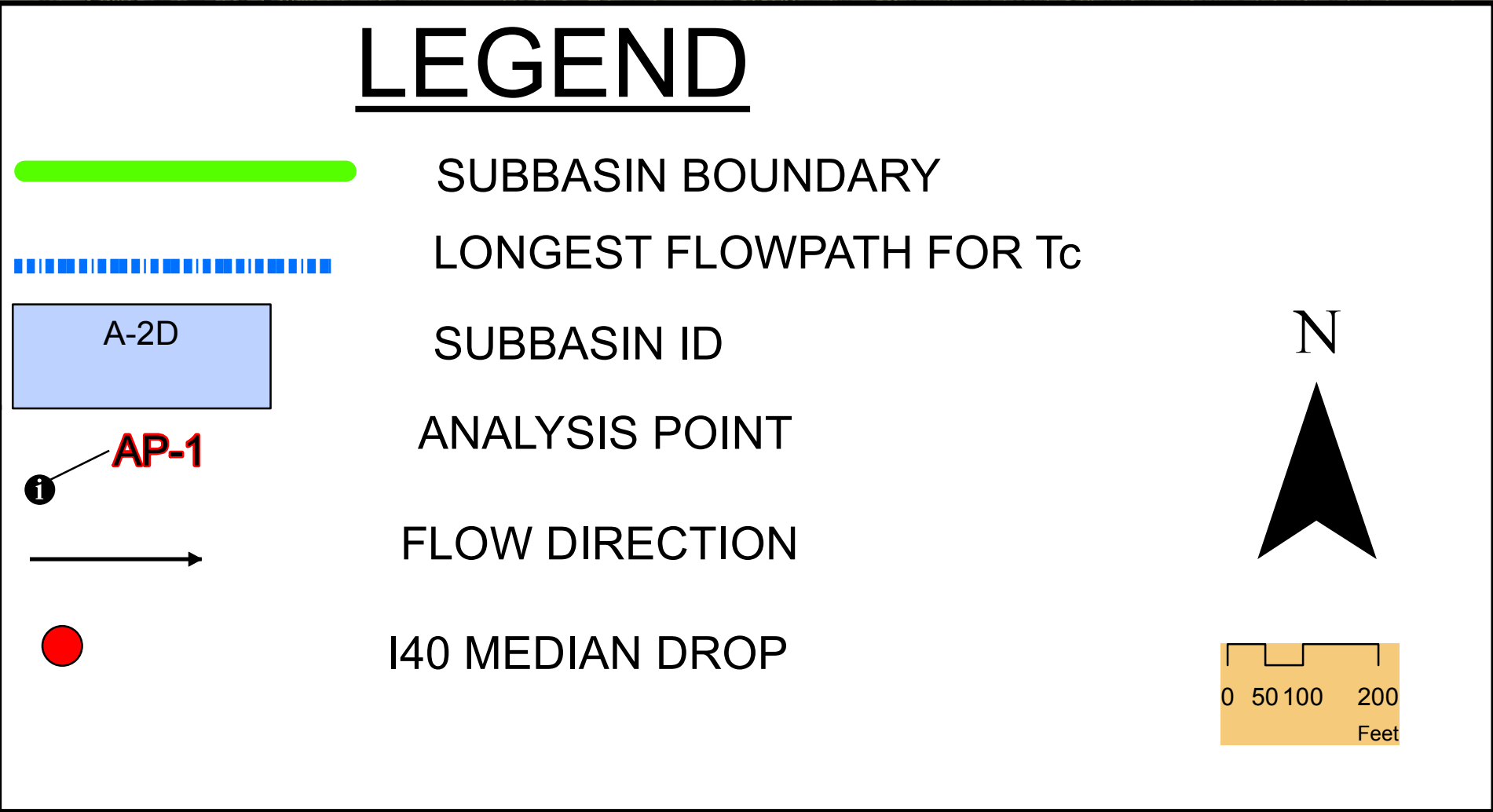




Summary of Pond Routings												
Pond	Model Description	Design Volume	100 Yr-24 Hr Peak Storage Volume	100 Yr-24 Hr Inflow Volume	100 Yr-24 Hr Outflow Volume	100 Yr-24 Hr Inflow	100 Yr-24 Hr Outflow	Elevation of Emergency Spillway	100 Yr-24 Hr Peak Water Surface Elevation	Freeboard from Emergency Spillway	Available Storage	Comments
		ac-ft	ac-ft	cfs	cfs	cfs	cfs	ft	ft	ft	ac-ft	
		a						a		b		
Pond 4	Ex Conditions HEC-HMS	8.51	3.49	12.2	12.2	63.6	19.6	5155.1	5152.1	3.0	5.02	Model uses current watershed conditions using latest NOAA 14 100 Yr-24 Hr rainfall depth of 2.52 in. Pond 5 not modeled
Pond 6	Ex Conditions HEC-HMS	9.01	5.74	10.5	10.5	170.1	50.4	5177.9	5176.57	1.3	3.27	

a- All values reported on this table are taken directly from The Master Drainage Plan for the West Side Transit Facility
100 Yr-24 Hr rainfall depth based on latest NOAA Atlas 14 data
b - Freeboard = Elevation of Emergency Spillway - Peak Water Surface Elevation

EXISTING CONDITIONS - HC-IMS INPUT PARAMETERS																																				
General Subbasin Data				Time of Concentration (Tc) Data																				Lag Time/Lag Time								Final		Composite		Sub-basin
				Upper Reach or Entire Reach (0 to 400-ft length)												Middle Reach (400 to 160-ft length)								Lag Time/Lag Time		Final	Composite									
Sub-basin	Sub-basin Area	Sub-basin Area	Number of Reaches	L Length of Longest Water course	Lca Centroid Length	Sc Composite Slope	Kc Composite K	Top Elevation at beginning of water course	Bottom Elevation	Length (L)	Slope (S)	Kx	Vx	Elevation at lower end of water course	Length (L)	Slope (S)	Kx	Vx	t (hours)	t (minutes)	hours	minutes	hours	minutes	hours	minutes										
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	aa										
A-10	19.758	0.009	2	1.642	NA	0.0092	1.4457	5256	5252	400	0.0030	1.0	1.22	5270	1242	0.0038	2.0	1.43	0.15	9	0.18	0.20	0.13	69	A-10											
