

IMPACT OF WATER QUANTITY ON WATER QUALITY

presented to the
Colorado Watershed Assembly
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Colorado River District

Protecting Western Colorado Water Since 1937

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Colorado Constitution

- Section 6. Diverting unappropriated water -
- priority preferred uses. The right to divert
the unappropriated waters of any natural
stream to beneficial uses shall never be
denied

SECTION 25-8-104

- Colorado Water Quality Law is very clear
- “No provision of this article shall be interpreted so as to supersede, abrogate, or impair rights to divert water and apply water to beneficial uses “

CAN THERE BE ANY LINKAGE BETWEEN QUALITY AND QUANTITY?

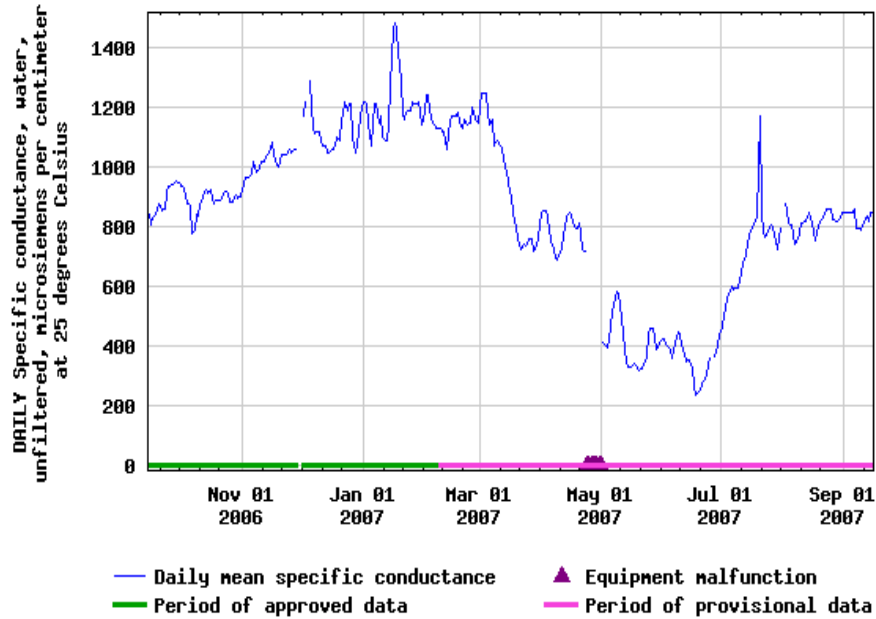
- (3) Any substituted water shall be of a quality and continuity to meet the requirements of use to which the senior appropriation has normally been put.

WHAT ARE RECOGNIZED LINKAGES

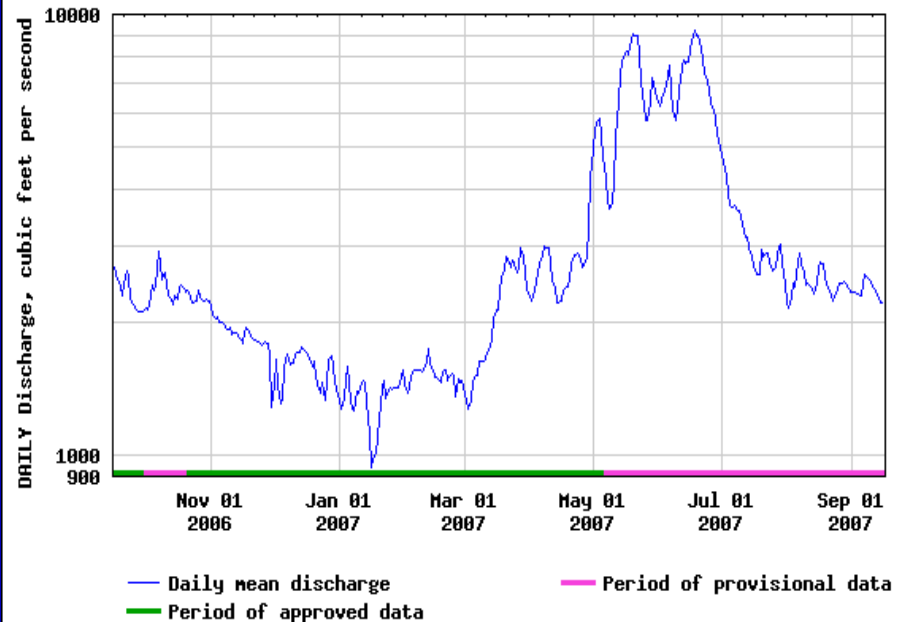
- Colorado River Basin Salinity Control Program
 - Predicated on concept that continued development in the Upper Basin will lead to increased TDS in the Lower Basin
 - Federal and State Program established to control salt load in the Colorado River System



USGS 09085150 COLORADO R ABV SOUTH CANYON CR NR GLENWOOD SPGS CO



USGS 09085100 COLORADO RIVER BELOW GLENWOOD SPRINGS, CO.



