

**MOST RECENT FIRE TESTING DATA AS PROVIDED TO  
A HIGHLANDS MUTUAL WATER COMPANY SHAREHOLDER**

After a shareholder requested fire hydrant testing data from Highlands Mutual Water Company a few years ago, Highlands provided them with the following spreadsheet. Highlands Water told them it was the most current information they had about testing their fire hydrants.

The same shareholder followed up in 2024 with a request for updated data, but was told there is no new information available.

The report shows the reported state of Highlands Water's fire hydrants in their service area and a cover sheet of totals is included as page one, prior to Highlands's data. From what the data indicated, there is a **strong likelihood that a wildfire in Highlands's service area will cause catastrophic impacts to the entire City of Clearlake.**

Highlands Water's hydrant testing data shows:

- 193 total hydrants reported within their service area
- **16 (8%) apparently do not function at all**, with zero recorded for the flow.
- **Close to 7 in 10 hydrants do not meet common residential standards** of 1,000 gallons per minute (68% = 132 hydrants)
- 822 is the average gallons per minute of all hydrants in Highlands's area, well below typical standards for residential areas, and far below standards for commercial development.
- 1,000 gallons per minute is a common minimum residential standard for hydrant flow; much higher flow rates are required for commercial development depending on building size and construction materials.

# Highlands Water Company Hydrant Data Listed by Street Name

Location of Hydrants:		Hydrant and Connection Data:		Test Data:												
Street Name where Hydrant is Located:	Street Number:	Cross Street or Location where Hydrant is Located:	Distance Feet:	Direction:	Hydrant Brand:	Hydrant Type:	Pressure Zone: Plant #1, Fillmore #2, Spruce #3, 20th #4	Fire Dept. No.	Fire Dept. No. of adjacent Hydrant:	Main Size Inch:	Static Pressure:	Static Pressure of adjacent Hydrant:	Pressure of adjacent Hydrant during Test:	Pitot Gauge Pressure:	Flow GPM:	Supply Main Pressure Drop at Flow:
18th St.	15630	In Front of Redbud Hospital			Rich	Dry Barrel	4	H-186	H-210	8"	57	34	31	38	1149	3
18th St.	15630	Redbud Hospital Lower Parking Lot			Amer. Darling	Dry Barrel	4	H-210		8"				50	1318	
20th St.		Oak Ave.			Amer. Darling	Dry Barrel	4	H-205		12"	34			18	791	
Airport Rd.		20th St. Tank Pump Station			Rich	Dry Barrel	3	H-184		6"	66			23	894	
Alvita Ave.		3825 Uhl Ave.			Waterous	Dry Barrel	1	H-054		6"	66			24	913	
Alvita Ave.		Bayless Ave.			Greenberg	Wet Barrel	1	H-045		6"	60			26	851	
Anchor Dr.		7312			Muller	Dry Barrel	3	H-175		6"	64			19	913	
