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**STAFF REPORT**

**SUBJECT:** Fire Flow Improvement Program –  
Fiscal Year 2012-13 Annual Report

**SUBMITTED BY:** Jon LaHaye, Senior Engineer  
Environmental and Engineering Services Division

**RECOMMENDED ACTION:** Accept Report

**BACKGROUND:**

The Fire Flow Master Plan (FFMP) was initiated in Fiscal Year (FY) 1997-98 to increase the water distribution system's ability to provide water for fire protection and to strengthen the system to increase its survivability during a seismic event. The 15 year improvement program was concluded in Fiscal Year 2011-12.

In May 2012, the MMWD Board of Directors amended the MMWD Code and extended the collection of the \$75 per year Fire Flow Fee for a period of nineteen years. The extended Fire Flow Fee revenue will be used to fund the replacement of 52 miles of fire flow deficient distribution piping. The Fire Flow Improvement Program (FFIP) includes both new fire flow projects and remaining uncompleted work from the FFMP.

**FISCAL YEAR 2012-13:**

In Fiscal Year 2012-13, the Fire Flow Improvement Plan (FFIP) projects were successfully completed in the following areas/projects.

Gerstle Park	San Rafael
Chula Vista – San Rafael Hill	San Rafael
Chestnut Hill	Ross
Murray Park	Larkspur/Kentfield
Fifth St - Downtown	San Rafael

A total of approximately 22,400 ft of pipe was installed in these areas/projects. The total FFIP expenditure in FY 2012-13 was \$6,751,068.

**FIRE FLOW PROGRAM SUMMARY:**

The attached tabulations summarize FFIP and FFMP expenditures through Fiscal Year 2012-13. The "Fiscal Year Summary & Comparison of Expenditures to Revenue" shows actual

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expenditures and compares them to Fire Flow Fund revenue by fiscal year. Also attached is the “Prioritized Summary of Fire Flow and Seismic Improvements through Fiscal Year 2012-13” which provides a detailed accounting of the recommended improvements in each area and their costs by fiscal year.

Through June 30, 2013 \$81,178,755 has been expended on the Fire Flow Master Plan and the Fire Flow Improvement Program. The work completed includes over 370,000 feet of pipeline replacements as well as seismic retrofits of the treatment plants and the critical transmission tanks and pump stations.

As of June 30, 2013 the Fire Flow Fund had a balance of \$2,483,481.

**ATTACHMENTS:**

1. Fiscal Year Summary & Comparison of Expenditures to Revenue
2. Prioritized Summary of Fire Flow and Seismic Improvements through Fiscal Year 2012-13

## Attachment 1

<b>MARIN MUNICIPAL WATER DISTRICT</b>						
<b>FIRE FLOW MASTER PLAN / FIRE FLOW IMPROVEMENT PROGRAM</b>						
<b>FISCAL YEAR SUMMARY &amp; COMPARISON OF EXPENDITURES TO REVENUE</b>						
<b>Fiscal Year</b>	<b>Fiscal Year (\$1,000)</b>					
	<b>Actual Expenditure</b>	<b>Revenue</b>			<b>Difference</b>	<b>Fire Flow Fund Balance</b>
		<b>Parcel Fee</b>	<b>Interest Income</b>	<b>Total Revenue</b>		
1996/97	\$25.3	\$0.0	\$0.0	\$0.0	(\$25.3)	(\$25.3)
1997/98	\$3,208.8	\$4,481.7	\$0.0	\$4,481.7	\$1,272.9	\$1,247.6
1998/99	\$2,134.3	\$4,486.2	\$131.0	\$4,617.2	\$2,482.9	\$3,730.5
1999/00	\$5,288.9	\$4,493.9	\$453.7	\$4,947.6	(\$341.3)	\$3,389.1
2000/01	\$5,638.5	\$4,490.7	\$177.8	\$4,668.5	(\$970.0)	\$2,419.1
2001/02	\$3,920.7	\$4,492.3	\$71.0	\$4,563.3	\$642.6	\$3,061.7
2002/03	\$4,292.7	\$4,501.6	\$56.9	\$4,558.5	\$265.8	\$3,327.5
2003/04	\$2,416.0	\$4,469.2	\$60.4	\$4,529.5	\$2,113.5	\$5,441.1
2004/05	\$5,274.0	\$4,493.5	\$124.6	\$4,618.1	(\$655.9)	\$4,785.2
2005/06	\$7,646.9	\$4,501.4	\$100.2	\$4,601.6	(\$3,045.3)	\$1,739.9
2006/07	\$2,568.8	\$4,508.0	\$146.7	\$4,654.7	\$2,085.9	\$3,825.8
2007/08	\$4,271.8	\$4,510.4	\$163.5	\$4,673.9	\$402.1	\$4,227.9
2008/09	\$6,319.0	\$4,502.9	\$37.9	\$4,540.8	(\$1,778.2)	\$2,449.7
2009/10	\$2,936.6	\$4,467.1	\$19.5	\$4,486.6	\$1,550.0	\$3,999.7
2010/11	\$4,645.6	\$4,483.7	\$18.2	\$4,501.9	(\$143.7)	\$3,856.0
2011/12	\$3,709.6	\$4,523.3	\$15.1	\$4,538.4	\$828.8	\$4,684.7
<b>FFMP Totals</b>	\$64,297.6	\$67,405.9	\$1,576.5	\$68,982.3	\$4,684.7	
2012/13	\$6,751.1	\$4,540.4	\$9.4	\$4,549.8	(\$2,201.3)	\$2,483.5
<b>FFMP - FFIP Totals</b>	\$71,048.6	\$71,946.3	\$1,585.9	\$73,532.1	\$2,483.5	

