

# WY 2017 PRMS POTPOURRI

California Cooperative Meeting

11/2/2016

By John j. Lacey King



# POTPOURRI TOPICS

- PRMS Model Status for
  - Feather
  - Yuba
  - Merced
  - Kings
  - Tuolumne
- QA/QC Tool Development
- Redevelopment for Feather PRMS

# Feather PRMS Development



100 %

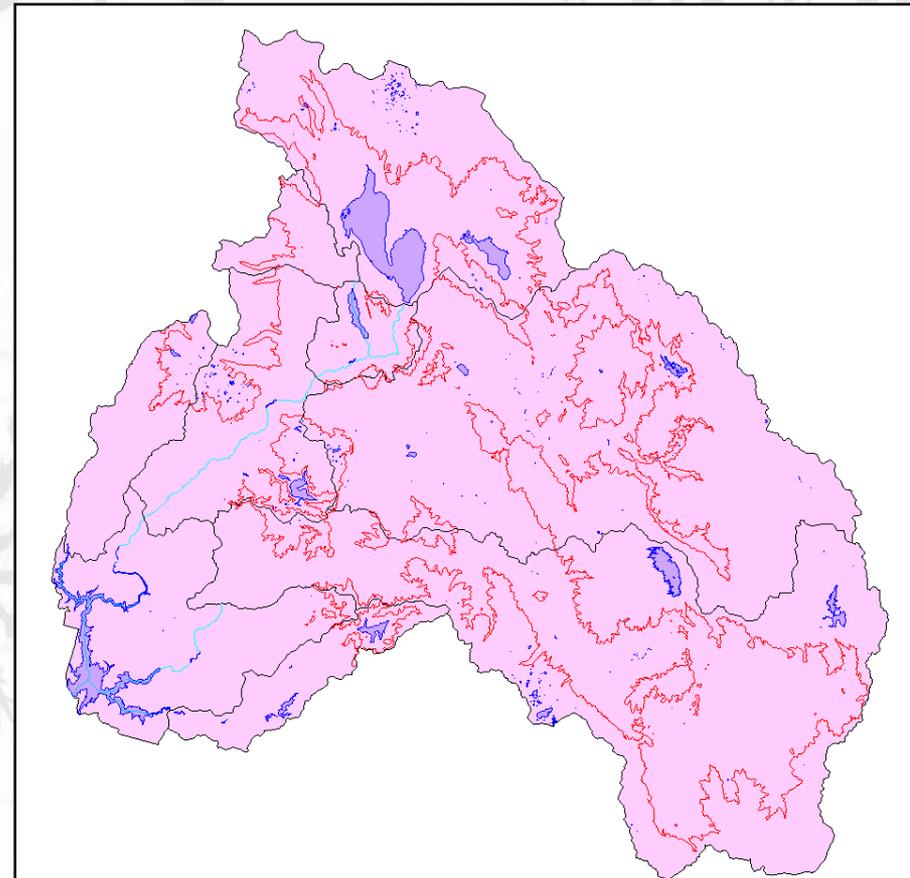
## Model

- Draft Received :
- Refined Draft Receive:
- Evaluation & Comment: 2004
  
- Final Model Received: 2005
  - Configured with:
    - 326 HRUs
    - 2 Snow Depletion Curves
    - 8 Calibrated Flow Nodes
    - 8 Simulation Nodes
    - 14 Routing Segments
    - 10 Precipitation Stations
    - 3 Temperature Stations
    - Prec Distribution Program-Draper
    - Temp Distribution Program- Lapse Rate
  
