



September 4, 2020
 Revised October 7, 2020

Richard J. Bourbonnais, PE, Town Engineer
 Town of South Kingstown
 Department of Engineering
 509 Commodore Perry Highway
 Wakefield, RI 02879

**RE: The Village at Curtis Corner Sewer Study
 Curtis Corner Road
 South Kingstown, RI
 DE Project #: 0265-053-A03**

Dear Mr. Bourbonnais:

The above referenced project is proposed for construction at Curtis Corner Road, South Kingstown, Rhode Island. The site is located on Assessors' Plat 40-4 Lot 55 (portion of former Lot 33 shown on the attached Sewer Load Analysis). The proposed 32-unit subdivision is proposed to be serviced by public water, public sewer and underground utilities. We are respectfully submitting this letter to summarize flows resulting from the development and its impact to the town sewer system.

Development Sewer Flow Estimation:

The sewer flow for the project was estimated conservatively using 150 gallons per bedroom per day.

32 Two-bedroom units = (150 gpd/unit x 2 bedrooms/unit x 32 units) = **9,600 gallons per day (6.7 gpm).**

Downstream Sewer Flow Review:

Curtis Corner Road is serviced by a 12" sewer main with slope of 0.0022'/' per the Curtis Corner Road as-built drawing prepared by CE Maguire, Inc. dated June 1979. This flows into the Kingstown Road 21" interceptor approximately 700' east of the proposed site driveway location. The capacity of the Curtis Corner Road main using a conservative n value of 0.013 is:

$$Q = (1.49 / 0.013) * (\pi * 0.5^2) * (0.25^{2/3}) * (0.0022^{1/2}) = 1.68 \text{ cfs} * 7.48 \text{ gal/cf} * 60 \text{ s/min} = 754 \text{ gpm.}$$

Per Town of South Kingstown Department of Public Services' environmental consultant, we have been requested to use 0.7D when calculating pipe capacity. In satisfying their request, the pipe capacity would be:

Inputs			Results		
Pipe diameter, d ₀	12	in	Flow, Q	627.8811	gpm
Manning roughness, n	0.013		Velocity, v	2.3824	ft/sec
Pressure slope (possibly ? equal to pipe slope), S ₀	0.0022	rise/run	Velocity head, h _v	1.0586	in H2O
Percent of (or ratio to) full depth (100% or 1 if flowing full)	0.7	fraction	Flow area	84.5613	sq. in.
			Wetted perimeter	23.7878	in
			Hydraulic radius	3.5548	in
			Top width, T	10.9982	in
			Froude number, F	0.52	
			Shear stress (tractive force), tau	0.0407	psf

Reference: hawsedc.com

Q = **628 gpm.**

Sewer flow information for all areas contributing to the Curtis Corner main was obtained in June 2019 and organized to determine upstream and downstream flows. See attached for the spreadsheet with raw data. The total annual flow contributing to the sewer main prior to discharge to the Kingstown Road interceptor is 3,274,090 cu. ft. (24,490,193 gallons). The average daily flow is:

$24,490,193 \text{ gallons} / 365 \text{ days} = 67,096 \text{ gpd} / 1440 \text{ minutes} = \mathbf{46.6 \text{ gpm}}$.

Using a conservative safety/peaking factor of 5.6 rounded to 6 for "peak on maximum day" from the TR-16 Guide, the peak flow would be **280 gpm**.

Under these conditions, the current pipe flows at 280 gpm / 628 gpm = *44.6% capacity*.

The new subdivision will result in a 1.07% (6.7 gpm / 628 gpm) increase to the pipe's flow, for a proposed pipe flow at $44.6\% + 1.07\% = 45.7\% \text{ capacity}$.

Using a conservative infiltration/inflow rate of 500 gallons per day per inch diameter per mile from the top end suggestion in the TR-16 guide, the I/I for this branch of the system is approximately:

$500 * 12" \text{ diameter} * 6 \text{ miles (rounded up from measured 5.1 miles)} = 36,000 \text{ gpd} / 1,440 \text{ m/d} = \mathbf{25 \text{ gpm}}$.

Therefore the final existing and proposed flow as a proportion of 0.7 times full pipe capacity will be:

Existing = $(280 \text{ gpm} + 25 \text{ gpm}) / 628 \text{ gpm} = \mathbf{48.6\% \text{ capacity}}$.
Proposed = $(305 \text{ gpm} + 6.7 \text{ gpm}) / 628 \text{ gpm} = \mathbf{49.6\% \text{ capacity}}$.

It is our opinion that this increase to the sewer system will be insignificant and not contribute to an overloading of pipe capacity.

We are respectfully seeking confirmation of sewer service availability for this project.

If you have any further questions on this matter, please feel free to contact me at your earliest convenience.

Sincerely,
DiPrete Engineering Associates, Inc.



Kevin DeMers, PE
Project Manager

Attachments: Table 1 – Sewer Data for Curtis Corner sewer main branch
Figure 2 – Curtis Corner Minor Subdivision Sewer Load Analysis
Figure 3 – TR-16 "Relation of Extreme Discharges on Maximum and Minimum Days to the Average Daily Discharge of Domestic Sewer"