**MARIN MUNICIPAL WATER DISTRICT  
FIRE FLOW IMPROVEMENT PROGRAM  
PRIORITIZED SUMMARY OF FIRE FLOW AND SEISMIC IMPROVEMENTS**

Priority No.	Proj. No.	Fire Dept.	Project Name / Fire Department System Description	System No.	Construction Costs per Fiscal Year (\$1,000)						Total Cost \$1,000								
					FFMP	12/13	13/14	14/15	15/16	16/17		17/18							
					Thru FY 2012	2013	2014	2015	2016	2017		2018							
<b>A. FIRE FLOW IMPROVEMENT PROJECTS</b>																			
1	F13003	SR	New Hydrants for SR Fire			\$45													\$45
1	F13006	SR	Hydrants Relocation in Glenwood			\$77													\$77
2	F12007	MC	Meadow Way PRP		\$7	\$837													\$844
3	F13001	RV	Fairfax PRP			\$127													\$127
4	F13002	RV	Brookside Dr SA PRP			\$688													\$688
5	F12006		Ross-Sausalito Line Project		\$1	\$30													\$30
6	F13008	MC	Woodacre Area PRP			\$301													\$301
6	F13011	MC	Sylvan Way PRP			\$27													\$27
7	F13009	LK	Marina Vista PRP			\$33													\$33
10	F13005	MV	Rose & Hazel Av PRP			\$307													\$307
11	F13007	RV	Oak Ave Area PRP			\$36													\$36
15	F13010	SM	Marin Drive PRP			\$30													\$30
22	F13004	SM	Ross Sausalito - Tomales St PRP			\$74													\$74
<b>Total FFIP Fire Flow Project Funds</b>						\$8	\$2,611	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,619
<b>B. FFMP FUNDED FIRE FLOW PROJECTS</b>																			
1		MV	Mill Valley Business Dist.	6-02	COSTS IN CASCADE CANYON AREA - PRIORITY NO. 9														
2	F9803 F9804 F9805 F11001	SR	Dominican Area	11-06	\$2,016	\$1													\$2,017
3	F9901	MC	Throckmorton Ridge	6-53	\$1,221														\$1,221
4	F9805	SR	Montecito Area	11-06	COSTS IN DOMINICAN AREA - PRIORITY NO. 2														
5	F9810	SR	Lincoln Avenue Area	11-06	\$918														\$918
6	F9905	RV	Sky Ranch/Oak Ave Area	3-60	\$143														\$143
7	F9809	RV	Sky Ranch/Oak Ave Area	3-52	\$574														\$574
8	F9903	LK	Madrone Canyon Area	5-12	\$712														\$712
9	F9907 F9908 F9815 F00110 F00120 F00130 F00170 F01300 F01310	MV	Cascade Canyon Area Central Business District, Warner Canyon & Blithedale Canyon	6-02	\$6,299														\$6,299

