SWEETWATER SPRINGS WATER DISTRICT

TO: Board of Directors **AGENDA NO. V-D**

FROM: Steve Mack, General Manager

Meeting Date: June 4, 2015

Subject: DISCUSSION/ACTION RE REVIEW OF DISTRICT CAPITAL IMPROVEMENT PROGRAM BY THE *AD HOC* CIP SUBCOMMITTEE

RECOMMENDED ACTION: Receive a report on the review of the District's Capital Improvement Program (CIP) by the *ad hoc* CIP Subcommittee and provide direction to staff.

FISCAL IMPACT: none

DISCUSSION:

District staff presented the annual Capital Improvement Program review at the December 4, 2014 Board meeting. Table 1 shows the approved 2014-2019 that was the start of the December discussion. Several of those projects have been completed or were in progress and it was time to propose a revised CIP. The Board had several questions about the proposed program and wanted a fuller discussion of the overall program. In discussions following that meeting staff recognized that there had been no thorough review of the District's CIP for some time - at least prior to the arrival of the current General Manager - and it would be appropriate to do a thorough review with an *ad hoc* subcommittee of the Board. At the February meeting, Tim Lipinski and Victoria Wikle were appointed to the subcommittee and the review started shortly after with periodic meetings with District staff, General Manager Steve Mack and Field Manager Kevin Gilman.

The first item the Subcommittee addressed was establishing the selection criteria. After much discussion and some revision, the Subcomittee agreed to the wording in Exhibit A and listed without the explanation below:

- **Improved water quality**
- **Water losses**
- **Potential Liability**
  - **Age of Pipe**
  - **Pipe Material**
  - **Terrain**
  - **Difficulty of Repair/Maintenance**
- **Storage and pressure zone requirements**
- **Costs per service**

It is important to note that there is no 'formula' for using the ranking criteria to establish the listing of the projects. The criteria are listed in relative importance but there are no numerical values given to the criteria. It is also important to note that costs per service is more informational than the other criteria: it's important information but cannot be a deciding factor in project ranking.

Going with this information, staff compiled a list of capital projects proposed in various historical documents and then edited that list to uncompleted proposed projects and other possible projects that have come to the attention of District staff. That list with annotations relative to the ranking criteria is shown in Table 2. These projects are not listed in any priority; they are just an accumulation of uncompleted historical projects with whatever project information that is available, and with the ranking criteria applied.

A review of the historical information shows that the District has been diligent in carrying out recommended projects. Most of the projects suggested and analyzed by consulting engineering expertise have been completed. There are still many projects on the list and more are being added

Table 3 shows the proposed 2016-2023 CIP developed after consideration of the review of the ad hoc CIP Subcommittee. This proposed CIP has taken into consideration the ranking criteria and included a through discussion of the historical CIP and all the projects. The review of the historical capital projects and how they fit into approved CIP's showed that experience in the field changed the timing of completing these projects. Many projects have been moved around based on current experience - higher leak numbers - Hidden Valley Road and Lovers Lane are good examples of that.

Another experience issue is catastrophic failure - the failure of Mill Street with cast iron water main has highlighted that issue with District water mains. The finding of two leaks associated with the water main along River Road near Rio Nido, the pipe material of that main - cast iron - the condition of the pipe material when it was excavated for repair, and the fact that it's the only supply line into Rio Nido have moved this project to the top of the list.

Something different with this proposed CIP is a relatively small capital project in FY 2018, replacement of the green sand filter at the Monte Rio treatment plant. In earlier iterations we were proposing no capital program in 2018 because a full CIP - in the $1 million range - would go into District Policy Reserves and we haven't wanted to do that if not necessary. The green sand filter replacement is a needed project, we have contemplated replacing it for some time - at the time of its last rehabilitation in 2010 we discussed that the next rehabilitation would be needed in about eight years and would need to be a major effort or a replacement with a similar process as used at the Highland treatment plant. We are recommending replacing it with ATEC technology because we have had good experience with it at Highland and because the green sand filter technology requires use of potassium permanganate which is a hazardous material and requires very careful operation to achieve the needed results. This capital project is not related to any of the main replacement projects; thus no real economy of scale exists with other capital projects, and because considerable staff time will be needed to oversee this project, we agreed this would be a good 'off-year' project.