Table 1

Plat	Lot	Parcel ID	Parcel Location	Sewer Account	Parcel Address	Property Type	Annual Consumption
40-1	128	40-1-128	DOWNSTREAM	S-13-1176-10	1790 KINGSTOWN ROAD	COMMERCIAL	18,200
40-4	32	40-4-32	DOWNSTREAM	S-11-0786-00	57 CURTIS CORNER ROAD	RESIDENTIAL	4,400
39-3	15	39-3-15	UPSTREAM	S-11-1205-90	415 CURTIS CORNER ROAD	RESIDENTIAL	10,500
39-3	17	39-3-17	UPSTREAM	S-11-1165-00	391 CURTIS CORNER ROAD	RESIDENTIAL	1,700
39-3	18	39-3-18	UPSTREAM	S-11-1263-90	381 CURTIS CORNER ROAD	COMMERCIAL	20,000
39-3	19	39-3-19	UPSTREAM	S-11-1274-20	376 CURTIS CORNER ROAD	RESIDENTIAL	5,500
39-3	20	39-3-20	UPSTREAM	S-13-1163-80	301 CURTIS CORNER ROAD	COMMERCIAL	59,690
39-3	28	39-3-28	UPSTREAM	S-11-1163-20	14 SWEET ALLEN FARM ROAD	RESIDENTIAL	7,400
40-4	2	40-4-2	UPSTREAM	S-11-0109-00	333 CURTIS CORNER ROAD	RESIDENTIAL	9,500
40-4	21	40-4-21	UPSTREAM	S-11-0559-00	298 CURTIS CORNER ROAD	RESIDENTIAL	5,500
40-4	22	40-4-22	UPSTREAM	S-11-0018-50	310 CURTIS CORNER ROAD	RESIDENTIAL	1,800
40-4	23	40-4-23	UPSTREAM	S-11-0331-50	276 CURTIS CORNER ROAD	RESIDENTIAL	5,600
40-4	25	40-4-25	UPSTREAM	S-11-0812-50	260 CURTIS CORNER ROAD	RESIDENTIAL	10,700
40-4	28	40-4-28	UPSTREAM	S-11-0020-00	240 CURTIS CORNER ROAD	RESIDENTIAL	5,000
40-4	29	40-4-29	UPSTREAM	S-11-0938-50	214 CURTIS CORNER ROAD	RESIDENTIAL	10,600
40-4	3	40-4-3	UPSTREAM	S-11-0933-50	15 MELLBRIDGE DRIVE	RESIDENTIAL	12,200
40-4	30	40-4-30	UPSTREAM	S-11-1205-30	202 CURTIS CORNER ROAD	RESIDENTIAL	10,000
40-4	31	40-4-31	UPSTREAM	S-11-0841-50	190 CURTIS CORNER ROAD	RESIDENTIAL	1,900
40-4	33	40-4-33	UPSTREAM	S-11-0800-50	109 CURTIS CORNER ROAD	RESIDENTIAL	10,000
40-4	34	40-4-34	UPSTREAM	S-11-0083-00	231 CURTIS CORNER ROAD	RESIDENTIAL	5,100
40-4	35	40-4-35	UPSTREAM	S-11-0036-50	259 CURTIS CORNER ROAD	RESIDENTIAL	9,500
40-4	4	40-4-4	UPSTREAM	S-11-0620-50	31 MELLBRIDGE DRIVE	RESIDENTIAL	2,900
40-4	41	40-4-41	UPSTREAM	S-11-1196-90	245 CURTIS CORNER ROAD	RESIDENTIAL	19,100
40-4	44	40-4-44	UPSTREAM	S-11-1117-50	230 CURTIS CORNER ROAD	RESIDENTIAL	9,900
40-4	5	40-4-5	UPSTREAM	S-11-0033-00	51 MELLBRIDGE DRIVE	RESIDENTIAL	4,000
40-4	6	40-4-6	UPSTREAM	S-11-0516-50	50 MELLBRIDGE DRIVE	RESIDENTIAL	9,700
40-4	7	40-4-7	UPSTREAM	S-11-0600-00	40 MELLBRIDGE DRIVE	RESIDENTIAL	5,000
40-4	8	40-4-8	UPSTREAM	S-11-0253-00	26 MELLBRIDGE DRIVE	RESIDENTIAL	6,800
40-4	9	40-4-9	UPSTREAM	S-11-0948-50	10 MELLBRIDGE DRIVE	RESIDENTIAL	9,800
47-2	100	47-2:100	UPSTREAM	S-11-1189-40	20 LUPINE COURT	RESIDENTIAL	10,000
47-2	101	47-2:101	UPSTREAM	S-11-1193-10	24 BITTERSWEET LANE	RESIDENTIAL	7,700

