

CITY OF REDLANDS  
MASTER PLAN OF DRAINAGE (MPD)



**TECHNICAL APPENDIX B.3**

**Street Flooded Width Analysis (Excel)**

CITY OF REDLANDS MASTER PLAN OF DRAINAGE  
PROPOSED SYSTEM STREET FLOW ANALYSIS

D/S NODE	CALC'D HYDROLOGY Q (CFS)			EXISTING STORM DRAIN SIZE (IN)	EXISTING STORM DRAIN CAPACITY (CFS)	STREET FLOW Q WITH CAPACITY FLOW IN STORM DRAIN (CFS)			FLOWLINE ELEV (FT) NAVD 88	FLOW LENGTH	SLOPE	STREET	HALF STREET	ROADWAY TYPE	ROADWAY CLASS	STREET FLOW DEFICIENCY			EXISTING CONDITION PRIORITY	PIPE REPLACEMENT OPTION					
	10	25	100			10	25	100								10	25	100		10	25	100	FLOW IN STREET (100-YR)	STREET DEFICIENCY CHECK (100-YR)	FINAL PIPE SIZE (IN)
<b>FACILITY 4-5</b>																									
11201	10	13	18	54	65	0	0	0	1250.00	-	-	W Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	-	-	-	-	-	-	-	54			
11201-11202	20	25	34	54	65	0	0	0	1247.00	291.6	0.0103	W Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	-	34	OKAY	-	54	
11202-11203	34	42	58	72	65	0	0	0	1240.00	419.5	0.0167	W Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	-	58	OKAY	-	72	
11203-11204	58	73	101	72	259	0	0	0	1228.00	824.0	0.0146	W Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	-	101	OKAY	-	72	
11204-11205	77	96	132	72-84	259	0	0	0	1217.00	696.5	0.0158	W Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	-	132	OKAY	-	72-84	
11205-11216	77	96	132	72-84	259	0	0	0	1210.00	1299.6	0.0054	Alabama Street	-	COLLECTOR STREET - INDUSTRIAL	LOCAL	-	N/A	-	-	-	132	DEFICIENT	6	72-84	
11216-11228	162	204	279	96	329	0	0	0	1209.00	1455.7	0.0020	Alabama Street	-	COLLECTOR STREET - INDUSTRIAL	LOCAL	-	N/A	-	-	-	279	DEFICIENT	6	96	
11228-11229	233	293	402	72	329	0	0	73	1208.00	1471.8	0.0020	Alabama Street	-	COLLECTOR STREET - INDUSTRIAL	LOCAL	-	N/A	DEFICIENT	2	-	58	OKAY	90	96	
11229-11230	325	410	561	72	329	0	81	232	1200.00	1206.5	0.0066	Alabama Street	-	COLLECTOR STREET - INDUSTRIAL	LOCAL	-	N/A	DEFICIENT	2	-	133	DEFICIENT	90	84	
<b>TRIBUTARY TO FACILITY 4-5 (AT SAN BERNARDINO AVENUE)</b>																									
11211	5	6	8	-	-	5	6	8	1245.00	-	-	W. San Bernardino Avenue	-	MAJOR ARTERIALS - 4 LANES	-	-	-	-	-	-	-	-	-		
11211-11212	10	12	17	-	-	10	12	17	1243.00	163.5	0.0123	W. San Bernardino Avenue	-	MAJOR ARTERIALS - 4 LANES	ARTERIAL	-	-	-	-	-	-	17	OKAY	-	-
11212-11213	22	28	38	-	-	22	28	38	1238.00	291.1	0.0172	W. San Bernardino Avenue	-	MAJOR ARTERIALS - 4 LANES	ARTERIAL	-	-	-	-	-	-	38	OKAY	-	-
11213-11214	42	52	72	-	-	42	52	72	1231.00	426.5	0.0164	W. San Bernardino Avenue	-	MAJOR ARTERIALS - 4 LANES	ARTERIAL	DEFICIENT	-	-	-	-	19	OKAY	30	30	
11214-11215	79	99	136	-	-	79	99	136	1218.00	803.0	0.0162	W. San Bernardino Avenue	-	MAJOR ARTERIALS - 4 LANES	ARTERIAL	DEFICIENT	DEFICIENT	-	-	-	7	OKAY	42	42	
11215-11216	92	116	159	-	-	92	116	159	1210.00	711.0	0.0113	W. San Bernardino Avenue	-	MAJOR ARTERIALS - 4 LANES	ARTERIAL	DEFICIENT	DEFICIENT	-	-	-	6	OKAY	48	48	
<b>TRIBUTARY TO FACILITY 4-5 (AT PIONEER AVENUE)</b>																									
11221	16	20	27	-	-	16	-	27	1243.00	-	-	Pioneer Avenue	-	COLLECTOR STREET - COMMERCIAL	-	-	-	-	-	-	-	-	-		
11221-11222	21	26	36	-	-	21	26	36	1241.00	170.7	0.0117	Pioneer Avenue	-	COLLECTOR STREET - COMMERCIAL	LOCAL	-	N/A	-	-	-	-	36	OKAY	-	-
11222-11223	27	33	46	-	-	27	33	46	1239.00	199.0	0.0101	Pioneer Avenue	-	COLLECTOR STREET - COMMERCIAL	LOCAL	-	N/A	-	-	-	-	46	OKAY	-	-
11223-11224	35	44	60	-	-	35	44	60	1235.00	319.6	0.0125	Pioneer Avenue	-	COLLECTOR STREET - COMMERCIAL	LOCAL	-	N/A	-	-	-	-	60	OKAY	-	-
11224-11225	43	54	74	-	-	43	54	74	1230.00	327.1	0.0153	Pioneer Avenue	-	COLLECTOR STREET - COMMERCIAL	LOCAL	-	N/A	-	-	-	-	74	OKAY	-	-
11225-11226	52	65	89	-	-	52	65	89	1222.00	398.1	0.0201	Pioneer Avenue	-	COLLECTOR STREET - COMMERCIAL	LOCAL	-	N/A	-	-	-	-	89	OKAY	-	-
11226-11227	59	75	102	-	-	59	75	102	1215.00	348.5	0.0201	Pioneer Avenue	-	COLLECTOR STREET - COMMERCIAL	LOCAL	-	N/A	-	-	-	-	102	OKAY	-	-
11227-11228	63	79	108	-	-	63	79	108	1209.00	284.0	0.0211	Pioneer Avenue	-	COLLECTOR STREET - COMMERCIAL	LOCAL	-	N/A	-	-	-	-	108	OKAY	-	-
<b>FACILITY 4-4</b>																									
11303	14	17	24	-	0	14	17	24	1205.00	-	-	Pioneer Avenue	-	COLLECTOR STREET - COMMERCIAL	-	-	-	-	-	-	-	-	-		