Table 4 shows the financial model analysis of the proposed CIP. It includes 3% increases in every year and a drop in the Capital Debt Reduction Charge in 2013 because debt payments are lower - the State loans are paid off then. Reserves above District policy are negative in 2023, but not by much and there are so many assumptions going into these calculations (CDRC dropping by $170,000 is one), that there should be no alarm about that negative amount. The analysis shows that we need to skip FY 21 to avoid going into policy reserves, and includes the small CIP in 2018.

The most important recommendation in the proposed CIP is moving forward with the River Road water main replacement in FY 2017. This is a project that has had demonstrated leaks, is cast iron with a probable installation date of the 1920'2-1930's. It could catastrophically fail which would cut off water supply to Rio Nido as well as the 70 customers directly connected to this main.

The other projects in the CIP are our current recommendation based on the information we have today. We will continue with an annual review of the CIP to confirm the current Program or make other recommendations as current experience dictates.

Table 1. Sweetwater Springs Water District Approved 2014-2019 CIP Projects by Year

Year	Projects	Estimated Cost	Cost per service	Comments
2014				
	Hidden Valley Rd (GV) – Replace 3,900 lf of existing main and appurtenances on Hidden Valley Rd, 67 services.	$656,000	$9,791	Needed for flows, fire protection, customer water quality, leaks; need to figure out project
	Guernewood Lane (GV) - – Replace 1,800 lf of existing main and appurtenances and abandon 200 lf of redundant 4 – inch main along Hwy 116, 20 services.	$318,000	$15,900	Has been pushed down from past priority lists; needed.
	2014 Total	$974,000		Completed cost was $1,056,658
2015				
	Old Monte Rio Road (GV) – Replace 5,800 lf of existing main and appurtenances commencing at the Handy Andy Booster and proceeding westerly, 50 services.	$936,000	$18,720	Needed for flows, fire protection, customer water quality, leaks
	2015 Total	$936,000		Contract cost plus CM is $1,122,197
2016				
	Canyon 1 (Rio Nido) Replace approximately 3,900 ft of existing mainline and 75 services along Canyon 1 Rd., Memory Ln., Memory Park Rd.	$890,000	$13,284	needed project; moved this up.
	2016 Total	$890,000		
2017				
	Park Ave. (GV) replace approximately 2900 lf of main line on Park Ave. and McLane, 37 services. Loop two deadend lines.	$688,000	$18,595	pushed down, but needed
	Cherry St. (GV) replace approximately 440 lf of main line, 13 services.	$126,000	$9,692	do with Park Ave.
	2017 Total	$814,000		
2018	**No Capital Project**			
2019				
	Wright Drive main pressure zone. – (GV) Replace approximately 1,120 ft of existing mainline and 18 associated services along Wright Dr. and Wright Ln.	$275,000	$15,278	
	Woodland Drive – mainline replacement. (GV) Replace approximately 1,900 ft of existing mainline and 27 associated services along Woodland Dr in the main pressure zone.	$400,000	$14,815	

	Monte Rio Treatment Plant Green Sand Filter Replacement	$130,000	NA	Investigation/analysis needed on replacing this
	5th Year (2019?) Total	$805,000		
	Priority List (5 Years) Total	**$4,419,000**		
	Other Projects			
	Schoeneman pressure zone- main line replacement. (GV) Replace approximately 3,000 ft of existing mainline and 47 associated services along Highland Way, Sunset Ave, Woodland Dr, Laurel Way and Morningside Drive. (requires completion of Schoeneman Tank)	$744,300	$15,836	
	Highway 116 (MR) Replace approximately 850 ft of main line.	$280,000		Do with Main Street
	Main St (MR) Replace approximately 800 ft of mainline along Main St.	$180,000		
	Upper Summit Tank - Construct a storage tank with a nominal capacity of approximately 120,000 gallons at the District–owned site on McLane Avenue. Project to include relocation/ construction of the existing hydro-pneumatic pump station.	$490,000		Do we wait on development for these tanks? Does new development contribute?
	Natoma Tank – Replace the existing 10,000 gallon storage tank with a 30,000 storage tank. 2005 cost estimate	$190,000		
	Schoeneman Tank– Replace the existing 10,000 gallon tank with a 30,000 gallon storage tank. 2005 cost estimate	$127,000		
	Wright Drive upper pressure zone. – (GV) Replace approximately 3,280 ft of existing mainline and 47 associated services along Wright Dr, Glenda Dr, Natoma Dr. (requires completion of Natoma Tank)	$800,000	$17,021	
	Other Projects Total	$2,811,300		
	Total Projects Amount	**$7,230,300**		

