

# Appendix F

## Hydrology and Hydraulics

### Data

Content:

- Culvert Data Table

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Table F.1

OBJECTID *	Oak Creek				Evaluate	GIS Contour Data			Overtopping Evaluation				
	Shape *	Point_X	Point_Y	Note		Evaluate_(yes/no/insufficient_data)	Road_elevation	Channel_elevation_Upstream	Channel_depth_at_Road	Approx_Dist_between_DNR_Xsect	DS_Backwater	Approx_100yr_WSE_at_Road	Road_Overtopped_per_DNR_Data
1	Point	160373	213524	Located within FEMA Floodway	No								
2	Point	158830	213078	Located within FEMA Floodway	No								
3	Point	158749	213054	Located within FEMA Floodway	No								
4	Point	157456	212651	Located within FEMA Floodway	No								
5	Point	157361	212650	Located within FEMA Floodway	No								
6	Point	156589	213614	No Xsect, unmodeled Tributary	Insufficient	1148.75	1143	5.75	0	No	1143.0	No	-5.8
7	Point	156463	213844	No Xsect, unmodeled Tributary	Insufficient	1149	1143	6	0	No	1143.0	No	-6.0
8	Point	156231	214231	No Xsect, unmodeled Tributary	Insufficient	1151	1146	5	0	No	1146.0	No	-5.0
9	Point	155102	214386	No Xsect, unmodeled Tributary	Insufficient	1158	1157	1	0	No	1157.0	No	-1.0
7	Line	153769.4	214393.2	No Xsect, unmodeled Tributary	Insufficient	1171	1170	1	0	No	1170.0	No	-1.0
11	Point	152955	215034	No Xsect, unmodeled Tributary	Insufficient	1185	1181	4	0	No	1181.0	No	-4.0
12	Point	155090	211991	Located within FEMA Floodway	No								
13	Point	152338	211204	Located within FEMA Floodway	No								
14	Point	148071	211957	Located within FEMA Floodway	No								
15	Point	147937	212674	No Xsect, unmodeled Tributary	Insufficient	1155	1137	18	0	No	1137.0	No	-18.0
16	Point	146726	214581	No Xsect, unmodeled Tributary	Insufficient	1153	1148	5	0	No	1148.0	No	-5.0
17	Point	146700	215195	No Xsect, unmodeled Tributary	Insufficient	1154	1149	5	0	No	1149.0	No	-5.0
18	Point	146667	216042	No Xsect, unmodeled Tributary	Insufficient	1160	1154	6	0	No	1154.0	No	-6.0
19	Point	148390	216900	No Xsect, unmodeled Tributary	Insufficient	1182.5	1177	5.5	0	No	1177.0	No	-5.5
20	Point	148525	216972	No Xsect, unmodeled Tributary	Insufficient	1187	1185	2	0	No	1185.0	No	-2.0
21	Point	148661	219281	No Xsect, unmodeled Tributary	Insufficient	1212	1208	4	0	No	1208.0	No	-4.0
22	Point	148621	221652	No Xsect, unmodeled Tributary	Insufficient	1225	1209	16	0	No	1209.0	No	-16.0
23	Point	144353	209217	Located within FEMA Floodway	No								
24	Point	138614	216563	No Xsect, unmodeled Tributary	Insufficient	1164	1161	3	0	No	1161.0	No	-3.0
25	Point	136952	215992	No Xsect, unmodeled Tributary	Insufficient	1183.5	1179	4.5	0	No	1179.0	No	-4.5
26	Point	136834	215890	No Xsect, unmodeled Tributary	Insufficient	1184.5	1181	3.5	0	No	1181.0	No	-3.5
27	Point	138506	217454	No Xsect, unmodeled Tributary	Insufficient	1164	1156	8	0	No	1156.0	No	-8.0
28	Point	136577.2	217468.9	No Xsect, unmodeled Tributary	Insufficient	1175	1166	9	0	No	1166.0	No	-9.0
29	Line	135490.3	217187.9	No Xsect, unmodeled Tributary	Insufficient	1179.5	1171	8.5	0	No	1171.0	No	-8.5
12	Point	128864.6	219631.1	No Xsect, unmodeled Tributary	Insufficient	1234.5	1228	6.5	0	No	1228.0	No	-6.5