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IMPACTS OF SALINITY IN THE LOWER COLORADO BASIN

- 10 KAF of additional development in the Upper Basin is estimated to increase the TDS in the Lower Basin by 1 mg/l

IMPACT OF SALINITY IN COLORADO

- GRAND VALLEY IS VERY CONCERNED WITH THE QUALITY AND TIMING OF WATER IN THE COLORADO RIVER
- AFFECTED BY UPSTREAM DIVERSIONS AND MID RIVER SPRINGS

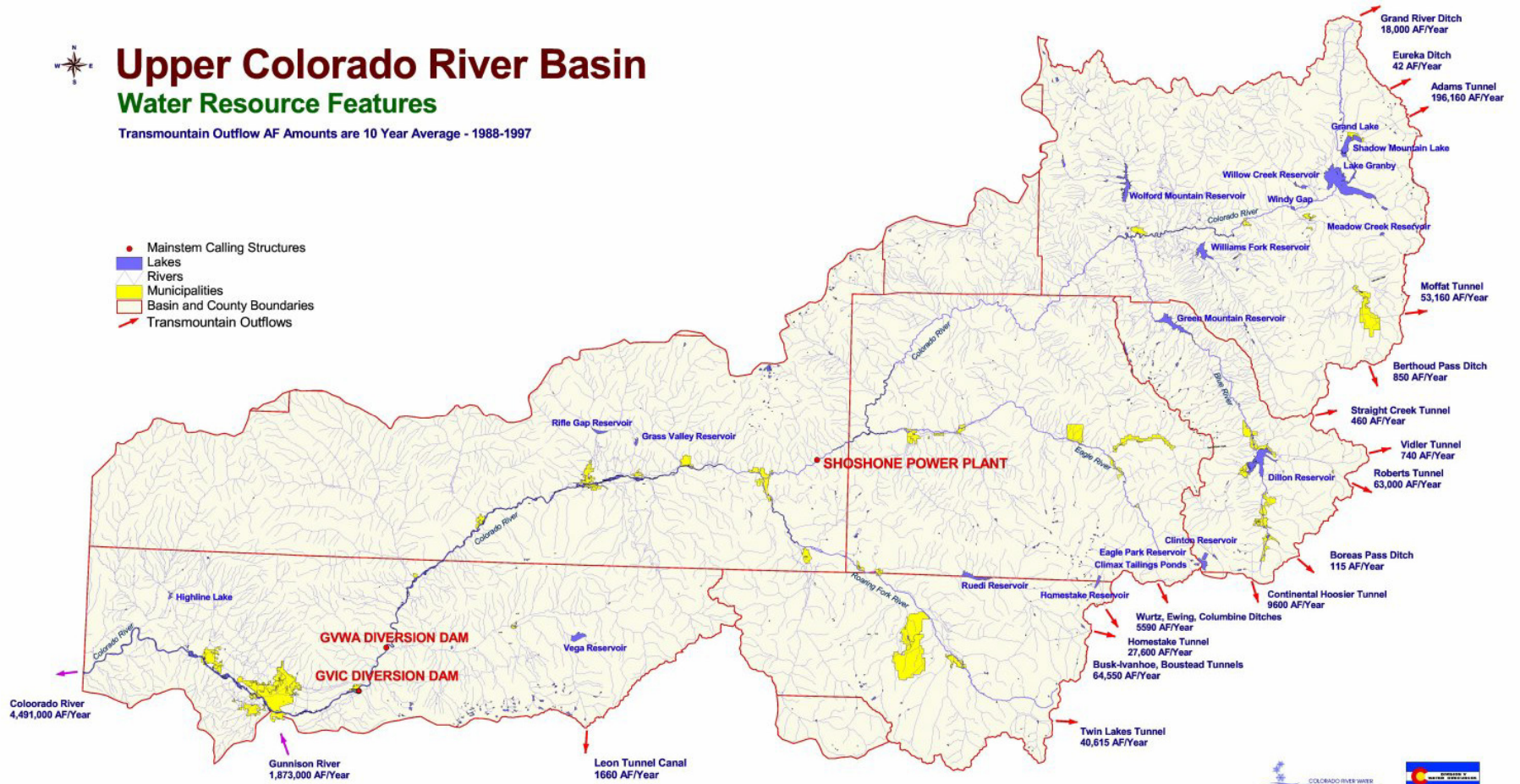


Upper Colorado River Basin

Water Resource Features

Transmountain Outflow AF Amounts are 10 Year Average - 1988-1997

- Mainstem Calling Structures
- Lakes
- Rivers