  - PRMS Version 1

## Document

- Published Report: 2005

3485 Square Mile Watershed



# Yuba PRMS Development



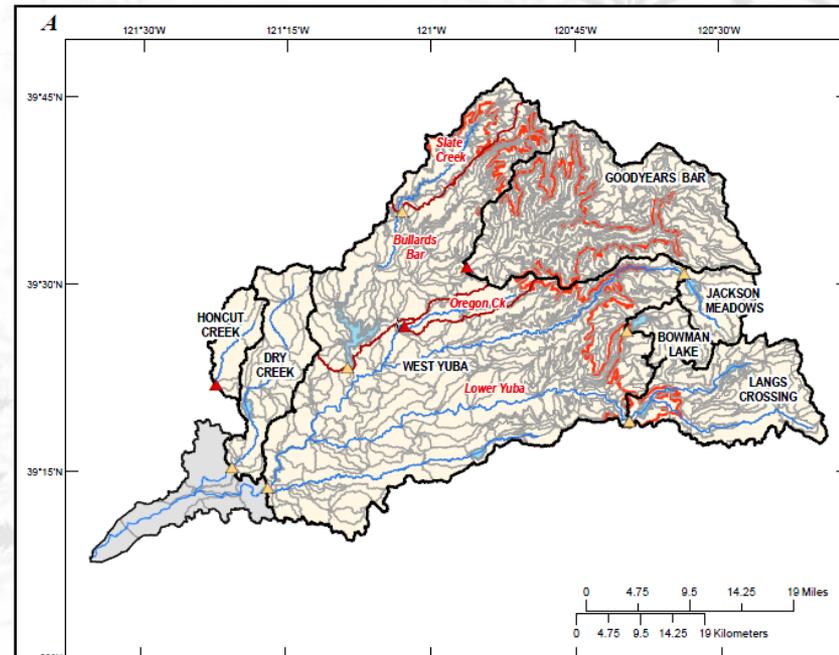
## Model

- Draft Received 2/22/2016
- Refined Draft Receive: 6/10/2016
  - Configured with:
    - 946 HRUs
    - 2 Snow Depletion Curves
    - 10 Calibrated Flow Nodes
    - 25 Simulation Nodes
    - 62 Routing Segments
    - 29 Precipitation Stations
    - 30 Temperature Stations
    - Climate Distribution Program-Draper
    - PRMS Version 4.0.1
- Evaluation & Comment: Dec 2016 – April 2017
- Final Model Receive: April 2017

## Document

- Draft Document Receive: **November 2016**
- Published Report: April 2017

1386 square mile watershed



Modified from the U.S. Geological Survey National Elevation Dataset, 10 meter resolution (<http://ned.usgs.gov/>) using the GIS Weasel ([http://www.brr.or.usgs.gov/projects/SW\\_MoWS/Weasel.html](http://www.brr.or.usgs.gov/projects/SW_MoWS/Weasel.html))

### EXPLANATION

- Flood Plain (not modeled)
- Model boundary
- Calibrated area
- Catchment boundary
- Hydrologic Response Unit (HRU)
- Average Snowline 5,600 feet

- Calibration Nodes**
- Measured data
- Reconstructed data



# Merced PRMS Development



## Model

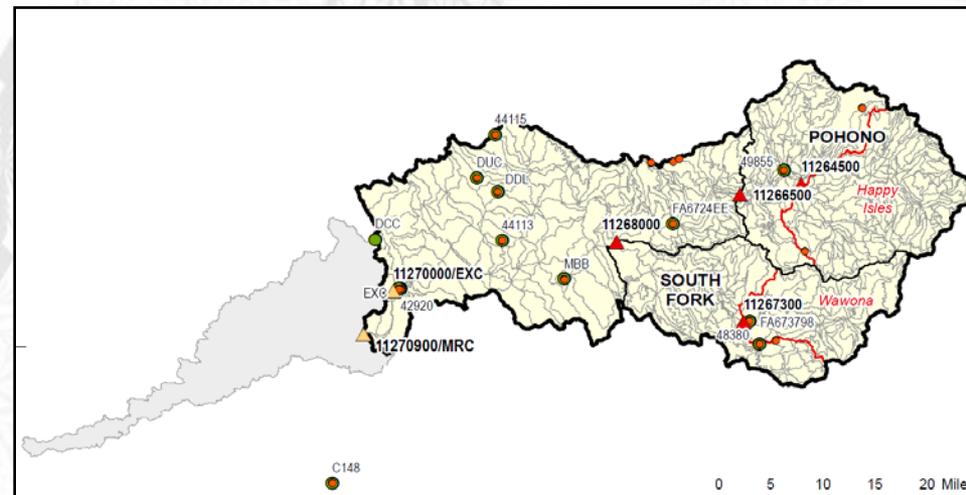
- Draft Received 11/22/2015
- Refined Draft Receive: 7/7/2016
  - Configured with:
    - 653 HRUs
    - 2 Snow Depletion Curves
    - 5 Calibrated Flow Nodes
    - 20 Simulation Nodes
    - 42 Routing Segments
    - 13 Precipitation Stations
    - 17 Temperature Stations
    - Climate Distribution Program-Draper
    - PRMS Version 4.0.1
- Evaluation & Comment: Dec 2016 – April 2017
- Final Model Receive: April 2017