11303-11304	40	50	68	-	0	40	50	68	1202.00	394.0	0.0076	Pioneer Avenue	-	COLLECTOR STREET - COMMERCIAL	LOCAL	-	N/A	-	-	-	-	68	OKAY	-	-
11304-11305	94	118	162	-	0	94	118	162	1190.00	882.2	0.0136	Pioneer Avenue	-	COLLECTOR STREET - COMMERCIAL	LOCAL	DEFICIENT	N/A	-	-	-	0	OKAY	48	48	
11305-11306	143	180	247	54-60	190	0	0	57	1176.00	1136.9	0.0123	Pioneer Avenue	-	COLLECTOR STREET - COMMERCIAL	LOCAL	-	N/A	-	-	-	247	DEFICIENT	48	54-60	
11306-11316	152	192	262	78-84	470	0	0	0	1175.00	1316.5	0.0020	Nevada Street	-	MINOR ARTERIALS - 2 LANES	ARTERIAL	-	N/A	-	-	-	262	DEFICIENT	48	78-84	
11316-11317	232	292	399	84	545	0	0	0	1160.00	1841.8	0.0081	Nevada Street	-	MINOR ARTERIALS - 2 LANES	ARTERIAL	-	N/A	-	-	-	399	DEFICIENT	48	84	
<b>TRIBUTARY TO FACILITY 4-4 (AT PALMETTO AVENUE)</b>																									
11312	10	13	18	-	-	10	13	18	1211.50	-	-	Palmetto Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	-	-	-	-	-	-	-	-	-		
11312-11313	22	28	39	-	-	22	28	39	1210.00	302.5	0.0050	Palmetto Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	-	-	3	10	OKAY	30	30
11313-11314	47	59	80	-	-	47	59	80	1200.00	564.5	0.0177	Palmetto Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	-	-	3	0	OKAY	36	36
11314-11315	79	100	136	-	-	79	100	136	1185.00	751.0	0.0200	Palmetto Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	-	-	3	0	OKAY	42	42
11315-11316	81	102	140	-	-	81	102	140	1175.00	753.5	0.0133	Palmetto Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	DEFICIENT	-	-	-	1	24	OKAY	42	42
<b>FACILITY 4-4A</b>																									
1196.44	9	11	15	48	-	9	11	15	1196.00	-	-	Nevada Street	-	MINOR ARTERIALS - 2 LANES	-	-	-	-	-	-	-	-	-		
1196.44-1173.44	9	11	15	48	33	0	0	0	1195.96	23	0.0020	Nevada Street	-	MINOR ARTERIALS - 2 LANES	ARTERIAL	-	N/A	-	-	-	-	15	OKAY	-	-
1173.44-253.46	9	11	15	48	33	0	0	0	1194.37	919.98	0.0020	Nevada Street	-	MINOR ARTERIALS - 2 LANES	ARTERIAL	-	N/A	-	-	-	-	15	OKAY	-	-
253.46-41.25	9	11	15	48	17	0	0	0	1194.00	212.21	0.0020	Nevada Street	-	MINOR ARTERIALS - 2 LANES	ARTERIAL	-	N/A	-	-	-	-	15	OKAY	-	-
<b>FACILITY 4-3E</b>																									
11401	10	12	16	-	-	10	12	16	1208.00	-	-	Almond Avenue	-	LOCAL STREET - RESIDENTIAL	-	-	-	-	-	-	-	-	-		
11401-11402	16	20	28	-	-	16	20	28	1206.00	156.5	0.0128	Almond Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	-	28	OKAY	-	-
11402-11403	30	38	52	-	-	30	38	52	1202.00	419.5	0.0095	Almond Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	-	52	OKAY	-	-
11403-11404	55	70	96	-	-	55	70	96	1193.00	817.0	0.0110	Almond Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	-	96	OKAY	-	-
11404-11405	94	118	162	-	-	94	118	162	1178.00	1414.5	0.0106	Almond Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	DEFICIENT	N/A	DEFICIENT	-	-	-	13	OKAY	48	48
11405-11406	138	174	239	-	-	138	174	239	1141.00	2238.5	0.0165	Almond Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	DEFICIENT	N/A	DEFICIENT	-	-	-	54	OKAY	48	48
11406-11416	150	189	259	102	320	0	0	0	1140.00	1299.5	0.0020	California Street	-	MAJOR ARTERIALS - 4 LANES	ARTERIAL	-	-	-	-	-	259	DEFICIENT	48	102	
11416-11426	271	341	467	108	579	0	0	0	1139.00	1300.5	0.0020	California Street	-	MAJOR ARTERIALS - 4 LANES	ARTERIAL	-	-	-	-	-	467	DEFICIENT	48	108	
11416-11436	334	420	576	108	672	0	0	0	1138.00	1323.1	0.0020	California Street	-	MAJOR ARTERIALS - 4 LANES	ARTERIAL	-	-	-	-	-	576	DEFICIENT	48	108	
11436-11437	393	494	677	114	866	0	0	0	1120.00	1425.9	0.0126	California Street	-	MAJOR ARTERIALS - 4 LANES	ARTERIAL	-	-	-	-	-	677	DEFICIENT	48	114	
<b>TRIBUTARY TO FACILITY 4-3E (AT PIONEER AVENUE)</b>																									
11411	6	7	9	-	-	6	7	9	1207.00	-	-	W. San Bernardino Avenue	-	MAJOR ARTERIALS - 6 LANES UNDIVIDED	-	-	-	-	-	-	-	-	-		
11411-11412	9	11	16	-	-	9	11	16	1205.00	156.0	0.0128	W. San Bernardino Avenue	-	MAJOR ARTERIALS - 6 LANES UNDIVIDED	ARTERIAL	-	-	-	-	-	-	16	OKAY	-	-
11412-11413	17	22	30	-	-	17	22	30	1200.00	426.5	0.0117	W. San Bernardino Avenue	-	MAJOR ARTERIALS - 6 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	-	-	3	5	OKAY	24	24
11413-11414	31	39	53	-	-	31	39	53	1190.00	803.0	0.0125	W. San Bernardino Avenue	-	MAJOR ARTERIALS - 6 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	-	-	3	7	OKAY	30	30