47-2	104	47-2:104	UPSTREAM	S-11-1197-00	326 MULBERRY DRIVE	RESIDENTIAL	15,400
47-2	105	47-2:105	UPSTREAM	S-11-1196-40	310 MULBERRY DRIVE	RESIDENTIAL	6,900
47-2	106	47-2:106	UPSTREAM	S-11-1205-60	301 MULBERRY DRIVE	RESIDENTIAL	11,100
47-2	107	47-2:107	UPSTREAM	S-11-1196-00	315 MULBERRY DRIVE	RESIDENTIAL	4,400
47-2	108	47-2:108	UPSTREAM	S-11-1200-60	329 MULBERRY DRIVE	RESIDENTIAL	14,000
47-2	109	47-2:109	UPSTREAM	S-11-1201-50	335 MULBERRY DRIVE	RESIDENTIAL	23,400
47-2	110	47-2:110	UPSTREAM	S-11-1196-20	345 MULBERRY DRIVE	RESIDENTIAL	7,300
47-2	111	47-2:111	UPSTREAM	S-11-1199-00	357 MULBERRY DRIVE	RESIDENTIAL	6,800
47-2	112	47-2:112	UPSTREAM	S-11-1198-00	371 MULBERRY DRIVE	RESIDENTIAL	15,700
47-2	113	47-2:113	UPSTREAM	S-11-1197-80	364 MULBERRY DRIVE	RESIDENTIAL	12,400
47-2	114	47-2:114	UPSTREAM	S-11-1195-60	350 MULBERRY DRIVE	RESIDENTIAL	14,900
47-2	115	47-2:115	UPSTREAM	S-11-1202-30	30 WINTERBERRY LANE	RESIDENTIAL	9,700
47-2	17	47-2:17	UPSTREAM	S-11-1225-40	102 GENTIAN DRIVE	RESIDENTIAL	15,100
47-2	38	47-2:38	UPSTREAM	S-11-1218-30	91 GENTIAN DRIVE	RESIDENTIAL	12,400
47-2	42	47-2:42	UPSTREAM	S-11-1081-50	81 ELDERBERRY LANE	RESIDENTIAL	11,200
47-2	43	47-2:43	UPSTREAM	S-11-1151-70	68 ELDERBERRY LANE	RESIDENTIAL	9,800
47-2	44	47-2:44	UPSTREAM	S-11-1066-00	80 ELDERBERRY LANE	RESIDENTIAL	11,600
47-2	45	47-2:45	UPSTREAM	S-11-1131-00	21 INKBERRY DRIVE	RESIDENTIAL	12,400
47-2	46	47-2:46	UPSTREAM	S-11-1159-00	33 INKBERRY DRIVE	RESIDENTIAL	11,300
47-2	47	47-2:47	UPSTREAM	S-11-1060-00	47 INKBERRY DRIVE	RESIDENTIAL	6,900
47-2	51	47-2:51	UPSTREAM	S-11-1186-60	28 SWEET ALLEN FARM ROAD	RESIDENTIAL	8,700
47-2	52	47-2:52	UPSTREAM	S-11-1159-80	15 SWEET ALLEN FARM ROAD	RESIDENTIAL	4,100
47-2	53	47-2:53	UPSTREAM	S-11-1159-20	23 SWEET ALLEN FARM ROAD	RESIDENTIAL	7,200
47-2	54	47-2:54	UPSTREAM	S-11-1154-40	31 SWEET ALLEN FARM ROAD	RESIDENTIAL	12,000
47-2	55	47-2:55	UPSTREAM	S-11-1150-00	41 SWEET ALLEN FARM ROAD	RESIDENTIAL	7,800
47-2	56	47-2:56	UPSTREAM	S-11-1150-20	47 SWEET ALLEN FARM ROAD	RESIDENTIAL	12,900
47-2	57	47-2:57	UPSTREAM	S-11-1159-40	55 SWEET ALLEN FARM ROAD	RESIDENTIAL	5,400
47-2	58	47-2:58	UPSTREAM	S-11-1154-20	65 SWEET ALLEN FARM ROAD	RESIDENTIAL	12,400
47-2	59	47-2:59	UPSTREAM	S-11-1187-90	233 MULBERRY DRIVE	RESIDENTIAL	4,600
47-2	60	47-2:60	UPSTREAM	S-11-1198-60	247 MULBERRY DRIVE	RESIDENTIAL	25,400
47-2	61	47-2:61	UPSTREAM	S-11-1199-30	261 MULBERRY DRIVE	RESIDENTIAL	8,400
47-2	62	47-2:62	UPSTREAM	S-11-1168-30	224 MULBERRY DRIVE	RESIDENTIAL	3,000
47-2	63	47-2:63	UPSTREAM	S-11-1168-90	240 MULBERRY DRIVE	RESIDENTIAL	6,100
47-2	64	47-2:64	UPSTREAM	S-11-1174-10	61 INKBERRY DRIVE	RESIDENTIAL	25,700

47-2	65	47-2:65	UPSTREAM	S-11-1172-40	49 DEWBERRY LANE	RESIDENTIAL	10,400
47-2	66	47-2:66	UPSTREAM	S-11-1175-30	33 DEWBERRY LANE	RESIDENTIAL	15,600
47-2	67	47-2:67	UPSTREAM	S-11-1168-50	19 DEWBERRY LANE	RESIDENTIAL	3,900
47-2	68	47-2:68	UPSTREAM	S-11-1167-50	22 DEWBERRY LANE	RESIDENTIAL	4,400
47-2	69	47-2:69	UPSTREAM	S-11-1175-20	36 DEWBERRY LANE	RESIDENTIAL	5,200
47-2	70	47-2:70	UPSTREAM	S-11-1168-80	52 DEWBERRY LANE	RESIDENTIAL	11,900
47-2	71	47-2:71	UPSTREAM	S-11-1167-20	68 DEWBERRY LANE	RESIDENTIAL	27,500
47-2	72	47-2:72	UPSTREAM	S-11-1175-70	260 MULBERRY DRIVE	RESIDENTIAL	14,000
47-2	73	47-2:73	UPSTREAM	S-11-1182-90	120 GENTIAN DRIVE	RESIDENTIAL	8,400
47-2	74	47-2:74	UPSTREAM	S-11-1177-60	134 GENTIAN DRIVE	RESIDENTIAL	11,200
47-2	75	47-2:75	UPSTREAM	S-11-1183-00	148 GENTIAN DRIVE	RESIDENTIAL	5,700
47-2	76	47-2:76	UPSTREAM	S-11-1194-30	18 WINTERBERRY LANE	RESIDENTIAL	16,000
47-2	77	47-2:77	UPSTREAM	S-11-1193-40	6 CURTIS CIRCLE	RESIDENTIAL	11,600
47-2	78	47-2:78	UPSTREAM	S-11-1194-20	16 CURTIS CIRCLE	RESIDENTIAL	4,800
47-2	79	47-2:79	UPSTREAM	S-11-1194-10	17 CURTIS CIRCLE	RESIDENTIAL	10,700
47-2	80	47-2:80	UPSTREAM	S-11-1193-70	9 CURTIS CIRCLE	RESIDENTIAL	4,700
47-2	81	47-2:81	UPSTREAM	S-11-1189-50	9 WINTERBERRY LANE	RESIDENTIAL	13,100
47-2	82	47-2:82	UPSTREAM	S-11-1194-50	155 GENTIAN DRIVE	RESIDENTIAL	6,200
47-2	83	47-2:83	UPSTREAM	S-11-1186-70	135 GENTIAN DRIVE	RESIDENTIAL	4,900
47-2	84	47-2:84	UPSTREAM	S-11-1179-60	125 GENTIAN DRIVE	RESIDENTIAL	5,500
47-2	90	47-2:90	UPSTREAM	S-11-1190-80	19 BITTERSWEET LANE	RESIDENTIAL	8,800
47-2	91	47-2:91	UPSTREAM	S-11-1194-90	31 BITTERSWEET LANE	RESIDENTIAL	12,300
47-2	92	47-2:92	UPSTREAM	S-11-1190-30	43 BITTERSWEET LANE	RESIDENTIAL	6,000
47-2	93	47-2:93	UPSTREAM	S-11-1193-80	53 BITTERSWEET LANE	RESIDENTIAL	18,200
47-2	94	47-2:94	UPSTREAM	S-11-1190-90	63 BITTERSWEET LANE	RESIDENTIAL	3,200
47-2	95	47-2:95	UPSTREAM	S-11-1208-80	275 MULBERRY DRIVE	RESIDENTIAL	11,600
47-2	96	47-2:96	UPSTREAM	S-11-1215-80	289 MULBERRY DRIVE	RESIDENTIAL	16,300
47-2	97	47-2:97	UPSTREAM	S-11-1191-00	294 MULBERRY DRIVE	RESIDENTIAL	6,500
47-2	98	47-2:98	UPSTREAM	S-11-1191-10	7 LUPINE COURT	RESIDENTIAL	7,900
47-2	99	47-2:99	UPSTREAM	S-11-1189-00	21 LUPINE COURT	RESIDENTIAL	6,700
47-3	1	47-3:1	UPSTREAM	S-11-1179-70	64 DEER TRAIL ROAD	RESIDENTIAL	4,200
47-3	10	47-3:10	UPSTREAM	S-11-1218-20	25 MULBERRY DRIVE	RESIDENTIAL	5,000
47-3	100	47-3:100	UPSTREAM	S-11-1176-90	86 MILLSTONE ROAD	RESIDENTIAL	3,600
47-3	101	47-3:101	UPSTREAM	S-11-1186-50	68 MILLSTONE ROAD	RESIDENTIAL	6,300