## Document

- Draft Document Receive: **November 2016**
- Published Report: April 2017



1059 square mile watershed



# Kings PRMS Development



## Model

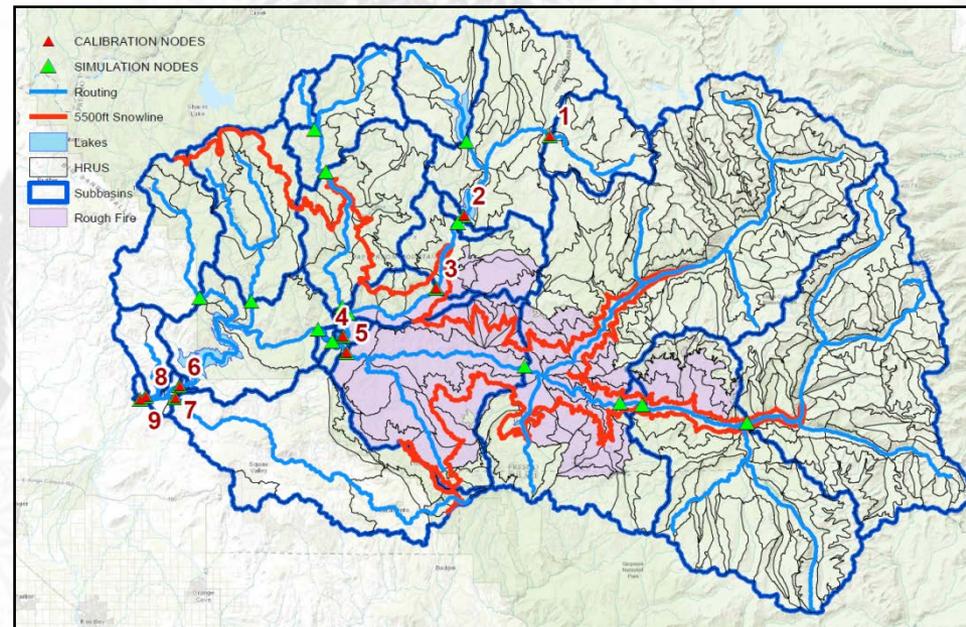
- Draft Received 3/3/2016
- Refined Draft Receive: **November 2016**
  - Configured with:
    - 552 HRUs developed from 126 USGS NHM HRUs
    - 128 Snow Depletion Curves
      - (2 default and 126 USGS NHM HRUs)
    - 9 Calibrated Flow Nodes
    - 23 Simulation Nodes
    - 68 Routing Segments
    - 18 Precipitation Stations
    - 28 Temperature Stations
    - Climate Distribution Program-Draper
    - PRMS Version 4.0.2
  - Evaluation & Comment: Dec 2016 – April 2017
  - Final Model Receive: April 2017

