Surface Withdrawal and Surface Condition Subcommittee Report

October 2021

Big thank you to:

- *The RBC members willing to volunteer*
- *The members that ended up being on the subcommittee for their time and perspectives*
- *CDM and Clemson for supporting the subcommittee on a very abbreviated timeline*

Relevant Charter Components

1. The RBC's goals include:
   a. "Ensuring water resources are maintained to support current and future human and ecosystem needs."
   b. "Improving the resiliency of the water resources and help minimize disruptions within the basin."
2. The point of the river basin plan and our subcommittee isn't just to balance between withdrawals and the environment, but to ensure all withdrawers have access to the resource even during drought. This includes:
   a. All the different withdrawers (registrations and permits)
   b. Everyone from the first withdrawers in the basin to the last
   c. The largest and the smallest withdrawers
   d. And yes, at least some flow remaining after all withdrawals for the environment

Subcommittee's Short-term Goals

Discuss/Consider:

- Current and future operational resiliency
- Surface condition(s)
- Low flow management strategy

How did it go?

- Candid but productive
- Need more time to fully model the surface condition and potential low flow management strategy

Operational Resiliency

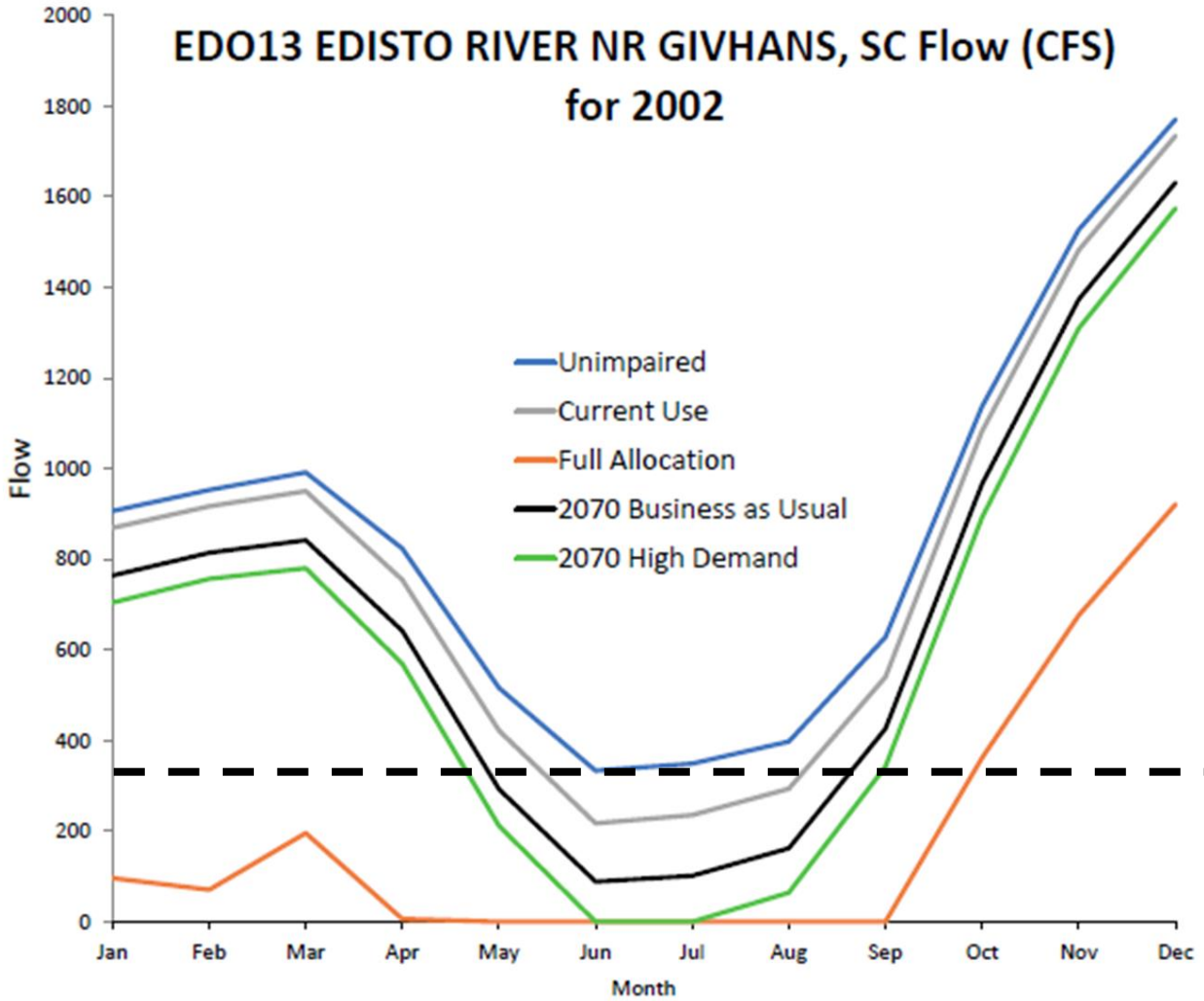
- Premise: surface withdrawal operational resiliency is basin resiliency and vice versa…
- Many of the largest surface withdrawers already have significant resiliency (i.e., ability to withdrawal from ground, pond or another basin) rather than the surface during low flows
- Others have at least partial conjunctive use (or other source) capability
- Some are in the process of increasing conjunctive use (or other source) capabilities, but that will take time
- There is no downside to helping all those that currently don't have any contingency or conjunctive use capability to develop at least some (10-20%) over the next ten years
- May need help with expertise, regulatory hurdles or even funding assistance to accomplish at least some alternate source capability (i.e., contingency wells, ponds, etc.)