47-3	102	47-3:102	UPSTREAM	S-11-1176-70	32 MILLSTONE ROAD	RESIDENTIAL	6,600
47-3	103	47-3:103	UPSTREAM	S-11-1173-80	14 MILLSTONE ROAD	RESIDENTIAL	7,200
47-3	104	47-3:104	UPSTREAM	S-11-1188-60	25 DEER TRAIL ROAD	RESIDENTIAL	10,800
47-3	105	47-3:105	UPSTREAM	S-11-1188-70	69 DEER TRAIL ROAD	RESIDENTIAL	41,700
47-3	106	47-3:106	UPSTREAM	S-11-1185-50	87 DEER TRAIL ROAD	RESIDENTIAL	5,200
47-3	107	47-3:107	UPSTREAM	S-11-1185-80	117 DEER TRAIL ROAD	RESIDENTIAL	6,000
47-3	108	47-3:108	UPSTREAM	S-11-1184-70	145 DEER TRAIL ROAD	RESIDENTIAL	14,200
47-3	109	47-3:109	UPSTREAM	S-11-1185-60	29 FOXRIDGE CIRCLE	RESIDENTIAL	16,500
47-3	11	47-3:11	UPSTREAM	S-11-1233-00	41 MULBERRY DRIVE	RESIDENTIAL	11,400
47-3	110	47-3:110	UPSTREAM	S-11-1184-80	134 DEER TRAIL ROAD	RESIDENTIAL	19,500
47-3	111	47-3:111	UPSTREAM	S-11-1179-40	148 DEER TRAIL ROAD	RESIDENTIAL	17,600
47-3	112	47-3:112	UPSTREAM	S-11-1182-20	74 FOXRIDGE CIRCLE	RESIDENTIAL	6,200
47-3	113	47-3:113	UPSTREAM	S-11-1180-50	54 FOXRIDGE CIRCLE	RESIDENTIAL	4,400
47-3	114	47-3:114	UPSTREAM	S-11-1182-30	44 FOXRIDGE CIRCLE	RESIDENTIAL	17,500
47-3	115	47-3:115	UPSTREAM	S-11-1186-30	30 FOXRIDGE CIRCLE	RESIDENTIAL	33,500
47-3	116	47-3:116	UPSTREAM	S-11-1186-40	110 DEER TRAIL ROAD	RESIDENTIAL	6,500
47-3	117	47-3:117	UPSTREAM	S-11-1179-90	98 DEER TRAIL ROAD	RESIDENTIAL	7,400
47-3	118	47-3:118	UPSTREAM	S-11-1185-90	82 DEER TRAIL ROAD	RESIDENTIAL	7,600
47-3	36	47-3:36	UPSTREAM	S-11-1210-10	44 MULBERRY DRIVE	RESIDENTIAL	11,000
47-3	47	47-3:47	UPSTREAM	S-11-1096-00	225 WEATHERVANE ROAD	RESIDENTIAL	9,900
47-3	48	47-3:48	UPSTREAM	S-11-1009-50	91 FOSTER SHELDON ROAD	RESIDENTIAL	7,200
47-3	49	47-3:49	UPSTREAM	S-11-1053-50	87 FOSTER SHELDON ROAD	RESIDENTIAL	10,200
47-3	50	47-3:50	UPSTREAM	S-11-1024-50	77 FOSTER SHELDON ROAD	RESIDENTIAL	7,100
47-3	51	47-3:51	UPSTREAM	S-11-1078-00	61 FOSTER SHELDON ROAD	RESIDENTIAL	10,000
47-3	52	47-3:52	UPSTREAM	S-11-1050-50	53 FOSTER SHELDON ROAD	RESIDENTIAL	10,700
47-3	53	47-3:53	UPSTREAM	S-11-1016-00	38 FOSTER SHELDON ROAD	RESIDENTIAL	4,800
47-3	54	47-3:54	UPSTREAM	S-11-1025-50	44 FOSTER SHELDON ROAD	RESIDENTIAL	11,700
47-3	55	47-3:55	UPSTREAM	S-11-1025-00	52 FOSTER SHELDON ROAD	RESIDENTIAL	4,900
47-3	56	47-3:56	UPSTREAM	S-11-1151-80	60 FOSTER SHELDON ROAD	RESIDENTIAL	12,700
47-3	57	47-3:57	UPSTREAM	S-11-1100-00	70 FOSTER SHELDON ROAD	RESIDENTIAL	6,100
47-3	58	47-3:58	UPSTREAM	S-11-1026-50	76 FOSTER SHELDON ROAD	RESIDENTIAL	6,100
47-3	59	47-3:59	UPSTREAM	S-11-1047-50	82 FOSTER SHELDON ROAD	RESIDENTIAL	7,900
47-3	60	47-3:60	UPSTREAM	S-11-1041-00	90 FOSTER SHELDON ROAD	RESIDENTIAL	9,700
47-3	61	47-3:61	UPSTREAM	S-11-1041-50	100 FOSTER SHELDON ROAD	RESIDENTIAL	9,100