## Document

- Draft Document Receive: January 2017
- Published Report: September 2017



1692 square mile watershed  
69% above snowline, 31 % below snowline



# Tuolumne PRMS Development



## Model

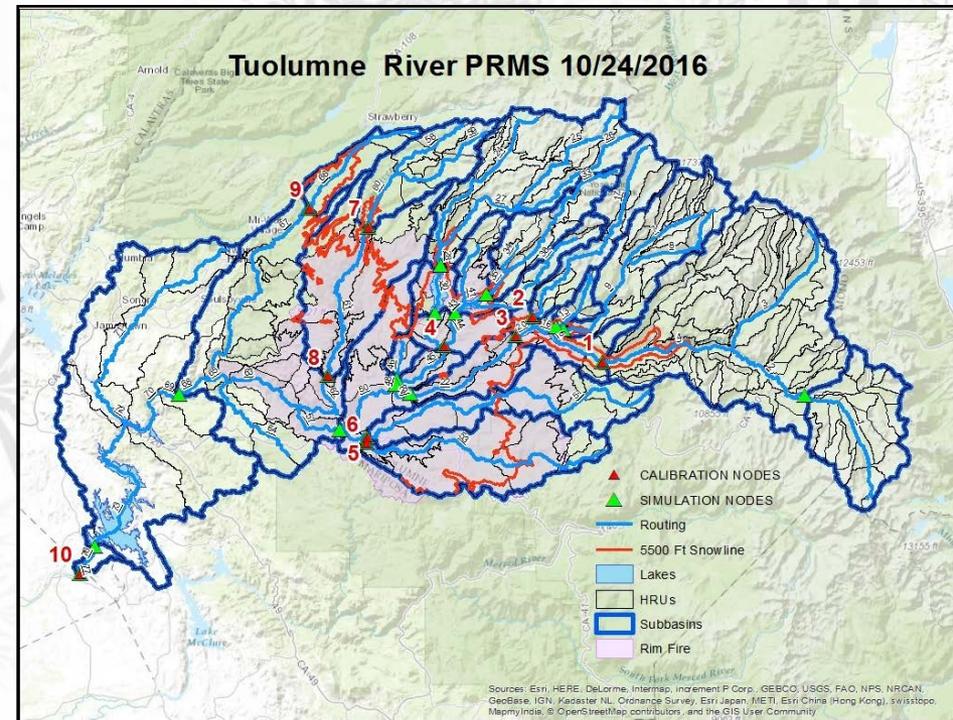
- Draft Received 3/3/2016
- Refined Draft Receive: **November 2016**
  - Configured with:
    - 405 HRUs developed from 116 USGS NHM HRUs
    - 118 Snow Depletion Curves
      - (2 default and 116 USGS NHM HRUs)
    - 10 Calibrated Flow Nodes
    - 23 Simulation Nodes
    - 77 Routing Segments
    - 21 Precipitation Stations
    - 33 Temperature Stations
    - Climate Distribution Program-Draper
    - PRMS Version 4.0.2
  - Evaluation & Comment: Dec 2016 – April 2017
  - Final Model Receive: April 2017

## Document

- Draft Document Receive: January 2017
- Published Report: September 2017



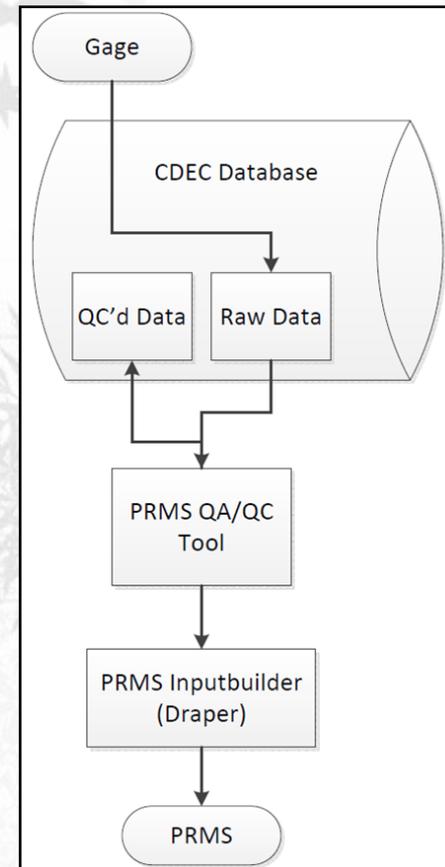
1538 square mile watershed  
47% above snowline, 53 % below snowline