Austin Rd.		14215 Evans Ave.			Greenberg	Wet Barrel	1	H-042		4"	64			12	646	
Austin Rd.		14551 Madlen Ave.			Rich	Dry Barrel	1	H-039		4"	60			28	987	
Austin Rd.		14745 Manchester Ave.			Rich	Dry Barrel	1	H-037		6"	62			30	1021	
Austin Rd.		14875 Vista Robles			Rich	Dry Barrel	1	H-036		6"	60			20	834	
Austin Rd.		15061 Old Hwy. 51			Waterous	Dry Barrel	1	H-031		6"	56			22	874	
Austin Rd.		15160 New Commons			Amer. Darling	Dry Barrel	2	H-090		6"	48			20	834	
Austin Rd.		15170 McKinley Dr.			Amer. Darling	Dry Barrel	2	H-030		6"	48			30	1021	
Bailpark Ave.		14960 Old Hwy. 53			Amer. Darling	Dry Barrel	1	H-127		10"	58			38	1149	
Barrum Circle		3158 Garner Lane			Amer. Darling	Dry Barrel	2	H-103		6"	72			23	894	
Barrum Circle		3177 Runsey Rd.			Amer. Darling	Dry Barrel	2	H-097		6"	70			21	894	
Barrum Circle		3206 Runsey Rd.			Amer. Darling	Dry Barrel	2	H-008		6"	70			26	951	
Bay St.		Lakeside Dr.			Waterous	Dry Barrel	3	H-198		8"	60			33	1071	
Bay St.		Lakeview Way			Waterous	Dry Barrel	1	H-044		6"	60			20	834	
Bayless Ave.		Robinson Ave.			Amer. Darling	Dry Barrel	2	H-034		8"	70			22	874	
Bovvers Rd.		3271 Burns Valley Rd. (Senior Center)			Waterous	Dry Barrel	2	H-012		6"	63			32	1055	
Burns Valley Rd.		14785 Redbud Library			Amer. Darling	Dry Barrel	2	H-011		6"	68			20	834	
Burns Valley Rd.		14900 Bovvers Rd.			Amer. Darling	Dry Barrel	2	H-104		6"	60			21	854	
Burns Valley Rd.		14910 Sharp Lane			Amer. Darling	Dry Barrel	2	H-010		6"	64			20	834	
Burns Valley Rd.		14930 Runsey Rd. (Inside Autumn Village)			Rich	Dry Barrel	2	H-013		6"	80			45	1251	
Burns Valley Rd.		15000 Olympic Dr.			Jones	Worthead	3	H-208		8"				6	457	
Catche Creek Way		End of Rainbow			Amer. Darling	Dry Barrel	3	H-209		8"				10	590	
Catche Creek Way		Shaws Resort			Greenberg	Worthead	3	H-142		4"				10	590	
Clement Ave.		14900 Find			Jones	Worthead	3	H-143		4"				10	590	
Clement Ave.		14940 Old Hwy. 53			Rich	Dry Barrel	3	H-147		6"				9	559	
Cottage Ave.		Cass Ave.			Rich	Dry Barrel	3	H-149		6"				16	746	
Cottage Ave.		Mohican Ave.			Clow	Dry Barrel	3	H-152		5"				8	527	
Crawford Ave.		Elk's Lodge			Clow	Wet Barrel	4	H-217		10"	70			22	874	
Dam Rd.		15945 Jack in the Box			Amer. Darling	Dry Barrel	4	H-192		10"	70			60	1444	
Dam Rd. Extension		15960 Wal Mart Center (Inty)			Amer. Darling	Dry Barrel	4	H-200		10"	60			60	1444	
Dam Rd. Extension		15960 Wal Mart Center (McDonalds)			Amer. Darling	Dry Barrel	4	H-201		10"	60			60	1444	
Dam Rd. Extension		15960 Wal Mart Center (Ray's Market Front)			Amer. Darling	Dry Barrel	4	H-202		10"	60			60	1444	
Dam Rd. Extension		15960 Wal Mart Center (Ray's Market Rear)			Amer. Darling	Dry Barrel	4	H-202		10"	60			60	1444	