47-3	62	47-3:62	UPSTREAM	S-11-1085-50	108 FOSTER SHELDON ROAD	RESIDENTIAL	9,000
47-3	63	47-3:63	UPSTREAM	S-11-1089-00	201 WEATHERVANE ROAD	RESIDENTIAL	6,900
47-3	64	47-3:64	UPSTREAM	S-11-1026-00	65 MULBERRY DRIVE	RESIDENTIAL	6,900
47-3	65	47-3:65	UPSTREAM	S-11-1070-50	79 MULBERRY DRIVE	RESIDENTIAL	10,800
47-3	66	47-3:66	UPSTREAM	S-11-1010-00	93 MULBERRY DRIVE	RESIDENTIAL	9,200
47-3	67	47-3:67	UPSTREAM	S-11-1028-50	107 MULBERRY DRIVE	RESIDENTIAL	6,000
47-3	68	47-3:68	UPSTREAM	S-11-1043-50	119 MULBERRY DRIVE	RESIDENTIAL	11,500
47-3	69	47-3:69	UPSTREAM	S-11-1042-00	126 MULBERRY DRIVE	RESIDENTIAL	13,900
47-3	70	47-3:70	UPSTREAM	S-11-1073-00	112 MULBERRY DRIVE	RESIDENTIAL	14,200
47-3	71	47-3:71	UPSTREAM	S-11-1065-50	98 MULBERRY DRIVE	RESIDENTIAL	5,700
47-3	72	47-3:72	UPSTREAM	S-11-1151-30	84 MULBERRY DRIVE	RESIDENTIAL	14,200
47-3	73	47-3:73	UPSTREAM	S-11-1040-50	72 MULBERRY DRIVE	RESIDENTIAL	8,400
47-3	74	47-3:74	UPSTREAM	S-11-1076-50	58 MULBERRY DRIVE	RESIDENTIAL	7,000
47-3	75	47-3:75	UPSTREAM	S-11-1160-80	24 INKBERRY DRIVE	RESIDENTIAL	11,700
47-3	76	47-3:76	UPSTREAM	S-11-1165-40	61 ELDERBERRY LANE	RESIDENTIAL	4,400
47-3	77	47-3:77	UPSTREAM	S-11-1059-00	51 ELDERBERRY LANE	RESIDENTIAL	6,200
47-3	78	47-3:78	UPSTREAM	S-11-1152-20	37 ELDERBERRY LANE	RESIDENTIAL	7,900
47-3	79	47-3:79	UPSTREAM	S-11-1152-60	23 ELDERBERRY LANE	RESIDENTIAL	3,300
47-3	80	47-3:80	UPSTREAM	S-11-1161-40	20 ELDERBERRY LANE	RESIDENTIAL	10,300
47-3	81	47-3:81	UPSTREAM	S-11-1154-60	34 ELDERBERRY LANE	RESIDENTIAL	9,400
47-3	82	47-3:82	UPSTREAM	S-11-1163-40	48 ELDERBERRY LANE	RESIDENTIAL	4,200
47-3	83	47-3:83	UPSTREAM	S-11-1120-00	237 WEATHERVANE ROAD	RESIDENTIAL	3,400
47-3	84	47-3:84	UPSTREAM	S-11-1120-50	245 WEATHERVANE ROAD	RESIDENTIAL	6,000
47-3	85	47-3:85	UPSTREAM	S-11-1211-70	54 DEER TRAIL ROAD	RESIDENTIAL	10,700
47-3	86	47-3:86	UPSTREAM	S-11-1199-20	44 DEER TRAIL ROAD	RESIDENTIAL	10,600
47-3	87	47-3:87	UPSTREAM	S-11-1207-50	610 SOUTH ROAD	RESIDENTIAL	8,800
47-3	88	47-3:88	UPSTREAM	S-11-1184-60	9 MILLSTONE ROAD	RESIDENTIAL	6,900
47-3	9	47-3:9	UPSTREAM	S-11-1194-80	13 MULBERRY DRIVE	RESIDENTIAL	5,700
47-3	90	47-3:90	UPSTREAM	S-11-1200-70	41 MILLSTONE ROAD	RESIDENTIAL	14,900
47-3	91	47-3:91	UPSTREAM	S-11-1195-20	51 MULBERRY DRIVE	RESIDENTIAL	8,800
47-3	92	47-3:92	UPSTREAM	S-11-1188-50	51 MILLSTONE ROAD	RESIDENTIAL	8,600
47-3	93	47-3:93	UPSTREAM	S-11-1186-20	67 MILLSTONE ROAD	RESIDENTIAL	12,200
47-3	94	47-3:94	UPSTREAM	S-11-1174-80	85 MILLSTONE ROAD	RESIDENTIAL	11,700
47-3	95	47-3:95	UPSTREAM	S-11-1174-90	99 MILLSTONE ROAD	RESIDENTIAL	7,300