# QA/QC Tool Development

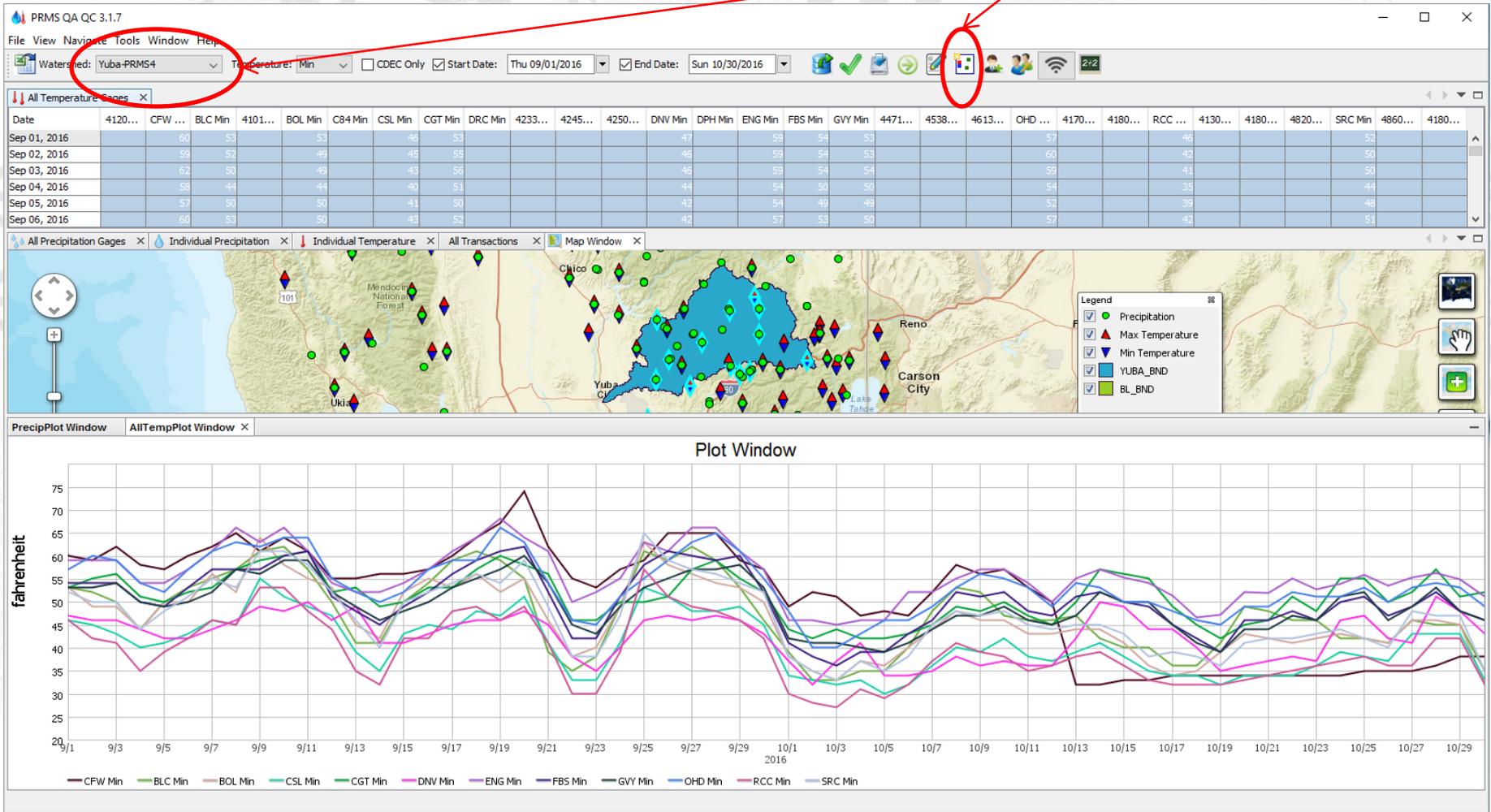


- Draft Received: 2013
- Refined Draft Receive: 10/11/2016
  - Same Configuration Build as 2014 Version
  - QA/QC CDEC Prec Data
  - QA/QC CDEC Temp Data
  - QA/QC can be revised on CDEC
- New Functionalities
  - Capabilities to Edit Data in all CA Watersheds
  - Station Mapping Features
- Challenges
  - PGE Firewall Issues
- Final Model Receive: **November 2016**
- DWR shares tool with all interested Cooperators: **December 2016**
  - **PGE**                      **KRWA**                      **TID**
  - **MID**                      **NRCS**                      **SFWPS**
- Increase Functionality



