

August 4, 2010

TO: Sree Kumar
Design Division

Attention Zahid Atashzay

FROM: *for* Christopher Stone 
Water Resources Division

OXFORD RETENTION BASIN HYDROLOGY STUDY

In response to your request, a revised hydrologic analysis for Oxford Retention Basin including Project Nos. 3872 and 5243 has been completed. The information in this report will assist in evaluating the feasibility of constructing a relief line with linear detention and pump station at Oxford Retention Basin.

As requested, the hydrologic information provided is for the Capital Flood, based on a 50-year frequency 4-day design storm. The total watershed area tributary to Oxford Retention Basin is 687.4 acres.

Additionally, a reservoir routing analysis was performed for the basin using the 4-day design storm with an initial water surface elevation of 2.7 feet MSL and also 3.4 feet MSL. As requested by your staff, the elevation-storage-discharge rating curve from the previous August 15, 1994, study was used to perform these analyses.

The subarea hydrograph for the sump located at Oxford Avenue is provided to determine the volume and depth of ponding that could result when the water surface elevation at Oxford Retention Basin exceeds the existing Project 5243 catch basin's invert.

The hydrology was performed using the Watershed Modeling System and the Modified Rational Method. The hydrologic analysis is based on the standards and procedures described in the 2006 Hydrology Manual.

Attachments

- A-1. Hydrologic map with aerial photograph showing existing drain alignment and drainage boundaries.
- A-2. Hydrologic map with Thomas Brothers streets showing existing drain alignment and drainage boundaries.
- B. Hydrologic data sheets listing subarea sizes, subarea, and reach peak flow rates from an adequately collected system based on a 50-year frequency design storm.

Sree Kumar
August 4, 2010
Page 2

- C-1. Reservoir routing analysis results assuming initial water surface elevation of 2.7 feet MSL.
- C-2. Reservoir routing analysis results assuming initial water surface elevation of 3.4 feet MSL.
- D. Capital Flood hydrograph for Subarea 33F.
- E. Supporting information, including design parameters.
- F. Comparison with previous hydrology study.

Summary of Findings

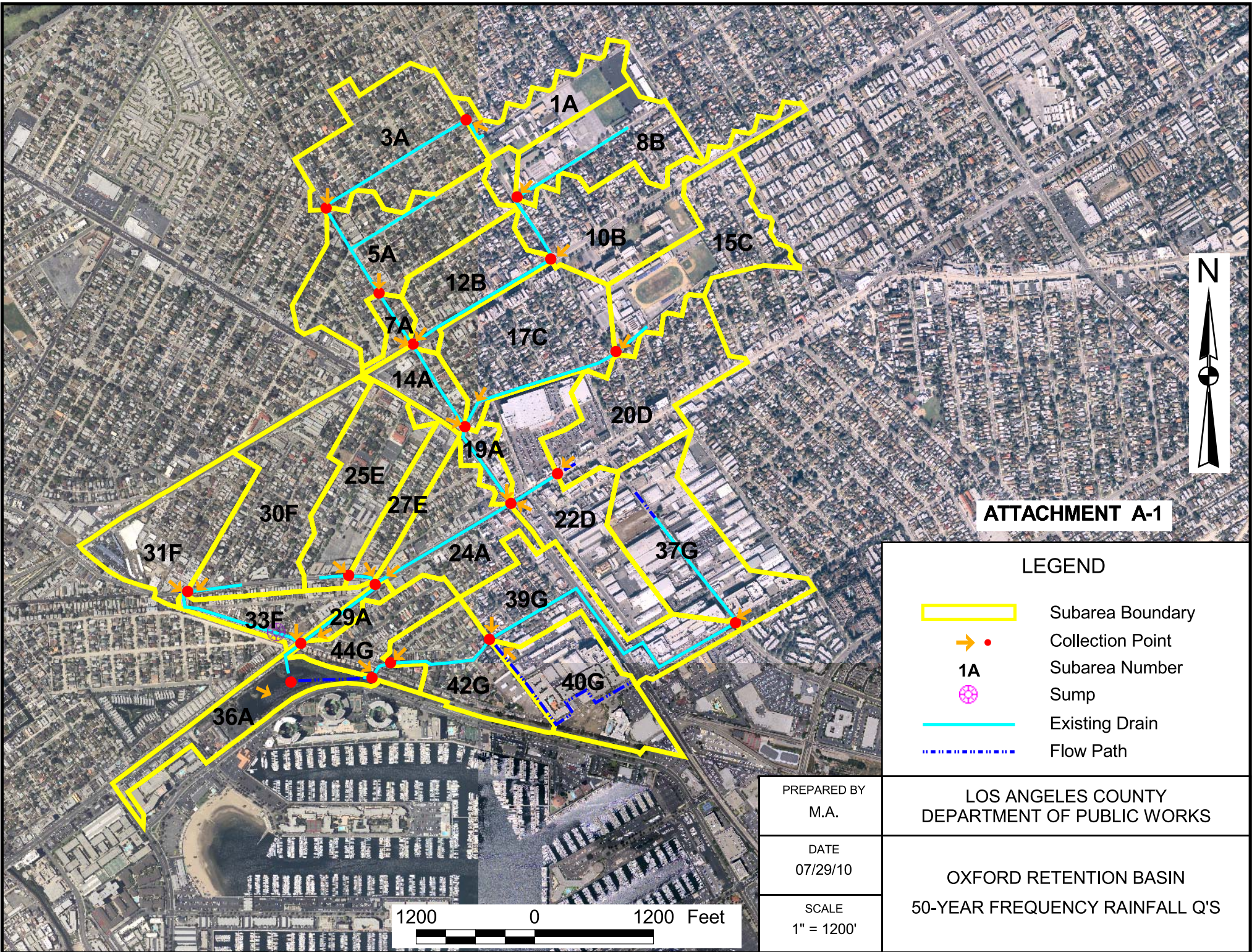
The Capital Flood for Oxford Retention Basin is 751 cfs. A reservoir routing analysis of Oxford Retention Basin using the calculated 4-day inflow hydrographs along with the existing elevation-storage-discharge relationship used in the 1994 study showed that for on an initial water surface elevation of 2.7 feet MSL, the basin will reach a maximum elevation of 4.90 feet MSL. A second analysis showed that based on an initial water surface elevation of 3.4 feet MSL, the basin will reach a maximum elevation of 5.60 feet MSL.

If you have any questions, please contact Martin Araiza at Extension 6152.

MA:yg

P:\wrd\Hyddev\Users\Martin\memos\Oxford Memo.doc

Attach.



ATTACHMENT A-1

LEGEND

- Subarea Boundary
- • Collection Point
- 1A** Subarea Number
- ⊗ Sump
- Existing Drain
- Flow Path

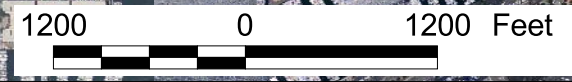
PREPARED BY
M.A.

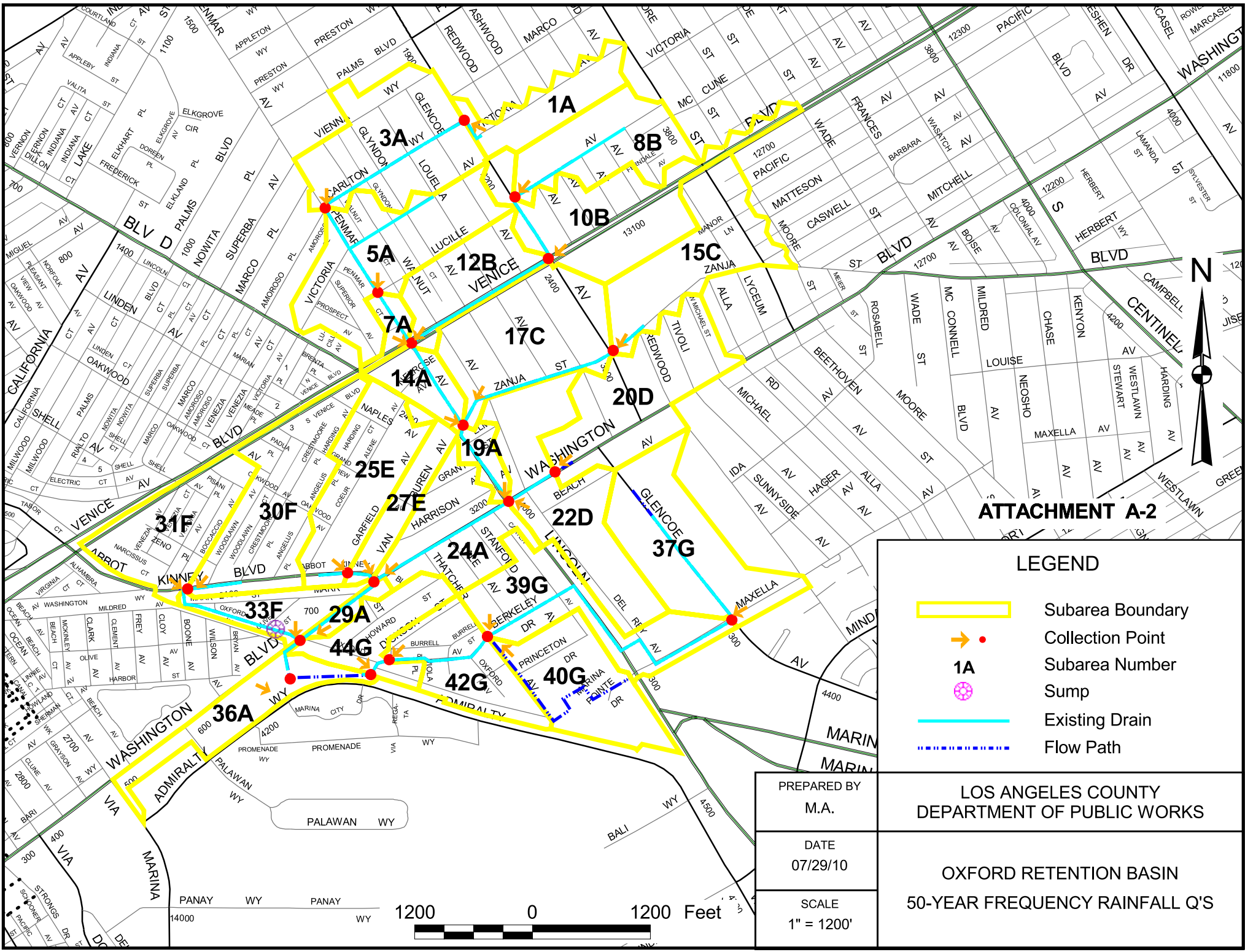
DATE
07/29/10

SCALE
1" = 1200'

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS






OXFORD RETENTION BASIN
50-YEAR FREQUENCY RAINFALL Q'S





ATTACHMENT A-2

LEGEND

-  Subarea Boundary
-  Collection Point
- 1A** Subarea Number
-  Sump
-  Existing Drain
-  Flow Path

PREPARED BY
M.A.

DATE
07/29/10

SCALE
1" = 1200'

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS

OXFORD RETENTION BASIN
50-YEAR FREQUENCY RAINFALL Q'S

**County of Los Angeles Department of Public Works
ATTACHMENT B
HYDROLOGIC DATA**

Project: OXFORD RETENTION BASIN

Conveyance Types:

- | | |
|---------------------|------------------------|
| 1. Natural Mountain | 4. Pipe |
| 2. Natural Valley | 5. Rectangular Channel |
| 3. Street | 6. Trapezoidal Channel |

50 -Year Frequency Design Storm

Reach or Subarea	Preliminary Conveyance			Slope	Area (acres)		Peak Q (cfs)	
	Length (feet)	Type	Size (feet)		Subarea	Total	Subarea ¹	Reach ²
<u>Line A</u>								
1A					16.9		25	
1A - 3A	1,684	4	2.00	0.01671		16.9		25
3A					41.0		67	
3A - 5A	1,016	4	5.25	0.00100		57.9		90
5A					42.1		58	
5A - 7A	620	4	4.25	0.00838		100.0		143
7A					4.7		11	
7A - Line B	-	-	-	-		104.7		145
Line B					89.0		120	
Line B - 14A	988	4	7.75	0.00100		193.7		265
14A					10.3		16	
14A - Line C	-	-	-	-		204.0		272
Line C					73.4		84	
Line C - 19A	933	4	6.00	0.00644		277.4		355
19A					5.7		11	
19A - Line D	-	-	-	-		283.1		357
Line D					81.7		108	
Line D - 24A	1,597	5	12.00	0.00100		364.8		454
24A					27.7		36	

¹Peak flow rate from the subarea that can be proportioned (Q/A) for catch basin design within the subarea (see the Department's "Hydraulic Design Manual").

²Peak flow rate at the top of the reach for design of the conveyance.

**County of Los Angeles Department of Public Works
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Reach or Subarea	Preliminary Conveyance			Slope	Area (acres)		Peak Q (cfs)	
	Length (feet)	Type	Size (feet)		Subarea	Total	Subarea ¹	Reach ²
24A - Line E	-	-	-	-		392.5		474
Line E					43.3		50	
Line E - 29A	973	5	13.00	0.00100		435.8		519
29A					3.3		5	
29A - Line F	-	-	-	-		439.1		519
Line F					83.4		94	
Line F - 36A	279	5	13.00	0.00100		522.5		601
36A					19.7		26	
36A - Line G	-	-	-	-		542.2		620
Line G					145.2		140	
Line G - Oxford Ret Basin	-	-	-	-		687.7		751
Line B								
8B					27.1		40	
8B - 10B	764	4	2.50	0.00831		27.1		40
10B					40.9		53	
10B - 12B	1,640	4	3.75	0.00689		68.0		92
12B					21.0		32	

¹Peak flow rate from the subarea that can be proportioned (Q/A) for catch basin design within the subarea (see the Department's "Hydraulic Design Manual").