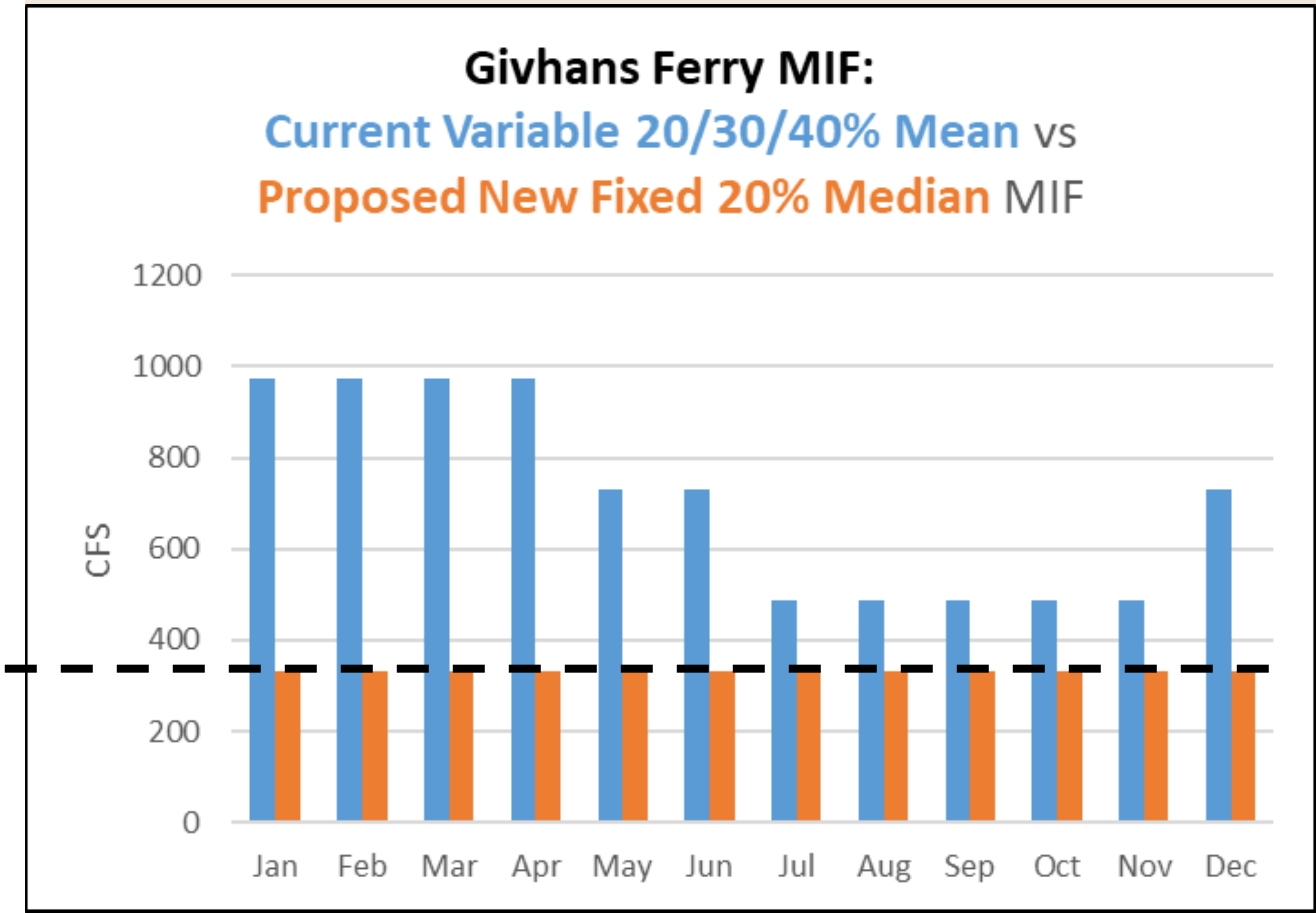
Surface Condition

- Making sure the last withdrawer and the environment after them get at least some flow during drought, etc.
- Making sure that as we look at this low flow management strategy and the many other resource stretching management strategies that we will consider, we have a metric (other than how many times will the river run dry) for evaluating their effectiveness
- Such a condition has to balance the variety of needs and positions of all the stakeholders in the basin
- While simultaneously being supported by the math and science
- The surface condition discussed at Givhans Ferry was 20% median or about 332cfs
- Rather than multiple values for different months, the same value could be used for all months since historical and projection data shows the low flows are most likely to occur during the 20 or 30% months and to simplify modeling and contingency planning

Surface Condition

20% median at Givhans “happens” to represent a value between the unimpaired and current use monthly minimum (i.e., point at which management strategies involving withdrawals could minimize further drops in river flow during a drought)





Low Flow Management Strategy

- The proposed low flow management strategy attempts to answer an obvious question: what should happen when the river falls below the surface condition despite our best efforts to stretch and manage the resource?
- Rather than triggering full curtailment as is the position of the law for MIF on new users, this low flow management strategy would trigger incremental shifts to other sources for all upstream surface withdrawers able to do so equal to the amount the surface condition at the bottom of the basin has been exceeded