CITY OF REDLANDS MASTER PLAN OF DRAINAGE  
PROPOSED SYSTEM STREET FLOW ANALYSIS

D/S NODE	CALC'D HYDROLOGY Q (CFS)			EXISTING STORM DRAIN SIZE (IN)	EXISTING STORM DRAIN CAPACITY (CFS)	STREET FLOW Q WITH CAPACITY FLOW IN STORM DRAIN (CFS)			FLOWLINE ELEV (FT) NAVD 88	FLOW LENGTH	SLOPE	STREET	HALF STREET	ROADWAY TYPE	ROADWAY CLASS	STREET FLOW DEFICIENCY			EXISTING CONDITION PRIORITY	PIPE REPLACEMENT OPTION					
	10	25	100			10	25	100								10	25	100		100-YR	STREET DEFICIENCY CHECK (100-YR)	FINAL PIPE SIZE (IN)	WSPGW FINAL PIPE SIZE (IN)		
<b>FACILITY 4-3B</b>																									
1591.88	44	56	76	-	-	-	-	-	1133.00	-	-	Private	-	LOCAL STREET - RESIDENTIAL	-	-	-	-	-	-	-	-	-	-	
1591.88-698.17	44	56	76	42	50	0	6	26	1130.82	893.7	0.0024	Private	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	76	DEFICIENT	6	-	
698.17-360.46	49	62	84	48	75	0	0	9	1130.00	337.7	0.0024	Private	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	84	DEFICIENT	6	-	
<b>FACILITY 4-3D</b>																									
2607.21	2	3	4	-	-	2	3	4	1150.00	-	-	Private	-	LOCAL STREET - RESIDENTIAL	-	-	-	-	-	-	-	-	-	-	-
2607.21-2560	2	3	4	24	4	0	0	0	1149.92	47.21	0.0020	Private	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	4	OKAY	48	-	
2560-2289	5	6	8	24	9	0	0	0	1149.49	271.00	0.0020	Private	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	8	OKAY	48	-	
2289-2090.47	32	40	55	54	17	15	23	38	1149.17	198.53	0.0020	Private	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	55	OKAY	48	-	
2090.47-1888.25	42	52	72	54	27	15	25	45	1148.85	202.22	0.0020	Private	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	72	DEFICIENT	6	-	
1888.25-1688.3	49	62	85	54	37	12	25	48	1148.53	199.95	0.0020	Private	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	85	DEFICIENT	6	-	
1688.3-1488.3	57	72	98	54	48	9	24	50	1148.21	200.00	0.0020	Private	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	98	DEFICIENT	6	-	
1488.3-1022.67	65	81	112	60	96	0	0	16	1147.47	465.63	0.0020	Private	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	112	DEFICIENT	24	-	
1022.67-557.67	79	99	136	60	154	0	0	0	1146.72	465.00	0.0020	Private	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	136	DEFICIENT	30	-	
557.67-106.43	103	129	177	60	238	0	0	0	1146.00	451.24	0.0020	Private	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	177	DEFICIENT	42	-	
<b>FACILITY 4-3</b>																									
11502	11	14	19	-	-	11	14	19	1135.00	-	-	W. San Bernardino Avenue	-	MAJOR ARTERIALS - 6 LANES UNDIVIDED	-	-	-	-	-	-	-	-	-	-	-
11502-11503	30	38	53	-	-	30	38	53	1130.00	607.8	0.0082	W. San Bernardino Avenue	-	MAJOR ARTERIALS - 6 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	-	3	0	OKAY	36	30	
11503-11504	64	80	110	30	12	52	68	98	1115.00	1118.0	0.0134	W. San Bernardino Avenue	-	MAJOR ARTERIALS - 6 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	-	3	0	OKAY	42	30	
11504-11505	64	80	110	36	36	28	44	74	1114.00	1297.0	0.0092	Marigold Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	-	3	13	OKAY	42	36	
11505-11506	90	113	155	48	64	26	49	91	1102.00	1304.0	0.0092	Marigold Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	-	3	17	OKAY	48	48	
11506-11507	215	271	371	72-96	246	0	25	125	1090.00	1103.0	0.0109	Palmetto Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	-	-	371	DEFICIENT	48	72-96	
<b>FACILITY 4-3C</b>																									
6044.64	28	36	49	36	-	28	36	49	1157.00	-	-	Palmetto Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	-	-	-	-	-	-	-	-	-	-	-
6044.64--11505.3	28	36	49	36	-	28	36	49	1151.35	778.7	0.0073	Palmetto Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	-	3	0	OKAY	36	-	
6044.64--11505.3	28	36	49	54	-	28	36	49	1149.77	217.5	0.0073	Palmetto Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	-	3	0	OKAY	36	-	
11505.3-11506	28	36	49	54	-	28	36	49	1147.00	381.2	0.0073	Palmetto Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	-	3	0	OKAY	36	-	
11505.3-11506	28	36	49	54	-	28	36	49	1135.05	511.4	0.0234	Palmetto Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	-	3	0	OKAY	36	-	
11505.3-11506	28	36	49	54	-	28	36	49	1133.00	87.7	0.0234	Palmetto Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	-	3	0	OKAY	36	-	
<b>FACILITY 4-2</b>																									
11510	13	17	23	-	-	13	17	23	1138.00	-	-	Almond Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	-	-	-	-	-	-	-	-	-	-	-
11510-11511	13	17	23	-	-	13	17	23	1135.00	352.2	0.0085	Almond Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	-	23	OKAY	-	-	
11511-11512	36	45	61	102	471	0	0	0	1123.00	1059.9	0.0113	Almond Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	61	OKAY	-	102		
11512-11513	103	129	177	102	471	0	0	0	1106.00	1613.3	0.0105	Almond Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	177	OKAY	-	102		
11513-11514	197	248	339	108	620	0	0	0	1096.00	1097.9	0.0091	Almond Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	339	DEFICIENT	6	108		
11514-11515	254	320	438	108	620	0	0	0	1085.00	1031.1	0.0107	Almond Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	438	DEFICIENT	6	108		
11515-11516	284	357	489	108	620	0	0	0	1075.00	1032.3	0.0097	S. Mountain View Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	489	DEFICIENT	6	108		
11516-11517	302	381	521	108	971	0	0	0	1062.00	1261.3	0.0103	S. Mountain View Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	521	DEFICIENT	6	108		
11517-11518	351	442	605	108	971	0	0	0	1055.00	697.9	0.0100	S. Mountain View Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	605	DEFICIENT	6	108		
<b>FACILITY 4-2A</b>																									
11515.6	41	51	71	36	-	41	51	71	1105.00	-	-	S. Mountain View Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	-	-	-	-	-	-	-	-	-	36	
11515.6-11515.5	41	51	71	36	4	37	47	67	1104.27	35.1	0.0208	S. Mountain View Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	-	3	11	OKAY	30	36	
11515.5-11515.4	41	52	71	36	5	36	47	66	1101.17	149.5	0.0208	S. Mountain View Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	-	3	11	OKAY	30	36	
11515.4-11515.3	41	52	71	36	7	34	45	64	1097.02	200.0	0.0208	S. Mountain View Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	-	3	12	OKAY	30	36	
11515.3-11515.2	41	52	71	36	14	27	38	57	1092.86	200.0	0.0208	S. Mountain View Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	-	3	12	OKAY	30	36	
11515.2-11515.1	41	52	71	36	36	5	16	35	1087.32	267.3	0.0208	S. Mountain View Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	71	OKAY	30	36		
11515.1-11515	41	52	71	36	140	0	0	0	1085.00	111.6	0.0208	S. Mountain View Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	71	OKAY	30	36		
<b>FACILITY 4-17, 4-17A, 4-17B, 4-17C &amp; 4-17D</b>																									
21521	13	16	23	-	-	13	16	23	1233.00	-	-	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	-	-	-	-	-	-	-	-	-	-	-
21521-21522	28	35	48	-	-	28	35	48	1230.00	334.0	0.0090	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	-	3	9	OKAY	30	30	
21522-21523	55	69	94	-	-	55	69	94	1222.00	682.5	0.0117	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	-	3	22	OKAY	36	36	
21523-21524	93	117	160	-	-	93	117	160	1216.00	1343.0	0.0045	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	DEFICIENT	DEFICIENT	1	28	OKAY	54	42		
21524-21525	144	181	248	15-42	53	91	128	195	1192.00	1371.7	0.0175	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	DEFICIENT	DEFICIENT	1	57	OKAY	54	48-60		
21525-21526	192	242	331	-	-	192	242	331	1173.00	1371.7	0.0139	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	DEFICIENT	DEFICIENT	1	24	OKAY	60	72		
21526-21527	248	312	427	-	-	248	312	427	1155.00	1315.0	0.0137	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	DEFICIENT	DEFICIENT	1	33	OKAY	66	72		
21527-21528	272	343	470	24-51	123	149	220	347	1143.00	1250.5	0.0096	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	DEFICIENT	DEFICIENT	1	54	OKAY	72	72		
21528-21529	307	386	529	36-66	217	89	169	311	1125.00	1283.6	0.0140	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	DEFICIENT	DEFICIENT	1	130	OKAY	72	72		
21529-21530	307	387	530	66	147	160	239	382	1113.00	1241.5	0.0097	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	DEFICIENT	DEFICIENT	1	112	OKAY	72	72		
21530-21531	311	392	537	72	147	164	245	390	1083.00																



