Appendix 1a. Weather stations used for estimating ET and net irrigation water requirements (sorted by station name). * indicates station was used for basin average.

STATION NAME	STATION NUMBER	LAT (NAD83)	LONG (NAD83)	ELEVATION (feet)	DATA FILE START YEAR	DATA FILE END YEAR	NUMBER OF YEARS WITH INSIGNIFICANT MISSING DATA	BASIN NAME	BASIN NUMBER
ADAVEN	260046	38.12	-115.58	6250	1914	1981	53	Garden Valley	172
ALAMO*	260099	37.37	-115.17	3517	1921	1962	29	Pahranagat Valley	209
AMARGOSA FARMS-GAREY*	260150	36.57	-116.47	2450	1965	2006	28	Amargosa Desert	230
ANTELOPE VALLEY FARR*	260282	39.97	-117.43	4900	1984	1998	8	Antelope Valley	57
ARTHUR 4 NW*	260438	40.78	-115.18	6300	1963	2007	34	Ruby Valley	176
AUSTIN #2*	260507	39.50	-117.07	6780	1887	2007	82	Upper Reese River Valley	56
BASALT	260668	38.00	-118.27	6355	1941	1957	10	Teels Marsh Valley	114
BATTLE MTN*	260688	40.65	-116.93	4514	1898	1945	25	Clovers Area	64
BATTLE MTN AP*	260691	40.62	-116.90	4540	1944	2007	55	Lower Reese River Valley	59
BEATTY*	260715	36.92	-116.75	3304	1917	1972	32	Oasis Valley	228
BEATTY 8 N*	260718	37.00	-116.72	3550	1972	2007	28	Oasis Valley	228
BEOWAWE*	260795	40.58	-116.47	4700	1908	2007	60	Crescent Valley	54
BEOWAWE U OF N RCH*	260800	39.90	-116.58	5740	1972	2007	28	Grass Valley	138
BLUE EAGLE RCH HANKS*	260955	38.52	-115.55	4780	1978	2007	23	Railroad Valley	173B
BLUE JAY HWY STN*	260961	38.38	-116.22	5322	1963	1984	7	Hot Creek	156
BOULDER CITY*	261071	35.98	-114.85	2500	1931	2004	64	Eldorado Valley	167
BRINKERHOFF RCH*	261160	40.08	-117.67	3661	1966	1981	7	Dixie Valley	128
BUFFALO RCH*	261311	40.38	-117.47	5430	1966	1981	7	Buffalo Valley	131
BUNKERVILLE*	261327	36.77	-114.12	1550	1979	2007	6	Virgin River Valley	222
CALIENTE*	261358	37.62	-114.52	4400	1903	2007	22	Clover Valley	204
CALLVILLE BAY*	261371	36.13	-114.73	1270	1989	2007	8	Black Moutains Area	215
CARLIN NEWMONT MINE	261415	40.92	-116.32	6520	1966	2002	24	Boulder Flat	61
CARSON CITY*	261485	39.15	-119.77	4651	1893	2007	90	Eagle Valley	104
CATHEDRAL GORGE SP*	261590	37.80	-114.40	4830	2003	2007	4	Panaca Valley	203
CENTRAL NEVADA FLD LAB*	261630	39.38	-117.32	5950	1965	1986	13	Upper Reese River Valley	56
CHARLESTON*	261660	41.68	-115.53	5947	1961	2007	4	Bruneau River Area	38
CLOVER VALLEY*	261740	40.85	-115.03	5750	1900	2007	39	Clover Valley	177
COALDALE JUNCTION*	261755	38.05	-117.90	4603	1941	1965	6	Columbus Salt Marsh Valley	118
CONTACT*	261905	41.77	-114.75	5350	1949	1999	33	Salmon Falls Creek Area	40

Appendix 1a cont. Weather stations used for estimating ET and net irrigation water requirements (sorted by station name). * indicates station was used for basin average.

STATION NAME	STATION NUMBER	LAT (NAD83)	LONG (NAD83)	ELEVATION (feet)	DATA FILE START YEAR	DATA FILE END YEAR	NUMBER OF YEARS WITH INSIGNIFICANT MISSING DATA	BASIN NAME	BASIN NUMBER
CORTEZ GOLD MINE*	261975	40.18	-116.63	4905	1968	1979	10	Crescent Valley	54
CURRANT*	262078	38.75	-115.47	5184	1941	1949	4	Railroad Valley	173B
CURRANT HWY STN	262091	38.80	-115.35	6243	1963	1977	7	Railroad Valley	173B
CURRIE HWY STN*	262096	40.27	-114.75	5820	1961	1991	10	Steptoe Valley	179
DAGGET PASS	262119	38.98	-119.88	7334	1988	2007	5	Lake Tahoe Basin	90
DENIO*	262229	41.98	-118.63	4190	1951	2006	39	Pueblo Valley	1
DESERT NWR*	262243	36.43	-115.37	2920	1940	2007	60	Las Vegas Valley	212
DIABLO*	262276	37.92	-116.05	5105	1959	1978	10	Railroad Valley	173A
DIAMOND VALLEY USDA*	262296	39.68333	-116.0333	5970	1979	2007	19	Diamond Valley	153
DUCKWATER*	262390	38.85	-115.63	5550	1966	2003	19	Railroad Valley	173B
DUFURRENA*	262394	41.87	-119.02	4800	1959	2005	30	Virgin Valley	4
DYER*	262431	37.62	-118.02	4900	1903	2007	55	Fish Lake Valley	117
EASTGATE*	262477	39.30	-117.88	5023	1956	1964	4	Eastgate Valley Area	127
ECHO BAY*	262497	36.32	-114.43	1250	1989	2007	10	Black Moutains Area	215
ELGIN*	262557	37.35	-114.55	3420	1985	2007	20	Lower Meadow Valley Wash	205
ELGIN 3 SE*	262562	37.32	-114.50	3301	1965	1985	15	Lower Meadow Valley Wash	205
ELKO*	262570	40.87	-115.75	5235	1999	2007	6	Elko Segment	49
ELKO RGNL AP*	262573	40.83	-115.78	5050	1888	2007	94	Elko Segment	49
ELY 6 NE	262626	39.30	-114.83	6263	1999	2005	5	Steptoe Valley	179
ELY YELLAND FLD AP*	262631	39.30	-114.85	6262	1893	2005	68	Steptoe Valley	179
EMIGRANT PASS HWY STN	262656	40.65	-116.30	5760	1963	2001	27	Boulder Flat	61
EMPIRE*	262662	40.58	-119.35	3953	1951	1976	6	San Emidio Desert	22
EUREKA	262708	39.52	-115.97	6540	1888	2007	67	Diamond Valley	153
FALLON EXP STN*	262780	39.45	-118.78	3965	1903	2007	96	Carson Desert	101
FERGUSON SPRINGS HMS*	262820	40.42	-114.18	5840	1972	1982	7	Great Salt Lake Desert	192
FERNLEY*	262840	39.62	-119.25	4163	1907	1974	21	Fernley Area	76
FISH CREEK RCH*	262860	39.27	-116.00	6053	1943	1964	14	Little Smoky Valley	155A
GERLACH*	263090	40.65	-119.37	3950	1948	2007	27	San Emidio Desert	22
GEYSER RCH*	263101	38.67	-114.63	6020	1904	2002	19	Lake Valley	183

Appendix 1a cont. Weather stations used for estimating ET and net irrigation water requirements (sorted by station name). * indicates station was used for basin average.

STATION NAME	STATION NUMBER	LAT (NAD83)	LONG (NAD83)	ELEVATION (feet)	DATA FILE START YEAR	DATA FILE END YEAR	NUMBER OF YEARS WITH INSIGNIFICANT MISSING DATA	BASIN NAME	BASIN NUMBER
GIBBS RCH*	263114	41.57	-115.22	6000	1953	2007	43	Marys River Area	42
GLENBROOK*	263205	39.08	-119.93	6350	1909	2007	50	Lake Tahoe Basin	90
GOLCONDA*	263245	40.95	-117.50	4415	1906	2007	71	Winnemucca Segment	70
GOLDFIELD	263285	37.70	-117.23	5690	1906	2007	66	Alkali Spring Valley	142
GOODSPRINGS*	263316	35.83	-115.43	4000	1999	2007	6	Ivanpah Valley	164A
GREAT BASIN NP	263340	39.02	-114.23	6830	1987	2007	16	Snake Valley	195
HAWTHORNE*	263512	38.52	-118.63	4330	1954	2007	13	Walker Lake Valley	110C
HAWTHORNE AP*	263515	38.55	-118.67	4220	1888	1991	39	Walker Lake Valley	110C
HIKO*	263671	37.55	-115.22	3900	1989	2007	15	Pahranagat Valley	209
HUMBOLDT FLD	263853	40.08	-118.15	4160	1940	1947	7	Buena Vista Valley	129
I-L RCH*	263940	41.57	-116.40	5203	1962	1969	3	South Fork Owyhee River Area	35
IMLAY*	263957	40.65	-118.17	4260	1914	2007	56	Imlay Area	72
INDIAN SPRINGS*	263980	36.58	-115.68	3123	1913	1964	23	Indian Springs Valley	161
JACKPOT*	264016	41.98	-114.67	5290	1986	2007	15	Salmon Falls Creek Area	40
JARBRIDGE 4 N	264038	41.93	-115.43	6168	1916	1995	22	Jarbidge River Area	39
JARBIDGE 7 N*	264039	41.98	-115.43	6050	1995	2007	11	Jarbidge River Area	39
JIGGS 8 SSE ZAGA*	264095	40.35	-115.62	5800	1978	2007	19	Huntington Valley	47
JUNGO MEYER RCH*	264108	40.88	-118.43	4200	1968	1986	7	Desert Valley	31
KIMBERLY	264199	39.27	-115.03	7234	1928	1958	28	White River Valley	207
KNOLL CREEK FLD STN	264268	41.63	-114.73	6004	1971	1979	6	Salmon Falls Creek Area	40
KYLE CANYON RS	264314	36.25	-115.60	7205	1939	1948	4	Las Vegas Valley	212
LAGES*	264341	40.07	-114.62	5960	1984	2007	21	Steptoe Valley	179
LAHONTAN DAM*	264349	39.47	-119.07	4150	1911	2007	72	Churchill Valley	102
LAKE VALLEY STEWARD	264384	38.32	-114.65	6350	1971	1998	22	Lake Valley	183
LAMOILLE YOST*	264394	40.72	-115.52	5840	1975	2004	22	Lamoille Valley	45
LAMOILLE PH	264395	40.68	-115.47	6293	1916	1972	35	Lamoille Valley	45
LAS VEGAS*	264429	36.17	-115.13	2011	1895	1956	36	Las Vegas Valley	212
LAS VEGAS*	23112	36.17	-115.15	1867	1949	1970	22	Las Vegas Valley	212
LAS VEGAS WB AP*	264436	36.08	-115.07	2160	1948	2005	57	Las Vegas Valley	212

Appendix 1a cont. Weather stations used for estimating ET and net irrigation water requirements (sorted by station name). * indicates station was used for basin average.

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LAS VEGAS NWFO*	264439	36.05	-115.18	2170	1996	2007	9	Las Vegas Valley	212
LATHROP WELLS	264457	36.65	-116.40	2671	1942	1963	8	Fortymile Canyon	227A
LAUGHLIN*	264480	35.17	-114.58	605	1988	2007	10	Colorado Valley	213
LEHMAN CAVES NM	264514	39.00	-114.22	6826	1937	1987	44	Snake Valley	195
LEONARD CREEK RCH*	264527	41.52	-118.72	4224	1954	2007	44	Black Rock Desert	28
LEWERS RCH	264542	39.23	-119.85	5203	1893	1938	15	Washoe Valley	89
LITTLE RED ROCK	264600	36.15	-115.42	3802	1965	1970	4	Las Vegas Valley	212
LOGANDALE*	264651	36.62	-114.48	1410	1968	1992	20	Lower Moapa Valley	220
LOVELOCK DERBY FLD*	264700	40.07	-118.57	3902	1948	2005	49	Lovelock Valley	73
LUND*	264745	38.87	-115.02	5560	1957	2007	47	White River Valley	207
MALA VISTA RCH*	264824	41.32	-115.25	5594	1939	1965	16	Marys River Area	42
MARLETTE LAKE	264858	39.17	-119.92	8005	1916	1952	19	Lake Tahoe Basin	90
MCDERMITT*	264935	42.00	-117.72	4527	1892	2007	29	Quinn River Valley	33B
MCGILL*	264950	39.40	-114.78	6270	1892	2007	90	Steptoe Valley	179
MESQUITE*	265085	36.80	-114.07	1570	1942	2006	13	Virgin River Valley	222
METROPOLIS*	265092	41.28	-115.02	5800	1965	1995	18	Marys River Area	42
MIDAS 4 SE*	265105	41.20	-116.73	5203	1961	1969	4	Willow Creek Valley	63
MIDDLEGATE-LOWERY*	265132	39.30	-118.02	4600	1988	2007	15	Cowkick Valley	126
MINA*	265168	38.38	-118.10	4550	1896	2007	79	Soda Spring Valley	121A
MINDEN*	265191	38.95	-119.77	4720	1906	2007	86	Carson Valley	105
MONTELLO 2 SE*	265352	41.25	-114.17	4890	1902	2007	67	Thousand Springs Valley	189D
MONTGOMERY MNTC STN	265362	37.97	-118.32	7100	1960	1980	10	Queen Valley	116
MOORMAN RCH*	265371	39.33	-115.32	6539	2002	2007	4	Jakes Valley	174
MTN CITY RS*	265392	41.83	-115.97	5650	1955	1999	35	Owyhee River Area	37
MT CHARLESTON FS	265400	36.27	-115.65	7600	1949	2007	6	Las Vegas Valley	212
MT ROSE BOWL	265440	39.35	-119.87	7500	1973	1987	8	Pleasant Valley	88
NIXON*	265605	39.83	-119.35	3904	1928	1974	30	Pyramid Lake Valley	81
NORTH LAS VEGAS*	265705	36.22	-115.13	1888	1951	2007	20	Las Vegas Valley	212
OASIS*	265722	41.03	-114.47	5830	1987	2007	17	Goshute Valley	187
OLD RUTH	265760	39.27	-114.98	7034	1978	1985	5	Steptoe Valley	179

Appendix 1a cont. Weather stations used for estimating ET and net irrigation water requirements (sorted by station name). * indicates station was used for basin average.

STATION NAME	STATION NUMBER	LAT (NAD83)	LONG (NAD83)	ELEVATION (feet)	DATA FILE START YEAR	DATA FILE END YEAR	NUMBER OF YEARS WITH INSIGNIFICANT MISSING DATA	BASIN NAME	BASIN NUMBER
OROVADA 3 W*	265818	41.57	-117.83	4200	1911	2007	74	Quinn River Valley	33A
OVERTON*	265846	36.55	-114.45	1250	1939	2007	35	Lower Moapa Valley	220
OWYHEE*	265869	41.95	-116.10	5397	1948	1984	30	Owyhee River Area	37
PAHRANAGAT WR*	265880	37.27	-115.12	3400	1964	2007	33	Pahranagat Valley	209
PAHRUMP*	265890	36.22	-116.02	2700	1914	2007	42	Pahrump Valley	162
PAHUTE MEADOWS RCH*	265907	41.30	-118.93	4383	1963	1976	4	Black Rock Desert	28
PALMETTO	265931	37.47	-117.77	5906	1890	1911	14	Fish Lake Valley	117
PARADISE VALLEY 1 NW*	266005	41.50	-117.55	4675	1894	2007	47	Paradise Valley	69
PARIS RCH*	266055	40.22	-117.68	4140	1966	1991	22	Pleasant Valley	130
PENOYER VALLEY*	266130	37.65	-115.80	4800	1967	2006	5	Penoyer Valley	170
PEQUOP	266148	41.07	-114.53	6033	1959	1985	23	Goshute Valley	187
PILOT VALLEY-LEE*	266228	41.12	-114.12	4905	2000	2007	6	Pilot Creek Valley	191
PINE VALLEY BAILEY RCH*	266242	40.43	-116.12	5047	1982	2006	11	Pine Valley	53
PIOCHE	266252	37.95	-114.47	6180	1888	2006	61	Patterson Valley	202
QUINN RVR CROSSING	266504	41.57	-118.43	4091	1901	1951	10	Pine Forest Valley	29
RAND RCH PALISADE*	266574	40.43	-116.12	5046	1957	1982	19	Pine Valley	53
RATTLESNAKE	266630	38.45	-116.17	5915	1948	1966	13	Hot Creek	156
RED ROCK WC*	29999	39.892	-119.9345	4708	2004	2008	4	Red Rock Valley	99
RED ROCK CANYON SP	266691	36.08	-115.45	3780	1977	2007	20	Las Vegas Valley	212
REESE RIVER*	266746	39.07	-117.42	6550	1972	2007	26	Upper Reese River Valley	56
REESE VALLEY CARPER	266748	40.05	-117.23	4898	1976	1983	6	Middle Reese River Valley	58
RENO TAHOE INTL AP*	266779	39.48	-119.77	4410	1937	2007	69	Truckee Meadows	87
RENO WFO*	266791	39.57	-119.80	4974	1996	2007	10	Truckee Meadows	87
RUBY LAKE*	267123	40.20	-115.50	6010	1940	2007	61	Ruby Valley	176
RUTH	267175	39.28	-114.98	6850	1958	2007	30	Steptoe Valley	179
RYNDON*	267188	40.95	-115.60	5150	1999	2007	6	North Fork Area	44
RYE PATCH DAM*	267192	40.47	-118.30	4135	1935	2007	63	Imlay Area	72
SAND PASS*	267261	40.32	-119.80	3904	1913	1971	41	Smoke Creek Desert	21
SAN JACINTO*	267284	41.88	-114.68	5203	1904	1948	21	Salmon Falls Creek Area	40
SARCOBATUS*	267319	37.27	-117.02	4022	1941	1961	14	Sarcobatus Flat	146

Appendix 1a cont. Weather stations used for estimating ET and net irrigation water requirements (sorted by station name). * indicates station was used for basin average.

STATION NAME	STATION NUMBER	LAT (NAD83)	LONG (NAD83)	ELEVATION (feet)	DATA FILE START YEAR	DATA FILE END YEAR	NUMBER OF YEARS WITH INSIGNIFICANT MISSING DATA	BASIN NAME	BASIN NUMBER
SAVAL RCH*	267324	41.28	-115.92	6365	1960	1967	5	North Fork Area	44
SCHURZ*	267358	38.95	-118.82	4124	1920	1957	30	Walker Lake Valley	110A
SEARCHLIGHT	267369	35.47	-114.92	3540	1913	2007	73	Piute Valley	214
SEVENTY ONE RCH*	267397	40.90	-115.32	5453	1939	1952	4	Starr Valley Area	43
SHELDON	267443	41.85	-119.63	6506	1933	1972	35	Guano Valley	6
SHOSHONE 5 N*	267450	38.92	-114.40	5930	1988	2007	17	Spring Valley	184
SILVERPEAK*	267463	37.77	-117.57	4260	1967	2007	31	Clayton Valley	143
SMITH 1 N*	267609	38.82	-119.33	4754	1937	1966	23	Smith Valley	107
SMITH 6 N*	267612	38.95	-119.33	5000	1973	2007	23	Smith Valley	107
SMOKE CREEK ESPIL*	267618	40.60	-119.75	3850	1987	2006	14	Smoke Creek Desert	21
SMOKEY VALLEY*	267620	38.78	-117.17	5625	1949	2007	46	Big Smoky Valley	137B
SNOWBALL RCH	267640	39.03	-116.20	7160	1966	2002	33	Little Smoky Valley	155A
SOUTH FORK SP*	267690	40.68	-115.75	5270	1993	2007	8	Dixie Creek Tenmile	48
SPRING VALLEY SP*	267750	38.03	-114.18	5950	1974	2007	24	Spring Valley	201
STATELINE-HARRAH'S*	267806	38.97	-119.95	6248	1984	1998	13	Lake Tahoe Basin	90
STEAD*	267820	39.62	-119.88	5120	1985	2007	14	Lemmon Valley	92B
SULPHUR*	267873	40.90	-118.67	4042	1914	1953	21	Black Rock Desert	28
SUNNYSIDE*	267908	38.42	-115.02	5300	1891	2007	35	White River Valley	207
SUTCLIFFE	267953	39.95	-119.60	3900	1967	2007	27	Pyramid Lake Valley	81
TEMPIUTE 4 NW*	267983	37.68	-115.72	4889	1972	1985	12	Penoyer Valley	170
THORNE*	268034	38.60	-118.60	4203	1914	1950	24	Walker Lake Valley	110C
TONOPAH*	268170	38.05	-117.08	5395	1954	2005	49	Ralston Valley	141
TOPAZ LAKE 3N*	268186	38.73	-119.52	5105	1957	2007	19	Antelope Valley	106
TOPAZ LAKE 4 N*	268202	38.75	-119.52	5577	1986	2000	11	Antelope Valley	106
TUSCARORA*	268346	41.32	-116.22	6170	1958	2007	40	Independence Valley	36
TWIN SPRING FALLINI*	268443	38.20	-116.18	5300	1985	2005	10	Hot Creek	156
UNIV OF NEVADA EXP FM*	268500	39.52	-119.78	4514	1949	1954	4	Truckee Meadows	87
URSINE	268538	37.98	-114.22	5833	1964	1972	4	Eagle Valley	200
VALLEY OF FIRE SP	268588	36.43	-114.52	2000	1972	2007	33	Black Moutains Area	215
VIRGINIA CITY	268761	39.32	-119.65	6340	1887	2007	41	Dayton Valley	103
VYA	268810	41.58	-119.92	5663	1959	1980	14	Surprise Valley	14
WABUSKA 6 SE*	268822	39.07	-119.12	4300	1972	2007	27	Mason Valley	108

Appendix 1a cont. Weather stations used for estimating ET and net irrigation water requirements (sorted by station name). * indicates station was used for basin average.

STATION NAME	STATION NUMBER	LAT (NAD83)	LONG (NAD83)	ELEVATION (feet)	DATA FILE START YEAR	DATA FILE END YEAR	NUMBER OF YEARS WITH INSIGNIFICANT MISSING DATA	BASIN NAME	BASIN NUMBER
WADSWORTH*	268834	39.63	-119.28	4081	1902	1948	6	Tracy Segment	83
WADSWORTH 4 N*	268838	39.68	-119.28	4200	1974	2007	21	Dodge Flat	82
WASHOE VALLEY WC*	39999	39.285	-119.789	5050	2004	2008	4	Washoe valley	89
WELLINGTON RS*	268977	38.75	-119.37	4843	1942	1973	27	Smith Valley	107
WELLS*	268988	41.10	-114.97	5700	1895	2004	66	Marys River Area	42
WILDHORSE RSVR*	269072	41.63	-115.80	6226	1982	2007	18	Owyhee River Area	37
WILKINS*	269122	41.43	-114.75	5643	1948	1980	16	Thousand Springs Valley	189A
WILLOW SPRINGS*	269137	38.43	-117.20	6125	1941	1948	4	Big Smoky Valley	137A
WINNEMUCCA #2*	269168	40.93	-117.75	4300	1999	2007	6	Grass Valley	71
WINNEMUCCA MUNI AP*	269171	40.90	-117.80	4296	1949	2007	57	Winnemucca Segment	70
YERINGTON*	269229	39.00	-119.17	4380	1894	2007	66	Mason Valley	108

Appendix 1b. Weather stations used for estimating ET and net irrigation water requirements (sorted by basin name). * indicates station was used for basin average.

STATION NAME	STATION NUMBER	LAT (NAD83)	LONG (NAD83)	ELEVATION (feet)	DATA FILE START YEAR	DATA FILE END YEAR	NUMBER OF YEARS WITH INSIGNIFICANT MISSING DATA	BASIN NAME	BASIN NUMBER
GOLDFIELD	263285	37.70	-117.23	5690	1906	2007	66	Alkali Spring Valley	142
AMARGOSA FARMS-GAREY*	260150	36.57	-116.47	2450	1965	2006	28	Amargosa Desert	230
ANTELOPE VALLEY FARR*	260282	39.97	-117.43	4900	1984	1998	8	Antelope Valley	57
TOPAZ LAKE 3N*	268186	38.73	-119.52	5105	1957	2007	19	Antelope Valley	106
TOPAZ LAKE 4 N*	268202	38.75	-119.52	5577	1986	2000	11	Antelope Valley	106
SMOKEY VALLEY*	267620	38.78	-117.17	5625	1949	2007	46	Big Smoky Valley	137B
WILLOW SPRINGS*	269137	38.43	-117.20	6125	1941	1948	4	Big Smoky Valley	137A
CALLVILLE BAY*	261371	36.13	-114.73	1270	1989	2007	8	Black Moutains Area	215
ECHO BAY*	262497	36.32	-114.43	1250	1989	2007	10	Black Moutains Area	215
VALLEY OF FIRE SP	268588	36.43	-114.52	2000	1972	2007	33	Black Moutains Area	215
LEONARD CREEK RCH*	264527	41.52	-118.72	4224	1954	2007	44	Black Rock Desert	28
PAHUTE MEADOWS RCH*	265907	41.30	-118.93	4383	1963	1976	4	Black Rock Desert	28
SULPHUR*	267873	40.90	-118.67	4042	1914	1953	21	Black Rock Desert	28
CARLIN NEWMONT MINE	261415	40.92	-116.32	6520	1966	2002	24	Boulder Flat	61
EMIGRANT PASS HWY STN	262656	40.65	-116.30	5760	1963	2001	27	Boulder Flat	61
CHARLESTON*	261660	41.68	-115.53	5947	1961	2007	4	Bruneau River Area	38
HUMBOLDT FLD	263853	40.08	-118.15	4160	1940	1947	7	Buena Vista Valley	129
BUFFALO RCH*	261311	40.38	-117.47	5430	1966	1981	7	Buffalo Valley	131
FALLON EXP STN*	262780	39.45	-118.78	3965	1903	2007	96	Carson Desert	101
MINDEN*	265191	38.95	-119.77	4720	1906	2007	86	Carson Valley	105
LAHONTAN DAM*	264349	39.47	-119.07	4150	1911	2007	72	Churchill Valley	102
SILVERPEAK*	267463	37.77	-117.57	4260	1967	2007	31	Clayton Valley	143
CALIENTE*	261358	37.62	-114.52	4400	1903	2007	22	Clover Valley	204
CLOVER VALLEY*	261740	40.85	-115.03	5750	1900	2007	39	Clover Valley	177
BATTLE MTN*	260688	40.65	-116.93	4514	1898	1945	25	Clovers Area	64
LAUGHLIN*	264480	35.17	-114.58	605	1988	2007	10	Colorado Valley	213
COALDALE JUNCTION*	261755	38.05	-117.90	4603	1941	1965	6	Columbus Salt Marsh Valley	118

Appendix 1b cont. Weather stations used for estimating ET and net irrigation water requirements (sorted by basin name). * indicates station was used for basin average.

STATION NAME	STATION NUMBER	LAT (NAD83)	LONG (NAD83)	ELEVATION (feet)	DATA FILE START YEAR	DATA FILE END YEAR	NUMBER OF YEARS WITH INSIGNIFICANT MISSING DATA	BASIN NAME	BASIN NUMBER
MIDDLEGATE-LOWERY*	265132	39.30	-118.02	4600	1988	2007	15	Cowkick Valley	126
BEOWAWE*	260795	40.58	-116.47	4700	1908	2007	60	Crescent Valley	54
CORTEZ GOLD MINE*	261975	40.18	-116.63	4905	1968	1979	10	Crescent Valley	54
VIRGINIA CITY	268761	39.32	-119.65	6340	1887	2007	41	Dayton Valley	103
JUNGO MEYER RCH*	264108	40.88	-118.43	4200	1968	1986	7	Desert Valley	31
DIAMOND VALLEY USDA*	262296	39.683	-116.03	5970	1979	2007	19	Diamond Valley	153
EUREKA	262708	39.52	-115.97	6540	1888	2007	67	Diamond Valley	153
SOUTH FORK SP*	267690	40.68	-115.75	5270	1993	2007	8	Dixie Creek Tenmile	48
BRINKERHOFF RCH*	261160	40.08	-117.67	3661	1966	1981	7	Dixie Valley	128
WADSWORTH 4 N*	268838	39.68	-119.28	4200	1974	2007	21	Dodge Flat	82
CARSON CITY*	261485	39.15	-119.77	4651	1893	2007	90	Eagle Valley	104
URSINE	268538	37.98	-114.22	5833	1964	1972	4	Eagle Valley	200
EASTGATE*	262477	39.30	-117.88	5023	1956	1964	4	Eastgate Valley Area	127
BOULDER CITY*	261071	35.98	-114.85	2500	1931	2004	64	Eldorado Valley	167
ELKO*	262570	40.87	-115.75	5235	1999	2007	6	Elko Segment	49
ELKO RGNL AP*	262573	40.83	-115.78	5050	1888	2007	94	Elko Segment	49
FERNLEY*	262840	39.62	-119.25	4163	1907	1974	21	Fernley Area	76
DYER*	262431	37.62	-118.02	4900	1903	2007	55	Fish Lake Valley	117
PALMETTO	265931	37.47	-117.77	5906	1890	1911	14	Fish Lake Valley	117
LATHROP WELLS	264457	36.65	-116.40	2671	1942	1963	8	Fortymile Canyon	227A
ADAVEN	260046	38.12	-115.58	6250	1914	1981	53	Garden Valley	172
OASIS*	265722	41.03	-114.47	5830	1987	2007	17	Goshute Valley	187
PEQUOP	266148	41.07	-114.53	6033	1959	1985	23	Goshute Valley	187
BEOWAWE U OF N RCH*	260800	39.90	-116.58	5740	1972	2007	28	Grass Valley	138
WINNEMUCCA #2*	269168	40.93	-117.75	4300	1999	2007	6	Grass Valley	71
FERGUSON SPRINGS HMS*	262820	40.42	-114.18	5840	1972	1982	7	Great Salt Lake Desert	192
SHELDON	267443	41.85	-119.63	6506	1933	1972	35	Guano Valley	6
BLUE JAY HWY STN*	260961	38.38	-116.22	5322	1963	1984	7	Hot Creek	156
RATTLESNAKE	266630	38.45	-116.17	5915	1948	1966	13	Hot Creek	156
TWIN SPRING FALLINI*	268443	38.20	-116.18	5300	1985	2005	10	Hot Creek	156
JIGGS 8 SSE ZAGA*	264095	40.35	-115.62	5800	1978	2007	19	Huntington Valley	47
IMLAY*	263957	40.65	-118.17	4260	1914	2007	56	Imlay Area	72

Appendix 1b cont. Weather stations used for estimating ET and net irrigation water requirements (sorted by basin name). * indicates station was used for basin average.

STATION NAME	STATION NUMBER	LAT (NAD83)	LONG (NAD83)	ELEVATION (feet)	DATA FILE START YEAR	DATA FILE END YEAR	NUMBER OF YEARS WITH INSIGNIFICANT MISSING DATA	BASIN NAME	BASIN NUMBER
RYE PATCH DAM*	267192	40.47	-118.30	4135	1935	2007	63	Imlay Area	72
TUSCARORA*	268346	41.32	-116.22	6170	1958	2007	40	Independence Valley	36
INDIAN SPRINGS*	263980	36.58	-115.68	3123	1913	1964	23	Indian Springs Valley	161
GOODSPRINGS*	263316	35.83	-115.43	4000	1999	2007	6	Ivanpah Valley	164A
MOORMAN RCH*	265371	39.33	-115.32	6539	2002	2007	4	Jakes Valley	174
JARBRIDGE 4 N	264038	41.93	-115.43	6168	1916	1995	22	Jarbidge River Area	39
JARBIDGE 7 N*	264039	41.98	-115.43	6050	1995	2007	11	Jarbidge River Area	39
DAGGET PASS	262119	38.98	-119.88	7334	1988	2007	5	Lake Tahoe Basin	90
GLENBROOK*	263205	39.08	-119.93	6350	1909	2007	50	Lake Tahoe Basin	90
MARLETTE LAKE	264858	39.17	-119.92	8005	1916	1952	19	Lake Tahoe Basin	90
STATELINE-HARRAH'S*	267806	38.97	-119.95	6248	1984	1998	13	Lake Tahoe Basin	90
GEYSER RCH*	263101	38.67	-114.63	6020	1904	2002	19	Lake Valley	183
LAKE VALLEY STEWARD	264384	38.32	-114.65	6350	1971	1998	22	Lake Valley	183
LAMOILLE YOST*	264394	40.72	-115.52	5840	1975	2004	22	Lamoille Valley	45
LAMOILLE PH	264395	40.68	-115.47	6293	1916	1972	35	Lamoille Valley	45
DESERT NWR*	262243	36.43	-115.37	2920	1940	2007	60	Las Vegas Valley	212
KYLE CANYON RS	264314	36.25	-115.60	7205	1939	1948	4	Las Vegas Valley	212
LAS VEGAS*	264429	36.17	-115.13	2011	1895	1956	36	Las Vegas Valley	212
LAS VEGAS*	23112	36.17	-115.15	1867	1949	1970	22	Las Vegas Valley	212
LAS VEGAS WB AP*	264436	36.08	-115.07	2160	1948	2005	57	Las Vegas Valley	212
LAS VEGAS NWFO*	264439	36.05	-115.18	2170	1996	2007	9	Las Vegas Valley	212
LITTLE RED ROCK	264600	36.15	-115.42	3802	1965	1970	4	Las Vegas Valley	212
MT CHARLESTON FS	265400	36.27	-115.65	7600	1949	2007	6	Las Vegas Valley	212
NORTH LAS VEGAS*	265705	36.22	-115.13	1888	1951	2007	20	Las Vegas Valley	212
RED ROCK CANYON SP	266691	36.08	-115.45	3780	1977	2007	20	Las Vegas Valley	212
STEAD*	267820	39.62	-119.88	5120	1985	2007	14	Lemmon Valley	92B
FISH CREEK RCH*	262860	39.27	-116.00	6053	1943	1964	14	Little Smoky Valley	155A
SNOWBALL RCH	267640	39.03	-116.20	7160	1966	2002	33	Little Smoky Valley	155A
LOVELOCK DERBY FLD*	264700	40.07	-118.57	3902	1948	2005	49	Lovelock Valley	73

Appendix 1b cont. Weather stations used for estimating ET and net irrigation water requirements (sorted by basin name). * indicates station was used for basin average.

STATION NAME	STATION NUMBER	LAT (NAD83)	LONG (NAD83)	ELEVATION (feet)	DATA FILE START YEAR	DATA FILE END YEAR	NUMBER OF YEARS WITH INSIGNIFICANT MISSING DATA	BASIN NAME	BASIN NUMBER
ELGIN*	262557	37.35	-114.55	3420	1985	2007	20	Lower Meadow Valley Wash	205
ELGIN 3 SE*	262562	37.32	-114.50	3301	1965	1985	15	Lower Meadow Valley Wash	205
LOGANDALE*	264651	36.62	-114.48	1410	1968	1992	20	Lower Moapa Valley	220
OVERTON*	265846	36.55	-114.45	1250	1939	2007	35	Lower Moapa Valley	220
BATTLE MTN AP*	260691	40.62	-116.90	4540	1944	2007	55	Lower Reese River Valley	59
GIBBS RCH*	263114	41.57	-115.22	6000	1953	2007	43	Marys River Area	42
MALA VISTA RCH*	264824	41.32	-115.25	5594	1939	1965	16	Marys River Area	42
METROPOLIS*	265092	41.28	-115.02	5800	1965	1995	18	Marys River Area	42
WELLS*	268988	41.10	-114.97	5700	1895	2004	66	Marys River Area	42
WABUSKA 6 SE*	268822	39.07	-119.12	4300	1972	2007	27	Mason Valley	108
YERINGTON*	269229	39.00	-119.17	4380	1894	2007	66	Mason Valley	108
REESE VALLEY CARPER	266748	40.05	-117.23	4898	1976	1983	6	Middle Reese River Valley	58
SOLDIERS MEADOW*	267682	41.35	-119.17	4554	1962	1966	8	Mud Meadow	26
RYNDON*	267188	40.95	-115.60	5150	1999	2007	6	North Fork Area	44
SAVAL RCH*	267324	41.28	-115.92	6365	1960	1967	5	North Fork Area	44
BEATTY*	260715	36.92	-116.75	3304	1917	1972	32	Oasis Valley	228
BEATTY 8 N*	260718	37.00	-116.72	3550	1972	2007	28	Oasis Valley	228
MTN CITY RS*	265392	41.83	-115.97	5650	1955	1999	35	Owyhee River Area	37
OWYHEE*	265869	41.95	-116.10	5397	1948	1984	30	Owyhee River Area	37
WILDHORSE RSVR*	269072	41.63	-115.80	6226	1982	2007	18	Owyhee River Area	37
ALAMO*	260099	37.37	-115.17	3517	1921	1962	29	Pahranagat Valley	209
HIKO*	263671	37.55	-115.22	3900	1989	2007	15	Pahranagat Valley	209
PAHRANAGAT WR*	265880	37.27	-115.12	3400	1964	2007	33	Pahranagat Valley	209
PAHRUMP*	265890	36.22	-116.02	2700	1914	2007	42	Pahrump Valley	162
CATHEDRAL GORGE SP*	261590	37.80	-114.40	4830	2003	2007	4	Panaca Valley	203
PARADISE VALLEY 1 NW*	266005	41.50	-117.55	4675	1894	2007	47	Paradise Valley	69
PIOCHE	266252	37.95	-114.47	6180	1888	2006	61	Patterson Valley	202

Appendix 1b cont. Weather stations used for estimating ET and net irrigation water requirements (sorted by basin name). * indicates station was used for basin average.

STATION NAME	STATION NUMBER	LAT (NAD83)	LONG (NAD83)	ELEVATION (feet)	DATA FILE START YEAR	DATA FILE END YEAR	NUMBER OF YEARS WITH INSIGNIFICANT MISSING DATA	BASIN NAME	BASIN NUMBER
PENOYER VALLEY*	266130	37.65	-115.80	4800	1967	2006	5	Penoyer Valley	170
TEMPIUTE 4 NW*	267983	37.68	-115.72	4889	1972	1985	12	Penoyer Valley	170
PILOT VALLEY-LEE*	266228	41.12	-114.12	4905	2000	2007	6	Pilot Creek Valley	191
QUINN RVR CROSSING	266504	41.57	-118.43	4091	1901	1951	10	Pine Forest Valley	29
PINE VALLEY BAILEY RCH*	266242	40.43	-116.12	5047	1982	2006	11	Pine Valley	53
RAND RCH PALISADE*	266574	40.43	-116.12	5046	1957	1982	19	Pine Valley	53
SEARCHLIGHT	267369	35.47	-114.92	3540	1913	2007	73	Piute Valley	214
MT ROSE BOWL	265440	39.35	-119.87	7500	1973	1987	8	Pleasant Valley	88
PARIS RCH*	266055	40.22	-117.68	4140	1966	1991	22	Pleasant Valley	130
DENIO*	262229	41.98	-118.63	4190	1951	2006	39	Pueblo Valley	1
NIXON*	265605	39.83	-119.35	3904	1928	1974	30	Pyramid Lake Valley	81
SUTCLIFFE	267953	39.95	-119.60	3900	1967	2007	27	Pyramid Lake Valley	81
MONTGOMERY MNTC STN	265362	37.97	-118.32	7100	1960	1980	10	Queen Valley	116
MCDERMITT*	264935	42.00	-117.72	4527	1892	2007	29	Quinn River Valley	33B
OROVADA 3 W*	265818	41.57	-117.83	4200	1911	2007	74	Quinn River Valley	33A
BLUE EAGLE RCH HANKS*	260955	38.52	-115.55	4780	1978	2007	23	Railroad Valley	173B
CURRANT*	262078	38.75	-115.47	5184	1941	1949	4	Railroad Valley	173B
CURRANT HWY STN	262091	38.80	-115.35	6243	1963	1977	7	Railroad Valley	173B
DIABLO*	262276	37.92	-116.05	5105	1959	1978	10	Railroad Valley	173A
DUCKWATER*	262390	38.85	-115.63	5550	1966	2003	19	Railroad Valley	173B
TONOPAH*	268170	38.05	-117.08	5395	1954	2005	49	Ralston Valley	141
RED ROCK WC*	29999	39.892	-119.9345	4708	2004	2008	4	Red Rock Valley	99
ARTHUR 4 NW*	260438	40.78	-115.18	6300	1963	2007	34	Ruby Valley	176
RUBY LAKE*	267123	40.20	-115.50	6010	1940	2007	61	Ruby Valley	176
CONTACT*	261905	41.77	-114.75	5350	1949	1999	33	Salmon Falls Creek Area	40
JACKPOT*	264016	41.98	-114.67	5290	1986	2007	15	Salmon Falls Creek Area	40
KNOLL CREEK FLD STN	264268	41.63	-114.73	6004	1971	1979	6	Salmon Falls Creek Area	40
SAN JACINTO*	267284	41.88	-114.68	5203	1904	1948	21	Salmon Falls Creek Area	40
EMPIRE*	262662	40.58	-119.35	3953	1951	1976	6	San Emidio Desert	22
GERLACH*	263090	40.65	-119.37	3950	1948	2007	27	San Emidio Desert	22

Appendix 1b cont. Weather stations used for estimating ET and net irrigation water requirements (sorted by basin name). * indicates station was used for basin average.

STATION NAME	STATION NUMBER	LAT (NAD83)	LONG (NAD83)	ELEVATION (feet)	DATA FILE START YEAR	DATA FILE END YEAR	NUMBER OF YEARS WITH INSIGNIFICANT MISSING DATA	BASIN NAME	BASIN NUMBER
SARCOBATUS*	267319	37.27	-117.02	4022	1941	1961	14	Sarcobatus Flat	146
SMITH 1 N*	267609	38.82	-119.33	4754	1937	1966	23	Smith Valley	107
SMITH 6 N*	267612	38.95	-119.33	5000	1973	2007	23	Smith Valley	107
WELLINGTON RS*	268977	38.75	-119.37	4843	1942	1973	27	Smith Valley	107
SAND PASS*	267261	40.32	-119.80	3904	1913	1971	41	Smoke Creek Desert	21
SMOKE CREEK ESPIL*	267618	40.60	-119.75	3850	1987	2006	14	Smoke Creek Desert	21
GREAT BASIN NP	263340	39.02	-114.23	6830	1987	2007	16	Snake Valley	195
LEHMAN CAVES NM	264514	39.00	-114.22	6826	1937	1987	44	Snake Valley	195
MINA*	265168	38.38	-118.10	4550	1896	2007	79	Soda Spring Valley	121A
I-L RCH*	263940	41.57	-116.40	5203	1962	1969	3	South Fork Owyhee River Area	35
SHOSHONE 5 N*	267450	38.92	-114.40	5930	1988	2007	17	Spring Valley	184
SPRING VALLEY SP*	267750	38.03	-114.18	5950	1974	2007	24	Spring Valley	201
SEVENTY ONE RCH*	267397	40.90	-115.32	5453	1939	1952	4	Starr Valley Area	43
CURRIE HWY STN*	262096	40.27	-114.75	5820	1961	1991	10	Steptoe Valley	179
ELY 6 NE	262626	39.30	-114.83	6263	1999	2005	5	Steptoe Valley	179
ELY YELLAND FLD AP*	262631	39.30	-114.85	6262	1893	2005	68	Steptoe Valley	179
LAGES*	264341	40.07	-114.62	5960	1984	2007	21	Steptoe Valley	179
MCGILL*	264950	39.40	-114.78	6270	1892	2007	90	Steptoe Valley	179
OLD RUTH	265760	39.27	-114.98	7034	1978	1985	5	Steptoe Valley	179
RUTH	267175	39.28	-114.98	6850	1958	2007	30	Steptoe Valley	179
VYA	268810	41.58	-119.92	5663	1959	1980	14	Surprise Valley	14
BASALT	260668	38.00	-118.27	6355	1941	1957	10	Teels Marsh Valley	114
MONTELLO 2 SE*	265352	41.25	-114.17	4890	1902	2007	67	Thousand Springs Valley	189D
WILKINS*	269122	41.43	-114.75	5643	1948	1980	16	Thousand Springs Valley	189A
WADSWORTH*	268834	39.63	-119.28	4081	1902	1948	6	Tracy Segment	83
RENO TAHOE INTL AP*	266779	39.48	-119.77	4410	1937	2007	69	Truckee Meadows	87
RENO WFO*	266791	39.57	-119.80	4974	1996	2007	10	Truckee Meadows	87
UNIV OF NEVADA EXP FM*	268500	39.52	-119.78	4514	1949	1954	4	Truckee Meadows	87
AUSTIN #2*	260507	39.50	-117.07	6780	1887	2007	82	Upper Reese River Valley	56

Appendix 1b cont. Weather stations used for estimating ET and net irrigation water requirements (sorted by basin name). * indicates station was used for basin average.

STATION NAME	STATION NUMBER	LAT (NAD83)	LONG (NAD83)	ELEVATION (feet)	DATA FILE START YEAR	DATA FILE END YEAR	NUMBER OF YEARS WITH INSIGNIFICANT MISSING DATA	BASIN NAME	BASIN NUMBER
CENTRAL NEVADA FLD LAB*	261630	39.38	-117.32	5950	1965	1986	13	Upper Reese River Valley	56
REESE RIVER*	266746	39.07	-117.42	6550	1972	2007	26	Upper Reese River Valley	56
BUNKERVILLE*	261327	36.77	-114.12	1550	1979	2007	6	Virgin River Valley	222
MESQUITE*	265085	36.80	-114.07	1570	1942	2006	13	Virgin River Valley	222
DUFURRENA*	262394	41.87	-119.02	4800	1959	2005	30	Virgin Valley	4
HAWTHORNE*	263512	38.52	-118.63	4330	1954	2007	13	Walker Lake Valley	110C
HAWTHORNE AP*	263515	38.55	-118.67	4220	1888	1991	39	Walker Lake Valley	110C
SCHURZ*	267358	38.95	-118.82	4124	1920	1957	30	Walker Lake Valley	110A
THORNE*	268034	38.60	-118.60	4203	1914	1950	24	Walker Lake Valley	110C
LEWERS RCH	264542	39.23	-119.85	5203	1893	1938	15	Washoe Valley	89
WASHOE VALLEY WC*	39999	39.285	-119.789	5050	2004	2008	4	Washoe valley	89
KIMBERLY	264199	39.27	-115.03	7234	1928	1958	28	White River Valley	207
LUND*	264745	38.87	-115.02	5560	1957	2007	47	White River Valley	207
SUNNYSIDE*	267908	38.42	-115.02	5300	1891	2007	35	White River Valley	207
MIDAS 4 SE*	265105	41.20	-116.73	5203	1961	1969	4	Willow Creek Valley	63
GOLCONDA*	263245	40.95	-117.50	4415	1906	2007	71	Winnemucca Segment	70
WINNEMUCCA MUNI AP*	269171	40.90	-117.80	4296	1949	2007	57	Winnemucca Segment	70

Appendix 2. Details of supplementary Washoe County weather data and modifications made to 2 NWS weather station data sets due to poor station siting.

Non NWS Weather Station Analysis

Two weather data sets from 'full sweet' weather stations not part of the NWS network were added to this analysis to provide ET and net irrigation water Requirement estimates in basins where information is needed to address current and future water rights applications. These stations are operated and maintained by Washoe County Department of Water Resources and are located in Washoe Valley and Redrock Valley. Weather data used from these stations were compiled and formatted to be used in the computer program developed to read NWS station data.

Measured daily wind speed, calculated daily dew point from measured RH, and measured precipitation for the Redrock weather station were used to calculate daily ET_{os} and the net irrigation water requirement for the period of record. After analyzing the dewpoint depression for the Redrock weather station it was determined that no adjustment was needed to reflect reference conditions due to the fact that the computed mean annual dewpoint depression was 2.5^{o}C, which generally represents near reference conditions.

Washoe Valley contains two weather stations that Washoe County maintains and operates. One of the weather stations is located near Old Franktown road on the west side of Washoe Valley, while the other is located near Washoe Lake on the east central side of Washoe Valley. The location of the weather station located near Old Franktown road is not ideal, as it is located in an area where the predominant upwind fetch is obstructed by tall timber. Conversely, the east side weather station is located downwind of Washoe Lake and experiences high winds, partly due to the smooth surface of the lake. Additionally, the precipitation gradient from the west side to the east side of the valley is large. According to the 800m version 2 PRISM (Parameter-elevation Regressions on Independent Slopes Model) precipitation map (Daly et al., 1996) the west side weather station averages 15.4 inches verses the east side weather station of 12.1 inches. Measured mean annual precipitation of 16 and 9 inches (2004-2008) from the west and east side weather stations, respectively, confirm this gradient. Because ET_{os} is a function of wind speed, and the net irrigation water requirement is a function of ET_{os} and the precipitation amount, averaging and developing basin wide representative variables of wind speed and precipitation was required to obtain one dataset that could be used to calculate the ET_{os} and the net irrigation water requirement that is representative of the entire valley. This approach was chosen rather than calculating separate net irrigation water requirement estimates for each station and averaging the two, due to the questionable quality and representativeness of measured wind speed, missing data, and having access to Nevada Department of Transportation (NDOT) weather data located near the center of the valley in a more valley wide representative area of pasture grass. The single weather dataset was constructed for the period of 2004-2008 and consisted of daily T_{max}, T_{min}, and calculated dew point collected from the east side weather station, mean monthly wind speed from the NDOT station, and daily precipitation, which was calculated by averaging daily measurements of precipitation from the west and east side weather stations. Average precipitation for 2004-2008 (i.e. average of east and west stations) was 12.7 inches, similar to the 1971-2000 PRISM 800m version 2 (Parameter-

elevation Regressions on Independent Slopes Model) precipitation map (Daly et al., 1996) spatial average for the valley floor of 12.8 inches. Calculated mean annual dewpoint depression from the east side station represented near reference conditions of 2.4^{o}C, therefore no adjustment were made to the calculated dewpoint.

NWS Station Data Adjustment

Two NWS stations were identified in the Nevada dataset that had questionable temperature data. The first station identified was the Laughlin station (264480). Questionable temperature data were identified when comparing estimated solar radiation to measured solar radiation at a nearby weather station in Mohave, AZ. Figure AP1 and AP2 illustrate the estimated and measured solar radiation for Laughlin and Mohave, respectively, where it is obvious that the estimated solar radiation is below the measured solar radiation and does not ever approach the clear sky solar radiation "envelope" that it should for that elevation and latitude. Given that estimated R_s from T_{max} and T_{min} compares well with measurements at other stations, and that the estimated daily R_s is a function of the daily difference between T_{max} and T_{min}, investigation of Laughlin measured T_{max} and T_{min} was pursued to explain the underestimation. When comparing mean monthly measured T_{min} and T_{max} for Laughlin and Mohave it was evident that the maximum temperatures compared well but the Laughlin T_{min} was significantly higher than Mohave (Figure AP3).

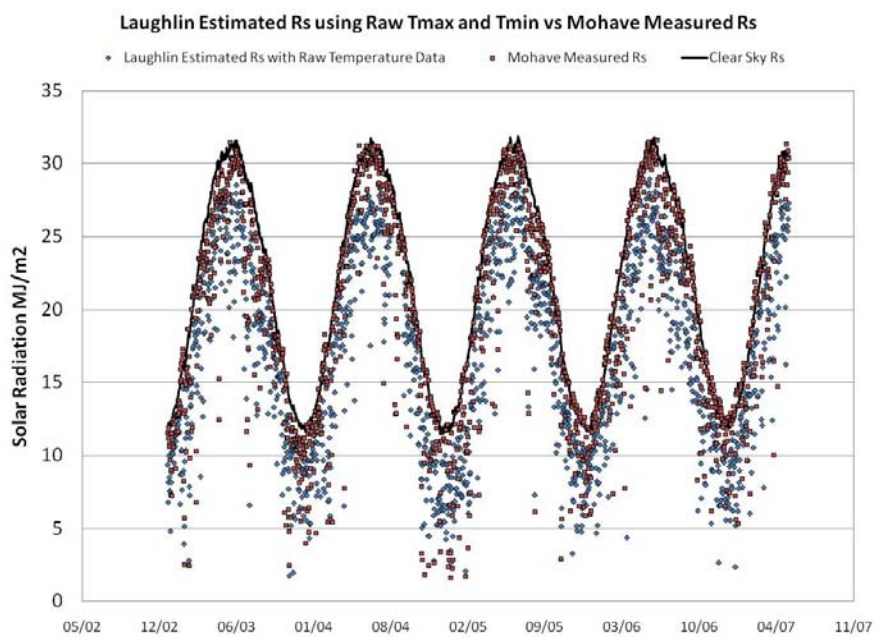

Figure AP1. Daily measured, estimated, and clear sky solar radiation for Mohave and Laughlin weather stations. The estimated solar radiation for Laughlin using T_{max} and T_{min} is underestimated when compared to the Mohave measured solar radiation.