Table 2. Potential CIP Projects

Prioritization Criteria	
Improved water quality	+
Water losses	-
Potential Liability	!
Storage and pressure zone requirements	#
Costs per service	$

Projects	Estimated Cost	$	+	-	!	#
Park Ave. (GV) replace approximately 2900 lf of main line on Park Ave. and McLane, 37 services. Loop two deadend lines.	$688,000	$ 18,595	+	-	!	#
Cherry St. (GV) replace approximately 440 lf of main line, 13 services.	$126,000	$ 9,692	+	-	!	#
Wright Drive main pressure zone. – (GV) Replace approximately 1,120 ft of existing mainline and 18 associated services along Wright Dr. and Wright Ln.	$275,000	$ 15,278	+	-	!	#
Woodland Drive – mainline replacement. (GV) Replace approximately 1,900 ft of existing mainline and 27 associated services along Woodland Dr in the main pressure zone. (requires completion of Schoeneman Tank)	$400,000	$ 14,815	+	-	!	
Monte Rio Treatment Plant Green Sand Filter Replacement	$130,000		+		!	
Schoeneman pressure zone- main line replacement. (GV) Replace approximately 3,000 ft of existing mainline and 47 associated services along Highland Way, Sunset Ave, Woodland Dr, Laurel Way and Morningside Drive. (requires completion of Schoeneman Tank)	$744,300	$ 15,836	+	-	!	#
Highway 116 (MR) Replace approximately 850 ft of main line. 16 services	$280,000	$ 17,500	+	-	!	#
Main St (MR) Replace approximately 800 ft of mainline along Main St.	$180,000	NA	+	-	!	
Upper Summit Tank - Construct a storage tank with a nominal capacity of approximately 120,000 gallons at the District–owned site on McLane Avenue. Project to include relocation/ construction of the existing hydro-pneumatic pump station. 25 services, also provides service to lower zone.	$490,000	$ 19,600	+		!	#
Natoma Tank – Replace the existing 10,000 gallon storage tank with a 30,000 storage tank. Done with Upper Wright, 2005 cost estimate	$190,000	$ 4,043	+		!	#
Schoeneman Tank– Replace the existing 10,000 gallon tank with a 30,000 gallon storage tank. Done with Schoeneman, 2005 cost estimate	$127,000	$2,702	+		!	#
Wright Drive upper pressure zone. – (GV) Replace approximately 3,280 ft of existing mainline and 47 associated services along Wright Dr, Glenda Dr, Natoma Dr. (requires completion of Natoma Tank)	$800,000	$17,021	+	-	!	#
Old River Road - Replace approximately 3,500 ft of existing main and 70 services on Old River Rd at Morningside east to the eastern section of Foothill Drive. Include Orchard Rd and Foothill Drive and River Rd on river side of the road. Feeds Rio Nido	$ 1,000,000	$ 14,286	+	-	!!	#
Total Cost	**$ 4,616,300**					
Additional Historical Projects						
Sweetwater (Tank to Road) In-house	$ 560,000		+	-	!	#
Bohemian Hwy - This is Main Street beyond school to Tyrone Rd	$ 480,000		+	-	!	#
Solar Ridge - 2 inch galvanized	$ 125,000		+	-	!	#
Palo Alto Drive - 6 inch AC pipe, currently not causing problems	$ 241,000		+	-	!	#
Canyon 4 Tank Feed - more complicated than original conceptual project, do with zone	$ 75,000		+	-	!	#
Duncan Road to Santa Rosa Avenue - connects Summit Tank with Crespo Tanks	$ 510,000		+	-	!	#
Duncan Road to Santal Clara - Leppo Tank feed	$ 141,000		+	-	!	#
Highland Booster Station, goes with Schoeneman Tank	$70,000		+		!	#
Edgehill Booster Station - goes with Natoma Tank	$70,000		+		!	#
Additional Projects Total Cost	$ 2,272,000					
Possible Additional Projects - Cost Information Not Available						
Fern Road						
Canyon 4 Zone						
Greentree Rd						