CITY OF REDLANDS MASTER PLAN OF DRAINAGE  
PROPOSED SYSTEM STREET FLOW ANALYSIS

D/S NODE	CALC'D HYDROLOGY Q (CFS)			EXISTING STORM DRAIN SIZE (IN)	EXISTING STORM DRAIN CAPACITY (CFS)	STREET FLOW Q WITH CAPACITY FLOW IN STORM DRAIN (CFS)			FLOWLINE ELEV (FT) NAVD 88	FLOW LENGTH	SLOPE	STREET	HALF STREET	ROADWAY TYPE	ROADWAY CLASS	STREET FLOW DEFICIENCY			EXISTING CONDITION PRIORITY	PIPE REPLACEMENT OPTION			
	10	25	100			10	25	100								10	25	100		100-YR	STREET DEFICIENCY CHECK (100-YR)	FINAL PIPE SIZE (IN)	WSPGW FINAL PIPE SIZE (IN)
<b>TRIBUTARY TO FACILITY 4-19</b>																							
21061	12	15	20	-	-	12	15	20	1267.00	-	-	W. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	-	-	-	-	-	-	-	-	-
21061-21062	22	27	37	-	-	22	27	37	1266.00	371.0	0.0027	W. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	37	OKAY	-
21062-21063	28	35	48	-	-	28	35	48	1265.00	228.5	0.0044	W. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	48	OKAY	-
21063-21064	36	46	63	-	-	36	46	63	1258.00	323.6	0.0216	W. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	63	OKAY	-
21064-21065	43	55	76	-	-	43	55	76	1254.00	294.5	0.0136	W. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	76	OKAY	-
21065-21066	44	56	79	-	-	44	56	79	1230.00	1452.0	0.0165	W. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	79	OKAY	-
21066-21067	44	56	79	-	-	44	56	79	1220.00	858.5	0.0116	W. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	79	OKAY	-
<b>FACILITY 4-19A</b>																							
RBF1261.64	16	20	27	-	-	16	20	27	1255.00	-	-	W. Park Avenue	-	COLLECTOR STREET - COMMERCIAL	-	-	-	-	-	-	-	-	-
1261.64-988.29	16	20	27	30	18	0	2	9	1250.67	273.4	0.0159	W. Park Avenue	-	COLLECTOR STREET - COMMERCIAL	LOCAL	-	N/A	-	-	-	27	OKAY	60
988.29-504.86	32	40	55	36	20	12	20	35	1243.00	483.4	0.0159	W. Park Avenue	-	COLLECTOR STREET - COMMERCIAL	LOCAL	-	N/A	-	-	-	55	OKAY	66
504.86-240.18	48	60	82	36	30	18	30	52	1238.81	264.7	0.0159	W. Park Avenue	-	COLLECTOR STREET - COMMERCIAL	LOCAL	-	N/A	-	-	-	82	OKAY	72
240.18-0	64	80	110	36	40	24	40	70	1235.00	240.2	0.0159	W. Park Avenue	-	COLLECTOR STREET - COMMERCIAL	LOCAL	-	N/A	-	-	-	110	OKAY	72
<b>FACILITY 4-18</b>																							
21431	17	21	28	-	-	17	21	28	1214.00	-	-	Redlands Boulevard	-	MAJOR ARTERIALS - 4 LANES	-	-	-	-	-	-	-	-	-
21431-21432	33	41	53	-	-	33	41	53	1209.00	286.0	0.0175	Redlands Boulevard	-	MAJOR ARTERIALS - 4 LANES	ARTERIAL	DEFICIENT	-	-	3	0	OKAY	30	-
21432-21433	45	56	74	-	-	45	56	74	1206.00	254.0	0.0118	Redlands Boulevard	-	MAJOR ARTERIALS - 4 LANES	ARTERIAL	DEFICIENT	-	-	3	1	OKAY	36	-
21433-21434	61	76	101	36	23	38	53	78	1202.00	349.0	0.0115	Redlands Boulevard	-	MAJOR ARTERIALS - 4 LANES	ARTERIAL	DEFICIENT	-	-	3	0	OKAY	42	-
21434-21435	87	108	144	36	34	54	75	111	1195.00	602.0	0.0116	Redlands Boulevard	-	MAJOR ARTERIALS - 4 LANES	ARTERIAL	DEFICIENT	-	-	3	35	OKAY	42	-
21435-21436	123	154	206	54	139	0	15	67	1183.00	889.5	0.0135	Redlands Boulevard	-	MAJOR ARTERIALS - 4 LANES	ARTERIAL	-	-	-	-	206	OKAY	42	-
21436-21437	158	198	265	60	198	0	0	67	1172.00	717.0	0.0153	Redlands Boulevard	-	MAJOR ARTERIALS - 4 LANES	ARTERIAL	-	-	-	-	265	DEFICIENT	42	-
21437-21438	209	263	352	60	263	0	0	90	1157.00	1061.0	0.0141	Redlands Boulevard	-	MAJOR ARTERIALS - 4 LANES	ARTERIAL	-	-	-	-	352	DEFICIENT	42	-
21438-21439	241	303	404	30	263	0	40	142	1143.00	895.0	0.0156	Redlands Boulevard	-	MAJOR ARTERIALS - 4 LANES	ARTERIAL	-	-	-	-	404	DEFICIENT	42	-
<b>FACILITY 4-7</b>																							
11121	13	17	23	-	-	13	17	23	1390.00	-	-	Brockton Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	-	-	-	-	-	-	-
11121-11122	22	27	37	-	-	22	27	37	1388.00	185.9	0.0108	Brockton Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	37	OKAY	-
11122-11123	30	38	52	-	-	30	38	52	1385.00	198.6	0.0151	Brockton Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	52	OKAY	-
11123-11124	42	53	73	-	-	42	53	73	1380.00	331.3	0.0151	Brockton Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	73	OKAY	-
11124-11125	54	68	94	-	-	54	68	94	1370.00	346.0	0.0289	Brockton Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	94	OKAY	-