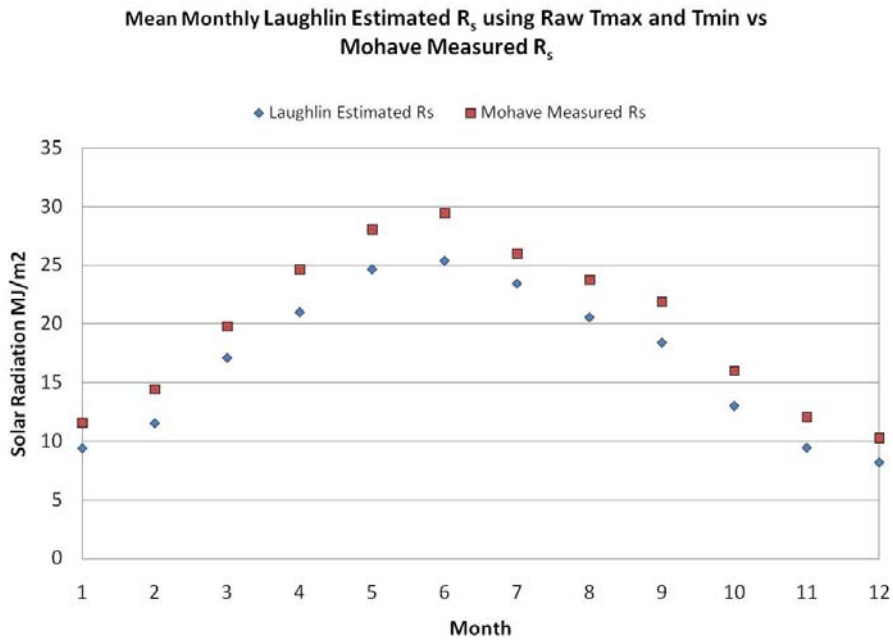

Figure AP2. Mean monthly measured and estimated solar radiation for Mohave and Laughlin weather stations.

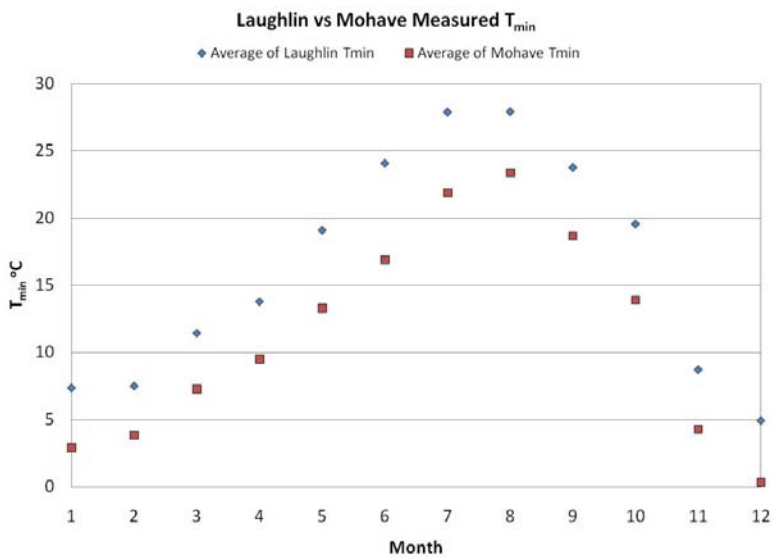

Figure AP3. Mean monthly T_{min} comparison between the Mohave and Laughlin weather stations.

The Mohave weather station is in an irrigated area along the Colorado River, so it is logical that there would be less sensible heat surrounding this station, which is illustrated in Figure AP4, where Mohave T_{max} is slightly lower than Laughlin in the spring and summer months due to evaporative cooling.

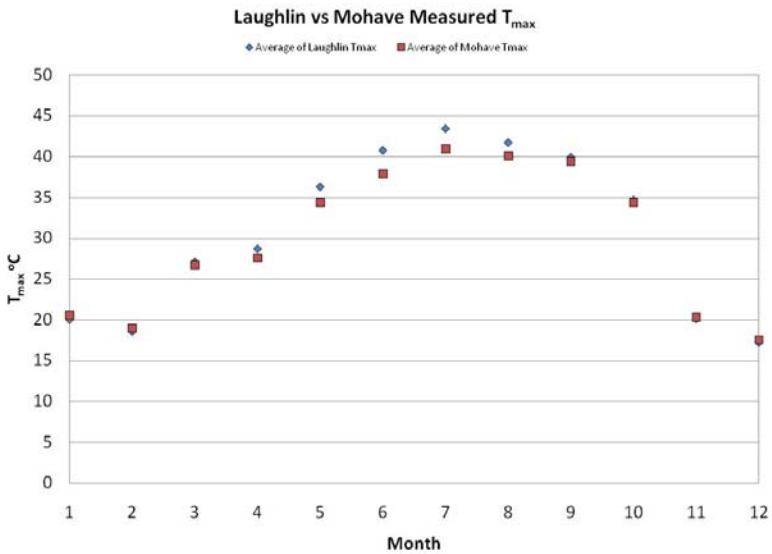

Figure AP4. Mean monthly T_{max} comparison between the Mohave and Laughlin weather stations.

The fact that Laughlin T_{min} is significantly higher than Mohave for all times of the year led to question if the area surrounding the Laughlin station could possibly be storing heat during the day and emitting it at night, such as from pavement or asphalt, thereby affecting the T_{min}. Photographs of the Laughlin station indicate that the station is indeed surrounded by asphalt and darker colored gravel (Figures AP5-AP6) perhaps having low thermal radiation emissivity and could be causing inflated T_{min} measurement. Miss calibration of the temperature sensor could also be causing inflated T_{min} measurement.

Figure AP5. Photo of the Laughlin weather station looking north.

Figure AP6. Photo of the Laughlin weather station looking south.

Artificially inflated T_{min} measurements are the primary reason why the estimated R_s did not compare well with the measured R_s nearby at the Mohave weather station. As previously mentioned, the empirical method used to estimate R_s (Thornton and Running, 1999) is based on the daily difference between T_{max} and T_{min}. The physical basis for the method is based from the fact that during cloud cover maximum air temperatures generally decrease and the minimum temperature is increased due to increased downward emission of reflection of long wave radiation by clouds at night (Allen, 1997). Because the T_{min} was abnormally inflated at Laughlin and not characteristic of an agricultural (evaporating) surface, the Thornton and Running equation, generally calibrated for more reference conditions, predicted that conditions were typically cloudy, when clearly from comparing to the Mohave measured R_s, it was not as cloudy as predicted in the region. To adjust the Laughlin T_{min} the mean monthly difference between the Laughlin and Mohave measured T_{min} was calculated and then subtracted from the Laughlin T_{min} time series for the period of record (1988-2007). After adjustment of the Laughlin T_{min} time series, estimated R_s compared well with measured R_s at the Mohave weather station.

During the QAQC process it was noted that the Minden weather station (265191) had significantly higher measured T_{max} than USGS micrometeorological weather station (ET-2) measured T_{max}, which was collected in a field of irrigated alfalfa when compared for respective time periods (Figure AP7). Measured T_{min} for both stations were very similar (Figure AP8). It is expected that the T_{max} measured over irrigated alfalfa would be somewhat lower due to less sensible heat and more ET occurring as compared to the area immediately surrounding Minden station which is a residential setting. However, the magnitudes of mean monthly differences of T_{max}, peaking at 7.8 ^{o}C in August for T_{max}, (Figure AP9) were considered significant given that the town of Minden is largely

Figure AP7. USGS Bowen Ratio micrometeorological weather station located in a field of irrigated alfalfa (modified from Maurer et al., 2005).

surrounded by irrigated alfalfa and pasture grass. These issues warranted an investigation of the area surrounding the Minden weather station. Figures AP10 and AP11 illustrate that the immediate area surrounding the Minden weather station is composed of a darker colored gravel, and is located within a residential area. Given that the Minden measured T_{min} compared well with measured T_{min} at the ET-2 site, the site surroundings of Mindin likely caused the increased T_{max} measurements. The affect of gravel surrounding the Minden weather station on T_{min} is smaller than the Laughlin station due to the limited extent of the gravel, where the Laughlin grave area immediately surrounding the station was large and included large areas of asphalt. In addition to the gravel surface in the vicinity of the Minden station, where there is no evaporative cooling to reduce air temperatures, there was probably substantial heat loading of the air temperature sensors due to thermal radiation emissions from the gravel, adjacent fence, and building shown in Figure AP11. The fence and building face the sun and would warm during the daytime, emitting substantial radiation toward the temperature shelter. In addition, the fence and building restricted air flow past the temperature shelter.

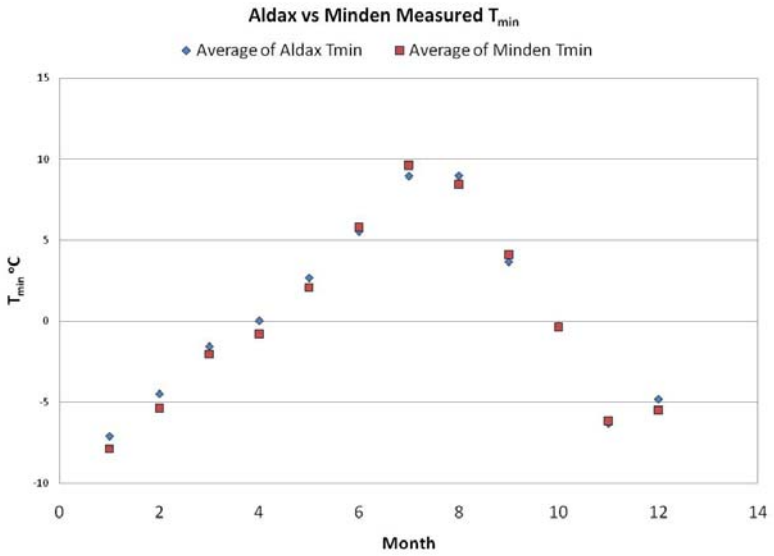

Figure AP8. Mean monthly T_{min} comparison between the ET-2 Aldax and Minden weather stations.

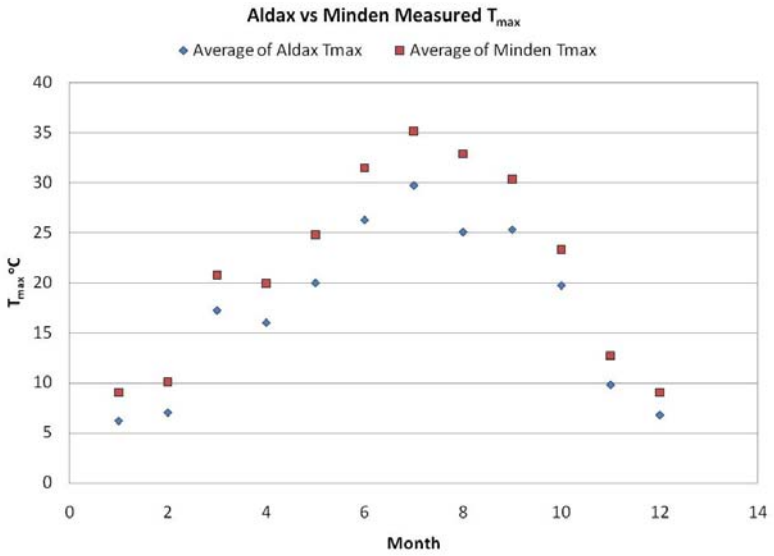

Figure AP9. Mean monthly T_{max} comparison between the ET-2 Aldax and Minden weather stations.

Figure AP10. Gravel area surrounding the Minden NWS weather station looking northwest.

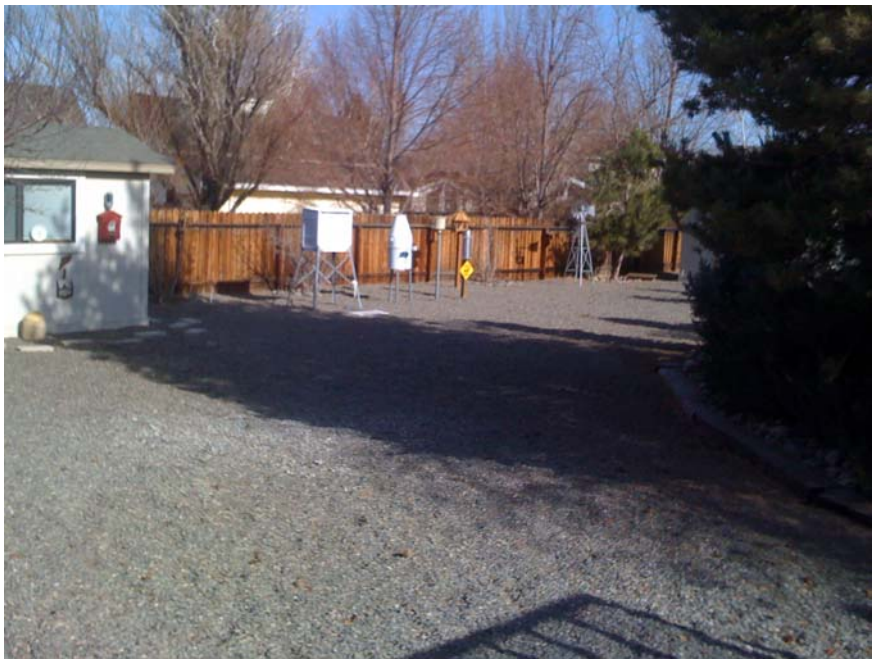

Figure AP11. Gravel area surrounding the Minden NWS weather station looking northeast

To adjust the Minden measured T_{max}, one half of the mean monthly difference between the Minden and the ET-2 site T_{max} were subtracted from the Minden T_{max} time series, beginning in 1991 when the station was relocated to the present site. Only one half of the T_{max} difference was used to adjust the Minden T_{max} time series based on findings that by using the full T_{max} difference produced unreasonable simulated greenup and harvest dates for Minden. Greenup and harvest date cumulative growing degree day parameters were calibrated to many areas of the state (see greenup and harvest date calibration section of report) using mostly NWS data that generally have a small amount of aridity bias due to siting near residential developments or non reference type settings. Therefore, the calibration may not perform well with T_{max} and T_{min} data collected in centers of irrigated fields that tend to run cooler. Because many NWS weather stations are not located in large irrigated areas, or directly over alfalfa or irrigated pasture grass, the adjustment was selected to replicate temperature measurements that would be more representative of typical NWS station site locations.

Appendix 3a. Mean monthly dew point depression (^{o}C) for stations used in spatial interpolation and assignment to NWS weather stations.

STATION	NETWORK	STATE	ELEVATION (ft)	LAT	LONG	PERIOD OF RECORD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
Aberdeen, ID	BOR Agrimet	ID	4400	42.95	-112.83	1992-2004	-2.4	-2.2	-0.5	1.4	1.6	1.0	0.6	1.9	1.2	0.6	-1.6	-2.7	-0.1
Fairfield, ID	BOR Agrimet	ID	5038	43.31	-114.83	1990-2004	-4.3	-4.4	-2.4	0.5	0.8	0.4	1.4	2.2	1.6	0.5	-2.3	-4.2	-0.9
Malta, ID	BOR Agrimet	ID	4410	42.44	-113.41	1990-2002	-1.1	-1.3	0.1	1.1	0.9	1.3	2.5	2.9	1.3	0.8	-1.1	-1.7	0.5
Rupert, ID	BOR Agrimet	ID	4154	42.60	-113.84	1988-2008	-1.4	-1.0	0.4	1.5	1.7	1.3	1.2	2.0	1.2	0.8	-0.7	-1.4	0.5
Twin Falls, ID	BOR Agrimet	ID	3919	42.55	-114.35	1990-2008	-0.6	-0.3	1.3	2.0	2.4	3.0	3.3	3.0	2.6	1.9	0.0	-0.7	1.5
Grand View, ID	BOR Agrimet	ID	2579	42.91	-116.06	1993-2008	-1.6	-1.2	0.6	1.4	2.2	3.2	4.6	3.5	1.4	0.1	-1.3	-1.8	0.9
Bishop, CA	CIMIS	CA	4170	37.36	-118.40	1996-2007	1.6	2.0	4.3	5.0	4.4	4.4	4.0	3.7	2.7	2.5	2.0	2.0	3.2
Buntingville, CA	CIMIS	CA	4005	40.29	-120.43	1986-2007	-1.5	-0.6	0.4	0.9	0.9	2.2	3.3	4.0	2.4	0.6	-1.8	-1.8	0.7
Beryl Junction, UT	Utah Agmet	UT	5186	37.72	-113.70	2003-2007	-3.1	-1.4	0.5	2.4	3.1	5.8	4.3	2.9	3.1	1.2	0.3	-2.0	1.4
Drainage Farm, UT	Utah Agmet	UT	4430	41.83	-111.88	2003-2007	-1.9	-1.8	-1.6	2.0	2.5	2.9	4.4	3.8	1.7	0.0	-0.4	-1.3	0.9
Parowan, UT	Utah Agmet	UT	5754	37.86	-112.88	2004-2007	-3.3	-1.0	1.4	3.2	3.9	6.0	4.9	3.7	4.3	1.7	1.1	-1.9	2.0
Cedar City, UT	Utah Agmet	UT	5515	37.67	-113.14	2005-2007	-2.6	-0.3	1.2	3.4	4.7	8.1	6.5	4.7	4.8	2.2	2.9	-1.4	2.9
Flowell, UT	Utah Agmet	UT	4715	38.96	-112.42	2006-2007	-0.8	1.1	2.2	3.3	4.4	5.4	4.3	3.3	2.4	1.9	1.5	-3.7	2.1
Mason Valley, NV	USGS Bowen	NV	4322	39.11	-119.15	2005-2007	-0.4	0.7	2.3	2.2	1.6	2.3	3.6	2.4	1.4	0.6	-0.6	-0.7	1.3
Carson Valley, NV	USGS Bowen Ratio	NV	4686	39.01	-119.78	2003-2004	-0.1	2.0	2.3	3.0	1.9	2.4	2.4	1.8	2.5	1.9	0.2	-0.3	1.7
Eureka, NV	BOR Agrimet	NV	5897	39.69	-115.98	1989-2007	-3.6	-2.6	0.3	1.1	1.8	4.1	4.8	4.4	2.8	1.7	-0.9	-2.9	0.9
Fallon, NV	BOR Agrimet	NV	3965	39.46	-118.78	2001-2007	-1.0	1.0	4.6	5.6	6.7	9.6	8.3	5.9	4.9	3.2	0.3	-0.1	4.1
Lakeview, OR	BOR Agrimet	OR	4808	42.12	-120.52	1988-2007	-1.6	-1.4	-0.3	0.4	1.1	1.8	3.1	3.2	2.1	0.3	-1.5	-1.9	0.4
Lorella, OR	BOR Agrimet	OR	4130	42.08	-121.22	2001-2007	-1.7	-1.2	-1.0	-1.0	-0.2	0.1	0.7	0.3	-1.2	-2.4	-2.2	-1.6	-1.0
Mohave, AZ	AZMET	AZ	1581	34.97	-114.61	2003-2007	2.7	3.5	4.4	6.4	8.0	9.1	8.1	6.8	7.7	5.3	3.1	3.3	5.7

Appendix 3b. Interpolated or assigned basin average mean monthly dew point depression K_o (^oC) used for assignment to respective weather stations. Symbol * next to the basin name indicates the basins that were assigned the measured mean monthly dew point depression.

BASIN NUMBER	BASIN NAME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN ANNUAL
142	Alkali Spring Valley	-0.2	0.9	2.9	3.8	3.8	4.8	4.6	3.8	3.1	2.1	0.9	0.1	2.5
111B	Alkali Valley	-0.2	1.1	3.0	3.5	3.3	4.2	4.3	3.4	2.7	1.8	0.4	0.1	2.3
230	Amargosa Desert	-0.5	0.8	2.7	3.9	4.3	5.7	5.1	4.1	3.8	2.4	1.2	0.0	2.8
57	Antelope Valley	-1.6	-0.3	2.0	2.7	3.0	4.7	4.9	4.0	2.9	1.7	-0.4	-1.2	1.9
106	Antelope Valley	-0.4	1.3	2.5	2.9	2.3	3.1	3.4	2.5	2.4	1.5	-0.1	-0.4	1.7
186B	Antelope Valley	-2.3	-1.4	0.4	1.9	2.4	3.6	3.8	3.4	2.4	1.3	-0.3	-2.3	1.1
137A	Big Smoky Valley	-0.6	0.7	2.8	3.6	3.6	4.9	4.7	3.8	3.0	2.0	0.6	-0.2	2.4
137B	Big Smoky Valley	-1.8	-0.5	1.9	2.7	3.0	4.8	4.9	4.0	3.0	1.8	-0.1	-1.4	1.9
215	Black Moutains Area	-0.6	0.8	2.4	4.1	5.0	6.9	5.9	4.7	4.9	2.8	1.7	0.0	3.2
28	Black Rock Desert	-1.3	-0.3	1.3	2.0	2.2	3.4	3.9	3.4	2.3	1.0	-0.9	-1.3	1.3
61	Boulder Flat	-2.1	-1.3	0.9	1.8	2.2	3.4	4.0	3.6	2.4	1.3	-0.8	-1.9	1.1
38	Bruneau River Area	-1.8	-1.4	0.3	1.6	2.0	2.5	3.2	3.1	1.9	0.9	-0.9	-1.9	0.8
129	Buena Vista Valley	-1.2	0.0	2.2	2.9	3.2	4.8	4.9	3.9	2.9	1.6	-0.5	-1.0	2.0
131	Buffalo Valley	-1.7	-0.6	1.5	2.3	2.6	4.0	4.4	3.7	2.6	1.4	-0.7	-1.4	1.5
101	Carson Desert*	-1.0	1.0	4.6	5.6	6.7	9.6	8.3	5.9	4.9	3.2	0.3	-0.4	4.1
105	Carson Valley*	-0.1	2.0	2.3	3.0	1.4	2.2	2.4	1.6	3.0	3.0	0.2	-0.3	1.7
102	Churchill Valley	-0.6	0.9	2.9	3.2	2.9	4.2	4.7	3.3	2.5	1.5	-0.3	-0.5	2.1
143	Clayton Valley	0.3	1.3	3.4	4.1	4.0	4.7	4.4	3.7	3.0	2.2	1.2	0.7	2.7
177	Clover Valley	-2.2	-1.5	0.4	1.8	2.2	3.2	3.6	3.3	2.2	1.2	-0.6	-2.1	1.0
204	Clover Valley	-2.7	-0.9	1.0	2.8	3.6	6.1	4.9	3.5	3.6	1.6	0.9	-1.8	1.9
64	Clovers Area	-1.9	-1.0	1.0	1.8	2.2	3.4	4.0	3.5	2.3	1.2	-0.9	-1.7	1.2
213	Colorado Valley	1.8	2.7	3.8	5.7	7.2	8.5	7.5	6.2	6.9	4.6	2.7	2.4	5.0
118	Columbus Salt Marsh Valley	0.1	1.2	3.2	3.9	3.8	4.6	4.4	3.7	2.9	2.1	0.9	0.4	2.6
126	Cowkick Valley	-1.0	0.6	3.1	3.8	4.1	6.0	5.8	4.3	3.4	2.1	-0.1	-0.5	2.6
54	Crescent Valley	-2.4	-1.4	1.0	1.8	2.3	4.0	4.4	3.9	2.7	1.5	-0.7	-2.0	1.3
103	Dayton Valley	-0.4	1.3	2.5	2.9	2.3	3.2	3.6	2.6	2.4	1.5	-0.2	-0.5	1.8
31	Desert Valley	-1.4	-0.5	1.3	2.0	2.2	3.4	3.9	3.4	2.3	1.0	-0.9	-1.4	1.3
153	Diamond Valley*	-3.6	-2.6	0.3	1.1	1.8	4.1	4.8	4.4	2.8	1.7	-0.9	-2.9	0.9
48	Dixie Creek-Tenmile Creek Area	-2.4	-1.6	0.6	1.7	2.2	3.6	4.0	3.7	2.4	1.3	-0.7	-2.2	1.0
128	Dixie Valley	-1.1	0.3	2.8	3.5	3.9	5.7	5.6	4.2	3.3	2.0	-0.2	-0.7	2.4
82	Dodge Flat	-0.8	0.8	2.9	3.5	3.6	5.2	5.2	3.9	3.1	1.9	-0.3	-0.5	2.4
104	Eagle Valley	-0.2	1.8	2.3	2.9	2.0	2.6	2.7	2.0	2.5	1.8	0.1	-0.3	1.7
200	Eagle Valley	-2.7	-1.0	0.9	2.8	3.6	6.1	4.8	3.4	3.5	1.5	0.8	-1.9	1.8

Appendix 3b cont. Interpolated or assigned basin average mean monthly dew point depression K_o (^oC).

BASIN NUMBER	BASIN NAME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN ANNUAL
127	Eastgate Valley Area	-1.0	0.5	2.9	3.6	3.9	5.7	5.6	4.2	3.3	2.0	-0.1	-0.6	2.5
167	Eldorado Valley	0.9	2.0	3.3	5.1	6.3	7.8	6.8	5.6	6.1	3.9	2.3	1.5	4.3
49	Elko Segment	-2.2	-1.5	0.6	1.7	2.2	3.4	3.8	3.5	2.3	1.3	-0.7	-2.1	1.0
76	Fernley Area	-0.8	0.9	3.4	4.0	4.2	6.1	5.8	4.2	3.4	2.1	-0.1	-0.4	2.7
117	Fish Lake Valley	0.7	1.5	3.7	4.4	4.1	4.5	4.2	3.7	2.9	2.3	1.4	1.1	2.9
227A	Fortymile Canyon	-0.7	0.6	2.5	3.7	4.1	5.6	5.0	4.1	3.7	2.3	1.1	-0.2	2.7
122	Gabbs Valley	-0.8	0.7	2.9	3.5	3.6	5.1	5.1	3.8	3.0	1.9	0.0	-0.5	2.4
172	Garden Valley	-1.9	-0.3	1.7	3.0	3.6	5.6	4.9	3.9	3.5	1.9	0.7	-1.4	2.1
187	Goshute Valley	-2.2	-1.4	0.3	1.7	2.2	3.2	3.5	3.3	2.2	1.2	-0.4	-2.1	1.0
71	Grass Valley	-1.5	-0.4	1.6	2.3	2.6	3.9	4.3	3.6	2.5	1.3	-0.7	-1.3	1.5
138	Grass Valley	-2.6	-1.5	1.1	1.9	2.4	4.4	4.7	4.1	2.8	1.7	-0.6	-2.1	1.4
192	Great Salt Lake Desert	-2.1	-1.3	0.3	1.8	2.4	3.4	3.5	3.3	2.3	1.2	-0.3	-2.1	1.0
6	Guano Valley	-1.6	-1.0	0.2	0.8	1.2	2.0	3.0	2.8	1.6	0.1	-1.4	-1.7	0.5
156	Hot Creek	-1.7	-0.3	1.9	2.9	3.3	5.1	4.9	4.0	3.2	1.9	0.4	-1.2	2.0
24	Hualapai Flat	-1.3	-0.3	1.1	1.7	1.9	3.0	3.7	3.3	2.2	0.8	-1.1	-1.3	1.1
47	Huntington Valley	-2.9	-1.9	0.6	1.5	2.1	4.0	4.5	4.0	2.7	1.5	-0.7	-2.5	1.1
72	Imlay Area	-1.3	-0.1	1.8	2.5	2.8	4.1	4.4	3.6	2.6	1.4	-0.6	-1.1	1.7
36	Independence Valley	-1.9	-1.4	0.4	1.6	2.0	2.8	3.5	3.3	2.0	1.0	-1.0	-1.9	0.9
161	Indian Springs Valley	-1.0	0.5	2.2	3.7	4.3	6.1	5.3	4.2	4.1	2.4	1.3	-0.4	2.7
135	Ione Valley	-0.9	0.5	2.7	3.4	3.5	5.0	4.9	3.8	3.0	1.9	0.1	-0.6	2.3
164A	Ivanpah Valley	0.7	1.8	3.1	4.9	6.0	7.5	6.6	5.3	5.7	3.7	2.1	1.2	4.0
174	Jakes Valley	-2.8	-1.5	0.9	1.9	2.5	4.5	4.7	4.0	2.9	1.7	-0.2	-2.3	1.4
39	Jarbidge River Area	-1.7	-1.3	0.3	1.6	2.0	2.4	3.0	3.0	1.8	1.0	-0.9	-1.8	0.8
30A	Kings River Valley	-1.6	-0.9	0.7	1.4	1.8	2.7	3.5	3.1	1.9	0.6	-1.1	-1.6	0.9
90	Lake Tahoe Basin	-0.3	1.7	2.3	2.9	2.1	2.7	2.7	2.1	2.5	1.8	0.1	-0.3	1.7
183	Lake Valley	-2.3	-0.7	1.2	2.8	3.6	5.8	4.9	3.7	3.5	1.7	0.9	-1.8	2.0
45	Lamoille Valley	-2.2	-1.5	0.5	1.7	2.2	3.3	3.8	3.5	2.2	1.2	-0.7	-2.1	1.0
212	Las Vegas Valley	-0.4	0.9	2.5	4.2	5.0	6.8	5.9	4.7	4.8	2.9	1.6	0.2	3.3
92A	Lemmon Valley	-0.8	0.6	2.1	2.6	2.4	3.5	3.9	3.3	2.6	1.4	-0.6	-0.8	1.7
92B	Lemmon Valley	-0.8	0.7	2.2	2.7	2.5	3.6	4.0	3.2	2.6	1.5	-0.5	-0.7	1.8
155A	Little Smoky Valley	-2.9	-1.7	0.9	1.8	2.3	4.4	4.8	4.2	2.9	1.7	-0.5	-2.3	1.3
73	Lovelock Valley	-1.0	0.4	2.7	3.4	3.7	5.4	5.3	4.1	3.1	1.8	-0.4	-0.7	2.3
205	Lower Meadow Valley Wash	-2.2	-0.4	1.4	3.1	3.9	6.2	5.1	3.8	3.8	1.9	1.1	-1.4	2.2
220	Lower Moapa Valley	-1.6	0.0	1.8	3.5	4.4	6.5	5.5	4.1	4.2	2.3	1.4	-0.9	2.6
59	Lower Reese River Valley	-1.9	-0.9	1.3	2.1	2.5	3.9	4.4	3.8	2.6	1.5	-0.7	-1.6	1.4
52	Marys Creek Area	-2.3	-1.4	0.8	1.8	2.2	3.6	4.0	3.7	2.4	1.4	-0.8	-2.1	1.1
42	Marys River Area	-1.9	-1.4	0.4	1.7	2.1	2.7	3.2	3.1	2.0	1.1	-0.8	-1.9	0.9

Appendix 3b cont. Interpolated or assigned basin average mean monthly dew point depression K_o (^oC).

BASIN NUMBER	BASIN NAME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN ANNUAL
108	Mason Valley*	-0.4	0.7	2.3	2.2	1.6	2.3	3.6	2.4	1.4	0.6	-0.6	-0.7	1.3
225	Mercury Valley	-0.7	0.6	2.4	3.8	4.3	5.9	5.3	4.2	4.0	2.4	1.3	-0.2	2.8
58	Middle Reese River Valley	-1.9	-0.7	1.6	2.3	2.7	4.3	4.6	3.9	2.8	1.6	-0.5	-1.5	1.6
26	Mud Meadow	-1.4	-0.5	1.0	1.6	1.9	2.9	3.6	3.2	2.1	0.7	-1.1	-1.4	1.0
44	North Fork Area	-1.9	-1.4	0.5	1.7	2.1	2.9	3.4	3.2	2.0	1.1	-0.8	-2.0	0.9
228	Oasis Valley	-0.6	0.7	2.6	3.7	4.0	5.3	4.8	3.9	3.5	2.2	1.1	-0.1	2.6
37	Owyhee River Area	-1.8	-1.4	0.3	1.5	2.0	2.6	3.3	3.1	1.9	0.9	-1.0	-1.9	0.8
209	Pahranagat Valley	-1.9	-0.3	1.6	3.2	3.9	6.0	5.1	3.9	3.7	1.9	1.0	-1.3	2.2
162	Pahrump Valley	-0.3	1.0	2.6	4.1	4.8	6.4	5.7	4.5	4.5	2.8	1.5	0.2	3.2
203	Panaca Valley	-2.6	-0.8	1.0	2.8	3.6	6.1	4.9	3.5	3.6	1.6	0.9	-1.8	1.9
69	Paradise Valley	-1.7	-0.9	0.9	1.7	2.1	3.1	3.8	3.3	2.1	0.9	-1.0	-1.6	1.1
202	Patterson Valley	-2.5	-0.8	1.1	2.9	3.6	6.0	4.9	3.6	3.6	1.7	0.9	-1.8	1.9
170	Penoyer Valley	-1.5	-0.1	1.9	3.2	3.7	5.6	5.0	3.9	3.5	2.0	0.8	-1.0	2.2
191	Pilot Creek Valley	-1.9	-1.4	0.2	1.7	2.1	2.8	3.2	3.1	2.0	1.1	-0.5	-2.0	0.9
29	Pine Forest Valley	-1.6	-0.8	0.7	1.5	1.8	2.8	3.5	3.1	1.9	0.6	-1.1	-1.6	0.9
53	Pine Valley	-2.9	-1.9	0.7	1.6	2.1	4.0	4.5	4.1	2.7	1.6	-0.7	-2.4	1.1
214	Piute Valley	2.0	2.9	3.9	5.9	7.3	8.6	7.6	6.3	7.1	4.7	2.8	2.6	5.1
88	Pleasant Valley	-0.4	1.3	2.4	2.9	2.3	3.1	3.3	2.6	2.5	1.6	-0.1	-0.5	1.8
130	Pleasant Valley	-1.4	-0.2	1.9	2.6	2.9	4.4	4.7	3.8	2.7	1.5	-0.5	-1.2	1.8
1	Pueblo Valley	-1.6	-0.9	0.6	1.3	1.7	2.6	3.3	3.0	1.8	0.5	-1.2	-1.6	0.8
65	Pumpernickel Valley	-1.7	-0.7	1.3	2.0	2.4	3.7	4.1	3.5	2.4	1.2	-0.8	-1.5	1.3
81	Pyramid Lake Valley	-1.0	0.4	2.1	2.7	2.7	4.2	4.5	3.7	2.8	1.4	-0.7	-0.9	1.8
116	Queen Valley	0.6	1.4	3.5	4.2	3.9	4.4	4.2	3.6	2.8	2.2	1.2	1.0	2.7
33A	Quinn River Valley	-1.6	-0.9	0.8	1.6	1.9	2.9	3.6	3.2	2.0	0.8	-1.1	-1.6	1.0
33B	Quinn River Valley	-1.7	-1.0	0.6	1.5	1.9	2.8	3.5	3.1	1.9	0.7	-1.1	-1.7	0.9
173A	Railroad Valley	-1.4	0.0	2.0	3.2	3.6	5.4	4.9	3.9	3.4	2.0	0.7	-1.0	2.2
173B	Railroad Valley	-2.2	-0.8	1.4	2.5	3.1	5.1	4.8	4.0	3.2	1.8	0.2	-1.7	1.8
141	Ralston Valley	-0.9	0.4	2.5	3.4	3.6	5.0	4.8	3.9	3.1	2.0	0.6	-0.5	2.3
176	Ruby Valley	-2.7	-1.7	0.5	1.7	2.3	3.9	4.2	3.8	2.6	1.4	-0.6	-2.3	1.1
40	Salmon Falls Creek Area	-1.6	-1.2	0.4	1.6	2.0	2.4	2.9	2.9	1.9	1.1	-0.7	-1.7	0.8
22	San Emidio Desert	-1.2	0.0	1.6	2.1	2.3	3.5	4.0	3.6	2.5	1.1	-0.9	-1.1	1.5
146	Sarcobatus Flat	-0.2	0.9	2.9	3.9	4.0	5.1	4.7	3.9	3.3	2.2	1.1	0.2	2.6
107	Smith Valley	-0.4	1.1	2.5	2.8	2.3	3.1	3.7	2.7	2.2	1.3	-0.2	-0.5	1.7
21	Smoke Creek Desert	-1.3	-0.3	1.1	1.6	1.7	2.9	3.6	3.5	2.3	0.8	-1.2	-1.3	1.1
195	Snake Valley	-2.3	-0.7	1.1	2.6	3.4	5.3	4.6	3.7	3.1	1.6	0.6	-2.1	1.7
121A	Soda Spring Valley	-0.5	0.8	2.9	3.5	3.4	4.7	4.6	3.6	2.9	1.9	0.3	-0.2	2.3
46	South Fork Area	-2.5	-1.6	0.6	1.7	2.2	3.6	4.0	3.7	2.4	1.3	-0.7	-2.3	1.0

Appendix 3b cont. Interpolated or assigned basin average mean monthly dew point depression K_o (^oC).

BASIN NUMBER	BASIN NAME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN ANNUAL
35	South Fork Owyhee River Area	-1.9	-1.4	0.4	1.5	2.0	2.7	3.5	3.2	1.9	0.8	-1.1	-1.9	0.8
184	Spring Valley	-2.4	-0.9	1.1	2.5	3.2	5.1	4.6	3.7	3.1	1.6	0.4	-2.1	1.7
201	Spring Valley	-2.6	-0.8	1.0	2.8	3.6	6.1	4.9	3.5	3.6	1.6	0.9	-1.8	1.9
43	Starr Valley Area	-2.1	-1.4	0.5	1.7	2.2	3.1	3.5	3.3	2.1	1.2	-0.7	-2.0	0.9
179	Steptoe Valley	-2.5	-1.3	0.8	2.1	2.7	4.5	4.5	3.8	2.8	1.5	0.0	-2.2	1.4
149	Stone Cabin Valley	-1.2	0.2	2.3	3.2	3.5	5.1	4.8	3.9	3.2	2.0	0.5	-0.8	2.2
14	Surprise Valley	-1.5	-0.9	0.2	0.8	1.2	2.1	3.0	2.8	1.6	0.1	-1.4	-1.6	0.5
114	Teels Marsh Valley	0.1	1.2	3.2	3.8	3.6	4.4	4.3	3.6	2.8	2.0	0.8	0.4	2.5
189A	Thousand Springs Valley	-1.8	-1.3	0.3	1.7	2.0	2.6	3.0	3.0	2.0	1.1	-0.7	-1.9	0.8
189D	Thousand Springs Valley	-1.7	-1.3	0.2	1.6	2.0	2.5	2.9	2.9	1.9	1.0	-0.6	-1.8	0.8
83	Tracy Segment	-0.6	1.0	2.7	3.2	2.9	4.2	4.4	3.3	2.7	1.7	-0.2	-0.5	2.0
91	Truckee Canyon Segment	-0.6	1.1	2.3	2.8	2.3	3.2	3.5	2.8	2.5	1.6	-0.3	-0.6	1.7
87	Truckee Meadows	-0.6	1.1	2.4	2.9	2.4	3.4	3.7	2.9	2.5	1.6	-0.2	-0.6	1.8
56	Upper Reese River Valley	-1.6	-0.3	2.1	2.8	3.2	4.9	5.0	4.0	3.0	1.8	-0.2	-1.2	2.0
222	Virgin River Valley	-2.2	-0.4	1.4	3.2	4.0	6.4	5.2	3.8	3.9	1.9	1.2	-1.4	2.3
4	Virgin Valley	-1.5	-0.9	0.4	1.1	1.5	2.4	3.2	2.9	1.7	0.3	-1.3	-1.6	0.7
110A	Walker Lake Valley	-0.6	0.8	2.8	3.1	2.9	4.2	4.7	3.3	2.4	1.4	-0.3	-0.5	2.0
110C	Walker Lake Valley	-0.4	1.0	2.9	3.4	3.2	4.3	4.5	3.4	2.7	1.7	0.2	-0.2	2.2
89	Washoe Valley	-0.3	1.5	2.4	2.9	2.2	2.9	3.0	2.3	2.5	1.7	0.0	-0.4	1.7
207	White River Valley	-2.3	-0.8	1.3	2.6	3.2	5.2	4.8	3.9	3.3	1.8	0.4	-1.8	1.8
63	Willow Creek Valley	-1.9	-1.2	0.7	1.7	2.1	3.0	3.6	3.4	2.2	1.1	-0.9	-1.8	1.0
70	Winnemucca Segment	-1.6	-0.6	1.3	2.0	2.3	3.5	4.0	3.5	2.3	1.1	-0.8	-1.4	1.3
159	Yucca Flat	-1.0	0.4	2.3	3.5	4.0	5.7	5.0	4.0	3.7	2.2	1.1	-0.5	2.5

Appendix 4a. Mean monthly 2 meter equivalent wind speed (m/s) for stations used in spatial interpolation and assignment to weather NWS weather stations.

STATION NAME	LAT	LONG	ELEVATION (FT)	STATE	NETWORK	BASIN NUMBER	BASIN NAME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN ANNUAL
AMARGOSA VALLEY	36.57	-116.46	2425	NV	CEMP	230	Amargosa Desert	1.8	2.2	2.3	3.0	2.7	2.9	2.9	2.8	2.3	2.0	1.7	1.7	2.4
ANTELOPE LAKE	41.68	-116.76	5459	NV	RAWS	34	Little Owyhee River Area	2.8	2.8	3.1	3.0	3.0	2.8	2.7	2.8	2.6	2.7	2.9	2.9	2.8
B11 WALKER BOWEN	39.11	-119.15	4321	NV	USGS	108	Mason Valley	1.4	2.1	2.0	2.2	1.8	1.5	1.4	1.4	1.4	1.3	1.5	1.5	1.6
BAKER FLAT	39.00	-114.22	6841	NV	RAWS	195	Snake Valley	1.5	1.4	1.8	2.0	2.0	2.1	2.0	2.0	1.9	1.6	1.5	1.5	1.8
BEACON LIGHT	40.56	-116.76	4800	NV	RAWS	59	Lower Reese River Valley	1.3	1.7	2.0	2.1	2.2	2.2	2.1	2.0	1.9	1.5	1.4	1.4	1.8
BENTON	37.84	-118.48	5449	CA	RAWS	NA	NA	1.8	2.2	2.4	2.6	2.3	2.1	1.9	1.9	1.8	1.9	2.0	1.9	2.1
BIG SMOKEY VALLEY	39.05	-117.00	5840	NV	DRI	137B	Big Smoky Valley	2.0	2.4	2.9	3.3	3.0	3.2	2.9	2.7	2.5	2.4	2.4	2.3	2.7
BLUEWING MOUNTAIN	40.50	-119.12	4570	NV	RAWS	79	Kumiva Valley	1.7	2.0	2.3	2.6	2.7	2.5	2.4	2.3	2.2	2.0	1.9	1.8	2.2
BUFFALO CREEK	40.58	-119.79	2795	NV	RAWS	21	Smoke Creek Desert	1.5	2.0	2.5	2.9	2.9	2.9	2.8	2.6	2.4	2.2	1.8	1.6	2.3
CARSON VALLEY	39.00	-119.78	4685	NV	NVDOT	105	Carson Valley	1.7	1.8	2.6	2.6	2.4	2.2	1.9	1.7	1.8	1.6	1.7	1.8	2.0
CATNIP MOUNTAIN	41.92	-119.50	5741	NV	RAWS	6	Guano Valley	3.6	3.2	3.4	3.3	3.0	2.9	2.6	2.5	2.4	2.8	3.3	3.5	3.0
CATTLE CAMP	38.90	-114.81	7024	NV	RAWS	179	Steptoe Valley	2.1	2.1	2.2	2.4	2.4	2.5	2.3	2.4	2.2	2.2	2.1	2.1	2.3
CEDARVILLE	41.59	-120.17	4600	CA	AGRIMET	NA	NA	2.1	2.1	2.5	2.4	2.2	2.0	1.9	1.9	1.8	1.8	2.1	2.1	2.1
COYOTE WASH	38.28	-114.76	5771	NV	RAWS	181	Dry Lake Valley	1.7	1.9	2.1	2.3	2.4	2.4	2.2	2.1	2.1	2.0	1.8	1.8	2.1
CURRANT CREEK	38.76	-115.41	5751	NV	RAWS	173B	Railroad Valley	1.8	2.2	2.6	2.9	2.8	2.9	2.7	2.8	2.6	2.3	1.9	1.7	2.4
DESATOYA MOUNTAIN	39.30	-117.58	6201	NV	RAWS	134	Smith Creek	2.2	2.4	2.5	2.5	2.5	2.5	2.4	2.3	2.1	2.0	2.2	2.3	2.3
DOYLE	40.03	-120.11	4239	CA	RAWS	NA	NA	1.9	2.2	2.3	2.3	2.3	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1
DUCKWATER	38.92	-115.70	5463	NV	DRI	173B	Railroad Valley	2.6	2.6	3.1	3.5	3.1	3.3	2.7	2.7	2.8	2.8	2.6	2.4	2.8

Appendix 4a cont. Mean monthly 2 meter equivalent wind speed (m/s) for stations used in spatial interpolation and assignment to weather stations used for computing ET and net irrigation water requirements.

STATION NAME	LAT	LONG	ELEVATION (FT)	STATE	NETWORK	BASIN NUMBER	BASIN NAME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN ANNUAL
DYER - WALLACE FARMS	37.61	-117.99	4882	NV	DRI	117	Fish Lake Valley	3.2	3.8	3.8	4.1	3.2	3.2	2.9	2.8	2.8	3.1	3.1	3.3	3.3
EDWARDS CREEK VALLEY	39.53	-117.75	5194	NV	DRI	133	Edwards Creek Valley	1.7	1.9	2.1	2.4	2.4	2.4	2.4	2.3	2.1	1.9	1.8	1.8	2.1
ELKO WB AIRPORT	40.83	-115.78	5050	NV	AIRPORT	49	Elko Segment	1.6	1.8	2.1	2.3	2.2	2.2	2.1	1.9	1.8	1.6	1.7	1.6	1.9
ELY WBO	39.30	-114.85	6262	NV	AIRPORT	179	Steptoe Valley	3.0	3.1	3.3	3.4	3.4	3.4	3.3	3.3	3.2	3.1	3.0	3.1	3.2
EUREKA	39.69	-115.98	5896	NV	AGRIMET	153	Diamond Valley	1.7	1.9	2.6	3.0	2.3	2.2	1.9	1.8	1.8	1.8	1.9	2.0	2.1
FAIRVIEW VALLEY	39.32	-118.22	4236	NV	DRI	124	Fairview Valley	1.7	2.1	2.3	2.7	2.8	2.6	2.6	2.3	2.1	1.9	1.9	1.7	2.2
FALLON	39.46	-118.78	3967	NV	AGRIMET	101	Carson Desert	1.3	1.7	2.0	2.2	1.8	1.8	1.4	1.3	1.3	1.1	1.3	1.5	1.6
GARDEN VALLEY	38.03	-115.44	5167	NV	CEMP	172	Garden Valley	1.1	1.3	1.6	1.9	1.8	1.8	1.7	1.6	1.5	1.2	1.1	1.1	1.5
GARDNERVILLE	38.89	-119.72	4797	NV	NVDOT	105	Carson Valley	1.5	1.5	2.2	2.4	2.2	1.9	1.7	1.8	1.6	1.5	1.5	1.7	1.8
GOLDFIELD	37.71	-117.24	5627	NV	CEMP	142	Alkali Spring Valley	2.8	3.1	3.3	3.5	3.1	3.1	2.8	2.8	2.7	2.6	2.7	2.7	2.9
IMMIGRATION WASH	37.92	-114.17	6230	NV	RAWS	198	Dry Valley	2.2	2.4	2.8	3.1	3.2	3.3	2.9	2.8	2.8	2.6	2.3	2.2	2.7
LAS VEGAS WSO AIRPORT	36.23	-115.03	1883	NV	AIRPORT	212	Las Vegas Valley	2.4	2.8	3.3	3.6	3.7	3.6	3.3	3.1	2.9	2.6	2.5	2.4	3.0
LOVELOCK FAA AIRPORT	40.07	-118.57	3902	NV	AIRPORT	73	Lovelock Valley	1.8	2.2	2.5	2.9	3.0	2.9	2.6	2.4	2.2	2.0	1.8	1.7	2.3
LOWER BIG SMOKEY VALLEY	38.37	-117.47	5036	NV	DRI	137A	Big Smoky Valley	3.2	3.5	3.9	4.3	4.1	4.2	3.5	3.4	3.5	3.6	3.4	3.0	3.6
MEDLINS RANCH	37.40	-115.54	4475	NV	CEMP	169A	Tikapoo Valley	2.5	2.5	2.8	3.2	3.1	3.0	2.7	2.6	2.7	2.5	2.3	2.3	2.7
MESQUITE	36.81	-114.05	1768	NV	CEMP	222	Virgin River Valley	1.4	1.4	1.5	1.7	1.7	1.6	1.7	1.5	1.6	1.3	1.2	1.2	1.5
MOHAVE	34.97	-114.61	479	AZ	AZMET	NA	NA	2.6	2.7	2.7	2.8	2.6	2.2	1.8	1.7	1.6	1.9	2.3	2.9	2.3
MOREY CREEK	41.45	-117.62	5499	NV	RAWS	69	Paradise	2.1	2.3	3.0	3.0	2.9	2.9	2.9	2.8	2.6	2.5	2.3	2.1	2.6
NYALA	38.25	-115.73	4826	NV	CEMP	173B	Railroad Valley	1.3	1.5	1.9	2.4	2.3	2.4	2.3	2.2	1.9	1.6	1.4	1.2	1.9
ORIENTAL WASH	37.24	-117.50	4101	NV	RAWS	232	Oriental W.	3.1	3.2	3.4	3.6	3.6	3.6	3.4	3.4	3.4	3.5	3.2	3.1	3.4

Appendix 4a cont. Mean monthly 2 meter equivalent wind speed (m/s) for stations used in spatial interpolation and assignment to weather stations used for computing ET and net irrigation water requirements.

STATION NAME	LAT	LONG	ELEVATION (FT)	STATE	NETWORK	BASIN NUMBER	BASIN NAME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN ANNUAL
OVERTON	36.55	-114.45	1260	NV	CEMP	220	Lower Moapa Valley	1.4	1.5	1.6	1.9	1.8	1.8	1.5	1.6	1.5	1.4	1.3	1.3	1.5
PANCAKE	38.30	-116.19	5200	NV	RAWS	156	Hot Creek	1.4	1.8	2.3	2.6	2.6	2.6	2.4	2.3	2.1	1.9	1.7	1.6	2.1
PYRAMID LAKE FISHERIES	39.94	-119.59	3809	NV	DRI	81	Pyramid Lake Valley	2.5	2.7	3.0	3.2	2.7	2.5	2.3	2.5	2.5	2.5	2.8	3.2	2.7
RACHEL	37.64	-115.74	4849	NV	CEMP	170	Penoyer Valley	1.9	2.3	2.5	3.1	2.9	3.0	2.9	2.8	2.4	2.1	1.9	1.8	2.5
RED BUTTE	39.98	-117.32	5049	NV	RAWS	57	Antelope Valley	1.6	2.0	2.2	2.5	2.6	2.5	2.2	2.1	2.0	1.8	1.7	1.7	2.1
RED ROCK	39.90	-119.94	4715	NV	WASHOE COUNTY	99	Red Rock Valley	1.2	1.3	1.8	2.1	2.0	1.8	1.7	1.7	1.5	1.3	1.5	1.5	1.6
RENO WSFO AIRPORT	39.48	-119.77	4410	NV	AIRPORT	87	Truckee Meadows	1.6	2.0	2.5	2.8	2.8	2.7	2.5	2.3	2.0	1.7	1.8	1.7	2.2
ROCK SPRING CREEK	41.64	-114.44	5400	NV	RAWS	189B	Thousand Springs Valley	2.0	2.2	2.5	2.7	2.7	2.8	2.6	2.5	2.3	2.3	2.1	2.2	2.4
RUBY LAKE	40.17	-115.49	5971	NV	RAWS	176	Ruby Valley	2.5	2.7	3.0	3.2	3.0	2.9	2.5	2.5	2.5	2.5	2.6	2.6	2.7
SARCOBATUS FLATS	37.28	-117.02	4016	NV	CEMP	146	Sarcobatus Flat	2.3	2.4	2.6	2.7	2.2	2.3	2.2	2.0	1.9	1.9	2.0	2.2	2.2
SHO-PAI	42.02	-116.21	5351	ID	RAWS	NA	NA	2.8	2.8	3.3	3.2	3.1	2.9	2.9	2.8	2.7	2.6	3.1	3.0	2.9
SIARD	40.39	-117.63	4600	NV	RAWS	130	Pleasant Valley	1.7	1.9	2.3	2.4	2.5	2.5	2.3	2.2	2.1	1.9	1.8	1.8	2.1
SPRUCE MOUNTAIN	40.44	-114.81	6099	NV	RAWS	187	Goshute Valley	2.5	2.4	2.8	3.1	3.0	3.0	2.8	2.7	2.5	2.4	2.4	2.4	2.7
STEAD GOLF	39.63	-119.89	5140	NV	DRI	92A	Lemmon Valley	1.6	2.2	2.4	2.9	2.7	2.7	2.6	2.5	2.2	1.9	1.9	2.3	2.3
TONOPAH AIRPORT	38.05	-117.08	5395	NV	AIRPORT	141	Ralston Valley	3.0	3.3	3.6	3.9	3.7	3.5	3.1	3.1	3.0	3.1	3.1	3.0	3.3
TRACY CLARK	39.57	-119.53	4501	NV	NVDOT	83	Tracy Segment	1.5	2.1	2.4	3.1	2.8	2.5	2.4	2.3	2.1	1.8	1.9	1.7	2.2
WALKER	38.57	-119.46	5440	CA	RAWS	NA	NA	1.9	2.1	2.6	2.9	2.8	2.7	2.5	2.4	2.4	1.9	2.0	2.3	2.4
WASHOE VALLEY	39.27	-119.82	5043	NV	NVDOT	89	Washoe Valley	2.3	2.1	3.1	3.4	2.9	2.3	2.3	2.1	2.1	1.9	2.4	3.0	2.5
WASHOEVALLEY_EAST	39.29	-119.79	5040	NV	WASHOE COUNTY	89	Washoe Valley	2.8	3.1	4.4	5.2	5.1	4.3	4.2	4.5	4.5	3.7	3.1	3.8	4.0
WINNEMUCCA WSO AIRPORT	40.90	-117.80	4296	NV	AIRPORT	70	Winnemucca Segment	2.5	2.8	2.8	2.9	2.9	2.9	2.8	2.6	2.5	2.4	2.5	2.5	2.7

Appendix 4b. Interpolated or assigned basin average mean monthly wind speed (m/s) used for assignment to respective NWS weather stations. Symbol * next to the basin name indicates that the basins was assigned the measured mean monthly wind speed.