# QA/QC Preview

Edit Watershed Feature



# QA/QC Preview

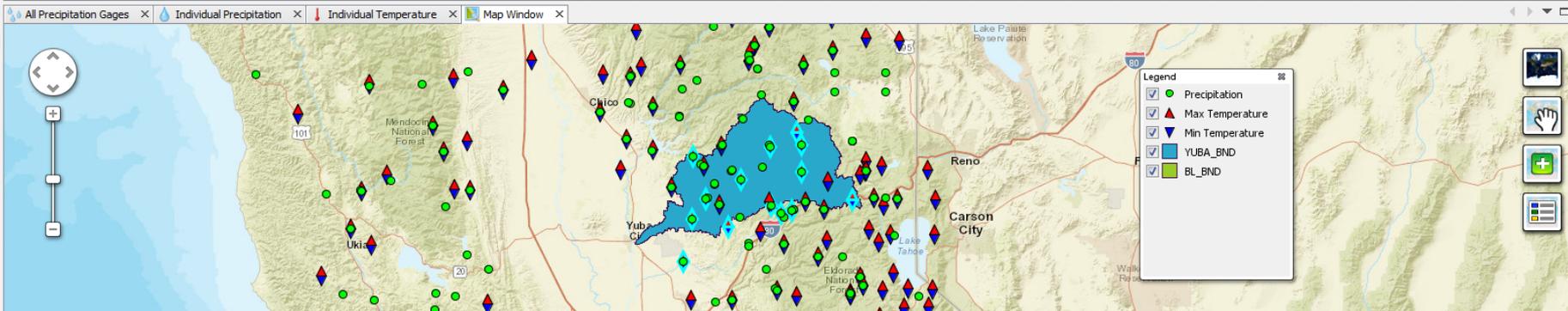
PRMS QA QC 3.1.7

File View Navigate Tools Window Help

Watershed: Yuba-PRMS4 Temperature: Min  CDEC Only  Start Date: Thu 09/01/2016 End Date: Sun 10/30/2016

All Temperature Gages

Date	4120...	CFW...	BLC Min	4101...	BOL Min	C84 Min	CSL Min	CGT Min	DRC Min	4233...	4245...	4250...	DNV Min	DPH Min	ENG Min	FBS Min	GVY Min	4471...	4538...	4613...	OHD ...	4170...	4180...	RCC ...	4130...	4180...	4820...	SRC Min	4860...	4180...	
Sep 01, 2016		60	53		53		46	53					47		59	54	53					57			46				52		
Sep 02, 2016		59	52		49		45	55					46		59	54	53					60			42				50		
Sep 03, 2016		62	50		49		43	56					46		59	54	54					59			41				50		
Sep 04, 2016		58	44		44		40	51					44		54	50	50					54			35				44		
Sep 05, 2016		57	50		50		41	50					42		54	49	49					52			39				48		
Sep 06, 2016		60	53		59		43	52					42		57	53	59					57			42				51		
Sep 07, 2016		62	55		56		46	53					44		61	57	52					61			46				55		
Sep 08, 2016		65	57		52		45	57					46		66	57	57					63			45				53		
Sep 09, 2016		61	61		64		55	59					49		63	57	56					62			53				61		
Sep 10, 2016		64	62		58		51	60					48		66	60	59					64			53				61		
Sep 11, 2016		61	57		55		49	61					50		61	61	59					64			48				58		
Sep 12, 2016		55	50		53		47	52					46		54	51	52					55			44				52		