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Reach or Subarea	Preliminary Conveyance			Slope	Area (acres)		Peak Q (cfs)	
	Length (feet)	Type	Size (feet)		Subarea	Total	Subarea ¹	Reach ²
12B - Line A	-	-	-	-		89.0		120
<u>Line C</u>								
15C					33.5		46	
15C - 17C	1,776	4	4.00	0.00100		33.5		46
17C					39.9		46	
17C - Line A	-	-	-	-		73.4		84
<u>Line D</u>								
20D					39.8		51	
20D - 22D	561	4	4.25	0.00100		39.8		51
22D					41.9		59	
22D - Line A	-	-	-	-		81.7		108
<u>Line E</u>								
25E					30.8		36	
25E - 27E	309	4	3.75	0.00100		30.8		36

¹Peak flow rate from the subarea that can be proportioned (Q/A) for catch basin design within the subarea (see the Department's "Hydraulic Design Manual").

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	Length (feet)	Type	Size (feet)		Subarea	Total	Subarea ¹	Reach ²
27E					12.5		14	
27E - Line A	-	-	-	-		43.3		50
<u>Line F</u>								
30F					40.8		47	
31F					28.9		34	
31F - 33F	1,428	4	5.00	0.00100		69.7		81
33F					13.7		19	
33F - Line A	-	-	-	-		83.4		94
<u>Line G</u>								
37G					40.5		49	
37G - 39G	3,251	4	4.25	0.00100		40.5		49
39G					33.5		39	
40G					29.4		34	
40G - 42G	1,111	4	5.50	0.00100		103.4		104
42G					24.0		25	
42G - 44G	260	4	5.75	0.00100		127.4		124

¹Peak flow rate from the subarea that can be proportioned (Q/A) for catch basin design within the subarea (see the Department's "Hydraulic Design Manual").

²Peak flow rate at the top of the reach for design of the conveyance.

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50 -Year Frequency Design Storm

Reach or Subarea	Preliminary Conveyance			Slope	Area (acres)		Peak Q (cfs)	
	Length (feet)	Type	Size (feet)		Subarea	Total	Subarea ¹	Reach ²
44G					17.8		23	
44G - Line A	-	-	-	-		145.2		140

¹Peak flow rate from the subarea that can be proportioned (Q/A) for catch basin design within the subarea (see the Department's "Hydraulic Design Manual").

²Peak flow rate at the top of the reach for design of the conveyance.

**County of Los Angeles Department of Public Works
ATTACHMENT C-1
RESERVOIR ROUTING ANALYSIS**

***** RESERVOIR ROUTING STORM DAY 1 *****

RESERVOIR ROUTING at 47A STORM DAY 1 STORM FREQ. 50
INITIAL WATER SURFACE ELEVATION: 2.70
RESERVOIR COMPOSITE ELEVATION-STORAGE-DISCHARGE DATA at 47A

ELEVATION (ft.)	STORAGE (a.f.)	OUTFLOW (cfs)
2.70	0.00	0.00
2.77	0.41	93.00
2.95	1.48	186.00
3.25	3.24	279.00
3.30	3.54	289.81
3.68	5.96	372.00
4.22	9.40	465.00
4.88	13.60	558.00
5.30	16.27	608.08
5.66	18.42	651.00
6.00	20.46	685.75
6.57	24.14	744.00
7.00	26.91	783.21
7.59	30.72	837.00
8.73	38.07	930.00
9.30	41.75	972.00

RESERVOIR ROUTING TABLE at 47A

TIME	INFLOW (cfs)	OUTFLOW (cfs)	W.S.ELEV (ft.)	STORAGE (a.f.)
0	0.00	0.00	2.70	0.00
100	4.53	4.33	2.70	0.02
200	5.69	5.68	2.70	0.03
300	5.99	5.98	2.70	0.03
400	6.33	6.32	2.70	0.03
500	6.74	6.73	2.71	0.03
600	7.25	7.24	2.71	0.03
700	7.91	7.88	2.71	0.03
800	8.79	8.75	2.71	0.04
900	10.09	10.04	2.71	0.04
1000	12.28	12.18	2.71	0.05
1050	14.18	14.03	2.71	0.06
1100	17.54	17.25	2.71	0.08
1110	18.60	18.25	2.71	0.08
1120	19.90	19.46	2.71	0.09
1130	21.57	21.00	2.72	0.09
1131	21.77	21.18	2.72	0.09
1132	21.98	21.37	2.72	0.09
1133	22.19	21.56	2.72	0.10
1134	22.41	21.76	2.72	0.10
1135	22.64	21.97	2.72	0.10
1136	22.88	22.18	2.72	0.10
1137	23.12	22.40	2.72	0.10
1138	23.38	22.63	2.72	0.10
1139	23.65	22.87	2.72	0.10
1140	23.93	23.12	2.72	0.10
1141	24.22	23.37	2.72	0.10
1142	24.52	23.64	2.72	0.10
1143	24.85	23.93	2.72	0.11
1144	25.19	24.22	2.72	0.11
1145	25.55	24.53	2.72	0.11
1146	25.94	24.86	2.72	0.11
1147	26.35	25.21	2.72	0.11

**County of Los Angeles Department of Public Works
ATTACHMENT C-1
RESERVOIR ROUTING ANALYSIS**

1148	26.80	25.58	2.72	0.11
1149	27.30	25.98	2.72	0.11
1150	27.85	26.41	2.72	0.12
1151	28.50	26.89	2.72	0.12
1152	29.53	27.46	2.72	0.12
1153	30.42	28.14	2.72	0.12
1154	31.23	28.87	2.72	0.13
1155	31.95	29.60	2.72	0.13
1156	32.61	30.32	2.72	0.13
1157	33.27	31.03	2.72	0.14
1158	34.00	31.74	2.72	0.14
1159	34.79	32.45	2.72	0.14
1160	35.65	33.20	2.72	0.15
1161	36.57	33.99	2.73	0.15
1162	37.51	34.81	2.73	0.15
1163	38.45	35.67	2.73	0.16
1164	39.36	36.54	2.73	0.16
1165	40.23	37.42	2.73	0.16
1166	41.05	38.29	2.73	0.17
1167	41.82	39.14	2.73	0.17
1168	42.55	39.96	2.73	0.18
1169	43.22	40.75	2.73	0.18
1170	43.83	41.50	2.73	0.18
1171	44.37	42.20	2.73	0.19
1172	44.80	42.85	2.73	0.19
1173	45.03	43.41	2.73	0.19
1174	45.33	43.89	2.73	0.19
1175	45.58	44.31	2.73	0.20
1176	45.75	44.68	2.73	0.20
1177	45.89	44.99	2.73	0.20
1178	45.83	45.22	2.73	0.20
1179	45.92	45.40	2.73	0.20
1180	46.09	45.56	2.73	0.20
1181	46.21	45.72	2.73	0.20
1182	46.28	45.86	2.73	0.20
1183	46.25	45.97	2.73	0.20
1184	46.14	46.03	2.73	0.20
1185	45.99	46.04	2.73	0.20
1186	45.85	46.01	2.73	0.20
1187	45.68	45.94	2.73	0.20
1188	45.47	45.84	2.73	0.20
1189	45.16	45.70	2.73	0.20
1190	44.75	45.50	2.73	0.20
1191	44.21	45.22	2.73	0.20
1192	43.59	44.87	2.73	0.20
1193	42.92	44.43	2.73	0.20
1194	42.23	43.93	2.73	0.19
1195	41.53	43.38	2.73	0.19
1196	40.84	42.78	2.73	0.19
1197	40.15	42.16	2.73	0.19
1198	39.44	41.52	2.73	0.18
1199	38.74	40.87	2.73	0.18
1200	38.04	40.20	2.73	0.18
1201	37.32	39.52	2.73	0.17
1202	36.59	38.82	2.73	0.17
1203	35.85	38.12	2.73	0.17
1204	35.10	37.41	2.73	0.16
1205	34.34	36.68	2.73	0.16
1206	33.57	35.94	2.73	0.16
1207	32.80	35.20	2.73	0.16

County of Los Angeles Department of Public Works
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RESERVOIR ROUTING ANALYSIS

1208	32.02	34.44	2.73	0.15
1209	31.24	33.68	2.73	0.15
1210	30.47	32.92	2.72	0.15
1211	29.70	32.15	2.72	0.14
1212	28.94	31.39	2.72	0.14
1213	28.19	30.62	2.72	0.14
1214	27.45	29.87	2.72	0.13
1215	26.74	29.12	2.72	0.13
1216	26.04	28.38	2.72	0.13
1217	25.36	27.65	2.72	0.12
1218	24.70	26.95	2.72	0.12
1219	24.07	26.25	2.72	0.12
1220	23.46	25.58	2.72	0.11
1221	22.88	24.93	2.72	0.11
1222	22.32	24.30	2.72	0.11
1223	21.78	23.69	2.72	0.10
1224	21.26	23.10	2.72	0.10
1225	20.77	22.54	2.72	0.10
1226	20.29	22.00	2.72	0.10
1227	19.84	21.48	2.72	0.09
1228	19.41	20.98	2.72	0.09
1229	19.00	20.50	2.72	0.09
1230	18.61	20.04	2.72	0.09
1231	18.23	19.60	2.71	0.09
1232	17.87	19.19	2.71	0.08
1233	17.53	18.78	2.71	0.08
1234	17.20	18.40	2.71	0.08
1235	16.88	18.03	2.71	0.08
1236	16.58	17.68	2.71	0.08
1237	16.29	17.34	2.71	0.08
1238	16.02	17.02	2.71	0.08
1239	15.76	16.72	2.71	0.07
1240	15.50	16.42	2.71	0.07
1241	15.26	16.14	2.71	0.07
1242	15.03	15.87	2.71	0.07
1243	14.81	15.61	2.71	0.07
1244	14.60	15.37	2.71	0.07
1245	14.39	15.13	2.71	0.07
1246	14.20	14.91	2.71	0.07
1247	14.01	14.69	2.71	0.06
1248	13.83	14.48	2.71	0.06
1249	13.66	14.28	2.71	0.06
1250	13.49	14.09	2.71	0.06
1251	13.33	13.91	2.71	0.06
1252	13.17	13.73	2.71	0.06
1253	13.01	13.56	2.71	0.06
1254	12.87	13.39	2.71	0.06
1255	12.72	13.23	2.71	0.06
1256	12.58	13.07	2.71	0.06
1257	12.44	12.92	2.71	0.06
1258	12.31	12.77	2.71	0.06
1259	12.18	12.63	2.71	0.06
1260	12.06	12.49	2.71	0.06
1261	11.95	12.36	2.71	0.05
1262	11.83	12.23	2.71	0.05
1263	11.73	12.11	2.71	0.05
1264	11.62	11.99	2.71	0.05
1265	11.52	11.88	2.71	0.05
1266	11.42	11.77	2.71	0.05
1267	11.33	11.66	2.71	0.05

**County of Los Angeles Department of Public Works
ATTACHMENT C-1
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1268	11.24	11.56	2.71	0.05
1269	11.15	11.46	2.71	0.05
1270	11.06	11.36	2.71	0.05
1271	10.97	11.27	2.71	0.05
1272	10.88	11.18	2.71	0.05
1273	10.80	11.09	2.71	0.05
1274	10.72	11.00	2.71	0.05
1275	10.64	10.91	2.71	0.05
1276	10.57	10.83	2.71	0.05
1277	10.49	10.75	2.71	0.05
1278	10.41	10.67	2.71	0.05
1279	10.34	10.59	2.71	0.05
1280	10.27	10.51	2.71	0.05
1281	10.20	10.44	2.71	0.05
1282	10.13	10.36	2.71	0.05
1283	10.06	10.29	2.71	0.05
1284	10.00	10.22	2.71	0.05
1285	9.93	10.15	2.71	0.04
1286	9.87	10.09	2.71	0.04
1287	9.81	10.02	2.71	0.04
1288	9.75	9.95	2.71	0.04
1289	9.69	9.89	2.71	0.04
1290	9.63	9.83	2.71	0.04
1291	9.57	9.77	2.71	0.04
1292	9.52	9.71	2.71	0.04
1293	9.46	9.65	2.71	0.04
1294	9.41	9.59	2.71	0.04
1295	9.36	9.53	2.71	0.04
1296	9.31	9.48	2.71	0.04
1297	9.26	9.43	2.71	0.04
1298	9.21	9.38	2.71	0.04
1299	9.16	9.32	2.71	0.04
1300	9.12	9.27	2.71	0.04
1310	8.69	8.82	2.71	0.04
1320	8.31	8.43	2.71	0.04
1330	7.98	8.09	2.71	0.04
1340	7.69	7.78	2.71	0.03
1350	7.43	7.51	2.71	0.03
1360	7.20	7.28	2.71	0.03
1370	6.99	7.06	2.71	0.03
1380	6.81	6.86	2.71	0.03
1390	6.64	6.69	2.71	0.03
1400	6.47	6.52	2.70	0.03
1420	6.18	6.22	2.70	0.03
1440	5.92	5.96	2.70	0.03