BASIN NUMBER	BASIN NAME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN ANNUAL
142	Alkali Spring Valley*	2.8	3.1	3.3	3.5	3.1	3.1	2.8	2.8	2.7	2.6	2.7	2.7	2.9
111B	Alkali Valley	2.0	2.3	2.7	2.9	2.6	2.5	2.2	2.2	2.1	2.0	2.1	2.2	2.3
230	Amargosa Desert*	1.8	2.2	2.3	3.0	2.7	2.9	2.9	2.8	2.3	2.0	1.7	1.7	2.4
57	Antelope Valley*	1.6	2.0	2.2	2.5	2.6	2.5	2.2	2.1	2.0	1.8	1.7	1.7	2.1
106	Antelope Valley	1.9	2.1	2.6	2.9	2.8	2.7	2.5	2.4	2.4	1.9	2.0	2.3	2.4
186B	Antelope Valley	2.4	2.4	2.7	3.0	2.8	2.9	2.6	2.6	2.4	2.4	2.3	2.3	2.6
137A	Big Smoky Valley*	3.2	3.5	3.9	4.3	4.1	4.2	3.5	3.4	3.5	3.6	3.4	3.0	3.6
137B	Big Smoky Valley*	2.0	2.4	2.9	3.3	3.0	3.2	2.9	2.7	2.5	2.4	2.4	2.3	2.7
215	Black Moutains Area	1.8	2.0	2.3	2.6	2.5	2.5	2.2	2.2	2.1	1.9	1.8	1.7	2.1
28	Black Rock Desert	2.0	2.2	2.6	2.8	2.7	2.6	2.5	2.4	2.3	2.2	2.1	2.1	2.4
61	Boulder Flat	1.7	2.0	2.3	2.5	2.4	2.4	2.3	2.2	2.0	1.8	1.8	1.8	2.1
38	Bruneau River Area	2.4	2.5	2.9	2.9	2.8	2.8	2.7	2.6	2.4	2.4	2.6	2.5	2.6
129	Buena Vista Valley	1.8	2.1	2.4	2.6	2.6	2.6	2.4	2.3	2.1	2.0	1.9	1.9	2.2
131	Buffalo Valley	1.8	2.0	2.3	2.5	2.5	2.5	2.3	2.3	2.1	1.9	1.9	1.8	2.2
101	Carson Desert*	1.3	1.7	2.0	2.2	1.8	1.8	1.4	1.3	1.3	1.1	1.3	1.5	1.6
105	Carson Valley*	1.6	1.6	2.4	2.5	2.3	2.0	1.8	1.7	1.7	1.6	1.6	1.8	1.9
102	Churchill Valley	1.6	2.0	2.3	2.6	2.3	2.1	1.9	1.8	1.8	1.6	1.8	1.8	2.0
143	Clayton Valley	2.8	3.2	3.4	3.6	3.2	3.2	2.9	2.8	2.8	2.8	2.8	2.8	3.0
177	Clover Valley	2.3	2.3	2.7	2.9	2.8	2.8	2.6	2.5	2.3	2.3	2.3	2.3	2.5
204	Clover Valley	1.9	2.0	2.3	2.7	2.6	2.7	2.5	2.4	2.4	2.1	1.9	1.8	2.3
64	Clovers Area	1.9	2.1	2.5	2.6	2.6	2.5	2.4	2.3	2.2	2.0	2.0	1.9	2.2
213	Colorado Valley	2.6	2.7	2.7	2.8	2.6	2.2	1.8	1.7	1.6	1.9	2.3	2.9	2.3
118	Columbus Salt Marsh Valley	2.6	3.0	3.2	3.5	3.1	3.0	2.7	2.6	2.6	2.7	2.7	2.6	2.8
126	Cowkick Valley	1.8	2.1	2.3	2.6	2.6	2.5	2.5	2.3	2.1	1.9	1.9	1.9	2.2
54	Crescent Valley	1.6	1.9	2.3	2.4	2.4	2.4	2.2	2.1	2.0	1.8	1.7	1.7	2.1
103	Dayton Valley	1.8	2.0	2.6	2.9	2.6	2.3	2.2	2.0	2.0	1.8	2.0	2.1	2.2
31	Desert Valley	2.2	2.4	2.7	2.8	2.8	2.8	2.6	2.5	2.4	2.3	2.3	2.2	2.5
153	Diamond Valley*	1.7	1.9	2.6	3.0	2.3	2.2	1.9	1.8	1.8	1.8	1.9	2.0	2.1
48	Dixie Creek-Tenmile Creek Area	1.8	2.0	2.3	2.5	2.4	2.4	2.2	2.1	2.0	1.9	1.9	1.9	2.1
128	Dixie Valley	1.7	2.0	2.3	2.6	2.6	2.5	2.4	2.2	2.1	1.9	1.9	1.8	2.1

Appendix 4b cont. Interpolated or assigned basin average mean monthly wind speed (m/s) used for assignment to respective weather stations. Symbol * next to the basin name indicates that the basins was assigned the measured mean monthly wind speed.

BASIN NUMBER	BASIN NAME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN ANNUAL
82	Dodge Flat	1.7	2.1	2.5	2.9	2.7	2.4	2.3	2.2	2.1	1.8	2.0	2.1	2.2
104	Eagle Valley	2.0	2.0	2.7	3.0	2.7	2.3	2.2	2.0	2.0	1.8	2.1	2.4	2.3
200	Eagle Valley	2.1	2.4	2.7	3.1	3.1	3.3	2.9	2.8	2.8	2.5	2.3	2.2	2.7
127	Eastgate Valley Area	1.9	2.2	2.3	2.6	2.6	2.5	2.4	2.3	2.1	1.9	2.0	2.0	2.2
167	Eldorado Valley	2.2	2.5	2.8	3.1	3.1	3.0	2.7	2.6	2.4	2.3	2.2	2.2	2.6
49	Elko Segment	1.6	1.8	2.1	2.3	2.2	2.2	2.1	1.9	1.8	1.6	1.7	1.6	1.9
76	Fernley Area	1.7	2.1	2.4	2.8	2.6	2.3	2.2	2.1	1.9	1.7	1.9	2.0	2.1
117	Fish Lake Valley*	3.2	3.8	3.8	4.1	3.2	3.2	2.9	2.8	2.8	3.1	3.1	3.3	3.3
227A	Fortymile Canyon	2.0	2.3	2.5	3.1	2.8	2.9	2.8	2.7	2.3	2.2	1.9	1.9	2.4
122	Gabbs Valley	2.0	2.4	2.6	2.9	2.8	2.7	2.5	2.3	2.2	2.1	2.2	2.1	2.4
172	Garden Valley*	1.1	1.3	1.6	1.9	1.8	1.8	1.7	1.6	1.5	1.2	1.1	1.1	1.5
187	Goshute Valley*	2.5	2.4	2.8	3.1	3.0	3.0	2.8	2.7	2.5	2.4	2.4	2.4	2.7
71	Grass Valley	2.1	2.3	2.6	2.7	2.7	2.7	2.6	2.5	2.3	2.2	2.2	2.1	2.4
138	Grass Valley	1.8	2.1	2.4	2.7	2.6	2.5	2.3	2.2	2.1	2.0	1.9	1.9	2.2
192	Great Salt Lake Desert	2.3	2.3	2.7	2.9	2.8	2.8	2.6	2.5	2.4	2.3	2.3	2.3	2.5
6	Guano Valley	3.6	3.2	3.4	3.3	3.0	2.9	2.6	2.5	2.4	2.8	3.3	3.5	3.0
156	Hot Creek*	1.4	1.8	2.3	2.6	2.6	2.6	2.4	2.3	2.1	1.9	1.7	1.6	2.1
156	Hot Creek	1.4	1.8	2.3	2.6	2.6	2.6	2.4	2.3	2.1	1.9	1.7	1.6	2.1
24	Hualapai Flat	1.9	2.1	2.5	2.8	2.7	2.6	2.5	2.4	2.2	2.1	2.0	2.0	2.3
47	Huntington Valley	2.2	2.4	2.7	3.0	2.8	2.7	2.4	2.4	2.3	2.3	2.3	2.3	2.5
72	Imlay Area	2.0	2.3	2.5	2.7	2.7	2.7	2.5	2.4	2.3	2.1	2.1	2.0	2.4
72	Imlay Area	2.0	2.3	2.5	2.7	2.7	2.7	2.5	2.4	2.3	2.1	2.1	2.0	2.4
36	Independence Valley	2.2	2.3	2.7	2.8	2.7	2.6	2.5	2.4	2.3	2.2	2.3	2.3	2.4
161	Indian Springs Valley	2.0	2.2	2.5	2.9	2.8	2.8	2.7	2.5	2.3	2.1	2.0	1.9	2.4
135	Ione Valley	2.4	2.7	2.9	3.2	3.1	3.1	2.8	2.6	2.6	2.5	2.5	2.4	2.7
164A	Ivanpah Valley	2.2	2.5	2.9	3.2	3.2	3.1	2.8	2.7	2.5	2.3	2.3	2.2	2.7
174	Jakes Valley	2.3	2.5	2.8	3.0	2.9	2.9	2.7	2.7	2.6	2.5	2.4	2.4	2.6
39	Jarbidge River Area	2.3	2.4	2.8	2.9	2.8	2.8	2.6	2.5	2.4	2.3	2.5	2.4	2.6
30A	Kings River Valley	2.3	2.4	2.9	2.9	2.8	2.8	2.7	2.6	2.4	2.4	2.4	2.3	2.6
90	Lake Tahoe Basin	1.9	2.0	2.7	2.9	2.6	2.3	2.1	2.0	2.0	1.8	2.0	2.3	2.2
183	Lake Valley	1.9	2.0	2.3	2.5	2.5	2.6	2.4	2.3	2.2	2.1	1.9	1.9	2.2
45	Lamoille Valley	1.9	2.0	2.4	2.6	2.5	2.4	2.3	2.2	2.1	1.9	2.0	1.9	2.2
212	Las Vegas Valley	2.4	2.8	3.3	3.6	3.7	3.6	3.3	3.1	2.9	2.6	2.5	2.4	3.0
92A	Lemmon Valley*	1.6	2.2	2.4	2.9	2.7	2.7	2.6	2.5	2.2	1.9	1.9	2.3	2.3
92B	Lemmon	1.6	2.2	2.4	2.9	2.7	2.7	2.6	2.5	2.2	1.9	1.9	2.3	2.3

Appendix 4b cont. Interpolated or assigned basin average mean monthly wind speed (m/s) used for assignment to respective weather stations. Symbol * next to the basin name indicates that the basins was assigned the measured mean monthly wind speed.

BASIN NUMBER	BASIN NAME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN ANNUAL
	Valley													
155A	Little Smoky Valley	2.1	2.3	2.7	3.1	2.8	2.8	2.5	2.5	2.4	2.3	2.2	2.1	2.5
73	Lovelock Valley*	1.8	2.2	2.5	2.9	3.0	2.9	2.6	2.4	2.2	2.0	1.8	1.7	2.3
205	Lower Meadow V. W	1.7	1.8	2.1	2.4	2.3	2.3	2.2	2.1	2.0	1.8	1.7	1.6	2.0
220	Lower Moapa Valley*	1.4	1.5	1.6	1.9	1.8	1.8	1.5	1.6	1.5	1.4	1.3	1.3	1.5
59	Lower Reese River Valley*	1.3	1.7	2.0	2.1	2.2	2.2	2.1	2.0	1.9	1.5	1.4	1.4	1.8
52	Marys Creek Area	1.8	2.0	2.3	2.5	2.4	2.4	2.3	2.2	2.0	1.9	1.9	1.8	2.1
42	Marys River Area	2.1	2.3	2.6	2.8	2.7	2.7	2.5	2.4	2.3	2.2	2.2	2.2	2.4
108	Mason Valley*	1.4	2.1	2.0	2.2	1.8	1.5	1.4	1.4	1.4	1.3	1.5	1.5	1.6
225	Mercury Valley	2.0	2.2	2.5	3.0	2.8	2.9	2.8	2.6	2.3	2.1	1.9	1.9	2.4
58	Middle Reese River Valley	1.7	2.0	2.3	2.5	2.5	2.5	2.3	2.1	2.0	1.9	1.8	1.8	2.1
26	Mud Meadow	2.2	2.3	2.7	2.8	2.7	2.6	2.5	2.4	2.2	2.2	2.3	2.3	2.4
44	North Fork Area	2.0	2.2	2.5	2.7	2.6	2.5	2.4	2.3	2.2	2.1	2.1	2.1	2.3
228	Oasis Valley	2.3	2.5	2.7	3.1	2.7	2.8	2.7	2.5	2.3	2.3	2.2	2.2	2.5
37	Owyhee River Area	2.5	2.6	3.0	3.0	2.9	2.8	2.7	2.7	2.5	2.4	2.8	2.7	2.7
209	Pahranagat Valley	2.0	2.1	2.4	2.8	2.7	2.7	2.5	2.4	2.3	2.1	1.9	1.9	2.3
162	Pahrump Valley	2.1	2.4	2.7	3.1	2.9	3.0	2.8	2.6	2.4	2.2	2.1	2.0	2.5
203	Panaca Valley	1.9	2.1	2.5	2.8	2.8	2.9	2.6	2.5	2.5	2.2	2.0	1.9	2.4
69	Paradise Valley*	2.1	2.3	3.0	3.0	2.9	2.9	2.9	2.8	2.6	2.5	2.3	2.1	2.6
202	Patterson Valley	1.9	2.1	2.4	2.7	2.7	2.8	2.5	2.5	2.4	2.2	2.0	1.9	2.4
170	Penoyer Valley*	1.9	2.3	2.5	3.1	2.9	3.0	2.9	2.8	2.4	2.1	1.9	1.8	2.5
191	Pilot Creek Valley	2.2	2.3	2.6	2.8	2.7	2.8	2.6	2.5	2.4	2.3	2.3	2.3	2.5
29	Pine Forest Valley	2.3	2.5	2.8	2.9	2.8	2.8	2.6	2.5	2.4	2.3	2.4	2.4	2.6
53	Pine Valley	1.9	2.1	2.5	2.7	2.5	2.5	2.3	2.2	2.1	2.0	2.0	2.0	2.2
214	Piute Valley	2.6	2.7	2.7	2.8	2.6	2.2	1.8	1.7	1.6	1.9	2.3	2.9	2.3
88	Pleasant Valley	2.1	2.3	2.8	3.1	2.9	2.6	2.4	2.3	2.2	2.0	2.3	2.6	2.5
130	Pleasant Valley*	1.7	1.9	2.3	2.4	2.5	2.5	2.3	2.2	2.1	1.9	1.8	1.8	2.1
1	Pueblo Valley	2.5	2.5	2.9	2.9	2.8	2.8	2.6	2.5	2.4	2.4	2.5	2.5	2.6
65	Pumpernickel Valley	2.0	2.2	2.5	2.7	2.7	2.7	2.5	2.4	2.3	2.1	2.1	2.0	2.3
81	Pyramid Lake Valley*	2.5	2.7	3.0	3.2	2.7	2.5	2.3	2.5	2.5	2.5	2.8	3.2	2.7
116	Queen Valley	2.0	2.3	2.6	2.8	2.4	2.3	2.1	2.0	2.0	2.0	2.1	2.1	2.2
33A	Quinn River Valley	2.2	2.3	2.9	2.9	2.9	2.9	2.8	2.7	2.5	2.4	2.4	2.2	2.6
33B	Quinn River	2.3	2.4	2.9	2.9	2.9	2.8	2.7	2.6	2.5	2.4	2.4	2.3	2.6

Appendix 4b cont. Interpolated or assigned basin average mean monthly wind speed (m/s) used for assignment to respective weather stations. Symbol * next to the basin name indicates that the basins was assigned the measured mean monthly wind speed.

BASIN NUMBER	BASIN NAME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN ANNUAL
	Valley													
173A	Railroad Valley	1.8	2.1	2.4	2.8	2.7	2.7	2.5	2.4	2.2	2.0	1.9	1.8	2.3
173B	Railroad Valley*	1.9	2.1	2.5	2.9	2.7	2.8	2.6	2.6	2.4	2.2	2.0	1.8	2.4
141	Ralston Valley*	3.0	3.3	3.6	3.9	3.7	3.5	3.1	3.1	3.0	3.1	3.1	3.0	3.3
176	Ruby Valley*	2.5	2.7	3.0	3.2	3.0	2.9	2.5	2.5	2.5	2.5	2.6	2.6	2.7
40	Salmon Falls Creek Area	2.1	2.3	2.6	2.8	2.7	2.8	2.6	2.5	2.3	2.3	2.2	2.2	2.5
22	San Emidio Desert	1.7	2.0	2.4	2.7	2.7	2.6	2.4	2.3	2.2	2.0	1.9	1.9	2.2
146	Sarcobatus Flat*	2.3	2.4	2.6	2.7	2.2	2.3	2.2	2.0	1.9	1.9	2.0	2.2	2.2
107	Smith Valley	1.5	1.7	2.1	2.4	2.2	2.0	1.9	1.8	1.8	1.5	1.6	1.7	1.8
21	Smoke Creek Desert*	1.5	2.0	2.5	2.9	2.9	2.9	2.8	2.6	2.4	2.2	1.8	1.6	2.3
195	Snake Valley*	1.5	1.4	1.8	2.0	2.0	2.1	2.0	2.0	1.9	1.6	1.5	1.5	1.8
121A	Soda Spring Valley	2.4	2.8	3.0	3.3	3.0	3.0	2.7	2.6	2.5	2.5	2.5	2.4	2.7
46	South Fork Area	2.1	2.2	2.5	2.8	2.6	2.6	2.4	2.3	2.2	2.1	2.2	2.1	2.3
35	South Fork Owyhee River Area	2.6	2.7	3.0	3.0	3.0	2.8	2.7	2.7	2.5	2.5	2.8	2.7	2.7
184	Spring Valley	2.1	2.2	2.5	2.7	2.6	2.7	2.5	2.5	2.4	2.2	2.1	2.1	2.4
201	Spring Valley	2.0	2.2	2.5	2.8	2.8	2.9	2.7	2.6	2.5	2.3	2.1	2.0	2.5
43	Starr Valley Area	2.0	2.2	2.5	2.7	2.6	2.6	2.4	2.3	2.2	2.1	2.1	2.1	2.3
179	Steptoe Valley	2.6	2.6	2.8	2.9	2.9	2.9	2.8	2.8	2.7	2.6	2.5	2.6	2.7
149	Stone Cabin Valley	2.3	2.6	2.9	3.2	3.1	3.1	2.8	2.7	2.5	2.4	2.4	2.3	2.7
14	Surprise Valley	2.3	2.3	2.6	2.6	2.4	2.3	2.1	2.1	2.0	2.0	2.2	2.3	2.3
114	Teels Marsh Valley	2.2	2.6	2.8	3.1	2.7	2.6	2.3	2.3	2.2	2.3	2.3	2.3	2.5
189A	Thousand Springs Valley	2.1	2.3	2.6	2.8	2.7	2.8	2.6	2.5	2.3	2.3	2.2	2.2	2.4
189D	Thousand Springs Valley	2.1	2.2	2.6	2.8	2.7	2.8	2.6	2.5	2.3	2.3	2.2	2.2	2.4
83	Tracy Segment*	1.5	2.1	2.4	3.1	2.8	2.5	2.4	2.3	2.1	1.8	1.9	1.7	2.2
91	Truckee Canyon Segment	1.9	2.2	2.6	3.0	2.8	2.6	2.4	2.3	2.2	1.9	2.1	2.3	2.3
87	Truckee Meadows*	1.6	2.0	2.5	2.8	2.8	2.7	2.5	2.3	2.0	1.7	1.8	1.7	2.2
56	Upper Reese River Valley	2.0	2.3	2.6	2.8	2.7	2.7	2.5	2.4	2.3	2.1	2.1	2.1	2.4
222	Virgin River Valley	1.4	1.4	1.5	1.7	1.7	1.6	1.7	1.5	1.6	1.3	1.2	1.2	1.5
4	Virgin Valley	3.0	2.8	3.1	3.1	2.9	2.7	2.5	2.5	2.4	2.5	2.9	3.0	2.8
110A	Walker Lake Valley	1.6	2.0	2.3	2.5	2.3	2.0	1.9	1.8	1.8	1.6	1.7	1.8	1.9
110C	Walker Lake Valley	2.0	2.4	2.7	2.9	2.6	2.5	2.3	2.2	2.1	2.0	2.1	2.2	2.3

Appendix 4b cont. Interpolated or assigned basin average mean monthly wind speed (m/s) used for assignment to respective weather stations. Symbol * next to the basin name indicates that the basins was assigned the measured mean monthly wind speed.

BASIN NUMBER	BASIN NAME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN ANNUAL
89	Washoe Valley*	2.6	2.6	3.7	4.3	4.0	3.3	3.2	3.3	3.3	2.8	2.8	3.4	3.3
207	White River Valley	1.9	2.1	2.4	2.7	2.6	2.7	2.5	2.5	2.4	2.2	2.0	1.9	2.3
63	Willow Creek Valley	2.2	2.4	2.7	2.8	2.7	2.7	2.5	2.5	2.3	2.3	2.3	2.3	2.5
70	Winnemucca Segment*	2.5	2.8	2.8	2.9	2.9	2.9	2.8	2.6	2.5	2.4	2.5	2.5	2.7
159	Yucca Flat	2.1	2.3	2.6	3.0	2.8	2.9	2.7	2.6	2.4	2.2	2.1	2.0	2.5

Appendix 5. Crop parameter table listing all parameters used in estimating crop ET, planting or greenup, harvest, killing frost, and runoff.

Parameter	Explanation	Alfalfa Hay	Grass Hay	Beans Fresh	Beans Dry	Field Corn	Silage Corn	Sweet Corn - early	Sweet Corn - late	Spring Grain	Winter Grain
Days after planting or greenup for earliest irrigation		0	0	0	0	0	0	0	0	20	155
Winter surface class	1=bare, 2=mulch, 3=turf	2	3	1	1	1	1	1	1	2	2
MAD during initial and development stage	Maximum Allowable Depletion of soil moisture in percent	60	50	60	60	60	60	60	60	60	60
MAD during midseason and late season	Maximum Allowable Depletion of soil moisture in percent	60	50	50	50	50	50	50	50	50	50
Initial effective rooting depth, m	On alfalfa, 2nd cycle, start at max.	0.7	0.3	0.12	0.12	0.12	0.12	0.12	0.12	0.25	0.25
Maximum effective rooting depth, m		1.8	1.1	1.2	1.2	1.5	1.5	1	1	1.8	1.8
End of root growth, as a fraction of time from planting or greenup to EFC		0.5	0.4	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Starting crop height, m		0.1	0.1	0.05	0.05	0.1	0.1	0.1	0.1	0.05	0.05
Maximum Crop height, m		0.6	0.6	0.35	0.35	3	3.5	1.5	1.5	1	1
Crop Kcb curve number		13	19	12	11	9	9	10	10	1	2
Crop curve type	1=NCGDD, 2=%PL-EC, 3=%PL-EC,daysafter	1	1	1	1	1	1	1	1	1	1
Flag for means to estimate Greenup	1=CGDD, 2=T30, 3=date, 4 is on all the time	1	2	2	2	2	2	2	2	2	3
T30 for Greenup or CGDD for Greenup	30 day moving average, Degree C	300	7	11	11	9	9	9	12	5	
Date of Greenup (can be blank)	A negative values is an offset to the prior row, pos is months (fraction)										10
For NCGDD based curves: Tbase:	Mean Temp Base Degree C	0	0	5	5	-10	-10	-10	-10	0	0
CGDD for EFC	Cumulative Degree C days from Jan 1	880	1200	670	670	540	540	540	540	840	1080
CGDD for termination		740	3600	1150	1350	1400	1300	1000	1000	1600	1800
time for harvest (neg to extend until frost)	Use as max length for CGDD crops									180	
Killing frost temperature	Degrees C	-7	-5	-2	-2	-5	-4	-4	-5	-100	-100
Invoke Stress	1 yes, 0 no, 2 yes and will recover after severe stress (Ks<0.05)	2	2	1	1	1	1	1	1	2	2
NRCS runoff curve number - coarse soil		60	60	67	67	67	67	67	67	63	65
NRCS runoff curve number - medium soil		68	68	75	75	75	75	75	75	75	75
NRCS runoff curve number - fine soil		77	77	85	85	85	85	85	85	85	85

Appendix 5 cont. Crop parameter table listing all parameters used in estimating crop ET, planting or greenup, harvest, killing frost, and runoff.

Parameter	Explanation	Grass Pasture - high management	Grass Pasture - low management	Grass - Turf	Orchards - Apples and Cherries w/ground cover	Orchards - Apples and Cherries no ground cover	Garden Vegetables - general
Days after planting or greenup for earliest irrigation		0	0	0	0	0	0
Winter surface class	1=bare, 2=mulch, 3=turf	3	3	3	2	1	1
MAD during initial and development stage	Maximum Allowable Depletion of soil moisture in percent	60	60	60	50	50	50
MAD during midseason and late season	Maximum Allowable Depletion of soil moisture in percent	50	50	50	50	50	40
Initial rooting depth, m	On alfalfa, 2nd cycle, start at max.	0.3	0.3	0.3	1.5	1.5	0.12
Maximum rooting depth, m		1	1	0.6	1.5	1.5	0.6
End of root growth, as a fraction of time from planting or greenup to EFC		0.4	0.4	0.4	0.5	0.5	1.2
Starting crop height, m		0.1	0.1	0.05	4	4	0.1
Maximum Crop height, m		0.25	0.15	0.1	4	4	0.4
Crop Kcb curve number		30	31	29	24	25	20
Crop curve type	1=NCGDD, 2=%PL-EC, 3=%PL-EC,daysafter	3	3	2	2	2	2
Flag for means to estimate Greenup	1=CGDD, 2=T30, 3=date, 4 is on all the time	2	2	2	2	2	2
T30 for Greenup or CGDD for Greenup	30 day moving average, Degree C	5	5	5	6	6	10
Time for EFC	Days after planting or greenup	40	50	70	55	55	80
time for harvest (neg to extend until frost)	Use as max length for CGDD crops	-220	-220	-270	-260	-260	200
Killing frost temperature	Degrees C	-5	-5	-5	-5	-5	-2
Invoke Stress	1 yes, 0 no, 2 yes and will recover after severe stress (Ks<0.05)	2	2	2	1	1	1
NRCS runoff curve number - coarse soil		40	40	40	60	65	72
NRCS runoff curve number - medium soil		70	70	70	68	72	80
NRCS runoff curve number - fine soil		82	82	82	70	82	88

Appendix 5 cont. Crop parameter table listing all parameters used in estimating crop ET, planting or greenup, harvest, killing frost, and runoff.

Parameter	Explanation	Onions	Melons	Wine Grapes	Alfalfa Seed	Peas-fresh	Peas-seed	Potatoes-processing (early harvest)	Potatoes-cold pack (late harvest)
Days after planting or greenup for earliest irrigation		0	0	20	0	0	0	0	0
Winter surface class	1=bare, 2=mulch, 3=turf	1	1	1	2	1	1	1	1
MAD during initial and development stage	Maximum Allowable Depletion of soil moisture in percent	50	50	70	70	60	60	50	50
MAD during midseason and late season	Maximum Allowable Depletion of soil moisture in percent	40	50	70	70	50	50	40	40
Initial rooting depth, m	On alfalfa, 2nd cycle, start at max.	0.2	0.2	1	0.7	0.2	0.2	0.3	0.3
Maximum rooting depth, m		0.8	1.2	2	1.5	1	1	0.8	0.8
End of root growth, as a fraction of time from planting or greenup to EFC		1.2	1.2	1	0.5	1	1	1	1
Starting crop height, m		0.1	0.05	1.5	0.1	0.05	0.05	0.05	0.05
Maximum Crop height, m		0.4	0.3	1.5	0.6	0.3	0.3	0.4	0.4
Crop Kcb curve number		20	22	21	33	4	3	7	6
Crop curve type	1=NCGDD, 2=%PL-EC, 3=%PL-EC,daysafter	2	2	2	3	1	1	1	1
Flag for means to estimate Greenup	1=CGDD, 2=T30, 3=date, 4 is on all the time	2	2	2	1	2	2	2	2
T30 for Greenup or CGDD for Greenup	30 day moving average, Degree C	7.5	10	8	240	5	5	5	5
For NCGDD based curves: Tbase:	Temp Min. Degree C				0	0	0	5	5
CGDD for EFC	Cumulative Degree C days from Jan 1					640	640	700	740
CGDD for termination						1000	1620	1350	1900
Time for EFC	Days after planting or greenup	70	70	80	80				
time for harvest (neg to extend until frost)	Use as max length for CGDD crops	220	145	-270	100				
Killing frost temperature	Degrees C	-2	-2	-3	-7	-4	-4	-5	-5
Invoke Stress for rainfed agriculture	1 yes, 0 no, 2 yes and will recover after severe stress (Ks<0.05)	1	1	1	1	1	1	1	1
NRCS runoff curve number - coarse soil		72	72	65	60	63	63	70	70
NRCS runoff curve number - medium soil		80	80	72	68	70	70	76	76
NRCS runoff curve number - fine soil		88	88	82	77	82	82	88	88

Appendix 5 cont. Crop parameter table listing all parameters used in estimating crop ET, planting or greenup, harvest, killing frost, and runoff.

Parameter	Explanation	Sugar beets	Hops	Sunflower	Safflower	Canola
Days after planting or greenup for earliest irrigation		0	0	0	0	0
Winter surface class	1=bare, 2=mulch, 3=turf	1	1	1	2	2
MAD during initial and development stage	Maximum Allowable Depletion of soil moisture in percent	50	50	60	60	60
MAD during midseason and late season	Maximum Allowable Depletion of soil moisture in percent	50	50	60	60	60
Initial rooting depth, m	On alfalfa, 2nd cycle, start at max.	0.15	1	0.2	0.2	0.2
Maximum rooting depth, m		1.3	1.5	2.5	2.5	1.6
End of root growth, as a fraction of time from planting or greenup to EFC		1.2	1	1.2	1.2	1.2
Starting crop height, m		0.05	1	0.1	0.1	0.1
Maximum Crop height, m		0.35	6	2	1	1
Crop Kcb curve number		5	23	28	28	27
Crop curve type	1=NCGDD, 2=%PL-EC, 3=%PL-EC,daysafter	1	2	2	2	2
Flag for means to estimate Greenup	1=CGDD, 2=T30, 3=date, 4 is on all the time	2	1	2	2	2
T30 for Greenup or CGDD for Greenup	30 day moving average, Degree C	8	600	10	8	8
For NCGDD based curves: Tbase:	Temp Min. Degree C	0	0			
CGDD for EFC	Cumulative Degree C days from Jan 1	970				
CGDD for termination		2600				
Time for EFC	Days after planting or greenup		100	70	70	55
time for harvest (neg to extend until frost)	Use as max length for CGDD crops		170	170	170	170
Killing frost temperature	Degrees C	-4	-2	-4	-4	-4
Invoke Stress	1 yes, 0 no, 2 yes and will recover after severe stress (Ks<0.05)	1	1	1	1	1
NRCS runoff curve number - coarse soil		67	65	58	58	58
NRCS runoff curve number - medium soil		74	72	72	72	72
NRCS runoff curve number - fine soil		86	82	83	83	83

Appendix 5 cont. Crop parameter table listing all parameters used in estimating crop ET, planting or greenup, harvest, killing frost, and runoff.

Parameter	Explanation	Garlic	Bare soil	Mulched soil - including wheat stubble	Dormant Turf (winter time)	Open water - shallow systems
Days after planting or greenup for earliest irrigation		0	NA	NA	NA	NA
Winter surface class	1=bare, 2=mulch, 3=turf	1	1	2	3	NA
MAD during initial and development stage	Maximum Allowable Depletion of soil moisture in percent	50	60	60	60	NA
MAD during midseason and late season	Maximum Allowable Depletion of soil moisture in percent	40	60	60	60	NA
Initial rooting depth, m	On alfalfa, 2nd cycle, start at max.	0.2	0.08	0.08	0.08	NA
Maximum rooting depth, m		0.8	0.08	0.08	0.08	NA
End of root growth, as a fraction of time from planting or greenup to EFC		1.2	1	1	1	NA
Starting crop height, m		0.1	0.05	0.05	0.05	NA
Maximum Crop height, m		0.4	0.05	0.05	0.05	NA
Crop Kcb curve number		20	0	0	0	NA
Crop curve type	1=NCGDD, 2=%PL-EC, 3=%PL-EC,daysafter	2	NA	NA	NA	NA
Flag for means to estimate Greenup	1=CGDD, 2=T30, 3=date, 4 is on all the time	2	4	4	4	NA
T30 for Greenup or CGDD for Greenup	30 day moving average, Degree C	7.5				
Time for EFC	Days after planting or greenup	70				
time for harvest (neg to extend until frost)	Use as max length for CGDD crops	200				
Killing frost temperature	Degrees C	-2	-50	-50	-50	NA
Invoke Stress	1 yes, 0 no, 2 yes and will recover after severe stress (Ks<0.05)	1	2	2	2	NA
NRCS runoff curve number - coarse soil		72	58	58	40	NA
NRCS runoff curve number - medium soil		80	72	72	70	NA
NRCS runoff curve number - fine soil		88	83	83	82	NA

Appendix 6. Basal crop coefficient (K_{cb}) curve values for crop types simulated.

Type of K_{cb} Curve	1	1	1	1	1	1	1
X axis = NCGDD*100 (type 1)	**Spring Wheat**	**Winter Wheat**	**Peas, seed**	**Peas, fresh**	**Sugar Beets**	**Potatoes--cold pack (late harvest)**	**Potatoes--processing (early harvest)**
0	0.18	0.14	0.14	0.14	0.18	0.18	0.18
10	0.18	0.14	0.17	0.17	0.18	0.18	0.18
20	0.24	0.18	0.18	0.18	0.19	0.18	0.18
30	0.34	0.24	0.19	0.19	0.2	0.2	0.2
40	0.48	0.32	0.24	0.24	0.22	0.28	0.28
50	0.6	0.48	0.38	0.38	0.25	0.42	0.42
60	0.71	0.86	0.55	0.55	0.48	0.58	0.58
70	0.98	1.12	0.76	0.76	0.68	0.74	0.74
80	1.14	1.19	0.92	0.92	0.88	0.83	0.83
90	1.19	1.24	1.02	1.02	1.06	0.89	0.89
100	1.24	1.24	1.1	1.1	1.24	0.92	0.92
110	1.24	1.24	1.1	1.1	1.24	0.92	0.92
120	1.24	1.24	1.1	1.1	1.24	0.92	0.91
130	1.24	1.24	1.09	1.09	1.24	0.9	0.86
140	1.24	1.22	1.01	1.01	1.22	0.86	0.84
150	1.24	1.2	0.94	0.94	1.21	0.84	0.82
160	1.24	0.86	0.85	0.85	1.19	0.82	0.78
170	1.21	0.52	0.78	0.78	1.16	0.79	0.76
180	1.16	0.3	0.7		1.14	0.77	0.71
190	1.06	0.18	0.62		1.09	0.73	0.65
200	0.77	0.12	0.54		1.04	0.7	0.48
210	0.49	0.06	0.46		0.98	0.65	0.12
220	0.34		0.37		0.92	0.58	
230	0.19		0.32		0.88	0.19	
240	0.12		0.26		0.83	0.12	
250	0.06		0.22		0.76		
260			0.17		0.68		
270			0.12		0.12		

Appendix 6 cont. Basal crop coefficient (K_{cb}) curve values for crop types simulated.

Type of K_{cb} Curve	1	1	1	1	1	1	1	1
X axis = NCGDD*100 (type 1)	**Field Corn**	**Sileage Corn**	**Sweet Corn**	**Snap Beans-dry**	**Snap Beans-fresh**	**Alfalfa 1st cycle**	**Alfalfa Int cycle**	**Alfalfa Last cycle**
0	0.18	0.18	0.18	0.18	0.18	0.3	0.3	0.3
10	0.18	0.18	0.18	0.19	0.19	0.61	0.4	0.35
20	0.18	0.18	0.18	0.23	0.23	0.88	0.54	0.46
30	0.2	0.2	0.2	0.28	0.28	1.01	0.96	0.67
40	0.23	0.23	0.23	0.46	0.46	1.08	1.12	0.95
50	0.34	0.34	0.34	0.59	0.59	1.18	1.19	1.09
60	0.5	0.5	0.5	0.72	0.72	1.2	1.2	1.15
70	0.65	0.65	0.65	0.89	0.89	1.2	1.19	1.2
80	0.88	0.88	0.88	1.03	1.03	1.19	1.16	1.19
90	1.03	1.03	1.03	1.13	1.13	1.16	1.15	1.15
100	1.15	1.15	1.15	1.14	1.14	1.15	1.13	1.13
110	1.15	1.15	1.15	1.14	1.14			
120	1.15	1.15	1.14	1.14	1.14			
130	1.15	1.15	1.13	1.12	1.12			
140	1.15	1.15	1.12	1.08	1.08			
150	1.13	1.13	1.08	1.02	1.02			
160	1.08	1.08	1.03	0.9	0.9			
170	1.03	1.03	0.98	0.77				
180	0.98	0.98		0.59				
190	0.94	0.94		0.41				
200	0.88	0.88		0.23				
210	0.78	0.78		0.1				
220	0.53	0.24						
230	0.26	0.12						
240	0.16	0.12						

Appendix 6 cont. Basal crop coefficient (K_{cb}) curve values for crop types simulated.

Type of K_{cb} Curve	1	1	1	2	2	2	2	2	2	2
X axis = NCGDD*100 or % Time to EFC (type 1 and 2)	**Lentils**	**Mint**	**Grass Hay**	**Onions**	**Garlic**	**Wine grapes**	**Melons**	**Hops**	**Orchard w/GC**	**Orchard w/no GC**
0	0.18	0.42	0.24	0.18	0.18	0.19	0.18	0.12	0.18	0.18
10	0.18	0.61	0.55	0.18	0.18	0.22	0.18	0.12	0.24	0.18
20	0.22	0.88	0.82	0.18	0.18	0.26	0.2	0.12	0.29	0.22
30	0.3	1.01	0.95	0.29	0.29	0.31	0.24	0.14	0.4	0.3
40	0.43	1.08	1.02	0.4	0.4	0.44	0.29	0.16	0.53	0.42
50	0.54	1.18	1.12	0.49	0.49	0.67	0.37	0.38	0.66	0.53
60	0.64	1.2	1.14	0.62	0.62	0.78	0.53	0.66	0.79	0.68
70	0.89	1.2	1.14	0.74	0.74	0.78	0.67	0.83	0.92	0.79
80	1.03	1.19	1.13	0.85	0.85	0.78	0.78	0.95	1.01	0.86
90	1.07	1.16	1.1	0.9	0.9	0.78	0.78	1.04	1.04	0.9
100	1.12	1.15	1.09	0.9	0.9	0.78	0.78	1.15	1.08	0.9
110	1.12	0.3	0.6	0.9	0.9	0.78	0.78	1.2	1.08	0.9
120	1.12	0.4	0.66	0.9	0.9	0.78	0.78	1.2	1.08	0.9
130	1.12	0.54	0.84	0.9	0.9	0.78	0.78	1.2	1.08	0.9
140	1.12	0.9	0.9	0.9	0.9	0.78	0.78	1.16	1.08	0.9
150	1.12	0.9	0.9	0.9	0.78	0.78	0.78	1.07	1.08	0.9
160	1.12	0.9	0.9	0.9	0.67	0.78	0.78	0.85	1.08	0.9
170	1.09	0.9	0.9	0.78	0.56	0.78	0.78	0.62	1.08	0.9
180	1.04	0.9	0.9	0.67	0.46	0.78	0.78	0.36	1.08	0.9
190	0.95	0.9	0.84	0.56		0.72	0.78	0.31	1.08	0.9
200	0.7	0.9	0.84	0.46		0.72	0.78	0.26	1.08	0.9
210	0.44	0.9	0.84			0.72	0.78		1.08	0.9
220	0.3	0.9	0.78			0.72	0.78		0.88	0.84
230	0.19	0.9	0.78			0.72	0.78		0.66	0.66
240	0.12	0.9	0.78			0.72	0.78		0.66	0.66
250		0.9	0.72			0.72	0.78		0.66	0.66
260		0.9	0.66			0.72	0.78		0.66	0.66
270		0.9	0.6			0.72	0.78		0.66	0.66
280			0.54							
290			0.54							
300			0.54							

Appendix 6 cont. Basal crop coefficient (K_{cb}) curve values for crop types simulated.

Type of K_{cb} Curve		2	2	2	3	3	3
X axis = % Time to EFC (type 2)	**X axis = % Time to EFC then days after (type 3)**	**Canola**	**Sunflower/ Safflower**	**Turf**	**Grass Pasture - high management**	**Grass Pasture - low management**	**Alfalfa Seed**
0	0	0.18	0.18	0.18	0.35	0.26	0.42
10	10	0.18	0.18	0.3	0.42	0.31	0.6
20	20	0.18	0.18	0.46	0.5	0.38	0.72
30	30	0.23	0.23	0.58	0.6	0.46	0.8
40	40	0.35	0.35	0.71	0.71	0.53	0.88
50	50	0.79	0.67	0.78	0.84	0.64	0.95
60	60	1.02	0.9	0.84	0.89	0.66	0.98
70	70	1.14	1.02	0.84	0.92	0.7	1
80	80	1.16	1.04	0.84	0.96	0.72	1.01
90	90	1.16	1.04	0.84	0.96	0.72	1.01
100	100	1.16	1.04	0.84	0.96	0.72	1.02
110	0	1.16	1.04	0.84	0.96	0.72	1.02
120	10	1.16	1.04	0.84	0.96	0.72	1.02
130	20	1.16	1.04	0.84	0.96	0.72	1.02
140	30	1.15	1.03	0.84	0.96	0.72	1.02
150	40	0.97	0.85	0.84	0.96	0.72	1
160	50	0.7	0.58	0.84	0.96	0.72	0.97
170	60	0.43	0.37	0.84	0.96	0.72	0.95
180	70	0.3	0.24	0.84	0.96	0.72	0.84
190	80	0.12	0.12	0.84	0.96	0.71	0.68
200	90			0.84	0.95	0.7	0.54
210	100			0.84	0.92	0.68	0.48
220	110			0.84	0.9	0.67	0.48
230	120			0.84	0.84	0.65	
240	130			0.84	0.78	0.62	
250	140			0.84	0.72	0.6	
260	150			0.84	0.66	0.48	
270	160			0.84	0.6	0.36	
	170				0.48	0.36	
	180				0.48	0.36	
	190				0.48	0.36	
	200				0.48	0.36	
	210				0.48	0.36	
	220				0.48	0.36	
	230				0.48	0.36	

Appendix 7. Description of greenup and harvest information used in calibrating the cumulative growing degree day and T30 parameters controlling simulated greenup and harvest dates.

The calibration of parameters T_{30}, CGDD, controlling the greenup or planting dates and harvest dates was accomplished by comparing simulated mean annual dates to documented and typical dates of greenup or planting, and cutting and harvest dates for major crops grown in valleys discussed in the paragraphs below. Table 4 in the main body outlines the calibration information used for multiple crops.

Alfalfa grown in Carson Valley, Douglas County, typically greens up in early April and the typical beef hay alfalfa farmer gets a first cutting in the second week of June, second cutting in the first week of August, and last cutting in mid September. After the third cutting the crop is left for grazing and it is not irrigated, usually due to a shortage of water. Typical beef hay yields range between 4 and 4.5 tons per acre (Andy Aldax, verbal communication, 2008). The dairy hay farmer that irrigates with center pivots usually sees greenup occur in early April and the alfalfa usually reaches full cover by the mid May, and as a rule of thumb makes the first cutting at the end of May with 28-35 days between cuttings. The fourth and last cutting usually takes more time and occurs in mid September. Typical yields for dairy hay average about 5.5 tons per acre (Jim Usher, Bently Farms, verbal communication, 2008).

In the Boulder Flat hydrographic area, located in Eureka County, dairy and beef alfalfa hay is the primary crop and is largely irrigated from water derived from dewatering activities at surrounding mine sites. The greenup and harvest times of are very similar to Carson Valley where greenup occurs around the first of April and is first cut around the end of May to the beginning of June, with approximately 30-35 days in between cuttings. Some years however a fourth cutting is not attainable due to weather conditions of the season (Dan Gralian, TS Ranch, written communication, 2008).

In the Mason and Smith Valley hydrographic areas, located in Lyon County, beef and dairy hay are the primary crops grown, however the valleys are famous for producing some of the best quality onions in the country. Alfalfa greenup dates in Mason and SmithValley typically occur in mid to late March to early April and cutting dates usually occurs every 35 to 45 days beginning in the end of May to early June (John Snyder, verbal communication, 2009). Onion crops in Mason Valley are typically planted in mid March and greenup occurs 3 to 4 weeks after planting. Harvest of onions usually takes place in late August and continues throughout September depending on the variety. After harvest the fields are fallow until the next seasons planting (Peri and Sons, verbal communication, 2008, John Snyder, verbal communication, 2009). Garlic is commonly grown in Mason Valley and is typically harvested 2-3 weeks before onions. Irrigation is usually ceased by early to mid August to allow drying of the garlic (John Snyder, verbal communication, 2009).

Fallon, located in the Carson Desert hydrographic area, Churchill County, is well known for producing beef and dairy hay alfalfa and melons. Melons are a 90 day crop and are typically planted in early May, greenup occurs 10-12 days after planting, and harvest occurs in the middle of August (Workman Farms & Latin Farms, verbal communication, 2008). Fresh beans are typically planted in the middle of May and are harvested in the middle of August. Sweet corn being a 70-90 day crop is planted around the first of May and is harvested by the middle August to early September, and silage

corn is planted at the same time as sweet corn but is grown longer and harvested around the middle to late September (Latin Farms, verbal communication, 2008). Alfalfa greenup usually occurs at the end of March with cuttings beginning in early to mid June, with 30 – 40 days between cuttings, and ending in late September to mid October with 3 to 4 cuttings.

Paradise Valley, located in Humboldt County, is a large agricultural area that is well known for its potatoes, but also produces wheat and dairy and beef alfalfa hay. Potatoes are grown for the processing and fresh market industry and are typically planted around early April to mid May. Processing potatoes are harvested beginning in mid August through mid September while fresh potatoes are harvested beginning in September through mid October (Verbal Communication, Shane Cheyne, Winnemucca Farms, 2008). Winter wheat is typically planted during the mid part of September through October and is harvested in mid to late July. Spring wheat is typically planted in late March, greens up in mid April, and is harvested in mid July to mid August.

Lake Valley, located in Lincoln County and White Pine counties, is home to Atlanta Farms, which produces large quantities of dairy and beef alfalfa hay and fresh potatoes. Greenup of alfalfa usually occurs in mid April, with the first cutting in mid June, and subsequent cuttings every 35-45 days after, with 3-4 cuttings. Potatoes are planted in mid April to mid May and harvest usually occurs in mid September through early October (Verbal Communication, Joseph Harker, Atlanta Farms, 2009).

Antelope Valley, located in Lander County, primarily produces dairy hay alfalfa. Typical greenup occurs between April 1 – 15, with effective full cover occurring around the mid to end of May, the first cutting occurring between June 15, the second cutting occurring near the beginning of August, and the last and third cutting occurring near Sept 15. Spring wheat is grown as a rotation crop is planted in mid April and is harvested in middle to late July (verbal communication, Allen Farr, Farr Farms, 2008).

In Moapa Valley, located in Clark County, dairy hay alfalfa is the primary crop grown and typically greens up near mid February, where the first cutting is generally within the first week of April and a 30 day period between cuttings with typically 7 cutting per year. The last cutting usually occurs in the mid part of November (verbal communication, Glenn Hardy, 2007). Typical annual alfalfa yields were stated to be about 8 tons per acre. After 3 to 4 years of alfalfa production Sudan grass and winter wheat are the typical rotation crops.

Appendix 8. Weather station aridity ratings following Allen and Brockway (1983), estimated from station photos, and high resolution image analysis (0= irrigated area, 100=completely arid).

Station Name	NOAA #	Station Aridity	Area Aridity	Regional Aridity	Cumulative Aridity
ADAVEN	260046	30	70	100	57
ALAMO	260099	30	60	80	50
AMARGOSA FARMS-GAREY	260150	90	90	100	91
ANTELOPE VALLEY FARR	260282	50	60	80	58
ARTHUR 4 NW	260438	50	60	70	57
AUSTIN #2	260507	90	80	80	84
BASALT	260668	100	100	100	100
BATTLE MTN	260688	80	70	70	74
BATTLE MTN AP	260691	100	80	70	87
BEATTY	260715	100	80	90	89
BEATTY 8 N	260718	90	90	100	91
BEOWAWE	260795	90	60	70	73
BEOWAWE U OF N RCH	260800	20	40	80	36
BLUE EAGLE RCH HANKS	260955	30	50	90	46
BLUE JAY HWY STN	260961	100	100	100	100
BOULDER CITY	261071	100	90	90	94
BRINKERHOFF RCH	261160	100	90	100	95
BUFFALO RCH	261311	90	90	90	90
BUNKERVILLE	261327	70	70	90	72
CALIENTE	261358	60	70	90	68
CALLVILLE BAY	261371	100	70	90	84
CARLIN NEWMONT MINE	261415	100	100	90	99
CARSON CITY	261485	100	80	70	87
CATHEDRAL GORGE SP	261590	90	90	90	90
CENTRAL NEVADA FLD LAB	261630	70	60	90	67
CHARLESTON	261660	70	60	80	66
CLOVER VALLEY	261740	20	30	90	32
COALDALE JUNCTION	261755	100	100	100	100
CONTACT	261905	100	80	90	89
CORTEZ GOLD MINE	261975	100	100	100	100
CURRANT	262078	50	30	90	44
CURRANT HWY STN	262091	100	100	100	100
CURRIE HWY STN	262096	80	70	90	76

Appendix 8 cont. Weather station aridity ratings following Allen and Brockway (1983), estimated from station photos, and high resolution image analysis (0= irrigated area, 100=completely arid).