All Transactions PrecipPlot Window AllTempPlot Window

Data Type: Precipitation Station: ALL Transaction Status: All

Type	Station	Date	Old Value	New Value	User	Transaction Date	Transaction ID	Comments	Approved Before
Rejected	BOL	Jun 22, 2016		0.07	0SEAN	2016-07-11 12:53:30		841 Most likely a reading error.	True
Rejected	DPH	Jun 25, 2016		2.5	0SEAN	2016-07-11 12:54:32		842 Bad data point	True
Rejected	ALY	Jun 25, 2016		0.04	0SEAN	2016-07-11 12:55:08		843 Repeated value. Most likely ...	True
Rejected	ALY	Jun 19, 2016		0.04	0SEAN	2016-07-11 12:55:34		844 Repeated value. Most likely ...	True
Rejected	ALY	Jun 21, 2016		0.04	0SEAN	2016-07-11 12:55:43		845 Repeated value. Most likely ...	True
Rejected	SBY	Jun 27, 2016		0.04	0SEAN	2016-07-11 12:58:13		846 Changed to zero because onl...	True



Transaction Table

# Feather PRMS Redevelopment

## Model

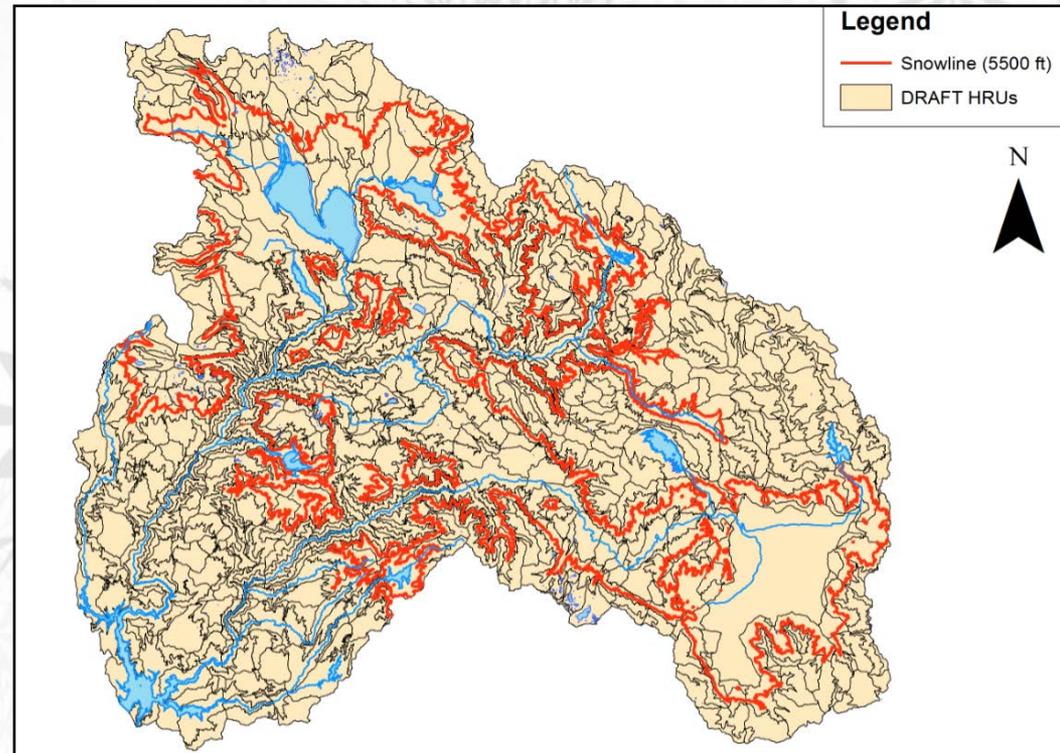
- ~~• Draft Received :~~
- ~~• Refined Draft Receive:~~
- ~~• Evaluation & Comment:~~
- ~~• Final Model Receive:~~
- Working Plan:
  - Configured with:
    - 940 HRUs
    - 2 Snow Depletion Curves
    - 14 Calibrated Flow Nodes
    - 27 Simulation Nodes
    - 27 + Routing Segments
    - ~40 Precipitation Stations
    - ~35 Temperature Stations
    - Climate Distribution Program ?
    - PRMS 4.0.2
  - Calibration Method: ?
  - Calibration Target Data
    - Flow
    - Snow Survey and Sensor SWE Data
    - NOAA NOHRSC SWE
    - Solar Radiation Data
- Final Model & Document: March 31, 2017



## Document

- ~~• Draft Document Receive~~
- ~~• Published Report.~~

3485 Square Mile Watershed





# Questions