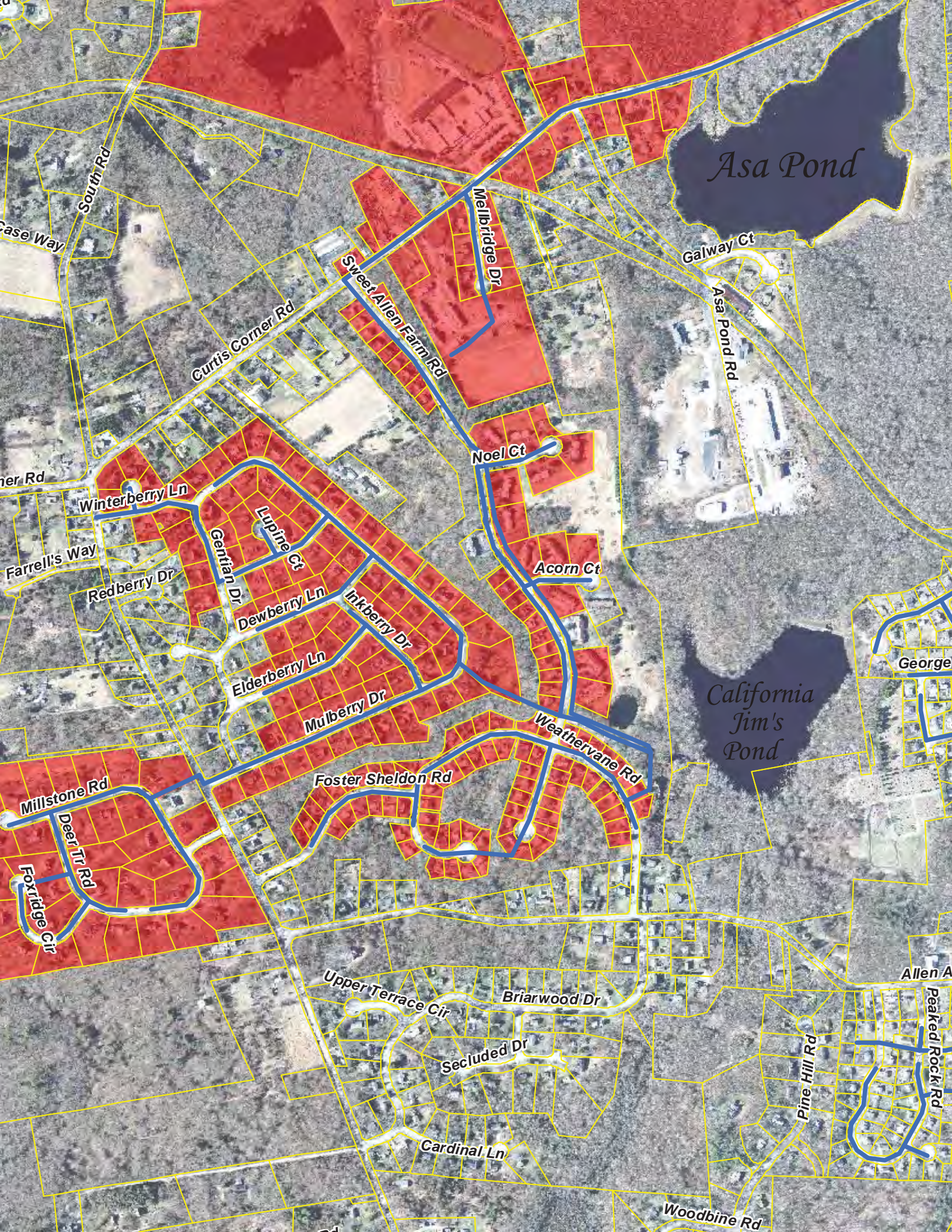
47-3	96	47-3:96	UPSTREAM	S-11-1177-40	119 MILLSTONE ROAD	RESIDENTIAL	8,300
47-3	97	47-3:97	UPSTREAM	S-11-1177-50	125 MILLSTONE ROAD	RESIDENTIAL	14,200
47-3	98	47-3:98	UPSTREAM	S-11-1174-50	126 MILLSTONE ROAD	RESIDENTIAL	10,000
47-3	99	47-3:99	UPSTREAM	S-11-1173-60	110 MILLSTONE ROAD	RESIDENTIAL	10,000
48-1	10	48-1:10	UPSTREAM	S-11-1013-00	239 SWEET ALLEN FARM ROAD	RESIDENTIAL	10,900
48-1	11	48-1:11	UPSTREAM	S-11-1011-00	231 SWEET ALLEN FARM ROAD	RESIDENTIAL	5,400
48-1	12	48-1:12	UPSTREAM	S-11-1012-50	221 SWEET ALLEN FARM ROAD	RESIDENTIAL	3,700
48-1	13	48-1:13	UPSTREAM	S-11-1012-00	211 SWEET ALLEN FARM ROAD	RESIDENTIAL	7,100
48-1	15	48-1:15	UPSTREAM	S-11-1135-00	222D SWEET ALLEN FARM ROAD	RESIDENTIAL	32,800
48-1	16	48-1:16	UPSTREAM	S-11-1046-50	8E ACORN COURT	RESIDENTIAL	102,400
48-1	17	48-1:17	UPSTREAM	S-11-1075-50	18F ACORN COURT	RESIDENTIAL	21,300
48-1	18	48-1:18	UPSTREAM	S-11-1151-40	30G ACORN COURT	RESIDENTIAL	30,000
48-1	24	48-1:24	UPSTREAM	S-11-1046-00	179 MULBERRY DRIVE	RESIDENTIAL	2,500
48-1	25	48-1:25	UPSTREAM	S-11-1050-00	189 MULBERRY DRIVE	RESIDENTIAL	13,700
48-1	26	48-1:26	UPSTREAM	S-11-1042-50	194 MULBERRY DRIVE	RESIDENTIAL	3,400
48-1	27	48-1:27	UPSTREAM	S-11-1107-00	195 SWEET ALLEN FARM ROAD	RESIDENTIAL	8,500
48-1	29	48-1:29	UPSTREAM	S-11-1125-00	160 SWEET ALLEN FARM ROAD	RESIDENTIAL	17,800
48-1	30	48-1:30	UPSTREAM	S-11-1124-00	138/48 SWEET ALLEN FARM ROAD	RESIDENTIAL	18,500
48-1	31	48-1:31	UPSTREAM	S-11-1111-00	21-31 NOEL COURT	RESIDENTIAL	20,100
48-1	32	48-1:32	UPSTREAM	S-11-1115-00	41-51 NOEL COURT	RESIDENTIAL	32,300
48-1	33	48-1:33	UPSTREAM	S-11-1252-90	46 NOEL COURT	RESIDENTIAL	2,500
48-1	34	48-1:34	UPSTREAM	S-11-1098-00	20-30 NOEL COURT	RESIDENTIAL	31,000
48-1	35	48-1:35	UPSTREAM	S-11-1107-50	120-30 SWEET ALLEN FARM ROAD	RESIDENTIAL	28,400
48-1	36	48-1:36	UPSTREAM	S-11-1121-50	201 SWEET ALLEN FARM ROAD	RESIDENTIAL	2,600
48-1	37	48-1:37	UPSTREAM	S-11-1151-90	79 SWEET ALLEN FARM ROAD	RESIDENTIAL	4,700
48-1	38	48-1:38	UPSTREAM	S-11-1152-00	67 SWEET ALLEN FARM ROAD	RESIDENTIAL	13,000
48-1	39	48-1:39	UPSTREAM	S-11-1173-90	203 MULBERRY DRIVE	RESIDENTIAL	11,900
48-1	40	48-1:40	UPSTREAM	S-11-1174-60	215 MULBERRY DRIVE	RESIDENTIAL	19,100
48-1	41	48-1:41	UPSTREAM	S-11-1174-70	212 MULBERRY DRIVE	RESIDENTIAL	7,800
48-1	8	48-1:8	UPSTREAM	S-13-0027-60	364 CURTIS CORNER ROAD	COMMERCIAL	491,300
48-1	9	48-1:9	UPSTREAM	S-11-1010-50	247 SWEET ALLEN FARM ROAD	RESIDENTIAL	5,200
48-4	100	48-4:100	UPSTREAM	S-11-1137-50	325 SWEET ALLEN FARM ROAD	RESIDENTIAL	8,100
48-4	101	48-4:101	UPSTREAM	S-11-1099-50	220 WEATHERVANE ROAD	RESIDENTIAL	9,900
48-4	102	48-4:102	UPSTREAM	S-11-1091-00	230 WEATHERVANE ROAD	RESIDENTIAL	4,400