Station Name	NOAA #	Station Aridity	Area Aridity	Regional Aridity	Cumulative Aridity
DAGGET PASS	262119	70	60	60	64
DENIO	262229	70	60	80	66
DESERT NWR	262243	80	90	100	87
DIABLO	262276	100	100	100	100
DIAMOND VALLEY USDA	262296	70	20	40	42
DUCKWATER	262390	60	60	80	62
DUFURRENA	262394	80	60	90	71
DYER	262431	90	90	90	90
EASTGATE	262477	90	90	100	91
ECHO BAY	262497	100	80	70	87
ELGIN	262557	60	90	90	78
ELGIN 3 SE	262562	60	90	90	78
ELKO	262570	70	70	90	72
ELKO RGNL AP	262573	100	70	80	83
ELY 6 NE	262626	90	90	90	90
ELY YELLAND FLD AP	262631	100	100	90	99
EMIGRANT PASS HWY STN	262656	90	90	100	91
EMPIRE	262662	70	90	100	83
EUREKA	262708	90	90	100	91
FALLON EXP STN	262780	50	70	50	60
FERGUSON SPRINGS HMS	262820	90	90	90	90
FERNLEY	262840	100	100	100	100
FISH CREEK RCH	262860	20	40	80	36
GERLACH	263090	100	90	100	95
GEYSER RCH	263101	60	70	90	68
GIBBS RCH	263114	50	50	70	52
GLENBROOK	263205	50	70	70	62
GOLCONDA	263245	100	100	100	100
GOLDFIELD	263285	100	100	100	100
GOODSPRINGS	263316	80	100	100	92
GREAT BASIN NP	263340	70	80	100	78
HAWTHORNE	263512	90	100	100	96
HAWTHORNE AP	263515	80	90	100	87
HIKO	263671	50	50	70	52
HUMBOLDT FLD	263853	90	100	100	96
I-L RCH	263940	80	80	90	81
IMLAY	263957	90	90	100	91
INDIAN SPRINGS	263980	100	100	100	100
JACKPOT	264016	70	90	100	83

Appendix 8 cont. Weather station aridity ratings following Allen and Brockway (1983), estimated from station photos, and high resolution image analysis (0= irrigated area, 100=completely arid).

Station Name	NOAA #	Station Aridity	Area Aridity	Regional Aridity	Cumulative Aridity
JARBRIDGE 4 N	264038	100	100	100	100
JARBIDGE 7 N	264039	40	70	100	61
JIGGS 8 SSE ZAGA	264095	70	90	100	83
JUNGO MEYER RCH	264108	80	90	100	87
KIMBERLY	264199	100	100	100	100
KNOLL CREEK FLD	264268	60	60	100	64
KYLE CANYON RS	264314	80	80	100	82
LAGES	264341	90	100	100	96
LAHONTAN DAM	264349	100	90	100	95
LAKE VALLEY STEWARD	264384	80	90	100	87
LAMOILLE YOST	264394	80	100	90	91
LAMOILLE PH	264395	80	90	90	86
LAS VEGAS	264429	100	100	100	100
LAS VEGAS WB AP	264436	100	100	100	100
LAS VEGAS NWFO	264439	100	100	100	100
LATHROP WELLS	264457	90	100	100	96
LAUGHLIN	264480	100	100	100	100
LEHMAN CAVES NM	264514	80	100	100	92
LEONARD CREEK RCH	264527	60	80	100	74
LEWERS RCH	264542	20	30	40	27
LITTLE RED ROCK	264600	100	100	100	100
LOGANDALE	264651	60	60	60	60
LOVELOCK DERBY FLD	264700	100	100	100	100
LUND	264745	60	60	80	62
MALA VISTA RCH	264824	60	50	80	57
MARLETTE LAKE	264858	80	80	80	80
MCDERMITT	264935	80	80	100	82
MCGILL	264950	80	90	100	87
MESQUITE	265085	70	70	80	71
METROPOLIS	265092	60	70	90	68
MIDAS 4 SE	265105	60	70	90	68
MIDDLEGATE-LOWERY	265132	100	100	100	100
MINA	265168	100	100	100	100
MINDEN	265191	10	30	30	22
MONTELLO 2 SE	265352	60	70	80	67
MONTGOMERY MNTC STN	265362	100	100	100	100
MOORMAN RCH	265371	100	100	100	100
MTN CITY RS	265392	70	80	90	77
MT CHARLESTON	265400	70	80	90	77

Appendix 8 cont. Weather station aridity ratings following Allen and Brockway (1983), estimated from station photos, and high resolution image analysis (0= irrigated area, 100=completely arid).

Station Name	NOAA #	Station Aridity	Area Aridity	Regional Aridity	Cumulative Aridity
FS					
MT ROSE BOWL	265440	70	80	90	77
NIXON	265605	90	80	100	86
NORTH LAS VEGAS	265705	100	100	100	100
OASIS	265722	70	70	90	72
OLD RUTH	265760	100	100	100	100
OROVADA 3 W	265818	30	60	60	48
OVERTON	265846	70	70	80	71
OWYHEE	265869	60	30	60	45
PAHRANAGAT WR	265880	60	60	60	60
PAHRUMP	265890	100	100	100	100
PAHUTE MEADOWS RCH	265907	40	60	90	55
PALMETTO	265931	100	100	100	100
PARADISE VALLEY 1 NW	266005	70	70	80	71
PARIS RCH	266055	60	70	90	68
PENOYER VALLEY	266130	60	20	70	41
PEQUOP	266148	100	100	100	100
PILOT VALLEY-LEE	266228	70	90	100	83
PINE VALLEY BAILEY RCH	266242	60	50	80	57
PIOCHE	266252	100	100	100	100
QUINN RVR CROSSING	266504	50	50	70	52
RAND RCH PALISADE	266574	60	40	80	52
RATTLESNAKE	266630	100	100	100	100
RED ROCK CANYON SP	266691	50	80	100	70
REESE RIVER	266746	60	80	90	73
REESE VALLEY CARPER	266748	60	50	60	55
RENO TAHOE INTL AP	266779	100	90	80	93
RENO WFO	266791	100	100	100	100
RUBY LAKE	267123	60	60	70	61
RUTH	267175	70	70	100	73
RYNDON	267188	60	50	70	56
RYE PATCH DAM	267192	70	60	90	67
SAND PASS	267261	70	80	100	78
SAN JACINTO	267284	70	50	60	59
SARCOBATUS	267319	50	60	90	59
SAVAL RCH	267324	90	90	100	91
SCHURZ	267358	60	70	70	66
SEARCHLIGHT	267369	100	100	100	100

Appendix 8 cont. Weather station aridity ratings following Allen and Brockway (1983), estimated from station photos, and high resolution image analysis (0= irrigated area, 100=completely arid).

Station Name	NOAA #	Station Aridity	Area Aridity	Regional Aridity	Cumulative Aridity
SEVENTY ONE RCH	267397	20	40	60	34
SHELDON	267443	50	50	80	53
SHOSHONE 5 N	267450	50	90	90	74
SILVERPEAK	267463	60	60	90	63
SMITH 1 N	267609	60	40	40	48
SMITH 6 N	267612	100	70	60	81
SMOKE CREEK ESPIL	267618	80	80	90	81
SMOKEY VALLEY	267620	70	80	90	77
SNOWBALL RCH	267640	100	100	100	100
SOUTH FORK SP	267690	90	90	90	90
SPRING VALLEY SP	267750	20	40	70	35
STATELINE-HARRAH'S	267806	20	30	30	26
STEAD	267820	100	90	100	95
SULPHUR	267873	100	100	100	100
SUNNYSIDE	267908	100	100	100	100
SUTCLIFFE	267953	70	80	90	77
TEMPIUTE 4 NW	267983	100	100	100	100
THORNE	268034	100	100	100	100
TONOPAH	268170	100	100	100	100
TOPAZ LAKE 3N	268186	70	90	100	83
TOPAZ LAKE 4 N	268202	70	90	100	83
TUSCARORA	268346	100	100	100	100
TWIN SPRING FALLINI	268443	100	100	100	100
UNIV OF NEVADA EXP FM	268500	50	70	80	63
URSINE	268538	40	60	80	54
VALLEY OF FIRE SP	268588	100	100	100	100
VIRGINIA CITY	268761	70	80	100	78
VYA	268810	100	100	100	100
WABUSKA 6 SE	268822	100	70	80	83
WADSWORTH	268834	100	70	90	84
WADSWORTH 4 N	268838	100	70	90	84
WELLINGTON RS	268977	60	70	70	66
WELLS	268988	70	80	100	78
WILDHORSE RSVR	269072	100	100	100	100
WILKINS	269122	70	70	90	72
WILLOW SPRINGS	269137	100	100	100	100
WINNEMUCCA #2	269168	70	90	90	82
WINNEMUCCA MUNI AP	269171	100	100	100	100
YERINGTON	269229	50	60	50	55

Appendix 8 cont. Weather station aridity ratings following Allen and Brockway (1983), estimated from station photos, and high resolution image analysis (0= irrigated area, 100=completely arid).

Station Name	NOAA #	Station Aridity	Area Aridity	Regional Aridity	Cumulative Aridity
LAS VEGAS	23112	100	100	100	100
RED ROCK WC	29999	90	30	40	55
WASHOE VALLEY WC	39999	60	30	30	42

Appendix 9. Descriptions of daily, monthly, annual, and statistical summaries of ET, net irrigation water requirement, and effective precipitation.

Daily Time Series

The daily ET_c time series files are assembled as one file per station and contain daily information for entire periods of record. The daily ET_c time series file has ET_c information for up to 34 crops or land use conditions. Any missing data in the daily ET_c files are denoted as –99. Generally, missing data occurred due to missing air temperature data for a day that precluded the calculation of ET_{os}. Often, entire months were missing from NWS files obtained from the NOAA-NCDC system. The daily ET_c files can be large, exceeding 50mb for some stations having long periods of record and many crop types. The total crop types that are included for each station are listed in Appendix 10.

The names of the ET_c files for the National Weather Service (NWS) stations contain the NCDC station ID number, for example, 262780 for the Fallon Exp station. The extension to these files is '*.dat*.' For example, the name Fallon Exp station is 262780ETca.dat. The daily ET_c files are 'flat' text (i.e., ASCII) files with all columns of data separated by one or more blank spaces. The daily ETc files contain daily ETc data for the full period of record for the particular station, with some files dating to the late 1800's. All NWS files conclude at 12/31/2007 or earlier, as the end of 2007 was the last period for which data were obtained for most stations. The full list of weather station names along with assigned file numbers are provided in Appendix 1a and 1b.

The daily files contain reference ET and reported precipitation in units of mm/day, along with the computed 30-day average daily mean air temperature (T30), and crop ET for different crop types. The value for T30 is for the 30-day period ending on the particular date. T30 was used to estimate starts of growth periods for many types of crops. The file header is comprised of five lines that describe the date of computation, the station ID number and internal station 'ET number' as well as the station latitude, longitude and elevation (in decimal degrees and feet). The fourth line of the header lists the total number of crop or land cover types in the specific file as well as a listing of each crop type. Each crop or land cover type is listed beginning with its specific number (1 through 34) followed by a short character description of the crop or land use. The last line in the header describes each data column. The first seven columns, headed by "*Year DoY Mo Dy PMETo Pr.mm T30*" represent the year, day of year (1-366), month, day of month, grass reference ET computed by the ASCE Penman-Monteith ETos method, gross precipitation, and 30-day mean air temperature. Following these seven columns, seven columns appear for each crop or land cover: "*ETact ETpot ETbas Irrn Seasn Runof DPerc*" These columns are defined as follows:

ETact (*actual daily* ET_c) - ET_{act} represents the total estimated flux of ET given any reduction in actual ET caused by soil water shortage or soil surface dryness. ET_{act} is computed as $ET_{act} = K_s\, ET_{bas} + K_e\, ET_{os}$, where ET_{os} is grass reference ET, K_s is a stress factor (0 – 1 where 1 means no stress) and K_e is the evaporation coefficient. ET_{bas} is defined below. ET_{act} is occasionally less than ET_{pot} for irrigated crops prior to the growing season when a low-level, basal crop coefficient for the non-growing season cover cannot be sustained by precipitation, or early in the growing season prior to

initiation of irrigation. ET_{act} includes evaporation from the soil surface from both precipitation and any simulated irrigation.

ETpot (p*otential daily* ET_c) - ET_{pot} represents the total estimated flux of ET that would occur if there were no moisture stress imposed by soil water shortage in the root zone. ET_{pot} includes evaporation from the soil surface from both precipitation and any simulated irrigation. ET_{pot} is computed as $ET_{pot} = ET_{bas} + K_e ET_{os}$, where ET_{os} is the grass reference ET.

ETbas (*basal daily* ET_c) - ET_{bas} represents the ET that would occur under no water stress and with no surface wetting by precipitation or irrigation. In other words, ET_{bas} represents potential ET_c (ET_{pot}) for a dry soil surface. ET_{bas} should not be used to estimate irrigation water requirements, and is included to provide an indication of the amount of *ET* that is primarily 'transpiration', as opposed to any amount that is from evaporation of water from the soil surface layer. ET_{bas} is calculated as $K_{cb}\ ET_{os}$ where K_{cb} is the basal crop coefficient and ET_{os} is the grass reference ET.

Irrn (*irrigations)* - Irrigation timing and amount is simulated using a daily soil water balance. Irrigations are simulated when the root zone dries to the specified threshold point (i.e. the maximum allowable depletion) where stress will begin to occur (listed in appendix 5). The simulated irrigation frequency and depth per irrigation is a function of the crop type and available water holding capacity.

Seasn (*growing or non-growing season*) - The *Seasn* column contains a 'flag' that is 1 when the date is inside the estimated growing season and 0 when outside the growing season. The growing season is defined as the time from first green-up or planting of the crop type until the time of harvest, senescence, or killing frost. The season start and end varies from year to year for crops where the season start is estimated using T30, cumulative growing degree days, and/or where season length is estimated using cumulative growing degree days, or is terminated by frost specified by a killing frost temperature. In the case of the four land cover types (bare soil, mulch, dormant turf, and small open water bodies), the season flag is always on.

Runof (*surface runoff from precipitation)* - Surface runoff is estimated during precipitation events using the NRCS curve number as described in the main body of text.

DPerc (*deep percolation below the root zone)* - *DPerc* represents water, in mm/day, percolating below the maximum root zone depth for the crop or land cover type. This water is considered to be unrecoverable for fulfilling any ET requirements. There are no estimates for upward capillary fluxes into the root zone from below the root zone. The *DPerc* during irrigation events may contain 10% of the irrigation depth (the amount of water required to refill the root zone). This 10% was included to provide recharge to depths in the soil profile that are above the maximum rooting depth, and below the current rooting depth of the crop. This was necessary to simulate buildup of soil water during irrigation events that is used later in the season as roots may deepen. This phenomenon is typical in practice.

Monthly Time Series

Files for monthly ET_c time series have names that follow the same convention for daily ET_c files. The latter portion of the name carries the label '*ETc_monthly.dat*', for example, the Fallon Exp station is "*262780ETc_monthly.dat.*" The monthly files are assembled as one file per station. Each file has ETc information for up to 34 crops or land use conditions. The monthly ET_c time series files have 10 lines of header information that contain similar information as for the daily time series files. The header notes the time and date of computation of the original daily ET_c information as well as the time and date of computation of the monthly summaries (series). The first three columns of data contain the year, the month number (1-12) and the number of 'valid' days in the month (*V.Dys*). *V.Dys* represents valid days (that do not have a –999 flag in the daily ET_c file caused by lack of weather data). The next two columns are average reference ET (ET_{os}) and average daily precipitation (*Prec*). Any missing data in the monthly ET_c time series files are denoted as –999. Generally, a monthly period in a time series was marked as missing if air temperature data were missing for all days in that month. Entire months were frequently missing from NWS files obtained as from the NOAA-NCDC system. All units are mm/day averaged over the month.

There are six columns of data presented for each crop or land cover that are defined as follow:

ETact (*actual monthly* ET_c) - ET_{act} represents the total estimated flux of ET given any reduction in actual ET caused by soil water shortage or soil surface dryness. ET_{act} is computed as $ET_{act} = K_s\, ET_{bas} + K_e\, ET_{os}$, where ET_{os} is grass reference ET, K_s is a stress factor (0 – 1 where 1 means no stress) and K_e is the evaporation coefficient. ET_{bas} is defined below. ET_{act} is occasionally less than ET_{pot} for irrigated crops prior to the growing season when a low-level, basal crop coefficient for the non-growing season cover cannot be sustained by precipitation, or early in the growing season prior to initiation of irrigation. <u>ET_{act} includes evaporation from the soil surface from both precipitation and any simulated irrigation.</u>

ETpot (p*otential monthly* ET_c) - ET_{pot} represents the total estimated flux of ET that would occur if there were no moisture stress imposed by soil water shortage in the root zone. ET_{pot} includes evaporation from the soil surface from both precipitation and any simulated irrigation. ET_{pot} is computed as $ET_{pot} = ET_{bas} + K_e ET_{os}$, where ET_{os} is the grass reference ET.

NIWR (*Net Irrigation Water Requirement AKA precipitation deficit)* - The NIWR is the difference between the actual ET (ET_{act}) and the amount of precipitation that resides in the root zone (*P_rz*) and is available for ET. *NIWR* is calculated as $ET_{act} - P\_rz$. *NIWR* represents the amount of additional water that the crop would consume (evapotranspire) beyond *P_rz* if that water were made available at the right time during the growing or non-growing season. The ET_{act} estimate includes soil evaporation from precipitation and simulated irrigation events. The *NIWR*, if summed only during the growing season, <u>does not</u> include the impact of the *NIWR* during the non-growing season in providing stored soil moisture that may offset irrigation requirements during the growing season. Conversely, if summed on an annual time step, the *NIWR* <u>does</u> include stored soil

moisture from non-growing season precipitation, and represents what has historically been called the ***net consumptive use***, and is being termed the ***net irrigation water requirement*** in this report. All available precipitation in the root zone is considered when computing the *NIWR* because ET_{act} is used, where ET_{act} is the actual ET that is calculated from a daily soil water balance, and includes evaporation from precipitation. Because ET_{act} includes evaporation of precipitation *P_rz* must be subtracted from ET_{act}.

P_rz (*precipitation residing in the root zone)* - *P_rz* is the amount of gross reported precipitation less any surface runoff or deep percolation that resides in the soil and is available for consumption by evaporation or transpiration. *P_rz* is computed as *P – Runoff – DPerc* where *P* is gross reported precipitation, *Runoff* is estimated surface runoff and *DPerc* is deep percolation of any precipitation below the maximum root zone for the crop or land cover type. The difference between *P_rz* and ET_{act} during the non-growing season represents the amount of 'recharge' or 'build-up' of moisture to the root zone during the non-growing season (i.e., increase in soil water storage) that would be available at the start of the growing season to later partially fulfill plant water requirements. The ratio of $(P\_rz - ET_{act})/P$ computed during the non-growing period represents the 'efficiency' or effectiveness of gross precipitation in building soil water for use during the growing season.

P_efT (*precipitation residing in the root zone that is available for transpiration)* - *P_efT* is the amount of gross reported precipitation less any surface runoff or deep percolation that resides in the soil and is available for consumption by transpiration. *P_efT* does not include the amount of infiltrated precipitation that evaporates from the surface evaporation layer (upper 100 mm of soil). The *P_efT* parameter is useful in estimating the amount of precipitation during the non-growing season that is stored and made available for transpiration requirements during the growing season. *P_efT* is always less than *P_rz.* When analyzed during the growing season, *P_efT* is useful for estimating how 'efficient' precipitation is in fulfilling transpiration requirements of crops, as opposed to simply 'burning off' as evaporation from the soil surface. *P_efT* was calculated as *P_efT = P_rz - surface evaporation losses = P – Runoff – DPerc - surface evaporation losses*, where *P_rz* is precipitation infiltrating and residing in the maximum root zone for the crop, *P* is gross reported precipitation, *Runoff* is estimated surface runoff, and *DPerc* is deep percolation of any precipitation below the maximum root zone for the crop or land cover type.

SeDys (number of *growing season days* within the particular month) - *SeDys is* computed by summing the *Seasn* flag contained in the daily ETc files.

Annual Time Series

The annual ET_c time series files contain the same information as the monthly ET_c time series files. The annual files have names that follow the same convention for daily ET_c files previously described. The latter portion of the name carries the label '*ETc_annual.dat*', for example, for Fallon Exp, the name for the annual file is "*262780ETc_annual.dat*". Each file has ET_c information for up to 34 crops and land cover conditions. All units are in mm/year.

The annual ET_c time series files have 10 lines of header information that contain similar information as for the monthly and daily time series files. The header notes the time and date of computation of the original daily ET_c information as well as the time and date of computation of the annual summaries. The first four columns of data contain the year and the number of 'valid' days in the year (*V.Days*). *V.Days* represents those days that do not have a –999 flag in the daily ET_c file caused by lack of weather data. The next two columns are total reference ET (ET_{os}) and total precipitation (*Prec.*) for the calendar year, both expressed as mm over the year. It is important to note that both ET_{os} and *Prec.* represent the entire calendar year (365 or 366 days), including winter periods. Any years that had less than 350 days of valid data or more than 5 days of missing data during the growing season (defined as the growing period for grass hay) were reported as –999. Years having one to fifteen missing days during the year (and fewer than 6 missing days during the growing season) had annual values for ET and precipitation deficit adjusted by multiplying by 365 or 366 divided by the number of valid days. Any years that had more than 5 days of missing data during the growing season for a crop were reported as –999 for the seasonal ET totals.

There are six columns of annual data presented for each crop that are defined as follow:

ETac (*actual ETc)* - ET_{act} summed over the year. ET_{act} represents the total estimated flux of ET given any reduction in actual ET caused by soil water shortage or soil surface dryness. ET_{act} is computed as $ET_{act} = K_s\ ET_{bas} + K_e\ ET_{os}$, where ET_{os} is grass reference ET, K_s is a stress factor (0 – 1 where 1 means no stress) and K_e is the evaporation coefficient. ET_{bas} is defined below. ET_{act} is occasionally less than ET_{pot} for irrigated crops prior to the growing season when a low-level, basal crop coefficient for the non-growing season cover cannot be sustained by precipitation, or early in the growing season prior to initiation of irrigation. <u>ET_{act} includes evaporation from the soil surface from both precipitation and any simulated irrigation.</u>

ETpt (*potential* ET_c) - ET_{pot} summed over the year. ET_{pot} represents the total estimated flux of ET that would occur if there were no moisture stress imposed by soil water shortage in the root zone. ET_{pot} includes evaporation from the soil surface from both precipitation and any simulated irrigation. ET_{pot} is computed as $ET_{pot} = ET_{bas} + K_eET_{os}$, where ET_{os} is the grass reference ET.

NIWR (*Net Irrigation Water Requirement AKA precipitation deficit)* – NIWR summed over the year. The NIWR is the difference between the actual ET (ET_{act}) and the amount

of precipitation that resides in the root zone and is available for ET. *NIWR* is calculated as $ET_{act} - P\_rz$. *NIWR* represents the amount of additional water that the crop would consume (evapotranspire) beyond *P_rz* if that water were made available at the right time during the growing or non-growing season. The ET_{act} estimate includes soil evaporation for precipitation and simulated irrigation events. Summed on an annual time step, *NIWR* does include stored soil moisture from non-growing season precipitation, and represents what has historically been called the ***net consumptive use***, and is being termed the ***net irrigation water requirement*** in this report. Although P_rz includes precipitation that is later evaporated and not "consumed" by the crop, it is important to note that because ET_{act} includes water that is consumed by evaporation of precipitation, that $ET_{act} - P\_rz$, represents the net irrigation water requirement, and not ET_{act} minus root zone water that is effective toward transpiration only.

P_rz (p*recipitation residing in the root zone)* - *P_rz* is the amount of gross reported precipitation less any surface runoff or deep percolation that resides in the soil and is available for consumption by evaporation or transpiration. *P_rz* is computed as *P – Runoff – DPerc* where *P* is gross reported precipitation, *Runoff* is estimated surface runoff and *DPerc* is deep percolation of any precipitation below the maximum root zone for the crop or land cover type.

P_efT (*precipitation residing in the root zone that is available for transpiration)* - *P_efT* is the amount of gross reported precipitation less any surface runoff or deep percolation that resides in the soil and is available for consumption by transpiration. *P_efT* does not include the amount of infiltrated precipitation that evaporates from the surface evaporation layer (upper 100 mm of soil). The *P_efT* parameter is useful in estimating the amount of precipitation that is stored and made available for transpiration requirements. *P_efT* is always less than *P_rz*. *P_efT* is useful for estimating how 'efficient' precipitation is in fulfilling transpiration requirements of crops, as opposed to simply 'burning off' as evaporation from the soil surface. *P_efT* was calculated as *P_efT = P_rz - surface evaporation losses = P – Runoff – DPerc - surface evaporation losses*, where *P_rz* is precipitation infiltrating and residing in the maximum root zone for the crop, *P* is gross reported precipitation, *Runoff* is estimated surface runoff, and *DPerc* is deep percolation of any precipitation below the maximum root zone for the crop or land cover type.

DSn – The *number of growing season days* within the calendar year. *DSn* was computed by summing the *Seasn* flag contained in the daily ETc files over the calendar year.

Statistics Files

Perhaps the most useful results from this study are the statistics describing long-term mean values for ET_c on monthly, growing season, and annual bases, as well as standard deviations and 20% and 80% exceedence values that describe the expected variation of the populations of ET_c. These statistics have been computed for the following lengths of time periods within each month; 3, 7, 15, and 30 days. These period lengths were selected to include expected lengths of irrigation intervals or drying periods that are of interest in irrigation system design and operation. For example, a potato crop may be irrigated each 3 days during the peak month of July, so that users may be interested in reviewing the statistics describing the 3 day periods within the month of July for irrigation systems design. Or, for example, if a crop of alfalfa having a deeper effective root zone is irrigated on average each two weeks during August, then users may be interested in reviewing the statistics describing 15 day periods within the month of August for irrigation systems design.

There are four 'statistics' files per weather station. These files contain statistical summaries for 1) *actual ET*; 2) *potential ET*; 3) *basal ET*; and 4) *precipitation deficit* (i.e., *net irrigation water requirement*). The files have names beginning with the station coop number and ending with '*ETcact_stats.dat*', '*ETcpot_stats.dat*', '*ETcbas_stats.dat*' or '*NIWR_stats.dat*'. For example, in the case of the Fallon Exp station, the four files are named *262780ETcact_stats.dat*, *262780ETcpot_stats.dat*, *262780ETcbas_stats.dat* and *262780NIWR_stats.dat*. The *ETcact* represents actual ET, *ETcpot* represents potential ET, *Etcbas* represents basal ET, and *NIWR* represents the Net Irrigation Water Requirement (i.e. precipitation deficit, *P_def*). All of these terms have been defined under the daily, monthly, annual time series sections above. The *NIWR* is summarized for both growing season and annual time periods. The four files all contain headers comprised of 12 lines containing similar information including the time and date of the original calculation of daily ET and the time and date of the calculation of the statistical summaries. The headers also contain the station latitude and longitude in decimal degrees and station elevation in feet. Each crop or land cover type that was processed for a station is contained in the statistics files, following a single entry for reference ET (in the '*ETcact_stats*' file), for gross precipitation (in the '*ETcpot_stats*' file), or for 30 day average daily mean air temperature (in the '*ETcbas_stats*' file).

The statistics were computed over the most recent 30 years of valid (non-missing) data or over shorter periods if less than 30 years of valid data were available (minimum of 4 years). The span of the 30 year 'normals' are listed for each crop, but may not necessarily contain 30 years depending on the station period of record or number of missing days. The span of the normal periods can change with crop type, depending on the timing of any missing data (inside or outside growing periods). The span of the normal period can also exceed 30 years if some intervening years were omitted due to missing data.

The 30 year normal or shorter periods available were used to generate means and other statistics describing the behavior of the ET data rather than the entire periods of record (i.e. greater than 30 years) for two reasons. One, lengths of station records vary widely from station to station, ranging from as few as 4 years from 2005-2008, to 112 years from 1893-2004. Secondly, trends in air temperature and growing season lengths are apparent, and consequently ET trends exist. Some of these trends are caused by

changes in relative dryness of the local or regional environment due to irrigation development or land-use change, by specific station location, or perhaps by change in overall climate. The last 30 years of usable record are considered to be more representative of expected future conditions than prior periods. The full record for each station is preserved in the daily, monthly and annual time series files. Therefore, statistics for the full periods of record can be computed as needed from these series.

For each crop, the following data columns are reported for each month, for the calendar year ('Ann.' row) and for the growing season ('Sea.' row):

Mean (*mean value)* - *Mean value* for the month and over the 'normal' period of record for the location. *Mean* represents either *ETcact*, *ETcpot*, *ETcbas* or *NIWR*, depending on the file. Units are in mm/day for monthly periods and mm/year annual and seasonal periods. The '*nyr*' column represents the number of years that had 'valid' entries for the month and that were included in the mean. Generally, if a full normal period was available, *nyr* = 30. The actual period of record for the station may have been much longer and is preserved in the time series files. Values for means are reported for the monthly, 15, 7, and 3 day averaging periods within each month. In general, these four means are nearly the same, and are reported only for documentation. Means for the 15, 7 and 3 day periods can deviate from those for the entire month because some information near the beginning and end of the month may not have the same weight. This was caused by the requirement that each 3, 7 or 15 day period considered for a month must have all of its member days residing within the month evaluated. For example, for the 15 day statistics, generally 13 to 16 separate 15 day averages were computed and considered for a specific month and year. The member days for the 15-day averages were days 1-15, days 2-16, days 3-17, ……, days 14-28, days 15-29, days 16-30, and days 17-31. Therefore, days nearer to the beginning and end of a period appeared fewer times in the computed means for the month. Thus, some differences in monthly means occurred between the 3, 7, 15 and monthly periods. Differences were generally small.

Stdev (*standard deviation)* - *Standard devieation* of the variable for the month over the normal period of record. The *Stdev* entry for a particular month was computed using one value (the observation mean) per year for the month. Units are in mm/day for monthly periods and mm for annual and seasonal periods.

Skew (*skew of the distribution of values)* - The *skew* is shown for the variable for each month for the monthly means (only) over the period of record. The skew for a particular month was computed using one value (the observation mean) per year for the month. A value for skew near zero indicates that the underlying distribution approximates a normal (Gaussian) and symmetrical distribution. A skew near 1.0 indicates that the underlying distribution approximates a lognormal distribution. The values for skew, standard deviation and mean can be used to parameterize a variety of probability density functions such as the normal, lognormal, Pearson, and Gamma distributions.

Kurt. (*Kurtosis)* - *Kurtosis* is a measurement of the 'slenderness' of the underlying distribution; in other words, the 'height to width ratio' of the probability density function. A normal (Gaussian) distribution has a kurtosis of 3. The higher the number, the taller

and more slender the distribution is. A high kurtosis indicates that many of the observations in the distribution have very similar values. Kurtosis was calculated for monthly averages only over the normal period.

20%Ex *(20% exceedence)* **-** The *20%Ex* value represents the value for the parameter (actual, potential or basal ET or the precipitation deficit) *that has a 20% chance of being exceeded* that month during any particular year. Conversely, there is an 80% chance that the value of the parameter (for the particular length of averaging period) will be less than the *20%Ex* value. The *20%Ex* value is commonly used in design of capacity for irrigation and water supply systems. Units for *20%Ex* are in mm/day for monthly periods and mm for annual and seasonal periods. The *20%Ex* values were computed assuming a 'distribution free' probability density function. The values were selected by ranking the highest 3-, 7-, 15- or 30-day value within the month for *ETact, ETpot, ETbas* or *NIWR* for each year of the 30 year normal period and selecting the value that was positioned 20% of the way down from the highest value. There were '*nyrs*' values that were ranked (one for each year). In this way, the *20%Ex* value represents that value for the parameter (*ETact, ETpot, ETbas* or *NIWR*) that, when averaged over any 3-, 7-, 15- or 30- day period within the month, would have only a 20% chance of being exceeded at any time during that month for the given year. Thus, if an irrigation system were designed with capacity to provide the *20%Ex* amount of *NIWR* over a 7-day period, for example, the system's 'net' output (less any incidental leakage, spray drift or uniformity 'losses') would exceed the actual precipitation deficit (i.e., the ET less any Prz) 8 years out of 10. During two years out of any 10 year period, the ET less any Prz would exceed the net system capacity during at least one 7 day period during the particular month by some amount. The amount of the exceedence might range from only a millimeter to perhaps 15 to 20 mm over the period.

AveHi *(average hi)* - The *AveHi* parameter complements the *20%Ex* parameter, where *AveHi* represents the average (over the normal period) of the highest value for the parameter within the 3, 7, or 15 day period for each month. Therefore, each month of each year was assigned one 'highest' value for the parameter for the 3, 7 or 15 day averaging length. Then, for each month of the year, the values over the normal period were averaged to obtain *AveHi*. The value for *AveHi* for 3, 7 and 15 day periods is always greater than the average for the month itself (i.e., the mean), since the *AveHi* is the mean of the highest value for the 3, 7, or 15 day period within the month. The value for *AveHi* increases as the length of the averaging period (3, 7 or 15 days) decreases. The same values used to calculate *AveHi* were used in calculating the *20%Ex* value.

80%Ex *(20% exceedence)* **-** The *80%Ex* value represents the *value* for the parameter (actual, potential, basal ET, or the precipitation deficit) *that has an 80% chance of being exceeded* that month during any particular year. Conversely, there is a 20% chance that the value of the parameter (for the particular length of averaging period) will be less than the *80%Ex* value. The *80%Ex* value is commonly used in design of land application systems where water application may need to be limited to amounts that have at least 80% chance of being consumed. Units for *80%Ex* are in mm/day for monthly periods and mm for annual and seasonal periods. The *80%Ex* values were computed assuming a 'distribution free' probability density function. The values were selected by ranking the

lowest 3-, 7-, 15- or 30-day value during the month for *ETact*, *ETpot*, *ETbas* or *NIWR* for each year and selecting the value that was positioned 80% of the way down from the highest value. There were 'nyrs' values that were ranked (one for each year). In this way, the 80%Ex value represents that value for the parameter (*ETact*, *ETpot*, *ETbas* or *NIWR*) that, when averaged over any 3-, 7-, 15- or 30- day period within the month, would have an 80% chance of being exceeded at all times during that month for the given year. Thus, if a land application system were designed with capacity to provide the *80%Ex* amount of *NIWR* over a 7-day period, for example, then the systems 'net' output (less any incidental leakage, spray drift or uniformity 'losses') would exceed the actual precipitation deficit (i.e., the ET less any Prz) during 2 years out of a 10 year period. During eight years out of any 10 year period, the ET less any Prz would exceed the application amount during all 7 day periods during the particular month by some amount. The amount of the exceedence might range from only a millimeter to perhaps 15 to 20 mm.

AveLo *(average low)* **-** The *AveLo* parameter complements the *80%Ex* parameter, where *AveLo* represents the average (over the normal period) of the lowest value for the parameter within the 3, 7, or 15 day period for each month. Therefore, each month of each year was assigned one 'lowest' value for the parameter for the 3, 7 or 15 day averaging length. Then, for each month of the year, the values over the normal period were averaged to obtain *AveLo*. The value for *AveLo* for 3, 7 and 15 day periods is always less than the average for the month itself (i.e., the 'mean'), since the *AveLo* is the mean of the lowest value for the 3, 7, or 15 day period within the month. The value for *AveLo* decreases as the length of the averaging period (3, 7 or 15 days) decreases. The same values used to calculate *AveLo* were used in calculating the *80%Ex* value. On an annual or growing season basis, the mean, *20%Ex* and *80%Ex* values are computed only for annual or growing season totals and represent the distribution of annual or growing season values (rather than for specific months).

Appendix 10. Crop or land cover class simulated for each station (1 = yes, 0 = no).

Station Name	Station Number	Alfalfa Hay	Grass Hay	Snap and Dry Beans - fresh	Snap and Dry Beans - seed	Field Corn	Silage Corn	Sweet Corn--early	Sweet Corn--late	Spring Grain - irrigated	Winter Grain - irrigated
ADAVEN	260046	1	1								
ALAMO	260099	1	1			1	1	1	1	1	1
AMARGOSA FARMS-GAREY	260150	1	1			1	1	1	1	1	1
ANTELOPE VALLEY FARR	260282	1	1								
ARTHUR 4 NW	260438	1	1			1	1	1	1	1	1
AUSTIN #2	260507	1	1								
BASALT	260668	1	1								
BATTLE MTN	260688	1	1			1	1	1	1	1	1
BATTLE MTN AP	260691	1	1			1	1	1	1	1	1
BEATTY	260715	1	1			1	1	1	1	1	1
BEATTY 8 N	260718	1	1			1	1	1	1	1	1
BEOWAWE	260795	1	1								
BEOWAWE U OF N RCH	260800	1	1								
BLUE EAGLE RCH HANKS	260955	1	1								
BLUE JAY HWY STN	260961	1	1								
BOULDER CITY	261071	1	1			1	1	1	1	1	1
BRINKERHOFF RCH	261160	1	1								
BUFFALO RCH	261311	1	1								
BUNKERVILLE	261327	1	1			1	1	1	1	1	1
CALIENTE	261358	1	1			1	1	1	1	1	1
CALLVILLE BAY	261371	1	1								
CARLIN NEWMONT MINE	261415	1	1								
CARSON CITY	261485	1	1								
CATHEDRAL GORGE SP	261590	1	1			1	1	1	1	1	1
CENTRAL NEVADA FLD LAB	261630	1	1			1	1	1	1	1	1
CHARLESTON	261660	1	1								
CLOVER VALLEY	261740	1	1			1	1	1	1	1	1
COALDALE JUNCTION	261755	1	1								
CONTACT	261905	1	1								
CORTEZ GOLD MINE	261975	1	1								
CURRANT	262078	1	1			1	1	1	1	1	1
CURRANT HWY STN	262091	1	1								
CURRIE HWY STN	262096	1	1								
DAGGET PASS	262119	1	1								
DENIO	262229	1	1			1	1	1	1	1	1
DESERT NWR	262243	1	1								
DIABLO	262276	1	1								
DIAMOND VALLEY USDA	262296	1	1			1	1	1	1	1	1
DUCKWATER	262390	1	1			1	1	1	1	1	1
DUFURRENA	262394	1	1								
DYER	262431	1	1			1	1	1	1	1	1
EASTGATE	262477	1	1								
ECHO BAY	262497	1	1								
ELGIN	262557	1	1			1	1	1	1	1	1
ELGIN 3 SE	262562	1	1			1	1	1	1	1	1

Appendix 10 cont. Crop or land cover class simulated for each station (1 = yes, 0 = no).

Station Name	Station Number	Alfalfa Hay	Grass Hay	Snap and Dry Beans - fresh	Snap and Dry Beans - seed	Field Corn	Silage Corn	Sweet Corn--early	Sweet Corn--late	Spring Grain - irrigated	Winter Grain - irrigated
ELKO	262570	1	1			1	1	1	1	1	1
ELKO RGNL AP	262573	1	1			1	1	1	1	1	1
ELY 6 NE	262626	1	1			1	1	1	1	1	1
ELY YELLAND FLD AP	262631	1	1			1	1	1	1	1	1
EMIGRANT PASS HWY STN	262656	1	1								
EMPIRE	262662	1	1			1	1	1	1	1	1
EUREKA	262708	1	1								
FALLON EXP STN	262780	1	1	1	1	1	1	1	1	1	1
FERGUSON SPRINGS HMS	262820	1	1								
FERNLEY	262840	1	1	1	1	1	1	1	1	1	1
FISH CREEK RCH	262860	1	1			1	1	1	1	1	1
GERLACH	263090	1	1			1	1	1	1	1	1
GEYSER RCH	263101	1	1			1	1	1	1	1	1
GIBBS RCH	263114	1	1								
GLENBROOK	263205	1	1								
GOLCONDA	263245	1	1								
GOLDFIELD	263285	1	1								
GOODSPRINGS	263316	1	1								
GREAT BASIN NP	263340	1	1								
HAWTHORNE	263512	1	1								
HAWTHORNE AP	263515	1	1								
HIKO	263671	1	1			1	1	1	1	1	1
HUMBOLDT FLD	263853	1	1								
I-L RCH	263940	1	1								
IMLAY	263957	1	1								
INDIAN SPRINGS	263980	1	1								
JACKPOT	264016	1	1								
JARBRIDGE 4 N	264038	1	1								
JARBIDGE 7 N	264039	1	1								
JIGGS 8 SSE ZAGA	264095	1	1								
JUNGO MEYER RCH	264108	1	1								
KIMBERLY	264199	1	1								
KNOLL CREEK FLD STN	264268	1	1								
KYLE CANYON RS	264314	1	1								
LAGES	264341	1	1								
LAHONTAN DAM	264349	1	1								
LAKE VALLEY STEWARD	264384	1	1								
LAMOILLE YOST	264394	1	1			1	1	1	1	1	1
LAMOILLE PH	264395	1	1			1	1	1	1	1	1
LAS VEGAS	264429	1	1			1	1	1	1	1	1
LAS VEGAS WB AP	264436	1	1			1	1	1	1	1	1
LAS VEGAS NWFO	264439	1	1			1	1	1	1	1	1
LATHROP WELLS	264457	1	1			1	1	1	1	1	1
LAUGHLIN	264480	1	1			1	1	1	1	1	1
LEHMAN CAVES NM	264514	1	1			1	1	1	1	1	1
LEONARD CREEK RCH	264527	1	1			1	1	1	1	1	1
LEWERS RCH	264542	1	1								
LITTLE RED ROCK	264600	1	1								

Appendix 10 cont. Crop or land cover class simulated for each station (1 = yes, 0 = no).

Station Name	Station Number	Alfalfa Hay	Grass Hay	Snap and Dry Beans - fresh	Snap and Dry Beans - seed	Field Corn	Silage Corn	Sweet Corn--early	Sweet Corn--late	Spring Grain - irrigated	Winter Grain - irrigated
LOGANDALE	264651	1	1	1	1	1	1	1	1	1	1
LOVELOCK DERBY FLD	264700	1	1	1	1	1	1	1	1	1	1
LUND	264745	1	1			1	1	1	1	1	1
MALA VISTA RCH	264824	1	1			1	1	1	1	1	1
MARLETTE LAKE	264858	1	1								
MCDERMITT	264935	1	1			1	1	1	1	1	1
MCGILL	264950	1	1			1	1	1	1	1	1
MESQUITE	265085	1	1			1	1	1	1	1	1
METROPOLIS	265092	1	1			1	1	1	1	1	1
MIDAS 4 SE	265105	1	1								
MIDDLEGATE-LOWERY	265132	1	1								
MINA	265168	1	1								
MINDEN	265191	1	1			1	1	1	1	1	1
MONTELLO 2 SE	265352	1	1			1	1	1	1	1	1
MONTGOMERY MNTC STN	265362	1	1								
MOORMAN RCH	265371	1	1								
MTN CITY RS	265392	1	1								
MT CHARLESTON FS	265400	1	1								
MT ROSE BOWL	265440	1	1								
NIXON	265605	1	1			1	1	1	1	1	1
NORTH LAS VEGAS	265705	1	1			1	1	1	1	1	1
OASIS	265722	1	1								
OLD RUTH	265760	1	1								
OROVADA 3 W	265818	1	1	1	1	1	1	1	1	1	1
OVERTON	265846	1	1	1	1	1	1	1	1	1	1
OWYHEE	265869	1	1			1	1	1	1	1	1
PAHRANAGAT WR	265880	1	1			1	1	1	1	1	1
PAHRUMP	265890	1	1			1	1	1	1	1	1
PAHUTE MEADOWS RCH	265907	1	1								
PALMETTO	265931	1	1								
PARADISE VALLEY 1 NW	266005	1	1			1	1	1	1	1	1
PARIS RCH	266055	1	1								
PENOYER VALLEY	266130	1	1								
PEQUOP	266148	1	1								
PILOT VALLEY-LEE	266228	1	1								
PINE VALLEY BAILEY RCH	266242	1	1			1	1	1	1	1	1
PIOCHE	266252	1	1			1	1	1	1	1	1
QUINN RVR CROSSING	266504	1	1			1	1	1	1	1	1
RAND RCH PALISADE	266574	1	1			1	1	1	1	1	1
RATTLESNAKE	266630	1	1								
RED ROCK CANYON SP	266691	1	1								
REESE RIVER	266746	1	1			1	1	1	1	1	1
REESE VALLEY CARPER	266748	1	1								
RENO TAHOE INTL AP	266779	1	1			1	1	1	1	1	1
RENO WFO	266791	1	1			1	1	1	1	1	1
RUBY LAKE	267123	1	1			1	1	1	1	1	1
RUTH	267175	1	1								
RYNDON	267188	1	1			1	1	1	1	1	1

Appendix 10 cont. Crop or land cover class simulated for each station (1 = yes, 0 = no).

Station Name	Station Number	Alfalfa Hay	Grass Hay	Snap and Dry Beans - fresh	Snap and Dry Beans - seed	Field Corn	Silage Corn	Sweet Corn--early	Sweet Corn--late	Spring Grain - irrigated	Winter Grain - irrigated
RYE PATCH DAM	267192	1	1								
SAND PASS	267261	1	1								
SAN JACINTO	267284	1	1								
SARCOBATUS	267319	1	1								
SAVAL RCH	267324	1	1								
SCHURZ	267358	1	1								
SEARCHLIGHT	267369	1	1								
SEVENTY ONE RCH	267397	1	1			1	1	1	1	1	1
SHELDON	267443	1	1								
SHOSHONE 5 N	267450	1	1								
SILVERPEAK	267463	1	1								
SMITH 1 N	267609	1	1			1	1	1	1	1	1
SMITH 6 N	267612	1	1			1	1	1	1	1	1
SMOKE CREEK ESPIL	267618	1	1								
SMOKEY VALLEY	267620	1	1			1	1	1	1	1	1
SNOWBALL RCH	267640	1	1								
SOUTH FORK SP	267690	1	1			1	1	1	1	1	1
SPRING VALLEY SP	267750	1	1								
STATELINE-HARRAH'S	267806	1	1								
STEAD	267820	1	1			1	1	1	1	1	1
SULPHUR	267873	1	1								
SUNNYSIDE	267908	1	1								
SUTCLIFFE	267953	1	1								
TEMPIUTE 4 NW	267983	1	1								
THORNE	268034	1	1								
TONOPAH	268170	1	1			1	1	1	1	1	1
TOPAZ LAKE 3N	268186	1	1			1	1	1	1	1	1
TOPAZ LAKE 4 N	268202	1	1			1	1	1	1	1	1
TUSCARORA	268346	1	1								
TWIN SPRING FALLINI	268443	1	1								
UNIV OF NEVADA EXP FM	268500	1	1			1	1	1	1	1	1
URSINE	268538	1	1								
VALLEY OF FIRE SP	268588	1	1								
VIRGINIA CITY	268761	1	1			1	1	1	1	1	1
VYA	268810	1	1								
WABUSKA 6 SE	268822	1	1			1	1	1	1	1	1
WADSWORTH	268834	1	1			1	1	1	1	1	1
WADSWORTH 4 N	268838	1	1								
WELLINGTON RS	268977	1	1			1	1	1	1	1	1
WELLS	268988	1	1			1	1	1	1	1	1
WILDHORSE RSVR	269072	1	1								
WILKINS	269122	1	1								
WILLOW SPRINGS	269137	1	1								
WINNEMUCCA #2	269168	1	1			1	1	1	1	1	1
WINNEMUCCA MUNI AP	269171	1	1			1	1	1	1	1	1
YERINGTON	269229	1	1			1	1	1	1	1	1
LAS VEGAS	23112	1	1			1	1	1	1	1	1
RED ROCK WC	29999	1	1			1	1	1	1	1	1
WASHOE VALLEY WC	39999	1	1			1	1	1	1	1	1

Appendix 10 cont. Crop or land cover class simulated for each station (1 = yes, 0 = no).

Station Name	Station Number	Grass Pasture - high management	Grass Pasture - low management	Grass - Turf	Orchards - Apples and Cherries w/ground cover	Orchards - Apples and Cherries w/no ground cover	Garden Vegetables - general	Onions	Melons
ADAVEN	260046	1	1	1					
ALAMO	260099	1	1	1	1	1	1	1	
AMARGOSA FARMS-GAREY	260150	1	1	1	1	1	1	1	
ANTELOPE VALLEY FARR	260282	1	1	1					
ARTHUR 4 NW	260438	1	1	1	1	1			
AUSTIN #2	260507	1	1	1					
BASALT	260668	1	1	1					
BATTLE MTN	260688	1	1	1	1	1	1	1	
BATTLE MTN AP	260691	1	1	1	1	1	1	1	
BEATTY	260715	1	1	1	1	1	1	1	
BEATTY 8 N	260718	1	1	1	1	1	1	1	
BEOWAWE	260795	1	1	1					
BEOWAWE U OF N RCH	260800	1	1	1					
BLUE EAGLE RCH HANKS	260955	1	1	1					
BLUE JAY HWY STN	260961	1	1	1					
BOULDER CITY	261071	1	1	1	1	1	1		
BRINKERHOFF RCH	261160	1	1	1					
BUFFALO RCH	261311	1	1	1					
BUNKERVILLE	261327	1	1	1	1	1	1	1	
CALIENTE	261358	1	1	1	1	1	1	1	
CALLVILLE BAY	261371	1	1	1					
CARLIN NEWMONT MINE	261415	1	1	1					
CARSON CITY	261485	1	1	1					
CATHEDRAL GORGE SP	261590	1	1	1	1	1	1	1	
CENTRAL NEVADA FLD LAB	261630	1	1	1	1	1	1		
CHARLESTON	261660	1	1	1					
CLOVER VALLEY	261740	1	1	1	1	1	1		
COALDALE JUNCTION	261755	1	1	1					
CONTACT	261905	1	1	1					
CORTEZ GOLD MINE	261975	1	1	1					
CURRANT	262078	1	1	1	1	1	1	1	
CURRANT HWY STN	262091	1	1	1					
CURRIE HWY STN	262096	1	1	1					
DAGGET PASS	262119	1	1	1					
DENIO	262229	1	1	1	1	1	1	1	
DESERT NWR	262243	1	1	1					
DIABLO	262276	1	1	1					
DIAMOND VALLEY USDA	262296	1	1	1	1	1	1		
DUCKWATER	262390	1	1	1	1	1	1	1	
DUFURRENA	262394	1	1	1					
DYER	262431	1	1	1	1	1	1	1	
EASTGATE	262477	1	1	1					
ECHO BAY	262497	1	1	1					
ELGIN	262557	1	1	1	1	1	1	1	
ELGIN 3 SE	262562	1	1	1	1	1	1	1	
ELKO	262570	1	1	1	1	1	1		

Appendix 10 cont. Crop or land cover class simulated for each station (1 = yes, 0 = no).

Station Name	Station Number	Grass Pasture - high management	Grass Pasture - low management	Grass - Turf	Orchards - Apples and Cherries w/ground cover	Orchards - Apples and Cherries w/no ground cover	Garden Vegetables - general	Onions	Melons
ELKO RGNL AP	262573	1	1	1	1	1	1		
ELY 6 NE	262626	1	1	1	1	1	1		
ELY YELLAND FLD AP	262631	1	1	1	1	1	1		
EMIGRANT PASS HWY STN	262656	1	1	1					
EMPIRE	262662	1	1	1	1	1	1	1	
EUREKA	262708	1	1	1					
FALLON EXP STN	262780	1	1	1	1	1	1	1	1
FERGUSON SPRINGS HMS	262820	1	1	1					
FERNLEY	262840	1	1	1	1	1	1	1	1
FISH CREEK RCH	262860	1	1	1	1	1	1		
GERLACH	263090	1	1	1	1	1	1	1	
GEYSER RCH	263101	1	1	1	1	1	1	1	
GIBBS RCH	263114	1	1	1					
GLENBROOK	263205	1	1	1					
GOLCONDA	263245	1	1	1					
GOLDFIELD	263285	1	1	1					
GOODSPRINGS	263316	1	1	1					
GREAT BASIN NP	263340	1	1	1					
HAWTHORNE	263512	1	1	1					
HAWTHORNE AP	263515	1	1	1					
HIKO	263671	1	1	1	1	1	1	1	
HUMBOLDT FLD	263853	1	1	1					
I-L RCH	263940	1	1	1					
IMLAY	263957	1	1	1					
INDIAN SPRINGS	263980	1	1	1					
JACKPOT	264016	1	1	1					
JARBRIDGE 4 N	264038	1	1	1					
JARBIDGE 7 N	264039	1	1	1					
JIGGS 8 SSE ZAGA	264095	1	1	1					
JUNGO MEYER RCH	264108	1	1	1					
KIMBERLY	264199	1	1	1					
KNOLL CREEK FLD STN	264268	1	1	1					
KYLE CANYON RS	264314	1	1	1					
LAGES	264341	1	1	1					
LAHONTAN DAM	264349	1	1	1					
LAKE VALLEY STEWARD	264384	1	1	1					
LAMOILLE YOST	264394	1	1	1	1	1			
LAMOILLE PH	264395	1	1	1	1	1			
LAS VEGAS	264429	1	1	1	1	1	1		
LAS VEGAS WB AP	264436	1	1	1	1	1	1		
LAS VEGAS NWFO	264439	1	1	1	1	1	1		
LATHROP WELLS	264457	1	1	1	1	1	1	1	
LAUGHLIN	264480	1	1	1	1	1	1		
LEHMAN CAVES NM	264514	1	1	1	1	1	1		
LEONARD CREEK RCH	264527	1	1	1	1	1	1	1	
LEWERS RCH	264542	1	1	1					
LITTLE RED ROCK	264600	1	1	1					
LOGANDALE	264651	1	1	1	1	1	1	1	

Appendix 10 cont. Crop or land cover class simulated for each station (1 = yes, 0 = no).