Oak Creek					Evaluate	GIS Contour Data			Overtopping Evaluation				
OBJECTID *	Shape *	Point_X	Point_Y	Note	Evaluate_(yes/no/insufficient_data)	Road_elevation	Channel_elevation_Upstream	Channel_depth_at_Road	Approx_Dist_between_DNR_Xsect	DS_Backwater	Approx_100yr_WSE_at_Road	Road_Overtopped_per_DNR_Data	Depth_Overtopped
31	Point	138698	217735	Located within FEMA Floodway	No								
32	Point	138717	220612	Located within FEMA Floodway	No								
33	Point	138723	223493	Located within FEMA Floodway	No								
34	Point	138016	224155	No Xsect, unmodeled Tributary	Insufficient	1172.5	1164	8.5	0	No	1164.0	No	-8.5
35	Point	137558	223549	No Xsect, unmodeled Tributary	Insufficient	1173.5	1171	2.5	1	No	1171.0	No	-2.5
36	Point	136643	223667	No Xsect, unmodeled Tributary	Insufficient	1176.5	1174	2.5	2	No	1174.0	No	-2.5
37	Point	138806	226380	Located within FEMA Floodway	No								
38	Point	139376	227168	No Xsect, unmodeled Tributary	Insufficient	1176	1162	14	2	No	1162.0	No	-14.0
39	Point	141382	227667	No Xsect, unmodeled Tributary	Insufficient	1181	1169	12	3	No	1169.0	No	-12.0
40	Point	142797	228098	No Xsect, unmodeled Tributary	Insufficient	1185	1178	7	4	No	1178.0	No	-7.0
41	Point	144579	227489	No Xsect, unmodeled Tributary	Insufficient	1193	1187	6	5	No	1187.0	No	-6.0
42	Line	144671	227496.1	No Xsect, unmodeled Tributary	Insufficient	1197	1190	7	6	No	1190.0	No	-7.0
43	Point	144948	227500	No Xsect, unmodeled Tributary	Insufficient	1203	1192	11	7	No	1192.0	No	-11.0
44	Point	145514	227513	No Xsect, unmodeled Tributary	Insufficient	1203.5	1196	7.5	8	No	1196.0	No	-7.5
45	Point	145917	227504	No Xsect, unmodeled Tributary	Insufficient	1204.5	1199	5.5	9	No	1199.0	No	-5.5
46	Point	146235	227508	No Xsect, unmodeled Tributary	Insufficient	1207	1202	5	10	No	1202.0	No	-5.0
47	Point	146637	227506	No Xsect, unmodeled Tributary	Insufficient	1209	1204	5	11	No	1204.0	No	-5.0
48	Point	147102	227521	No Xsect, unmodeled Tributary	Insufficient	1211	1208	3	12	No	1208.0	No	-3.0
49	Line	147268.4	229232.6	No Xsect, unmodeled Tributary	Insufficient	1233	1230	3	13	No	1230.0	No	-3.0
50	Line	141886.5	229397.4	No Xsect, unmodeled Tributary	Insufficient	1184	1174	10	14	No	1174.0	No	-10.0
51	Point	144244	230895	No Xsect, unmodeled Tributary	Insufficient	1194	1189	5	15	No	1189.0	No	-5.0