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					FFMP	12/13	13/14	14/15	15/16	16/17		17/18
					Thru	2013	2014	2015	2016	2017		2018
					FY 2012	1	2	3	4	5		6
10	F01280 F01290	RV	Cascade Canyon Area/FX	2-07	\$1,495							\$1,495
11	F01190 F01210	SR	Fairhills / Rafael Highlands Area	11-52	\$638							\$638
12	F00140	SM	Throckmorton Ridge	6-61	\$387							\$387
13	F01200	SR	Fairhills / Rafael Highlands Area	11-54	\$588							\$588
14		SR	Dominican Area	11-16								\$0
15	F02005 F02006	KT	Kent Woodlands Area	4-56	\$1,622							\$1,622
16	F9905	SR	California Park Area	11-72	\$86							\$86
17		SR	Country Club Area	11-66	COSTS IN COUNTRY CLUB AREA - PRIORITY NO. 44							
18	F02004 F03001	MV	Warner Canyon / Scott Highlands Area	6-23	\$827							\$827
19	F01260 F01270	KT	Del Mesa Area	4-54	\$591							\$591
20	F01260	KT	Del Mesa Area	4-55	\$377							\$377
21	F03006	KT	Greenbrae Area	10-52	\$502							\$502
22	F03003	KT	Greenbrae Area	10-76	\$547							\$547
23	F02003	SR	Montecito Area	11-07	\$320							\$320
24	F04001	SM	Cypress Ridge	8-52/59	\$784							\$784
25		SR	Glenwood Area	12-53	COSTS IN GLENWOOD AREA - PRIORITY NO. 63							
26	F03005 F03008 F08004	CM	Chapman Park Area	5-16	\$698							\$698
27	F03005 F03008	CM	Chapman Park Area	5-07	\$666							\$666
28		SR	Upper Toyon / Gerstle Park Area	11-68	NO IMPROVEMENTS RECOMMENDED							
29	F00150	SR	Country Club / Montecito Area	11-07	\$440							\$440
	F00150		Marina Court Dr.									
	F00150		Marina Court									
	F00150		Marina Court Dr.									
	F00150		Alta Vista Way									
	F00150		Pigeon Hollow Rd.									
	F00150		Montecito Rd.									
30	F06003	SR	Glenwood Area	12-52	\$842							\$842

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					FFMP	12/13	13/14	14/15	15/16	16/17		17/18								
					Thru FY 2012	2013	2014	2015	2016	2017		2018								
31	F04003 F04004 F04005	MV	Blithedale Canyon Area	6-03	\$2,009														\$2,009	
32	F02003	SR	California Park Area	11-04	\$118														\$118	
33		SR	California Park Area	11-56															\$0	
34	F05005	MV	Blithedale Canyon Area	6-51	\$1,028														\$1,028	
35	F04002	RV	Manor Hill Area	2-51	\$1,000														\$1,000	
36		CM	Christmas Tree Hill Area	5-51	NO IMPROVEMENTS RECOMMENDED															
37	F05002	SR	West End Area	11-05	\$481														\$481	
38	F05003 F05004 F05005	MV	Blithedale Canyon Area	6-11	\$1,735														\$1,735	
39	F03004	TV	Marin Drive & Adjacent Sts	7-51	\$549														\$549	
40	F06005	SM	Marion Avenue Area	8-56	\$622														\$622	
41	F06006	TB	Main Street	9-19	\$666														\$666	
42	F03007	SR	Country Club Area	11-63	COSTS IN COUNTRY CLUB AREA - PRIORITY NO. 44															
43	F06002	SR	Country Club Area	11-64	COSTS IN COUNTRY CLUB AREA - PRIORITY NO. 44															
44	F07004	SR	Country Club Area	11-62	\$1,803														\$1,803	
45	F09004	SR	Bayside Acres Area	11-73	\$470														\$470	
46	F06004	SM	Strawberry Point Peninsula	9-20	\$929														\$929	
47	F05006	KT	Kent Woodlands Area	4-07	\$758														\$758	
48	F07003	SR	Country Club Area	11-12	\$612														\$612	
49	F09004	SR	Bayside Acres Area	11-15	\$379														\$379	
50	F09003 F09006	MV	Blithedale Canyon Area	6-52	\$497														\$497	
51	F07002	SM	Northern Ave / Eastwood Park Area	7-01	\$635														\$635	
52	F08003	CM	Christmas Tree Hill Area	5-06	\$514														\$514	
53	F09002	LK	Baltimore Canyon Area	5-01	\$418														\$418	
54	F10002	SM	Throckmorton Ridge	6-59	\$867	\$5													\$872	
55		KT	Kent Woodlands Area	4-08																
56	F10004 F10005	KT	Kent Woodlands Area	4-06/10	\$2,181	\$15													\$2,196	
57	F09005 F12004	KT	Greenbrae Area	10-04	\$1,155	\$16													\$1,171	
58		SR	Dominican Area	11-77	NO IMPROVEMENTS RECOMMENDED															
59		SR	Dominican Area	11-60															\$0	