Station Name	Station Number	Grass Pasture - high management	Grass Pasture - low management	Grass - Turf	Orchards - Apples and Cherries w/ground cover	Orchards - Apples and Cherries w/no ground cover	Garden Vegetables - general	Onions	Melons
LOVELOCK DERBY FLD	264700	1	1	1	1	1	1	1	
LUND	264745	1	1	1	1	1	1	1	
MALA VISTA RCH	264824	1	1	1	1	1	1	1	
MARLETTE LAKE	264858	1	1	1					
MCDERMITT	264935	1	1	1	1	1	1	1	
MCGILL	264950	1	1	1	1	1	1	1	
MESQUITE	265085	1	1	1	1	1	1	1	
METROPOLIS	265092	1	1	1	1	1	1	1	
MIDAS 4 SE	265105	1	1	1					
MIDDLEGATE-LOWERY	265132	1	1	1					
MINA	265168	1	1	1					
MINDEN	265191	1	1	1	1	1	1	1	
MONTELLO 2 SE	265352	1	1	1	1	1	1	1	
MONTGOMERY MNTC STN	265362	1	1	1					
MOORMAN RCH	265371	1	1	1					
MTN CITY RS	265392	1	1	1					
MT CHARLESTON FS	265400	1	1	1					
MT ROSE BOWL	265440	1	1	1					
NIXON	265605	1	1	1	1	1	1	1	
NORTH LAS VEGAS	265705	1	1	1	1	1	1		
OASIS	265722	1	1	1					
OLD RUTH	265760	1	1	1					
OROVADA 3 W	265818	1	1	1	1	1	1	1	
OVERTON	265846	1	1	1	1	1	1	1	1
OWYHEE	265869	1	1	1	1	1	1		
PAHRANAGAT WR	265880	1	1	1	1	1	1	1	
PAHRUMP	265890	1	1	1	1	1	1	1	
PAHUTE MEADOWS RCH	265907	1	1	1					
PALMETTO	265931	1	1	1					
PARADISE VALLEY 1 NW	266005	1	1	1	1	1	1	1	
PARIS RCH	266055	1	1	1					
PENOYER VALLEY	266130	1	1	1					
PEQUOP	266148	1	1	1					
PILOT VALLEY-LEE	266228	1	1	1					
PINE VALLEY BAILEY RCH	266242	1	1	1	1	1	1		
PIOCHE	266252	1	1	1	1	1	1	1	
QUINN RVR CROSSING	266504	1	1	1	1	1	1	1	
RAND RCH PALISADE	266574	1	1	1	1	1	1	1	
RATTLESNAKE	266630	1	1	1					
RED ROCK CANYON SP	266691	1	1	1					
REESE RIVER	266746	1	1	1	1	1	1	1	
REESE VALLEY CARPER	266748	1	1	1					
RENO TAHOE INTL AP	266779	1	1	1	1	1	1	1	
RENO WFO	266791	1	1	1	1	1	1	1	
RUBY LAKE	267123	1	1	1	1	1	1		
RUTH	267175	1	1	1					
RYNDON	267188	1	1	1	1	1	1	1	
RYE PATCH DAM	267192	1	1	1					

Appendix 10 cont. Crop or land cover class simulated for each station (1 = yes, 0 = no).

Station Name	Station Number	Grass Pasture - high management	Grass Pasture - low management	Grass - Turf	Orchards - Apples and Cherries w/ground cover	Orchards - Apples and Cherries w/no ground cover	Garden Vegetables - general	Onions	Melons
SAND PASS	267261	1	1	1					
SAN JACINTO	267284	1	1	1					
SARCOBATUS	267319	1	1	1					
SAVAL RCH	267324	1	1	1					
SCHURZ	267358	1	1	1					
SEARCHLIGHT	267369	1	1	1					
SEVENTY ONE RCH	267397	1	1	1	1	1			
SHELDON	267443	1	1	1					
SHOSHONE 5 N	267450	1	1	1					
SILVERPEAK	267463	1	1	1					
SMITH 1 N	267609	1	1	1	1	1	1	1	
SMITH 6 N	267612	1	1	1	1	1	1	1	
SMOKE CREEK ESPIL	267618	1	1	1					
SMOKEY VALLEY	267620	1	1	1	1	1	1		
SNOWBALL RCH	267640	1	1	1					
SOUTH FORK SP	267690	1	1	1	1	1	1	1	
SPRING VALLEY SP	267750	1	1	1					
STATELINE-HARRAH'S	267806	1	1	1					
STEAD	267820	1	1	1	1	1	1		
SULPHUR	267873	1	1	1					
SUNNYSIDE	267908	1	1	1					
SUTCLIFFE	267953	1	1	1					
TEMPIUTE 4 NW	267983	1	1	1					
THORNE	268034	1	1	1					
TONOPAH	268170	1	1	1	1	1	1	1	
TOPAZ LAKE 3N	268186	1	1	1	1	1	1	1	
TOPAZ LAKE 4 N	268202	1	1	1	1	1	1	1	
TUSCARORA	268346	1	1	1					
TWIN SPRING FALLINI	268443	1	1	1					
UNIV OF NEVADA EXP FM	268500	1	1	1	1	1	1	1	
URSINE	268538	1	1	1					
VALLEY OF FIRE SP	268588	1	1	1					
VIRGINIA CITY	268761	1	1	1	1	1	1	1	
VYA	268810	1	1	1					
WABUSKA 6 SE	268822	1	1	1	1	1	1	1	
WADSWORTH	268834	1	1	1	1	1	1	1	
WADSWORTH 4 N	268838	1	1	1					
WELLINGTON RS	268977	1	1	1	1	1	1	1	
WELLS	268988	1	1	1	1	1			
WILDHORSE RSVR	269072	1	1	1					
WILKINS	269122	1	1	1					
WILLOW SPRINGS	269137	1	1	1					
WINNEMUCCA #2	269168	1	1	1	1	1	1		
WINNEMUCCA MUNI AP	269171	1	1	1	1	1	1		
YERINGTON	269229	1	1	1	1	1	1	1	
LAS VEGAS	23112	1	1	1	1	1	1		
RED ROCK WC	29999	1	1	1	1	1	1		
WASHOE VALLEY WC	39999	1	1	1	1	1	1		

Appendix 10 cont. Crop or land cover class simulated for each station (1 = yes, 0 = no).

Station Name	Station Number	Grapes--wine	Alfalfa Seed	Peas--fresh	Peas--seed	Potatoes--processing (early harvest)	Potatoes--cold pack (late harvest)	Sugar beets	Hops
ADAVEN	260046								
ALAMO	260099		1			1	1	1	
AMARGOSA FARMS-GAREY	260150		1			1	1	1	
ANTELOPE VALLEY FARR	260282								
ARTHUR 4 NW	260438		1						
AUSTIN #2	260507								
BASALT	260668								
BATTLE MTN	260688		1			1	1		
BATTLE MTN AP	260691		1			1	1		
BEATTY	260715		1			1	1	1	
BEATTY 8 N	260718		1			1	1	1	
BEOWAWE	260795								
BEOWAWE U OF N RCH	260800								
BLUE EAGLE RCH HANKS	260955								
BLUE JAY HWY STN	260961								
BOULDER CITY	261071		1						
BRINKERHOFF RCH	261160								
BUFFALO RCH	261311								
BUNKERVILLE	261327		1			1	1	1	
CALIENTE	261358		1			1	1	1	
CALLVILLE BAY	261371								
CARLIN NEWMONT MINE	261415								
CARSON CITY	261485								
CATHEDRAL GORGE SP	261590		1			1	1	1	
CENTRAL NEVADA FLD LAB	261630		1						
CHARLESTON	261660								
CLOVER VALLEY	261740		1						
COALDALE JUNCTION	261755								
CONTACT	261905								
CORTEZ GOLD MINE	261975								
CURRANT	262078		1			1	1	1	
CURRANT HWY STN	262091								
CURRIE HWY STN	262096								
DAGGET PASS	262119								
DENIO	262229		1			1	1	1	
DESERT NWR	262243								
DIABLO	262276								
DIAMOND VALLEY USDA	262296		1						
DUCKWATER	262390		1			1	1	1	
DUFURRENA	262394								
DYER	262431		1			1	1	1	
EASTGATE	262477								
ECHO BAY	262497								
ELGIN	262557		1			1	1	1	
ELGIN 3 SE	262562		1			1	1	1	

Appendix 10 cont. Crop or land cover class simulated for each station (1 = yes, 0 = no).

Station Name	Station Number	Grapes--wine	Alfalfa Seed	Peas--fresh	Peas--seed	Potatoes--processing (early harvest)	Potatoes--cold pack (late harvest)	Sugar beets	Hops
ELKO	262570		1						
ELKO RGNL AP	262573		1						
ELY 6 NE	262626		1						
ELY YELLAND FLD AP	262631		1						
EMIGRANT PASS HWY STN	262656								
EMPIRE	262662		1			1	1	1	
EUREKA	262708								
FALLON EXP STN	262780	1	1	1	1	1	1	1	
FERGUSON SPRINGS HMS	262820								
FERNLEY	262840	1	1	1	1	1	1	1	
FISH CREEK RCH	262860		1						
GERLACH	263090		1			1	1	1	
GEYSER RCH	263101		1			1	1	1	
GIBBS RCH	263114								
GLENBROOK	263205								
GOLCONDA	263245								
GOLDFIELD	263285								
GOODSPRINGS	263316								
GREAT BASIN NP	263340								
HAWTHORNE	263512								
HAWTHORNE AP	263515								
HIKO	263671		1			1	1	1	
HUMBOLDT FLD	263853								
I-L RCH	263940								
IMLAY	263957								
INDIAN SPRINGS	263980								
JACKPOT	264016								
JARBRIDGE 4 N	264038								
JARBIDGE 7 N	264039								
JIGGS 8 SSE ZAGA	264095								
JUNGO MEYER RCH	264108								
KIMBERLY	264199								
KNOLL CREEK FLD STN	264268								
KYLE CANYON RS	264314								
LAGES	264341								
LAHONTAN DAM	264349								
LAKE VALLEY STEWARD	264384								
LAMOILLE YOST	264394		1						
LAMOILLE PH	264395		1						
LAS VEGAS	264429		1						
LAS VEGAS WB AP	264436		1						
LAS VEGAS NWFO	264439		1						
LATHROP WELLS	264457		1						
LAUGHLIN	264480		1						
LEHMAN CAVES NM	264514		1			1	1		
LEONARD CREEK RCH	264527		1			1	1	1	
LEWERS RCH	264542								
LITTLE RED ROCK	264600								

Appendix 10 cont. Crop or land cover class simulated for each station (1 = yes, 0 = no).

Station Name	Station Number	Grapes--wine	Alfalfa Seed	Peas--fresh	Peas--seed	Potatoes--processing (early harvest)	Potatoes--cold pack (late harvest)	Sugar beets	Hops
LOGANDALE	264651	1	1	1	1	1	1	1	1
LOVELOCK DERBY FLD	264700	1	1	1	1	1	1	1	1
LUND	264745		1			1	1	1	1
MALA VISTA RCH	264824		1			1	1	1	
MARLETTE LAKE	264858								
MCDERMITT	264935		1			1	1	1	1
MCGILL	264950		1			1	1	1	1
MESQUITE	265085		1			1	1	1	
METROPOLIS	265092		1			1	1	1	
MIDAS 4 SE	265105								
MIDDLEGATE-LOWERY	265132								
MINA	265168								
MINDEN	265191		1			1	1	1	1
MONTELLO 2 SE	265352		1			1	1	1	1
MONTGOMERY MNTC STN	265362								
MOORMAN RCH	265371								
MTN CITY RS	265392								
MT CHARLESTON FS	265400								
MT ROSE BOWL	265440								
NIXON	265605		1			1	1	1	1
NORTH LAS VEGAS	265705		1						
OASIS	265722								
OLD RUTH	265760								
OROVADA 3 W	265818		1	1	1	1	1	1	1
OVERTON	265846	1	1	1	1	1	1	1	1
OWYHEE	265869		1						1
PAHRANAGAT WR	265880		1			1	1	1	
PAHRUMP	265890		1			1	1	1	1
PAHUTE MEADOWS RCH	265907								
PALMETTO	265931								
PARADISE VALLEY 1 NW	266005		1			1	1	1	1
PARIS RCH	266055								
PENOYER VALLEY	266130								
PEQUOP	266148								
PILOT VALLEY-LEE	266228								
PINE VALLEY BAILEY RCH	266242		1						
PIOCHE	266252		1			1	1	1	
QUINN RVR CROSSING	266504		1			1	1	1	
RAND RCH PALISADE	266574		1			1	1	1	
RATTLESNAKE	266630								
RED ROCK CANYON SP	266691								
REESE RIVER	266746		1			1	1	1	
REESE VALLEY CARPER	266748								
RENO TAHOE INTL AP	266779	1	1			1	1		
RENO WFO	266791	1	1			1	1		
RUBY LAKE	267123		1						
RUTH	267175								
RYNDON	267188		1			1	1	1	

Appendix 10 cont. Crop or land cover class simulated for each station (1 = yes, 0 = no).

Station Name	Station Number	Grapes--wine	Alfalfa Seed	Peas--fresh	Peas--seed	Potatoes--processing (early harvest)	Potatoes--cold pack (late harvest)	Sugar beets	Hops
RYE PATCH DAM	267192								
SAND PASS	267261								
SAN JACINTO	267284								
SARCOBATUS	267319								
SAVAL RCH	267324								
SCHURZ	267358								
SEARCHLIGHT	267369								
SEVENTY ONE RCH	267397		1						
SHELDON	267443								
SHOSHONE 5 N	267450								
SILVERPEAK	267463								
SMITH 1 N	267609	1	1			1	1		
SMITH 6 N	267612	1	1			1	1		
SMOKE CREEK ESPIL	267618								
SMOKEY VALLEY	267620		1						
SNOWBALL RCH	267640								
SOUTH FORK SP	267690		1			1	1	1	
SPRING VALLEY SP	267750								
STATELINE-HARRAH'S	267806								
STEAD	267820		1						
SULPHUR	267873								
SUNNYSIDE	267908								
SUTCLIFFE	267953								
TEMPIUTE 4 NW	267983								
THORNE	268034								
TONOPAH	268170		1			1	1		
TOPAZ LAKE 3N	268186		1			1	1		
TOPAZ LAKE 4 N	268202		1			1	1		
TUSCARORA	268346								
TWIN SPRING FALLINI	268443								
UNIV OF NEVADA EXP FM	268500		1			1	1		
URSINE	268538								
VALLEY OF FIRE SP	268588								
VIRGINIA CITY	268761		1			1	1		
VYA	268810								
WABUSKA 6 SE	268822		1			1	1		
WADSWORTH	268834		1			1	1		
WADSWORTH 4 N	268838								
WELLINGTON RS	268977		1			1	1		
WELLS	268988		1						
WILDHORSE RSVR	269072								
WILKINS	269122								
WILLOW SPRINGS	269137								
WINNEMUCCA #2	269168		1			1	1		
WINNEMUCCA MUNI AP	269171		1			1	1		
YERINGTON	269229		1			1	1		
LAS VEGAS	23112		1						
RED ROCK WC	29999		1			1	1		
WASHOE VALLEY WC	39999		1			1	1		

Appendix 10 cont. Crop or land cover class simulated for each station (1 = yes, 0 = no).

Station Name	Station Number	Sunflower -irrigated	Safflower -irrigated	Canola	Garlic	Bare soil	Mulched soil, including wheat stubble	Dormant turf (winter time)	Open water - shallow systems/ponds
ADAVEN	260046					1	1	1	1
ALAMO	260099	1	1	1	1	1	1	1	1
AMARGOSA FARMS-GAREY	260150	1	1	1		1	1	1	1
ANTELOPE VALLEY FARR	260282					1	1	1	1
ARTHUR 4 NW	260438					1	1	1	1
AUSTIN #2	260507					1	1	1	1
BASALT	260668					1	1	1	1
BATTLE MTN	260688					1	1	1	1
BATTLE MTN AP	260691					1	1	1	1
BEATTY	260715	1	1	1	1	1	1	1	1
BEATTY 8 N	260718	1	1	1	1	1	1	1	1
BEOWAWE	260795					1	1	1	1
BEOWAWE U OF N RCH	260800					1	1	1	1
BLUE EAGLE RCH HANKS	260955					1	1	1	1
BLUE JAY HWY STN	260961					1	1	1	1
BOULDER CITY	261071	1	1	1		1	1	1	1
BRINKERHOFF RCH	261160					1	1	1	1
BUFFALO RCH	261311					1	1	1	1
BUNKERVILLE	261327	1	1	1	1	1	1	1	1
CALIENTE	261358	1	1	1	1	1	1	1	1
CALLVILLE BAY	261371					1	1	1	1
CARLIN NEWMONT MINE	261415					1	1	1	1
CARSON CITY	261485					1	1	1	1
CATHEDRAL GORGE SP	261590	1	1	1		1	1	1	1
CENTRAL NEVADA FLD LAB	261630					1	1	1	1
CHARLESTON	261660					1	1	1	1
CLOVER VALLEY	261740					1	1	1	1
COALDALE JUNCTION	261755					1	1	1	1
CONTACT	261905					1	1	1	1
CORTEZ GOLD MINE	261975					1	1	1	1
CURRANT	262078	1	1	1		1	1	1	1
CURRANT HWY STN	262091					1	1	1	1
CURRIE HWY STN	262096					1	1	1	1
DAGGET PASS	262119					1	1	1	1
DENIO	262229	1	1	1	1	1	1	1	1
DESERT NWR	262243					1	1	1	1
DIABLO	262276					1	1	1	1
DIAMOND VALLEY USDA	262296					1	1	1	1
DUCKWATER	262390	1	1	1	1	1	1	1	1
DUFURRENA	262394					1	1	1	1
DYER	262431	1	1	1	1	1	1	1	1
EASTGATE	262477					1	1	1	1
ECHO BAY	262497					1	1	1	1
ELGIN	262557	1	1	1	1	1	1	1	1

Appendix 10 cont. Crop or land cover class simulated for each station (1 = yes, 0 = no).

Station Name	Station Number	Sunflower -irrigated	Safflower -irrigated	Canola	Garlic	Bare soil	Mulched soil, including wheat stubble	Dormant turf (winter time)	Open water - shallow systems/ponds
ELGIN 3 SE	262562	1	1	1	1	1	1	1	1
ELKO	262570					1	1	1	1
ELKO RGNL AP	262573					1	1	1	1
ELY 6 NE	262626					1	1	1	1
ELY YELLAND FLD AP	262631					1	1	1	1
EMIGRANT PASS HWY STN	262656					1	1	1	1
EMPIRE	262662	1	1	1	1	1	1	1	1
EUREKA	262708					1	1	1	1
FALLON EXP STN	262780	1	1	1	1	1	1	1	1
FERGUSON SPRINGS HMS	262820					1	1	1	1
FERNLEY	262840	1	1	1	1	1	1	1	1
FISH CREEK RCH	262860					1	1	1	1
GERLACH	263090	1	1	1	1	1	1	1	1
GEYSER RCH	263101	1	1	1	1	1	1	1	1
GIBBS RCH	263114					1	1	1	1
GLENBROOK	263205					1	1	1	1
GOLCONDA	263245					1	1	1	1
GOLDFIELD	263285					1	1	1	1
GOODSPRINGS	263316					1	1	1	1
GREAT BASIN NP	263340					1	1	1	1
HAWTHORNE	263512					1	1	1	1
HAWTHORNE AP	263515					1	1	1	1
HIKO	263671	1	1	1		1	1	1	1
HUMBOLDT FLD	263853					1	1	1	1
I-L RCH	263940					1	1	1	1
IMLAY	263957					1	1	1	1
INDIAN SPRINGS	263980					1	1	1	1
JACKPOT	264016					1	1	1	1
JARBRIDGE 4 N	264038					1	1	1	1
JARBIDGE 7 N	264039					1	1	1	1
JIGGS 8 SSE ZAGA	264095					1	1	1	1
JUNGO MEYER RCH	264108					1	1	1	1
KIMBERLY	264199					1	1	1	1
KNOLL CREEK FLD STN	264268					1	1	1	1
KYLE CANYON RS	264314					1	1	1	1
LAGES	264341					1	1	1	1
LAHONTAN DAM	264349					1	1	1	1
LAKE VALLEY STEWARD	264384					1	1	1	1
LAMOILLE YOST	264394					1	1	1	1
LAMOILLE PH	264395					1	1	1	1
LAS VEGAS	264429	1	1	1		1	1	1	1
LAS VEGAS WB AP	264436	1	1	1		1	1	1	1
LAS VEGAS NWFO	264439	1	1	1		1	1	1	1
LATHROP WELLS	264457	1	1	1		1	1	1	1
LAUGHLIN	264480	1	1	1		1	1	1	1
LEHMAN CAVES NM	264514					1	1	1	1
LEONARD CREEK RCH	264527	1	1	1		1	1	1	1
LEWERS RCH	264542					1	1	1	1

Appendix 10 cont. Crop or land cover class simulated for each station (1 = yes, 0 = no).

Station Name	Station Number	Sunflower -irrigated	Safflower -irrigated	Canola	Garlic	Bare soil	Mulched soil, including wheat stubble	Dormant turf (winter time)	Open water - shallow systems/ponds
LITTLE RED ROCK	264600					1	1	1	1
LOGANDALE	264651	1	1	1		1	1	1	1
LOVELOCK DERBY FLD	264700	1	1	1	1	1	1	1	1
LUND	264745				1	1	1	1	1
MALA VISTA RCH	264824	1	1	1		1	1	1	1
MARLETTE LAKE	264858					1	1	1	1
MCDERMITT	264935					1	1	1	1
MCGILL	264950					1	1	1	1
MESQUITE	265085	1	1	1		1	1	1	1
METROPOLIS	265092	1	1	1		1	1	1	1
MIDAS 4 SE	265105					1	1	1	1
MIDDLEGATE-LOWERY	265132					1	1	1	1
MINA	265168					1	1	1	1
MINDEN	265191				1	1	1	1	1
MONTELLO 2 SE	265352				1	1	1	1	1
MONTGOMERY MNTC STN	265362					1	1	1	1
MOORMAN RCH	265371					1	1	1	1
MTN CITY RS	265392					1	1	1	1
MT CHARLESTON FS	265400					1	1	1	1
MT ROSE BOWL	265440					1	1	1	1
NIXON	265605				1	1	1	1	1
NORTH LAS VEGAS	265705	1	1	1		1	1	1	1
OASIS	265722					1	1	1	1
OLD RUTH	265760					1	1	1	1
OROVADA 3 W	265818				1	1	1	1	1
OVERTON	265846	1	1	1	1	1	1	1	1
OWYHEE	265869					1	1	1	1
PAHRANAGAT WR	265880	1	1	1	1	1	1	1	1
PAHRUMP	265890	1	1	1	1	1	1	1	1
PAHUTE MEADOWS RCH	265907					1	1	1	1
PALMETTO	265931					1	1	1	1
PARADISE VALLEY 1 NW	266005	1	1	1	1	1	1	1	1
PARIS RCH	266055					1	1	1	1
PENOYER VALLEY	266130					1	1	1	1
PEQUOP	266148					1	1	1	1
PILOT VALLEY-LEE	266228					1	1	1	1
PINE VALLEY BAILEY RCH	266242					1	1	1	1
PIOCHE	266252	1	1	1	1	1	1	1	1
QUINN RVR CROSSING	266504	1	1	1		1	1	1	1
RAND RCH PALISADE	266574	1	1	1		1	1	1	1
RATTLESNAKE	266630					1	1	1	1
RED ROCK CANYON SP	266691					1	1	1	1
REESE RIVER	266746	1	1	1		1	1	1	1
REESE VALLEY CARPER	266748					1	1	1	1
RENO TAHOE INTL AP	266779				1	1	1	1	1
RENO WFO	266791				1	1	1	1	1
RUBY LAKE	267123					1	1	1	1
RUTH	267175					1	1	1	1

Appendix 10 cont. Crop or land cover class simulated for each station (1 = yes, 0 = no).

Station Name	Station Number	Sunflower -irrigated	Safflower -irrigated	Canola	Garlic	Bare soil	Mulched soil, including wheat stubble	Dormant turf (winter time)	Open water - shallow systems/ponds
RYNDON	267188	1	1	1		1	1	1	1
RYE PATCH DAM	267192					1	1	1	1
SAND PASS	267261					1	1	1	1
SAN JACINTO	267284					1	1	1	1
SARCOBATUS	267319					1	1	1	1
SAVAL RCH	267324					1	1	1	1
SCHURZ	267358					1	1	1	1
SEARCHLIGHT	267369					1	1	1	1
SEVENTY ONE RCH	267397					1	1	1	1
SHELDON	267443					1	1	1	1
SHOSHONE 5 N	267450					1	1	1	1
SILVERPEAK	267463					1	1	1	1
SMITH 1 N	267609	1	1	1	1	1	1	1	1
SMITH 6 N	267612	1	1	1	1	1	1	1	1
SMOKE CREEK ESPIL	267618					1	1	1	1
SMOKEY VALLEY	267620					1	1	1	1
SNOWBALL RCH	267640					1	1	1	1
SOUTH FORK SP	267690				1	1	1	1	1
SPRING VALLEY SP	267750					1	1	1	1
STATELINE-HARRAH'S	267806					1	1	1	1
STEAD	267820					1	1	1	1
SULPHUR	267873					1	1	1	1
SUNNYSIDE	267908					1	1	1	1
SUTCLIFFE	267953					1	1	1	1
TEMPIUTE 4 NW	267983					1	1	1	1
THORNE	268034					1	1	1	1
TONOPAH	268170				1	1	1	1	1
TOPAZ LAKE 3N	268186				1	1	1	1	1
TOPAZ LAKE 4 N	268202				1	1	1	1	1
TUSCARORA	268346					1	1	1	1
TWIN SPRING FALLINI	268443					1	1	1	1
UNIV OF NEVADA EXP FM	268500					1	1	1	1
URSINE	268538					1	1	1	1
VALLEY OF FIRE SP	268588					1	1	1	1
VIRGINIA CITY	268761					1	1	1	1
VYA	268810					1	1	1	1
WABUSKA 6 SE	268822					1	1	1	1
WADSWORTH	268834					1	1	1	1
WADSWORTH 4 N	268838					1	1	1	1
WELLINGTON RS	268977	1	1	1	1	1	1	1	1
WELLS	268988					1	1	1	1
WILDHORSE RSVR	269072					1	1	1	1
WILKINS	269122					1	1	1	1
WILLOW SPRINGS	269137					1	1	1	1
WINNEMUCCA #2	269168					1	1	1	1
WINNEMUCCA MUNI AP	269171					1	1	1	1
YERINGTON	269229	1	1	1	1	1	1	1	1
LAS VEGAS	23112					1	1	1	1

Appendix 10 cont. Crop or land cover class simulated for each station (1 = yes, 0 = no).

Station Name	Station Number	Sunflower -irrigated	Safflower -irrigated	Canola	Garlic	Bare soil	Mulched soil, including wheat stubble	Dormant turf (winter time)	Open water - shallow systems/ponds
RED ROCK WC	29999					1	1	1	1
WASHOE VALLEY WC	39999					1	1	1	1

Appendix 11a. Mean annual ET_{os} and ET_{act} for each NWS weather station, sorted by station name. * Station was used in averaging or assigning ET_{os} and ET_{act} to respective hydrographic areas. Number of years used for average and start and end years listed are for alfalfa and may vary slightly for other crop types due to possible missing data within crop specific growing seasons. See statistic data files for further details.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
260046	ADAVEN	Garden Valley	172	30	1947	1978	3.8	3.1	3.1	2.5	2.9	2.9	4.0
260099	ALAMO*	Pahranagat Valley	209	29	1923	1958	5.6	5.0	4.5	3.6	4.2	4.6	5.8
260150	AMARGOSA FARMS-GAREY*	Amargosa Desert	230	28	1966	2005	5.8	5.6	4.8	3.9	3.7	5.6	6.1
260282	ANTELOPE VALLEY FARR*	Antelope Valley	57	8	1985	1998	4.4	3.6	3.6	3.0	3.5	3.5	4.6
260438	ARTHUR 4 NW*	Ruby Valley	176	30	1972	2007	3.8	3.1	3.0	2.5	2.9	2.8	4.0
260507	AUSTIN #2*	Upper Reese River Valley	56	30	1972	2007	4.1	3.4	3.3	2.7	3.1	3.1	4.3
260668	BASALT	Teels Marsh Valley	114	10	1942	1957	4.4	3.4	3.4	2.7	3.3	3.2	4.7
260691	BATTLE MTN AP*	Lower Reese River Valley	59	30	1974	2006	4.3	3.8	3.7	3.1	3.5	3.6	4.5
260688	BATTLE MTN*	Clovers Area	64	25	1903	1944	4.6	4.0	3.9	3.2	3.7	3.8	4.8
260718	BEATTY 8 N*	Oasis Valley	228	28	1973	2004	5.3	4.9	4.3	3.5	4.1	4.8	5.6
260715	BEATTY*	Oasis Valley	228	30	1925	1972	5.6	5.2	4.6	3.7	4.2	5.1	5.9
260800	BEOWAWE U OF N RCH*	Grass Valley	138	28	1973	2007	4.2	3.5	3.4	2.8	3.3	3.3	4.4
260795	BEOWAWE*	Crescent Valley	54	30	1976	2006	4.3	3.6	3.6	3.0	3.5	3.5	4.5

Appendix 11a cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
260955	BLUE EAGLE RCH HANKS*	Railroad Valley	173B	23	1979	2007	4.8	4.4	4.3	3.6	4.2	4.3	5.0
260961	BLUE JAY HWY STN*	Hot Creek	156	7	1964	1983	4.8	3.9	3.9	3.2	3.7	3.7	5.0
261071	BOULDER CITY*	Eldorado Valley	167	30	1969	2004	5.4	5.1	4.3	3.5	3.1	5.0	5.7
261160	BRINKERHOFF RCH*	Dixie Valley	128	7	1967	1979	4.7	4.2	4.1	3.4	4.0	4.1	4.9
261311	BUFFALO RCH*	Buffalo Valley	131	7	1967	1978	4.0	3.7	3.5	2.9	3.3	3.5	4.2
261327	BUNKERVILLE*	Virgin River Valley	222	6	1980	2007	5.1	4.8	4.0	3.3	3.1	4.7	5.4
261358	CALIENTE*	Clover Valley	204	22	1904	2006	4.9	4.5	4.2	3.5	3.9	4.1	5.2
261371	CALLVILLE BAY*	Black Moutains Area	215	8	1990	2006	5.7	5.3	4.5	3.6	2.9	5.3	5.9
261415	CARLIN NEWMONT MINE	Boulder Flat	61	24	1967	1999	3.3	2.7	2.6	2.2	2.5	2.5	3.4
261485	CARSON CITY*	Eagle Valley	104	30	1974	2007	4.3	3.8	3.6	3.0	3.5	3.6	4.6
261590	CATHEDRAL GORGE SP*	Panaca Valley	203	4	2003	2007	5.0	4.7	4.4	3.7	4.3	4.3	5.3
261630	CENTRAL NEVADA FLD LAB*	Upper Reese River Valley	56	13	1966	1985	4.5	3.3	3.1	2.6	3.0	2.9	4.7
261660	CHARLESTON*	Bruneau River Area	38	4	1962	2005	4.1	2.3	2.0	1.7	1.7	1.8	4.3
261740	CLOVER VALLEY*	Clover Valley	177	30	1926	2007	4.0	3.3	3.3	2.7	3.1	3.1	4.2
261755	COALDALE JUNCTION*	Columbus Salt Marsh Valley	118	6	1942	1958	5.5	4.7	4.4	3.6	4.3	4.3	5.8

Appendix 11a cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
261905	CONTACT*	Salmon Falls Creek Area	40	30	1958	1998	4.2	3.4	3.2	2.7	3.0	3.0	4.4
261975	CORTEZ GOLD MINE*	Crescent Valley	54	10	1969	1979	4.1	3.6	3.5	2.9	3.4	3.3	4.3
262091	CURRANT HWY STN	Railroad Valley	173B	7	1964	1977	4.3	3.0	3.0	2.4	2.7	2.7	4.5
262078	CURRANT*	Railroad Valley	173B	4	1942	1946	4.4	3.8	3.8	3.1	3.7	3.6	4.6
262096	CURRIE HWY STN*	Steptoe Valley	179	10	1962	1989	4.7	3.2	3.1	2.5	2.9	2.8	4.9
262119	DAGGET PASS	Lake Tahoe Basin	90	5	1989	2005	3.3	2.3	2.2	1.7	2.0	2.0	3.4
262229	DENIO*	Pueblo Valley	1	30	1970	2005	4.3	3.7	3.6	3.0	3.5	3.5	4.5
262243	DESERT NWR*	Las Vegas Valley	212	30	1976	2007	6.2	5.9	5.1	4.1	4.2	5.7	6.5
262276	DIABLO*	Railroad Valley	173A	10	1960	1978	4.8	4.2	4.1	3.4	4.0	4.1	5.0
262296	DIAMOND VALLEY USDA*	Diamond Valley	153	19	1980	2006	4.1	3.2	3.1	2.5	3.0	2.9	4.3
262390	DUCKWATER*	Railroad Valley	173B	19	1967	1998	4.5	3.9	3.8	3.1	3.7	3.6	4.7
262394	DUFURRENA*	Virgin Valley	4	30	1967	2004	4.4	3.3	3.1	2.6	3.0	2.9	4.6
262431	DYER*	Fish Lake Valley	117	30	1974	2007	5.5	4.6	4.4	3.6	4.3	4.3	5.8
262477	EASTGATE*	Eastgate Valley Area	127	4	1957	1963	4.5	3.9	3.9	3.2	3.9	3.8	4.8
262497	ECHO BAY*	Black Moutains Area	215	10	1990	2003	5.3	5.0	4.2	3.4	2.8	4.9	5.6

Appendix 11a cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
262562	ELGIN 3 SE*	Lower Meadow Valley Wash	205	15	1966	1985	4.9	4.6	3.9	3.2	3.5	4.5	5.1
262557	ELGIN*	Lower Meadow Valley Wash	205	20	1986	2006	4.9	4.6	4.1	3.3	3.8	4.5	5.2
262573	ELKO RGNL AP*	Elko Segment	49	30	1978	2007	4.0	3.3	3.2	2.7	3.1	3.0	4.2
262570	ELKO*	Elko Segment	49	6	2000	2007	3.9	3.3	3.3	2.7	3.2	3.1	4.1
262626	ELY 6 NE	Steptoe Valley	179	5	2000	2005	4.8	4.0	3.9	3.3	3.7	3.7	5.1
262631	ELY YELLAND FLD AP*	Steptoe Valley	179	30	1976	2005	4.5	3.5	3.3	2.7	3.2	3.0	4.7
262656	EMIGRANT PASS HWY STN	Boulder Flat	61	27	1964	1999	3.8	3.2	3.2	2.6	3.0	3.0	4.0
262662	EMPIRE*	San Emidio Desert	22	6	1951	1976	4.4	3.9	3.9	3.2	3.8	3.9	4.6
262708	EUREKA	Diamond Valley	153	30	1975	2007	3.6	2.9	2.8	2.2	2.6	2.5	3.8
262780	FALLON EXP STN*	Carson Desert	101	30	1973	2005	4.1	3.6	3.5	2.9	3.5	3.5	4.3
262820	FERGUSON SPRINGS HMS*	Great Salt Lake Desert	192	7	1973	1982	3.6	2.9	2.9	2.3	2.7	2.7	3.7
262840	FERNLEY*	Fernley Area	76	21	1908	1974	4.6	3.9	3.8	3.1	3.6	3.7	4.8
262860	FISH CREEK RCH*	Little Smoky Valley	155A	14	1944	1964	4.5	3.1	3.1	2.5	2.9	2.9	4.8
263090	GERLACH*	San Emidio Desert	22	27	1963	2006	4.2	3.8	3.7	3.0	3.6	3.7	4.4
263101	GEYSER RCH*	Lake Valley	183	19	1972	2002	4.5	3.6	3.4	2.8	3.3	3.2	4.7

Appendix 11a cont.

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263114	GIBBS RCH*	Marys River Area	42	30	1973	2007	3.9	3.0	2.9	2.4	2.8	2.8	4.1
263205	GLENBROOK*	Lake Tahoe Basin	90	30	1969	2007	3.5	2.9	2.7	2.2	2.5	2.5	3.7
263245	GOLCONDA*	Winnemucca Segment	70	30	1970	2005	4.6	4.0	3.9	3.2	3.8	3.8	4.8
263285	GOLDFIELD	Alkali Spring Valley	142	30	1951	2004	4.5	3.8	3.7	3.0	3.6	3.6	4.7
263316	GOODSPRINGS*	Ivanpah Valley	164A	6	2000	2006	5.9	5.7	4.9	4.0	4.1	5.6	6.2
263340	GREAT BASIN NP	Snake Valley	195	16	1988	2007	3.7	3.1	3.0	2.5	2.9	2.9	3.8
263515	HAWTHORNE AP*	Walker Lake Valley	110C	30	1948	1990	4.7	4.2	3.9	3.2	3.8	4.0	5.0
263512	HAWTHORNE*	Walker Lake Valley	110C	13	1955	2007	4.8	4.3	4.0	3.2	3.7	3.9	5.0
263671	HIKO*	Pahranagat Valley	209	15	1990	2006	5.0	4.5	4.2	3.4	3.8	4.4	5.2
263853	HUMBOLDT FLD	Buena Vista Valley	129	7	1940	1947	4.4	3.8	3.7	3.0	3.6	3.5	4.6
263940	I-L RCH*	South Fork Owyhee River Area	35	3	1963	1967	4.2	3.0	2.9	2.4	2.8	2.7	4.4
263957	IMLAY*	Imlay Area	72	30	1964	2007	4.5	4.0	3.9	3.2	3.8	3.8	4.7
263980	INDIAN SPRINGS*	Indian Springs Valley	161	23	1914	1964	6.0	5.4	4.9	4.0	4.2	5.3	6.3
264016	JACKPOT*	Salmon Falls Creek Area	40	15	1987	2004	3.9	3.2	3.2	2.6	3.0	3.0	4.1
264039	JARBIDGE 7 N*	Jarbidge River Area	39	11	1996	2006	3.9	3.3	3.0	2.5	2.9	2.8	4.1

Appendix 11a cont.

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264038	JARBRIDGE 4 N	Jarbidge River Area	39	22	1965	1995	3.8	3.1	2.6	2.2	2.3	2.4	4.0
264095	JIGGS 8 SSE ZAGA*	Huntington Valley	47	19	1979	2007	4.0	3.2	3.0	2.5	2.8	2.8	4.2
264108	JUNGO MEYER RCH*	Desert Valley	31	7	1969	1985	4.3	3.8	3.7	3.0	3.5	3.6	4.5
264199	KIMBERLY	White River Valley	207	28	1929	1958	3.9	3.0	2.9	2.4	2.8	2.7	4.1
264268	KNOLL CREEK FLD STN	Salmon Falls Creek Area	40	6	1972	1979	4.0	2.9	2.7	2.1	2.5	2.4	4.2
264314	KYLE CANYON RS	Las Vegas Valley	212	4	1940	1948	4.5	3.4	3.0	2.4	3.2	2.7	4.7
264341	LAGES*	Steptoe Valley	179	21	1984	2006	4.5	3.6	3.5	2.8	3.3	3.2	4.7
264349	LAHONTAN DAM*	Churchill Valley	102	30	1969	2007	4.2	3.8	3.6	3.0	3.5	3.7	4.4
264384	LAKE VALLEY STEWARD	Lake Valley	183	22	1971	1998	3.8	3.2	3.1	2.5	3.0	2.9	4.0
264395	LAMOILLE PH	Lamoille Valley	45	30	1934	1972	3.6	3.1	2.9	2.4	2.8	2.8	3.8
264394	LAMOILLE YOST*	Lamoille Valley	45	22	1976	2003	3.9	3.0	2.8	2.3	2.7	2.6	4.1
264439	LAS VEGAS NWFO*	Las Vegas Valley	212	9	1997	2007	5.8	5.5	4.6	3.7	3.3	5.3	6.1
264436	LAS VEGAS WB AP*	Las Vegas Valley	212	30	1976	2005	5.8	5.6	4.9	4.0	3.4	5.7	6.0
23112	LAS VEGAS*	Las Vegas Valley	212	22	1949	1970	6.0	5.8	5.1	4.1	3.7	5.9	6.3
264429	LAS VEGAS*	Las Vegas Valley	212	30	1921	1956	6.6	6.4	5.6	4.6	4.3	6.5	6.9
264457	LATHROP WELLS	Fortymile Canyon	227A	8	1943	1963	5.8	5.4	4.7	3.8	3.9	5.4	6.0

Appendix 11a cont.

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264480	LAUGHLIN*	Colorado Valley	213	10	1989	2006	6.5	6.2	5.3	4.3	3.7	6.1	6.9
264514	LEHMAN CAVES NM	Snake Valley	195	30	1958	1987	3.6	2.9	2.8	2.3	2.7	2.6	3.8
264527	LEONARD CREEK RCH*	Black Rock Desert	28	30	1971	2004	4.2	3.9	3.8	3.2	3.7	3.8	4.4
264542	LEWERS RCH	Washoe Valley	89	15	1893	1913	4.5	3.9	3.6	2.9	3.5	3.4	4.7
264600	LITTLE RED ROCK	Las Vegas Valley	212	4	1966	1970	5.1	4.8	4.1	3.3	3.6	4.6	5.4
264651	LOGANDALE*	Lower Moapa Valley	220	20	1969	1991	5.0	4.7	4.1	3.4	3.2	4.9	5.2
264700	LOVELOCK DERBY FLD*	Lovelock Valley	73	30	1970	2005	4.7	4.1	4.1	3.4	4.0	4.0	4.9
264745	LUND*	White River Valley	207	30	1977	2007	4.5	3.9	3.8	3.2	3.7	3.7	4.8
264824	MALA VISTA RCH*	Marys River Area	42	16	1940	1965	4.1	3.1	2.9	2.4	2.8	2.7	4.3
264858	MARLETTE LAKE	Lake Tahoe Basin	90	19	1917	1952	2.9	1.8	1.7	1.3	1.6	1.5	3.0
264935	MCDERMITT*	Quinn River Valley	33B	29	1974	2007	4.3	3.4	3.2	2.7	2.9	3.0	4.5
264950	MCGILL*	Steptoe Valley	179	30	1977	2007	4.2	3.6	3.5	2.9	3.3	3.3	4.4
265085	MESQUITE*	Virgin River Valley	222	13	1942	2006	5.1	5.0	4.4	3.6	3.3	5.0	5.4
265092	METROPOLIS*	Marys River Area	42	18	1966	1994	3.7	3.2	3.1	2.6	3.0	3.0	3.9
265105	MIDAS 4 SE*	Willow Creek Valley	63	4	1962	1967	4.4	3.1	3.1	2.6	2.9	2.9	4.7
265132	MIDDLEGATE-LOWERY*	Cowkick Valley	126	15	1989	2007	4.8	3.8	3.5	2.9	3.4	3.3	5.0

Appendix 11a cont.

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265168	MINA*	Soda Spring Valley	121A	30	1978	2007	4.9	4.3	4.1	3.3	3.9	4.1	5.1
265191	MINDEN*	Carson Valley	105	30	1975	2007	4.3	3.6	3.5	2.9	3.3	3.4	4.5
265352	MONTELLO 2 SE*	Thousand Springs Valley	189D	30	1971	2007	4.4	3.5	3.4	2.7	3.2	3.1	4.6
265362	MONTGOMERY MNTC STN	Queen Valley	116	10	1961	1978	4.1	2.8	2.7	2.1	2.4	2.5	4.3
265371	MOORMAN RCH*	Jakes Valley	174	4	2003	2007	4.3	3.2	3.1	2.5	2.9	2.8	4.5
265400	MT CHARLESTON FS	Las Vegas Valley	212	6	1949	2007	4.4	3.4	2.7	2.1	3.1	2.4	4.7
265440	MT ROSE BOWL	Pleasant Valley	88	8	1974	1984	3.3	2.0	2.0	1.6	1.9	1.8	3.5
265392	MTN CITY RS*	Owyhee River Area	37	30	1965	1998	4.2	2.8	2.5	2.1	2.4	2.3	4.4
265605	NIXON*	Pyramid Lake Valley	81	30	1931	1973	4.8	4.1	4.0	3.2	3.8	3.9	5.0
265705	NORTH LAS VEGAS*	Las Vegas Valley	212	20	1952	2006	6.5	6.2	5.5	4.5	4.1	6.4	6.8
265722	OASIS*	Goshute Valley	187	17	1988	2006	4.2	3.4	3.2	2.6	3.1	2.9	4.5
265760	OLD RUTH	Steptoe Valley	179	5	1979	1985	3.8	2.9	2.9	2.3	2.7	2.6	4.0
265818	OROVADA 3 W*	Quinn River Valley	33A	30	1973	2006	4.4	3.9	3.8	3.1	3.6	3.6	4.6
265846	OVERTON*	Lower Moapa Valley	220	30	1953	2007	5.2	4.9	4.3	3.6	3.2	5.1	5.5
265869	OWYHEE*	Owyhee River Area	37	30	1954	1984	3.8	3.2	3.1	2.6	3.0	2.9	4.0

Appendix 11a cont.