A-11	11.951	0.011	2	0.96	NA	0.0044	1.2671	5219	5210	400	0.0036	1.0	1.47	5207	585	0.0061	2.0	1.43	0.15	9	0.18	0.20	0.13	90	A-20											
A-13	19.628	0.007	2	1.878	NA	0.0097	1.4002	5203.2	5193	400	0.0035	1.0	1.60	5185	478	0.0067	2.0	1.48	0.15	9	0.12	0.30	0.13	91	A-30											
C-1	6.81	0.0103	2	1.53	NA	0.0061	1.4460	5256	5250	400	0.0030	0.7	0.86	5220	153	0.1961	2.0	8.86	0.15	9	0.13	0.20	0.13	63	C-10											
C-10	12.376	0.0193	2	944	NA	0.0032	0.8488	5216	5210	400	0.0030	0.7	0.86	5188	444	0.0495	2.0	4.45	0.15	9	0.16	0.10	0.13	65	C-20											
C-2	26.803	0.0419	2	1.544	NA	0.0033	1.6165	5005	5015	400	0.0030	1.0	1.87	5010	1144	0.0032	2.0	2.37	0.15	9	0.17	0.20	0.13	69	C-20											
D-1	0.666	0.0009	2	0.66	NA	0.0039	1.0571	5212	5207	400	0.0035	1.0	1.12	5208	60	0.0047	2.0	0.75	0.15	9	0.11	0.20	0.13	87	D-1											
D-12	1.268	0.002	2	0.93	NA	0.0030	1.3953	5036	5198	400	0.0030	1.0	1.41	5196	553	0.0217	2.0	2.35	0.15	9	0.13	0.10	0.13	87	D-12											
LV-1	0.721	0.00113	2	0.67	NA	0.0408	1.2222	5217	5196	400	0.0035	1.0	1.29	5189	207	0.086	2.0	3.93	0.15	9	0.06	0.20	0.13	87	LV-1											
LV-2	1.225	0.00191	2	0.67	NA	0.0408	1.1488	5188	5175	400	0.0035	1.0	1.80	5164	567	0.0394	2.0	2.79	0.15	9	0.12	0.10	0.13	87	LV-2											
E-1	2.852	0.00446	2	1.470	NA	0.0019	1.4742	5214	5200	400	0.0030	0.7	0.91	5192	1474	0.0022	2.0	2.21	0.20	12	0.27	0.18	0.16	66	E-1											
F-1	7.3624	0.015	2	1.479	NA	0.0076	1.0047	5270	5273.5	400	0.0035	0.7	0.65	5253	1079	0.0018	2.0	0.79	0.14	10	0.19	0.10	0.20	89	F-1											
F-2	3.969	0.0019	2	0.96	NA	0.0019	1.0420	5250	5242	400	0.0030	0.7	0.98	5234	406	0.0057	2.0	3.15	0.15	9	0.15	0.10	0.13	89	F-2											
H-3	2.0791	0.00324	2	0.491	NA	0.0071	0.6683	5234	5228	400	0.0030	0.7	0.86	5227	9	0.1111	2.0	7.0	0.15	9	0.13	0.10	0.13	89	H-3											
H-4	1.9764	0.00309	1	341	NA	0.0176	70.006	5227	5221	341	0.0176	0.7	0.93	5221	1	0.0000	2.0	0.0	0.15	9	0.10	0.10	0.13	83	H-4											