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					FFMP	12/13	13/14	14/15	15/16	16/17	17/18		
					Thru	2013	2014	2015	2016	2017	2018		
					FY 2012	1	2	3	4	5	6		
60	F10001	CM	Meadowsweet/Casa Buena	5-07	\$340								\$340
61		KT	Marin General Hospital	10-06	NO IMPROVEMENTS RECOMMENDED								
62	F11003	SR	Upper Toyon / Gerstle Park	11-02	\$242	\$357							\$600
63		SR	Glenwood Area	12-10									\$0
64	F11002	SR	San Rafael Hill	11-59	\$330	\$937							\$1,266
65	F11001	SR	Dominican Area	11-61	\$631	\$6							\$637
66	F11004	RV	Sequoia Park Area	11-51	\$414	\$2							\$416
67	F11003	SR	Upper Toyon / Gerstle Park	11-53	\$164	\$286							\$450
68	F11003	SR	Upper Toyon / Gerstle Park	11-67	\$41	\$71							\$113
69	F10003	RV	Sky Ranch / Oak Ave Area	3-53	\$608	\$4							\$612
70		KT	Kent Woodlands Area	4-57									\$0
71		KT	Kent Woodlands Area	4-09									\$0
72	F12001	RS	Chestnut / Willow Hill	4-05	\$25	\$409							\$433
73	F03002	TB	Paradise Drive	9-01	\$88								\$88
74	F12002	RV	Willow Ave-Rocca Area	2-03	\$300	\$2							\$303
75		SR	Fairhills/Rafael Highlands	11-58									\$0
76		SM	NW Alto (E. of Hwy 101)	9-20									\$0
77	F10003	RS	Ross Proper	4-02	\$94	\$1							\$94
78		SR	Bayside Acres Area	11-12									\$0
79		SR	Fairhills/Rafael Highlands	11-01									\$0
80		MV	Blithedale Canyon Area	6-04									\$0
81		RV	Sky Ranch/Oak Ave Area	3-04									\$0
82		KT	Marin General Hospital	10-08									\$0
83		SR	San Rafael Hill	11-02									\$0
	D04009		Curtis Ave										
	D04009		Nye St										
	D10046		Nye St										
84	F10003	RS	Upper Road / Bald Hill Area	4-12	\$234	\$1							\$235
85		MC	Throckmorton Ridge	6-54									\$0
86		RS	Winship Park Area	4-11									\$0
87		SR	Glenwood Area	12-54									\$0
88		TV	Throckmorton Ridge	6-60									\$0
89	F12003	KT	Murray Park Area	5-03	\$66	\$971							\$1,038
90		CM	Baltimore Park Area	5-10									\$0
91		RV	Manor Hill Area	2-52									\$0
92		TIB	Centro/Mar East	9-19									\$0
93		LK	Baltimore Canyon Area	5-05									\$0