**County of Los Angeles Department of Public Works
ATTACHMENT C-1
RESERVOIR ROUTING ANALYSIS**

***** RESERVOIR ROUTING STORM DAY 2 *****

RESERVOIR ROUTING at 47A STORM DAY 2 STORM FREQ. 50
INITIAL WATER SURFACE ELEVATION: 2.70

RESERVOIR ROUTING TABLE at 47A

TIME	INFLOW (cfs)	OUTFLOW (cfs)	W.S.ELEV (ft.)	STORAGE (a.f.)
0	0.00	5.96	2.70	0.03
100	21.03	20.73	2.72	0.09
200	22.93	22.89	2.72	0.10
300	24.11	24.07	2.72	0.11
400	25.50	25.45	2.72	0.11
500	27.17	27.11	2.72	0.12
600	29.25	29.18	2.72	0.13
700	31.95	31.85	2.72	0.14
800	35.59	35.45	2.73	0.16
900	40.99	40.77	2.73	0.18
1000	50.25	49.85	2.74	0.22
1050	58.41	57.76	2.74	0.25
1100	73.20	71.88	2.75	0.32
1110	77.97	76.38	2.76	0.34
1120	83.96	81.95	2.76	0.36
1130	92.09	89.26	2.77	0.39
1131	93.16	90.17	2.77	0.40
1132	94.30	91.13	2.77	0.40
1133	95.49	92.15	2.77	0.41
1134	96.75	93.09	2.77	0.41
1135	98.07	93.58	2.77	0.42
1136	99.47	94.17	2.77	0.42
1137	100.94	94.85	2.77	0.43
1138	102.47	95.62	2.78	0.44
1139	104.07	96.49	2.78	0.45
1140	105.74	97.44	2.78	0.46
1141	107.51	98.48	2.78	0.47
1142	109.36	99.60	2.78	0.49
1143	111.31	100.81	2.79	0.50
1144	113.35	102.11	2.79	0.51
1145	115.50	103.51	2.79	0.53
1146	117.78	104.99	2.79	0.55
1147	120.21	106.57	2.80	0.57
1148	122.84	108.26	2.80	0.59
1149	125.81	110.07	2.80	0.61
1150	129.17	112.04	2.81	0.63
1151	133.07	114.20	2.81	0.65
1152	139.47	116.69	2.82	0.68
1153	145.21	119.59	2.82	0.72
1154	150.35	122.77	2.83	0.75
1155	154.95	126.15	2.83	0.79
1156	159.55	129.66	2.84	0.83
1157	164.59	133.32	2.85	0.87
1158	170.11	137.17	2.86	0.92
1159	175.99	141.22	2.86	0.96
1160	182.02	145.49	2.87	1.01
1161	187.99	149.95	2.88	1.07
1162	193.87	154.58	2.89	1.12
1163	199.59	159.34	2.90	1.17
1164	205.03	164.20	2.91	1.23
1165	210.18	169.10	2.92	1.29
1166	215.00	174.01	2.93	1.34

**County of Los Angeles Department of Public Works
ATTACHMENT C-1
RESERVOIR ROUTING ANALYSIS**

1167	219.41	178.89	2.94	1.40
1168	223.42	183.69	2.95	1.45
1169	227.02	187.48	2.95	1.51
1170	230.10	190.37	2.96	1.56
1171	232.81	193.25	2.97	1.62
1172	235.00	196.11	2.98	1.67
1173	236.36	198.89	2.99	1.72
1174	237.75	201.57	3.00	1.77
1175	238.79	204.14	3.01	1.82
1176	239.59	206.61	3.02	1.87
1177	240.36	208.95	3.02	1.91
1178	240.06	211.14	3.03	1.96
1179	240.40	213.19	3.04	1.99
1180	240.73	215.11	3.04	2.03
1181	240.60	216.90	3.05	2.06
1182	240.05	218.55	3.05	2.10
1183	238.98	220.02	3.06	2.12
1184	237.20	221.29	3.06	2.15
1185	234.98	222.33	3.07	2.17
1186	232.31	223.12	3.07	2.18
1187	228.70	223.64	3.07	2.19
1188	224.08	223.83	3.07	2.20
1189	218.32	223.65	3.07	2.19
1190	211.91	223.05	3.07	2.18
1191	205.03	222.03	3.07	2.16
1192	197.69	220.58	3.06	2.13
1193	190.27	218.71	3.06	2.10
1194	182.79	216.45	3.05	2.06
1195	175.36	213.82	3.04	2.01
1196	168.04	210.86	3.03	1.95
1197	160.88	207.61	3.02	1.89
1198	153.93	204.08	3.01	1.82
1199	147.25	200.32	3.00	1.75
1200	140.86	196.37	2.98	1.68
1201	134.78	192.26	2.97	1.60
1202	129.02	188.02	2.96	1.52
1203	123.57	182.28	2.94	1.44
1204	118.44	175.36	2.93	1.36
1205	113.64	168.66	2.92	1.28
1206	109.16	162.19	2.90	1.21
1207	104.96	155.96	2.89	1.13
1208	101.02	149.98	2.88	1.07
1209	97.35	144.24	2.87	1.00
1210	94.00	138.76	2.86	0.94
1211	90.84	133.52	2.85	0.88
1212	87.87	128.53	2.84	0.82
1213	85.12	123.79	2.83	0.76
1214	82.58	119.27	2.82	0.71
1215	80.25	115.00	2.81	0.66
1216	78.05	110.95	2.80	0.62
1217	75.97	107.12	2.80	0.57
1218	74.06	103.49	2.79	0.53
1219	72.28	100.06	2.78	0.49
1220	70.65	96.83	2.78	0.45
1221	69.07	93.79	2.77	0.42
1222	67.58	88.00	2.77	0.39
1223	66.17	82.29	2.76	0.36
1224	64.85	77.76	2.76	0.34
1225	63.60	74.10	2.76	0.33
1226	62.43	71.11	2.75	0.31

**County of Los Angeles Department of Public Works
ATTACHMENT C-1
RESERVOIR ROUTING ANALYSIS**

1227	61.35	68.61	2.75	0.30
1228	60.33	66.51	2.75	0.29
1229	59.37	64.71	2.75	0.29
1230	58.44	63.14	2.75	0.28
1231	57.58	61.76	2.75	0.27
1232	56.74	60.51	2.75	0.27
1233	55.93	59.39	2.74	0.26
1234	55.16	58.35	2.74	0.26
1235	54.41	57.39	2.74	0.25
1236	53.70	56.49	2.74	0.25
1237	53.02	55.64	2.74	0.25
1238	52.37	54.85	2.74	0.24
1239	51.75	54.09	2.74	0.24
1240	51.16	53.38	2.74	0.24
1241	50.59	52.70	2.74	0.23
1242	50.05	52.06	2.74	0.23
1243	49.52	51.44	2.74	0.23
1244	49.01	50.86	2.74	0.22
1245	48.52	50.29	2.74	0.22
1246	48.06	49.75	2.74	0.22
1247	47.62	49.24	2.74	0.22
1248	47.19	48.74	2.74	0.21
1249	46.77	48.26	2.74	0.21
1250	46.36	47.80	2.74	0.21
1251	45.96	47.36	2.74	0.21
1252	45.56	46.93	2.74	0.21
1253	45.18	46.51	2.74	0.21
1254	44.82	46.10	2.73	0.20
1255	44.46	45.70	2.73	0.20
1256	44.10	45.32	2.73	0.20
1257	43.75	44.94	2.73	0.20
1258	43.41	44.58	2.73	0.20
1259	43.08	44.22	2.73	0.19
1260	42.75	43.86	2.73	0.19
1261	42.44	43.52	2.73	0.19
1262	42.13	43.19	2.73	0.19
1263	41.83	42.86	2.73	0.19
1264	41.54	42.54	2.73	0.19
1265	41.25	42.23	2.73	0.19
1266	40.97	41.93	2.73	0.18
1267	40.70	41.63	2.73	0.18
1268	40.43	41.34	2.73	0.18
1269	40.17	41.06	2.73	0.18
1270	39.91	40.78	2.73	0.18
1271	39.66	40.51	2.73	0.18
1272	39.41	40.25	2.73	0.18
1273	39.18	39.99	2.73	0.18
1274	38.94	39.74	2.73	0.18
1275	38.72	39.49	2.73	0.17
1276	38.50	39.25	2.73	0.17
1277	38.28	39.02	2.73	0.17
1278	38.07	38.79	2.73	0.17
1279	37.87	38.57	2.73	0.17
1280	37.66	38.35	2.73	0.17
1281	37.46	38.14	2.73	0.17
1282	37.27	37.93	2.73	0.17
1283	37.07	37.72	2.73	0.17
1284	36.88	37.52	2.73	0.17
1285	36.69	37.32	2.73	0.16
1286	36.50	37.13	2.73	0.16

**County of Los Angeles Department of Public Works
ATTACHMENT C-1
RESERVOIR ROUTING ANALYSIS**

1287	36.32	36.93	2.73	0.16
1288	36.14	36.74	2.73	0.16
1289	35.96	36.56	2.73	0.16
1290	35.79	36.37	2.73	0.16
1291	35.63	36.19	2.73	0.16
1292	35.46	36.02	2.73	0.16
1293	35.29	35.85	2.73	0.16
1294	35.13	35.67	2.73	0.16
1295	34.96	35.50	2.73	0.16
1296	34.80	35.34	2.73	0.16
1297	34.64	35.17	2.73	0.16
1298	34.49	35.01	2.73	0.15
1299	34.33	34.85	2.73	0.15
1300	34.18	34.69	2.73	0.15
1310	32.76	33.20	2.72	0.15
1320	31.51	31.90	2.72	0.14
1330	30.40	30.75	2.72	0.14
1340	29.44	29.74	2.72	0.13
1350	28.55	28.83	2.72	0.13
1360	27.75	28.00	2.72	0.12
1370	27.01	27.25	2.72	0.12
1380	26.32	26.54	2.72	0.12
1390	25.69	25.89	2.72	0.11
1400	25.09	25.28	2.72	0.11
1420	24.02	24.18	2.72	0.11
1440	23.07	23.22	2.72	0.10

**County of Los Angeles Department of Public Works
ATTACHMENT C-1
RESERVOIR ROUTING ANALYSIS**

***** RESERVOIR ROUTING STORM DAY 3 *****

RESERVOIR ROUTING at 47A STORM DAY 3 STORM FREQ. 50
INITIAL WATER SURFACE ELEVATION: 2.72

RESERVOIR ROUTING TABLE at 47A

TIME	INFLOW (cfs)	OUTFLOW (cfs)	W.S.ELEV (ft.)	STORAGE (a.f.)
0	0.00	23.22	2.72	0.10
100	18.25	17.94	2.71	0.08
200	20.05	20.02	2.72	0.09
300	21.09	21.05	2.72	0.09
400	22.30	22.26	2.72	0.10
500	23.76	23.71	2.72	0.10
600	25.58	25.51	2.72	0.11
700	27.92	27.84	2.72	0.12
800	31.11	30.99	2.72	0.14
900	35.81	35.62	2.73	0.16
1000	43.86	43.51	2.73	0.19
1050	50.99	50.43	2.74	0.22
1100	63.79	62.67	2.75	0.28
1110	67.97	66.59	2.75	0.29
1120	73.12	71.38	2.75	0.31
1130	79.88	77.59	2.76	0.34
1131	80.68	78.32	2.76	0.35
1132	81.52	79.07	2.76	0.35
1133	82.38	79.85	2.76	0.35
1134	83.28	80.65	2.76	0.36
1135	84.22	81.49	2.76	0.36
1136	85.21	82.36	2.76	0.36
1137	86.24	83.27	2.76	0.37
1138	87.32	84.22	2.76	0.37
1139	88.45	85.21	2.76	0.38
1140	89.65	86.25	2.76	0.38
1141	90.92	87.34	2.77	0.39
1142	92.29	88.49	2.77	0.39
1143	93.75	89.72	2.77	0.40
1144	95.32	91.02	2.77	0.40
1145	97.02	92.41	2.77	0.41
1146	98.90	93.38	2.77	0.41
1147	100.97	94.12	2.77	0.42
1148	103.25	95.02	2.77	0.43
1149	105.78	96.09	2.78	0.45
1150	108.62	97.35	2.78	0.46
1151	112.07	98.82	2.78	0.48
1152	117.65	100.63	2.78	0.50
1153	122.63	102.83	2.79	0.52
1154	127.02	105.32	2.79	0.55
1155	130.97	107.99	2.80	0.58
1156	134.89	110.81	2.80	0.61
1157	139.13	113.77	2.81	0.65
1158	143.80	116.90	2.82	0.68
1159	148.79	120.22	2.82	0.72
1160	153.95	123.74	2.83	0.76
1161	159.07	127.44	2.84	0.81
1162	164.02	131.29	2.84	0.85
1163	168.79	135.26	2.85	0.90
1164	173.33	139.30	2.86	0.94
1165	177.63	143.39	2.87	0.99
1166	181.68	147.48	2.88	1.04

County of Los Angeles Department of Public Works
ATTACHMENT C-1
RESERVOIR ROUTING ANALYSIS

1167	185.45	151.56	2.88	1.08
1168	188.92	155.58	2.89	1.13
1169	192.07	159.53	2.90	1.18
1170	194.90	163.36	2.91	1.22
1171	197.33	167.06	2.91	1.26
1172	199.44	170.60	2.92	1.30
1173	200.71	173.93	2.93	1.34
1174	201.97	177.03	2.93	1.38
1175	203.06	179.91	2.94	1.41
1176	203.94	182.57	2.94	1.44
1177	204.73	185.03	2.95	1.47
1178	204.71	186.78	2.95	1.49
1179	205.06	188.05	2.96	1.52
1180	205.41	189.26	2.96	1.54
1181	205.44	190.39	2.96	1.56
1182	205.00	191.43	2.97	1.58
1183	203.96	192.35	2.97	1.60
1184	202.46	193.11	2.97	1.61
1185	200.62	193.70	2.97	1.63
1186	198.33	194.11	2.98	1.63
1187	195.41	194.30	2.98	1.64
1188	191.61	194.25	2.98	1.64
1189	186.89	193.90	2.98	1.63
1190	181.42	193.21	2.97	1.62
1191	175.64	192.18	2.97	1.60
1192	169.70	190.81	2.97	1.57
1193	163.69	189.12	2.96	1.54
1194	157.67	187.12	2.95	1.50
1195	151.67	184.14	2.95	1.46
1196	145.74	180.13	2.94	1.41
1197	139.91	175.92	2.93	1.36
1198	134.24	171.53	2.92	1.31
1199	128.75	167.01	2.91	1.26
1200	123.49	162.39	2.90	1.21
1201	118.46	157.71	2.90	1.15
1202	113.68	153.01	2.89	1.10
1203	109.14	148.31	2.88	1.05
1204	104.85	143.65	2.87	0.99
1205	100.81	139.03	2.86	0.94
1206	97.02	134.50	2.85	0.89
1207	93.42	130.07	2.84	0.84
1208	90.02	125.73	2.83	0.79
1209	86.86	121.52	2.83	0.74
1210	83.95	117.44	2.82	0.69
1211	81.17	113.50	2.81	0.65
1212	78.56	109.70	2.80	0.60
1213	76.13	106.05	2.80	0.56
1214	73.89	102.54	2.79	0.52
1215	71.82	99.19	2.78	0.48
1216	69.84	95.98	2.78	0.44
1217	67.99	92.83	2.77	0.41
1218	66.28	89.88	2.76	0.38
1219	64.68	87.07	2.76	0.35
1220	63.19	84.37	2.76	0.33
1221	61.74	81.77	2.75	0.32
1222	60.37	79.26	2.75	0.31
1223	59.09	76.84	2.75	0.29
1224	57.88	74.51	2.75	0.28
1225	56.75	72.26	2.75	0.28
1226	55.69	70.08	2.75	0.27