# Highlands Water Company Hydrant Data Listed by Street Name

## Location of Hydrants:

## Hydrant and Connection Data:

## Test Data:

Street Name where Hydrant is Located:	Street Number:	Cross Street or Location where Hydrant is Located:	Distance Feet:	Direction:	Hydrant Brand:	Hydrant Type:	Pressure Zone: Plant #1, Fillmore #2, Spruce #3, 20th #4	Fire Dept. No.	Fire Dept. No. of adjacent Hydrant:	Main Size Inch:	Static Pressure:	Static Pressure of adjacent Hydrant:	Pressure of adjacent Hydrant during Test:	Pitot Gauge Pressure:	Flow GPM:	Supply Main Pressure Drop at Flow:
44	Damn Rd. Extension	15960 Wal Mart Center (Wal Mart Parking)		Southwest	Amer. Darling	Dry Barrel	4	H-193		10"	60	52	1344			
45	Damn Rd. Extension	15960 Wal Mart Center (Wal Mart Parking)		West	Amer. Darling	Dry Barrel	4	H-194		10"	60	44	1237			
46	Damn Rd. Extension	15960 Wal Mart Center (Wal Mart Parking)		East	Amer. Darling	Dry Barrel	4	H-195		10"	60	60	1444			
47	Damn Rd. Extension	Yuba College Rd.			Amer. Darling	Dry Barrel	4	H-189		6"	60	46	1264			
48	Denton Lane	East End			Rich	Dry Barrel	4	H-005		8"	54	22	874			
49	Dexter Ln.	Austin Rd.			Amer. Darling	Dry Barrel	4	H-093		6"	48	30	1021			
50	Dexter Ln.	Austin Rd.			Amer. Darling	Dry Barrel	4	H-094		6"	42	24	913			
51	Duncan Ave.	Fillmore Ave.			Rich	Dry Barrel	2	H-029		6"	30	15	722			
52	EJ Camino Real	Saroni Parkway			Waterous	Dry Barrel	2	H-035		6"	60	22	874			
53	Garner Lane	Rumsey Rd.			Amer. Darling	Dry Barrel	2	H-102		6"	72	24	913			
54	Ghorzi Lane	Burns Valley Rd.			Greenberg	Worfield	2			2"	0	15	722			
55	Golf Ave.	5020 Brandlin Ave			Greenberg	Wet Barrel	1	H-128		8"	8"	20	834			
56	Harbor Lane	15147			Muller	Dry Barrel	3	H-170		6"	6"	10	590			
57	Highlands Harbor Dr.	7235			Muller	Dry Barrel	3	H-180		6"	6"	24	913			
58	Highlands Harbor Dr.	15200			Muller	Dry Barrel	3	H-172		6"	23	894				
59	Highlands Harbor Dr.	15275			Muller	Dry Barrel	3	H-174		6"	20	834				
60	Highlands Harbor Dr.	15364			Muller	Dry Barrel	3	H-176		6"	24	913				
61	Highlands Harbor Dr.	15474			Muller	Dry Barrel	3	H-179		6"	20	834				
62	Highlands Harbor Dr.	15534			Muller	Dry Barrel	3	H-171		6"	24	913				
63	Highlands Harbor Dr.	End			Muller	Dry Barrel	3	H-169		6"	22	874				
64	Highlands Harbor Dr.	Riverview Dr			Muller	Dry Barrel	3	H-033		6"	30	1021				
65	Highlands Way	Visa Robles Way			Clow	Dry Barrel	1	H-079		10"	12	646				
66	Hillcrest Ave.	14691 40th Ave			Rich	Dry Barrel	1	H-081		10"	26	20	834			
67	Hillcrest Ave.	14855 Carol Ave			Greenberg	Wet Barrel	1	H-082		10"	34	48	834			
68	Hillcrest Ave.	14999 Lansing Ave			Waterous	Dry Barrel	1	H-047		10"	34	26	951			
69	Howard Ave.	14415 Ridge Rd.			Amer. Darling	Dry Barrel	1	H-052		8"	62	11	618			
70	Howard Ave.	Pearl Ave			Amer. Darling	Dry Barrel	3	H-211		6"	26	951				
71	Huron Ave.	4877 Crawford Ave.			Rich	Dry Barrel	3	H-146		6"	11	618				
72	Huron Ave.	Cass Ave			Rich	Dry Barrel	3	H-026		6"	16	746				
73	Jefferson Ave	Olympic Dr.			Greenberg	Worfield	3	H-145		4"	4	373				
74	Jones Ave	Cass Ave			Greenberg	Worfield	3	H-204		10"	18	791				
75	Kent	Putnam			Greenberg	Worfield	1			4"	0	457				
76	Konocti View	15001 Old Hwy 53			Rich	Dry Barrel	1	H-133		6"	2	264				
77	Konocti View	15170 Old Hwy 53			Greenberg	Worfield	1	H-134		4"	69	987				
78	Konocti View	15275 Spruce St			Waterous	Dry Barrel	1	H-010		6"	27	969				
79	Laddell Ave.	3737 Austin Rd			Greenberg	Worfield	1	H-129		4"	14	698				
80	Laddell Ave.	3863			Greenberg	Dry Barrel	1	H-178		6"	18	791				
81	Laguna Ave.	14920 Kent Ave.			Muller	Dry Barrel	3	H-055		8"	79	932				
82	Lakeland Dr.	7398			Greenberg	Wet Barrel	1				25					
83	Lakeshore Dr	14050 Austin Dr			Greenberg	Wet Barrel	1				79					

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## Hydrant and Connection Data:

## Test Data:

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
2	<b>Street Name where Hydrant is Located:</b>																
3	<b>Street Number:</b>																
	<b>Cross Street or Location where Hydrant is Located:</b>																
	<b>Distance Feet:</b>																
	<b>Direction:</b>																
	<b>Hydrant Brand:</b>																
	<b>Hydrant Type:</b>																
	Pressure Zone: Plant #1, Fillmore #2, Spruce #3, 20th #4																
	<b>Fire Dept. No.</b>																
	<b>Fire Dept. No. of adjacent Hydrant:</b>																
	<b>Main Size Inch:</b>																
	<b>Static Pressure:</b>																
	<b>Static Pressure of adjacent Hydrant:</b>																
	<b>Pressure of adjacent Hydrant during Test:</b>																
	<b>Pitot Gauge Pressure:</b>																
	<b>Flow GPM:</b>																
	<b>Supply Main Pressure Drop at Flow:</b>																
84	Lakeshore Dr	14094				Greenberg	Wet Barrel	1	H-036		8"	62			28	987	
85	Lakeshore Dr	14120				Greenberg	Wet Barrel	1	H-037		8"	69			27	969	
86	Lakeshore Dr	14165	Alvita Ave			Greenberg	Wet Barrel	1	H-038		8"	68			30	1021	
87	Lakeshore Dr	14235				Greenberg	Wet Barrel	1	H-039		8"	68			31	1038	
88	Lakeshore Dr	14355	Howard Ave			Greenberg	Wet Barrel	1	H-040		8"	62			30	1021	
89	Lakeshore Dr	14355				Greenberg	Wet Barrel	1	H-061		8"	60			30	1021	
90	Lakeshore Dr	14530	Mullen Ave		200' East	Greenberg	Wet Barrel	1	H-062		8"	60			40	1179	
91	Lakeshore Dr	14585	Highlands Water Dist			Greenberg	Wet Barrel	1	H-063		8"	62			45	1251	
92	Lakeshore Dr	14656	Redbud Park			Greenberg	Wet Barrel	1	H-064		8"	64			42	1208	
93	Lakeshore Dr	14732	Emery Ave		East	Waterous	Wet Barrel	1	H-065		8"	64			42	1208	
94	Lakeshore Dr	14852				Greenberg	Wet Barrel	1	H-066		8"	60			38	1149	
95	Lakeshore Dr	14952	Auto Lot			Greenberg	Wet Barrel	1	H-067		8"	48			34	1087	
96	Lakeshore Dr	15130	Foods Etc	Rear of Restaurant		Rich	Wet Barrel	1	H-083		8"	40			20	834	
97	Lakeshore Dr	15135	El Grande South East Corner			Amur Darling	Dry Barrel	1	H-087		6"	40			24	913	
98	Lakeshore Dr	15135	El Grande South West Corner			Amur Darling	Dry Barrel	1	H-088		6"	40			24	913	
99	Lakeshore Dr	15140	Foods Etc	Front of Sprouse Reitz		Rich	Dry Barrel	1	H-084		8"	43			20	834	
100	Lakeshore Dr	15145	Bank of Bank next to BK			Greenberg	Wet Barrel	1	H-096		6"	25			0	0	
101	Lakeshore Dr	15150	Foods Etc	North West Rear Corner		Rich	Dry Barrel	1	H-085		6"	42			13	672	
102	Lakeshore Dr	15185	Wendy's			Waterous	Dry Barrel	1	H-086		6"	34			17	769	
103	Lakeside Dr	6223				Greenberg	Wet Barrel	3	H-156		6"	20			20	834	
104	Lakeside Dr	6303				Greenberg	Wet Barrel	3	H-157		6"	20			20	834	
105	Lakeside Dr		Bay Dr			Waterous	Wet Barrel	3	H-153		6"	27			27	969	
106	Lakeview Ave	15255	Spruce St		100' West	Greenberg	Dry Barrel	3	H-137		4"	0			1	186	
107	Lakeview Ave		James Ave		100' West	Greenberg	Worhead	3	H-138		4"	0			0	0	
108	Lakeview Way		Bay Dr		50' East	Waterous	Dry Barrel	3	H-160		6"	33			33	1071	
109	Lakeview Way		Meadowbrook Dr			Greenberg	Wet Barrel	3	H-159		6"	25			25	932	
110	Lakeview Way		Ridgeview Dr			Greenberg	Worhead	3	H-130		4"	30			30	1021	
111	Lakeview Way	14830	Golf Ave			Greenberg	Worhead	1	H-131		4"	264			2	264	
112	Lafayette Ave	14940	Old Hwy 53		600' West	Greenberg	Dry Barrel	1	H-131		4"	7			7	493	
113	Madison Dr		Austin Rd		300' East	Rich	Dry Barrel	2	H-028		6"	60			28	987	
114	Marmia Dr	7314				Muller	Dry Barrel	3	H-177		6"	19			19	813	
115	Meadowbrook Ct		End			Rich	Dry Barrel	3	H-168		6"	10			10	590	
116	Meadowbrook Dr	6830				Rich	Dry Barrel	3	H-166		6"	24			24	913	
117	Meadowbrook Dr		Riverview Dr			Rich	Dry Barrel	3	H-167		6"	22			22	874	
118	Meadowbrook Dr		Stonybrook Dr			Rich	Dry Barrel	3	H-164		6"	20			20	834	
119	Meadowbrook Dr		Woodside Dr			Rich	Dry Barrel	3	H-163		6"	17			17	769	
120	Mullen Ave	3850	Austin Rd		300' South	Rich	Dry Barrel	1	H-048		6"	60			60	874	
121	Mullen Ave	3950	Valley Ave			Rich	Dry Barrel	1	H-049		6"	42			16	746	
122	Mullen Ave	3985	14th Ave			Rich	Dry Barrel	1	H-050		8"	50			20	834	
123	Mullen Ave	4286	Emery Ave			Rich	Dry Barrel	1	H-068		8"	58			30	1021	