(a) All Measurements were obtained from the Drainage Basin Maps, prepared by Litter Control board dated 2010.

(b) Obtained from Table F-5 in the DPM, pg. 22-64.

(c) Obtained from Table F-4 in the DPM, pg. 22-64.

(d) $V = 10K^0.50 \cdot S^{0.5}$ - determined from $V = K \cdot S^{0.50}$ (pg. 22-64)

(f) See DPM, pages 22-63 through 22-65 for following formulas:

$F_L = L^{0.77}$

$T_c = L^{0.11} + L^{0.22} + 5300 \cdot S^{0.04}$ per hour

F_L is between 4.000 and 15.000 ft the

$T_c = (72.0004) \cdot (72.0009 \cdot K^{0.50})^{0.5} - (4.0000) \cdot (L^{0.77} \cdot S^{0.33}) / (552.2 \cdot V^{0.1658})$ (ignore upper reach K - it is insignificant for long lengths and assume middle reach K for this equation)

$F_L > 12000$ ft then

$T_c = 530 \cdot (F_L^{0.2676} / (L^{0.5892} \cdot S^{0.2580} \cdot V^{0.5033}))$

(g) For Tc it is computed to be less than 0.2 hours, then use 0.2 hours DPM pg. 22-37

(h) $T_c = 20 \cdot V^{0.2676}$ per DPM pg. 22-36

(i) $Sc = A^{0.1743} \cdot L^{0.2324} \cdot U^{0.3304}$ per DPM pg. 22-65

(j) $Kc = 0.15 \cdot U^{0.5} \cdot L^{0.1413} \cdot V^{0.5} \cdot (2 \cdot U^{0.5252} \cdot S^{0.5} + 1.3 \cdot U^{0.5370} \cdot S^{0.5})$ per DPM pg. 22-65

EX POND 6 RATING CURVE		
Elevation	Storage	Discharge
ft.	ac-ft.	cfs
5170	0	0
5171	0.14	4
5172	0.83	6.2
5173	1.77	7.9
5174	2.79	9.2
5175	3.87	10.4
5176	5.04	11.5
5177	6.27	79.5
5178	7.46	86.1
5179	9.01	93.2
DATA FROM MASTER DRAINAGE PLAN FOR THE WEST SIDE TRANSIT FACILITY		

I-40 SOUTH AND UNSER
DIVERSION MINI DMP
PLATE 1

EXISTING CONDITIONS DRAINAGE BASIN
MAP WITH HEC-HMS INPUT AND OUTPUT
SUMMARY
JULY, 2014