Table 3. Sweetwater Springs Water District Proposed 2016-2023 CIP Projects by Year				
Year	Projects	Estimated Cost	Cost/Service	Comments
2016				
	Canyon 1 (Rio Nido) Replace approximately 3,900 ft of existing mainline and 75 services along Canyon 1 Rd., Memory Ln., Memory Park Rd.	$890,000	$11,867	Contract Awarded for $915,433, Design, CMI $175,000
	2016 Total	$890,000		
2017				
	Replace approximately 3,500 ft of existing main and 70 services on Old River Rd at Morningside east to the eastern section of Foothill Drive. Include Orchard Rd and Foothill Drive and River Rd on river side of the road. Feeds Rio Nido.	$985,000	$14,071	Cost is rough estimate, will be refined during design
	2017 Total	$985,000		
2018				
	Monte Rio Treatment Plant Green Sand Filter Replacement. Serves Monte Rio system (1100 services)	$200,000	NA	
	2018 Total	$200,000		
2019				
	Park Ave. (GV) replace approximately 2900 lf of main line on Park Ave. and McLane, 37 services. Loop two deadend lines.	$688,000	$18,595	
	Cherry St. (GV) replace approximately 440 lf of main line, 13 services.	$126,000	$9,692	
	2019 Total	$814,000	$16,280	
2020				
	Wright Drive main pressure zone. – (GV) Replace approximately 1,120 ft of existing mainline and 18 associated services along Wright Dr. and Wright Ln.	$275,000	$15,278	
	Woodland Drive – mainline replacement. (GV) Replace approximately 1,900 ft of existing mainline and 27 associated services along Woodland Dr in the main pressure zone.	$400,000	$14,815	
	2020 Total	$675,000	$15,000	
2021	**Skip Capital Project**			

2022				
	Schoeneman pressure zone- main line replacement. (GV) Replace approximately 3,000 ft of existing mainline and 47 associated services along Highland Way, Sunset Ave, Woodland Dr, Laurel Way and Morningside Drive. (requires completion of Schoeneman Tank and includes Shoeneman Booster)	$814,300	$17,326	
	Schoeneman Tank– Replace the existing 10,000 gallon tank with a 30,000 gallon storage tank. 2005 cost estimate	$127,000		
	2021 Total	$941,300	$20,028	
2023				
	Wright Drive upper pressure zone. – (GV) Replace approximately 3,280 ft of existing mainline and 47 associated services along Wright Dr, Glenda Dr, Natoma Dr. (requires completion of Natoma Tank and includes Edgehill Booster)	$870,000	$18,511	
	Natoma Tank – Replace the existing 10,000 gallon storage tank with a 30,000 storage tank. 2005 cost estimate	$190,000		
	2023 Total	$1,060,000	$22,553	
	Total Cost of 2017-2023 Projects	**$4,675,300**		
	Other Projects			
	Highway 116 (MR) Replace approximately 850 ft of main line.	$280,000		
	Main St (MR) Replace approximately 800 ft of mainline along Main St.	$180,000		
	Upper Summit Tank - Construct a storage tank with a nominal capacity of approximately 120,000 gallons at the District–owned site on McLane Avenue. Project to include relocation/ construction of the existing hydro-pneumatic pump station.	$490,000		wait for Dubrava Development?
	Total Approximate Cost of Future, Unapproved Projects	**$950,000**		