11125-11126	72	91	124	-	-	72	91	124	1359.00	622.5	0.0177	Brockton Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	124	OKAY	-
11126-11127	80	100	138	-	-	80	100	138	1355.00	316.5	0.0126	Brockton Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	DEFICIENT	N/A	-	1	24	OKAY	42	42
11127-11128	146	184	252	-	-	146	184	252	1352.00	315.5	0.0095	Brockton Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	DEFICIENT	N/A	DEFICIENT	1	59	OKAY	54	54
11128-11129	152	191	262	-	-	152	191	262	1345.00	664.4	0.0105	Orange Street	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	DEFICIENT	N/A	DEFICIENT	1	60	OKAY	54	54
11129-11130	157	197	270	-	-	157	197	270	1335.00	675.5	0.0148	W. Western Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	DEFICIENT	N/A	DEFICIENT	1	31	OKAY	54	54
11130-11131	162	204	280	-	-	162	204	280	1320.00	1010.0	0.0149	W. Western Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	DEFICIENT	N/A	DEFICIENT	1	40	OKAY	54	54
11131-11132	245	309	423	-	-	245	309	423	1311.00	1001.0	0.0090	W. Western Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	DEFICIENT	N/A	DEFICIENT	1	104	OKAY	66	66
11132-11152	245	309	423	66	23	222	286	400	1300.00	662.7	0.0166	Texas Street	-	MINOR ARTERIALS - 2 LANES	ARTERIAL	DEFICIENT	N/A	DEFICIENT	1	87	OKAY	66	72
11152-11153	369	464	636	18-66	214	155	250	422	1258.00	2580.1	0.0163	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	DEFICIENT	DEFICIENT	1	94	OKAY	72	72-84
<b>FACILITY 4-7A</b>																							
11141	15	18	25	-	-	15	18	25	1388.00	-	-	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	-	-	-	-
11141-11142	25	32	44	-	-	25	32	44	1385.00	156.5	0.0192	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	3	0	OKAY	30	30
11142-11143	36	45	62	-	-	36	45	62	1380.00	234.5	0.0213	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	3	2	OKAY	30	30
11143-11144	45	57	78	-	-	45	57	78	1375.00	220.1	0.0227	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	3	16	OKAY	30	30
11144-11145	59	75	102	-	-	59	75	102	1370.00	313.0	0.0160	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	3	18	OKAY	36	36
11145-11146	69	86	118	-	-	69	86	118	1365.00	291.5	0.0172	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	3	31	OKAY	36	36
11146-11147	72	90	123	-	-	72	90	123	1357.00	397.5	0.0201	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	3	29	OKAY	36	36
11147-11148	73	92	126	-	-	73	92	126	1353.00	412.5	0.0097	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	DEFICIENT	1	27	OKAY	42	42	
11148-11149	77	97	132	-	-	77	97	132	1350.00	248.6	0.0121	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	DEFICIENT	1	21	OKAY	42	42	
11149-11150	83	104	143	-	-	83	104	143	1340.00	668.0	0.0150	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	DEFICIENT	1	20	OKAY	42	42	
11150-11151	93	117	161	-	-	93	117	161	1318.00	1208.5	0.0182	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	DEFICIENT	1	25	OKAY	42	42	
11151-11152	100	126	173	-	-	100	126	173	1300.00	810.0	0.0222	W. Lugonia Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	DEFICIENT	1	22	OKAY	42	42	
<b>TRIBUTARY TO SD FACILITY JUST EAST OF 210 FREEWAY</b>																							
11101	13	17	23	-	-	13	17	23	1341.00	-	-	W. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	-	-	-	-	-	-	-	-	-
11101-11102	24	30	41	-	-	24	30	41	1332.00	700.5	0.0128	W. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	41	OKAY	-
11102-11103	39	49	67	-	-	39	49	67	1310.00	1301.5	0.0169	W. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	67	OKAY	-
11103-11104	45	57	78	-	-	45	57	78	1302.00	333.8	0.0240	W. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	78	OKAY	-
11104-11105	49	61	84	-	-	49	61	84	1300.00	177.2	0.0113	W. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	84	OKAY	-
11105-11106	52	65	89	-	-	52	65	89	1298.00	169.0	0.0118	W. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	89	OKAY	-
11106-11107	57	71	98	-	-	57	71	98	1296.00	338.8	0.0059	W. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	DEFICIENT	N/A	-	1	20	OKAY	42	42
1110																							