**County of Los Angeles Department of Public Works
ATTACHMENT C-1
RESERVOIR ROUTING ANALYSIS**

1227	54.71	59.31	2.74	0.26
1228	53.78	57.94	2.74	0.26
1229	52.90	56.70	2.74	0.25
1230	52.08	55.56	2.74	0.24
1231	51.28	54.51	2.74	0.24
1232	50.51	53.53	2.74	0.24
1233	49.77	52.62	2.74	0.23
1234	49.05	51.75	2.74	0.23
1235	48.36	50.93	2.74	0.22
1236	47.71	50.15	2.74	0.22
1237	47.08	49.40	2.74	0.22
1238	46.48	48.69	2.74	0.21
1239	45.91	48.02	2.74	0.21
1240	45.37	47.38	2.74	0.21
1241	44.85	46.77	2.74	0.21
1242	44.35	46.18	2.73	0.20
1243	43.87	45.62	2.73	0.20
1244	43.42	45.09	2.73	0.20
1245	42.98	44.58	2.73	0.20
1246	42.57	44.09	2.73	0.19
1247	42.16	43.62	2.73	0.19
1248	41.76	43.17	2.73	0.19
1249	41.38	42.74	2.73	0.19
1250	41.00	42.32	2.73	0.19
1251	40.64	41.91	2.73	0.18
1252	40.29	41.52	2.73	0.18
1253	39.94	41.14	2.73	0.18
1254	39.60	40.77	2.73	0.18
1255	39.27	40.41	2.73	0.18
1256	38.95	40.06	2.73	0.18
1257	38.64	39.72	2.73	0.18
1258	38.33	39.39	2.73	0.17
1259	38.04	39.06	2.73	0.17
1260	37.74	38.74	2.73	0.17
1261	37.46	38.44	2.73	0.17
1262	37.18	38.14	2.73	0.17
1263	36.91	37.84	2.73	0.17
1264	36.65	37.55	2.73	0.17
1265	36.39	37.27	2.73	0.16
1266	36.13	37.00	2.73	0.16
1267	35.89	36.73	2.73	0.16
1268	35.64	36.47	2.73	0.16
1269	35.40	36.21	2.73	0.16
1270	35.17	35.96	2.73	0.16
1271	34.95	35.72	2.73	0.16
1272	34.73	35.48	2.73	0.16
1273	34.51	35.25	2.73	0.16
1274	34.31	35.02	2.73	0.15
1275	34.10	34.80	2.73	0.15
1276	33.91	34.59	2.73	0.15
1277	33.71	34.38	2.73	0.15
1278	33.52	34.17	2.73	0.15
1279	33.33	33.97	2.73	0.15
1280	33.15	33.77	2.73	0.15
1281	32.97	33.58	2.73	0.15
1282	32.79	33.39	2.73	0.15
1283	32.62	33.21	2.72	0.15
1284	32.45	33.02	2.72	0.15
1285	32.29	32.85	2.72	0.14
1286	32.13	32.67	2.72	0.14

County of Los Angeles Department of Public Works
ATTACHMENT C-1
RESERVOIR ROUTING ANALYSIS

1287	31.97	32.51	2.72	0.14
1288	31.82	32.34	2.72	0.14
1289	31.67	32.18	2.72	0.14
1290	31.51	32.02	2.72	0.14
1291	31.36	31.86	2.72	0.14
1292	31.21	31.71	2.72	0.14
1293	31.06	31.55	2.72	0.14
1294	30.92	31.40	2.72	0.14
1295	30.77	31.25	2.72	0.14
1296	30.63	31.10	2.72	0.14
1297	30.48	30.95	2.72	0.14
1298	30.34	30.81	2.72	0.14
1299	30.21	30.66	2.72	0.14
1300	30.08	30.52	2.72	0.13
1310	28.80	29.20	2.72	0.13
1320	27.67	28.02	2.72	0.12
1330	26.71	27.01	2.72	0.12
1340	25.86	26.13	2.72	0.12
1350	25.07	25.32	2.72	0.11
1360	24.36	24.59	2.72	0.11
1370	23.70	23.91	2.72	0.11
1380	23.09	23.28	2.72	0.10
1390	22.51	22.70	2.72	0.10
1400	21.99	22.15	2.72	0.10
1420	21.05	21.19	2.72	0.09
1440	20.23	20.35	2.72	0.09

**County of Los Angeles Department of Public Works
ATTACHMENT C-1
RESERVOIR ROUTING ANALYSIS**

***** RESERVOIR ROUTING STORM DAY 4 *****

RESERVOIR ROUTING at 47A STORM DAY 4 STORM FREQ. 50
INITIAL WATER SURFACE ELEVATION: 2.72

RESERVOIR ROUTING TABLE at 47A

TIME	INFLOW (cfs)	OUTFLOW (cfs)	W.S.ELEV (ft.)	STORAGE (a.f.)
0	0.00	20.35	2.72	0.09
100	53.78	53.37	2.74	0.24
200	57.44	57.35	2.74	0.25
300	60.40	60.30	2.75	0.27
400	63.90	63.78	2.75	0.28
500	68.15	68.00	2.75	0.30
600	73.43	73.25	2.76	0.32
700	80.22	79.97	2.76	0.35
800	89.96	89.47	2.77	0.39
900	109.07	107.54	2.80	0.58
1000	135.07	132.22	2.85	0.86
1050	159.25	154.39	2.89	1.12
1100	207.84	193.55	2.97	1.62
1110	225.13	205.80	3.01	1.85
1120	246.92	221.85	3.07	2.16
1130	276.13	242.89	3.13	2.56
1131	279.64	245.34	3.14	2.60
1132	283.32	247.88	3.15	2.65
1133	287.12	250.50	3.16	2.70
1134	291.01	253.21	3.17	2.75
1135	295.06	256.01	3.18	2.80
1136	299.28	258.90	3.19	2.86
1137	303.68	261.89	3.19	2.92
1138	308.30	264.99	3.20	2.97
1139	313.14	268.20	3.22	3.04
1140	318.25	271.53	3.23	3.10
1141	323.65	275.00	3.24	3.16
1142	329.33	278.62	3.25	3.23
1143	335.38	281.34	3.26	3.30
1144	341.89	284.12	3.27	3.38
1145	348.99	287.09	3.29	3.46
1146	356.69	290.24	3.30	3.55
1147	364.96	293.47	3.32	3.65
1148	373.96	296.94	3.33	3.75
1149	383.94	300.69	3.35	3.86
1150	395.22	304.76	3.37	3.98
1151	408.56	309.20	3.39	4.11
1152	429.38	314.21	3.41	4.26
1153	448.80	319.92	3.44	4.43
1154	466.36	326.21	3.47	4.61
1155	483.24	333.01	3.50	4.81
1156	501.44	340.29	3.53	5.03
1157	521.56	348.12	3.57	5.26
1158	542.72	356.53	3.61	5.50
1159	564.06	365.53	3.65	5.77
1160	585.15	374.47	3.69	6.05
1161	605.64	382.54	3.74	6.35
1162	625.28	391.06	3.79	6.66
1163	643.98	399.96	3.84	6.99
1164	661.54	409.20	3.90	7.34
1165	677.86	418.73	3.95	7.69
1166	692.92	428.48	4.01	8.05

**County of Los Angeles Department of Public Works
ATTACHMENT C-1
RESERVOIR ROUTING ANALYSIS**

1167	706.88	438.40	4.07	8.42
1168	719.67	448.45	4.12	8.79
1169	730.91	458.57	4.18	9.16
1170	740.11	468.03	4.24	9.54
1171	746.95	476.31	4.30	9.91
1172	751.16	484.50	4.36	10.28
1173	750.89	492.51	4.42	10.64
1174	750.46	500.27	4.47	10.99
1175	748.87	507.76	4.52	11.33
1176	745.99	514.96	4.57	11.66
1177	741.69	521.83	4.62	11.97
1178	733.20	528.31	4.67	12.26
1179	724.20	534.33	4.71	12.53
1180	713.61	539.88	4.75	12.78
1181	700.57	544.90	4.79	13.01
1182	685.33	549.35	4.82	13.21
1183	667.47	553.16	4.85	13.38
1184	647.55	556.30	4.87	13.52
1185	626.56	558.62	4.89	13.63
1186	603.47	560.05	4.90	13.71
1187	577.56	560.83	4.90	13.75
1188	549.68	560.90	4.90	13.75
1189	521.73	560.26	4.90	13.72
1190	494.66	558.93	4.89	13.65
1191	468.76	556.78	4.87	13.54
1192	444.64	553.77	4.85	13.41
1193	422.52	550.16	4.82	13.25
1194	401.96	546.02	4.79	13.06
1195	382.88	541.40	4.76	12.85
1196	364.63	536.37	4.73	12.62
1197	347.28	530.95	4.69	12.38
1198	331.07	525.19	4.65	12.12
1199	316.13	519.13	4.60	11.84
1200	302.60	512.83	4.56	11.56
1201	290.34	506.33	4.51	11.27
1202	278.91	499.67	4.47	10.97
1203	268.46	492.88	4.42	10.66
1204	258.59	485.99	4.37	10.35
1205	249.16	479.02	4.32	10.03
1206	240.36	471.98	4.27	9.72
1207	232.20	464.88	4.22	9.40
1208	224.67	456.23	4.17	9.08
1209	217.71	447.64	4.12	8.76
1210	211.25	439.12	4.07	8.44
1211	205.27	430.68	4.02	8.13
1212	199.72	422.33	3.97	7.82
1213	194.58	414.10	3.92	7.52
1214	189.89	405.99	3.88	7.22
1215	185.58	398.01	3.83	6.92
1216	181.64	390.17	3.79	6.63
1217	178.01	382.48	3.74	6.35
1218	174.71	374.95	3.70	6.07
1219	171.70	366.46	3.65	5.80
1220	168.82	357.50	3.61	5.53
1221	166.03	348.81	3.57	5.28
1222	163.30	340.39	3.53	5.03
1223	160.66	332.23	3.50	4.79
1224	158.12	324.33	3.46	4.56
1225	155.66	316.68	3.42	4.33
1226	153.30	309.27	3.39	4.11

**County of Los Angeles Department of Public Works
ATTACHMENT C-1
RESERVOIR ROUTING ANALYSIS**

1227	151.11	302.09	3.36	3.90
1228	149.08	295.14	3.32	3.70
1229	147.01	288.33	3.29	3.50
1230	145.00	281.44	3.26	3.31
1231	143.06	272.89	3.23	3.12
1232	141.22	263.70	3.20	2.95
1233	139.46	255.04	3.17	2.79
1234	137.76	246.86	3.15	2.63
1235	136.12	239.14	3.12	2.49
1236	134.54	231.85	3.10	2.35
1237	133.02	224.97	3.08	2.22
1238	131.56	218.46	3.05	2.09
1239	130.14	212.30	3.03	1.98
1240	128.77	206.49	3.02	1.87
1241	127.45	200.98	3.00	1.76
1242	126.18	195.77	2.98	1.66
1243	124.94	190.84	2.97	1.57
1244	123.75	186.17	2.95	1.48
1245	122.60	179.16	2.94	1.40
1246	121.50	172.71	2.92	1.33
1247	120.42	166.87	2.91	1.26
1248	119.38	161.56	2.90	1.20
1249	118.36	156.74	2.89	1.14
1250	117.37	152.35	2.88	1.09
1251	116.42	148.34	2.88	1.05
1252	115.49	144.68	2.87	1.00
1253	114.59	141.34	2.86	0.97
1254	113.72	138.27	2.86	0.93
1255	112.89	135.45	2.85	0.90
1256	112.07	132.85	2.85	0.87
1257	111.26	130.46	2.84	0.84
1258	110.47	128.24	2.84	0.82
1259	109.69	126.19	2.83	0.79
1260	108.93	124.29	2.83	0.77
1261	108.19	122.51	2.83	0.75
1262	107.46	120.85	2.82	0.73
1263	106.73	119.30	2.82	0.71
1264	106.03	117.84	2.82	0.70
1265	105.33	116.46	2.82	0.68
1266	104.64	115.17	2.81	0.67
1267	103.96	113.94	2.81	0.65
1268	103.27	112.77	2.81	0.64
1269	102.60	111.66	2.81	0.62
1270	101.93	110.60	2.80	0.61
1271	101.26	109.58	2.80	0.60
1272	100.58	108.60	2.80	0.59
1273	99.91	107.66	2.80	0.58
1274	99.24	106.75	2.80	0.57
1275	98.57	105.86	2.79	0.56
1276	97.90	105.00	2.79	0.55
1277	97.23	104.16	2.79	0.54
1278	96.56	103.34	2.79	0.53
1279	95.90	102.54	2.79	0.52
1280	95.24	101.75	2.79	0.51
1281	94.59	100.98	2.79	0.50
1282	93.93	100.22	2.78	0.49
1283	93.29	99.47	2.78	0.48
1284	92.65	98.74	2.78	0.48
1285	92.02	98.02	2.78	0.47
1286	91.41	97.30	2.78	0.46