Table 4. OPERATING AND CAPITAL BUDGET SUMMARY - 3% Increase, Proposed CIP

Water Rate, CDRC Increase = 3% Sales Flat

		FY14 Actual	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
1	**REVENUE**										
2	**OPERATING REVENUE**		Reduced WS	Flat	10%Increase	Flat					
3	**Water Bill Revenue**										
4	**Capital Debt Reduction Charge**	246,360	253,751	261,364	269,205	277,281	285,599	294,167	302,992	312,082	234,300
	Base Rate 35966	1,351,512	1,392,058	1,433,819	1,476,834	1,521,139	1,566,773	1,613,776	1,662,190	1,712,055	1,763,417
	Water Usage	589,167	546,157	562,542	637,360	656,481	676,175	696,461	717,354	738,875	761,041
5	**Total Water Sales**	1,940,679	1,938,215	1,996,361	2,114,194	2,177,620	2,242,949	2,310,237	2,379,544	2,450,930	2,524,458
6	**Total OPERATING REVENUE**	**2,223,005**	**2,191,966**	**2,257,725**	**2,383,399**	**2,454,901**	**2,528,548**	**2,604,404**	**2,682,536**	**2,763,013**	**2,758,758**
7	**Total NON-OPERATING REVENUE**	**107,484**	**107,071**	**108,911**	**110,788**	**112,702**	**114,655**	**116,647**	**118,679**	**120,751**	**122,865**
8	**Total Income**	2,330,490	2,299,037	2,366,636	2,494,187	2,567,603	2,643,203	2,721,051	2,801,215	2,883,763	2,881,623
9	**EXPENSES**										
10	**Total Salary**	**763,810**	**778,066**	**801,408**	**825,450**	**890,210**	**916,920**	**944,430**	**972,760**	**1,001,940**	**1,032,000**
11	**Total Benefits**	**316,700**	**312,785**	**324,479**	**336,764**	**357,497**	**371,100**	**385,286**	**400,082**	**415,516**	**431,616**
12	**SALARY & BENEFITS**	**1,078,736**	**1,090,851**	**1,125,886**	**1,162,214**	**1,247,707**	**1,288,020**	**1,329,716**	**1,372,842**	**1,417,456**	**1,463,616**
13	**SERVICES & SUPPLIES** increase =	1%									
14	**SERVICES & SUPPLIES**	**460,192**	**524,794**	**469,442**	**474,136**	**478,878**	**483,666**	**488,503**	**493,388**	**498,322**	**503,305**
15	**TOTAL OPERATING EXPENSES**	1,538,928	1,615,645	1,595,328	1,636,350	1,726,585	1,771,686	1,818,219	1,866,231	1,915,778	1,966,921
16	OPERATING SURPLUS/DEFICIT	**$791,562**	**$683,392**	**$771,308**	**$857,836**	**$841,018**	**$871,517**	**$902,832**	**$934,985**	**$967,985**	**$914,702**
17	**FIXED ASSET EXPENDITURES**	**16,747**	**40,000**	**11,000**	**40,000**	**11,000**	**40,000**	**11,000**	**40,000**	**11,000**	**40,000**
18	**Tfers to CIRF for CDR Revenue**	484,725	253,751	261,364	269,205	277,281	285,599	294,167	302,992	312,082	234,300
19	**Tfers to CIRF**	537,466	340,000	470,000	470,000	470,000	460,000	510,000	510,000	560,000	550,000
20	**Total TRANSFERS TO OTHER FUNDS**	1,062,191	633,751	771,364	779,205	787,281	785,599	844,167	852,992	912,082	824,300
21	SURPLUS/DEFICIT	**-287,377**	**9,640**	**-11,056**	**38,632**	**42,737**	**45,917**	**47,665**	**41,992**	**44,903**	**50,402**
22	**Capital Budget**										
23	**REVENUE/SOURCES OF FUNDS**										
24	**Net Operating Revenues****	250,089	349,640	458,944	508,632	512,737	505,917	557,665	551,992	604,903	600,402
25	**Assessments**	730,176	777,000	777,000	777,000	777,000	777,000	777,000	777,000	777,000	777,000
26	**Capital Debt Reduction Charge*****	484,725	253,751	261,364	269,205	277,281	285,599	294,167	302,992	312,082	234,300
27	**Capital Interest**	16,287	30,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
28	**Transfers From CIRF/Reserves**	876,614	750,000	630,000	520,000		480,000	250,000		320,000	540,000
29	TOTAL REVENUE	2,134,237	2,160,392	2,137,308	2,084,836	1,577,018	2,058,517	1,888,832	1,641,985	2,023,985	2,161,702
30	**EXPENSES**		no debt payment								
31	**Total Debt Payments**	**1,059,252**	**988,314**	**1,038,300**	**1,038,300**	**1,038,300**	**1,038,300**	**1,038,300**	**1,017,300**	**847,300**	**847,300**
32		CIP 2014	CIP 2015	CIP 2016	CIP 2017	CIP 2018	CIP 2019	CIP 2020	CIP 2021	CIP 2022	CIP 2023
33	**Annual CIP**	**1,056,658**	**1,122,100**	**1,055,433**	**1,000,000**	**200,000**	**976,800**	**810,000**	No Project	**1,129,560**	**1,272,000**
34	**In-House Construction Projects**	18,328	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
35	TOTAL EXPENSES	2,134,237	2,150,414	2,133,733	2,078,300	1,278,300	2,055,100	1,888,300	1,057,300	2,016,860	2,159,300
36	SURPLUS/DEFICIT	**0**	**9,978**	**3,575**	**6,536**	**298,718**	**3,417**	**532**	**584,685**	**7,125**	**2,402**
37	**FUND AND LOAN BALANCES (EOY)**										
38	**Ending Funds ab District Policy**	**2,507,800**	**1,767,778**	**1,141,353**	**627,889**	**926,607**	**450,024**	**200,556**	**785,240**	**472,366**	**(65,233)**
39	**NET CAPITAL FUNDING******	**422,026**	**422,078**	**469,008**	**526,536**	**538,718**	**540,217**	**600,532**	**624,685**	**856,685**	**774,402**