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265880	PAHRANAGAT WR*	Pahranagat Valley	209	30	1970	2006	5.2	4.8	4.3	3.5	3.7	4.6	5.4
265890	PAHRUMP*	Pahrump Valley	162	30	1976	2007	5.7	5.4	4.8	4.0	4.1	5.5	6.0
265907	PAHUTE MEADOWS RCH*	Black Rock Desert	28	4	1964	1974	4.2	3.6	3.6	2.9	3.5	3.5	4.4
265931	PALMETTO	Fish Lake Valley	117	14	1891	1907	4.9	3.5	3.4	2.7	3.1	3.1	5.2
266005	PARADISE VALLEY 1 NW*	Paradise Valley	69	30	1973	2007	4.6	3.8	3.6	3.0	3.5	3.4	4.8
266055	PARIS RCH*	Pleasant Valley	130	22	1967	1990	4.6	4.2	4.1	3.4	3.9	4.0	4.9
266130	PENOYER VALLEY*	Penoyer Valley	170	5	1968	2004	5.1	4.3	4.3	3.5	4.2	4.2	5.4
266148	PEQUOP	Goshute Valley	187	23	1960	1985	4.1	3.1	3.0	2.4	2.8	2.7	4.3
266228	PILOT VALLEY-LEE*	Pilot Creek Valley	191	6	2000	2007	4.2	3.4	3.3	2.7	3.1	3.1	4.4
266242	PINE VALLEY BAILEY RCH*	Pine Valley	53	11	1983	2003	4.5	3.4	3.2	2.7	3.0	3.0	4.7
266252	PIOCHE	Patterson Valley	202	30	1968	2006	4.1	3.6	3.4	2.8	3.3	3.3	4.3
266504	QUINN RVR CROSSING	Pine Forest Valley	29	10	1902	1950	4.5	3.6	3.5	2.8	3.4	3.3	4.8
266574	RAND RCH PALISADE*	Pine Valley	53	19	1958	1981	4.3	3.0	3.0	2.5	2.8	2.8	4.6
266630	RATTLESNAKE	Hot Creek	156	13	1949	1961	4.3	3.6	3.6	2.9	3.5	3.4	4.5
266691	RED ROCK CANYON SP	Las Vegas Valley	212	20	1978	2006	5.4	5.2	4.6	3.8	3.9	5.2	5.7
29999	RED ROCK WC*	Red Rock Valley	99	4	2004	2007	4.0	3.1	2.9	2.4	2.9	2.7	4.2

Appendix 11a cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
266746	REESE RIVER*	Upper Reese River Valley	56	26	1973	2006	4.3	3.0	2.8	2.2	2.6	2.5	4.5
266748	REESE VALLEY CARPER	Middle Reese River Valley	58	6	1977	1983	4.3	3.5	3.3	2.8	3.2	3.1	4.5
266779	RENO TAHOE INTL AP*	Truckee Meadows	87	30	1978	2007	4.4	4.0	3.8	3.2	3.8	3.9	4.7
266791	RENO WFO*	Truckee Meadows	87	10	1997	2007	4.2	3.9	3.7	3.0	3.6	3.8	4.4
267123	RUBY LAKE*	Ruby Valley	176	30	1976	2007	4.2	3.5	3.4	2.8	3.3	3.2	4.4
267175	RUTH	Steptoe Valley	179	30	1963	2007	4.3	3.0	2.7	2.3	2.6	2.5	4.5
267192	RYE PATCH DAM*	Imlay Area	72	30	1973	2007	4.8	4.2	4.1	3.4	4.0	4.0	5.0
267188	RYNDON*	North Fork Area	44	6	2000	2007	4.3	3.5	3.1	2.6	3.0	2.9	4.5
267284	SAN JACINTO*	Salmon Falls Creek Area	40	21	1905	1947	4.1	3.2	3.0	2.5	2.9	2.8	4.3
267261	SAND PASS*	Smoke Creek Desert	21	30	1931	1970	4.5	4.0	4.0	3.3	3.9	3.9	4.7
267319	SARCOBATUS*	Sarcobatus Flat	146	14	1942	1961	5.3	4.4	4.3	3.4	3.9	4.3	5.5
267324	SAVAL RCH*	North Fork Area	44	5	1961	1965	3.5	2.6	2.3	1.9	2.3	2.1	3.7
267358	SCHURZ*	Walker Lake Valley	110A	30	1921	1955	4.6	3.9	3.9	3.2	3.8	3.9	4.9
267369	SEARCHLIGHT	Piute Valley	214	30	1976	2006	5.0	4.7	4.1	3.3	3.3	4.7	5.2
267397	SEVENTY ONE RCH*	Starr Valley Area	43	4	1940	1951	4.1	3.3	2.9	2.4	2.8	2.7	4.3

Appendix 11a cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
267443	SHELDON	Guano Valley	6	30	1942	1972	3.5	2.5	2.3	1.9	2.2	2.2	3.6
267450	SHOSHONE 5 N*	Spring Valley	184	17	1989	2007	4.5	3.7	3.6	3.0	3.5	3.5	4.7
267463	SILVERPEAK*	Clayton Valley	143	30	1975	2007	5.5	4.7	4.6	3.8	4.2	4.7	5.7
267609	SMITH 1 N*	Smith Valley	107	23	1938	1966	4.4	3.6	3.5	2.9	3.3	3.4	4.6
267612	SMITH 6 N*	Smith Valley	107	23	1974	2007	4.3	3.7	3.6	3.0	3.4	3.5	4.5
267618	SMOKE CREEK ESPIL*	Smoke Creek Desert	21	14	1988	2004	4.7	4.2	4.1	3.4	4.0	4.0	4.9
267620	SMOKEY VALLEY*	Big Smoky Valley	137B	30	1975	2007	4.8	4.1	4.0	3.2	3.9	3.7	5.1
267640	SNOWBALL RCH	Little Smoky Valley	155A	30	1972	2002	4.0	3.0	2.8	2.3	2.6	2.6	4.2
267690	SOUTH FORK SP*	Dixie Creek - Tenmile	48	8	1994	2007	4.3	3.4	3.3	2.7	3.0	3.1	4.5
267750	SPRING VALLEY SP*	Spring Valley	201	24	1975	2007	4.9	3.6	3.5	2.8	3.3	3.2	5.1
267806	STATELINE-HARRAH'S*	Lake Tahoe Basin	90	13	1985	1998	3.6	2.9	2.8	2.3	2.6	2.7	3.7
267820	STEAD*	Lemmon Valley	92B	14	1986	2006	4.2	3.7	3.6	3.0	3.5	3.6	4.4
267873	SULPHUR*	Black Rock Desert	28	21	1915	1953	4.5	3.8	3.8	3.1	3.7	3.6	4.7
267908	SUNNYSIDE*	White River Valley	207	30	1974	2007	4.7	4.0	3.8	3.1	3.6	3.6	4.9
267953	SUTCLIFFE	Pyramid Lake Valley	81	27	1968	2006	3.9	3.7	3.4	2.8	3.3	3.6	4.1
267983	TEMPIUTE 4 NW*	Penoyer Valley	170	12	1973	1984	5.1	4.4	4.4	3.6	4.3	4.3	5.4

Appendix 11a cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
268034	THORNE*	Walker Lake Valley	110C	24	1915	1950	4.6	4.1	3.9	3.1	3.8	3.9	4.8
268170	TONOPAH*	Ralston Valley	141	30	1975	2005	5.1	4.4	4.3	3.6	4.3	4.3	5.3
268186	TOPAZ LAKE 3N*	Antelope Valley	106	19	1958	2005	4.7	3.9	3.7	3.1	3.5	3.6	5.0
268202	TOPAZ LAKE 4 N*	Antelope Valley	106	11	1987	1997	4.3	3.7	3.6	3.0	3.6	3.6	4.5
268346	TUSCARORA*	Independence Valley	36	30	1973	2006	3.7	3.0	2.8	2.3	2.6	2.6	3.9
268443	TWIN SPRING FALLINI*	Hot Creek	156	10	1986	2005	4.7	3.9	3.9	3.1	3.8	3.7	4.9
268500	UNIV OF NEVADA EXP FM*	Truckee Meadows	87	4	1949	1954	4.4	4.0	3.8	3.2	3.8	3.9	4.6
268538	URSINE	Eagle Valley	200	4	1965	1972	4.8	4.3	4.2	3.5	4.1	4.1	5.1
268588	VALLEY OF FIRE SP	Black Moutains Area	215	30	1977	2007	5.1	4.7	3.9	3.1	2.7	4.6	5.3
268761	VIRGINIA CITY	Dayton Valley	103	30	1975	2007	3.5	2.9	2.8	2.3	2.7	2.7	3.7
268810	VYA	Surprise Valley	14	14	1960	1975	3.6	2.7	2.5	2.1	2.4	2.3	3.8
268822	WABUSKA 6 SE*	Mason Valley	108	27	1973	2006	4.2	3.5	3.4	2.8	3.3	3.3	4.4
268838	WADSWORTH 4 N*	Dodge Flat	82	21	1975	2002	4.6	3.9	3.8	3.1	3.7	3.7	4.8
268834	WADSWORTH*	Tracy Segment	83	6	1902	1947	4.6	4.1	3.8	3.1	3.5	3.6	4.9
39999	WASHOE VALLEY WC*	Washoe Valley	89	5	2004	2008	5.2	4.4	4.2	3.4	4.0	3.9	5.5
268977	WELLINGTON RS*	Smith Valley	107	27	1943	1972	4.2	3.6	3.5	2.9	3.4	3.5	4.4

Appendix 11a cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
268988	WELLS*	Marys River Area	42	30	1975	2004	4.0	3.1	2.9	2.4	2.8	2.7	4.2
269072	WILDHORSE RSVR*	Owyhee River Area	37	18	1983	2006	4.0	2.5	2.1	1.8	2.1	2.0	4.2
269122	WILKINS*	Thousand Springs Valley	189A	16	1949	1964	4.3	2.9	2.8	2.3	2.7	2.5	4.5
269137	WILLOW SPRINGS*	Big Smoky Valley	137A	4	1942	1948	4.8	3.9	3.8	3.0	3.8	3.5	5.0
269168	WINNEMUCCA #2*	Grass Valley	71	6	2000	2007	4.4	3.9	3.8	3.1	3.6	3.7	4.7
269171	WINNEMUCCA MUNI AP*	Winnemucca Segment	70	30	1978	2007	4.7	3.9	3.8	3.1	3.6	3.6	4.9
269229	YERINGTON*	Mason Valley	108	30	1970	2007	4.1	3.5	3.4	2.8	3.3	3.5	4.3

Appendix 11b. Mean annual ET_{os} and ET_{act} for each NWS weather station, sorted by basin name. * Station was used in averaging or assigning ET_{os} and ET_{act} to respective hydrographic areas. Number of years used for average and start and end years listed are for alfalfa and may vary slightly for other crop types due to possible missing data within crop specific growing seasons. See statistic data files for further details.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
263285	GOLDFIELD	Alkali Spring Valley	142	30	1951	2004	4.5	3.8	3.7	3.0	3.6	3.6	4.7
260150	AMARGOSA FARMS-GAREY*	Amargosa Desert	230	28	1966	2005	5.8	5.6	4.8	3.9	3.7	5.6	6.1
260282	ANTELOPE VALLEY FARR*	Antelope Valley	57	8	1985	1998	4.4	3.6	3.6	3.0	3.5	3.5	4.6
268186	TOPAZ LAKE 3N*	Antelope Valley	106	19	1958	2005	4.7	3.9	3.7	3.1	3.5	3.6	5.0
268202	TOPAZ LAKE 4 N*	Antelope Valley	106	11	1987	1997	4.3	3.7	3.6	3.0	3.6	3.6	4.5
267620	SMOKEY VALLEY*	Big Smoky Valley	137B	30	1975	2007	4.8	4.1	4.0	3.2	3.9	3.7	5.1
269137	WILLOW SPRINGS*	Big Smoky Valley	137A	4	1942	1948	4.8	3.9	3.8	3.0	3.8	3.5	5.0
261371	CALLVILLE BAY*	Black Moutains Area	215	8	1990	2006	5.7	5.3	4.5	3.6	2.9	5.3	5.9
262497	ECHO BAY*	Black Moutains Area	215	10	1990	2003	5.3	5.0	4.2	3.4	2.8	4.9	5.6
268588	VALLEY OF FIRE SP	Black Moutains Area	215	30	1977	2007	5.1	4.7	3.9	3.1	2.7	4.6	5.3
264527	LEONARD CREEK RCH*	Black Rock Desert	28	30	1971	2004	4.2	3.9	3.8	3.2	3.7	3.8	4.4

Appendix 11b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
265907	PAHUTE MEADOWS RCH*	Black Rock Desert	28	4	1964	1974	4.2	3.6	3.6	2.9	3.5	3.5	4.4
267873	SULPHUR*	Black Rock Desert	28	21	1915	1953	4.5	3.8	3.8	3.1	3.7	3.6	4.7
261415	CARLIN NEWMONT MINE	Boulder Flat	61	24	1967	1999	3.3	2.7	2.6	2.2	2.5	2.5	3.4
262656	EMIGRANT PASS HWY STN	Boulder Flat	61	27	1964	1999	3.8	3.2	3.2	2.6	3.0	3.0	4.0
261660	CHARLESTON*	Bruneau River Area	38	4	1962	2005	4.1	2.3	2.0	1.7	1.7	1.8	4.3
263853	HUMBOLDT FLD	Buena Vista Valley	129	7	1940	1947	4.4	3.8	3.7	3.0	3.6	3.5	4.6
261311	BUFFALO RCH*	Buffalo Valley	131	7	1967	1978	4.0	3.7	3.5	2.9	3.3	3.5	4.2
262780	FALLON EXP STN*	Carson Desert	101	30	1973	2005	4.1	3.6	3.5	2.9	3.5	3.5	4.3
265191	MINDEN*	Carson Valley	105	30	1975	2007	4.3	3.6	3.5	2.9	3.3	3.4	4.5
264349	LAHONTAN DAM*	Churchill Valley	102	30	1969	2007	4.2	3.8	3.6	3.0	3.5	3.7	4.4
267463	SILVERPEAK*	Clayton Valley	143	30	1975	2007	5.5	4.7	4.6	3.8	4.2	4.7	5.7
261358	CALIENTE*	Clover Valley	204	22	1904	2006	4.9	4.5	4.2	3.5	3.9	4.1	5.2
261740	CLOVER VALLEY*	Clover Valley	177	30	1926	2007	4.0	3.3	3.3	2.7	3.1	3.1	4.2
260688	BATTLE MTN*	Clovers Area	64	25	1903	1944	4.6	4.0	3.9	3.2	3.7	3.8	4.8
264480	LAUGHLIN*	Colorado Valley	213	10	1989	2006	6.5	6.2	5.3	4.3	3.7	6.1	6.9

Appendix 11b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
261755	COALDALE JUNCTION*	Columbus Salt Marsh Valley	118	6	1942	1958	5.5	4.7	4.4	3.6	4.3	4.3	5.8
265132	MIDDLEGATE-LOWERY*	Cowkick Valley	126	15	1989	2007	4.8	3.8	3.5	2.9	3.4	3.3	5.0
260795	BEOWAWE*	Crescent Valley	54	30	1976	2006	4.3	3.6	3.6	3.0	3.5	3.5	4.5
261975	CORTEZ GOLD MINE*	Crescent Valley	54	10	1969	1979	4.1	3.6	3.5	2.9	3.4	3.3	4.3
268761	VIRGINIA CITY	Dayton Valley	103	30	1975	2007	3.5	2.9	2.8	2.3	2.7	2.7	3.7
264108	JUNGO MEYER RCH*	Desert Valley	31	7	1969	1985	4.3	3.8	3.7	3.0	3.5	3.6	4.5
262296	DIAMOND VALLEY USDA*	Diamond Valley	153	19	1980	2006	4.1	3.2	3.1	2.5	3.0	2.9	4.3
262708	EUREKA	Diamond Valley	153	30	1975	2007	3.6	2.9	2.8	2.2	2.6	2.5	3.8
267690	SOUTH FORK SP*	Dixie Creek - Tenmile	48	8	1994	2007	4.3	3.4	3.3	2.7	3.0	3.1	4.5
261160	BRINKERHOFF RCH*	Dixie Valley	128	7	1967	1979	4.7	4.2	4.1	3.4	4.0	4.1	4.9
268838	WADSWORTH 4 N*	Dodge Flat	82	21	1975	2002	4.6	3.9	3.8	3.1	3.7	3.7	4.8
261485	CARSON CITY*	Eagle Valley	104	30	1974	2007	4.3	3.8	3.6	3.0	3.5	3.6	4.6
268538	URSINE	Eagle Valley	200	4	1965	1972	4.8	4.3	4.2	3.5	4.1	4.1	5.1
262477	EASTGATE*	Eastgate Valley Area	127	4	1957	1963	4.5	3.9	3.9	3.2	3.9	3.8	4.8
261071	BOULDER CITY*	Eldorado Valley	167	30	1969	2004	5.4	5.1	4.3	3.5	3.1	5.0	5.7
262573	ELKO RGNL AP*	Elko Segment	49	30	1978	2007	4.0	3.3	3.2	2.7	3.1	3.0	4.2

Appendix 11b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
262570	ELKO*	Elko Segment	49	6	2000	2007	3.9	3.3	3.3	2.7	3.2	3.1	4.1
262840	FERNLEY*	Fernley Area	76	21	1908	1974	4.6	3.9	3.8	3.1	3.6	3.7	4.8
262431	DYER*	Fish Lake Valley	117	30	1974	2007	5.5	4.6	4.4	3.6	4.3	4.3	5.8
265931	PALMETTO	Fish Lake Valley	117	14	1891	1907	4.9	3.5	3.4	2.7	3.1	3.1	5.2
264457	LATHROP WELLS	Fortymile Canyon	227A	8	1943	1963	5.8	5.4	4.7	3.8	3.9	5.4	6.0
260046	ADAVEN	Garden Valley	172	30	1947	1978	3.8	3.1	3.1	2.5	2.9	2.9	4.0
265722	OASIS*	Goshute Valley	187	17	1988	2006	4.2	3.4	3.2	2.6	3.1	2.9	4.5
266148	PEQUOP	Goshute Valley	187	23	1960	1985	4.1	3.1	3.0	2.4	2.8	2.7	4.3
260800	BEOWAWE U OF N RCH*	Grass Valley	138	28	1973	2007	4.2	3.5	3.4	2.8	3.3	3.3	4.4
269168	WINNEMUCCA #2*	Grass Valley	71	6	2000	2007	4.4	3.9	3.8	3.1	3.6	3.7	4.7
262820	FERGUSON SPRINGS HMS*	Great Salt Lake Desert	192	7	1973	1982	3.6	2.9	2.9	2.3	2.7	2.7	3.7
267443	SHELDON	Guano Valley	6	30	1942	1972	3.5	2.5	2.3	1.9	2.2	2.2	3.6
260961	BLUE JAY HWY STN*	Hot Creek	156	7	1964	1983	4.8	3.9	3.9	3.2	3.7	3.7	5.0
266630	RATTLESNAKE	Hot Creek	156	13	1949	1961	4.3	3.6	3.6	2.9	3.5	3.4	4.5
268443	TWIN SPRING FALLINI*	Hot Creek	156	10	1986	2005	4.7	3.9	3.9	3.1	3.8	3.7	4.9
264095	JIGGS 8 SSE ZAGA*	Huntington Valley	47	19	1979	2007	4.0	3.2	3.0	2.5	2.8	2.8	4.2
263957	IMLAY*	Imlay Area	72	30	1964	2007	4.5	4.0	3.9	3.2	3.8	3.8	4.7

Appendix 11b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
267192	RYE PATCH DAM*	Imlay Area	72	30	1973	2007	4.8	4.2	4.1	3.4	4.0	4.0	5.0
268346	TUSCARORA*	Independence Valley	36	30	1973	2006	3.7	3.0	2.8	2.3	2.6	2.6	3.9
263980	INDIAN SPRINGS*	Indian Springs Valley	161	23	1914	1964	6.0	5.4	4.9	4.0	4.2	5.3	6.3
263316	GOODSPRINGS*	Ivanpah Valley	164A	6	2000	2006	5.9	5.7	4.9	4.0	4.1	5.6	6.2
265371	MOORMAN RCH*	Jakes Valley	174	4	2003	2007	4.3	3.2	3.1	2.5	2.9	2.8	4.5
264039	JARBIDGE 7 N*	Jarbidge River Area	39	11	1996	2006	3.9	3.3	3.0	2.5	2.9	2.8	4.1
264038	JARBRIDGE 4 N	Jarbidge River Area	39	22	1965	1995	3.8	3.1	2.6	2.2	2.3	2.4	4.0
262119	DAGGET PASS	Lake Tahoe Basin	90	5	1989	2005	3.3	2.3	2.2	1.7	2.0	2.0	3.4
263205	GLENBROOK*	Lake Tahoe Basin	90	30	1969	2007	3.5	2.9	2.7	2.2	2.5	2.5	3.7
264858	MARLETTE LAKE	Lake Tahoe Basin	90	19	1917	1952	2.9	1.8	1.7	1.3	1.6	1.5	3.0
267806	STATELINE-HARRAH'S*	Lake Tahoe Basin	90	13	1985	1998	3.6	2.9	2.8	2.3	2.6	2.7	3.7
263101	GEYSER RCH*	Lake Valley	183	19	1972	2002	4.5	3.6	3.4	2.8	3.3	3.2	4.7
264384	LAKE VALLEY STEWARD	Lake Valley	183	22	1971	1998	3.8	3.2	3.1	2.5	3.0	2.9	4.0
264395	LAMOILLE PH	Lamoille Valley	45	30	1934	1972	3.6	3.1	2.9	2.4	2.8	2.8	3.8
264394	LAMOILLE YOST*	Lamoille Valley	45	22	1976	2003	3.9	3.0	2.8	2.3	2.7	2.6	4.1
262243	DESERT NWR*	Las Vegas Valley	212	30	1976	2007	6.2	5.9	5.1	4.1	4.2	5.7	6.5

Appendix 11b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
264314	KYLE CANYON RS	Las Vegas Valley	212	4	1940	1948	4.5	3.4	3.0	2.4	3.2	2.7	4.7
264439	LAS VEGAS NWFO*	Las Vegas Valley	212	9	1997	2007	5.8	5.5	4.6	3.7	3.3	5.3	6.1
264436	LAS VEGAS WB AP*	Las Vegas Valley	212	30	1976	2005	5.8	5.6	4.9	4.0	3.4	5.7	6.0
23112	LAS VEGAS*	Las Vegas Valley	212	22	1949	1970	6.0	5.8	5.1	4.1	3.7	5.9	6.3
264429	LAS VEGAS*	Las Vegas Valley	212	30	1921	1956	6.6	6.4	5.6	4.6	4.3	6.5	6.9
264600	LITTLE RED ROCK	Las Vegas Valley	212	4	1966	1970	5.1	4.8	4.1	3.3	3.6	4.6	5.4
265400	MT CHARLESTON FS	Las Vegas Valley	212	6	1949	2007	4.4	3.4	2.7	2.1	3.1	2.4	4.7
265705	NORTH LAS VEGAS*	Las Vegas Valley	212	20	1952	2006	6.5	6.2	5.5	4.5	4.1	6.4	6.8
266691	RED ROCK CANYON SP	Las Vegas Valley	212	20	1978	2006	5.4	5.2	4.6	3.8	3.9	5.2	5.7
267820	STEAD*	Lemmon Valley	92B	14	1986	2006	4.2	3.7	3.6	3.0	3.5	3.6	4.4
262860	FISH CREEK RCH*	Little Smoky Valley	155A	14	1944	1964	4.5	3.1	3.1	2.5	2.9	2.9	4.8
267640	SNOWBALL RCH	Little Smoky Valley	155A	30	1972	2002	4.0	3.0	2.8	2.3	2.6	2.6	4.2
264700	LOVELOCK DERBY FLD*	Lovelock Valley	73	30	1970	2005	4.7	4.1	4.1	3.4	4.0	4.0	4.9
262562	ELGIN 3 SE*	Lower Meadow Valley Wash	205	15	1966	1985	4.9	4.6	3.9	3.2	3.5	4.5	5.1
262557	ELGIN*	Lower Meadow Valley Wash	205	20	1986	2006	4.9	4.6	4.1	3.3	3.8	4.5	5.2

Appendix 11b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
264651	LOGANDALE*	Lower Moapa Valley	220	20	1969	1991	5.0	4.7	4.1	3.4	3.2	4.9	5.2
265846	OVERTON*	Lower Moapa Valley	220	30	1953	2007	5.2	4.9	4.3	3.6	3.2	5.1	5.5
260691	BATTLE MTN AP*	Lower Reese River Valley	59	30	1974	2006	4.3	3.8	3.7	3.1	3.5	3.6	4.5
263114	GIBBS RCH*	Marys River Area	42	30	1973	2007	3.9	3.0	2.9	2.4	2.8	2.8	4.1
264824	MALA VISTA RCH*	Marys River Area	42	16	1940	1965	4.1	3.1	2.9	2.4	2.8	2.7	4.3
265092	METROPOLIS*	Marys River Area	42	18	1966	1994	3.7	3.2	3.1	2.6	3.0	3.0	3.9
268988	WELLS*	Marys River Area	42	30	1975	2004	4.0	3.1	2.9	2.4	2.8	2.7	4.2
268822	WABUSKA 6 SE*	Mason Valley	108	27	1973	2006	4.2	3.5	3.4	2.8	3.3	3.3	4.4
269229	YERINGTON*	Mason Valley	108	30	1970	2007	4.1	3.5	3.4	2.8	3.3	3.5	4.3
266748	REESE VALLEY CARPER	Middle Reese River Valley	58	6	1977	1983	4.3	3.5	3.3	2.8	3.2	3.1	4.5
267188	RYNDON*	North Fork Area	44	6	2000	2007	4.3	3.5	3.1	2.6	3.0	2.9	4.5
267324	SAVAL RCH*	North Fork Area	44	5	1961	1965	3.5	2.6	2.3	1.9	2.3	2.1	3.7
260718	BEATTY 8 N*	Oasis Valley	228	28	1973	2004	5.3	4.9	4.3	3.5	4.1	4.8	5.6
260715	BEATTY*	Oasis Valley	228	30	1925	1972	5.6	5.2	4.6	3.7	4.2	5.1	5.9
265392	MTN CITY RS*	Owyhee River Area	37	30	1965	1998	4.2	2.8	2.5	2.1	2.4	2.3	4.4

Appendix 11b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
265869	OWYHEE*	Owyhee River Area	37	30	1954	1984	3.8	3.2	3.1	2.6	3.0	2.9	4.0
269072	WILDHORSE RSVR*	Owyhee River Area	37	18	1983	2006	4.0	2.5	2.1	1.8	2.1	2.0	4.2
260099	ALAMO*	Pahranagat Valley	209	29	1923	1958	5.6	5.0	4.5	3.6	4.2	4.6	5.8
263671	HIKO*	Pahranagat Valley	209	15	1990	2006	5.0	4.5	4.2	3.4	3.8	4.4	5.2
265880	PAHRANAGAT WR*	Pahranagat Valley	209	30	1970	2006	5.2	4.8	4.3	3.5	3.7	4.6	5.4
265890	PAHRUMP*	Pahrump Valley	162	30	1976	2007	5.7	5.4	4.8	4.0	4.1	5.5	6.0
261590	CATHEDRAL GORGE SP*	Panaca Valley	203	4	2003	2007	5.0	4.7	4.4	3.7	4.3	4.3	5.3
266005	PARADISE VALLEY 1 NW*	Paradise Valley	69	30	1973	2007	4.6	3.8	3.6	3.0	3.5	3.4	4.8
266252	PIOCHE	Patterson Valley	202	30	1968	2006	4.1	3.6	3.4	2.8	3.3	3.3	4.3
266130	PENOYER VALLEY*	Penoyer Valley	170	5	1968	2004	5.1	4.3	4.3	3.5	4.2	4.2	5.4
267983	TEMPIUTE 4 NW*	Penoyer Valley	170	12	1973	1984	5.1	4.4	4.4	3.6	4.3	4.3	5.4
266228	PILOT VALLEY-LEE*	Pilot Creek Valley	191	6	2000	2007	4.2	3.4	3.3	2.7	3.1	3.1	4.4
266504	QUINN RVR CROSSING	Pine Forest Valley	29	10	1902	1950	4.5	3.6	3.5	2.8	3.4	3.3	4.8
266242	PINE VALLEY BAILEY RCH*	Pine Valley	53	11	1983	2003	4.5	3.4	3.2	2.7	3.0	3.0	4.7
266574	RAND RCH PALISADE*	Pine Valley	53	19	1958	1981	4.3	3.0	3.0	2.5	2.8	2.8	4.6
267369	SEARCHLIGHT	Piute Valley	214	30	1976	2006	5.0	4.7	4.1	3.3	3.3	4.7	5.2
265440	MT ROSE BOWL	Pleasant Valley	88	8	1974	1984	3.3	2.0	2.0	1.6	1.9	1.8	3.5

Appendix 11b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
266055	PARIS RCH*	Pleasant Valley	130	22	1967	1990	4.6	4.2	4.1	3.4	3.9	4.0	4.9
262229	DENIO*	Pueblo Valley	1	30	1970	2005	4.3	3.7	3.6	3.0	3.5	3.5	4.5
265605	NIXON*	Pyramid Lake Valley	81	30	1931	1973	4.8	4.1	4.0	3.2	3.8	3.9	5.0
267953	SUTCLIFFE	Pyramid Lake Valley	81	27	1968	2006	3.9	3.7	3.4	2.8	3.3	3.6	4.1
265362	MONTGOMERY MNTC STN	Queen Valley	116	10	1961	1978	4.1	2.8	2.7	2.1	2.4	2.5	4.3
264935	MCDERMITT*	Quinn River Valley	33B	29	1974	2007	4.3	3.4	3.2	2.7	2.9	3.0	4.5
265818	OROVADA 3 W*	Quinn River Valley	33A	30	1973	2006	4.4	3.9	3.8	3.1	3.6	3.6	4.6
260955	BLUE EAGLE RCH HANKS*	Railroad Valley	173B	23	1979	2007	4.8	4.4	4.3	3.6	4.2	4.3	5.0
262091	CURRANT HWY STN	Railroad Valley	173B	7	1964	1977	4.3	3.0	3.0	2.4	2.7	2.7	4.5
262078	CURRANT*	Railroad Valley	173B	4	1942	1946	4.4	3.8	3.8	3.1	3.7	3.6	4.6
262276	DIABLO*	Railroad Valley	173A	10	1960	1978	4.8	4.2	4.1	3.4	4.0	4.1	5.0
262390	DUCKWATER*	Railroad Valley	173B	19	1967	1998	4.5	3.9	3.8	3.1	3.7	3.6	4.7
268170	TONOPAH*	Ralston Valley	141	30	1975	2005	5.1	4.4	4.3	3.6	4.3	4.3	5.3
29999	RED ROCK WC*	Red Rock Valley	99	4	2004	2007	4.0	3.1	2.9	2.4	2.9	2.7	4.2
260438	ARTHUR 4 NW*	Ruby Valley	176	30	1972	2007	3.8	3.1	3.0	2.5	2.9	2.8	4.0
267123	RUBY LAKE*	Ruby Valley	176	30	1976	2007	4.2	3.5	3.4	2.8	3.3	3.2	4.4

Appendix 11b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
261905	CONTACT*	Salmon Falls Creek Area	40	30	1958	1998	4.2	3.4	3.2	2.7	3.0	3.0	4.4
264016	JACKPOT*	Salmon Falls Creek Area	40	15	1987	2004	3.9	3.2	3.2	2.6	3.0	3.0	4.1
264268	KNOLL CREEK FLD STN	Salmon Falls Creek Area	40	6	1972	1979	4.0	2.9	2.7	2.1	2.5	2.4	4.2
267284	SAN JACINTO*	Salmon Falls Creek Area	40	21	1905	1947	4.1	3.2	3.0	2.5	2.9	2.8	4.3
262662	EMPIRE*	San Emidio Desert	22	6	1951	1976	4.4	3.9	3.9	3.2	3.8	3.9	4.6
263090	GERLACH*	San Emidio Desert	22	27	1963	2006	4.2	3.8	3.7	3.0	3.6	3.7	4.4
267319	SARCOBATUS*	Sarcobatus Flat	146	14	1942	1961	5.3	4.4	4.3	3.4	3.9	4.3	5.5
267609	SMITH 1 N*	Smith Valley	107	23	1938	1966	4.4	3.6	3.5	2.9	3.3	3.4	4.6
267612	SMITH 6 N*	Smith Valley	107	23	1974	2007	4.3	3.7	3.6	3.0	3.4	3.5	4.5
268977	WELLINGTON RS*	Smith Valley	107	27	1943	1972	4.2	3.6	3.5	2.9	3.4	3.5	4.4
267261	SAND PASS*	Smoke Creek Desert	21	30	1931	1970	4.5	4.0	4.0	3.3	3.9	3.9	4.7
267618	SMOKE CREEK ESPIL*	Smoke Creek Desert	21	14	1988	2004	4.7	4.2	4.1	3.4	4.0	4.0	4.9
263340	GREAT BASIN NP	Snake Valley	195	16	1988	2007	3.7	3.1	3.0	2.5	2.9	2.9	3.8
264514	LEHMAN CAVES NM	Snake Valley	195	30	1958	1987	3.6	2.9	2.8	2.3	2.7	2.6	3.8

Appendix 11b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
265168	MINA*	Soda Spring Valley	121A	30	1978	2007	4.9	4.3	4.1	3.3	3.9	4.1	5.1
263940	I-L RCH*	South Fork Owyhee River Area	35	3	1963	1967	4.2	3.0	2.9	2.4	2.8	2.7	4.4
267450	SHOSHONE 5 N*	Spring Valley	184	17	1989	2007	4.5	3.7	3.6	3.0	3.5	3.5	4.7
267750	SPRING VALLEY SP*	Spring Valley	201	24	1975	2007	4.9	3.6	3.5	2.8	3.3	3.2	5.1
267397	SEVENTY ONE RCH*	Starr Valley Area	43	4	1940	1951	4.1	3.3	2.9	2.4	2.8	2.7	4.3
262096	CURRIE HWY STN*	Steptoe Valley	179	10	1962	1989	4.7	3.2	3.1	2.5	2.9	2.8	4.9
262626	ELY 6 NE	Steptoe Valley	179	5	2000	2005	4.8	4.0	3.9	3.3	3.7	3.7	5.1
262631	ELY YELLAND FLD AP*	Steptoe Valley	179	30	1976	2005	4.5	3.5	3.3	2.7	3.2	3.0	4.7
264341	LAGES*	Steptoe Valley	179	21	1984	2006	4.5	3.6	3.5	2.8	3.3	3.2	4.7
264950	MCGILL*	Steptoe Valley	179	30	1977	2007	4.2	3.6	3.5	2.9	3.3	3.3	4.4
265760	OLD RUTH	Steptoe Valley	179	5	1979	1985	3.8	2.9	2.9	2.3	2.7	2.6	4.0
267175	RUTH	Steptoe Valley	179	30	1963	2007	4.3	3.0	2.7	2.3	2.6	2.5	4.5
268810	VYA	Surprise Valley	14	14	1960	1975	3.6	2.7	2.5	2.1	2.4	2.3	3.8
260668	BASALT	Teels Marsh Valley	114	10	1942	1957	4.4	3.4	3.4	2.7	3.3	3.2	4.7
265352	MONTELLO 2 SE*	Thousand Springs Valley	189D	30	1971	2007	4.4	3.5	3.4	2.7	3.2	3.1	4.6

Appendix 11b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
269122	WILKINS*	Thousand Springs Valley	189A	16	1949	1964	4.3	2.9	2.8	2.3	2.7	2.5	4.5
268834	WADSWORTH*	Tracy Segment	83	6	1902	1947	4.6	4.1	3.8	3.1	3.5	3.6	4.9
266779	RENO TAHOE INTL AP*	Truckee Meadows	87	30	1978	2007	4.4	4.0	3.8	3.2	3.8	3.9	4.7
266791	RENO WFO*	Truckee Meadows	87	10	1997	2007	4.2	3.9	3.7	3.0	3.6	3.8	4.4
268500	UNIV OF NEVADA EXP FM*	Truckee Meadows	87	4	1949	1954	4.4	4.0	3.8	3.2	3.8	3.9	4.6
260507	AUSTIN #2*	Upper Reese River Valley	56	30	1972	2007	4.1	3.4	3.3	2.7	3.1	3.1	4.3
261630	CENTRAL NEVADA FLD LAB*	Upper Reese River Valley	56	13	1966	1985	4.5	3.3	3.1	2.6	3.0	2.9	4.7
266746	REESE RIVER*	Upper Reese River Valley	56	26	1973	2006	4.3	3.0	2.8	2.2	2.6	2.5	4.5
261327	BUNKERVILLE*	Virgin River Valley	222	6	1980	2007	5.1	4.8	4.0	3.3	3.1	4.7	5.4
265085	MESQUITE*	Virgin River Valley	222	13	1942	2006	5.1	5.0	4.4	3.6	3.3	5.0	5.4
262394	DUFURRENA*	Virgin Valley	4	30	1967	2004	4.4	3.3	3.1	2.6	3.0	2.9	4.6
263515	HAWTHORNE AP*	Walker Lake Valley	110C	30	1948	1990	4.7	4.2	3.9	3.2	3.8	4.0	5.0
263512	HAWTHORNE*	Walker Lake Valley	110C	13	1955	2007	4.8	4.3	4.0	3.2	3.7	3.9	5.0
267358	SCHURZ*	Walker Lake Valley	110A	30	1921	1955	4.6	3.9	3.9	3.2	3.8	3.9	4.9

Appendix 11b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
268034	THORNE*	Walker Lake Valley	110C	24	1915	1950	4.6	4.1	3.9	3.1	3.8	3.9	4.8
264542	LEWERS RCH	Washoe Valley	89	15	1893	1913	4.5	3.9	3.6	2.9	3.5	3.4	4.7
39999	WASHOE VALLEY WC*	Washoe Valley	89	5	2004	2008	5.2	4.4	4.2	3.4	4.0	3.9	5.5
264199	KIMBERLY	White River Valley	207	28	1929	1958	3.9	3.0	2.9	2.4	2.8	2.7	4.1
264745	LUND*	White River Valley	207	30	1977	2007	4.5	3.9	3.8	3.2	3.7	3.7	4.8
267908	SUNNYSIDE*	White River Valley	207	30	1974	2007	4.7	4.0	3.8	3.1	3.6	3.6	4.9
265105	MIDAS 4 SE*	Willow Creek Valley	63	4	1962	1967	4.4	3.1	3.1	2.6	2.9	2.9	4.7
263245	GOLCONDA*	Winnemucca Segment	70	30	1970	2005	4.6	4.0	3.9	3.2	3.8	3.8	4.8
269171	WINNEMUCCA MUNI AP*	Winnemucca Segment	70	30	1978	2007	4.7	3.9	3.8	3.1	3.6	3.6	4.9

Appendix 12a. Mean annual Net Irrigation Water Requirement (NIWR) for each NWS weather station, sorted by station name. * Station was used in averaging or assigning NIWR to respective hydrographic areas. Number of years used for average and start and end years listed are for alfalfa and may vary slightly for other crop types due to possible missing data within crop specific growing seasons. See statistic data files for further details.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
260046	ADAVEN	Garden Valley	172	30	1947	1978	2.5	2.6	2.0	2.5	2.4	2.9
260099	ALAMO*	Pahranagat Valley	209	29	1922	1958	4.6	4.2	3.3	3.9	4.3	5.3
260150	AMARGOSA FARMS-GAREY*	Amargosa Desert	230	28	1966	2005	5.3	4.5	3.6	3.6	5.3	5.8
260282	ANTELOPE VALLEY FARR*	Antelope Valley	57	8	1985	1998	3.0	3.1	2.4	3.0	3.0	3.9
260438	ARTHUR 4 NW*	Ruby Valley	176	30	1971	2007	2.3	2.3	1.8	2.3	2.2	2.7
260507	AUSTIN #2*	Upper Reese River Valley	56	30	1972	2007	2.7	2.7	2.1	2.6	2.5	3.1
260668	BASALT	Teels Marsh Valley	114	10	1942	1957	3.2	3.2	2.5	3.1	3.0	4.2
260691	BATTLE MTN AP*	Lower Reese River Valley	59	30	1973	2006	3.0	3.1	2.4	2.9	3.0	3.8
260688	BATTLE MTN*	Clovers Area	64	25	1899	1944	3.5	3.4	2.8	3.3	3.3	4.3
260718	BEATTY 8 N*	Oasis Valley	228	28	1973	2004	4.5	3.9	3.1	3.8	4.5	5.1
260715	BEATTY*	Oasis Valley	228	30	1921	1972	4.9	4.3	3.4	4.0	4.8	5.5
260800	BEOWAWE U OF N RCH*	Grass Valley	138	28	1973	2006	2.7	2.8	2.2	2.7	2.7	3.5
260795	BEOWAWE*	Crescent Valley	54	30	1976	2006	2.9	3.0	2.4	2.9	2.9	3.7

Appendix 12a cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
260955	BLUE EAGLE RCH HANKS*	Railroad Valley	173B	23	1979	2007	3.7	3.7	2.9	3.5	3.7	4.3
260961	BLUE JAY HWY STN*	Hot Creek	156	7	1964	1983	3.3	3.4	2.6	3.3	3.2	4.3
261071	BOULDER CITY*	Eldorado Valley	167	30	1968	2004	4.6	3.9	3.1	2.9	4.6	5.1
261160	BRINKERHOFF RCH*	Dixie Valley	128	7	1967	1979	3.6	3.5	2.8	3.4	3.6	4.3
261311	BUFFALO RCH*	Buffalo Valley	131	7	1967	1978	2.8	2.8	2.2	2.7	2.8	3.0
261327	BUNKERVILLE*	Virgin River Valley	222	6	1980	2007	4.3	3.7	2.9	2.9	4.3	4.9
261358	CALIENTE*	Clover Valley	204	22	1904	2005	3.8	3.7	2.9	3.4	3.6	4.4
261371	CALLVILLE BAY*	Black Moutains Area	215	8	1990	2003	4.9	4.1	3.3	2.8	4.9	5.5
261415	CARLIN NEWMONT MINE	Boulder Flat	61	24	1967	1999	2.0	2.0	1.6	1.9	1.9	2.3
261485	CARSON CITY*	Eagle Valley	104	30	1973	2007	3.2	3.1	2.5	3.0	3.1	3.7
261590	CATHEDRAL GORGE SP*	Panaca Valley	203	4	2003	2007	3.7	3.6	2.8	3.5	3.5	4.2
261630	CENTRAL NEVADA FLD LAB*	Upper Reese River Valley	56	13	1966	1985	2.7	2.6	2.0	2.5	2.4	4.1
261660	CHARLESTON*	Bruneau River Area	38	4	1962	2005	1.6	1.5	1.1	1.2	1.3	3.3
261740	CLOVER VALLEY*	Clover Valley	177	30	1923	2007	2.5	2.6	2.1	2.5	2.5	3.1
261755	COALDALE JUNCTION*	Columbus Salt Marsh Valley	118	6	1942	1957	4.4	4.2	3.3	4.1	4.1	5.4

Appendix 12a cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
261905	CONTACT*	Salmon Falls Creek Area	40	30	1956	1998	2.6	2.4	1.9	2.3	2.3	3.5
261975	CORTEZ GOLD MINE*	Crescent Valley	54	10	1969	1979	2.9	2.9	2.3	2.8	2.8	3.5
262091	CURRANT HWY STN	Railroad Valley	173B	7	1964	1977	2.5	2.5	2.0	2.3	2.3	3.8
262078	CURRANT*	Railroad Valley	173B	4	1942	1946	3.3	3.4	2.6	3.2	3.2	4.1
262096	CURRIE HWY STN*	Steptoe Valley	179	10	1962	1989	2.8	2.7	2.1	2.5	2.5	4.3
262119	DAGGET PASS	Lake Tahoe Basin	90	5	1989	2005	1.9	1.9	1.4	1.7	1.7	1.3
262229	DENIO*	Pueblo Valley	1	30	1969	2005	3.1	3.1	2.5	3.0	3.0	3.7
262243	DESERT NWR*	Las Vegas Valley	212	30	1974	2007	5.5	4.7	3.7	4.0	5.4	6.1
262276	DIABLO*	Railroad Valley	173A	10	1960	1978	3.7	3.7	3.0	3.5	3.7	4.5
262296	DIAMOND VALLEY USDA*	Diamond Valley	153	19	1980	2006	2.5	2.5	2.0	2.4	2.4	3.5
262390	DUCKWATER*	Railroad Valley	173B	19	1967	1998	3.3	3.3	2.6	3.2	3.1	4.1
262394	DUFURRENA*	Virgin Valley	4	30	1965	2004	2.8	2.7	2.1	2.6	2.5	4.0
262431	DYER*	Fish Lake Valley	117	30	1974	2007	4.2	4.1	3.2	4.1	4.0	5.4
262477	EASTGATE*	Eastgate Valley Area	127	4	1957	1963	3.4	3.4	2.7	3.4	3.4	4.2
262497	ECHO BAY*	Black Moutains Area	215	10	1990	2003	4.5	3.8	3.0	2.6	4.6	5.1
262562	ELGIN 3 SE*	Lower Meadow Valley Wash	205	15	1966	1985	3.8	3.2	2.5	2.9	3.8	3.9

Appendix 12a cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
262557	ELGIN*	Lower Meadow Valley Wash	205	20	1986	2006	3.9	3.4	2.7	3.3	3.9	4.2
262573	ELKO RGNL AP*	Elko Segment	49	30	1978	2007	2.6	2.6	2.1	2.5	2.5	3.3
262570	ELKO*	Elko Segment	49	6	2000	2007	2.6	2.7	2.1	2.6	2.5	3.2
262626	ELY 6 NE	Steptoe Valley	179	5	2000	2005	3.4	3.4	2.7	3.1	3.2	4.4
262631	ELY YELLAND FLD AP*	Steptoe Valley	179	30	1976	2005	2.8	2.7	2.1	2.6	2.5	3.9
262656	EMIGRANT PASS HWY STN	Boulder Flat	61	27	1964	1999	2.4	2.5	2.0	2.4	2.4	2.9
262662	EMPIRE*	San Emidio Desert	22	6	1951	1976	3.5	3.5	2.8	3.4	3.5	4.1
262708	EUREKA	Diamond Valley	153	30	1975	2007	2.3	2.3	1.7	2.2	2.1	2.8
262780	FALLON EXP STN*	Carson Desert	101	30	1973	2005	3.2	3.2	2.5	3.1	3.2	3.9
262820	FERGUSON SPRINGS HMS*	Great Salt Lake Desert	192	7	1973	1982	2.3	2.4	1.9	2.3	2.2	3.1
262840	FERNLEY*	Fernley Area	76	21	1908	1974	3.5	3.4	2.7	3.3	3.3	4.3
262860	FISH CREEK RCH*	Little Smoky Valley	155A	14	1944	1964	2.8	2.8	2.2	2.6	2.6	4.4
263090	GERLACH*	San Emidio Desert	22	27	1963	2006	3.1	3.2	2.5	3.1	3.2	3.7
263101	GEYSER RCH*	Lake Valley	183	19	1905	2002	3.0	2.9	2.3	2.7	2.7	4.0
263114	GIBBS RCH*	Marys River Area	42	30	1972	2006	2.3	2.3	1.8	2.2	2.1	3.2
263205	GLENBROOK*	Lake Tahoe Basin	90	30	1969	2007	2.3	2.2	1.7	2.1	2.1	2.2
263245	GOLCONDA*	Winnemucca Segment	70	30	1970	2005	3.4	3.4	2.7	3.3	3.4	4.2

Appendix 12a cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
263285	GOLDFIELD	Alkali Spring Valley	142	30	1951	2004	3.4	3.3	2.6	3.2	3.2	4.2
263316	GOODSPRINGS*	Ivanpah Valley	164A	6	2000	2006	5.2	4.4	3.5	3.7	5.1	5.6
263340	GREAT BASIN NP	Snake Valley	195	16	1988	2007	2.3	2.4	1.8	2.3	2.3	2.7
263515	HAWTHORNE AP*	Walker Lake Valley	110C	30	1947	1990	3.8	3.6	2.8	3.5	3.6	4.6
263512	HAWTHORNE*	Walker Lake Valley	110C	13	1955	2007	3.9	3.6	2.8	3.4	3.6	4.6
263671	HIKO*	Pahranagat Valley	209	15	1990	2006	4.1	3.7	2.9	3.5	3.9	4.6
263853	HUMBOLDT FLD	Buena Vista Valley	129	7	1940	1947	3.2	3.2	2.5	3.1	3.1	4.0
263940	I-L RCH*	South Fork Owyhee River Area	35	3	1963	1967	1.8	1.9	1.5	2.0	1.8	3.1
263957	IMLAY*	Imlay Area	72	30	1964	2007	3.4	3.3	2.6	3.2	3.3	4.0
263980	INDIAN SPRINGS*	Indian Springs Valley	161	23	1914	1964	5.2	4.7	3.7	4.1	5.0	6.0
264016	JACKPOT*	Salmon Falls Creek Area	40	15	1987	2004	2.5	2.5	2.0	2.4	2.4	3.3
264039	JARBIDGE 7 N*	Jarbidge River Area	39	11	1996	2006	2.3	2.3	1.7	2.2	2.1	2.7
264038	JARBRIDGE 4 N	Jarbidge River Area	39	22	1917	1995	2.1	1.9	1.4	1.7	1.7	2.3
264095	JIGGS 8 SSE ZAGA*	Huntington Valley	47	19	1979	2007	2.4	2.4	1.8	2.2	2.2	3.0
264108	JUNGO MEYER RCH*	Desert Valley	31	7	1969	1985	3.1	3.2	2.5	3.1	3.1	3.8
264199	KIMBERLY	White River Valley	207	28	1929	1958	2.4	2.4	1.9	2.3	2.2	3.0

Appendix 12a cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
264268	KNOLL CREEK FLD STN	Salmon Falls Creek Area	40	6	1972	1979	2.4	2.3	1.7	2.1	2.0	3.6
264314	KYLE CANYON RS	Las Vegas Valley	212	4	1940	1948	2.8	2.6	2.0	2.7	2.3	3.1
264341	LAGES*	Steptoe Valley	179	21	1984	2006	3.0	3.0	2.3	2.9	2.8	4.0
264349	LAHONTAN DAM*	Churchill Valley	102	30	1966	2003	3.4	3.2	2.6	3.1	3.4	4.0
264384	LAKE VALLEY STEWARD	Lake Valley	183	22	1971	1998	2.4	2.5	1.9	2.4	2.3	2.7
264395	LAMOILLE PH	Lamoille Valley	45	30	1934	1972	2.1	2.2	1.7	2.1	2.1	2.2
264394	LAMOILLE YOST*	Lamoille Valley	45	22	1976	2003	2.3	2.3	1.8	2.2	2.1	2.9
264439	LAS VEGAS NWFO*	Las Vegas Valley	212	9	1997	2007	5.1	4.3	3.3	3.2	5.0	5.6
264436	LAS VEGAS WB AP*	Las Vegas Valley	212	30	1976	2005	5.2	4.5	3.7	3.2	5.4	5.7
23112	LAS VEGAS*	Las Vegas Valley	212	22	1949	1970	5.5	4.8	3.9	3.6	5.6	6.0
264429	LAS VEGAS*	Las Vegas Valley	212	30	1915	1955	6.1	5.3	4.2	4.1	6.2	6.5
264457	LATHROP WELLS	Fortymile Canyon	227A	8	1943	1963	5.2	4.6	3.6	3.8	5.3	5.8
264480	LAUGHLIN*	Colorado Valley	213	10	1989	2006	5.8	5.0	3.9	3.6	5.8	6.4
264514	LEHMAN CAVES NM	Snake Valley	195	30	1958	1987	2.1	2.2	1.7	2.1	2.0	2.6
264527	LEONARD CREEK RCH*	Black Rock Desert	28	30	1971	2004	3.2	3.2	2.5	3.1	3.2	3.6
264542	LEWERS RCH	Washoe Valley	89	15	1893	1913	3.2	3.1	2.4	3.1	2.9	2.7

Appendix 12a cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
264600	LITTLE RED ROCK	Las Vegas Valley	212	4	1966	1970	4.3	3.7	2.8	3.3	4.2	4.7
264651	LOGANDALE*	Lower Moapa Valley	220	20	1969	1991	4.3	3.7	3.0	2.9	4.5	4.8
264700	LOVELOCK DERBY FLD*	Lovelock Valley	73	30	1970	2005	3.7	3.7	3.0	3.6	3.6	4.5
264745	LUND*	White River Valley	207	30	1977	2007	3.1	3.1	2.4	2.9	2.9	3.9
264824	MALA VISTA RCH*	Marys River Area	42	16	1940	1965	2.4	2.3	1.8	2.2	2.2	3.5
264858	MARLETTE LAKE	Lake Tahoe Basin	90	19	1917	1952	1.4	1.5	1.1	1.4	1.3	0.7
264935	MCDERMITT*	Quinn River Valley	33B	29	1916	2007	2.8	2.7	2.1	2.3	2.5	3.8
264950	MCGILL*	Steptoe Valley	179	30	1977	2007	2.9	2.8	2.2	2.7	2.7	3.6
265085	MESQUITE*	Virgin River Valley	222	13	1942	2006	4.4	3.9	3.1	2.9	4.5	4.8
265092	METROPOLIS*	Marys River Area	42	18	1966	1994	2.4	2.4	1.9	2.4	2.3	2.8
265105	MIDAS 4 SE*	Willow Creek Valley	63	4	1962	1967	2.4	2.5	2.0	2.4	2.4	3.9
265132	MIDDLEGATE-LOWERY*	Cowkick Valley	126	15	1989	2007	3.4	3.2	2.5	3.1	3.0	4.5
265168	MINA*	Soda Spring Valley	121A	30	1978	2007	3.9	3.7	2.9	3.6	3.7	4.6
265191	MINDEN*	Carson Valley	105	30	1975	2007	3.0	3.0	2.4	2.9	3.0	3.7
265352	MONTELLO 2 SE*	Thousand Springs Valley	189D	30	1971	2007	2.9	2.9	2.2	2.8	2.6	4.0

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STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
265362	MONTGOMERY MNTC STN	Queen Valley	116	10	1961	1978	2.3	2.3	1.8	2.1	2.1	3.6
265371	MOORMAN RCH*	Jakes Valley	174	4	2003	2007	2.7	2.6	2.0	2.5	2.4	3.7
265400	MT CHARLESTON FS	Las Vegas Valley	212	6	1949	2007	2.8	2.3	1.8	2.7	2.1	3.2
265440	MT ROSE BOWL	Pleasant Valley	88	8	1974	1984	1.6	1.7	1.3	1.6	1.5	1.0
265392	MTN CITY RS*	Owyhee River Area	37	30	1965	1998	2.1	2.0	1.6	1.9	1.8	3.3
265605	NIXON*	Pyramid Lake Valley	81	30	1931	1973	3.6	3.5	2.8	3.4	3.5	4.4
265705	NORTH LAS VEGAS*	Las Vegas Valley	212	20	1952	2006	5.9	5.2	4.2	3.9	6.0	6.4
265722	OASIS*	Goshute Valley	187	17	1988	2006	2.8	2.7	2.1	2.6	2.5	3.7
265760	OLD RUTH	Steptoe Valley	179	5	1979	1985	2.1	2.3	1.7	2.1	2.0	2.8
265818	OROVADA 3 W*	Quinn River Valley	33A	30	1971	2006	3.1	3.1	2.5	3.0	3.1	3.7
265846	OVERTON*	Lower Moapa Valley	220	30	1950	2007	4.6	4.0	3.2	2.9	4.7	5.1
265869	OWYHEE*	Owyhee River Area	37	30	1953	1984	2.3	2.4	1.9	2.3	2.2	2.8
265880	PAHRANAGAT WR*	Pahranagat Valley	209	30	1968	2006	4.3	3.8	3.0	3.5	4.2	4.9
265890	PAHRUMP*	Pahrump Valley	162	30	1973	2006	5.0	4.4	3.6	3.8	5.1	5.6
265907	PAHUTE MEADOWS RCH*	Black Rock Desert	28	4	1964	1974	3.2	3.2	2.6	3.2	3.1	3.8

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STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
265931	PALMETTO	Fish Lake Valley	117	14	1891	1907	2.8	2.8	2.2	2.5	2.6	3.7
266005	PARADISE VALLEY 1 NW*	Paradise Valley	69	30	1972	2007	3.2	3.2	2.5	3.0	3.0	4.0
266055	PARIS RCH*	Pleasant Valley	130	22	1967	1990	3.5	3.4	2.8	3.3	3.4	4.1
266130	PENOYER VALLEY*	Penoyer Valley	170	5	1968	2004	3.9	4.0	3.2	3.8	3.9	4.9
266148	PEQUOP	Goshute Valley	187	23	1960	1985	2.4	2.3	1.8	2.3	2.1	3.2
266228	PILOT VALLEY-LEE*	Pilot Creek Valley	191	6	2000	2007	2.9	2.8	2.2	2.7	2.6	3.6
266242	PINE VALLEY BAILEY RCH*	Pine Valley	53	11	1983	2003	2.7	2.6	2.0	2.3	2.4	3.8
266252	PIOCHE	Patterson Valley	202	30	1968	2006	2.8	2.7	2.1	2.6	2.6	3.1
266504	QUINN RVR CROSSING	Pine Forest Valley	29	10	1902	1950	3.1	3.1	2.4	3.0	3.0	4.3
266574	RAND RCH PALISADE*	Pine Valley	53	19	1958	1981	2.3	2.3	1.8	2.2	2.2	3.7
266630	RATTLESNAKE	Hot Creek	156	13	1949	1961	3.2	3.3	2.6	3.2	3.1	4.1
266691	RED ROCK CANYON SP	Las Vegas Valley	212	20	1978	2006	4.4	3.9	3.1	3.4	4.5	4.7
29999	RED ROCK WC*	Red Rock Valley	99	4	2004	2007	2.6	2.6	2.0	2.5	2.4	3.4
266746	REESE RIVER*	Upper Reese River Valley	56	26	1973	2006	2.5	2.4	1.8	2.2	2.1	3.9
266748	REESE VALLEY CARPER	Middle Reese River Valley	58	6	1977	1983	2.8	2.8	2.2	2.6	2.6	3.7
266779	RENO TAHOE INTL AP*	Truckee Meadows	87	30	1978	2007	3.5	3.4	2.7	3.3	3.5	4.0

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266791	RENO WFO*	Truckee Meadows	87	10	1997	2007	3.3	3.2	2.6	3.2	3.4	3.7
267123	RUBY LAKE*	Ruby Valley	176	30	1975	2007	2.8	2.8	2.2	2.7	2.6	3.3
267175	RUTH	Steptoe Valley	179	30	1963	2007	2.3	2.2	1.7	2.1	2.0	3.5
267192	RYE PATCH DAM*	Imlay Area	72	30	1973	2007	3.6	3.5	2.8	3.4	3.4	4.3
267188	RYNDON*	North Fork Area	44	6	2000	2007	2.6	2.6	2.0	2.5	2.4	3.6
267284	SAN JACINTO*	Salmon Falls Creek Area	40	21	1905	1947	2.6	2.4	1.9	2.3	2.3	3.6
267261	SAND PASS*	Smoke Creek Desert	21	30	1930	1970	3.5	3.6	2.8	3.4	3.6	4.2
267319	SARCOBATUS*	Sarcobatus Flat	146	14	1942	1961	4.2	4.0	3.2	3.7	4.2	5.2
267324	SAVAL RCH*	North Fork Area	44	5	1961	1965	1.8	1.7	1.3	1.7	1.6	2.7
267358	SCHURZ*	Walker Lake Valley	110A	30	1920	1955	3.5	3.5	2.8	3.4	3.5	4.4
267369	SEARCHLIGHT	Piute Valley	214	30	1976	2006	4.2	3.6	2.8	3.0	4.2	4.6
267397	SEVENTY ONE RCH*	Starr Valley Area	43	4	1940	1945	2.4	2.3	1.8	2.2	2.2	3.3
267443	SHELDON	Guano Valley	6	30	1942	1972	1.8	1.8	1.4	1.7	1.7	2.6
267450	SHOSHONE 5 N*	Spring Valley	184	17	1989	2007	3.0	3.0	2.4	2.9	2.9	3.9
267463	SILVERPEAK*	Clayton Valley	143	30	1974	2007	4.4	4.3	3.4	3.9	4.4	5.3
267609	SMITH 1 N*	Smith Valley	107	23	1938	1966	3.0	3.0	2.4	2.8	2.9	4.0
267612	SMITH 6 N*	Smith Valley	107	23	1974	2007	3.1	3.1	2.5	3.0	3.1	4.0
267618	SMOKE CREEK ESPIL*	Smoke Creek Desert	21	14	1988	2004	3.6	3.6	2.9	3.5	3.6	4.3