**County of Los Angeles Department of Public Works
ATTACHMENT C-1
RESERVOIR ROUTING ANALYSIS**

1287	90.79	96.60	2.78	0.45
1288	90.20	95.91	2.78	0.44
1289	89.61	95.23	2.77	0.44
1290	89.04	94.57	2.77	0.43
1291	88.48	93.91	2.77	0.42
1292	87.94	93.27	2.77	0.41
1293	87.40	92.13	2.77	0.41
1294	86.89	90.78	2.77	0.40
1295	86.38	89.66	2.77	0.40
1296	85.89	88.71	2.77	0.39
1297	85.41	87.88	2.77	0.39
1298	84.95	87.15	2.77	0.38
1299	84.50	86.50	2.77	0.38
1300	84.06	85.90	2.76	0.38
1310	80.32	81.48	2.76	0.36
1320	77.28	78.23	2.76	0.34
1330	74.64	75.47	2.76	0.33
1340	72.28	73.02	2.75	0.32
1350	70.15	70.82	2.75	0.31
1360	68.31	68.89	2.75	0.30
1370	66.56	67.11	2.75	0.30
1380	64.92	65.44	2.75	0.29
1390	63.42	63.89	2.75	0.28
1400	62.07	62.50	2.75	0.28
1420	59.48	59.88	2.75	0.26
1440	57.20	57.55	2.74	0.25

County of Los Angeles Department of Public Works
ATTACHMENT C-2
RESERVOIR ROUTING ANALYSIS

RESERVOIR ROUTING at 47A STORM DAY 1 STORM FREQ. 50
 INITIAL WATER SURFACE ELEVATION: 3.40
 RESERVOIR COMPOSITE ELEVATION-STORAGE-DISCHARGE DATA at 47A

ELEVATION (ft.)	STORAGE (a.f.)	OUTFLOW (cfs)
3.40	0.00	0.00
3.47	0.41	93.00
3.65	1.48	186.00
3.95	3.24	279.00
4.00	3.54	289.81
4.38	5.96	372.00
4.92	9.40	465.00
5.58	13.60	558.00
6.00	16.27	608.08
6.36	18.42	651.00
6.70	20.46	685.75
7.27	24.14	744.00
7.70	26.91	783.21
8.29	30.72	837.00
9.43	38.07	930.00
10.00	41.75	972.00

RESERVOIR ROUTING TABLE at 47A

TIME	INFLOW (cfs)	OUTFLOW (cfs)	W.S.ELEV (ft.)	STORAGE (a.f.)
0	0.00	0.00	3.40	0.00
100	4.53	4.33	3.40	0.02
200	5.69	5.68	3.40	0.03
300	5.99	5.98	3.40	0.03
400	6.33	6.32	3.40	0.03
500	6.74	6.73	3.41	0.03
600	7.25	7.24	3.41	0.03
700	7.91	7.88	3.41	0.03
800	8.79	8.75	3.41	0.04
900	10.09	10.04	3.41	0.04
1000	12.28	12.18	3.41	0.05
1050	14.18	14.03	3.41	0.06
1100	17.54	17.25	3.41	0.08
1110	18.60	18.25	3.41	0.08
1120	19.90	19.46	3.41	0.09
1130	21.57	21.00	3.42	0.09
1131	21.77	21.18	3.42	0.09
1132	21.98	21.37	3.42	0.09
1133	22.19	21.56	3.42	0.10
1134	22.41	21.76	3.42	0.10
1135	22.64	21.97	3.42	0.10
1136	22.88	22.18	3.42	0.10
1137	23.12	22.40	3.42	0.10
1138	23.38	22.63	3.42	0.10
1139	23.65	22.87	3.42	0.10
1140	23.93	23.12	3.42	0.10
1141	24.22	23.37	3.42	0.10
1142	24.52	23.64	3.42	0.10
1143	24.85	23.93	3.42	0.11
1144	25.19	24.22	3.42	0.11
1145	25.55	24.53	3.42	0.11
1146	25.94	24.86	3.42	0.11
1147	26.35	25.21	3.42	0.11
1148	26.80	25.58	3.42	0.11
1149	27.30	25.98	3.42	0.11

**County of Los Angeles Department of Public Works
ATTACHMENT C-2
RESERVOIR ROUTING ANALYSIS**

1150	27.85	26.41	3.42	0.12
1151	28.50	26.89	3.42	0.12
1152	29.53	27.46	3.42	0.12
1153	30.42	28.14	3.42	0.12
1154	31.23	28.87	3.42	0.13
1155	31.95	29.60	3.42	0.13
1156	32.61	30.32	3.42	0.13
1157	33.27	31.03	3.42	0.14
1158	34.00	31.74	3.42	0.14
1159	34.79	32.45	3.42	0.14
1160	35.65	33.20	3.42	0.15
1161	36.57	33.99	3.43	0.15
1162	37.51	34.81	3.43	0.15
1163	38.45	35.67	3.43	0.16
1164	39.36	36.54	3.43	0.16
1165	40.23	37.42	3.43	0.16
1166	41.05	38.29	3.43	0.17
1167	41.82	39.14	3.43	0.17
1168	42.55	39.96	3.43	0.18
1169	43.22	40.75	3.43	0.18
1170	43.83	41.50	3.43	0.18
1171	44.37	42.20	3.43	0.19
1172	44.80	42.85	3.43	0.19
1173	45.03	43.41	3.43	0.19
1174	45.33	43.89	3.43	0.19
1175	45.58	44.31	3.43	0.20
1176	45.75	44.68	3.43	0.20
1177	45.89	44.99	3.43	0.20
1178	45.83	45.22	3.43	0.20
1179	45.92	45.40	3.43	0.20
1180	46.09	45.56	3.43	0.20
1181	46.21	45.72	3.43	0.20
1182	46.28	45.86	3.43	0.20
1183	46.25	45.97	3.43	0.20
1184	46.14	46.03	3.43	0.20
1185	45.99	46.04	3.43	0.20
1186	45.85	46.01	3.43	0.20
1187	45.68	45.94	3.43	0.20
1188	45.47	45.84	3.43	0.20
1189	45.16	45.70	3.43	0.20
1190	44.75	45.50	3.43	0.20
1191	44.21	45.22	3.43	0.20
1192	43.59	44.87	3.43	0.20
1193	42.92	44.43	3.43	0.20
1194	42.23	43.93	3.43	0.19
1195	41.53	43.38	3.43	0.19
1196	40.84	42.78	3.43	0.19
1197	40.15	42.16	3.43	0.19
1198	39.44	41.52	3.43	0.18
1199	38.74	40.87	3.43	0.18
1200	38.04	40.20	3.43	0.18
1201	37.32	39.52	3.43	0.17
1202	36.59	38.82	3.43	0.17
1203	35.85	38.12	3.43	0.17
1204	35.10	37.41	3.43	0.16
1205	34.34	36.68	3.43	0.16
1206	33.57	35.94	3.43	0.16
1207	32.80	35.20	3.43	0.16
1208	32.02	34.44	3.43	0.15
1209	31.24	33.68	3.43	0.15

**County of Los Angeles Department of Public Works
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RESERVOIR ROUTING ANALYSIS**

1210	30.47	32.92	3.42	0.15
1211	29.70	32.15	3.42	0.14
1212	28.94	31.39	3.42	0.14
1213	28.19	30.62	3.42	0.14
1214	27.45	29.87	3.42	0.13
1215	26.74	29.12	3.42	0.13
1216	26.04	28.38	3.42	0.13
1217	25.36	27.65	3.42	0.12
1218	24.70	26.95	3.42	0.12
1219	24.07	26.25	3.42	0.12
1220	23.46	25.58	3.42	0.11
1221	22.88	24.93	3.42	0.11
1222	22.32	24.30	3.42	0.11
1223	21.78	23.69	3.42	0.10
1224	21.26	23.10	3.42	0.10
1225	20.77	22.54	3.42	0.10
1226	20.29	22.00	3.42	0.10
1227	19.84	21.48	3.42	0.09
1228	19.41	20.98	3.42	0.09
1229	19.00	20.50	3.42	0.09
1230	18.61	20.04	3.42	0.09
1231	18.23	19.60	3.41	0.09
1232	17.87	19.19	3.41	0.08
1233	17.53	18.78	3.41	0.08
1234	17.20	18.40	3.41	0.08
1235	16.88	18.03	3.41	0.08
1236	16.58	17.68	3.41	0.08
1237	16.29	17.34	3.41	0.08
1238	16.02	17.02	3.41	0.08
1239	15.76	16.72	3.41	0.07
1240	15.50	16.42	3.41	0.07
1241	15.26	16.14	3.41	0.07
1242	15.03	15.87	3.41	0.07
1243	14.81	15.61	3.41	0.07
1244	14.60	15.37	3.41	0.07
1245	14.39	15.13	3.41	0.07
1246	14.20	14.91	3.41	0.07
1247	14.01	14.69	3.41	0.06
1248	13.83	14.48	3.41	0.06
1249	13.66	14.28	3.41	0.06
1250	13.49	14.09	3.41	0.06
1251	13.33	13.91	3.41	0.06
1252	13.17	13.73	3.41	0.06
1253	13.01	13.56	3.41	0.06
1254	12.87	13.39	3.41	0.06
1255	12.72	13.23	3.41	0.06
1256	12.58	13.07	3.41	0.06
1257	12.44	12.92	3.41	0.06
1258	12.31	12.77	3.41	0.06
1259	12.18	12.63	3.41	0.06
1260	12.06	12.49	3.41	0.06
1261	11.95	12.36	3.41	0.05
1262	11.83	12.23	3.41	0.05
1263	11.73	12.11	3.41	0.05
1264	11.62	11.99	3.41	0.05
1265	11.52	11.88	3.41	0.05
1266	11.42	11.77	3.41	0.05
1267	11.33	11.66	3.41	0.05
1268	11.24	11.56	3.41	0.05
1269	11.15	11.46	3.41	0.05

**County of Los Angeles Department of Public Works
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RESERVOIR ROUTING ANALYSIS**

1270	11.06	11.36	3.41	0.05
1271	10.97	11.27	3.41	0.05
1272	10.88	11.18	3.41	0.05
1273	10.80	11.09	3.41	0.05
1274	10.72	11.00	3.41	0.05
1275	10.64	10.91	3.41	0.05
1276	10.57	10.83	3.41	0.05
1277	10.49	10.75	3.41	0.05
1278	10.41	10.67	3.41	0.05
1279	10.34	10.59	3.41	0.05
1280	10.27	10.51	3.41	0.05
1281	10.20	10.44	3.41	0.05
1282	10.13	10.36	3.41	0.05
1283	10.06	10.29	3.41	0.05
1284	10.00	10.22	3.41	0.05
1285	9.93	10.15	3.41	0.04
1286	9.87	10.09	3.41	0.04
1287	9.81	10.02	3.41	0.04
1288	9.75	9.95	3.41	0.04
1289	9.69	9.89	3.41	0.04
1290	9.63	9.83	3.41	0.04
1291	9.57	9.77	3.41	0.04
1292	9.52	9.71	3.41	0.04
1293	9.46	9.65	3.41	0.04
1294	9.41	9.59	3.41	0.04
1295	9.36	9.53	3.41	0.04
1296	9.31	9.48	3.41	0.04
1297	9.26	9.43	3.41	0.04
1298	9.21	9.38	3.41	0.04
1299	9.16	9.32	3.41	0.04
1300	9.12	9.27	3.41	0.04
1310	8.69	8.82	3.41	0.04
1320	8.31	8.43	3.41	0.04
1330	7.98	8.09	3.41	0.04
1340	7.69	7.78	3.41	0.03
1350	7.43	7.51	3.41	0.03
1360	7.20	7.28	3.41	0.03
1370	6.99	7.06	3.41	0.03
1380	6.81	6.86	3.41	0.03
1390	6.64	6.69	3.41	0.03
1400	6.47	6.52	3.40	0.03
1420	6.18	6.22	3.40	0.03
1440	5.92	5.96	3.40	0.03

County of Los Angeles Department of Public Works
ATTACHMENT C-2
RESERVOIR ROUTING ANALYSIS

***** RESERVOIR ROUTING STORM DAY 2 *****

RESERVOIR ROUTING at 47A STORM DAY 2 STORM FREQ. 50
 INITIAL WATER SURFACE ELEVATION: 3.40

RESERVOIR ROUTING TABLE at 47A

TIME	INFLOW (cfs)	OUTFLOW (cfs)	W.S.ELEV (ft.)	STORAGE (a.f.)
0	0.00	5.96	3.40	0.03
100	21.03	20.73	3.42	0.09
200	22.93	22.89	3.42	0.10
300	24.11	24.07	3.42	0.11
400	25.50	25.45	3.42	0.11
500	27.17	27.11	3.42	0.12
600	29.25	29.18	3.42	0.13
700	31.95	31.85	3.42	0.14
800	35.59	35.45	3.43	0.16
900	40.99	40.77	3.43	0.18
1000	50.25	49.85	3.44	0.22
1050	58.41	57.76	3.44	0.25
1100	73.20	71.88	3.45	0.32
1110	77.97	76.38	3.46	0.34
1120	83.96	81.95	3.46	0.36
1130	92.09	89.26	3.47	0.39
1131	93.16	90.17	3.47	0.40
1132	94.30	91.13	3.47	0.40
1133	95.49	92.15	3.47	0.41
1134	96.75	93.09	3.47	0.41
1135	98.07	93.58	3.47	0.42
1136	99.47	94.17	3.47	0.42
1137	100.94	94.85	3.47	0.43
1138	102.47	95.62	3.48	0.44
1139	104.07	96.49	3.48	0.45
1140	105.74	97.44	3.48	0.46
1141	107.51	98.48	3.48	0.47
1142	109.36	99.60	3.48	0.49
1143	111.31	100.81	3.49	0.50
1144	113.35	102.11	3.49	0.51
1145	115.50	103.51	3.49	0.53
1146	117.78	104.99	3.49	0.55
1147	120.21	106.57	3.50	0.57
1148	122.84	108.26	3.50	0.59
1149	125.81	110.07	3.50	0.61
1150	129.17	112.04	3.51	0.63
1151	133.07	114.20	3.51	0.65
1152	139.47	116.69	3.52	0.68
1153	145.21	119.59	3.52	0.72
1154	150.35	122.77	3.53	0.75
1155	154.95	126.15	3.53	0.79
1156	159.55	129.66	3.54	0.83
1157	164.59	133.32	3.55	0.87
1158	170.11	137.17	3.56	0.92
1159	175.99	141.22	3.56	0.96
1160	182.02	145.49	3.57	1.01
1161	187.99	149.95	3.58	1.07
1162	193.87	154.58	3.59	1.12
1163	199.59	159.34	3.60	1.17
1164	205.03	164.20	3.61	1.23
1165	210.18	169.10	3.62	1.29
1166	215.00	174.01	3.63	1.34