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Street Name where Hydrant is Located:	Street Number:	Cross Street or Location where Hydrant is Located:	Distance Feet:	Direction:	Hydrant Brand:	Hydrant Type:	Pressure Zone: Plant #1, Fillmore #2, Spruce #3, 20th #4	Fire Dept. No.	Fire Dept. No. of adjacent Hydrant:	Main Size Inch:	Static Pressure:	Static Pressure of adjacent Hydrant:	Pressure of adjacent Hydrant during Test:	Pitot Gauge Pressure:	Flow GPM:	Supply Main Pressure Drop at Flow:
124	Oak Ave	19th St.			Amer. Darling	Dry Barrel	4	H-206		12"	62			26	951	
125	Old Hwy 53	3191 Bowers Rd			Rich	Dry Barrel	2	H-004		8"	62			30	1021	
126	Old Hwy 53	3680 Ron Lanes			Jones	Workhead	1	H-025		6"	54			18	791	
127	Old Hwy 53	3820 Clearlake Commons			Waterous	Dry Barrel	2	H-038		6"	62			31	1038	
128	Old Hwy 53	4750 Lakeshore Dr		50' North	Greenberg	Wet Barrel	1	H-089		10"	45			34	1087	
129	Old Hwy 53	4765 Lakeshore Dr (Kragen Auto)		50' South	Amer. Darling	Dry Barrel	1									
130	Old Hwy 53	5245 Ladbelle Ave			Greenberg	Wet Barrel	3	H-141		10"				30	1021	
131	Old Hwy 53	5535 Larkovanna Rd.			Greenberg	Wet Barrel	3	H-144		10"				30	1021	
132	Old Hwy 53	5735 Highlander Resort			Greenberg	Wet Barrel	3	H-148		10"				22	874	
133	Old Hwy 53	6035 Gamers Resort			Greenberg	Wet Barrel	3	H-151		10"				22	874	
134	Old Hwy 53	6215 Sentiers Apartments			Rich	Dry Barrel	3	H-158		10"				14	698	
135	Old Hwy 53	6885 Side of Water Park		West	Waterous	Dry Barrel	3	H-185		6"	40			52	1344	
136	Old Hwy 53	7145 Clearlake Apts (On Site)		South	Waterous	Dry Barrel	3	H-181		6"	40			20	834	
137	Old Hwy 53	7145 Clearlake Apts (On Site)		West	Waterous	Dry Barrel	3	H-182		6"	40			10	590	
138	Old Hwy 53	7145 Clearlake Apts (On Site)		North	Waterous	Dry Barrel	3	H-183		6"	40			35	1103	
139	Old Hwy 53	Konocti View			Greenberg	Workhead	3	H-132		4"					0	
140	Old Hwy 53	Saroni Parkway			Rich	Dry Barrel	1	H-032		6"	40			15	722	
141	Olympic Dr.	14560 Madrone St.			Amer. Darling	Dry Barrel	2	H-019		6"	72			31	1038	
142	Olympic Dr.	14580 Olympic Villa Apartments			Amer. Darling	Dry Barrel	2	H-020		6"	72			31	1038	
143	Olympic Dr.	14580 Olympic Villa Apartments in Back			Jones	Workhead	2	H-106		4"	76			13	672	
144	Olympic Dr.	14670 Sycamore St.		300' North	Amer. Darling	Dry Barrel	2	H-018		6"	72			32	1055	
145	Olympic Dr.	14730 PG&E			Rich	Dry Barrel	2	H-017		6"	72			31	1038	
146	Olympic Dr.	14815 Fire House Court		300' South	Waterous	Workhead	2	H-022		4"	72			38	1149	
147	Olympic Dr.	14815 Fire House Front Ramp			Muelher	Workhead	2	H-023		4"	70			21	854	
148	Olympic Dr.	14860 Pay & Save			Rich	Dry Barrel	2	H-016		6"	76			40	1179	
149	Olympic Dr.	14900 Old Hwy 53			Rich	Dry Barrel	2	H-024		6"	78			31	1038	
150	Olympic Dr.	14922 Sateway		400' West	L. B. Iron	Dry Barrel	2	H-015		6"	76			40	1179	
151	Olympic Dr.	14922 Sateway Rear Parking Area			L. B. Iron	Dry Barrel	2	H-014		6"	60			32	1055	
152	Olympic Dr.	15100 Emerson St			Amer. Darling	Dry Barrel	2	H-021		6"	70			44	1237	
153	Olympic Dr.	15210 Harrison Ave			Waterous	Dry Barrel	2	H-007		6"	58			34	1087	
154	Olympic Dr.	15600 Amber Ave			Waterous	Dry Barrel	2	H-006		6"	54			30	1021	
155	Palmer Ave.	14600			Rich	Dry Barrel	1	H-069		6"	58			26	951	
156	Palmer Ave.	14667			Rich	Dry Barrel	1	H-070		6"	60			20	834	
157	Palmer Ave.	Erve Ave.		250' West	Rich	Dry Barrel	1	H-076		6"	54			18	791	
158	Palmer Ave.	Golf Ave.			Rich	Workhead	1	H-071		6"	61			28	987	
159	Park St.	End		West	Greenberg	Workhead	3	H-150		4"	64			4	373	
160	Pearl Ave.	3680 Division Ave			Amer. Darling	Dry Barrel	1	H-043		8"	64			4	373	
161	Pearl Ave.	3790 Bliss Ave		200' North	Amer. Darling	Dry Barrel	1	H-108		8"	64			15	722	
162	Pearl Ave.	Mullen Ave			Rich	Dry Barrel	1	H-051		6"	49			15	722	
163	Pearl Ave	Mullen Ave		350' East	Rich	Dry Barrel	1	H-073		6"	55			26	951	