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					FFMP Thru FY 2012	12/13 2013	13/14 2014	14/15 2015	15/16 2016	16/17 2017	17/18 2018	
						1	2	3	4	5	6	
94		SM	NW Alto (E. of Hwy 101)	9-05								\$0
95		SR	Sun Valley Area	11-01								\$0
96		SM	Hawk Hill Area	7-58								\$0
97		TB	Geldert Area	9-57	NO IMPROVEMENTS RECOMMENDED							
98		SM	Marin Drive & Adjacent Sts	7-52								\$0
99		RS	Upper Road- Bald Hill Area	4-52								\$0
100		TB	Hill Haven Area	9-53	NO IMPROVEMENTS RECOMMENDED							
<b>Total Assigned FFMP Fire Flow Project Funds</b>					<b>\$46,299</b>	<b>\$3,085</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$49,384</b>
<b>B. FFMP FUNDED SEISMIC PROJECTS</b>												
1	F9802		Lucas Valley Tank		\$93							\$93
2, 3	F9904 F9906		Hawthorne Hills Tanks		\$808							\$808
4	F9806		Tiburon First Lift Tank		\$128							\$128
5	F9801		Tiburon Supply Pipeline		\$813							\$813
7	F9807		Forbes Reservoir		\$227							\$227
8	F9808		BTTP Washwater Tank		\$107							\$107
6, 9, 10, 15	F9902		1998-99 Steel Tank Seismic Retrofit		\$1,043							\$1,043
11	F9812		San Geronimo Booster Station		\$65							\$65
12	F9813		Kastania Pump Station		NO IMPROVEMENTS RECOMMENDED							
13	F9814		Ignacio Pump Station		\$1							\$1
14	F9811		San Geronimo Treat Plant		\$314							\$314
16	F9910		Lagunitas Booster Station		\$275							\$275
17	F9909		Bon Tempe Treat Plant		\$367							\$367
18	F00180		Ross Reservoir		\$26							\$26
19			San Anselmo Hub Regulator									\$0
20			Las Gallinas Recl Plant									\$0
21, 22, 23, 24	F01250 F10006		2010-11 Steel Tank Seismic Retrofit		\$338	\$1						\$339
25	F02001		Marinwood Tank		\$106							\$106
26	F01240		North Marin Line Trestles									\$0
27	F01230		North Marin Line									\$0
28	F01220		Phoenix By-Pass		\$364							\$364
29	F02007 F06001		Concrete Pipe Road		\$4,829							\$4,829
30, 31	F07001 F09001		Ross Reservoir Inlet Pipe / Phoenix Lake Rd PRP		\$4,830							\$4,830



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					FFMP Thru FY 2012	12/13 2013	13/14 2014	14/15 2015	15/16 2016	16/17 2017	17/18 2018		
						1	2	3	4	5	6		
32	F08002		Smith Saddle Access Rd.		\$115								\$115
33			North Marin Line										\$0
34			Sausalito Line										\$0
35			Los Ranchitos-Forbes Line		NO IMPROVEMENTS RECOMMENDED								
36			Southern Marin Line										\$0
37			Alto Downline										\$0
38			Marinship Cast Iron Pipe		NO IMPROVEMENTS RECOMMENDED								
39			Alto-Sausalito Line										\$0
40	F00160		Tamalpais Drive Pipeline		\$363								\$363
41			Lucas Valley Tank Outlet										\$0
42	F12005		Fifth Street Pipeline		\$219	\$1,054							\$1,273
43			Hawthorne-Fairfax Pipeline										\$0
44			Glenwood Pipeline										\$0
45			Sausalito Cast Iron Pipe		NO IMPROVEMENTS RECOMMENDED								
46			BTTP Landslide Stabilization										\$0
47			Lagunitas Boosters										\$0
48			Kastania Pump Station		NO IMPROVEMENTS RECOMMENDED								
49			San Geronimo Treat Plant										\$0
50	F05001 F08001		Tiburon Supply Pipeline #2		\$2,560								\$2,560
<b>Total Assigned FFMP Seismic Project Monies</b>					<b>\$17,990</b>	<b>\$1,055</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$19,045</b>
<b>FIRE FLOW IMPROVEMENT PROGRAM TOTALS</b>													
<b>Total Assigned FFIP Project Monies</b>					<b>\$64,298</b>	<b>\$6,751</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$71,049</b>
<b>Average Annual FFIP Funding</b>						\$4,500	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500	\$4,500	
<b>Difference</b>						\$2,251	(\$4,500)	(\$4,500)	(\$4,500)	(\$4,500)	(\$4,500)	(\$4,500)	

**NOTE:**

## FIRE DEPARTMENT / DISTRICT ABBREVIATIONS

CM	CORTE MADERA	MV	MILL VALLEY
MC	COUNTY OF MARIN	RV	ROSS VALLEY
KT	KENTFIELD	SM	SOUTHERN MARIN
LK	LARKSPUR	SR	SAN RAFAEL

<b>TOTAL FFIP EXPENDITURES FOR FISCAL YEAR 2012-13:</b>	<b>\$6,751,068</b>
<b>TOTAL FFMP/FFIP EXPENDITURES THROUGH FISCAL YEAR ENDING JUNE 30, 2013:</b>	<b>\$71,048,632</b>
<b>CIP EXPENDITURES ON FFMP IMPROVEMENTS (PRIOR TO FY 2012-13):</b>	<b>\$10,130,123</b>
<b>TOTAL:</b>	<b>\$81,178,755</b>