**County of Los Angeles Department of Public Works
ATTACHMENT C-2
RESERVOIR ROUTING ANALYSIS**

1167	219.41	178.89	3.64	1.40
1168	223.42	183.69	3.65	1.45
1169	227.02	187.48	3.65	1.51
1170	230.10	190.37	3.66	1.56
1171	232.81	193.25	3.67	1.62
1172	235.00	196.11	3.68	1.67
1173	236.36	198.89	3.69	1.72
1174	237.75	201.57	3.70	1.77
1175	238.79	204.14	3.71	1.82
1176	239.59	206.61	3.72	1.87
1177	240.36	208.95	3.72	1.91
1178	240.06	211.14	3.73	1.96
1179	240.40	213.19	3.74	1.99
1180	240.73	215.11	3.74	2.03
1181	240.60	216.90	3.75	2.06
1182	240.05	218.55	3.75	2.10
1183	238.98	220.02	3.76	2.12
1184	237.20	221.29	3.76	2.15
1185	234.98	222.33	3.77	2.17
1186	232.31	223.12	3.77	2.18
1187	228.70	223.64	3.77	2.19
1188	224.08	223.83	3.77	2.20
1189	218.32	223.65	3.77	2.19
1190	211.91	223.05	3.77	2.18
1191	205.03	222.03	3.77	2.16
1192	197.69	220.58	3.76	2.13
1193	190.27	218.71	3.76	2.10
1194	182.79	216.45	3.75	2.06
1195	175.36	213.82	3.74	2.01
1196	168.04	210.86	3.73	1.95
1197	160.88	207.61	3.72	1.89
1198	153.93	204.08	3.71	1.82
1199	147.25	200.32	3.70	1.75
1200	140.86	196.37	3.68	1.68
1201	134.78	192.26	3.67	1.60
1202	129.02	188.02	3.66	1.52
1203	123.57	182.28	3.64	1.44
1204	118.44	175.36	3.63	1.36
1205	113.64	168.66	3.62	1.28
1206	109.16	162.19	3.60	1.21
1207	104.96	155.96	3.59	1.13
1208	101.02	149.98	3.58	1.07
1209	97.35	144.24	3.57	1.00
1210	94.00	138.76	3.56	0.94
1211	90.84	133.52	3.55	0.88
1212	87.87	128.53	3.54	0.82
1213	85.12	123.79	3.53	0.76
1214	82.58	119.27	3.52	0.71
1215	80.25	115.00	3.51	0.66
1216	78.05	110.95	3.50	0.62
1217	75.97	107.12	3.50	0.57
1218	74.06	103.49	3.49	0.53
1219	72.28	100.06	3.48	0.49
1220	70.65	96.83	3.48	0.45
1221	69.07	93.79	3.47	0.42
1222	67.58	88.00	3.47	0.39
1223	66.17	82.29	3.46	0.36
1224	64.85	77.76	3.46	0.34
1225	63.60	74.10	3.46	0.33
1226	62.43	71.11	3.45	0.31

**County of Los Angeles Department of Public Works
ATTACHMENT C-2
RESERVOIR ROUTING ANALYSIS**

1227	61.35	68.61	3.45	0.30
1228	60.33	66.51	3.45	0.29
1229	59.37	64.71	3.45	0.29
1230	58.44	63.14	3.45	0.28
1231	57.58	61.76	3.45	0.27
1232	56.74	60.51	3.45	0.27
1233	55.93	59.39	3.44	0.26
1234	55.16	58.35	3.44	0.26
1235	54.41	57.39	3.44	0.25
1236	53.70	56.49	3.44	0.25
1237	53.02	55.64	3.44	0.25
1238	52.37	54.85	3.44	0.24
1239	51.75	54.09	3.44	0.24
1240	51.16	53.38	3.44	0.24
1241	50.59	52.70	3.44	0.23
1242	50.05	52.06	3.44	0.23
1243	49.52	51.44	3.44	0.23
1244	49.01	50.86	3.44	0.22
1245	48.52	50.29	3.44	0.22
1246	48.06	49.75	3.44	0.22
1247	47.62	49.24	3.44	0.22
1248	47.19	48.74	3.44	0.21
1249	46.77	48.26	3.44	0.21
1250	46.36	47.80	3.44	0.21
1251	45.96	47.36	3.44	0.21
1252	45.56	46.93	3.44	0.21
1253	45.18	46.51	3.44	0.21
1254	44.82	46.10	3.43	0.20
1255	44.46	45.70	3.43	0.20
1256	44.10	45.32	3.43	0.20
1257	43.75	44.94	3.43	0.20
1258	43.41	44.58	3.43	0.20
1259	43.08	44.22	3.43	0.19
1260	42.75	43.86	3.43	0.19
1261	42.44	43.52	3.43	0.19
1262	42.13	43.19	3.43	0.19
1263	41.83	42.86	3.43	0.19
1264	41.54	42.54	3.43	0.19
1265	41.25	42.23	3.43	0.19
1266	40.97	41.93	3.43	0.18
1267	40.70	41.63	3.43	0.18
1268	40.43	41.34	3.43	0.18
1269	40.17	41.06	3.43	0.18
1270	39.91	40.78	3.43	0.18
1271	39.66	40.51	3.43	0.18
1272	39.41	40.25	3.43	0.18
1273	39.18	39.99	3.43	0.18
1274	38.94	39.74	3.43	0.18
1275	38.72	39.49	3.43	0.17
1276	38.50	39.25	3.43	0.17
1277	38.28	39.02	3.43	0.17
1278	38.07	38.79	3.43	0.17
1279	37.87	38.57	3.43	0.17
1280	37.66	38.35	3.43	0.17
1281	37.46	38.14	3.43	0.17
1282	37.27	37.93	3.43	0.17
1283	37.07	37.72	3.43	0.17
1284	36.88	37.52	3.43	0.17
1285	36.69	37.32	3.43	0.16
1286	36.50	37.13	3.43	0.16

**County of Los Angeles Department of Public Works
ATTACHMENT C-2
RESERVOIR ROUTING ANALYSIS**

1287	36.32	36.93	3.43	0.16
1288	36.14	36.74	3.43	0.16
1289	35.96	36.56	3.43	0.16
1290	35.79	36.37	3.43	0.16
1291	35.63	36.19	3.43	0.16
1292	35.46	36.02	3.43	0.16
1293	35.29	35.85	3.43	0.16
1294	35.13	35.67	3.43	0.16
1295	34.96	35.50	3.43	0.16
1296	34.80	35.34	3.43	0.16
1297	34.64	35.17	3.43	0.16
1298	34.49	35.01	3.43	0.15
1299	34.33	34.85	3.43	0.15
1300	34.18	34.69	3.43	0.15
1310	32.76	33.20	3.42	0.15
1320	31.51	31.90	3.42	0.14
1330	30.40	30.75	3.42	0.14
1340	29.44	29.74	3.42	0.13
1350	28.55	28.83	3.42	0.13
1360	27.75	28.00	3.42	0.12
1370	27.01	27.25	3.42	0.12
1380	26.32	26.54	3.42	0.12
1390	25.69	25.89	3.42	0.11
1400	25.09	25.28	3.42	0.11
1420	24.02	24.18	3.42	0.11
1440	23.07	23.22	3.42	0.10

County of Los Angeles Department of Public Works
ATTACHMENT C-2
RESERVOIR ROUTING ANALYSIS

***** RESERVOIR ROUTING STORM DAY 3 *****

RESERVOIR ROUTING at 47A STORM DAY 3 STORM FREQ. 50
 INITIAL WATER SURFACE ELEVATION: 3.42

RESERVOIR ROUTING TABLE at 47A

TIME	INFLOW (cfs)	OUTFLOW (cfs)	W.S.ELEV (ft.)	STORAGE (a.f.)
0	0.00	23.22	3.42	0.10
100	18.25	17.94	3.41	0.08
200	20.05	20.02	3.42	0.09
300	21.09	21.05	3.42	0.09
400	22.30	22.26	3.42	0.10
500	23.76	23.71	3.42	0.10
600	25.58	25.51	3.42	0.11
700	27.92	27.84	3.42	0.12
800	31.11	30.99	3.42	0.14
900	35.81	35.62	3.43	0.16
1000	43.86	43.51	3.43	0.19
1050	50.99	50.43	3.44	0.22
1100	63.79	62.67	3.45	0.28
1110	67.97	66.59	3.45	0.29
1120	73.12	71.38	3.45	0.31
1130	79.88	77.59	3.46	0.34
1131	80.68	78.32	3.46	0.35
1132	81.52	79.07	3.46	0.35
1133	82.38	79.85	3.46	0.35
1134	83.28	80.65	3.46	0.36
1135	84.22	81.49	3.46	0.36
1136	85.21	82.36	3.46	0.36
1137	86.24	83.27	3.46	0.37
1138	87.32	84.22	3.46	0.37
1139	88.45	85.21	3.46	0.38
1140	89.65	86.25	3.46	0.38
1141	90.92	87.34	3.47	0.39
1142	92.29	88.49	3.47	0.39
1143	93.75	89.72	3.47	0.40
1144	95.32	91.02	3.47	0.40
1145	97.02	92.41	3.47	0.41
1146	98.90	93.38	3.47	0.41
1147	100.97	94.12	3.47	0.42
1148	103.25	95.02	3.47	0.43
1149	105.78	96.09	3.48	0.45
1150	108.62	97.35	3.48	0.46
1151	112.07	98.82	3.48	0.48
1152	117.65	100.63	3.48	0.50
1153	122.63	102.83	3.49	0.52
1154	127.02	105.32	3.49	0.55
1155	130.97	107.99	3.50	0.58
1156	134.89	110.81	3.50	0.61
1157	139.13	113.77	3.51	0.65
1158	143.80	116.90	3.52	0.68
1159	148.79	120.22	3.52	0.72
1160	153.95	123.74	3.53	0.76
1161	159.07	127.44	3.54	0.81
1162	164.02	131.29	3.54	0.85
1163	168.79	135.26	3.55	0.90
1164	173.33	139.30	3.56	0.94
1165	177.63	143.39	3.57	0.99
1166	181.68	147.48	3.58	1.04

**County of Los Angeles Department of Public Works
ATTACHMENT C-2
RESERVOIR ROUTING ANALYSIS**

1167	185.45	151.56	3.58	1.08
1168	188.92	155.58	3.59	1.13
1169	192.07	159.53	3.60	1.18
1170	194.90	163.36	3.61	1.22
1171	197.33	167.06	3.61	1.26
1172	199.44	170.60	3.62	1.30
1173	200.71	173.93	3.63	1.34
1174	201.97	177.03	3.63	1.38
1175	203.06	179.91	3.64	1.41
1176	203.94	182.57	3.64	1.44
1177	204.73	185.03	3.65	1.47
1178	204.71	186.78	3.65	1.49
1179	205.06	188.05	3.66	1.52
1180	205.41	189.26	3.66	1.54
1181	205.44	190.39	3.66	1.56
1182	205.00	191.43	3.67	1.58
1183	203.96	192.35	3.67	1.60
1184	202.46	193.11	3.67	1.61
1185	200.62	193.70	3.67	1.63
1186	198.33	194.11	3.68	1.63
1187	195.41	194.30	3.68	1.64
1188	191.61	194.25	3.68	1.64
1189	186.89	193.90	3.68	1.63
1190	181.42	193.21	3.67	1.62
1191	175.64	192.18	3.67	1.60
1192	169.70	190.81	3.67	1.57
1193	163.69	189.12	3.66	1.54
1194	157.67	187.12	3.65	1.50
1195	151.67	184.14	3.65	1.46
1196	145.74	180.13	3.64	1.41
1197	139.91	175.92	3.63	1.36
1198	134.24	171.53	3.62	1.31
1199	128.75	167.01	3.61	1.26
1200	123.49	162.39	3.60	1.21
1201	118.46	157.71	3.60	1.15
1202	113.68	153.01	3.59	1.10
1203	109.14	148.31	3.58	1.05
1204	104.85	143.65	3.57	0.99
1205	100.81	139.03	3.56	0.94
1206	97.02	134.50	3.55	0.89
1207	93.42	130.07	3.54	0.84
1208	90.02	125.73	3.53	0.79
1209	86.86	121.52	3.53	0.74
1210	83.95	117.44	3.52	0.69
1211	81.17	113.50	3.51	0.65
1212	78.56	109.70	3.50	0.60
1213	76.13	106.05	3.50	0.56
1214	73.89	102.54	3.49	0.52
1215	71.82	99.19	3.48	0.48
1216	69.84	95.98	3.48	0.44
1217	67.99	92.83	3.47	0.41
1218	66.28	89.88	3.46	0.38
1219	64.68	87.03	3.46	0.35
1220	63.19	84.28	3.46	0.33
1221	61.74	81.63	3.45	0.32
1222	60.37	79.08	3.45	0.31
1223	59.09	76.63	3.45	0.29
1224	57.88	74.28	3.45	0.28
1225	56.75	72.03	3.45	0.28
1226	55.69	70.88	3.45	0.27