- Some may shift more than others based off their ability to do so and the condition of the other source
- The goal of all the resource stretching management strategies is to reduce the times the surface condition will be exceeded and conversely, the # of times such a low flow management strategy would need to trigger

Increments of the Low Flow Management Strategy

20% Increments

20% Increments	River Flow Range (cfs)		Basin % Shift	CWS % Shift off Edisto			CWS Not to Exceed	
Percent Below MIF	Bottom	Top	or Reduction	Flow Trigger	Permitted	Peak Demand	cfs	MGD
0-20%	266	332	20%	312	72%	20%	124	80
20-40%	199	266	40%	260	79%	40%	93	60
40-60%	133	199	60%	174	86%	60%	62	40
60-80%	66	133	80%	87	91%	75%	39	25
80-100%	0	66	100%					
**Shift to conjunctive use, another source or curtailment.*				**CWS shifts demand to Bushy Park Res. or Goose Creek Res. sources.*				

**The 40%+ curtailment may be borne more by some than others depending on each operations capabilities and the condition of the other conjunctive sources!*

- The model projections thus far have not modeled the ability of many of the withdrawers to utilize other sources
- This resiliency would get better as more implement at least some contingency capabilities
- The shift to ground water would only be for a low flow contingency

CDM Projections of Impact of the Low Flow Management Strategy?

- CDM shows partial results (unimpaired and current-use) of this management strategy
- See if there is enough interest by the surface committee and RBC for CDM to fully model the proposed surface condition and potential low flow management strategy for the business-as-usual and high-demand projection scenarios
- Could potentially be brought up for vote at the November meeting