CITY OF REDLANDS MASTER PLAN OF DRAINAGE  
PROPOSED SYSTEM STREET FLOW ANALYSIS

D/S NODE	CALC'D HYDROLOGY Q (CFS)			EXISTING STORM DRAIN SIZE (IN)	EXISTING STORM DRAIN CAPACITY (CFS)	STREET FLOW Q WITH CAPACITY FLOW IN STORM DRAIN (CFS)			FLOWLINE ELEV (FT) NAVD 88	FLOW LENGTH	SLOPE	STREET	HALF STREET	ROADWAY TYPE	ROADWAY CLASS	STREET FLOW DEFICIENCY			EXISTING CONDITION PRIORITY	PIPE REPLACEMENT OPTION			
	10	25	100			10	25	100								10	25	100		100-YR	STREET DEFICIENCY CHECK (100-YR)	FINAL PIPE SIZE (IN)	WSPGW FINAL PIPE SIZE (IN)
<b>FACILITY TRIBUTARY TO CHURCH STREET SD (SOUTH)</b>																							
20530	0	0	0	-	-	0	0	0	1480.00	-	-	Clock Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	-	-	-	-	-	-	-
20530-20531	6	8	11	-	-	6	8	11	1470.00	818.9	0.0122	Clock Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	11	OKAY	-	-
20531-20532	22	31	45	-	-	22	31	45	1465.00	771.1	0.0065	North Grove Street	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	45	OKAY	-	-
20532-20533	22	31	45	-	-	22	31	45	1455.00	1024.1	0.0098	Brockton Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	45	OKAY	-	-
20533-20534	41	67	100	-	-	41	67	100	1430.00	1374.0	0.0182	Brockton Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	100	OKAY	-	-
20534-20535	55	90	137	-	600	0	0	0	1396.00	1929.5	0.0176	Brockton Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	137	OKAY	-	-
20535-20536	62	90	137	-	600	0	0	0	1395.00	1300.6	0.0020	Church Street	-	MINOR ARTERIALS - 2 LANES	ARTERIAL	DEFICIENT	N/A	DEFICIENT	2	137	DEFICIENT	6	-
20536-20537	262	379	580	-	600	0	0	0	1394.50	877.0	0.0020	Church Street	-	MINOR ARTERIALS - 2 LANES	ARTERIAL	DEFICIENT	N/A	DEFICIENT	2	580	DEFICIENT	6	-
<b>FACILITY TRIBUTARY TO JUDSON STREET SD</b>																							
20501	5	6	8	-	-	5	6	8	1591.00	-	-	Brockton Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	-	-	-	-	-	-	-
20501-20502	9	11	15	-	-	9	11	15	1587.00	262.7	0.0152	Brockton Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	15	OKAY	-	-
20502-20503	13	17	24	-	-	13	17	24	1580.00	296.7	0.0236	Brockton Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	24	OKAY	-	-
20503-20504	20	26	35	-	-	20	26	35	1570.00	416.0	0.0240	Brockton Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	35	OKAY	-	-
20504-20505	25	32	44	-	-	25	32	44	1560.00	387.5	0.0258	Brockton Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	44	OKAY	-	-
20505-20506	35	47	66	-	-	35	47	66	1535.00	1240.5	0.0202	Brockton Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	66	OKAY	-	-
20506-20507	41	57	82	-	-	41	57	82	1518.00	947.0	0.0180	Brockton Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	82	OKAY	-	-
20507-20508	44	63	94	-	-	44	63	94	1490.50	1523.1	0.0181	Brockton Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	94	OKAY	-	-
20508-20509	44	63	94	-	-	44	63	94	1490.00	621.2	0.0020	Judson Street	-	MINOR ARTERIALS - 2 LANES	ARTERIAL	DEFICIENT	N/A	DEFICIENT	2	29	OKAY	48	-
20509-20518	44	63	94	-	-	44	63	94	1489.50	654.2	0.0020	Judson Street	-	MINOR ARTERIALS - 2 LANES	ARTERIAL	DEFICIENT	N/A	DEFICIENT	2	29	OKAY	48	-
<b>FACILITY 4-23</b>																							
20759	142	200	280	-	-	142	200	280	1875.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20759-20760	174	253	358	-	-	174	253	358	1871.00	178.2	0.0225	-	-	-	-	-	-	-	-	-	-	-	-
20759-20760	174	253	358	-	-	174	253	358	1868.76	99.4	0.0225	-	-	-	-	-	-	-	-	-	-	-	-
20759-20760	174	253	358	-	-	174	253	358	1856.95	525.5	0.0225	-	-	-	-	-	-	-	-	-	-	-	-
20759-20760	174	253	358	-	-	174	253	358	1855.36	70.7	0.0225	-	-	-	-	-	-	-	-	-	-	-	-
20759-20760	174	253	358	-	-	174	253	358	1850.25	227.6	0.0225	-	-	-	-	-	-	-	-	-	-	-	-
20759-20760	174	253	358	-	-	174	253	358	1849.66	25.9	0.0225	-	-	-	-	-	-	-	-	-	-	-	-
20759-20760	174	253	358	-	-	174	253	358	1848.24	63.5	0.0225	-	-	-	-	-	-	-	-	-	-	-	-
20759-20760	174	253	358	-	-	174	253	358	1845.00	144.0	0.0225	-	-	-	-	-	-	-	-	-	-	-	-
20760-20761	211	309	439	-	-	211	309	439	1811.79	929.6	0.0357	-	-	-	-	-	-	-	-	-	-	-	-
20760-20761	211	309	439	-	-	211	309	439	1782.79	811.7	0.0357	-	-	-	-	-	-	-	-	-	-	-	-
20760-20761	211	309	439	-	-	211	309	439	1770.00	357.9	0.0357	-	-	-	-	-	-	-	-	-	-	-	-
20761-20762	226	332	470	48	247	0	85	223	1758.69	589.7	0.0192	Ford Street	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	470	DEFICIENT	6	-
20761-20762	226	332	470	48	247	0	85	223	1753.38	277.2	0.0192	Ford Street	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	470	DEFICIENT	6	-
20761-20762	226	332	470	60	247	0	85	223	1749.63	195.7	0.0192	Ford Street	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	470	DEFICIENT	6	-
20761-20762	226	332	470	48	247	0	85	223	1740.00	502.2	0.0192	Ford Street	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	470	DEFICIENT	6	-
20762-20763	226	332	470	48	247	0	85	223	1703.29	551.6	0.0666	Ford Street	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	470	OKAY	6	-
20762-20763	339	372	701	54	247	92	125	453	1689.99	199.7	0.0666	Ford Street	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	3	192	OKAY	54	-
20762-20763	339	372	701	54	247	92	125	453	1621.26	1032.6	0.0666	Ford Street	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	3	192	OKAY	54	-
20762-20763	339	372	701	54	247	92	125	453	1600.00	319.5	0.0666	Ford Street	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	3	192	OKAY	54	-
<b>FACILITY 4-27</b>																							
20511	6	7	10	-	-	-	-	-	1590.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20511-20512	12	15	21	60	180	0	0	0	1580.00	249.4	0.0401	E. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	21	OKAY	-	-
20512-20513	21	27	38	60	240	0	0	0	1575.00	306.5	0.0163	E. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	38	OKAY	-	-
20513-20514	34	45	61	60	240	0	0	0	1570.00	416.5	0.0120	E. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	61	OKAY	-	-
20514-20515	46	59	82	60	315	0	0	0	1565.00	392.5	0.0127	E. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	82	OKAY	-	-
20515-20516	76	99	140	60	315	0	0	0	1530.00	1215.6	0.0288	E. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	140	OKAY	-	-
20516-20517	92	125	180	60	315	0	0	0	1510.00	1115.0	0.0179	E. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	180	OKAY	-	-
20518-20518	105	147	218	66	366	0	0	0	1489.50	1340.0	0.0153	E. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	218	DEFICIENT	6	-
20518-20519	171	243	372	66	417	0	0	0	1440.00	2632.6	0.0188	E. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	372	DEFICIENT	6	-
20519-20520	200	289	445	72	457	0	0	0	1410.00	1552.5	0.0193	E. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	445	DEFICIENT	6	-
20520-20536	200	289	445	72	457	0	0	0	1395.00	1041.5	0.0144	E. Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	445	DEFICIENT	6	-
<b>FACILITY 4-30A</b>																							
20371	53	85	136	60	225	0	0	0	1845.00	-	-	5th Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	-	-	-	-	-	-	-
20371-20372	56	97	162	60	225	0	0	0	1825.00	580.5	0.0345	5th Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	162	OKAY	-	-
20372-20373	63	121	212	60	225	0	0	0	1770.00	1298.8	0.0423	Wabash Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	212	OKAY	-	-
20373-20374	63	136	260	54	267	0	0	0	1720.00	1333.5	0.0375	Wabash Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	260	OKAY	-	-
20374-20375	64	148	301	60	309	0	0	0	1660.00	1282.2	0.0468	Wabash Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	301	OKAY	-	-
20375-20376	73	169	351	60	402	0	0	0	1600.00	1887.1	0.0318	Wabash Avenue	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	-	-	-	-	351	DEFICIENT	6	-
<b>FACILITY TRIBUTARY TO HIGHLAND AVENUE SD</b>																							
20401	16	20	28	-	-	16	20	28	1670.00	-	-	Shirley Lane	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	-						