County of Los Angeles Department of Public Works
ATTACHMENT C-2
RESERVOIR ROUTING ANALYSIS

1227	54.71	59.31	3.44	0.26
1228	53.78	57.94	3.44	0.26
1229	52.90	56.70	3.44	0.25
1230	52.08	55.56	3.44	0.24
1231	51.28	54.51	3.44	0.24
1232	50.51	53.53	3.44	0.24
1233	49.77	52.62	3.44	0.23
1234	49.05	51.75	3.44	0.23
1235	48.36	50.93	3.44	0.22
1236	47.71	50.15	3.44	0.22
1237	47.08	49.40	3.44	0.22
1238	46.48	48.69	3.44	0.21
1239	45.91	48.02	3.44	0.21
1240	45.37	47.38	3.44	0.21
1241	44.85	46.77	3.44	0.21
1242	44.35	46.18	3.43	0.20
1243	43.87	45.62	3.43	0.20
1244	43.42	45.09	3.43	0.20
1245	42.98	44.58	3.43	0.20
1246	42.57	44.09	3.43	0.19
1247	42.16	43.62	3.43	0.19
1248	41.76	43.17	3.43	0.19
1249	41.38	42.74	3.43	0.19
1250	41.00	42.32	3.43	0.19
1251	40.64	41.91	3.43	0.18
1252	40.29	41.52	3.43	0.18
1253	39.94	41.14	3.43	0.18
1254	39.60	40.77	3.43	0.18
1255	39.27	40.41	3.43	0.18
1256	38.95	40.06	3.43	0.18
1257	38.64	39.72	3.43	0.18
1258	38.33	39.39	3.43	0.17
1259	38.04	39.06	3.43	0.17
1260	37.74	38.74	3.43	0.17
1261	37.46	38.44	3.43	0.17
1262	37.18	38.14	3.43	0.17
1263	36.91	37.84	3.43	0.17
1264	36.65	37.55	3.43	0.17
1265	36.39	37.27	3.43	0.16
1266	36.13	37.00	3.43	0.16
1267	35.89	36.73	3.43	0.16
1268	35.64	36.47	3.43	0.16
1269	35.40	36.21	3.43	0.16
1270	35.17	35.96	3.43	0.16
1271	34.95	35.72	3.43	0.16
1272	34.73	35.48	3.43	0.16
1273	34.51	35.25	3.43	0.16
1274	34.31	35.02	3.43	0.15
1275	34.10	34.80	3.43	0.15
1276	33.91	34.59	3.43	0.15
1277	33.71	34.38	3.43	0.15
1278	33.52	34.17	3.43	0.15
1279	33.33	33.97	3.43	0.15
1280	33.15	33.77	3.43	0.15
1281	32.97	33.58	3.43	0.15
1282	32.79	33.39	3.43	0.15
1283	32.62	33.21	3.42	0.15
1284	32.45	33.02	3.42	0.15
1285	32.29	32.85	3.42	0.14
1286	32.13	32.67	3.42	0.14

**County of Los Angeles Department of Public Works
ATTACHMENT C-2
RESERVOIR ROUTING ANALYSIS**

1287	31.97	32.51	3.42	0.14
1288	31.82	32.34	3.42	0.14
1289	31.67	32.18	3.42	0.14
1290	31.51	32.02	3.42	0.14
1291	31.36	31.86	3.42	0.14
1292	31.21	31.71	3.42	0.14
1293	31.06	31.55	3.42	0.14
1294	30.92	31.40	3.42	0.14
1295	30.77	31.25	3.42	0.14
1296	30.63	31.10	3.42	0.14
1297	30.48	30.95	3.42	0.14
1298	30.34	30.81	3.42	0.14
1299	30.21	30.66	3.42	0.14
1300	30.08	30.52	3.42	0.13
1310	28.80	29.20	3.42	0.13
1320	27.67	28.02	3.42	0.12
1330	26.71	27.01	3.42	0.12
1340	25.86	26.13	3.42	0.12
1350	25.07	25.32	3.42	0.11
1360	24.36	24.59	3.42	0.11
1370	23.70	23.91	3.42	0.11
1380	23.09	23.28	3.42	0.10
1390	22.51	22.70	3.42	0.10
1400	21.99	22.15	3.42	0.10
1420	21.05	21.19	3.42	0.09
1440	20.23	20.35	3.42	0.09

**County of Los Angeles Department of Public Works
ATTACHMENT C-2
RESERVOIR ROUTING ANALYSIS**

***** RESERVOIR ROUTING STORM DAY 4 *****

RESERVOIR ROUTING at 47A STORM DAY 4 STORM FREQ. 50
INITIAL WATER SURFACE ELEVATION: 3.42

RESERVOIR ROUTING TABLE at 47A

TIME	INFLOW (cfs)	OUTFLOW (cfs)	W.S.ELEV (ft.)	STORAGE (a.f.)
0	0.00	20.35	3.42	0.09
100	53.78	53.37	3.44	0.24
200	57.44	57.35	3.44	0.25
300	60.40	60.30	3.45	0.27
400	63.90	63.78	3.45	0.28
500	68.15	68.00	3.45	0.30
600	73.43	73.25	3.46	0.32
700	80.22	79.97	3.46	0.35
800	89.96	89.47	3.47	0.39
900	109.07	107.54	3.50	0.58
1000	135.07	132.22	3.55	0.86
1050	159.25	154.39	3.59	1.12
1100	207.84	193.55	3.67	1.62
1110	225.13	205.80	3.71	1.85
1120	246.92	221.85	3.77	2.16
1130	276.13	242.89	3.83	2.56
1131	279.64	245.34	3.84	2.60
1132	283.32	247.88	3.85	2.65
1133	287.12	250.50	3.86	2.70
1134	291.01	253.21	3.87	2.75
1135	295.06	256.01	3.88	2.80
1136	299.28	258.90	3.89	2.86
1137	303.68	261.89	3.89	2.92
1138	308.30	264.99	3.90	2.97
1139	313.14	268.20	3.92	3.04
1140	318.25	271.53	3.93	3.10
1141	323.65	275.00	3.94	3.16
1142	329.33	278.62	3.95	3.23
1143	335.38	281.34	3.96	3.30
1144	341.89	284.12	3.97	3.38
1145	348.99	287.09	3.99	3.46
1146	356.69	290.24	4.00	3.55
1147	364.96	293.47	4.02	3.65
1148	373.96	296.94	4.03	3.75
1149	383.94	300.69	4.05	3.86
1150	395.22	304.76	4.07	3.98
1151	408.56	309.20	4.09	4.11
1152	429.38	314.21	4.11	4.26
1153	448.80	319.92	4.14	4.43
1154	466.36	326.21	4.17	4.61
1155	483.24	333.01	4.20	4.81
1156	501.44	340.29	4.23	5.03
1157	521.56	348.12	4.27	5.26
1158	542.72	356.53	4.31	5.50
1159	564.06	365.53	4.35	5.77
1160	585.15	374.47	4.39	6.05
1161	605.64	382.54	4.44	6.35
1162	625.28	391.06	4.49	6.66
1163	643.98	399.96	4.54	6.99
1164	661.54	409.20	4.60	7.34
1165	677.86	418.73	4.65	7.69
1166	692.92	428.48	4.71	8.05

**County of Los Angeles Department of Public Works
ATTACHMENT C-2
RESERVOIR ROUTING ANALYSIS**

1167	706.88	438.40	4.77	8.42
1168	719.67	448.45	4.82	8.79
1169	730.91	458.57	4.88	9.16
1170	740.11	468.03	4.94	9.54
1171	746.95	476.31	5.00	9.91
1172	751.16	484.50	5.06	10.28
1173	750.89	492.51	5.12	10.64
1174	750.46	500.27	5.17	10.99
1175	748.87	507.76	5.22	11.33
1176	745.99	514.96	5.27	11.66
1177	741.69	521.83	5.32	11.97
1178	733.20	528.31	5.37	12.26
1179	724.20	534.33	5.41	12.53
1180	713.61	539.88	5.45	12.78
1181	700.57	544.90	5.49	13.01
1182	685.33	549.35	5.52	13.21
1183	667.47	553.16	5.55	13.38
1184	647.55	556.30	5.57	13.52
1185	626.56	558.62	5.59	13.63
1186	603.47	560.05	5.60	13.71
1187	577.56	560.83	5.60	13.75
1188	549.68	560.90	5.60	13.75
1189	521.73	560.26	5.60	13.72
1190	494.66	558.93	5.59	13.65
1191	468.76	556.78	5.57	13.54
1192	444.64	553.77	5.55	13.41
1193	422.52	550.16	5.52	13.25
1194	401.96	546.02	5.49	13.06
1195	382.88	541.40	5.46	12.85
1196	364.63	536.37	5.43	12.62
1197	347.28	530.95	5.39	12.38
1198	331.07	525.19	5.35	12.12
1199	316.13	519.13	5.30	11.84
1200	302.60	512.83	5.26	11.56
1201	290.34	506.33	5.21	11.27
1202	278.91	499.67	5.17	10.97
1203	268.46	492.88	5.12	10.66
1204	258.59	485.99	5.07	10.35
1205	249.16	479.02	5.02	10.03
1206	240.36	471.98	4.97	9.72
1207	232.20	464.88	4.92	9.40
1208	224.67	456.23	4.87	9.08
1209	217.71	447.64	4.82	8.76
1210	211.25	439.12	4.77	8.44
1211	205.27	430.68	4.72	8.13
1212	199.72	422.33	4.67	7.82
1213	194.58	414.10	4.62	7.52
1214	189.89	405.99	4.58	7.22
1215	185.58	398.01	4.53	6.92
1216	181.64	390.17	4.49	6.63
1217	178.01	382.48	4.44	6.35
1218	174.71	374.95	4.40	6.07
1219	171.70	366.46	4.35	5.80
1220	168.82	357.50	4.31	5.53
1221	166.03	348.81	4.27	5.28
1222	163.30	340.39	4.23	5.03
1223	160.66	332.23	4.20	4.79
1224	158.12	324.33	4.16	4.56
1225	155.66	316.68	4.12	4.33
1226	153.30	309.27	4.09	4.11

**County of Los Angeles Department of Public Works
ATTACHMENT C-2
RESERVOIR ROUTING ANALYSIS**

1227	151.11	302.09	4.06	3.90
1228	149.08	295.14	4.02	3.70
1229	147.01	288.33	3.99	3.50
1230	145.00	281.44	3.96	3.31
1231	143.06	272.89	3.93	3.12
1232	141.22	263.70	3.90	2.95
1233	139.46	255.04	3.87	2.79
1234	137.76	246.86	3.85	2.63
1235	136.12	239.14	3.82	2.49
1236	134.54	231.85	3.80	2.35
1237	133.02	224.97	3.78	2.22
1238	131.56	218.46	3.75	2.09
1239	130.14	212.30	3.73	1.98
1240	128.77	206.49	3.72	1.87
1241	127.45	200.98	3.70	1.76
1242	126.18	195.77	3.68	1.66
1243	124.94	190.84	3.67	1.57
1244	123.75	186.17	3.65	1.48
1245	122.60	179.16	3.64	1.40
1246	121.50	172.71	3.62	1.33
1247	120.42	166.87	3.61	1.26
1248	119.38	161.56	3.60	1.20
1249	118.36	156.74	3.59	1.14
1250	117.37	152.35	3.58	1.09
1251	116.42	148.34	3.58	1.05
1252	115.49	144.68	3.57	1.00
1253	114.59	141.34	3.56	0.97
1254	113.72	138.27	3.56	0.93
1255	112.89	135.45	3.55	0.90
1256	112.07	132.85	3.55	0.87
1257	111.26	130.46	3.54	0.84
1258	110.47	128.24	3.54	0.82
1259	109.69	126.19	3.53	0.79
1260	108.93	124.29	3.53	0.77
1261	108.19	122.51	3.53	0.75
1262	107.46	120.85	3.52	0.73
1263	106.73	119.30	3.52	0.71
1264	106.03	117.84	3.52	0.70
1265	105.33	116.46	3.52	0.68
1266	104.64	115.17	3.51	0.67
1267	103.96	113.94	3.51	0.65
1268	103.27	112.77	3.51	0.64
1269	102.60	111.66	3.51	0.62
1270	101.93	110.60	3.50	0.61
1271	101.26	109.58	3.50	0.60
1272	100.58	108.60	3.50	0.59
1273	99.91	107.66	3.50	0.58
1274	99.24	106.75	3.50	0.57
1275	98.57	105.86	3.49	0.56
1276	97.90	105.00	3.49	0.55
1277	97.23	104.16	3.49	0.54
1278	96.56	103.34	3.49	0.53
1279	95.90	102.54	3.49	0.52
1280	95.24	101.75	3.49	0.51
1281	94.59	100.98	3.49	0.50
1282	93.93	100.22	3.48	0.49
1283	93.29	99.47	3.48	0.48
1284	92.65	98.74	3.48	0.48
1285	92.02	98.02	3.48	0.47
1286	91.41	97.30	3.48	0.46

**County of Los Angeles Department of Public Works
ATTACHMENT C-2
RESERVOIR ROUTING ANALYSIS**

1287	90.79	96.60	3.48	0.45
1288	90.20	95.91	3.48	0.44
1289	89.61	95.23	3.47	0.44
1290	89.04	94.57	3.47	0.43
1291	88.48	93.91	3.47	0.42
1292	87.94	93.27	3.47	0.41
1293	87.40	92.13	3.47	0.41
1294	86.89	90.78	3.47	0.40
1295	86.38	89.66	3.47	0.40
1296	85.89	88.71	3.47	0.39
1297	85.41	87.88	3.47	0.39
1298	84.95	87.15	3.47	0.38
1299	84.50	86.50	3.47	0.38
1300	84.06	85.90	3.46	0.38
1310	80.32	81.48	3.46	0.36
1320	77.28	78.23	3.46	0.34
1330	74.64	75.47	3.46	0.33
1340	72.28	73.02	3.45	0.32
1350	70.15	70.82	3.45	0.31
1360	68.31	68.89	3.45	0.30
1370	66.56	67.11	3.45	0.30
1380	64.92	65.44	3.45	0.29
1390	63.42	63.89	3.45	0.28
1400	62.07	62.50	3.45	0.28
1420	59.48	59.88	3.45	0.26
1440	57.20	57.55	3.44	0.25

