

# Staff Report

for the Water & Hydroelectric Operations Committee Meeting of September 16, 2020

**TO:** Water & Hydroelectric Operations Committee

**FROM:** Chip Close, Water Operations Manager

**DATE:** September 9, 2020

**SUBJECT:** Fall / Winter Water Requests

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## ***OPERATIONS***

### **RECOMMENDATION:**

Receive an informational update on off-season water delivery practices and canal limitations.

### **BACKGROUND:**

Per District rules and regulations, and general irrigation standards, the District provides seasonal raw water from April 15<sup>th</sup> through October 14<sup>th</sup>. The seasonal water schedule was developed as a balance of crop watering needs with the most efficient use of the District water rights.

Recently, the amount of customers requesting adjustments to the irrigation season delivery has increased exponentially. The largest request seems to occur in the fall when customers request additional water based upon extreme fire danger conditions. For many of these customers, the District is able to accommodate the request for fall/winter water; however, not all facilities are equipped to handle off-season service. District staff review every request in an attempt to provide water to those canals that are appropriately equipped.

The attached spreadsheet shows canals that have fall/winter water available highlighted in blue. The spreadsheet also depicts the canals that do not have access to fall/winter water in red. Lastly, canals that have limited access to fall/winter water are highlighted in orange. The spreadsheet also provides a brief explanation why fall/winter water delivery is a challenge. Some of those reasons include:

- Water Rights – a large number of the District's water rights allow collection to storage beginning in the fall months. Using these waters to send fall/winter water

to customers is water that will not replenish our storage reservoirs and therefore unavailable for summer use.

- Water Efficiency – many “dry” winter water canals are of substantial length. Wetting up miles of canal for a small number of customers would lead to an inefficient conveyance to loss.
- PG&E Outage – some Placer County canals are subject to an annual PG&E maintenance outage from October 15<sup>th</sup> through November. The outage eliminates, or severely limits supply to District canals and is during a time when there is little to no natural flows.
- NID Facility Maintenance – October through March is the prime time for District maintenance and construction crews to complete projects. Providing fall/winter water on all canals would restrict our ability to complete cleaning and repair in a timely fashion.
- Canals Constructed for Summer Flow – Many District canals were constructed to accommodate higher summertime flows. Low flows for fall/winter service results in lower water levels and orifice plates sitting above the waterline. Providing wintertime service on these canals would require the installation of numerous check dams at a major cost to the District. These check dams would have to be removed prior to every storm event, a very labor-intensive action.
- Winter Storms – prior to winter storms, District staff shut off canal flows and open all spill channels in an effort to prevent flooding and overtopping. Once the storm passes, the canal must be put back together. This is a labor-intensive effort and includes both Operations and Maintenance Department Staff. Adding to the number of canals with winter water increases costs and maxes out staffing.
- Natural Water Ways – some of the District’s canals use a natural waterway as a means of conveyance. During winter months, these waterways need all available capacity to pass storm flows. Adding import waters to these flows could intensify flood risk.
- Box Shut Off – at the end of irrigation season, staff must shut down all service outlets not purchasing water. Canals without fall/winter flow are dry and therefore do not necessitate shut off at each box. Transitioning these canals to winter flows would require increased labor.

#### **BUDGETARY IMPACT:**

Increasing the number of canals that offer fall/winter water would lead to a substantial increase in operational costs. The District currently hires temporary workers to set up the canal systems for summer time flows. Transitioning more canals to fall/winter flows is estimated to create the need for two additional Distribution Operators. With the limited number of customers requesting service, it is probable that providing fall/winter service on currently “dry canals” is not cost efficient, or water efficient.

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Attachment (1):

- Fall & Winter Water Canal Availability

## Fall & Winter Water Canal Water Availability

Available
  Limited
  Restricted

Cascade System	Notes
Cascade	
Cascade Pipe	
Snow Mtn	
Willow Valley	
Cement Hill	
Lake Vera Pipe	Treated water supply available
Sugar Loaf Res/Pipe	
Red Hill	
Red Hill Res/Pipe	
Buffington	
Upper G.V.	
Chicago Park	
Sunshine Valley	
Sontag	
Ripkin	No spillway; will overflow at end of canal
Russ Reservoir	Customer base limited; treated water supply available
Chicago Park East	
Chicago Park West	
Meyer Beirwagen Pipe	
Smith Moulton	
Blum Pipe	Shut down and drained to avoid silt buildup
John Henry Meyer	
Rattlesnake	
Woodpecker	
Forest Springs	
Maben	Canal on restriction until work complete
Maben Res/Pipe	Canal on restriction until work complete
Kyler	Canal on restriction until work complete
Grove	
Cherry Creek	Natural Creek - capacity reserved for storm flows
O Leary Pipe	

**Deer Creek South**

**Notes**

D.S.	
Red Dog	
Lower G.V.	Checks would need to be installed
Allison Ranch	
Corey	
Lafayette	Utilized as a spillway during off-season
Rough & Ready	
Wolf Creek Nat.	No import into Wolf Creek - capacity reserved for storm flows
Tarr	<b>Tarr System Notes</b>
Breckenridge	Checks would need to be installed, No water past B in offseason
Clear Creek	Water would need to be imported from storage to get to far end of system
Beyers	On the Tarr system
Smith Gordon	On the Tarr system
Casey Loney	On the Tarr system
Stinson Pipe	On the Tarr system
Pet Hill	On the Tarr system
Pet Hill Ext.	On the Tarr system
Bald Hill	On the Tarr system
B Canal	B system notes:
Cole Viet	Checks would need to be installed; B system is only serving 8 winter customers
Miller	Checks would be need to be installed
Wolf	Heavy winter runoff area on Tarr and B system; not able to complete as many fall projects on older infrastructure
Pearl Barnes	B system notes
Carpenter	B system notes
Cole	B system notes