CITY OF REDLANDS MASTER PLAN OF DRAINAGE  
PROPOSED SYSTEM STREET FLOW ANALYSIS

D/S NODE	CALC'D HYDROLOGY Q (CFS)			EXISTING STORM DRAIN SIZE (IN)	EXISTING STORM DRAIN CAPACITY (CFS)	STREET FLOW Q WITH CAPACITY FLOW IN STORM DRAIN (CFS)			FLOWLINE ELEV (FT) NAVD 88	FLOW LENGTH	SLOPE	STREET	HALF STREET	ROADWAY TYPE	ROADWAY CLASS	STREET FLOW DEFICIENCY			EXISTING CONDITION PRIORITY	PIPE REPLACEMENT OPTION				
	10	25	100			10	25	100								10	25	100		100-YR	STREET DEFICIENCY CHECK (100-YR)	FINAL PIPE SIZE (IN)	WSPGW FINAL PIPE SIZE (IN)	
<b>FACILITY 4-25B</b>																								
20901	17	21	29	-	-	17	21	29	1798.00	-	-	Marion Road	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	-	-	-	-	-	-	-	-
20901-20902	23	29	40	-	-	23	29	40	1770.00	427.7	0.0655	Marion Road	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	40	OKAY	-	-
20902-20903	27	34	49	-	-	27	34	49	1758.00	465.3	0.0258	Marion Road	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	49	OKAY	-	-
20903-20904	48	63	91	-	-	48	63	91	1750.00	486.2	0.0165	Marion Road	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	91	OKAY	-	-
10904-20905	69	92	133	-	-	69	92	133	1715.00	660.5	0.0530	Marion Road	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	133	OKAY	-	-
20905-20906	74	101	149	-	-	74	101	149	1670.00	1223.7	0.0368	Marion Road	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	149	OKAY	-	-
20906-20920	78	108	170	-	-	78	108	170	1600.00	1513.0	0.0463	Marion Road	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	170	OKAY	-	-
<b>FACILITY TRIBUTARY TO 4-25B (AT 5TH AVENUE)</b>																								
20915	30	40	59	-	-	30	40	59	1720.00	-	-	S. La Salle Street	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	-	-	-	-	-	-	-	-
20915-20916	38	55	86	-	-	38	55	86	1700.00	684.0	0.0292	S. La Salle Street	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	86	OKAY	-	-
20916-20917	48	70	110	-	-	48	70	110	1672.00	576.8	0.0485	S. La Salle Street	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	110	OKAY	-	-
20917-20918	56	82	130	-	-	56	82	130	1655.00	727.0	0.0234	5th Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	130	OKAY	-	-
20918-20919	58	86	138	-	-	58	86	138	1640.00	577.5	0.0260	5th Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	138	OKAY	-	-
20919-20920	71	110	187	-	-	71	110	187	1600.00	1346.5	0.0297	5th Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	187	OKAY	-	-
<b>FACILITY TRIBUTARY TO REDLANDS BLVD SD AT EUREKA STREET</b>																								
21021	9	11	14	-	-	9	11	14	1440.00	-	-	La Verne Street	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	-	-	-	-	-	-	-	-
21021-21022	15	19	25	-	-	15	19	25	1433.00	186.4	0.0376	La Verne Street	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	25	OKAY	-	-
21022-21023	25	31	42	-	-	25	31	42	1416.00	274.3	0.0620	La Verne Street	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	42	OKAY	-	-
21023-21024	33	41	56	-	-	33	41	56	1402.00	250.4	0.0559	La Verne Street	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	56	OKAY	-	-
21024-21025	40	50	68	-	-	40	50	68	1390.00	390.6	0.0307	La Verne Street	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	68	OKAY	-	-
21025-21026	42	53	72	-	-	42	53	72	1385.00	357.0	0.0140	Fern Street	-	MINOR ARTERIALS - 4 LANES UNDIVIDED	ARTERIAL	DEFICIENT	-	-	3	0	OKAY	36	-	
21026-21027	47	59	81	-	-	47	59	81	1374.00	355.4	0.0310	Cajon Street	-	COLLECTOR STREET - INDUSTRIAL	LOCAL	-	N/A	-	-	-	81	OKAY	36	-
21027-21028	51	64	88	-	-	51	64	88	1368.00	309.7	0.0194	Cajon Street	-	COLLECTOR STREET - INDUSTRIAL	LOCAL	-	N/A	-	-	-	88	OKAY	36	-
21028-21029	54	69	95	-	-	54	69	95	1363.00	301.0	0.0166	Cajon Street	-	COLLECTOR STREET - INDUSTRIAL	LOCAL	-	N/A	-	-	-	95	OKAY	36	-
21029-21030	89	114	159	-	-	89	114	159	1350.00	360.4	0.0361	Cajon Street	-	COLLECTOR STREET - INDUSTRIAL	LOCAL	-	N/A	-	-	-	159	OKAY	36	36
21030-21031	89	114	159	p	-	89	114	159	1340.00	474.3	0.0211	Cajon Street	-	COLLECTOR STREET - INDUSTRIAL	LOCAL	-	N/A	-	-	-	159	OKAY	36	36
21031-21032	94	120	168	p	-	94	120	168	1332.00	772.5	0.0104	W. Vine Street	-	LOCAL STREET - RESIDENTIAL	LOCAL	DEFICIENT	N/A	DEFICIENT	1	21	OKAY	48	48	
21032-21043	162	211	301	p	-	162	211	301	1327.00	353.6	0.0141	S. Eureka Street	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	DEFICIENT	N/A	DEFICIENT	1	67	OKAY	54	54	
<b>FACILITY TRIBUTARY TO EUREKA SD AT CITRUS AVENUE</b>																								
21041	19	24	31	-	-	19	24	31	1350.00	-	-	Brookside Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	-	-	-	-	-	-	-	-
21041-21042	32	39	53	-	-	32	39	53	1341.00	642.5	0.0140	Brookside Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	53	OKAY	-	-
21042-21043	32	39	53	p	-	32	39	53	1327.00	896.7	0.0156	Brookside Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	53	OKAY	-	-
21043-21044	198	257	365	p	-	198	257	365	1318.00	665.5	0.0135	-	-	-	-	-	-	-	-	-	-	-	-	
<b>FACILITY TRIBUTARY TO ZANJA AT LINCOLN STREET</b>																								
20441	8	10	14	-	-	8	10	14	1706.00	-	-	Agate Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	-	-	-	-	-	-	-	-
20441-20442	11	15	21	-	-	11	15	21	1705.00	478.4	0.0021	Agate Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	21	OKAY	72	-
20442-20443	17	22	32	-	-	17	22	32	1704.00	220.8	0.0045	Agate Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	32	OKAY	-	-
20443-20444	22	30	43	-	-	22	30	43	1702.00	263.5	0.0076	Agate Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	43	OKAY	-	-
20444-20445	30	41	59	-	-	30	41	59	1701.00	498.4	0.0020	Agate Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	59	OKAY	72	-
20445-20446	36	51	77	-	-	36	51	77	1700.00	790.4	0.0020	Agate Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	DEFICIENT	N/A	DEFICIENT	1	12	OKAY	48	-	
20446-20447	50	69	115	-	-	50	69	115	1670.00	962.0	0.0312	Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	115	OKAY	-	-
20447-20448	66	95	166	-	-	66	95	166	1645.00	877.5	0.0285	Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	166	OKAY	72	-
20448-20449	77	113	200	-	-	77	113	200	1625.00	820.3	0.0244	Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	200	OKAY	48	-
20449-20450	251	345	519	-	-	251	345	519	1595.00	1304.0	0.0230	Colton Avenue	-	COLLECTOR STREET - RESIDENTIAL	LOCAL	DEFICIENT	N/A	DEFICIENT	1	123	OKAY	60	-	
20450-20451	251	345	536	-	-	251	345	536	1530.00	2921.9	0.0222	CHANNEL	-	N/A	n/a	-	-	-	-	-	-	-	-	
20451-20452	251	345	536	-	-	251	345	536	1510.00	1273.1	0.0157	CHANNEL	-	N/A	n/a	-	-	-	-	-	-	-	-	
20422	23	29	38	-	-	23	29	38	1725.00	-	-	Mentone Blvd	-	COLLECTOR STREET - INDUSTRIAL	LOCAL	-	-	-	-	-	-	-	-	-
20422-20423	33	41	55	-	-	33	41	55	1712.00	299.2	0.0435	Mentone Blvd	-	COLLECTOR STREET - INDUSTRIAL	LOCAL	-	N/A	-	-	-	55	OKAY	-	-
20423-20424	40	50	66	-	-	40	50	66	1703.00	258.6	0.0348	Mentone Blvd	-	COLLECTOR STREET - INDUSTRIAL	LOCAL	-	N/A	-	-	-	66	OKAY	-	-
20424-20425	43	54	72	-	-	43	54	72	1696.00	197.6	0.0354	Mentone Blvd	-	COLLECTOR STREET - INDUSTRIAL	LOCAL	-	N/A	-	-	-	72	OKAY	-	-
20429	75	98	137	-	-	75	98	137	1664.00	-	-	Nice Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	-	-	-	-	-	-	-	-
20429-20430	104	138	201	-	-	104	138	201	1628.00	1363.1	0.0264	Nice Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	-	N/A	-	-	-	201	OKAY	-	-
20430-20449	104	138	201	-	-	104	138	201	1625.00	1350.2	0.0022	Nice Avenue	-	LOCAL STREET - RESIDENTIAL	LOCAL	DEFICIENT	N/A	DEFICIENT	1	42	OKAY	66	-	

Notes:  
1. Flow length is from the hydrology analysis.  
2. 'Half Street' refers to a street which has a center divider (not just a crown).