Appendix 12a cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
267620	SMOKEY VALLEY*	Big Smoky Valley	137B	30	1975	2007	3.6	3.5	2.8	3.5	3.4	4.5
267640	SNOWBALL RCH	Little Smoky Valley	155A	30	1972	2002	2.4	2.3	1.7	2.1	2.1	3.5
267690	SOUTH FORK SP*	Dixie Creek - Tenmile	48	8	1994	2007	2.8	2.7	2.1	2.4	2.6	3.7
267750	SPRING VALLEY SP*	Spring Valley	201	24	1975	2006	3.0	2.9	2.3	2.8	2.6	4.1
267806	STATELINE-HARRAH'S*	Lake Tahoe Basin	90	13	1985	1998	2.4	2.4	1.9	2.3	2.3	2.7
267820	STEAD*	Lemmon Valley	92B	14	1986	2006	3.1	3.1	2.5	3.0	3.1	3.4
267873	SULPHUR*	Black Rock Desert	28	21	1915	1953	3.4	3.4	2.7	3.4	3.3	4.2
267908	SUNNYSIDE*	White River Valley	207	30	1973	2007	3.3	3.3	2.5	3.1	3.1	4.1
267953	SUTCLIFFE	Pyramid Lake Valley	81	27	1968	2006	3.1	2.9	2.3	2.9	3.1	3.5
267983	TEMPIUTE 4 NW*	Penoyer Valley	170	12	1973	1984	3.8	3.8	3.1	3.7	3.8	4.7
268034	THORNE*	Walker Lake Valley	110C	24	1915	1950	3.8	3.7	2.9	3.6	3.7	4.6
268170	TONOPAH*	Ralston Valley	141	30	1975	2005	4.0	3.9	3.1	3.9	3.9	4.8
268186	TOPAZ LAKE 3N*	Antelope Valley	106	19	1958	1980	3.3	3.3	2.6	3.1	3.1	4.2
268202	TOPAZ LAKE 4 N*	Antelope Valley	106	11	1987	1997	3.2	3.1	2.5	3.2	3.2	3.7
268346	TUSCARORA*	Independence Valley	36	30	1973	2006	2.2	2.2	1.7	2.1	2.0	2.8
268443	TWIN SPRING FALLINI*	Hot Creek	156	10	1986	2005	3.5	3.5	2.8	3.4	3.3	4.4

Appendix 12a cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
268500	UNIV OF NEVADA EXP FM*	Truckee Meadows	87	4	1949	1954	3.4	3.3	2.7	3.3	3.5	3.9
268538	URSINE	Eagle Valley	200	4	1965	1972	3.4	3.6	2.8	3.4	3.5	4.0
268588	VALLEY OF FIRE SP	Black Moutains Area	215	30	1977	2007	4.2	3.5	2.7	2.6	4.2	4.7
268761	VIRGINIA CITY	Dayton Valley	103	30	1974	2007	2.4	2.4	1.8	2.3	2.3	2.6
268810	VYA	Surprise Valley	14	14	1960	1975	2.0	1.9	1.5	1.8	1.8	2.7
268822	WABUSKA 6 SE*	Mason Valley	108	27	1973	2006	3.1	3.0	2.4	2.9	3.0	4.0
268838	WADSWORTH 4 N*	Dodge Flat	82	21	1975	2002	3.5	3.4	2.7	3.3	3.3	4.3
268834	WADSWORTH*	Tracy Segment	83	6	1902	1947	3.6	3.4	2.7	3.1	3.3	4.3
39999	WASHOE VALLEY WC*	Washoe Valley	89	5	2004	2008	3.7	3.8	2.9	3.5	3.5	4.7
268977	WELLINGTON RS*	Smith Valley	107	27	1943	1972	3.0	3.0	2.4	2.9	3.0	3.7
268988	WELLS*	Marys River Area	42	30	1975	2004	2.5	2.4	1.9	2.3	2.2	3.4
269072	WILDHORSE RSVR*	Owyhee River Area	37	18	1983	2006	1.8	1.7	1.3	1.6	1.5	3.0
269122	WILKINS*	Thousand Springs Valley	189A	16	1949	1964	2.2	2.2	1.7	2.1	2.0	3.6
269137	WILLOW SPRINGS*	Big Smoky Valley	137A	4	1942	1948	3.7	3.6	2.9	3.6	3.4	4.7
269168	WINNEMUCCA #2*	Grass Valley	71	6	2000	2007	3.3	3.4	2.6	3.2	3.2	4.0

Appendix 12a cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
269171	WINNEMUCCA MUNI AP*	Winnemucca Segment	70	30	1978	2007	3.4	3.3	2.6	3.1	3.2	4.2
269229	YERINGTON*	Mason Valley	108	30	1965	2007	3.1	3.0	2.4	2.9	3.1	3.8

Appendix 12b. Mean annual Net Irrigation Water Requirement (NIWR) for each NWS weather station, sorted by basin name.
* Station was used in averaging or assigning NIWR to respective hydrographic areas. Number of years used for average and start and end years listed are for alfalfa and may vary slightly for other crop types due to possible missing data within crop specific growing seasons.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
263285	GOLDFIELD	Alkali Spring Valley	142	30	1951	2004	3.4	3.3	2.6	3.2	3.2	4.2
260150	AMARGOSA FARMS-GAREY*	Amargosa Desert	230	28	1966	2005	5.3	4.5	3.6	3.6	5.3	5.8
260282	ANTELOPE VALLEY FARR*	Antelope Valley	57	8	1985	1998	3.0	3.1	2.4	3.0	3.0	3.9
268186	TOPAZ LAKE 3N*	Antelope Valley	106	19	1958	1980	3.3	3.3	2.6	3.1	3.1	4.2
268202	TOPAZ LAKE 4 N*	Antelope Valley	106	11	1987	1997	3.2	3.1	2.5	3.2	3.2	3.7
267620	SMOKEY VALLEY*	Big Smoky Valley	137B	30	1975	2007	3.6	3.5	2.8	3.5	3.4	4.5
269137	WILLOW SPRINGS*	Big Smoky Valley	137A	4	1942	1948	3.7	3.6	2.9	3.6	3.4	4.7
261371	CALLVILLE BAY*	Black Moutains Area	215	8	1990	2003	4.9	4.1	3.3	2.8	4.9	5.5
262497	ECHO BAY*	Black Moutains Area	215	10	1990	2003	4.5	3.8	3.0	2.6	4.6	5.1
268588	VALLEY OF FIRE SP	Black Moutains Area	215	30	1977	2007	4.2	3.5	2.7	2.6	4.2	4.7
264527	LEONARD CREEK RCH*	Black Rock Desert	28	30	1971	2004	3.2	3.2	2.5	3.1	3.2	3.6

Appendix 12b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
265907	PAHUTE MEADOWS RCH*	Black Rock Desert	28	4	1964	1974	3.2	3.2	2.6	3.2	3.1	3.8
267873	SULPHUR*	Black Rock Desert	28	21	1915	1953	3.4	3.4	2.7	3.4	3.3	4.2
261415	CARLIN NEWMONT MINE	Boulder Flat	61	24	1967	1999	2.0	2.0	1.6	1.9	1.9	2.3
262656	EMIGRANT PASS HWY STN	Boulder Flat	61	27	1964	1999	2.4	2.5	2.0	2.4	2.4	2.9
261660	CHARLESTON*	Bruneau River Area	38	4	1962	2005	1.6	1.5	1.1	1.2	1.3	3.3
263853	HUMBOLDT FLD	Buena Vista Valley	129	7	1940	1947	3.2	3.2	2.5	3.1	3.1	4.0
261311	BUFFALO RCH*	Buffalo Valley	131	7	1967	1978	2.8	2.8	2.2	2.7	2.8	3.0
262780	FALLON EXP STN*	Carson Desert	101	30	1973	2005	3.2	3.2	2.5	3.1	3.2	3.9
265191	MINDEN*	Carson Valley	105	30	1975	2007	3.0	3.0	2.4	2.9	3.0	3.7
264349	LAHONTAN DAM*	Churchill Valley	102	30	1966	2003	3.4	3.2	2.6	3.1	3.4	4.0
267463	SILVERPEAK*	Clayton Valley	143	30	1974	2007	4.4	4.3	3.4	3.9	4.4	5.3
261358	CALIENTE*	Clover Valley	204	22	1904	2005	3.8	3.7	2.9	3.4	3.6	4.4
261740	CLOVER VALLEY*	Clover Valley	177	30	1923	2007	2.5	2.6	2.1	2.5	2.5	3.1
260688	BATTLE MTN*	Clovers Area	64	25	1899	1944	3.5	3.4	2.8	3.3	3.3	4.3
264480	LAUGHLIN*	Colorado Valley	213	10	1989	2006	5.8	5.0	3.9	3.6	5.8	6.4
261755	COALDALE JUNCTION*	Columbus Salt Marsh Valley	118	6	1942	1957	4.4	4.2	3.3	4.1	4.1	5.4

Appendix 12b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
265132	MIDDLEGATE-LOWERY*	Cowkick Valley	126	15	1989	2007	3.4	3.2	2.5	3.1	3.0	4.5
260795	BEOWAWE*	Crescent Valley	54	30	1976	2006	2.9	3.0	2.4	2.9	2.9	3.7
261975	CORTEZ GOLD MINE*	Crescent Valley	54	10	1969	1979	2.9	2.9	2.3	2.8	2.8	3.5
268761	VIRGINIA CITY	Dayton Valley	103	30	1974	2007	2.4	2.4	1.8	2.3	2.3	2.6
264108	JUNGO MEYER RCH*	Desert Valley	31	7	1969	1985	3.1	3.2	2.5	3.1	3.1	3.8
262296	DIAMOND VALLEY USDA*	Diamond Valley	153	19	1980	2006	2.5	2.5	2.0	2.4	2.4	3.5
262708	EUREKA	Diamond Valley	153	30	1975	2007	2.3	2.3	1.7	2.2	2.1	2.8
267690	SOUTH FORK SP*	Dixie Creek - Tenmile	48	8	1994	2007	2.8	2.7	2.1	2.4	2.6	3.7
261160	BRINKERHOFF RCH*	Dixie Valley	128	7	1967	1979	3.6	3.5	2.8	3.4	3.6	4.3
268838	WADSWORTH 4 N*	Dodge Flat	82	21	1975	2002	3.5	3.4	2.7	3.3	3.3	4.3
261485	CARSON CITY*	Eagle Valley	104	30	1973	2007	3.2	3.1	2.5	3.0	3.1	3.7
268538	URSINE	Eagle Valley	200	4	1965	1972	3.4	3.6	2.8	3.4	3.5	4.0
262477	EASTGATE*	Eastgate Valley Area	127	4	1957	1963	3.4	3.4	2.7	3.4	3.4	4.2
261071	BOULDER CITY*	Eldorado Valley	167	30	1968	2004	4.6	3.9	3.1	2.9	4.6	5.1
262573	ELKO RGNL AP*	Elko Segment	49	30	1978	2007	2.6	2.6	2.1	2.5	2.5	3.3
262570	ELKO*	Elko Segment	49	6	2000	2007	2.6	2.7	2.1	2.6	2.5	3.2
262840	FERNLEY*	Fernley Area	76	21	1908	1974	3.5	3.4	2.7	3.3	3.3	4.3
262431	DYER*	Fish Lake Valley	117	30	1974	2007	4.2	4.1	3.2	4.1	4.0	5.4

Appendix 12b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
265931	PALMETTO	Fish Lake Valley	117	14	1891	1907	2.8	2.8	2.2	2.5	2.6	3.7
264457	LATHROP WELLS	Fortymile Canyon	227A	8	1943	1963	5.2	4.6	3.6	3.8	5.3	5.8
260046	ADAVEN	Garden Valley	172	30	1947	1978	2.5	2.6	2.0	2.5	2.4	2.9
265722	OASIS*	Goshute Valley	187	17	1988	2006	2.8	2.7	2.1	2.6	2.5	3.7
266148	PEQUOP	Goshute Valley	187	23	1960	1985	2.4	2.3	1.8	2.3	2.1	3.2
260800	BEOWAWE U OF N RCH*	Grass Valley	138	28	1973	2006	2.7	2.8	2.2	2.7	2.7	3.5
269168	WINNEMUCCA #2*	Grass Valley	71	6	2000	2007	3.3	3.4	2.6	3.2	3.2	4.0
262820	FERGUSON SPRINGS HMS*	Great Salt Lake Desert	192	7	1973	1982	2.3	2.4	1.9	2.3	2.2	3.1
267443	SHELDON	Guano Valley	6	30	1942	1972	1.8	1.8	1.4	1.7	1.7	2.6
260961	BLUE JAY HWY STN*	Hot Creek	156	7	1964	1983	3.3	3.4	2.6	3.3	3.2	4.3
266630	RATTLESNAKE	Hot Creek	156	13	1949	1961	3.2	3.3	2.6	3.2	3.1	4.1
268443	TWIN SPRING FALLINI*	Hot Creek	156	10	1986	2005	3.5	3.5	2.8	3.4	3.3	4.4
264095	JIGGS 8 SSE ZAGA*	Huntington Valley	47	19	1979	2007	2.4	2.4	1.8	2.2	2.2	3.0
263957	IMLAY*	Imlay Area	72	30	1964	2007	3.4	3.3	2.6	3.2	3.3	4.0
267192	RYE PATCH DAM*	Imlay Area	72	30	1973	2007	3.6	3.5	2.8	3.4	3.4	4.3
268346	TUSCARORA*	Independence Valley	36	30	1973	2006	2.2	2.2	1.7	2.1	2.0	2.8
263980	INDIAN SPRINGS*	Indian Springs Valley	161	23	1914	1964	5.2	4.7	3.7	4.1	5.0	6.0

Appendix 12b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
263316	GOODSPRINGS*	Ivanpah Valley	164A	6	2000	2006	5.2	4.4	3.5	3.7	5.1	5.6
265371	MOORMAN RCH*	Jakes Valley	174	4	2003	2007	2.7	2.6	2.0	2.5	2.4	3.7
264039	JARBIDGE 7 N*	Jarbidge River Area	39	11	1996	2006	2.3	2.3	1.7	2.2	2.1	2.7
264038	JARBRIDGE 4 N	Jarbidge River Area	39	22	1917	1995	2.1	1.9	1.4	1.7	1.7	2.3
262119	DAGGET PASS	Lake Tahoe Basin	90	5	1989	2005	1.9	1.9	1.4	1.7	1.7	1.3
263205	GLENBROOK*	Lake Tahoe Basin	90	30	1969	2007	2.3	2.2	1.7	2.1	2.1	2.2
264858	MARLETTE LAKE	Lake Tahoe Basin	90	19	1917	1952	1.4	1.5	1.1	1.4	1.3	0.7
267806	STATELINE-HARRAH'S*	Lake Tahoe Basin	90	13	1985	1998	2.4	2.4	1.9	2.3	2.3	2.7
263101	GEYSER RCH*	Lake Valley	183	19	1905	2002	3.0	2.9	2.3	2.7	2.7	4.0
264384	LAKE VALLEY STEWARD	Lake Valley	183	22	1971	1998	2.4	2.5	1.9	2.4	2.3	2.7
264395	LAMOILLE PH	Lamoille Valley	45	30	1934	1972	2.1	2.2	1.7	2.1	2.1	2.2
264394	LAMOILLE YOST*	Lamoille Valley	45	22	1976	2003	2.3	2.3	1.8	2.2	2.1	2.9
262243	DESERT NWR*	Las Vegas Valley	212	30	1974	2007	5.5	4.7	3.7	4.0	5.4	6.1
264314	KYLE CANYON RS	Las Vegas Valley	212	4	1940	1948	2.8	2.6	2.0	2.7	2.3	3.1
264439	LAS VEGAS NWFO*	Las Vegas Valley	212	9	1997	2007	5.1	4.3	3.3	3.2	5.0	5.6
264436	LAS VEGAS WB AP*	Las Vegas Valley	212	30	1976	2005	5.2	4.5	3.7	3.2	5.4	5.7
23112	LAS VEGAS*	Las Vegas Valley	212	22	1949	1970	5.5	4.8	3.9	3.6	5.6	6.0

Appendix 12b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
264429	LAS VEGAS*	Las Vegas Valley	212	30	1915	1955	6.1	5.3	4.2	4.1	6.2	6.5
264600	LITTLE RED ROCK	Las Vegas Valley	212	4	1966	1970	4.3	3.7	2.8	3.3	4.2	4.7
265400	MT CHARLESTON FS	Las Vegas Valley	212	6	1949	2007	2.8	2.3	1.8	2.7	2.1	3.2
265705	NORTH LAS VEGAS*	Las Vegas Valley	212	20	1952	2006	5.9	5.2	4.2	3.9	6.0	6.4
266691	RED ROCK CANYON SP	Las Vegas Valley	212	20	1978	2006	4.4	3.9	3.1	3.4	4.5	4.7
267820	STEAD*	Lemmon Valley	92B	14	1986	2006	3.1	3.1	2.5	3.0	3.1	3.4
262860	FISH CREEK RCH*	Little Smoky Valley	155A	14	1944	1964	2.8	2.8	2.2	2.6	2.6	4.4
267640	SNOWBALL RCH	Little Smoky Valley	155A	30	1972	2002	2.4	2.3	1.7	2.1	2.1	3.5
264700	LOVELOCK DERBY FLD*	Lovelock Valley	73	30	1970	2005	3.7	3.7	3.0	3.6	3.6	4.5
262562	ELGIN 3 SE*	Lower Meadow Valley Wash	205	15	1966	1985	3.8	3.2	2.5	2.9	3.8	3.9
262557	ELGIN*	Lower Meadow Valley Wash	205	20	1986	2006	3.9	3.4	2.7	3.3	3.9	4.2
264651	LOGANDALE*	Lower Moapa Valley	220	20	1969	1991	4.3	3.7	3.0	2.9	4.5	4.8
265846	OVERTON*	Lower Moapa Valley	220	30	1950	2007	4.6	4.0	3.2	2.9	4.7	5.1
260691	BATTLE MTN AP*	Lower Reese River Valley	59	30	1973	2006	3.0	3.1	2.4	2.9	3.0	3.8

Appendix 12b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
263114	GIBBS RCH*	Marys River Area	42	30	1972	2006	2.3	2.3	1.8	2.2	2.1	3.2
264824	MALA VISTA RCH*	Marys River Area	42	16	1940	1965	2.4	2.3	1.8	2.2	2.2	3.5
265092	METROPOLIS*	Marys River Area	42	18	1966	1994	2.4	2.4	1.9	2.4	2.3	2.8
268988	WELLS*	Marys River Area	42	30	1975	2004	2.5	2.4	1.9	2.3	2.2	3.4
268822	WABUSKA 6 SE*	Mason Valley	108	27	1973	2006	3.1	3.0	2.4	2.9	3.0	4.0
269229	YERINGTON*	Mason Valley	108	30	1965	2007	3.1	3.0	2.4	2.9	3.1	3.8
266748	REESE VALLEY CARPER	Middle Reese River Valley	58	6	1977	1983	2.8	2.8	2.2	2.6	2.6	3.7
267188	RYNDON*	North Fork Area	44	6	2000	2007	2.6	2.6	2.0	2.5	2.4	3.6
267324	SAVAL RCH*	North Fork Area	44	5	1961	1965	1.8	1.7	1.3	1.7	1.6	2.7
260718	BEATTY 8 N*	Oasis Valley	228	28	1973	2004	4.5	3.9	3.1	3.8	4.5	5.1
260715	BEATTY*	Oasis Valley	228	30	1921	1972	4.9	4.3	3.4	4.0	4.8	5.5
265392	MTN CITY RS*	Owyhee River Area	37	30	1965	1998	2.1	2.0	1.6	1.9	1.8	3.3
265869	OWYHEE*	Owyhee River Area	37	30	1953	1984	2.3	2.4	1.9	2.3	2.2	2.8
269072	WILDHORSE RSVR*	Owyhee River Area	37	18	1983	2006	1.8	1.7	1.3	1.6	1.5	3.0
260099	ALAMO*	Pahranagat Valley	209	29	1922	1958	4.6	4.2	3.3	3.9	4.3	5.3
263671	HIKO*	Pahranagat Valley	209	15	1990	2006	4.1	3.7	2.9	3.5	3.9	4.6
265880	PAHRANAGAT WR*	Pahranagat Valley	209	30	1968	2006	4.3	3.8	3.0	3.5	4.2	4.9

Appendix 12b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
265890	PAHRUMP*	Pahrump Valley	162	30	1973	2006	5.0	4.4	3.6	3.8	5.1	5.6
261590	CATHEDRAL GORGE SP*	Panaca Valley	203	4	2003	2007	3.7	3.6	2.8	3.5	3.5	4.2
266005	PARADISE VALLEY 1 NW*	Paradise Valley	69	30	1972	2007	3.2	3.2	2.5	3.0	3.0	4.0
266252	PIOCHE	Patterson Valley	202	30	1968	2006	2.8	2.7	2.1	2.6	2.6	3.1
266130	PENOYER VALLEY*	Penoyer Valley	170	5	1968	2004	3.9	4.0	3.2	3.8	3.9	4.9
267983	TEMPIUTE 4 NW*	Penoyer Valley	170	12	1973	1984	3.8	3.8	3.1	3.7	3.8	4.7
266228	PILOT VALLEY-LEE*	Pilot Creek Valley	191	6	2000	2007	2.9	2.8	2.2	2.7	2.6	3.6
266504	QUINN RVR CROSSING	Pine Forest Valley	29	10	1902	1950	3.1	3.1	2.4	3.0	3.0	4.3
266242	PINE VALLEY BAILEY RCH*	Pine Valley	53	11	1983	2003	2.7	2.6	2.0	2.3	2.4	3.8
266574	RAND RCH PALISADE*	Pine Valley	53	19	1958	1981	2.3	2.3	1.8	2.2	2.2	3.7
267369	SEARCHLIGHT	Piute Valley	214	30	1976	2006	4.2	3.6	2.8	3.0	4.2	4.6
265440	MT ROSE BOWL	Pleasant Valley	88	8	1974	1984	1.6	1.7	1.3	1.6	1.5	1.0
266055	PARIS RCH*	Pleasant Valley	130	22	1967	1990	3.5	3.4	2.8	3.3	3.4	4.1
262229	DENIO*	Pueblo Valley	1	30	1969	2005	3.1	3.1	2.5	3.0	3.0	3.7
265605	NIXON*	Pyramid Lake Valley	81	30	1931	1973	3.6	3.5	2.8	3.4	3.5	4.4
267953	SUTCLIFFE	Pyramid Lake Valley	81	27	1968	2006	3.1	2.9	2.3	2.9	3.1	3.5
265362	MONTGOMERY MNTC STN	Queen Valley	116	10	1961	1978	2.3	2.3	1.8	2.1	2.1	3.6

Appendix 12b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
264935	MCDERMITT*	Quinn River Valley	33B	29	1916	2007	2.8	2.7	2.1	2.3	2.5	3.8
265818	OROVADA 3 W*	Quinn River Valley	33A	30	1971	2006	3.1	3.1	2.5	3.0	3.1	3.7
260955	BLUE EAGLE RCH HANKS*	Railroad Valley	173B	23	1979	2007	3.7	3.7	2.9	3.5	3.7	4.3
262091	CURRANT HWY STN	Railroad Valley	173B	7	1964	1977	2.5	2.5	2.0	2.3	2.3	3.8
262078	CURRANT*	Railroad Valley	173B	4	1942	1946	3.3	3.4	2.6	3.2	3.2	4.1
262276	DIABLO*	Railroad Valley	173A	10	1960	1978	3.7	3.7	3.0	3.5	3.7	4.5
262390	DUCKWATER*	Railroad Valley	173B	19	1967	1998	3.3	3.3	2.6	3.2	3.1	4.1
268170	TONOPAH*	Ralston Valley	141	30	1975	2005	4.0	3.9	3.1	3.9	3.9	4.8
29999	RED ROCK WC*	Red Rock Valley	99	4	2004	2007	2.6	2.6	2.0	2.5	2.4	3.4
260438	ARTHUR 4 NW*	Ruby Valley	176	30	1971	2007	2.3	2.3	1.8	2.3	2.2	2.7
267123	RUBY LAKE*	Ruby Valley	176	30	1975	2007	2.8	2.8	2.2	2.7	2.6	3.3
261905	CONTACT*	Salmon Falls Creek Area	40	30	1956	1998	2.6	2.4	1.9	2.3	2.3	3.5
264016	JACKPOT*	Salmon Falls Creek Area	40	15	1987	2004	2.5	2.5	2.0	2.4	2.4	3.3
264268	KNOLL CREEK FLD STN	Salmon Falls Creek Area	40	6	1972	1979	2.4	2.3	1.7	2.1	2.0	3.6
267284	SAN JACINTO*	Salmon Falls Creek Area	40	21	1905	1947	2.6	2.4	1.9	2.3	2.3	3.6
262662	EMPIRE*	San Emidio Desert	22	6	1951	1976	3.5	3.5	2.8	3.4	3.5	4.1
263090	GERLACH*	San Emidio Desert	22	27	1963	2006	3.1	3.2	2.5	3.1	3.2	3.7

Appendix 12b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
267319	SARCOBATUS*	Sarcobatus Flat	146	14	1942	1961	4.2	4.0	3.2	3.7	4.2	5.2
267609	SMITH 1 N*	Smith Valley	107	23	1938	1966	3.0	3.0	2.4	2.8	2.9	4.0
267612	SMITH 6 N*	Smith Valley	107	23	1974	2007	3.1	3.1	2.5	3.0	3.1	4.0
268977	WELLINGTON RS*	Smith Valley	107	27	1943	1972	3.0	3.0	2.4	2.9	3.0	3.7
267261	SAND PASS*	Smoke Creek Desert	21	30	1930	1970	3.5	3.6	2.8	3.4	3.6	4.2
267618	SMOKE CREEK ESPIL*	Smoke Creek Desert	21	14	1988	2004	3.6	3.6	2.9	3.5	3.6	4.3
263340	GREAT BASIN NP	Snake Valley	195	16	1988	2007	2.3	2.4	1.8	2.3	2.3	2.7
264514	LEHMAN CAVES NM	Snake Valley	195	30	1958	1987	2.1	2.2	1.7	2.1	2.0	2.6
265168	MINA*	Soda Spring Valley	121A	30	1978	2007	3.9	3.7	2.9	3.6	3.7	4.6
263940	I-L RCH*	South Fork Owyhee River Area	35	3	1963	1967	1.8	1.9	1.5	2.0	1.8	3.1
267450	SHOSHONE 5 N*	Spring Valley	184	17	1989	2007	3.0	3.0	2.4	2.9	2.9	3.9
267750	SPRING VALLEY SP*	Spring Valley	201	24	1975	2006	3.0	2.9	2.3	2.8	2.6	4.1
267397	SEVENTY ONE RCH*	Starr Valley Area	43	4	1940	1945	2.4	2.3	1.8	2.2	2.2	3.3
262096	CURRIE HWY STN*	Steptoe Valley	179	10	1962	1989	2.8	2.7	2.1	2.5	2.5	4.3
262626	ELY 6 NE	Steptoe Valley	179	5	2000	2005	3.4	3.4	2.7	3.1	3.2	4.4
262631	ELY YELLAND FLD AP*	Steptoe Valley	179	30	1976	2005	2.8	2.7	2.1	2.6	2.5	3.9
264341	LAGES*	Steptoe Valley	179	21	1984	2006	3.0	3.0	2.3	2.9	2.8	4.0

Appendix 12b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
264950	MCGILL*	Steptoe Valley	179	30	1977	2007	2.9	2.8	2.2	2.7	2.7	3.6
265760	OLD RUTH	Steptoe Valley	179	5	1979	1985	2.1	2.3	1.7	2.1	2.0	2.8
267175	RUTH	Steptoe Valley	179	30	1963	2007	2.3	2.2	1.7	2.1	2.0	3.5
268810	VYA	Surprise Valley	14	14	1960	1975	2.0	1.9	1.5	1.8	1.8	2.7
260668	BASALT	Teels Marsh Valley	114	10	1942	1957	3.2	3.2	2.5	3.1	3.0	4.2
265352	MONTELLO 2 SE*	Thousand Springs Valley	189D	30	1971	2007	2.9	2.9	2.2	2.8	2.6	4.0
269122	WILKINS*	Thousand Springs Valley	189A	16	1949	1964	2.2	2.2	1.7	2.1	2.0	3.6
268834	WADSWORTH*	Tracy Segment	83	6	1902	1947	3.6	3.4	2.7	3.1	3.3	4.3
266779	RENO TAHOE INTL AP*	Truckee Meadows	87	30	1978	2007	3.5	3.4	2.7	3.3	3.5	4.0
266791	RENO WFO*	Truckee Meadows	87	10	1997	2007	3.3	3.2	2.6	3.2	3.4	3.7
268500	UNIV OF NEVADA EXP FM*	Truckee Meadows	87	4	1949	1954	3.4	3.3	2.7	3.3	3.5	3.9
260507	AUSTIN #2*	Upper Reese River Valley	56	30	1972	2007	2.7	2.7	2.1	2.6	2.5	3.1
261630	CENTRAL NEVADA FLD LAB*	Upper Reese River Valley	56	13	1966	1985	2.7	2.6	2.0	2.5	2.4	4.1
266746	REESE RIVER*	Upper Reese River Valley	56	26	1973	2006	2.5	2.4	1.8	2.2	2.1	3.9
261327	BUNKERVILLE*	Virgin River Valley	222	6	1980	2007	4.3	3.7	2.9	2.9	4.3	4.9

Appendix 12b cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	NUMBER OF YEARS USED FOR AVERAGE	START YEAR	END YEAR	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
265085	MESQUITE*	Virgin River Valley	222	13	1942	2006	4.4	3.9	3.1	2.9	4.5	4.8
262394	DUFURRENA*	Virgin Valley	4	30	1965	2004	2.8	2.7	2.1	2.6	2.5	4.0
263515	HAWTHORNE AP*	Walker Lake Valley	110C	30	1947	1990	3.8	3.6	2.8	3.5	3.6	4.6
263512	HAWTHORNE*	Walker Lake Valley	110C	13	1955	2007	3.9	3.6	2.8	3.4	3.6	4.6
267358	SCHURZ*	Walker Lake Valley	110A	30	1920	1955	3.5	3.5	2.8	3.4	3.5	4.4
268034	THORNE*	Walker Lake Valley	110C	24	1915	1950	3.8	3.7	2.9	3.6	3.7	4.6
264542	LEWERS RCH	Washoe Valley	89	15	1893	1913	3.2	3.1	2.4	3.1	2.9	2.7
39999	WASHOE VALLEY WC*	Washoe Valley	89	5	2004	2008	3.7	3.8	2.9	3.5	3.5	4.7
264199	KIMBERLY	White River Valley	207	28	1929	1958	2.4	2.4	1.9	2.3	2.2	3.0
264745	LUND*	White River Valley	207	30	1977	2007	3.1	3.1	2.4	2.9	2.9	3.9
267908	SUNNYSIDE*	White River Valley	207	30	1973	2007	3.3	3.3	2.5	3.1	3.1	4.1
265105	MIDAS 4 SE*	Willow Creek Valley	63	4	1962	1967	2.4	2.5	2.0	2.4	2.4	3.9
263245	GOLCONDA*	Winnemucca Segment	70	30	1970	2005	3.4	3.4	2.7	3.3	3.4	4.2
269171	WINNEMUCCA MUNI AP*	Winnemucca Segment	70	30	1978	2007	3.4	3.3	2.6	3.1	3.2	4.2

Appendix 13. Example of assignment and weighting of the mean annual Net Irrigation Water Requirement (NIWR) of alfalfa for respective HAs. Values of the NIWR were either assigned or averaged for HAs with multiple stations according to valid period of record for each station used in computing the annual average. The NIWR is listed in order of HA name, with shaded areas denoting the weighted average, and respective HA name and number.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	ALFALFA NIWR (ft)	START YEAR	END YEAR	NUMBER OF YEARS IN AVERAGE	WEIGHT BASED ON NUMBER OF YEARS USED IN AVERAGE	WEIGHT x ALFALFA NIWR (ft)	WEIGHTED AVERAGE ALFALFA NIWR (ft)
260150	AMARGOSA FARMS-GAREY*	Amargosa Desert	230	5.3	1966	2005	28	1.00	5.3	5.3
260282	ANTELOPE VALLEY FARR*	Antelope Valley	57	3.0	1985	1998	8	1.00	3.0	3.0
268186	TOPAZ LAKE 3N*	Antelope Valley	106	3.3	1958	1980	19	0.63	2.1	
268202	TOPAZ LAKE 4 N*	Antelope Valley	106	3.2	1987	1997	11	0.37	1.2	3.3
269137	WILLOW SPRINGS*	Big Smoky Valley	137A	3.7	1942	1948	4	1.00	3.7	3.7
267620	SMOKEY VALLEY*	Big Smoky Valley	137B	3.6	1975	2007	30	1.00	3.6	3.6
261371	CALLVILLE BAY*	Black Moutains Area	215	4.9	1990	2003	8	0.44	2.2	
262497	ECHO BAY*	Black Moutains Area	215	4.5	1990	2003	10	0.56	2.5	4.7
263090	GERLACH*	San Emidio Desert	22	3.1	1963	2006	27	0.33	1.0	
264527	LEONARD CREEK RCH*	Black Rock Desert	28	3.2	1971	2004	30	0.37	1.2	
265907	PAHUTE MEADOWS RCH*	Black Rock Desert	28	3.2	1964	1974	4	0.05	0.2	
267873	SULPHUR*	Black Rock Desert	28	3.4	1915	1953	21	0.26	0.9	3.2

Appendix 13 cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	ALFALFA NIWR (ft)	START YEAR	END YEAR	NUMBER OF YEARS IN AVERAGE	WEIGHT BASED ON NUMBER OF YEARS USED IN AVERAGE	WEIGHT x ALFALFA NIWR (ft)	WEIGHTED AVERAGE ALFALFA NIWR (ft)
261660	CHARLESTON*	Bruneau River Area	38	1.6	1962	2005	4	1.00	1.6	1.6
261311	BUFFALO RCH*	Buffalo Valley	131	2.8	1967	1978	7	1.00	2.8	2.8
264349	LAHONTAN DAM*	Churchill Valley	102	3.4	1966	2003	30	0.50	1.7	
262780	FALLON EXP STN*	Carson Desert	101	3.2	1973	2005	30	0.50	1.6	3.3
265191	MINDEN*	Carson Valley	105	3.0	1975	2007	30	1.00	3.0	3.0
262780	FALLON EXP STN*	Carson Desert	101	3.2	1973	2005	30	0.50	1.6	
264349	LAHONTAN DAM*	Churchill Valley	102	3.4	1966	2003	30	0.50	1.7	3.3
267463	SILVERPEAK*	Clayton Valley	143	4.4	1974	2007	30	1.00	4.4	4.4
261740	CLOVER VALLEY*	Clover Valley	177	2.5	1923	2007	30	1.00	2.5	2.5
261358	CALIENTE*	Clover Valley	204	3.8	1904	2005	22	1.00	3.8	3.8
260691	BATTLE MTN AP*	Lower Reese River Valley	59	3.0	1973	2006	30	0.55	1.7	
260688	BATTLE MTN*	Clovers Area	64	3.5	1899	1944	25	0.45	1.6	3.2
264480	LAUGHLIN*	Colorado Valley	213	5.8	1989	2006	10	1.00	5.8	5.8
261755	COALDALE JUNCTION*	Columbus Salt Marsh Valley	118	4.4	1942	1957	6	1.00	4.4	4.4
265132	MIDDLEGATE-LOWERY*	Cowkick Valley	126	3.4	1989	2007	15	1.00	3.4	3.4
260795	BEOWAWE*	Crescent Valley	54	2.9	1976	2006	30	0.75	2.2	
261975	CORTEZ GOLD MINE*	Crescent Valley	54	2.9	1969	1979	10	0.25	0.7	2.9
264108	JUNGO MEYER RCH*	Desert Valley	31	3.1	1969	1985	7	1.00	3.1	3.1

Appendix 13 cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	ALFALFA NIWR (ft)	START YEAR	END YEAR	NUMBER OF YEARS IN AVERAGE	WEIGHT BASED ON NUMBER OF YEARS USED IN AVERAGE	WEIGHT x ALFALFA NIWR (ft)	WEIGHTED AVERAGE ALFALFA NIWR (ft)
262296	DIAMOND VALLEY USDA*	Diamond Valley	153	2.5	1980	2006	19	1.00	2.5	2.5
267690	SOUTH FORK SP*	Dixie Creek - Tenmile	48	2.8	1994	2007	8	1.00	2.8	2.8
261160	BRINKERHOFF RCH*	Dixie Valley	128	3.6	1967	1979	7	1.00	3.6	3.6
262840	FERNLEY*	Fernley Area	76	3.5	1908	1974	21	0.44	1.5	
268834	WADSWORTH*	Tracy Segment	83	3.6	1902	1947	6	0.13	0.5	
268838	WADSWORTH 4 N*	Dodge Flat	82	3.5	1975	2002	21	0.44	1.5	3.5
261485	CARSON CITY*	Eagle Valley	104	3.2	1973	2007	30	1.00	3.2	3.2
262477	EASTGATE*	Eastgate Valley Area	127	3.4	1957	1963	4	1.00	3.4	3.4
261071	BOULDER CITY*	Eldorado Valley	167	4.6	1968	2004	30	1.00	4.6	4.6
262570	ELKO*	Elko Segment	49	2.6	2000	2007	6	0.17	0.4	
262573	ELKO RGNL AP*	Elko Segment	49	2.6	1978	2007	30	0.83	2.2	2.6
268838	WADSWORTH 4 N*	Dodge Flat	82	3.5	1975	2002	21	0.44	1.5	
268834	WADSWORTH*	Tracy Segment	83	3.6	1902	1947	6	0.13	0.5	
262840	FERNLEY*	Fernley Area	76	3.5	1908	1974	21	0.44	1.5	3.5
262431	DYER*	Fish Lake Valley	117	4.2	1974	2007	30	1.00	4.2	4.2
265722	OASIS*	Goshute Valley	187	2.8	1988	2006	17	1.00	2.8	2.8
269171	WINNEMUCCA MUNI AP*	Winnemucca Segment	70	3.4	1978	2007	30	0.83	2.8	
269168	WINNEMUCCA #2*	Grass Valley	71	3.3	2000	2007	6	0.17	0.5	3.3

Appendix 13 cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	ALFALFA NIWR (ft)	START YEAR	END YEAR	NUMBER OF YEARS IN AVERAGE	WEIGHT BASED ON NUMBER OF YEARS USED IN AVERAGE	WEIGHT x ALFALFA NIWR (ft)	WEIGHTED AVERAGE ALFALFA NIWR (ft)
260800	BEOWAWE U OF N RCH*	Grass Valley	138	2.7	1973	2006	28	1.00	2.7	2.7
262820	FERGUSON SPRINGS HMS*	Great Salt Lake Desert	192	2.3	1973	1982	7	1.00	2.3	2.3
260961	BLUE JAY HWY STN*	Hot Creek	156	3.3	1964	1983	7	0.41	1.4	
268443	TWIN SPRING FALLINI*	Hot Creek	156	3.5	1986	2005	10	0.59	2.0	3.4
264095	JIGGS 8 SSE ZAGA*	Huntington Valley	47	2.4	1979	2007	19	1.00	2.4	2.4
263957	IMLAY*	Imlay Area	72	3.4	1964	2007	30	0.50	1.7	
267192	RYE PATCH DAM*	Imlay Area	72	3.6	1973	2007	30	0.50	1.8	3.5
268346	TUSCARORA*	Independence Valley	36	2.2	1973	2006	30	1.00	2.2	2.2
263980	INDIAN SPRINGS*	Indian Springs Valley	161	5.2	1914	1964	23	1.00	5.2	5.2
263316	GOODSPRINGS*	Ivanpah Valley	164A	5.2	2000	2006	6	1.00	5.2	5.2
265371	MOORMAN RCH*	Jakes Valley	174	2.7	2003	2007	4	1.00	2.7	2.7
264039	JARBIDGE 7 N*	Jarbidge River Area	39	2.3	1996	2006	11	1.00	2.3	2.3
263205	GLENBROOK*	Lake Tahoe Basin	90	2.3	1969	2007	30	0.70	1.6	
267806	STATELINE-HARRAH'S*	Lake Tahoe Basin	90	2.4	1985	1998	13	0.30	0.7	2.3
263101	GEYSER RCH*	Lake Valley	183	3.0	1905	2002	19	1.00	3.0	3.0
264394	LAMOILLE YOST*	Lamoille Valley	45	2.3	1976	2003	22	1.00	2.3	2.3
23112	LAS VEGAS*	Las Vegas Valley	212	5.5	1949	1970	22	0.16	0.9	
262243	DESERT NWR*	Las Vegas Valley	212	5.5	1974	2007	30	0.21	1.2	

Appendix 13 cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	ALFALFA NIWR (ft)	START YEAR	END YEAR	NUMBER OF YEARS IN AVERAGE	WEIGHT BASED ON NUMBER OF YEARS USED IN AVERAGE	WEIGHT x ALFALFA NIWR (ft)	WEIGHTED AVERAGE ALFALFA NIWR (ft)
264429	LAS VEGAS*	Las Vegas Valley	212	6.1	1915	1955	30	0.21	1.3	
264436	LAS VEGAS WB AP*	Las Vegas Valley	212	5.2	1976	2005	30	0.21	1.1	
264439	LAS VEGAS NWFO*	Las Vegas Valley	212	5.1	1997	2007	9	0.06	0.3	
265705	NORTH LAS VEGAS*	Las Vegas Valley	212	5.9	1952	2006	20	0.14	0.8	5.6
267820	STEAD*	Lemmon Valley	92B	3.1	1986	2006	14	1.00	3.1	3.1
262860	FISH CREEK RCH*	Little Smoky Valley	155A	2.8	1944	1964	14	1.00	2.8	2.8
264700	LOVELOCK DERBY FLD*	Lovelock Valley	73	3.7	1970	2005	30	1.00	3.7	3.7
264651	LOGANDALE*	Lower Moapa Valley	220	4.3	1969	1991	20	0.24	1.0	
265846	OVERTON*	Lower Moapa Valley	220	4.6	1950	2007	30	0.35	1.6	
262557	ELGIN*	Lower Meadow Valley Wash	205	3.9	1986	2006	20	0.24	0.9	
262562	ELGIN 3 SE*	Lower Meadow Valley Wash	205	3.8	1966	1985	15	0.18	0.7	4.2
264651	LOGANDALE*	Lower Moapa Valley	220	4.3	1969	1991	20	0.40	1.7	
265846	OVERTON*	Lower Moapa Valley	220	4.6	1950	2007	30	0.60	2.7	4.5
260688	BATTLE MTN*	Clovers Area	64	3.5	1899	1944	25	0.45	1.6	
260691	BATTLE MTN AP*	Lower Reese River Valley	59	3.0	1973	2006	30	0.55	1.7	3.2
263114	GIBBS RCH*	Marys River Area	42	2.3	1972	2006	30	0.32	0.7	

Appendix 13 cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	ALFALFA NIWR (ft)	START YEAR	END YEAR	NUMBER OF YEARS IN AVERAGE	WEIGHT BASED ON NUMBER OF YEARS USED IN AVERAGE	WEIGHT x ALFALFA NIWR (ft)	WEIGHTED AVERAGE ALFALFA NIWR (ft)
264824	MALA VISTA RCH*	Marys River Area	42	2.4	1940	1965	16	0.17	0.4	
265092	METROPOLIS*	Marys River Area	42	2.4	1966	1994	18	0.19	0.5	
268988	WELLS*	Marys River Area	42	2.5	1975	2004	30	0.32	0.8	2.4
268822	WABUSKA 6 SE*	Mason Valley	108	3.1	1973	2006	27	0.47	1.5	
269229	YERINGTON*	Mason Valley	108	3.1	1965	2007	30	0.53	1.6	3.1
267188	RYNDON*	North Fork Area	44	2.6	2000	2007	6	0.55	1.4	
267324	SAVAL RCH*	North Fork Area	44	1.8	1961	1965	5	0.45	0.8	2.2
260715	BEATTY*	Oasis Valley	228	4.9	1921	1972	30	0.52	2.5	
260718	BEATTY 8 N*	Oasis Valley	228	4.5	1973	2004	28	0.48	2.2	4.7
265392	MTN CITY RS*	Owyhee River Area	37	2.1	1965	1998	30	0.38	0.8	
265869	OWYHEE*	Owyhee River Area	37	2.3	1953	1984	30	0.38	0.9	
269072	WILDHORSE RSVR*	Owyhee River Area	37	1.8	1983	2006	18	0.23	0.4	2.1
260099	ALAMO*	Pahranagat Valley	209	4.6	1922	1958	29	0.39	1.8	
263671	HIKO*	Pahranagat Valley	209	4.1	1990	2006	15	0.20	0.8	
265880	PAHRANAGAT WR*	Pahranagat Valley	209	4.3	1968	2006	30	0.41	1.7	4.4
265890	PAHRUMP*	Pahrump Valley	162	5.0	1973	2006	30	1.00	5.0	5.0
261358	CALIENTE*	Clover Valley	204	3.8	1904	2005	22	0.85	3.2	
261590	CATHEDRAL GORGE SP*	Panaca Valley	203	3.7	2003	2007	4	0.15	0.6	3.8

Appendix 13 cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	ALFALFA NIWR (ft)	START YEAR	END YEAR	NUMBER OF YEARS IN AVERAGE	WEIGHT BASED ON NUMBER OF YEARS USED IN AVERAGE	WEIGHT x ALFALFA NIWR (ft)	WEIGHTED AVERAGE ALFALFA NIWR (ft)
266005	PARADISE VALLEY 1 NW*	Paradise Valley	69	3.2	1972	2007	30	1.00	3.2	3.2
266130	PENOYER VALLEY*	Penoyer Valley	170	3.9	1968	2004	5	0.29	1.2	
267983	TEMPIUTE 4 NW*	Penoyer Valley	170	3.8	1973	1984	12	0.71	2.7	3.9
266228	PILOT VALLEY-LEE*	Pilot Creek Valley	191	2.9	2000	2007	6	1.00	2.9	2.9
266242	PINE VALLEY BAILEY RCH*	Pine Valley	53	2.7	1983	2003	11	0.37	1.0	
266574	RAND RCH PALISADE*	Pine Valley	53	2.3	1958	1981	19	0.63	1.5	2.5
266055	PARIS RCH*	Pleasant Valley	130	3.5	1967	1990	22	1.00	3.5	3.5
262229	DENIO*	Pueblo Valley	1	3.1	1969	2005	30	1.00	3.1	3.1
265605	NIXON*	Pyramid Lake Valley	81	3.6	1931	1973	30	1.00	3.6	3.6
265818	OROVADA 3 W*	Quinn River Valley	33A	3.1	1971	2006	30	1.00	3.1	3.1
264935	MCDERMITT*	Quinn River Valley	33B	2.8	1916	2007	29	1.00	2.8	2.8
262276	DIABLO*	Railroad Valley	173A	3.7	1960	1978	10	1.00	3.7	3.7
260955	BLUE EAGLE RCH HANKS*	Railroad Valley	173B	3.7	1979	2007	23	0.50	1.8	
262078	CURRANT*	Railroad Valley	173B	3.3	1942	1946	4	0.09	0.3	
262390	DUCKWATER*	Railroad Valley	173B	3.3	1967	1998	19	0.41	1.4	3.5
268170	TONOPAH*	Ralston Valley	141	4.0	1975	2005	30	1.00	4.0	4.0
29999	RED ROCK WC*	Red Rock Valley	99	2.6	2004	2007	4	1.00	2.6	2.6

Appendix 13 cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	ALFALFA NIWR (ft)	START YEAR	END YEAR	NUMBER OF YEARS IN AVERAGE	WEIGHT BASED ON NUMBER OF YEARS USED IN AVERAGE	WEIGHT x ALFALFA NIWR (ft)	WEIGHTED AVERAGE ALFALFA NIWR (ft)
260438	ARTHUR 4 NW*	Ruby Valley	176	2.3	1971	2007	30	0.50	1.1	
267123	RUBY LAKE*	Ruby Valley	176	2.8	1975	2007	30	0.50	1.4	2.5
261905	CONTACT*	Salmon Falls Creek Area	40	2.6	1956	1998	30	0.45	1.2	
264016	JACKPOT*	Salmon Falls Creek Area	40	2.5	1987	2004	15	0.23	0.6	
267284	SAN JACINTO*	Salmon Falls Creek Area	40	2.6	1905	1947	21	0.32	0.8	2.6
262662	EMPIRE*	San Emidio Desert	22	3.5	1951	1976	6	0.18	0.6	
263090	GERLACH*	San Emidio Desert	22	3.1	1963	2006	27	0.82	2.6	3.2
267319	SARCOBATUS*	Sarcobatus Flat	146	4.2	1942	1961	14	1.00	4.2	4.2
267609	SMITH 1 N*	Smith Valley	107	3.0	1938	1966	23	0.32	1.0	
267612	SMITH 6 N*	Smith Valley	107	3.1	1974	2007	23	0.32	1.0	
268977	WELLINGTON RS*	Smith Valley	107	3.0	1943	1972	27	0.37	1.1	3.1
263090	GERLACH*	San Emidio Desert	22	3.1	1963	2006	27	0.38	1.2	
267261	SAND PASS*	Smoke Creek Desert	21	3.5	1930	1970	30	0.42	1.5	
267618	SMOKE CREEK ESPIL*	Smoke Creek Desert	21	3.6	1988	2004	14	0.20	0.7	3.4
265168	MINA*	Soda Spring Valley	121A	3.9	1978	2007	30	1.00	3.9	3.9
263940	I-L RCH*	South Fork Owyhee River Area	35	1.8	1963	1967	3	1.00	1.8	1.8
267450	SHOSHONE 5 N*	Spring Valley	184	3.0	1989	2007	17	1.00	3.0	3.0

Appendix 13 cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	ALFALFA NIWR (ft)	START YEAR	END YEAR	NUMBER OF YEARS IN AVERAGE	WEIGHT BASED ON NUMBER OF YEARS USED IN AVERAGE	WEIGHT x ALFALFA NIWR (ft)	WEIGHTED AVERAGE ALFALFA NIWR (ft)
267750	SPRING VALLEY SP*	Spring Valley	201	3.0	1975	2006	24	1.00	3.0	3.0
267397	SEVENTY ONE RCH*	Starr Valley Area	43	2.4	1940	1945	4	1.00	2.4	2.4
262096	CURRIE HWY STN*	Steptoe Valley	179	2.8	1962	1989	10	0.11	0.3	
262631	ELY YELLAND FLD AP*	Steptoe Valley	179	2.8	1976	2005	30	0.33	0.9	
264341	LAGES*	Steptoe Valley	179	3.0	1984	2006	21	0.23	0.7	
264950	MCGILL*	Steptoe Valley	179	2.9	1977	2007	30	0.33	0.9	2.9
269122	WILKINS*	Thousand Springs Valley	189A	2.2	1949	1964	16	1.00	2.2	2.2
265352	MONTELLO 2 SE*	Thousand Springs Valley	189D	2.9	1971	2007	30	1.00	2.9	2.9
262840	FERNLEY*	Fernley Area	76	3.5	1908	1974	21	0.44	1.5	
268838	WADSWORTH 4 N*	Dodge Flat	82	3.5	1975	2002	21	0.44	1.5	
268834	WADSWORTH*	Tracy Segment	83	3.6	1902	1947	6	0.13	0.5	3.5
266779	RENO TAHOE INTL AP*	Truckee Meadows	87	3.5	1978	2007	30	0.68	2.4	
266791	RENO WFO*	Truckee Meadows	87	3.3	1997	2007	10	0.23	0.8	
268500	UNIV OF NEVADA EXP FM*	Truckee Meadows	87	3.4	1949	1954	4	0.09	0.3	3.4
260507	AUSTIN #2*	Upper Reese River Valley	56	2.7	1972	2007	30	0.43	1.2	
261630	CENTRAL NEVADA FLD LAB*	Upper Reese River Valley	56	2.7	1966	1985	13	0.19	0.5	

Appendix 13 cont.