- Municipalities
- Basin and County Boundaries
- Transmountain Outflows



GREEN MOUNTAIN SUBSTITUTION

- Decreed by 91CW252
- Major Grand Valley Parties
 - City of Grand Junction
 - City of Clifton
 - Orchard Mesa Irrigation District
 - Palisade Irrigation District
 - Grand Valley Water Users Association
 - Grand Valley Irrigation Company

GREEN MOUNTAIN SUBSTITUTION

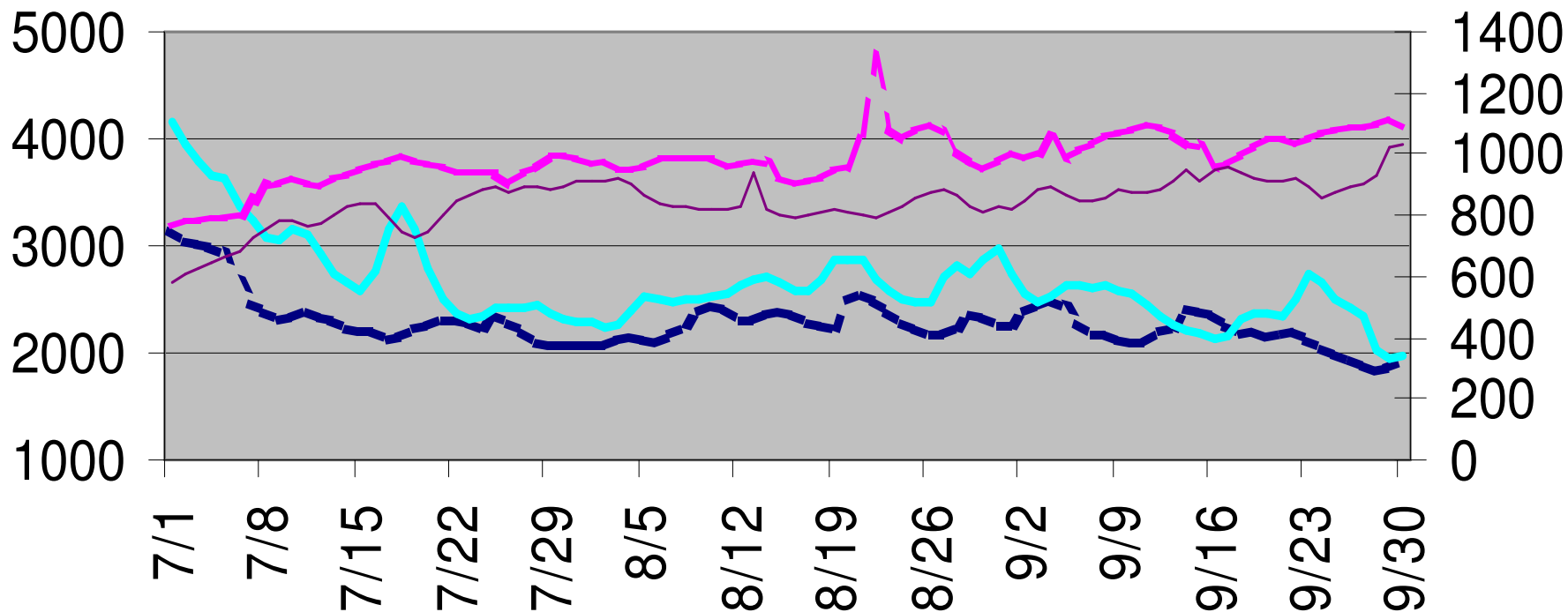
- Allows Substitution of Waters Stored in Either Williams Fork Reservoir or Wolford Mountain Reservoir(Denver's Account) for waters stored in Dillon Reservoir, but owed to Green Mountain Reservoir