Irregular Section (ST Typical Sections.fm8) Report

Label	Roughness Coefficient	Channel Slope (ft/ft)	Water Surface Elevation (ft)	Discharge (ft <sup>3</sup> /s)	Hydraulic Radius (ft)	Top Width (ft)	Normal Depth (ft)	Critical Depth (ft)	Velocity (ft/s)	Froude Number
Local Street-Hillside (1)	0.030	0.00200	5.5000	21.84	0.33	55.5000	3.00	2.37	1.07	0.31
Local Street-Hillside (1)-100yr	0.015	0.00200	5.5000	23.80	0.26	51.0000	0.82	0.72	1.75	0.60
Local Street-Hillside (2)	0.019	0.00200	3.0000	827.50	2.28	52.7800	5.18	4.49	5.93	0.64
Local Street-Hillside (2)-100yr	0.015	0.00200	0.8200	50.37	0.42	46.1000	0.82	0.68	2.50	0.67
Local Street-Hillside (2)-10yr	0.015	0.00200	0.6700	31.72	0.37	36.0000	0.67	0.57	2.29	0.65
Local Street-Hillside (1)-10yr	0.015	0.00200	5.3500	10.30	0.19	35.9867	0.67	0.58	1.46	0.58
Collector-Hillside	0.018	0.00200	0.8200	64.49	0.45	59.5000	3.00	2.77	2.21	0.56
Collector-Hillside-100yr	0.015	0.00200	0.8200	53.80	0.40	55.0000	0.82	0.67	2.40	0.66
Collector-Hillside-10yr	0.015	0.00200	0.6700	34.99	0.37	40.0000	0.67	0.57	2.28	0.65
Collector-Residential-100yr	0.015	0.00200	0.9100	63.98	0.40	64.0000	0.91	0.77	2.42	0.66
Collector-Residential-10yr	0.015	0.00200	0.6700	29.91	0.34	40.0000	0.67	0.58	2.15	0.64
Collector-Industrial-100yr	0.015	0.00200	0.8333	68.63	0.42	64.0000	0.83	0.69	2.49	0.67
Collector-Industrial-10yr	0.015	0.00200	0.6700	42.15	0.37	48.0000	0.67	0.58	2.29	0.65
Collector-Commercial-100yr	0.015	0.00200	0.9100	63.98	0.40	64.0000	0.91	0.77	2.42	0.66
Collector-Commercial-10yr	0.015	0.00200	0.6700	29.91	0.34	40.0000	0.67	0.58	2.15	0.64
Minor Arterials (2 Lanes)-100yr	0.015	0.00200	0.8700	79.09	0.43	72.0000	0.87	0.73	2.52	0.67
Minor Arterials (2 Lanes)-10yr	0.015	0.00200	0.6700	42.36	0.36	52.0000	0.67	0.58	2.23	0.65
Minor Arterials (4 Lanes)-100yr	0.015	0.00200	0.9100	86.83	0.40	88.0000	0.91	0.79	2.41	0.67
Minor Arterials (4 Lanes)-25yr	0.015	0.00200	0.6700	32.88	0.27	64.0000	0.67	0.57	1.86	0.62
Minor Arterials (4 Lanes)-10yr	0.015	0.00200	0.4225	7.81	0.17	34.0000	0.42	0.35	1.34	0.57
Major Arterials (4 Lanes)-100yr	0.015	0.00200	0.9100	86.52	0.40	88.0000	0.91	0.79	2.41	0.66
Major Arterials (4 Lanes)-25yr	0.015	0.00200	0.6700	32.88	0.27	64.0000	0.67	0.57	1.86	0.62
Major Arterials (4 Lanes)-10yr	0.015	0.00200	0.4225	7.81	0.17	34.0000	0.42	0.35	1.34	0.57
Major Arterials (6 Lanes)-100yr	0.015	0.00200	0.9900	122.29	0.43	112.0000	0.91	0.79	2.51	0.67
Major Arterials (6 Lanes)-25yr	0.015	0.00200	0.7500	46.18	0.28	88.0000	0.67	0.56	1.88	0.63
Major Arterials (6 Lanes)-10yr	0.015	0.00200	0.4050	5.06	0.13	34.0000	0.33	0.27	1.13	0.55
Local Street-Residential-100yr	0.015	0.00200	0.9100	62.43	0.41	60.0000	0.91	0.76	2.46	0.67
Local Street-Residential-10yr	0.015	0.00200	0.6700	31.72	0.37	36.0000	0.67	0.57	2.29	0.65
Local Street-Residential (half)-100yr	0.015	0.00200	0.9100	30.92	0.41	30.0000	0.91	0.76	2.44	0.66



Irregular Section (ST Typical Sections.fm8) Report

Label	Roughness Coefficient	Channel Slope (ft/ft)	Water Surface Elevation (ft)	Discharge (ft <sup>3</sup> /s)	Hydraulic Radius (ft)	Top Width (ft)	Normal Depth (ft)	Critical Depth (ft)	Velocity (ft/s)	Froude Number
Local Street-Residential (half)-10yr	0.015	0.00200	0.6700	15.75	0.37	18.0000	0.67	0.57	2.27	0.65
Local Street-Hillside (2)-half 100yr	0.015	0.00200	0.8200	21.17	0.48	15.1000	0.82	0.67	2.72	0.67
Local Street-Hillside (2)-half 10yr	0.015	0.00200	0.6700	13.85	0.42	12.5000	0.67	0.56	2.47	0.65
Local Street-Hillside (1)-half 100yr	0.015	0.00200	5.5000	12.19	0.26	25.5000	0.82	0.72	1.79	0.61
Local Street-Hillside (1)-half 10yr	0.015	0.00200	5.3500	5.15	0.19	17.9933	0.67	0.58	1.46	0.58
Collector-Hillside (half)-100yr	0.015	0.00200	0.8200	26.68	0.39	27.5000	0.82	0.67	2.38	0.66
Collector-Hillside (half)-10yr	0.015	0.00200	0.6700	17.38	0.37	20.0000	0.67	0.57	2.27	0.65
Collector-Residential (half)-100yr	0.015	0.00200	0.9100	31.72	0.40	32.0000	0.91	0.77	2.40	0.66
Collector-Residential (half)-10yr	0.015	0.00200	0.6700	14.87	0.33	20.0000	0.67	0.58	2.13	0.64
Collector-Industrial (half)-100yr	0.015	0.00200	0.8333	34.07	0.42	32.0000	0.83	0.69	2.47	0.66
Collector-Industrial (half)-10yr	0.015	0.00200	0.6700	20.97	0.37	24.0000	0.67	0.57	2.28	0.65
Collector-Commercial (half)-100yr	0.015	0.00200	0.9100	31.72	0.40	32.0000	0.91	0.77	2.40	0.66
Collector-Commercial (half)-10yr	0.015	0.00200	0.6700	14.87	0.33	20.0000	0.67	0.58	2.13	0.64
Minor Arterials (2 Lanes) -half 100yr	0.015	0.00200	0.8700	39.31	0.42	36.0000	0.87	0.73	2.50	0.67
Minor Arterials (2 Lanes) -half 10yr	0.015	0.00200	0.6700	21.11	0.35	26.0000	0.67	0.58	2.22	0.65
Minor Arterials (4 Lanes) -half 100yr	0.015	0.00200	0.9100	43.26	0.40	44.0000	0.91	0.79	2.41	0.66
Minor Arterials (4 Lanes) -half 25yr	0.015	0.00200	0.6700	16.44	0.27	32.0000	0.67	0.57	1.86	0.62
Minor Arterials (4 Lanes) -half 10yr	0.015	0.00200	0.4225	3.91	0.17	17.0000	0.42	0.35	1.34	0.57
Major Arterials (4 Lanes) - half 100yr	0.015	0.00200	0.9100	43.26	0.40	44.0000	0.91	0.79	2.41	0.66
Major Arterials (4 Lanes) - half 25yr	0.015	0.00200	0.6700	16.44	0.27	32.0000	0.67	0.57	1.86	0.62
Major Arterials (4 Lanes) - half 10yr	0.015	0.00200	0.4225	3.91	0.17	17.0000	0.42	0.35	1.34	0.57
Major Arterials (6 Lanes) - half 100yr	0.015	0.00200	0.9900	61.08	0.43	56.0000	0.91	0.79	2.51	0.67
Major Arterials (6 Lanes) - half 25yr	0.015	0.00200	0.7500	23.09	0.28	44.0000	0.67	0.56	1.88	0.63
Major Arterials (6 Lanes) - half 10yr	0.015	0.00200	0.4050	2.53	0.13	17.0000	0.33	0.27	1.13	0.55