**Deer Creek North**

**Notes**

Deer Creek Nat.	Pumps removed for winter flows-storm damage
Newtown	No sales past water treatment plant. Low berm on bottom end of the canal
Lester	
Tunnel	Canal low, checks would need to be installed. Would need to import water from storage (Scotts Flat)
Riffle Box	Would need to install checks at certain locations
Tunnel Ext.	Canal low, checks to be installed. Would need to import water from storage (Scotts Flat)
Rex Canal	Heavy winter run off area; need to pull water from storage; need to install checks.
Portuguese	Part of the Rex canal system

Quincy	Heavy winter runoff area, need to pull water from storage
Quincy Pipe	Heavy winter runoff area, need to pull water from storage
Squirrel Creek Nat.	Pumps removed for winter flows-storm damage
China Union	Water level low, checks would need to be installed; Import water from storage (Scotts Flat)
Spenceville	Water would need to be imported from storage
Meade	Treatment plant flow only
Ousley Bar	Water would need to be imported from storage
Town	Low water flows heavy winter runoff area
Farm	Low water flows heavy winter runoff area
Smartsville Irrig.	Pipe in poor condition needs to be removed or replaced
Keystone	Water would need to be imported from storage through Deer Creek; LWW reservoir restrictions

### Combie Phase

### Notes

Combie Phase I	
Magnolia III	
Magnolia III Ext.	Pumped water - treated water available
Combie Phase II&III	
Magnolia I	Only 1 spill on canal. Low berm areas
Weeks	illegal use of water in the past
Mag. II South	Low berm and small spill at end of canal
Mag. II North	
Markwell	Diversion structures would need to be installed; heavy run off area
Wolf Hannaman	Diversion structures would need to be installed; heavy run off area
Sanford Struckman	Diversion structures would need to be installed; heavy run off area

### Combie Ophir

### Notes

Combie Ophir I	
Lone Star	
Rudd	
Rainey	No spillway, would need to install check to get water into canal. Pvt ditch we cant use.
Oest	
Willetts	
Orr Creek Nat.	
Gold Hill I	
Camp Far West	
Lateral V	

Lateral IV	
Lateral II	Low canal; import water from long distance. Major storm runoff area
Lateral I	
Wiswell Gladding	
Church	Low canal, import water from long distance. Would need to install checks
Forbes	
Renken	
Bogdanoff	
Camp Far West Ext	Importing water from long distance, heavy runoff area; would need to install checks
Combie Ophir II	
Picket	
Beck	
Picket North	
Picket South	Too small for winter flows, no spillways
Rock Creek Bypass	Emergency use only no customers
Combie Ophir III	
Columbia East	
Columbia West	
Combie Ophir IV	
Vernon	
Rohr-Shanley	
Herkomer Pipe	
Dudley	
Gold Blossom	
St. Patricks	
Little Ophir	
Hymas	
Gold Hill II	Sales for Rt.13 only; heavy runoff area; Spill at end goes to pond with no release
Dead Mans Ravine	Pumps removed for winter storms
Whiskey Diggins	Diversion need to be installed; heavy storm runoff area; checks would need to be installed
Old Whiskey Diggins	
Valley View	
Kilaga Springs	
Nicklas	
Livingston	
Rielli	
Iron Canyon	No spill to release winter flows; Low berm area towards middle of canal

Thomas Stringham	
Files	Limited spill channels; low berm; heavy runoff area

### Fiddler Green

### Notes

Fiddler Green	PG&E Facility
Ophir	Limited flow, all canals in this section affected by annual PG&E outage in Fall Season
Kemper	Limited flow, affected by annual PG&E outage
East Kemper	Limited flow, affected by annual PG&E outage
West Kemper	Small canal and spill at end limited
Bean Cullers	Would need to install diversion in creek; heavy runoff area
Edgewood Pipe	Pumped water affected by PG&E outage; treated available in area
Edgewood Canal	Pumped water affected by PG&E outage; treated available in area

### Auburn Ravine

### Notes

Auburn Ravine Nat.	Auburn Ravine system is affected by PG&E outage in Fall limiting flows; pumps pulled for winter storms
Auburn Ravine I	Water would need to be imported from storage (Rollins), affected by PG&E outage in Fall
Chevallier Pipe	Small amount of natural to use during PG&E outage in Fall
Auburn Ravine II	Small amount of natural to use during PG&E outage in Fall
Lincoln	Small amount of natural to use during PG&E outage in Fall
Musser	Small amount of natural to use during PG&E outage in Fall
Markell	Small amount of natural to use during PG&E outage in Fall
Fruitvale	AR2 system PG&E outage; berm areas are low; heavy runoff area
Sohier-Ahart	Doty South Diversion comes out - no water
Hayt	Limited availability above the first siphon; would need to install checks
Doty	Water would need to be imported from storage (Rollins); affected by PG&E outage in Fall
Doty Natural	Water would need to be imported from storage (Rollins); affected by PG&E outage in Fall
Doty South	Diversion removed from creek- affects all laterals
Doty North	Water would need to be imported from storage (Rollins); affected by PG&E outage in Fall
Comstock Gladding	Water would need to be imported from storage (Rollins); affected by PG&E outage in Fall
Clark Jorstad	Water would need to be imported from storage (Rollins); affected by PG&E outage in Fall
Hemphill	Diversion removed from Auburn Ravine