GREEN MOUNTAIN SUBSTITUTION

- AMOUNTS

- 1ST 1,000 Acre Feet – retained in Dillon Reservoir for Instream Flow support
- Next 5,000 Acre Feet – To be provided by Wolford Mountain Reservoir
- Next 10,000 Acre Feet – To be provided by Williams Fork Reservoir
- Additional amounts (up to total of 26,000) af to be provided by Wolford Mountain Reservoir

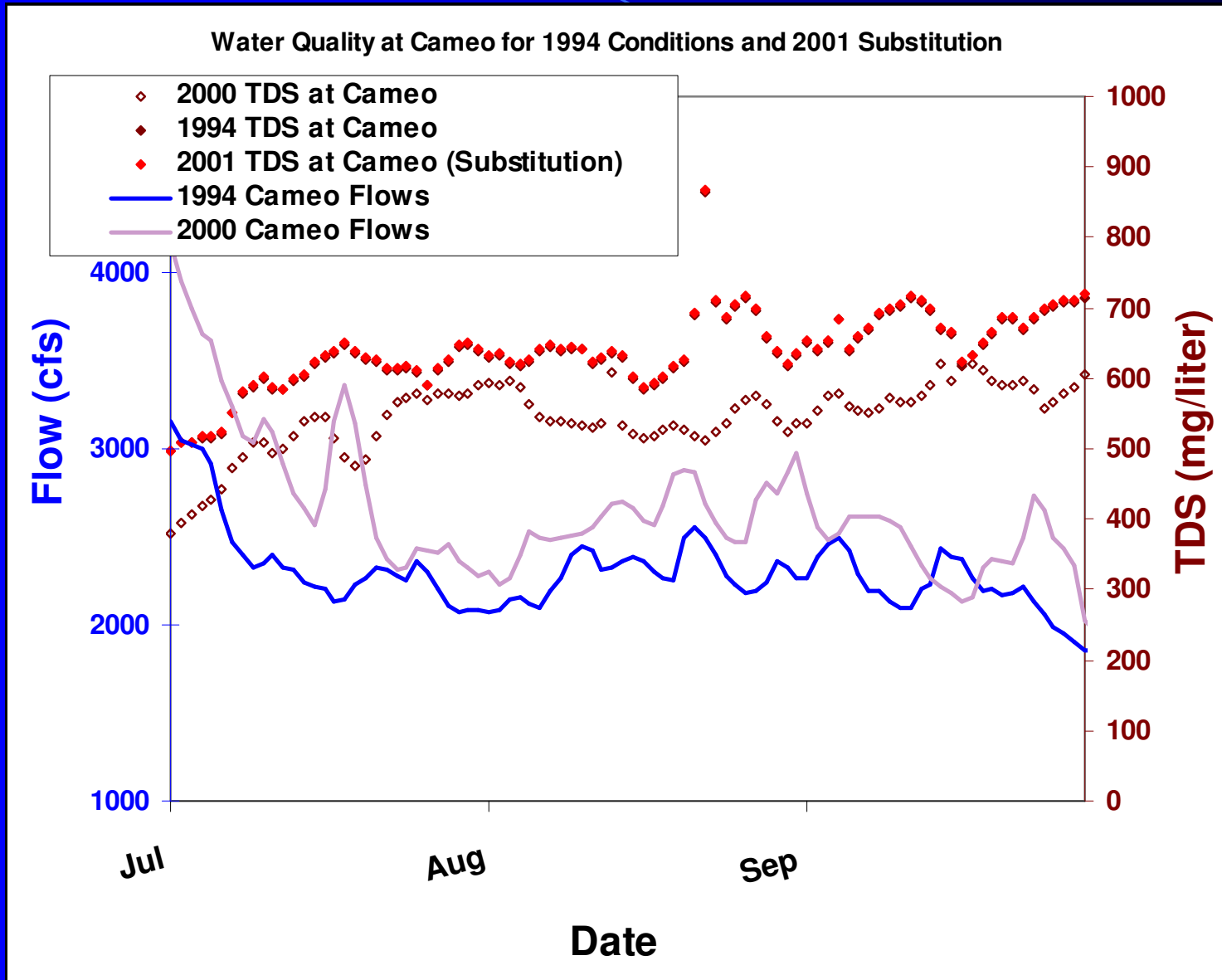
COLORADO RIVER AT CAMEO



--- FLOW 1994
--- COND 1994

— FLOW 2000