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164 Polk Ave.	14260	Mckinley Dr.			Rich	Dry Barrel	2	H-027		6"	60			30	1031	
165 Ridge Rd.	14480	Oakland Ave.			Amer. Darling	Dry Barrel	1	H-046		8"	46			25	932	
167 Ridgeway Dr.		Lakeside Dr.	50' West		Amer. Darling	Dry Barrel	1	H-107		8"				30	1021	
168 Ridgeway Dr.		Lakeside Dr.	75' North		Greenberg	Wet Barrel	3	H-154		6"				27	969	
169 Rimsy Rd.	14975	Sylvia Court	250' South		Greenberg	Wet Barrel	3	H-155		6"				25	932	
170 Rimsy Rd.	14985	Sylvia Court			Amer. Darling	Dry Barrel	2	H-100		6"	60			15	722	
171 Rimsy Rd.	15001	Garner Lane	300' West		Amer. Darling	Dry Barrel	2	H-099		6"	70			12	646	
172 Stump Lane		Burns Valley Rd.			Amer. Darling	Dry Barrel	2	H-101		6"	70			15	722	
173 Smith Lane	2851	End of Smith Lane	200' North		Amer. Darling	Dry Barrel	2	H-105		6"	60			24	913	
174 Smith Lane	2935	Halfway down	North		Watrous	Dry Barrel	2	H-001		6"	60			14	698	
175 Smith Lane	3150	Rimsy Rd.	North		Watrous	Dry Barrel	2	H-002		6"	70			16	746	
176 South Center Dr.		Dann Rd. Extension			Rich	Dry Barrel	2	H-003		6"	62			20	834	
177 South Center Dr.		Oak Hill School Annex (Entry)			Amer. Darling	Dry Barrel	4	H-188		6"				38	1149	
178 South Center Dr.		Oak Hill School Annex (Inside)			Amer. Darling	Dry Barrel	4	H-196		8"				48	1292	
179 South Center Dr.		Oak Hill School Annex (Inside)			Amer. Darling	Dry Barrel	4	H-197		8"				40	1179	
180 Spruce St.	5754	State Hwy 53	100' East		Rich	Dry Barrel	4	H-187		6"	66			42	1208	
181 Spruce St.		Hudson St.			Rich	Dry Barrel	3	H-135		6"				2	264	
182 Stonybrook Dr.	6855	Lakeview Ave.			Greenberg	Wet Barrel	3	H-136		4"				2	264	
183 Turner Ave.		Harrison Ave.			Rich	Dry Barrel	3	H-165		6"				2		
184 Uhl Ave.	14325	Alvita Ave.	300' East		Greenberg	Worhead	2	H-008		4"	57			10	590	
185 Uhl Ave.	14000	Veterans Lane			Amer. Darling	Dry Barrel	1	H-053		6"	60			32	1055	
186 Uhl Ave.		Mullen Ave.			Amer. Darling	Dry Barrel	1	H-091		6"	49			29	1004	
187 Uhl Ave.		Palmer Ave.	600' East		Rich	Dry Barrel	1	H-074		6"				28	987	
188 Uhl Ave.		Pearl Ave.			Rich	Dry Barrel	1	H-072		6"	55			28	987	
189 Valley Ave.		Manchester Ave.			Rich	Dry Barrel	1	H-075		6"	46			25	932	
190 Washington Ave.		Olympic Dr.	300' North		Watrous	Dry Barrel	1	H-080		6"	40			18	791	
191 Wayland Way	5355	West End			Greenberg	Wet Barrel	2	H-009		6"	72			30	1021	
192 Wayland Way		Old Hwy 53	500' West		Greenberg	Worhead	3	H-139		4"				5	417	
193 West 40th Ave.	4670	Hillcrest Ave.	500' West		Greenberg	Dry Barrel	1	H-078		6"	31			6	457	
194 West 40th Ave.	4712	Carroll Ave.	300' East		Rich	Dry Barrel	1	H-077		6"				18	791	
195 West 40th Ave.		Palm Ave.			Valve	2" Gate	1	H-077		2"				0	0	
196 Woodside Dr.		Medewbrook Dr.	500' West		Greenberg	Worhead	1	H-095		4"	25			0	0	
197 Woodside Dr.		Stonybrook Dr.			Greenberg	Wet Barrel	3	H-162		6"				24	913	
198 Youngs Lane		Burns Valley Rd.	300' North		Greenberg	Worhead	3	H-161		6"				26	951	
199 Yuba Collage Rd.		Oak Hill School Gym	100' North		Claw	Dry Barrel	2	H-203		2"				0	0	
200 Yuba Collage Rd.		Yuba Collage 1 (Entrance)			Watrous	Dry Barrel	4	H-190		6"	37			1134		
201 Yuba Collage Rd.		Yuba Collage 2 (Right Side Back)			Amer. Darling	Dry Barrel	4	H-112		8"	54			1370		
202 Yuba Collage Rd.		Yuba Collage 3 (Right Side 1st)			Amer. Darling	Dry Barrel	4	H-113		8"	0			0	0	
203 Yuba Collage Rd.		Yuba Collage 4 (Front Parkme)	150' East		Amer. Darling	Dry Barrel	4	H-114		8"	0			0	0	