Oak Creek					Evaluate	GIS Contour Data			Overtopping Evaluation				
OBJECTID *	Shape *	Point_X	Point_Y	Note	Evaluate_(yes/no/insufficient_data)	Road_elevation	Channel_elevation_Upstream	Channel_depth_at_Road	Approx_Dist_between_DNR_Xsect	DS_Backwater	Approx_100yr_WSE_at_Road	Road_Overtopped_per_DNR_Data	Depth_Overtopped
52	Line	144671	227496.1	No Xsect, unmodeled Tributary	Insufficient	1197	1190	7	16	No	1190.0	No	-7.0
53	Point	145217	231831	No Xsect, unmodeled Tributary	Insufficient	1202.5	1201	1.5	17	No	1201.0	No	-1.5
54	Point	145956	232459	No Xsect, unmodeled Tributary	Insufficient	1214	1212	2	18	No	1212.0	No	-2.0
55	Point	136683	227418	No Xsect, unmodeled Tributary	Insufficient	1189.5	1185	4.5	19	No	1185.0	No	-4.5
56	Point	137063	228662	Located within FEMA Floodway	No								
57	Line	137263.1	230448	No Xsect, unmodeled Tributary	Insufficient	1197	1190	7	0	No	1190.0	No	-7.0
58	Point	134681	232170	No Xsect, unmodeled Tributary	Insufficient	1196	1171	25	0	No	1171.0	No	-25.0
59	Point	134135	237142	No Xsect, unmodeled Tributary	Insufficient	1238	1232	6	0	No	1232.0	No	-6.0
60	Point	134267	237435	No Xsect, unmodeled Tributary	Insufficient	1244.5	1240	4.5	0	No	1240.0	No	-4.5
61	Point	131423	237195	No Xsect, unmodeled Tributary	Insufficient	1204	1191	13	0	No	1191.0	No	-13.0
62	Point	129001	240129	No Xsect, unmodeled Tributary	Insufficient	1215	1202	13	0	No	1202.0	No	-13.0
63	Point	128966	235432	No Xsect, unmodeled Tributary	Insufficient	1220	1213	7	0	No	1213.0	No	-7.0
64	Point	124263	237260	No Xsect, unmodeled Tributary	Insufficient	1270	1264	6	0	No	1264.0	No	-6.0
65	Point	123621	238119	No Xsect, unmodeled Tributary	Insufficient	1280	1276	4	0	No	1276.0	No	-4.0
66	Point	133702	232304	Located within FEMA Floodway	No								
67	Point	124712	231905	No Xsect, unmodeled Tributary	Insufficient	1228.5	1223	5.5	0	No	1223.0	No	-5.5
68	Point	123633	230854	No Xsect, unmodeled Tributary	Insufficient	1230	1219	11	0	No	1219.0	No	-11.0
69	Point	122918	226613	No Xsect, unmodeled Tributary	Insufficient	1288	1280	8	0	No	1280.0	No	-8.0
70	Point	123636	231672	Located within FEMA Floodway	No								
71	Point	123522	231907	Located within FEMA Floodway	No								
72	Point	139703	229501	Downstream Xsect	No	1186	1155						
73	Point	140459	237160	No Xsect, unmodeled Tributary	Insufficient	1185	1176	9	0	No	1176.0	No	-9.0
74	Point	139340	239683	No Xsect, unmodeled Tributary	Insufficient	1193	1188	5	0	No	1188.0	No	-5.0
75	Point	146567	237103	No Xsect, unmodeled Tributary	Insufficient	1217	1213	4	0	No	1213.0	No	-4.0
76	Point	143444	237139	No Xsect, unmodeled Tributary	Insufficient	1183	1182	1	0	No	1182.0	No	-1.0
77	Point	143601	237492	No Xsect, unmodeled Tributary	Insufficient	1187	1183	4	0	No	1183.0	No	-4.0
78	Point	142150	237153	Downstream Xsect	No	1189	1163						
79	Point	142082	242488	No Xsect, unmodeled Tributary	Insufficient	1189	1180	9	0	No	1180.0	No	-9.0
80	Point	142959	242473	No Xsect, unmodeled Tributary	Insufficient	1194	1192	2	0	No	1192.0	No	-2.0
81	Point	144582	242568	No Xsect, unmodeled Tributary	Insufficient	1209	1207	2	0	No	1207.0	No	-2.0
82	Point	144579	243946	No Xsect, unmodeled Tributary	Insufficient	1209	1205	4	0	No	1205.0	No	-4.0

Oak Creek				Evaluate	GIS Contour Data			Overtopping Evaluation					
OBJECTID *	Shape *	Point_X	Point_Y	Note	Evaluate_(yes/no/insufficient_data)	Road_elevation	Channel_elevation_Upstream	Channel_depth_at_Road	Approx_Dist_between_DNR_Xsect	DS_Backwater	Approx_100yr_WSE_at_Road	Road_Overtopped_per_DNR_Data	Depth_Overtopped
83	Point	142612	243598	No Xsect, unmodeled Tributary	Insufficient	1193	1189	4	0	No	1189.0	No	-4.0
84	Point	141552	242511	Downstream Xsect	No	1191	1168						
Culverts to Evaluate					0								