— COND 2000

POTENTIAL WQ IMPACT

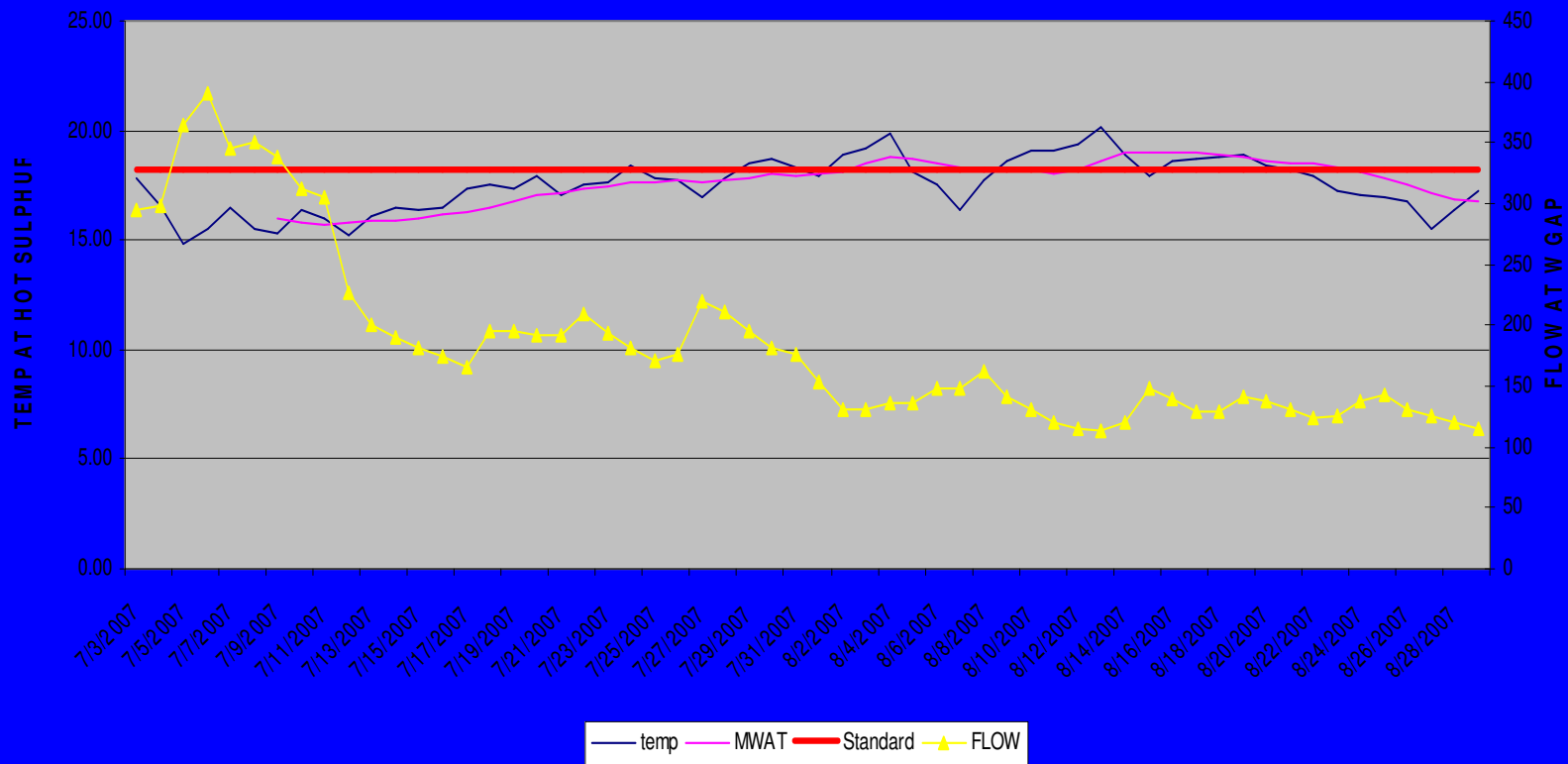


EMERGING CONCERNS

- TEMPERATURE IN HIGH MOUNTAIN STREAMS
- EXACERBATED BY DIVERSIONS, BOTH IN -BASIN AND OUT OF BASIN

Effect of flow on temperature

TEMPERATURE VS FLOW



CHALLENGE

- DEVISE “MITIGATION” TO PROVIDE FOR PROTECTION OF WATER QUALITY WHILE ALLOWING DEVELOPMENT OF WATER RIGHTS
 - DIVERSION SCHEDULING
 - RELEASE SCHEDULING
 - STREAM HABITAT IMPROVEMENTS

QUESTIONS?