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
	<b>Highlands Water Company Hydrant Data Listed by Street Name</b>																
1	<b>Location of Hydrants:</b>																
2	<b>Hydrant and Connection Data:</b>																
3	<b>Test Data:</b>																
204	Yuba College Rd.		Yuba College 5 (left in back)	200'	East	Amer. Darling	Dry Barrel	4	H-115		8"						
205																	

# Highlands Water Company Hydrant Data

Hydrant ID	Hydrant Locations		Hydrant & Connection Data		Connection		Test Hydrant Data		Adjacent Hydrant		Flows						
	Street Name & Number	Cross Street or Location of Hydrant	Hydrant Date	Hydrant & Connection Data	Zone	Main Size	Fire Dept. Size	Hydrant Nozzle Coeff	Prot. Gauge	Fire Dept. #	Base Line	Residual	2.5" Nozzle Flow	2.5" Nozzle Flow	Total Available		
1	18th St.	In Front of Redbud Hospital		Rich	4	8"	H-186	0.95	57	38	H210	34	20	31	3	1037 Green	1394 Green
2	18th St.	Redbud Hospital Lower Parking Lot		Amer. Darling	4	8"	H-210	0.95	50							1190 Green	
3	20th St.	Oak Ave.		Amer. Darling	4	12"	H-205	0.95	34	18			10			714 Orange	
4	Airport Rd.	20th St. Tank Pump Station		Rich	3	6"	H-184	0.95	23	23						807 Orange	
5	Alvita Ave.	Uhl Ave.		Waterous	1	6"	H-054	0.95	66	24			20			824 Orange	
6	Alvita Ave.	Boyliss Ave.		Greenberg	1	6"	H-045	0.95	60	26			20			858 Orange	
7	Anchor Dr.	Boyliss Ave.		Muller	3	6"	H-175	0.95	19							733 Orange	
8	Austin Rd.	Evans Ave.		Greenberg	1	4"	H-042	0.95	64	12			20			583 Orange	
9	Austin Rd.	Mullen Ave.		Rich	1	4"	H-039	0.95	60	28			20			890 Orange	
10	Austin Rd.	Manchester Ave.		Rich	1	6"	H-037	0.95	62	30			20			922 Orange	
11	Austin Rd.	Vista Robles		Rich	1	6"	H-036	0.95	60	20			20			752 Orange	
12	Austin Rd.	Old Hwy 53		Rich	1	6"	H-031	0.95	55	22			20			789 Orange	
13	Austin Rd.	New Commons		Waterous	2	6"	H-090	0.95	48	20			10			752 Orange	
14	Austin Rd.	McKinley Dr.		Amer. Darling	2	6"	H-030	0.95	48	30			10			922 Orange	
15	Ballpark Ave.	Old Hwy 53		Amer. Darling	1	10"	H-127	0.95	58	38			20			1037 Green	
16	Bartrum Circle	Garner Lane		Amer. Darling	2	6"	H-103	0.95	72	23			20			807 Orange	
17	Bartrum Circle	Runsey Rd.		Amer. Darling	2	6"	H-097	0.95	70	23			20			807 Orange	
18	Bartrum Circle	Runsey Rd.		Amer. Darling	2	6"	H-098	0.95	70	26			20			858 Orange	
19	Boy St.	Lakeside Dr.		Amer. Darling	3	8"	H-199	0.95	33							967 Orange	
20	Boy St.	Lakeview Way		Clow	3	8"	H-198	0.95	38							1037 Green	
21	Boyliss Ave.	Robinson Ave.		Waterous	1	6"	H-044	0.95	60	20			20			752 Orange	
22	Bowers Rd.	Burns Valley Rd. (Senior Center)		Amer. Darling	2	6"		0.95									
23	Burns Valley Rd.	Redbud Library		Clow	2	8"	H-034	0.95	70	22			20			789 Orange	
24	Burns Valley Rd.	Bowers Rd.		Waterous	2	6"	H-012	0.95	63	32			20			952 Orange	
25	Burns Valley Rd.	Runsey Rd.		Amer. Darling	2	6"	H-011	0.95	68	20			20			752 Orange	
26	Burns Valley Rd.	Sharp Lane		Amer. Darling	2	6"	H-104	0.95	60	21			20			771 Orange	
27	Burns Valley Rd.	Runsey Rd. (Inside Autumn Village)		Amer. Darling	2	6"	H-010	0.95	64	20			20			752 Orange	
28	Burns Valley Rd.	Olympic Dr.		Rich	2	6"	H-013	0.95	80	45			20			1129 Green	
29	CACHE Creek Way	End of Rainbow		Jones	3	8"	H-206	0.95	6							412 Red	
30	CACHE Creek Way	Shaws Resort		Amer. Darling	3	8"	H-142	0.95	10							532 Orange	
31	Clement Ave.	End		Greenberg	3	4"	H-143	0.95	9							532 Orange	
32	Clement Ave.	Old Hwy 53		Jones	3	4"	H-143	0.95	16							505 Orange	
33	Cottage Ave.	Cass Ave.		Rich	3	6"	H-147	0.95	8							673 Orange	
34	Cottage Ave.	Mohican Ave.		Rich	3	6"	H-149	0.95	22							476 Red	
35	Crawford Ave.	Elk's Lodge		Clow	3	6"	H-152	0.95	60	22						789 Orange	
36	Dam Rd.	Jack in the Box		Clow	4	10"	H-217	0.95	70	60			20			1303 Green	
37	Dam Rd. Extension	Wal Mart Center (Entry)		Amer. Darling	4	10"	H-192	0.95	70	60	H217	70	20	67	3	1303 Green	2261 Blue

