• Update on calibration extension
  – Impact of adding 2011-2015 to ESP traces
• Products and services
  – What do you need from us?
CALIBRATION EXTENSION RESULTS:
IMPACT ON 2017 APRIL-JULY ESP
2016 Calibration Results

• Analysis of 30 year vs. 35 year record:
  – Observed Precipitation
    • San Juan, Gunnison, Dolores, Duchesne
      – Drier October – April (especially January – April)
      – Little change May – September overall
        » variable month to month
    • Upper Green, Yampa, Upper Colorado mainstem
      – Little difference between 30 and 35 year averages
  – Observed April-July Unregulated Flow
    • Similar to winter precipitation results
1981-2015 Precipitation

- Simple ratio of 35 year average to 30 year average
  - $> 0 = 35$ year wetter than 30 year
  - $< 0 = 35$ year drier than 30 year
- Used groups of SNOTEL sites within each basin
  - no station weighting
  - had to have 35 years of record
  - Gunnison and Dolores treated as one area
  - Colorado mainstem treated as one area
1981-2015 Precipitation

October – April
35 yr vs. 30 yr precipitation

March
35 yr vs. 30 yr precipitation
1981-2015 Precipitation

May-September
35 yr vs. 30 yr precipitation
• Analysis of 30 year vs. 35 year ESP:
  – Expected results
    • San Juan, Gunnison, Dolores, Duchesne
      – Lower ESP April-July volumes (especially January – April)
    • Upper Green, Yampa, Upper Colorado mainstem
      – Little change
  – Observed results for 2017 so far
ESP DIFFERENCES

Navajo
ESP April-July 35year - 30year

KAF

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12/15/16 to 3/20/17
2017 APRIL-JULY ESP VOLUMES

Blue Mesa
ESP April-July Volume

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2017 APRIL-JULY ESP VOLUMES

Flaming Gorge
ESP April-July Volume

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2017 APRIL-JULY ESP VOLUMES

Colorado-Cameo
ESP April-July Volume

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ESP DIFFERENCES

Colorado-Cameo
ESP April-July 35year - 30year

KAF

MinDiff
90Diff
MedDiff
AvgDiff
10Diff
MaxDiff

2012
Lake Powell
ESP April-July Volume

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PRODUCTS AND SERVICES: WHAT DO YOU NEED FROM US?
Standard Products

• 10 day forecast hydrographs
  – produced daily
  – hourly timestep

• Seasonal forecast volumes
  – produced twice monthly
  – current month through July 50% volumes
  – April – July totals with 10%/90% at first of month

• Water year forecast volumes
  – produced first of month
  – monthly volumes through end of water year
  – 5 year MTOM ESP traces

• Peak flow outlooks
  – produced twice monthly March 1 – May 1
Special Products

- 10 day deterministic / daily ESP flow combo
- Peak flow forecast updates as requested