48-4	103	48-4:103	UPSTREAM	S-11-1088-50	242 WEATHERVANE ROAD	RESIDENTIAL	11,800
48-4	104	48-4:104	UPSTREAM	S-11-1109-50	260 WEATHERVANE ROAD	RESIDENTIAL	25,700
48-4	105	48-4:105	UPSTREAM	S-11-1091-50	270 WEATHERVANE ROAD	RESIDENTIAL	8,800
48-4	106	48-4:106	UPSTREAM	S-11-1122-00	274 WEATHERVANE ROAD	RESIDENTIAL	3,000
48-4	107	48-4:107	UPSTREAM	S-11-1122-50	280 WEATHERVANE ROAD	RESIDENTIAL	8,700
48-4	108	48-4:108	UPSTREAM	S-11-1093-50	277 WEATHERVANE ROAD	RESIDENTIAL	6,200
48-4	109	48-4:109	UPSTREAM	S-11-1114-50	273 WEATHERVANE ROAD	RESIDENTIAL	8,500
48-4	110	48-4:110	UPSTREAM	S-11-1101-50	265 WEATHERVANE ROAD	RESIDENTIAL	4,900
48-4	111	48-4:111	UPSTREAM	S-11-1109-00	257 WEATHERVANE ROAD	RESIDENTIAL	11,200
48-4	43	48-4:43	UPSTREAM	S-11-1089-50	112 WEATHERVANE ROAD	RESIDENTIAL	7,200
48-4	44	48-4:44	UPSTREAM	S-11-1099-00	130 WEATHERVANE ROAD	RESIDENTIAL	6,000
48-4	45	48-4:45	UPSTREAM	S-11-1086-50	138 WEATHERVANE ROAD	RESIDENTIAL	300
48-4	46	48-4:46	UPSTREAM	S-11-1047-00	150 WEATHERVANE ROAD	RESIDENTIAL	4,700
48-4	47	48-4:47	UPSTREAM	S-11-1064-00	160 WEATHERVANE ROAD	RESIDENTIAL	9,700
48-4	48	48-4:48	UPSTREAM	S-11-1064-50	170 WEATHERVANE ROAD	RESIDENTIAL	10,100
48-4	49	48-4:49	UPSTREAM	S-11-1016-50	180 WEATHERVANE ROAD	RESIDENTIAL	9,700
48-4	50	48-4:50	UPSTREAM	S-11-1088-00	188 WEATHERVANE ROAD	RESIDENTIAL	4,400
48-4	51	48-4:51	UPSTREAM	S-11-1051-50	198 WEATHERVANE ROAD	RESIDENTIAL	7,000
48-4	52	48-4:52	UPSTREAM	S-11-1123-00	210 WEATHERVANE ROAD	RESIDENTIAL	8,500
48-4	53	48-4:53	UPSTREAM	S-11-1137-00	181 WEATHERVANE ROAD	RESIDENTIAL	9,300
48-4	54	48-4:54	UPSTREAM	S-11-1067-50	171 WEATHERVANE ROAD	RESIDENTIAL	5,000
48-4	55	48-4:55	UPSTREAM	S-11-1087-00	161 WEATHERVANE ROAD	RESIDENTIAL	16,900
48-4	56	48-4:56	UPSTREAM	S-11-1069-00	151 WEATHERVANE ROAD	RESIDENTIAL	16,200
48-4	57	48-4:57	UPSTREAM	S-11-1093-00	137 WEATHERVANE ROAD	RESIDENTIAL	9,900
48-4	58	48-4:58	UPSTREAM	S-11-1076-00	293 SWEET ALLEN FARM ROAD	RESIDENTIAL	9,000
48-4	59	48-4:59	UPSTREAM	S-11-1014-00	283 SWEET ALLEN FARM ROAD	RESIDENTIAL	6,200
48-4	60	48-4:60	UPSTREAM	S-11-1011-50	275 SWEET ALLEN FARM ROAD	RESIDENTIAL	6,600
48-4	61	48-4:61	UPSTREAM	S-11-1051-00	259 SWEET ALLEN FARM ROAD	RESIDENTIAL	6,500
48-4	62	48-4:62	UPSTREAM	S-11-1013-50	251 SWEET ALLEN FARM ROAD	RESIDENTIAL	11,300
48-4	63	48-4:63	UPSTREAM	S-11-1014-50	260B SWEET ALLEN FARM ROAD	RESIDENTIAL	33,100
48-4	64	48-4:64	UPSTREAM	S-11-1015-50	272A SWEET ALLEN FARM ROAD	RESIDENTIAL	21,000
48-4	65	48-4:65	UPSTREAM	S-11-1071-50	300 SWEET ALLEN FARM ROAD	RESIDENTIAL	3,900
48-4	68	48-4:68	UPSTREAM	S-11-1065-00	157 MULBERRY DRIVE	RESIDENTIAL	17,500
48-4	69	48-4:69	UPSTREAM	S-11-1092-50	145 MULBERRY DRIVE	RESIDENTIAL	15,000