*** Starting values based on projected FY13 EOY**

**** =Transfer to CIRF plus net operating surplus**

***** =Transfers from CDRC**

****** =Net Operating Revenues + Assessments + CDRC + Capital Interest - Total Debt Payments**

Exhibit A: Sweetwater Springs Water District

Capital Improvement Projects Ranking Criteria

May 14, 2015

In developing lists of needed projects, District staff have used the following criteria. For a project to be placed on a priority list, there are normally several of the criteria below that come into play (some projects will have every listed item). Although the number of items within the criteria list can play a large role in the project prioritizing process, degree of the problem or importance, within the individual criterion, can be the deciding factor.

- **Improved water quality -** excellent water quality is the top priority of the District **-** meeting State and Federal water quality regulations and delivering good tasting, quality water to our customers. Principal approaches in doing this through capital projects are replacing older piping that have deposits that can affect water quality and by looping the system where possible - avoiding and eliminating "dead ends".

- **Water losses** - number of leaks, time to repair leaks. The District has unacceptable water losses - it has recently improved to 22% which is still much higher than industry standard and has reduced the annual number of leaks to 150 - still unacceptably high. These leaks happen because existing pipe is older, of poor quality and/or condition, and, in places, poorly installed. Replacing pipe in locations with high numbers of leaks has helped improve the loss and leak performance but much more replacement is needed.

- **Potential Liability -** Injuries to people, and/or damage to public or private property due to leaking pipes, from mudslides, washed out roads, falling trees, and other failure modes. These conditions include:
  - **Age of pipe -** older is not better.
  - **Pipe material** - cast iron is of most concern, but other older pipe materials also are much more likely to fail with age.
  - **Terrain -** steeper slopes move and that can result in pipe failures, especially with inappropriate pipe materials (flexibility is desired and flexible pipe is a more recent development).
  - **Difficulty of Repair/Maintenance** - some locations are difficult to access for repairs or difficult to repair without disturbing nearby residents.

- **Storage and pressure zone requirements -** Much of the District's facilities were constructed **as** parts of smaller water companies with no consideration of the consolidations that

eventually occurred. To make some of these areas work according to current day standards and requirements, more storage is needed, and better coordination of the pressure zones (also required because of the varying terrain) are needed.

- **Costs per service -** the District gets "more bang for the buck" by concentrating on locations that benefit the most customers. This not a major priority criterion but is important information.