Table F.1

OBJECTID *	DNR HYDRAULIC STUDY DATA							County Culvert Data						
	US_100yr_ depth	US_100yr_ Elevation	US_Q100	US_Distance_ to_point_ (ft)	DS_100yr_ depth	DS_100yr_ Elevation	DS_Q100	DS_Distance_ to_point_(ft)	County_ Longitude	County_ Latitude	Known_ WSE_100yr	Road_ Name	Culvert_ Description	Culvert_ Openings
1									160373	213524		Antelope Valley Parkway		
2									158830	213078		N 11th Street		
3									158749	213054		N 11th Street		
4									157456	212651		Interstate 180		
5									157361	212650		Interstate 180		
6									156589	213614		Cornhusker Highway	8' x 6'	TRIPLE
7									156463	213844		Countryside Lane		
8									156231	214231		Alexander Road		
9									155102	214386		N 1st Street	7' x 5'	SINGLE
7									153769	214393		NW 4th Street	6' x 5'	SINGLE
11									152955	215034		Gaslight Lane		
12									155090	211991		N 1st Street		
13									152338	211204		Railroad Crossing		
14									148071	211957		Interstate 80		
15									147937	212674		Outer Road		
16									146726	214581		Private Street		
17									146700	215195		W Furnas Avenue	12' x 4'	TRIPLE
18									146667	216042		W Adams Street		
19									148390	216900		Aviation Road		
20									148525	216972		North Park Road		
21									148661	219281		Railroad Crossing		
22									148621	221652		Outer Road/Railroad Crossing		
23									144353	209217		Outer Road		
24									138614	216563		Outer Road		
25									136952	215992		W Adams Street		
26									136834	215890		Private Driveway		
27									138506	217454		Outer Road		
28									136577	217469		NW 48th Street	96"	SINGLE
29									135490	217188		W Craw Street	6.4' x 8'	TWIN
12									128865	219631		M-96 (NW 70th Street)	72"x110'	TRIPLE

DNR HYDRAULIC STUDY DATA								County Culvert Data						
OBJECTID *	US_100yr_depth	US_100yr_Elevation	US_Q100	US_Distance_to_point_(ft)	DS_100yr_depth	DS_100yr_Elevation	DS_Q100	DS_Distance_to_point_(ft)	County_Longitude	County_Latitude	Known_WSE_100yr	Road_Name	Culvert_Description	Culvert_Openings
31									138698	217735		W Mathis Street		
32									138717	220612		Air Park Road		
33									138723	223493		W Cuming Street		
34									138016	224155		NW 44th Street		
35									137558	223549		Driveway		
36									136643	223667		NW 48th Street		
37									138806	226380		Railroad Crossing		
38									139376	227168		Railroad Crossing		
39									141382	227667		Railroad Crossing		
40									142797	228098		NW 31st Street		
41									144579	227489		Railroad Crossing		
42									144671	227496		NW 27th Street	9' x 5'	TWIN
43									144948	227500		Driveway		
44									145514	227513		Driveway		
45									145917	227504		Driveway		
46									146235	227508		Driveway		
47									146637	227506		Driveway		
48									147102	227521		Driveway		
49									147268	229233		Purple Heart Highway	8' x 5'	SINGLE
50									141887	229397		Purple Heart Highway	10' x 5'	TWIN
51									144244	230895		Railroad Crossing		



DNR HYDRAULIC STUDY DATA								County Culvert Data						
OBJECTID *	US_100yr_ depth	US_100yr_ Elevation	US_Q100	US_Distance_ to_point_ (ft)	DS_100yr_ depth	DS_100yr_ Elevation	DS_Q100	DS_Distance_ to_point_(ft)	County_ Longitude	County_ Latitude	Known_ WSE_100yr	Road_ Name	Culvert_ Description	Culvert_ Openings
52									144671	227496		NW 27th Street	6' x 5'	TWIN
53									145217	231831		W Alvo Road	12' x 4'	SINGLE
54									145956	232459		Outer Road		
55									136683	227418		NW 48th Street	6' x 11.5'	SINGLE
56									137063	228662		NW 48th Street		
57									137263	230448		Purple Heart Highway	5' x 5'	TWIN
58									134681	232170		US Highway 34	Bridge	
59									134135	237142		W McKelvie Road		
60									134267	237435		NW 56th Street		
61									131423	237195		W McKelvie Road	Bridge	
62									129001	240129		NW 70th Street	Bridge	
63									128966	235432		NW 70th Street		
64									124263	237260		W McKelvie Road		
65									123621	238119		NW 8th Street		
66									133702	232304		Driveway		
67									124712	231905		US Highway 34		
68									123633	230854		NW 84th Street		
69									122918	226613		W Fletcher Ave		
70									123636	231672		NW 84th Street		
71									123522	231907		US Highway 34		
72									139703	229501		Purple Heart Highway	Bridge	
73									140459	237160		W McKelvie Road	Bridge	
74									139340	239683		NW 40th Street		
75									146567	237103		W McKelvie Road		
76									143444	237139		W McKelvie Road		
77									143601	237492		Railroad Crossing		
78									142150	237153		W McKelvie Road	Bridge	
79									142082	242488		W Bluff Road		
80									142959	242473		Railroad Crossing		
81									144582	242568		NW 27th Street		
82									144579	243946		NW 27th Street		