48-4	70	48-4:70	UPSTREAM	S-11-1044-00	133 MULBERRY DRIVE	RESIDENTIAL	6,200
48-4	71	48-4:71	UPSTREAM	S-11-1027-50	144 MULBERRY DRIVE	RESIDENTIAL	5,300
48-4	72	48-4:72	UPSTREAM	S-11-1166-80	170 MULBERRY DRIVE	RESIDENTIAL	5,400
48-4	73	48-4:73	UPSTREAM	S-11-1131-50	169 MULBERRY DRIVE	RESIDENTIAL	7,200
48-4	74	48-4:74	UPSTREAM	S-11-1108-50	46 WEATHERVANE ROAD	RESIDENTIAL	9,700
48-4	75	48-4:75	UPSTREAM	S-11-1138-40	54 WEATHERVANE ROAD	RESIDENTIAL	6,500
48-4	76	48-4:76	UPSTREAM	S-11-1142-60	62 WEATHERVANE ROAD	RESIDENTIAL	11,200
48-4	77	48-4:77	UPSTREAM	S-11-1139-20	72 WEATHERVANE ROAD	RESIDENTIAL	3,700
48-4	78	48-4:78	UPSTREAM	S-11-0037-60	80 WEATHERVANE ROAD	RESIDENTIAL	8,800
48-4	79	48-4:79	UPSTREAM	S-11-1141-20	90 WEATHERVANE ROAD	RESIDENTIAL	4,400
48-4	80	48-4:80	UPSTREAM	S-11-1141-40	102 WEATHERVANE ROAD	RESIDENTIAL	10,200
48-4	81	48-4:81	UPSTREAM	S-11-1123-50	105 WEATHERVANE ROAD	RESIDENTIAL	15,100
48-4	82	48-4:82	UPSTREAM	S-11-1086-00	99 WEATHERVANE ROAD	RESIDENTIAL	5,600
48-4	83	48-4:83	UPSTREAM	S-11-1081-00	93 WEATHERVANE ROAD	RESIDENTIAL	7,400
48-4	84	48-4:84	UPSTREAM	S-11-1087-50	85 WEATHERVANE ROAD	RESIDENTIAL	9,200
48-4	85	48-4:85	UPSTREAM	S-11-1094-00	79 WEATHERVANE ROAD	RESIDENTIAL	6,400
48-4	86	48-4:86	UPSTREAM	S-11-1092-00	71 WEATHERVANE ROAD	RESIDENTIAL	14,000
48-4	87	48-4:87	UPSTREAM	S-11-1077-00	65 WEATHERVANE ROAD	RESIDENTIAL	15,700
48-4	88	48-4:88	UPSTREAM	S-11-1106-00	324 SWEET ALLEN FARM ROAD	RESIDENTIAL	6,000
48-4	89	48-4:89	UPSTREAM	S-11-1106-50	332 SWEET ALLEN FARM ROAD	RESIDENTIAL	12,000
48-4	90	48-4:90	UPSTREAM	S-11-1090-50	338 SWEET ALLEN FARM ROAD	RESIDENTIAL	9,300
48-4	91	48-4:91	UPSTREAM	S-11-1084-00	346 SWEET ALLEN FARM ROAD	RESIDENTIAL	10,400
48-4	92	48-4:92	UPSTREAM	S-11-1101-00	354 SWEET ALLEN FARM ROAD	RESIDENTIAL	6,100
48-4	93	48-4:93	UPSTREAM	S-11-1083-00	360 SWEET ALLEN FARM ROAD	RESIDENTIAL	5,600
48-4	94	48-4:94	UPSTREAM	S-11-1084-50	366 SWEET ALLEN FARM ROAD	RESIDENTIAL	5,100
48-4	95	48-4:95	UPSTREAM	S-11-1090-00	365 SWEET ALLEN FARM ROAD	RESIDENTIAL	8,200
48-4	96	48-4:96	UPSTREAM	S-11-1083-50	355 SWEET ALLEN FARM ROAD	RESIDENTIAL	4,300
48-4	97	48-4:97	UPSTREAM	S-11-1085-00	347 SWEET ALLEN FARM ROAD	RESIDENTIAL	7,300
48-4	98	48-4:98	UPSTREAM	S-11-1097-00	341 SWEET ALLEN FARM ROAD	RESIDENTIAL	9,700
48-4	99	48-4:99	UPSTREAM	S-11-1121-00	335 SWEET ALLEN FARM ROAD	RESIDENTIAL	7,500

Total Annual Cu. Ft. 3,274,090

Total Annual Gals 24,490,193



Asa Pond

California Jim's Pond

South Rd

Curtis Corner Rd

Street Allen Farm Rd

Wellbridge Dr

Galway Ct

Asa Pond Rd

Noel Ct

Winterberry Ln

Lupine Ct

Acorn Ct

Gentian Dr

Dewberry Ln

Inkberry Dr

Redberry Dr

Elderberry Ln

Mulberry Dr

Weathervane Rd

Millstone Rd

Foster Sheldon Rd

Deer Tr Rd

Foxridge Cir

Upper Terrace Cir

Briarwood Dr

Secluded Dr

Cardinal Ln

Pine Hill Rd

Woodbine Rd

Allen A

Peaked Rock Rd

George

Figure 3

Figure 2-1

Ratio of Extreme Flow to Average Daily Flow