ATTACHMENT D
Subarea 33F Hydrograph

TIME (minutes)	FLOW (cfs)	CUM VOL (ac-ft)
0	0.00	0.000
100	1.03	0.071
200	1.08	0.216
300	1.14	0.369
400	1.21	0.531
500	1.29	0.703
600	1.39	0.888
700	1.53	1.089
800	1.71	1.312
900	1.99	1.567
1000	2.50	1.876
1050	3.21	2.073
1100	4.68	2.344
1110	5.17	2.412
1120	5.84	2.488
1130	6.83	2.575
1131	6.95	2.585
1132	7.08	2.594
1133	7.21	2.604
1134	7.35	2.614
1135	7.50	2.625
1136	7.67	2.635
1137	7.84	2.646
1138	8.03	2.657
1139	8.23	2.668
1140	8.45	2.679
1141	8.68	2.691
1142	8.94	2.703
1143	9.21	2.716
1144	9.51	2.729
1145	9.85	2.742
1146	10.24	2.756
1147	10.69	2.770
1148	11.22	2.785
1149	11.87	2.801
1150	12.68	2.818
1151	13.84	2.836
1152	17.06	2.858
1153	18.50	2.882
1154	18.88	2.908
1155	19.06	2.934
1156	19.13	2.960

TIME (minutes)	FLOW (cfs)	CUM VOL (ac-ft)
1157	19.12	2.987
1158	19.06	3.013
1159	18.94	3.039
1160	18.78	3.065
1161	18.58	3.091
1162	18.34	3.116
1163	18.06	3.141
1164	17.73	3.166
1165	17.37	3.190
1166	16.96	3.214
1167	16.51	3.237
1168	15.97	3.259
1169	15.37	3.281
1170	14.67	3.301
1171	13.85	3.321
1172	12.86	3.339
1173	11.51	3.356
1174	8.21	3.370
1175	6.63	3.380
1176	6.02	3.389
1177	5.60	3.397
1178	5.28	3.404
1179	5.01	3.411
1180	4.79	3.418
1181	4.60	3.425
1182	4.43	3.431
1183	4.28	3.437
1184	4.14	3.443
1185	4.01	3.448
1186	3.87	3.454
1187	3.74	3.459
1188	3.62	3.464
1189	3.51	3.469
1190	3.41	3.474
1191	3.31	3.478
1192	3.23	3.483
1193	3.15	3.487
1194	3.07	3.491
1195	3.00	3.496
1196	2.94	3.500
1197	2.87	3.504
1198	2.81	3.508

ATTACHMENT D
Subarea 33F Hydrograph

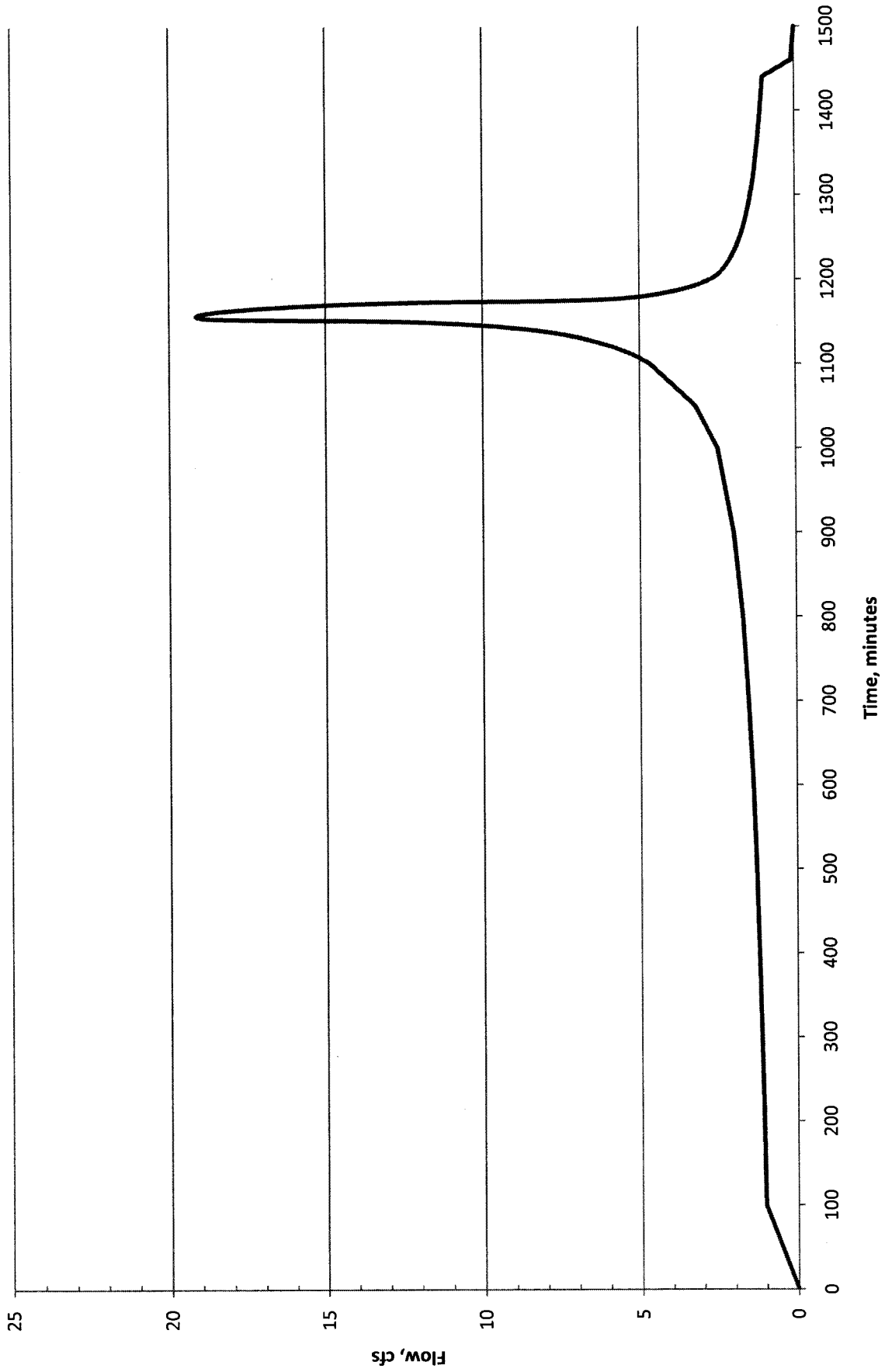
TIME (minutes)	FLOW (cfs)	CUM VOL (ac-ft)
1199	2.76	3.511
1200	2.70	3.515
1201	2.65	3.519
1202	2.60	3.523
1203	2.56	3.526
1204	2.51	3.530
1205	2.48	3.533
1206	2.45	3.536
1207	2.42	3.540
1208	2.39	3.543
1209	2.37	3.546
1210	2.34	3.550
1211	2.32	3.553
1212	2.30	3.556
1213	2.28	3.559
1214	2.25	3.562
1215	2.23	3.565
1216	2.21	3.568
1217	2.19	3.571
1218	2.17	3.574
1219	2.16	3.577
1220	2.14	3.580
1221	2.12	3.583
1222	2.10	3.586
1223	2.08	3.589
1224	2.07	3.592
1225	2.05	3.595
1226	2.04	3.598
1227	2.02	3.600
1228	2.01	3.603
1229	1.99	3.606
1230	1.98	3.609
1231	1.96	3.611
1232	1.95	3.614
1233	1.94	3.617
1234	1.92	3.619
1235	1.91	3.622
1236	1.90	3.625
1237	1.89	3.627
1238	1.87	3.630
1239	1.86	3.632
1240	1.85	3.635

TIME (minutes)	FLOW (cfs)	CUM VOL (ac-ft)
1241	1.84	3.638
1242	1.83	3.640
1243	1.82	3.643
1244	1.81	3.645
1245	1.80	3.648
1246	1.79	3.650
1247	1.78	3.653
1248	1.77	3.655
1249	1.76	3.657
1250	1.75	3.660
1251	1.74	3.662
1252	1.73	3.665
1253	1.72	3.667
1254	1.71	3.669
1255	1.70	3.672
1256	1.69	3.674
1257	1.68	3.676
1258	1.68	3.679
1259	1.67	3.681
1260	1.66	3.683
1261	1.65	3.686
1262	1.64	3.688
1263	1.64	3.690
1264	1.63	3.692
1265	1.62	3.695
1266	1.61	3.697
1267	1.61	3.699
1268	1.60	3.701
1269	1.59	3.703
1270	1.58	3.706
1271	1.58	3.708
1272	1.57	3.710
1273	1.56	3.712
1274	1.56	3.714
1275	1.55	3.716
1276	1.54	3.718
1277	1.54	3.721
1278	1.53	3.723
1279	1.53	3.725
1280	1.52	3.727
1281	1.51	3.729
1282	1.51	3.731

ATTACHMENT D
Subarea 33F Hydrograph

TIME (minutes)	FLOW (cfs)	CUM VOL (ac-ft)
1283	1.50	3.733
1284	1.49	3.735
1285	1.49	3.737
1286	1.48	3.739
1287	1.48	3.741
1288	1.47	3.743
1289	1.47	3.745
1290	1.46	3.747
1291	1.46	3.749
1292	1.45	3.751
1293	1.44	3.753
1294	1.44	3.755
1295	1.43	3.757
1296	1.43	3.759
1297	1.42	3.761
1298	1.42	3.763
1299	1.41	3.765
1300	1.41	3.767
1310	1.36	3.786
1320	1.32	3.805
1330	1.28	3.823
1340	1.25	3.840
1350	1.22	3.857
1360	1.19	3.874
1370	1.16	3.890
1380	1.14	3.906
1390	1.11	3.921
1400	1.09	3.936
1420	1.05	3.966
1440	1.01	3.994
1460	0.09	4.009
1500	0.00	4.012

SUBAREA 33F HYDROGRAPH



**County of Los Angeles Department of Public Works
ATTACHMENT E
SUPPORTING INFORMATION**

OXFORD RETENTION BASIN

Design Parameters

The total watershed size is 687.4 acres. The assumed development in the watershed is 49 percent single-family residential, 12 percent multiple-family residential, 19 percent commercial, 10 percent institutional, 8 percent manufacturing, and 2 percent open space.

The watershed boundaries used in this analysis are based on a 2006 hydrology study requested by Watershed Management to evaluate the feasibility of constructing a treatment plant in the vicinity of Oxford Retention Basin. For the 2006 study, a thorough field investigation was performed to verify the watershed boundaries. As-built storm drain plans were thoroughly reviewed to determine the proper drain alignments and to aid in subarea delineation and routing.

All reported flow rates are adequately collected runoff from a 50-year frequency design storm.

Adequate collection assumes that the drainage system collects all incoming surface flows and that runoff will flow out of its appropriate subarea only at the collection point. It is assumed that any catch basins, culverts, and drains within the watershed have sufficient capacity to capture the runoff from the Capital Flood.

Design Division requested using the same elevation-storage-discharge rating curve from the previous reservoir routing analysis conducted in August 15, 1994. The rating curves in that study were based on elevation 3.4 feet MSL. As recommended by Design, the rating curves for the second reservoir routing analysis were adjusted to elevation 2.7 feet MSL.

**County of Los Angeles Department of Public Works
ATTACHMENT F
COMPARISON WITH PREVIOUS HYDROLOGY STUDIES**

OXFORD RETENTION BASIN

- 1. Have hydrology studies been previously conducted and reported for the watershed?**

Yes

These studies are listed as follows:

<u>Name</u>	<u>Date</u>
Oxford Retention Basin and Pump Station	August 15, 1994

- 2. A comparison of the outlet Q's for the previous studies and our current study are as follows:**

<u>Date</u>	<u>Outlet Q</u>	<u>Watershed Size</u>	<u>Yield</u>
August 15, 1994	933 cfs	659 acres	1.42 cfs/ac
Current Study	751 cfs	687.4 acres	1.09 cfs/ac

- 3. Explain Differences:**

<u>Parameters</u>	<u>August 15, 1994</u>	<u>Current Study</u>
Watershed Size	659 acres	687.4 acres
Soil Type	3, 12, 16, 17	12, 16, 17
Rainfall Zone/Frequency	K50	N/A
Rainfall Depth (area weighted avg. depth)	8.0 inches	5.47 inches
Development	Single Family, Multiple Family, Manufacturing, Commercial, Institutional	Single Family, Multiple Family, Manufacturing, Commercial, Institutional
Imperviousness (avg.)	64%	68%
Time of Concentration (avg.)	19 min.	23 min.
Subarea Size (avg.)	21 acres	26 acres
Routing Lengths (avg.)	875 feet	1129 feet
Routing Type	Street/Pipe	Pipe
Burn Parameter	N/A	N/A
Bulking Parameter	N/A	N/A

**County of Los Angeles Department of Public Works
ATTACHMENT E
COMPARISON WITH PREVIOUS HYDROLOGY STUDIES**

4. Why are the newer Q's more representative or appropriate (if true)?

The current study is based on a 2006 hydrology study with utilized the WMS hydrologic software. Parameters; such as land use, area sizes, routing lengths, and rainfall depths; were calculated using the WMS software. Compared to the previous study that used the Zone Method, rainfall depths over the entire watershed have been reduced. A rainfall grid coverage has been developed to more accurately represent rainfall distribution. Time of concentrations for all the subareas were computed using the TC regression equation. All of these changes to the hydrology have resulted in an overall flow rate reduction of 20 percent for Oxford Retention Basin.

5. Impact of newer Q's on previously approved projects, maps (including floodway maps), and/or reports.

No impact.