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Pressure Zone	Supply Source Location	Hydrant Counts				Flow Formula Using Pitor Gauge 2.5" Nozzle		Available Flow Hazen-Williams Formula	
Zone #1	Hillcrest Ave. Treatment Pla	Hydrant Type	Pressure Zone	Zone #1	Zone #2	Zone #3	Zone #4	Totals	Totals
Zone #2	Fillmore St. Storage Tank	Worthead	Zone #1	22	73				
Zone #3	Spruce St. Storage Tanks	Wet Barrel	Zone #2	33	46				
Zone #4	20th Street Storage Tank	Dry Barrel	Zone #3	147	58				
Color Codes for Nozzle & Hydrant Flows		Other Types	Zone #4	1	26				
Color Code		Color Code Flow	Totals	203	203				
Blue	1,500 gpm or Greater								
Green	1000 to 1499 gpm								
Orange	500 to 999 gpm								
Red	Less than 500 gpm								

34	West 40th Ave.	Palm Ave.																	
35	Woodside Dr.	Medowbrook Dr.	500'	West	Greenberg	Worthead			1	4"	H-095	0.95	25	0		10		0	Red
36	Woodside Dr.	Stonybrook Dr.			Greenberg	Wet Barrel			3	6"	H-162	0.95		24				824	Orange
37	Youngs Lane	Burns Valley Rd.	300'	North	Greenberg	Worthead			3	6"	H-161	0.95		26				858	Orange
38	Yuba College Rd.	Oak Hill School Gym	100'	North	Clow	Dry Barrel			2	2"		0.95							
39	Yuba College Rd.	Yuba College 1 (Entrance)			Waterous	Dry Barrel			4	6"	H-203	0.95		37				1023	Green
40	Yuba College Rd.	Yuba College 2 (Right Side Back)	200'	East	Amer. Darling	Dry Barrel			4	6"	H-190	0.95		54				1236	Green
41	Yuba College Rd.	Yuba College 3 (Right Side 1st)	200'	East	Amer. Darling	Dry Barrel			4	8"	H-112	0.95							
42	Yuba College Rd.	Yuba College 4 (Front Parking)	150'	East	Amer. Darling	Dry Barrel			4	8"	H-113	0.95							
43	Yuba College Rd.	Yuba College 5 (Left in Back)	200'	East	Amer. Darling	Dry Barrel			4	8"	H-114	0.95							
									4	8"	H-115	0.95							

Flow Formula Using Pitor Gauge 2.5" Nozzle

$$Q = 29.83 \text{ cd}^2 \text{ SQRT } P \text{ } Q_r = Q_f \times \left( \frac{h_p}{h_0} \right)^{0.54}$$

Available Flow Hazen-Williams Formula

$$Q_r = \text{Available Flow}$$

$$Q_f = \text{Observed Flow}$$

$Q = \text{Observed Flow}$   
 $c = \text{Coefficient}$   
 $d = \text{Outlet Diameter of Nozzle}$   
 $p = \text{Pitor Pressure}$

$h_p = \text{Pressure Drop from Static to Baseline}$   
 $h_r = \text{Pressure Drop from Static to Residual}$

185 155 841

4 2