DNR HYDRAULIC STUDY DATA								County Culvert Data						
OBJECTID *	US_100yr_ depth	US_100yr_ Elevation	US_Q100	US_Distance_ to_point_ (ft)	DS_100yr_ depth	DS_100yr_ Elevation	DS_Q100	DS_Distance_ to_point_(ft)	County_ Longitude	County_ Latitude	Known_ WSE_100yr	Road_Name	Culvert_ Description	Culvert_ Openings
83									142612	243598		Railroad Crossing		
84									141552	242511		W Bluff Road	Bridge	

Table F.1

Modeled Culvert - per As-Built data from County																
OBJECTID *	Structure Type		Downstream Flowline_(ft)	Tailwater Elevation_(ft)	Assumed Crest Length_(ft)	Embedment depth_(in)	Culvert type	Inlet Configuration	Number of barrels	Inlet Elevation_(ft)	Outlet Elevation_(ft)	Crest Elevation_(ft)	Extra	Roadway Overtopped?	Overtopping Elevation (ft)	Overtopping Depth (ft)
1																
2																
3																
4																
5																
6	CBC		40.67													
7																
8																
9	CBC		50.93													
7	CBC		63.4													
11																
12																
13																
14																
15																
16																
17	CBC															
18																
19																
20																
21																
22																
23																
24																
25																
26																
27																
28	CMP															
29	CBC		69.4													
12	CMP															

Modeled Culvert - per As-Built data from County																
OBJECTID *	Structure_Type		Downstream_Flowline_(ft)	Tailwater_Elevation_(ft)	Assumed_Crest_Length_(ft)	Embedment_depth_(in)	Culvert_type	Inlet_Configuration	Number_of_barrels	Inlet_Elevation_(ft)	Outlet_Elevation_(ft)	Crest_Elevation_(ft)	Extra	Roadway_Overtopped?	Overtopping_Elevation (ft)	Overtopping_Depth (ft)
31																
32																
33																
34																
35																
36																
37																
38																
39																
40																
41																
42	CBC		88.23													
43																
44																
45																
46																
47																
48																
49	CBC		0													
50			72.64													
51																

Modeled Culvert - per As-Built data from County																
OBJECTID *	Structure Type		Downstream Flowline_(ft)	Tailwater Elevation_(ft)	Assumed Crest Length_(ft)	Embedment depth_(in)	Culvert type	Inlet Configuration	Number of barrels	Inlet Elevation_(ft)	Outlet Elevation_(ft)	Crest Elevation_(ft)	Extra	Roadway Overtopped?	Overtopping Elevation (ft)	Overtopping Depth (ft)
52	CBC		88.23													
53	CBC															
54																
55	CBC															
56																
57	CBC		82.41													
58																
59																
60																
61																
62																
63																
64																
65																
66																
67																
68																
69																
70																
71																
72																
73																
74																
75																
76																
77																
78																
79																
80																
81																
82																

Modeled Culvert - per As-Built data from County																
OBJECTID *	Structure _Type		Downstream_ Flowline_(ft)	Tailwater _ Elevation_ (ft)	Assumed_ Crest_ Length_ (ft)	Embedment_d epth_(in)	Culvert_ type	Inlet_ Configura tion	Number_ of_barrels	Inlet_ Elevation_ (ft)	Outlet_ Elevation_ (ft)	Crest_ Elevation_ (ft)	Extra	Roadway Overtopped?	Overtopping Elevation (ft)	Overtopping Depth (ft)
83																
84																