STATION NUMBER	STATION NAME	BASIN NAME	BASIN NUMBER	ALFALFA NIWR (ft)	START YEAR	END YEAR	NUMBER OF YEARS IN AVERAGE	WEIGHT BASED ON NUMBER OF YEARS USED IN AVERAGE	WEIGHT x ALFALFA NIWR (ft)	WEIGHTED AVERAGE ALFALFA NIWR (ft)
266746	REESE RIVER*	Upper Reese River Valley	56	2.5	1973	2006	26	0.38	0.9	2.6
261327	BUNKERVILLE*	Virgin River Valley	222	4.3	1980	2007	6	0.32	1.4	
265085	MESQUITE*	Virgin River Valley	222	4.4	1942	2006	13	0.68	3.0	4.4
262394	DUFURRENA*	Virgin Valley	4	2.8	1965	2004	30	1.00	2.8	2.8
267358	SCHURZ*	Walker Lake Valley	110A	3.5	1920	1955	30	1.00	3.5	3.5
263512	HAWTHORNE*	Walker Lake Valley	110C	3.9	1955	2007	13	0.19	0.8	
263515	HAWTHORNE AP*	Walker Lake Valley	110C	3.8	1947	1990	30	0.45	1.7	
268034	THORNE*	Walker Lake Valley	110C	3.8	1915	1950	24	0.36	1.4	3.8
39999	WASHOE VALLEY WC*	Washoe Valley	89	3.7	2004	2008	5	1.00	3.7	3.7
264745	LUND*	White River Valley	207	3.1	1977	2007	30	0.50	1.6	
267908	SUNNYSIDE*	White River Valley	207	3.3	1973	2007	30	0.50	1.7	3.2
265105	MIDAS 4 SE*	Willow Creek Valley	63	2.4	1962	1967	4	1.00	2.4	2.4
269168	WINNEMUCCA #2*	Grass Valley	71	3.3	2000	2007	6	0.09	0.3	
263245	GOLCONDA*	Winnemucca Segment	70	3.4	1970	2005	30	0.45	1.6	
269171	WINNEMUCCA MUNI AP*	Winnemucca Segment	70	3.4	1978	2007	30	0.45	1.5	3.4

Appendix 14. Mean annual reference (ET_{os}) and actual crop evapotranspiration (ET_{act}) of alfalfa, grass hay, pasture grass, turf grass, and small shallow open water bodies for all HAs. Values of the ET_{os} and ET_{act} for each HA were either assigned for HAs with single stations, computed using a valid period of record weighted average for HAs with multiple stations, or estimated from spatial interpolation for HAs with no stations. * indicates that the ET_{os} and ET_{act} was estimated using spatial interpolation.

BASIN NAME	BASIN NUMBER	BASIN REGION	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
Adobe Valley*	115	Central Region	5.0	4.3	4.1	3.3	3.9	4.0	5.2
Alkali Spring Valley*	142	Central Region	5.2	4.5	4.4	3.6	4.2	4.4	5.5
Alkali Valley*	111A	Central Region	4.7	4.1	3.9	3.1	3.7	3.9	4.9
Alkali Valley*	111B	Central Region	4.7	4.1	3.9	3.1	3.7	3.9	4.9
Amargosa Desert	230	Death Valley Basin	5.8	5.6	4.8	3.9	3.7	5.6	6.1
Antelope Valley	57	Humboldt River Basin	4.4	3.6	3.6	3.0	3.5	3.5	4.6
Antelope Valley	106	Walker River Basin	4.6	3.8	3.7	3.0	3.6	3.6	4.8
Antelope Valley*	186B	Central Region	4.1	3.2	3.1	2.5	2.9	2.9	4.3
Antelope Valley*	186A	Central Region	4.2	3.3	3.2	2.6	3.1	3.0	4.4
Antelope Valley*	93	Western Region	4.3	3.7	3.6	2.9	3.5	3.5	4.5
Antelope Valley*	151	Central Region	4.4	3.3	3.3	2.7	3.1	3.0	4.6
Bedell Flat*	94	Western Region	4.1	3.4	3.3	2.7	3.2	3.1	4.3
Big Smoky Valley	137B	Central Region	4.8	4.1	4.0	3.2	3.9	3.7	5.1
Big Smoky Valley	137A	Central Region	4.8	3.9	3.8	3.0	3.8	3.5	5.0
Black Moutains Area	215	Colorado River Basin	5.5	5.1	4.4	3.5	2.8	5.1	5.7
Black Rock Desert	28	Black Rock Desert Region	4.3	3.8	3.7	3.1	3.7	3.7	4.5
Boulder Flat*	61	Humboldt River Basin	4.2	3.5	3.4	2.8	3.3	3.3	4.4
Boulder Valley*	15	Northwest Region	4.3	3.8	3.7	3.0	3.6	3.6	4.6
Bradys Hot Springs Area*	75	West Central Region	4.5	3.9	3.8	3.1	3.6	3.7	4.8
Bruneau River Area	38	Snake River Basin	4.1	2.3	2.0	1.7	1.7	1.8	4.3

Appendix 14 cont.

BASIN NAME	BASIN NUMBER	BASIN REGION	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
Buena Vista Valley*	129	Central Region	4.6	4.1	3.9	3.3	3.8	3.9	4.8
Buffalo Valley	131	Central Region	4.0	3.7	3.5	2.9	3.3	3.5	4.2
Butte Valley*	178A	Central Region	4.3	3.3	3.1	2.6	3.0	2.9	4.5
Butte Valley*	178B	Central Region	4.3	3.4	3.3	2.7	3.1	3.1	4.5
Cactus Flat*	148	Central Region	5.0	4.3	4.2	3.4	4.0	4.2	5.3
California Wash*	218	Colorado River Basin	5.5	5.2	4.5	3.7	3.3	5.3	5.7
Carico Lake Valley*	55	Humboldt River Basin	4.3	3.6	3.5	2.9	3.4	3.4	4.5
Carson Desert	101	Carson River Basin	4.2	3.7	3.6	2.9	3.5	3.6	4.4
Carson Desert*	101A	Carson River Basin	4.6	4.1	4.0	3.3	3.8	3.9	4.8
Carson Valley	105	Carson River Basin	4.3	3.6	3.5	2.9	3.3	3.4	4.5
Cave Valley*	180	Central Region	4.6	3.9	3.7	3.0	3.5	3.5	4.8
Churchill Valley	102	Carson River Basin	4.2	3.7	3.6	2.9	3.5	3.6	4.4
Clayton Valley	143	Central Region	5.5	4.7	4.6	3.8	4.2	4.7	5.7
Clover Valley	177	Central Region	4.0	3.3	3.3	2.7	3.1	3.1	4.2
Clover Valley	204	Colorado River Basin	4.9	4.5	4.2	3.5	3.9	4.1	5.2
Clovers Area	64	Humboldt River Basin	4.4	3.8	3.8	3.1	3.6	3.7	4.7
Coal Valley*	171	Central Region	5.0	4.4	4.2	3.4	4.0	4.2	5.2
Cold Spring Valley*	100	Western Region	4.2	3.7	3.6	3.0	3.5	3.6	4.4
Cold Spring Valley*	100A	Western Region	4.2	3.6	3.4	2.8	3.4	3.4	4.4
Coleman Valley*	11	Northwest Region	4.3	3.7	3.6	2.9	3.4	3.4	4.5
Colorado Valley	213	Colorado River Basin	6.5	6.2	5.3	4.3	3.7	6.1	6.9
Columbus Salt Marsh Valley	118	Central Region	5.5	4.7	4.4	3.6	4.3	4.3	5.8
Continental Lake Valley*	2	Northwest Region	4.3	3.6	3.5	2.9	3.4	3.4	4.5
Cowkick Valley	126	Central Region	4.8	3.8	3.5	2.9	3.4	3.3	5.0
Coyote spring Valley*	210	Colorado River Basin	5.4	5.1	4.5	3.6	3.7	5.0	5.7

Appendix 14 cont.

BASIN NAME	BASIN NUMBER	BASIN REGION	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
Crater Flat*	229	Death Valley Basin	5.6	5.2	4.6	3.7	4.0	5.1	5.9
Crescent Valley	54	Humboldt River Basin	4.2	3.6	3.6	3.0	3.4	3.4	4.4
Dayton Valley*	103	Carson River Basin	4.4	3.8	3.7	3.0	3.5	3.6	4.6
Deep Creek Valley*	193	Great Salt Lake Basin	4.2	3.3	3.2	2.6	3.1	3.0	4.4
Delamar Valley*	182	Central Region	5.1	4.6	4.2	3.4	3.9	4.4	5.4
Desert Valley	31	Black Rock Desert Region	4.3	3.8	3.7	3.0	3.5	3.6	4.5
Diamond Valley	153	Central Region	4.1	3.2	3.1	2.5	3.0	2.9	4.3
Dixie Creek-Tenmile Creek Area	48	Humboldt River Basin	4.3	3.4	3.3	2.7	3.0	3.1	4.5
Dixie Valley	128	Central Region	4.7	4.2	4.1	3.4	4.0	4.1	4.9
Dodge Flat	82	Truckee River Basin	4.6	3.9	3.8	3.1	3.7	3.7	4.8
Dry Lake Valley*	181	Central Region	4.9	4.3	4.1	3.3	3.8	4.0	5.1
Dry Valley*	19	Black Rock Desert Region	4.5	4.0	3.9	3.2	3.8	3.9	4.7
Dry Valley*	95	Western Region	4.1	3.4	3.2	2.6	3.2	3.1	4.3
Dry Valley*	198	Colorado River Basin	4.9	4.2	4.0	3.3	3.8	3.9	5.2
Duck Lake Valley*	16	Northwest Region	4.4	3.9	3.8	3.1	3.7	3.7	4.6
Eagle Valley	104	Carson River Basin	4.3	3.8	3.6	3.0	3.5	3.6	4.6
Eagle Valley*	200	Colorado River Basin	4.9	3.8	3.6	2.9	3.4	3.3	5.1
East Walker Area*	109	Walker River Basin	4.6	3.9	3.8	3.1	3.6	3.8	4.8
Eastgate Valley Area	127	Central Region	4.5	3.9	3.9	3.2	3.9	3.8	4.8
Edwards Creek Valley*	133	Central Region	4.5	3.7	3.6	2.9	3.5	3.4	4.7
Eldorado Valley	167	Central Region	5.4	5.1	4.3	3.5	3.1	5.0	5.7
Elko Segment	49	Humboldt River Basin	4.0	3.3	3.2	2.7	3.1	3.0	4.2
Emigrant Valley*	158A	Central Region	5.3	4.7	4.4	3.6	4.1	4.5	5.5
Emigrant Valley*	158B	Central Region	5.5	5.0	4.5	3.7	4.1	4.8	5.8
Escalante Desert*	197	Escalante Desert	4.9	4.3	4.0	3.3	3.8	4.0	5.2

Appendix 14 cont.

BASIN NAME	BASIN NUMBER	BASIN REGION	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
Fairview Valley*	124	Central Region	4.6	3.8	3.6	3.0	3.5	3.5	4.8
Fernley Area	76	West Central Region	4.6	3.9	3.8	3.1	3.7	3.7	4.8
Fireball Valley*	77	West Central Region	4.6	4.0	3.8	3.1	3.7	3.7	4.8
Fish Lake Valley	117	Central Region	5.5	4.6	4.4	3.6	4.3	4.3	5.8
Fortymile Canyon*	227B	Death Valley Basin	5.4	4.9	4.5	3.6	4.0	4.8	5.7
Fortymile Canyon*	227A	Death Valley Basin	5.6	5.3	4.6	3.8	4.0	5.2	5.9
Frenchman Flat*	160	Central Region	5.7	5.3	4.7	3.8	4.1	5.2	6.0
Gabbs Valley*	122	Central Region	4.7	4.0	3.8	3.0	3.6	3.7	4.9
Garden Valley*	172	Central Region	4.9	4.2	4.1	3.4	4.0	4.1	5.1
Garfield Flat*	120	Central Region	4.8	4.3	4.0	3.2	3.9	4.0	5.1
Garnet Valley*	216	Colorado River Basin	5.9	5.6	4.9	4.0	3.6	5.6	6.2
Gold Butte Area*	223	Colorado River Basin	5.4	5.1	4.4	3.5	3.1	5.1	5.6
Gold Flat*	147	Central Region	5.2	4.5	4.3	3.5	4.0	4.4	5.4
Goose Creek Area*	41	Snake River Basin	4.1	3.2	3.1	2.6	3.0	2.9	4.3
Goshute Valley	187	Central Region	4.2	3.4	3.2	2.6	3.1	2.9	4.5
Granite Basin*	23	Black Rock Desert Region	4.3	3.8	3.8	3.1	3.7	3.7	4.5
Granite Springs Valley*	78	West Central Region	4.6	4.0	3.9	3.2	3.8	3.8	4.8
Grapevine Canyon*	231	Death Valley Basin	5.4	4.7	4.4	3.5	4.0	4.6	5.6
Grass Valley	71	Humboldt River Basin	4.6	3.9	3.8	3.1	3.6	3.6	4.9
Grass Valley	138	Central Region	4.2	3.5	3.4	2.8	3.3	3.3	4.4
Greasewood Basin*	224	Colorado River Basin	5.3	5.1	4.4	3.6	3.1	5.1	5.6
Great Salt Lake Desert	192	Great Salt Lake Basin	3.6	2.9	2.9	2.3	2.7	2.7	3.7
Gridley Lake Valley*	3	Northwest Region	4.3	3.7	3.6	2.9	3.5	3.5	4.5
Grouse Creek Valley*	190	Great Salt Lake Basin	4.2	3.3	3.2	2.6	3.0	3.0	4.4
Guano Valley*	6	Northwest Region	4.3	3.6	3.5	2.8	3.3	3.3	4.5

Appendix 14 cont.

BASIN NAME	BASIN NUMBER	BASIN REGION	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
Hamlin Valley*	196	Great Salt Lake Basin	4.6	3.8	3.7	3.0	3.5	3.5	4.9
Hardscrabble Area*	68	Humboldt River Basin	4.4	3.7	3.6	2.9	3.4	3.4	4.7
Hidden Valley*	217	Colorado River Basin	5.9	5.6	4.9	3.9	3.6	5.6	6.2
Hidden Valley*	166	Central Region	5.9	5.7	4.9	4.0	3.6	5.6	6.2
High Rock Lake Valley*	25	Black Rock Desert Region	4.3	3.8	3.7	3.0	3.6	3.6	4.5
Honey Lake Valley*	97	Western Region	4.4	3.8	3.7	3.0	3.6	3.6	4.6
Hot Creek	156	Central Region	4.7	3.9	3.9	3.2	3.8	3.7	4.9
Hualapai Flat*	24	Black Rock Desert Region	4.3	3.9	3.8	3.1	3.7	3.7	4.6
Huntington Valley	47	Humboldt River Basin	4.0	3.2	3.0	2.5	2.8	2.8	4.2
Huntoon Valley*	113	Central Region	4.9	4.2	4.0	3.2	3.8	4.0	5.1
Imlay Area	72	Humboldt River Basin	4.7	4.1	4.0	3.3	3.9	3.9	4.9
Independence Valley	36	Snake River Basin	3.7	3.0	2.8	2.3	2.6	2.6	3.9
Independence Valley*	188	Central Region	4.1	3.2	3.1	2.5	3.0	2.9	4.3
Indian Springs Valley	161	Central Region	6.0	5.4	4.9	4.0	4.2	5.3	6.3
Ione Valley*	135	Central Region	4.7	3.8	3.6	2.9	3.5	3.5	4.9
Ivanpah Valley	164A	Central Region	5.9	5.7	4.9	4.0	4.1	5.6	6.2
Ivanpah Valley*	164B	Central Region	5.9	5.7	4.9	4.0	3.7	5.7	6.2
Jakes Valley	174	Central Region	4.3	3.2	3.1	2.5	2.9	2.8	4.5
Jarbidge River Area	39	Snake River Basin	3.9	3.3	3.0	2.5	2.9	2.8	4.1
Jean Lake Valley*	165	Central Region	5.9	5.7	4.9	4.0	3.7	5.6	6.2
Jersey Valley*	132	Central Region	4.4	4.0	3.9	3.2	3.7	3.8	4.7
Kane Springs Valley*	206	Colorado River Basin	5.0	4.7	4.1	3.4	3.7	4.5	5.3
Kawich Valley*	157	Central Region	5.1	4.5	4.3	3.5	4.1	4.4	5.4
Kelley Creek Area*	66	Humboldt River Basin	4.4	3.7	3.6	3.0	3.4	3.4	4.7
Kings River Valley*	30A	Black Rock Desert Region	4.3	3.7	3.6	3.0	3.5	3.5	4.6

Appendix 14 cont.

BASIN NAME	BASIN NUMBER	BASIN REGION	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
Kings River Valley*	30B	Black Rock Desert Region	4.4	3.8	3.7	3.0	3.5	3.6	4.6
Kobeh Valley*	139	Central Region	4.2	3.4	3.3	2.7	3.1	3.1	4.4
Kumiva Valley*	79	West Central Region	4.4	3.9	3.9	3.2	3.7	3.8	4.7
Lake Tahoe Basin	90	Truckee River Basin	3.6	2.9	2.7	2.2	2.6	2.6	3.7
Lake Valley	183	Central Region	4.5	3.6	3.4	2.8	3.3	3.2	4.7
Lamoille Valley	45	Humboldt River Basin	3.9	3.0	2.8	2.3	2.7	2.6	4.1
Las Vegas Valley	212	Colorado River Basin	6.2	6.0	5.2	4.2	3.9	6.0	6.5
Lemmon Valley	92B	Western Region	4.2	3.7	3.6	3.0	3.5	3.6	4.4
Lemmon Valley*	92A	Western Region	4.2	3.7	3.6	3.0	3.5	3.6	4.4
Lida Valley*	144	Central Region	5.3	4.6	4.4	3.5	4.1	4.4	5.6
Little Fish Lake Valley*	150	Central Region	4.6	3.7	3.7	3.0	3.5	3.5	4.8
Little Humboldt Valley*	67	Humboldt River Basin	4.4	3.5	3.4	2.8	3.2	3.2	4.6
Little Owyhee River Area*	34	Snake River Basin	4.2	3.3	3.1	2.6	3.0	2.9	4.4
Little Smoky Valley	155A	Central Region	4.5	3.1	3.1	2.5	2.9	2.9	4.8
Little Smoky Valley*	155C	Central Region	4.6	3.9	3.8	3.1	3.7	3.7	4.9
Little Smoky Valley*	155B	Central Region	4.6	3.8	3.7	3.0	3.6	3.5	4.8
Long Valley*	9	Northwest Region	4.3	3.7	3.6	3.0	3.5	3.5	4.5
Long Valley*	175	Central Region	4.3	3.4	3.2	2.7	3.1	3.0	4.5
Lovelock Valley	73	Humboldt River Basin	4.7	4.1	4.1	3.4	4.0	4.0	4.9
Lovelock Valley*	73A	Humboldt River Basin	4.7	4.2	4.0	3.3	3.9	3.9	4.9
Lower Meadow Valley Wash	205	Colorado River Basin	5.0	4.7	4.2	3.4	3.4	4.8	5.3
Lower Moapa Valley	220	Colorado River Basin	5.1	4.9	4.3	3.5	3.2	5.0	5.4
Lower Reese River Valley	59	Humboldt River Basin	4.4	3.8	3.8	3.1	3.6	3.7	4.7
Macy Flat*	10	Northwest Region	4.3	3.6	3.5	2.9	3.4	3.4	4.5
Maggie Creek Area*	51	Humboldt River Basin	4.0	3.2	3.0	2.5	2.9	2.8	4.2

Appendix 14 cont.

BASIN NAME	BASIN NUMBER	BASIN REGION	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
Marys Creek Area*	52	Humboldt River Basin	4.2	3.5	3.3	2.8	3.2	3.2	4.4
Marys River Area	42	Humboldt River Basin	3.9	3.1	3.0	2.5	2.9	2.8	4.1
Mason Valley	108	Walker River Basin	4.1	3.5	3.4	2.8	3.3	3.4	4.4
Massacre Lake Valley*	8	Northwest Region	4.3	3.7	3.6	2.9	3.5	3.5	4.5
Mercury Valley*	225	Death Valley Basin	5.9	5.5	4.9	4.0	4.0	5.5	6.2
Mesquite Valley*	163	Central Region	5.9	5.7	4.9	4.0	3.9	5.7	6.2
Middle Reese River Valley*	58	Humboldt River Basin	4.3	3.8	3.7	3.0	3.5	3.6	4.6
Monitor Valley*	140A	Central Region	4.4	3.5	3.4	2.8	3.3	3.2	4.7
Monitor Valley*	140B	Central Region	4.7	3.8	3.7	3.0	3.6	3.5	4.9
Mono Valley*	112	Central Region	4.8	4.1	3.9	3.2	3.8	3.9	5.0
Monte Cristo Valley*	136	Central Region	5.0	4.3	4.1	3.3	4.0	4.1	5.3
Mosquito Valley*	12	Northwest Region	4.3	3.7	3.6	2.9	3.5	3.5	4.5
Mud Meadow*	26	Black Rock Desert Region	4.3	3.7	3.7	3.0	3.6	3.6	4.5
Muddy River Springs Area*	219	Colorado River Basin	5.4	5.1	4.4	3.6	3.4	5.1	5.6
Newark Valley*	154	Central Region	4.3	3.3	3.2	2.7	3.1	3.0	4.5
Newcomb Lake Valley*	96	Western Region	4.2	3.5	3.4	2.8	3.3	3.2	4.4
North Fork Area	44	Humboldt River Basin	4.0	3.1	2.8	2.3	2.7	2.6	4.2
Oasis Valley	228	Death Valley Basin	5.5	5.1	4.5	3.6	4.1	5.0	5.7
Oriental Wash*	232	Death Valley Basin	5.3	4.6	4.4	3.5	4.1	4.5	5.6
Owyhee River Area	37	Snake River Basin	4.0	2.9	2.7	2.2	2.5	2.4	4.2
Pahranagat Valley	209	Colorado River Basin	5.3	4.8	4.4	3.5	3.9	4.6	5.6
Pahroc Valley*	208	Colorado River Basin	4.9	4.4	4.1	3.4	3.9	4.1	5.2
Pahrump Valley	162	Central Region	5.7	5.4	4.8	4.0	4.1	5.5	6.0
Painter Flat*	18	Black Rock Desert Region	4.5	4.0	3.9	3.2	3.8	3.8	4.7
Panaca Valley	203	Colorado River Basin	4.9	4.5	4.2	3.5	4.0	4.1	5.2

Appendix 14 cont.

BASIN NAME	BASIN NUMBER	BASIN REGION	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
Paradise Valley	69	Humboldt River Basin	4.6	3.8	3.6	3.0	3.5	3.4	4.8
Patterson Valley*	202	Colorado River Basin	4.9	4.1	3.9	3.2	3.7	3.7	5.1
Penoyer Valley	170	Central Region	5.1	4.4	4.4	3.6	4.2	4.3	5.4
Pilgrim Flat*	17	Black Rock Desert Region	4.4	3.9	3.8	3.2	3.7	3.8	4.7
Pilot Creek Valley	191	Great Salt Lake Basin	4.2	3.4	3.3	2.7	3.1	3.1	4.4
Pine Forest Valley*	29	Black Rock Desert Region	4.3	3.8	3.7	3.0	3.5	3.5	4.5
Pine Valley	53	Humboldt River Basin	4.4	3.2	3.1	2.5	2.9	2.9	4.6
Piute Valley*	214	Colorado River Basin	6.1	5.8	5.0	4.0	3.6	5.8	6.4
Pleasant Valley	130	Central Region	4.6	4.2	4.1	3.4	3.9	4.0	4.9
Pleasant Valley*	194	Great Salt Lake Basin	4.3	3.4	3.3	2.7	3.2	3.1	4.5
Pleasant Valley*	88	Truckee River Basin	4.7	4.1	3.9	3.2	3.8	3.8	5.0
Pueblo Valley	1	Northwest Region	4.3	3.7	3.6	3.0	3.5	3.5	4.5
Pumpernickel Valley*	65	Humboldt River Basin	4.5	3.9	3.8	3.1	3.6	3.7	4.7
Pyramid Lake Valley	81	Truckee River Basin	4.8	4.1	4.0	3.2	3.8	3.9	5.0
Queen Valley*	116	Central Region	5.1	4.4	4.2	3.4	4.0	4.1	5.4
Quinn River Valley	33B	Black Rock Desert Region	4.3	3.4	3.2	2.7	2.9	3.0	4.5
Quinn River Valley	33A	Black Rock Desert Region	4.4	3.9	3.8	3.1	3.6	3.6	4.6
Railroad Valley	173B	Central Region	4.6	4.1	4.1	3.3	3.9	4.0	4.9
Railroad Valley	173A	Central Region	4.8	4.2	4.1	3.4	4.0	4.1	5.0
Ralston Valley	141	Central Region	5.1	4.4	4.3	3.6	4.3	4.3	5.3
Rawhide Flats*	123	Central Region	4.4	3.8	3.7	3.0	3.6	3.7	4.7
Red Rock Valley	99	Western Region	4.0	3.1	2.9	2.4	2.9	2.7	4.2
Rhodes Salt Marsh Valley*	119	Central Region	5.0	4.4	4.1	3.3	4.0	4.1	5.3
Rock Creek Valley*	62	Humboldt River Basin	4.3	3.4	3.3	2.7	3.1	3.1	4.5
Rock Valley*	226	Death Valley Basin	5.8	5.4	4.8	3.9	3.9	5.4	6.1

Appendix 14 cont.

BASIN NAME	BASIN NUMBER	BASIN REGION	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
Rose Valley*	199	Colorado River Basin	4.9	4.0	3.8	3.1	3.6	3.6	5.2
Ruby Valley	176	Central Region	4.0	3.3	3.2	2.6	3.1	3.0	4.2
Sage Hen Valley*	5	Northwest Region	4.3	3.4	3.3	2.7	3.2	3.1	4.6
Salmon Falls Creek Area	40	Snake River Basin	4.1	3.3	3.1	2.6	3.0	2.9	4.3
San Emidio Desert	22	Black Rock Desert Region	4.2	3.8	3.7	3.1	3.6	3.7	4.4
Sano Valley*	20	Black Rock Desert Region	4.5	4.0	3.9	3.2	3.8	3.8	4.7
Sarcobatus Flat	146	Central Region	5.3	4.4	4.3	3.4	3.9	4.3	5.5
Silver State Valley*	32	Black Rock Desert Region	4.5	3.9	3.8	3.1	3.6	3.6	4.7
Skedaddle Creek Valley*	98	Western Region	4.5	4.0	3.9	3.2	3.8	3.8	4.7
Smith Creek*	134	Central Region	4.5	3.5	3.3	2.7	3.2	3.2	4.7
Smith Valley	107	Walker River Basin	4.3	3.6	3.5	2.9	3.4	3.5	4.5
Smoke Creek Desert	21	Black Rock Desert Region	4.4	4.0	3.9	3.2	3.8	3.8	4.6
Snake Valley*	195	Great Salt Lake Basin	4.4	3.6	3.5	2.9	3.4	3.3	4.7
Soda Spring Valley	121A	Central Region	4.9	4.3	4.1	3.3	3.9	4.1	5.1
Soda Spring Valley*	121B	Central Region	4.7	4.1	3.9	3.2	3.8	3.9	5.0
South Fork Area*	46	Humboldt River Basin	4.1	3.3	3.1	2.5	2.9	2.9	4.3
South Fork Owyhee River Area	35	Snake River Basin	4.2	3.0	2.9	2.4	2.8	2.7	4.4
Spanish Springs Valley*	85	Truckee River Basin	4.4	3.9	3.7	3.1	3.6	3.7	4.6
Spring Valley	184	Central Region	4.5	3.7	3.6	3.0	3.5	3.5	4.7
Spring Valley	201	Colorado River Basin	4.9	3.6	3.5	2.8	3.3	3.2	5.1
Starr Valley Area	43	Humboldt River Basin	4.1	3.3	2.9	2.4	2.8	2.7	4.3
Steptoe Valley	179	Central Region	4.4	3.5	3.4	2.8	3.2	3.2	4.6
Stevens Basin*	152	Central Region	4.3	3.2	3.2	2.6	3.0	3.0	4.5
Stingaree Valley*	125	Central Region	4.7	3.8	3.6	2.9	3.5	3.4	4.9
Stone Cabin Valley*	149	Central Region	4.9	4.1	4.1	3.3	3.9	3.9	5.1

Appendix 14 cont.

BASIN NAME	BASIN NUMBER	BASIN REGION	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
Stonewall Flat*	145	Central Region	5.2	4.5	4.3	3.5	4.1	4.4	5.5
Summit Lake Valley*	27	Black Rock Desert Region	4.3	3.7	3.6	3.0	3.5	3.5	4.5
Sun Valley*	86	Truckee River Basin	4.2	3.9	3.7	3.0	3.6	3.8	4.5
Surprise Valley*	14	Northwest Region	4.3	3.8	3.7	3.0	3.6	3.6	4.6
Susie Creek Area*	50	Humboldt River Basin	4.0	3.3	3.1	2.6	3.0	2.9	4.2
Swan Lake Valley*	7	Northwest Region	4.3	3.6	3.5	2.9	3.4	3.3	4.5
Teels Marsh Valley*	114	Central Region	5.0	4.3	4.1	3.3	3.9	4.1	5.2
Thousand Springs Valley	189D	Great Salt Lake Basin	4.4	3.5	3.4	2.7	3.2	3.1	4.6
Thousand Springs Valley	189A	Great Salt Lake Basin	4.3	2.9	2.8	2.3	2.7	2.5	4.5
Thousand Springs Valley*	189B	Great Salt Lake Basin	4.2	3.2	3.1	2.5	2.9	2.8	4.4
Thousand Springs Valley*	189C	Great Salt Lake Basin	4.2	3.3	3.1	2.6	3.0	2.9	4.4
Three Lakes Valley*	168	Central Region	5.7	5.3	4.7	3.8	4.0	5.2	6.0
Three Lakes Valley*	211	Colorado River Basin	6.0	5.6	5.0	4.0	4.0	5.5	6.3
Tikapoo Valley*	169A	Central Region	5.2	4.6	4.3	3.5	4.0	4.4	5.5
Tikapoo Valley*	169B	Central Region	5.5	5.0	4.5	3.7	3.9	4.9	5.7
Tippett Valley*	185	Central Region	4.3	3.4	3.3	2.7	3.2	3.1	4.5
Tracy Segment	83	Truckee River Basin	4.6	3.9	3.8	3.1	3.7	3.7	4.8
Truckee Canyon Segment*	91	Truckee River Basin	4.4	3.9	3.7	3.0	3.6	3.7	4.6
Truckee Meadows	87	Truckee River Basin	4.4	3.9	3.8	3.1	3.7	3.8	4.6
Tule Desert*	221	Colorado River Basin	5.0	4.7	4.1	3.4	3.5	4.6	5.3
Upper Reese River Valley	56	Humboldt River Basin	4.2	3.2	3.0	2.5	2.9	2.8	4.5
Virgin River Valley	222	Colorado River Basin	5.1	4.9	4.3	3.5	3.2	4.9	5.4
Virgin Valley	4	Northwest Region	4.4	3.3	3.1	2.6	3.0	2.9	4.6
Walker Lake Valley	110A	Walker River Basin	4.6	3.9	3.9	3.2	3.8	3.9	4.9
Walker Lake Valley	110C	Walker River Basin	4.7	4.1	3.9	3.2	3.8	3.9	4.9

Appendix 14 cont.

BASIN NAME	BASIN NUMBER	BASIN REGION	REFERENCE ET_{os} (ft)	ALFALFA ET_{act} (ft)	HIGHLY MANAGED PASTURE GRASS ET_{act} (ft)	LOW MANAGED PASTURE GRASS ET_{act} (ft)	GRASS HAY ET_{act} (ft)	TURF GRASS ET_{act} (ft)	SHALLOW OPEN WATER E_{act} (ft)
Walker Lake Valley*	110B	Walker River Basin	4.6	4.0	3.9	3.1	3.7	3.9	4.9
Warm Springs Valley*	84	Truckee River Basin	4.4	3.8	3.6	3.0	3.5	3.6	4.6
Warner Valley*	13	Northwest Region	4.3	3.7	3.6	2.9	3.5	3.5	4.5
Washoe Valley	89	Truckee River Basin	5.2	4.4	4.2	3.4	4.0	3.9	5.5
Whirlwind Valley*	60	Humboldt River Basin	4.3	3.7	3.6	3.0	3.5	3.5	4.5
White Plains*	74	Humboldt River Basin	4.5	4.0	3.9	3.2	3.7	3.8	4.8
White River Valley	207	Colorado River Basin	4.6	4.0	3.8	3.2	3.7	3.6	4.9
Willow Creek Valley	63	Humboldt River Basin	4.4	3.1	3.1	2.6	2.9	2.9	4.7
Winnemucca Lake Valley*	80	Truckee River Basin	4.5	3.9	3.8	3.1	3.7	3.7	4.7
Winnemucca Segment	70	Humboldt River Basin	4.6	4.0	3.8	3.2	3.7	3.7	4.8
Yucca Flat*	159	Central Region	5.5	4.9	4.5	3.7	4.1	4.8	5.7

Appendix 15. Mean annual Net Irrigation Water Requirement (NIWR) of alfalfa, grass hay, pasture grass, turf grass, and small shallow open water bodies for all HAs. Values of the NIWR for each HA were either assigned for HAs with single stations, computed using a valid period of record weighted average for HAs with multiple stations, or estimated from spatial interpolation for HAs with no stations. * indicates that the NIWR was estimated using spatial interpolation.

BASIN NAME	BASIN NUMBER	BASIN REGION	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
Adobe Valley*	115	Central Region	3.9	3.8	3.0	3.6	3.7	4.8
Alkali Spring Valley*	142	Central Region	4.2	4.0	3.2	3.9	4.0	5.1
Alkali Valley*	111A	Central Region	3.7	3.5	2.8	3.4	3.5	4.5
Alkali Valley*	111B	Central Region	3.7	3.5	2.8	3.4	3.5	4.5
Amargosa Desert	230	Death Valley Basin	5.3	4.5	3.6	3.6	5.3	5.8
Antelope Valley	57	Humboldt River Basin	3.0	3.1	2.4	3.0	3.0	3.9
Antelope Valley	106	Walker River Basin	3.3	3.2	2.5	3.1	3.2	4.0
Antelope Valley*	186B	Central Region	2.6	2.6	2.0	2.5	2.4	3.6
Antelope Valley*	186A	Central Region	2.7	2.7	2.1	2.6	2.5	3.7
Antelope Valley*	93	Western Region	3.1	3.1	2.5	3.0	3.1	3.7
Antelope Valley*	151	Central Region	2.8	2.8	2.2	2.7	2.6	4.0
Bedell Flat*	94	Western Region	2.9	2.9	2.3	2.8	2.8	3.6
Big Smoky Valley	137B	Central Region	3.6	3.5	2.8	3.5	3.4	4.5
Big Smoky Valley	137A	Central Region	3.7	3.6	2.9	3.6	3.4	4.7
Black Moutains Area	215	Colorado River Basin	4.7	4.0	3.1	2.7	4.7	5.2
Black Rock Desert	28	Black Rock Desert Region	3.2	3.2	2.6	3.2	3.2	3.8
Boulder Flat*	61	Humboldt River Basin	2.8	2.8	2.2	2.7	2.7	3.6
Boulder Valley*	15	Northwest Region	3.3	3.2	2.6	3.2	3.2	3.9
Bradys Hot Springs Area*	75	West Central Region	3.5	3.4	2.7	3.3	3.3	4.2
Bruneau River Area	38	Snake River Basin	1.6	1.5	1.1	1.2	1.3	3.3

Appendix 15 cont.

BASIN NAME	BASIN NUMBER	BASIN REGION	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
Buena Vista Valley*	129	Central Region	3.4	3.4	2.7	3.3	3.3	4.1
Buffalo Valley	131	Central Region	2.8	2.8	2.2	2.7	2.8	3.0
Butte Valley*	178A	Central Region	2.6	2.6	2.0	2.5	2.4	3.6
Butte Valley*	178B	Central Region	2.8	2.7	2.1	2.6	2.5	3.7
Cactus Flat*	148	Central Region	3.9	3.8	3.1	3.7	3.9	4.8
California Wash*	218	Colorado River Basin	4.8	4.1	3.3	3.1	4.9	5.3
Carico Lake Valley*	55	Humboldt River Basin	3.0	3.0	2.3	2.8	2.9	3.7
Carson Desert	101	Carson River Basin	3.3	3.2	2.6	3.1	3.3	3.9
Carson Desert*	101A	Carson River Basin	3.5	3.5	2.8	3.4	3.4	4.2
Carson Valley	105	Carson River Basin	3.0	3.0	2.4	2.9	3.0	3.7
Cave Valley*	180	Central Region	3.2	3.1	2.4	3.0	2.9	4.0
Churchill Valley	102	Carson River Basin	3.3	3.2	2.6	3.1	3.3	3.9
Clayton Valley	143	Central Region	4.4	4.3	3.4	3.9	4.4	5.3
Clover Valley	177	Central Region	2.5	2.6	2.1	2.5	2.5	3.1
Clover Valley	204	Colorado River Basin	3.8	3.7	2.9	3.4	3.6	4.4
Clovers Area	64	Humboldt River Basin	3.2	3.2	2.6	3.1	3.1	4.0
Coal Valley*	171	Central Region	3.8	3.7	2.9	3.5	3.7	4.6
Cold Spring Valley*	100A	Western Region	3.0	3.0	2.4	2.9	3.0	3.6
Cold Spring Valley*	100	Western Region	3.1	3.1	2.5	3.0	3.1	3.6
Coleman Valley*	11	Northwest Region	3.1	3.1	2.4	3.0	3.0	3.9
Colorado Valley	213	Colorado River Basin	5.8	5.0	3.9	3.6	5.8	6.4
Columbus Salt Marsh Valley	118	Central Region	4.4	4.2	3.3	4.1	4.1	5.4
Continental Lake Valley*	2	Northwest Region	3.0	3.0	2.4	2.9	2.9	3.8
Cowkick Valley	126	Central Region	3.4	3.2	2.5	3.1	3.0	4.5
Coyote spring Valley*	210	Colorado River Basin	4.6	4.1	3.2	3.4	4.6	5.1

Appendix 15 cont.

BASIN NAME	BASIN NUMBER	BASIN REGION	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
Crater Flat*	229	Death Valley Basin	4.8	4.2	3.4	3.8	4.8	5.4
Crescent Valley	54	Humboldt River Basin	2.9	3.0	2.4	2.9	2.9	3.7
Dayton Valley*	103	Carson River Basin	3.3	3.2	2.6	3.1	3.2	3.9
Deep Creek Valley*	193	Great Salt Lake Basin	2.7	2.7	2.1	2.6	2.5	3.6
Delamar Valley*	182	Central Region	4.1	3.7	2.9	3.4	3.9	4.6
Desert Valley	31	Black Rock Desert Region	3.1	3.2	2.5	3.1	3.1	3.8
Diamond Valley	153	Central Region	2.5	2.5	2.0	2.4	2.4	3.5
Dixie Creek-Tenmile Creek Area	48	Humboldt River Basin	2.8	2.7	2.1	2.4	2.6	3.7
Dixie Valley	128	Central Region	3.6	3.5	2.8	3.4	3.6	4.3
Dodge Flat	82	Truckee River Basin	3.5	3.4	2.7	3.3	3.3	4.3
Dry Lake Valley*	181	Central Region	3.7	3.5	2.7	3.3	3.5	4.3
Dry Valley*	19	Black Rock Desert Region	3.5	3.5	2.8	3.4	3.5	4.1
Dry Valley*	95	Western Region	2.9	2.9	2.3	2.7	2.7	3.6
Dry Valley*	198	Colorado River Basin	3.5	3.3	2.6	3.2	3.2	4.2
Duck Lake Valley*	16	Northwest Region	3.3	3.3	2.6	3.2	3.3	4.0
Eagle Valley	104	Carson River Basin	3.2	3.1	2.5	3.0	3.1	3.7
Eagle Valley*	200	Colorado River Basin	3.1	3.0	2.4	2.9	2.8	4.1
East Walker Area*	109	Walker River Basin	3.5	3.4	2.7	3.3	3.4	4.3
Eastgate Valley Area	127	Central Region	3.4	3.4	2.7	3.4	3.4	4.2
Edwards Creek Valley*	133	Central Region	3.2	3.1	2.4	3.0	3.0	4.0
Eldorado Valley	167	Central Region	4.6	3.9	3.1	2.9	4.6	5.1
Elko Segment	49	Humboldt River Basin	2.6	2.6	2.1	2.5	2.5	3.3
Emigrant Valley*	158A	Central Region	4.2	4.0	3.2	3.7	4.1	5.0
Emigrant Valley*	158B	Central Region	4.6	4.2	3.3	3.8	4.5	5.3
Escalante Desert*	197	Escalante Desert	3.6	3.4	2.7	3.2	3.4	4.3

Appendix 15 cont.

BASIN NAME	BASIN NUMBER	BASIN REGION	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
Fairview Valley*	124	Central Region	3.4	3.2	2.6	3.2	3.2	4.3
Fernley Area	76	West Central Region	3.5	3.4	2.7	3.3	3.3	4.3
Fireball Valley*	77	West Central Region	3.5	3.4	2.7	3.3	3.4	4.3
Fish Lake Valley	117	Central Region	4.2	4.1	3.2	4.1	4.0	5.4
Fortymile Canyon*	227B	Death Valley Basin	4.6	4.1	3.3	3.8	4.5	5.3
Fortymile Canyon*	227A	Death Valley Basin	4.9	4.3	3.4	3.8	4.9	5.5
Frenchman Flat*	160	Central Region	4.9	4.4	3.5	3.9	4.9	5.6
Gabbs Valley*	122	Central Region	3.5	3.4	2.7	3.3	3.3	4.4
Garden Valley*	172	Central Region	3.7	3.6	2.9	3.5	3.6	4.5
Garfield Flat*	120	Central Region	3.9	3.7	2.9	3.5	3.7	4.7
Garnet Valley*	216	Colorado River Basin	5.2	4.5	3.6	3.4	5.3	5.7
Gold Butte Area*	223	Colorado River Basin	4.7	4.0	3.2	2.9	4.7	5.2
Gold Flat*	147	Central Region	4.1	3.9	3.1	3.7	4.1	5.0
Goose Creek Area*	41	Snake River Basin	2.5	2.5	1.9	2.4	2.3	3.5
Goshute Valley	187	Central Region	2.8	2.7	2.1	2.6	2.5	3.7
Granite Basin*	23	Black Rock Desert Region	3.3	3.3	2.6	3.2	3.3	3.9
Granite Springs Valley*	78	West Central Region	3.5	3.5	2.8	3.4	3.4	4.2
Grapevine Canyon*	231	Death Valley Basin	4.4	4.1	3.3	3.8	4.3	5.3
Grass Valley	71	Humboldt River Basin	3.3	3.3	2.6	3.2	3.2	4.2
Grass Valley	138	Central Region	2.7	2.8	2.2	2.7	2.7	3.5
Greasewood Basin*	224	Colorado River Basin	4.6	4.0	3.2	2.9	4.7	5.1
Great Salt Lake Desert	192	Great Salt Lake Basin	2.3	2.4	1.9	2.3	2.2	3.1
Gridley Lake Valley*	3	Northwest Region	3.1	3.1	2.4	3.0	3.0	3.8
Grouse Creek Valley*	190	Great Salt Lake Basin	2.7	2.6	2.0	2.5	2.4	3.6
Guano Valley*	6	Northwest Region	3.0	3.0	2.4	2.9	2.9	3.9

Appendix 15 cont.

BASIN NAME	BASIN NUMBER	BASIN REGION	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
Hamlin Valley*	196	Great Salt Lake Basin	3.0	3.0	2.4	2.9	2.9	4.0
Hardscrabble Area*	68	Humboldt River Basin	3.1	3.0	2.4	2.9	2.9	3.8
Hidden Valley*	217	Colorado River Basin	5.2	4.5	3.6	3.4	5.3	5.8
Hidden Valley*	166	Central Region	5.2	4.5	3.6	3.4	5.3	5.7
High Rock Lake Valley*	25	Black Rock Desert Region	3.2	3.2	2.6	3.2	3.2	3.9
Honey Lake Valley*	97	Western Region	3.3	3.3	2.6	3.2	3.3	4.0
Hot Creek	156	Central Region	3.4	3.5	2.7	3.4	3.3	4.4
Hualapai Flat*	24	Black Rock Desert Region	3.3	3.3	2.6	3.3	3.3	3.9
Huntington Valley	47	Humboldt River Basin	2.4	2.4	1.8	2.2	2.2	3.0
Huntoon Valley*	113	Central Region	3.9	3.7	2.9	3.5	3.7	4.7
Imlay Area	72	Humboldt River Basin	3.5	3.4	2.7	3.3	3.4	4.2
Independence Valley	36	Snake River Basin	2.2	2.2	1.7	2.1	2.0	2.8
Independence Valley*	188	Central Region	2.5	2.5	2.0	2.4	2.4	3.4
Indian Springs Valley	161	Central Region	5.2	4.7	3.7	4.1	5.0	6.0
Ione Valley*	135	Central Region	3.4	3.2	2.6	3.2	3.1	4.4
Ivanpah Valley	164A	Central Region	5.2	4.4	3.5	3.7	5.1	5.6
Ivanpah Valley*	164B	Central Region	5.3	4.5	3.6	3.5	5.3	5.8
Jakes Valley	174	Central Region	2.7	2.6	2.0	2.5	2.4	3.7
Jarbidge River Area	39	Snake River Basin	2.3	2.3	1.7	2.2	2.1	2.7
Jean Lake Valley*	165	Central Region	5.2	4.5	3.6	3.5	5.3	5.7
Jersey Valley*	132	Central Region	3.3	3.2	2.6	3.1	3.2	3.8
Kane Springs Valley*	206	Colorado River Basin	4.0	3.6	2.8	3.2	4.0	4.4
Kawich Valley*	157	Central Region	4.1	3.9	3.1	3.7	4.0	4.9
Kelley Creek Area*	66	Humboldt River Basin	3.0	3.1	2.4	2.9	2.9	3.9
Kings River Valley*	30A	Black Rock Desert Region	3.1	3.1	2.4	2.9	3.0	3.8

Appendix 15 cont.

BASIN NAME	BASIN NUMBER	BASIN REGION	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
Kings River Valley*	30B	Black Rock Desert Region	3.1	3.1	2.5	3.0	3.0	3.8
Kobeh Valley*	139	Central Region	2.7	2.7	2.1	2.6	2.6	3.6
Kumiva Valley*	79	West Central Region	3.4	3.4	2.7	3.3	3.4	4.1
Lake Tahoe Basin	90	Truckee River Basin	2.3	2.3	1.8	2.1	2.2	2.4
Lake Valley	183	Central Region	3.0	2.9	2.3	2.7	2.7	4.0
Lamoille Valley	45	Humboldt River Basin	2.3	2.3	1.8	2.2	2.1	2.9
Las Vegas Valley	212	Colorado River Basin	5.6	4.8	3.9	3.7	5.7	6.1
Lemmon Valley	92B	Western Region	3.1	3.1	2.5	3.0	3.1	3.4
Lemmon Valley*	92A	Western Region	3.1	3.1	2.5	3.0	3.1	3.6
Lida Valley*	144	Central Region	4.3	4.1	3.3	3.8	4.2	5.2
Little Fish Lake Valley*	150	Central Region	3.2	3.2	2.5	3.1	3.1	4.2
Little Humboldt Valley*	67	Humboldt River Basin	2.8	2.8	2.2	2.6	2.6	3.7
Little Owyhee River Area*	34	Snake River Basin	2.5	2.5	2.0	2.4	2.4	3.5
Little Smoky Valley	155A	Central Region	2.8	2.8	2.2	2.6	2.6	4.4
Little Smoky Valley*	155C	Central Region	3.3	3.3	2.6	3.2	3.2	4.2
Little Smoky Valley*	155B	Central Region	3.2	3.2	2.5	3.1	3.1	4.2
Long Valley*	9	Northwest Region	3.2	3.2	2.5	3.1	3.1	3.9
Long Valley*	175	Central Region	2.7	2.7	2.1	2.6	2.5	3.7
Lovelock Valley	73	Humboldt River Basin	3.7	3.7	3.0	3.6	3.6	4.5
Lovelock Valley*	73A	Humboldt River Basin	3.5	3.4	2.8	3.3	3.4	4.2
Lower Meadow Valley Wash	205	Colorado River Basin	4.2	3.7	2.9	3.0	4.3	4.6
Lower Moapa Valley	220	Colorado River Basin	4.5	1.8	1.5	1.4	2.2	2.4
Lower Reese River Valley	59	Humboldt River Basin	3.2	3.2	2.6	3.1	3.1	4.0
Macy Flat*	10	Northwest Region	3.1	3.1	2.4	3.0	2.9	3.9
Maggie Creek Area*	51	Humboldt River Basin	2.4	2.4	1.9	2.3	2.3	3.3

Appendix 15 cont.

BASIN NAME	BASIN NUMBER	BASIN REGION	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
Marys Creek Area*	52	Humboldt River Basin	2.7	2.7	2.2	2.6	2.6	3.6
Marys River Area	42	Humboldt River Basin	2.4	2.4	1.8	2.3	2.2	3.2
Mason Valley	108	Walker River Basin	3.1	3.0	2.4	2.9	3.0	3.9
Massacre Lake Valley*	8	Northwest Region	3.1	3.1	2.5	3.0	3.0	3.9
Mercury Valley*	225	Death Valley Basin	5.2	4.6	3.6	3.8	5.2	5.8
Mesquite Valley*	163	Central Region	5.3	4.5	3.6	3.7	5.3	5.7
Middle Reese River Valley*	58	Humboldt River Basin	3.1	3.1	2.4	2.9	3.0	3.8
Monitor Valley*	140A	Central Region	2.9	2.9	2.3	2.8	2.7	4.0
Monitor Valley*	140B	Central Region	3.3	3.3	2.6	3.2	3.1	4.3
Mono Valley*	112	Central Region	3.8	3.6	2.8	3.5	3.6	4.5
Monte Cristo Valley*	136	Central Region	4.0	3.8	3.0	3.7	3.7	4.9
Mosquito Valley*	12	Northwest Region	3.1	3.1	2.5	3.0	3.0	3.9
Mud Meadow*	26	Black Rock Desert Region	3.2	3.2	2.6	3.2	3.2	3.9
Muddy River Springs Area*	219	Colorado River Basin	4.7	4.0	3.2	3.1	4.7	5.1
Newark Valley*	154	Central Region	2.7	2.7	2.1	2.6	2.6	3.8
Newcomb Lake Valley*	96	Western Region	3.0	3.0	2.4	2.9	2.9	3.7
North Fork Area	44	Humboldt River Basin	2.2	2.2	1.7	2.1	2.0	3.2
Oasis Valley	228	Death Valley Basin	4.7	4.1	3.3	3.9	4.7	5.3
Oriental Wash*	232	Death Valley Basin	4.3	4.1	3.3	3.8	4.2	5.2
Owyhee River Area	37	Snake River Basin	2.1	2.1	1.6	2.0	1.9	3.1
Pahranagat Valley	209	Colorado River Basin	4.4	4.0	3.1	3.6	4.2	5.0
Pahroc Valley*	208	Colorado River Basin	3.8	3.6	2.8	3.4	3.6	4.4
Pahrump Valley	162	Central Region	5.0	4.4	3.6	3.8	5.1	5.6
Painter Flat*	18	Black Rock Desert Region	3.5	3.4	2.7	3.4	3.4	4.1
Panaca Valley	203	Colorado River Basin	3.8	3.6	2.9	3.4	3.6	4.4

Appendix 15 cont.

BASIN NAME	BASIN NUMBER	BASIN REGION	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
Paradise Valley	69	Humboldt River Basin	3.2	3.2	2.5	3.0	3.0	4.0
Patterson Valley*	202	Colorado River Basin	3.4	3.3	2.6	3.1	3.1	4.2
Penoyer Valley	170	Central Region	3.9	3.9	3.1	3.8	3.8	4.8
Pilgrim Flat*	17	Black Rock Desert Region	3.4	3.4	2.7	3.3	3.4	4.0
Pilot Creek Valley	191	Great Salt Lake Basin	2.9	2.8	2.2	2.7	2.6	3.6
Pine Forest Valley*	29	Black Rock Desert Region	3.1	3.1	2.5	3.0	3.1	3.8
Pine Valley	53	Humboldt River Basin	2.5	2.4	1.9	2.3	2.3	3.8
Piute Valley*	214	Colorado River Basin	5.4	4.6	3.7	3.5	5.4	6.0
Pleasant Valley	130	Central Region	3.5	3.4	2.8	3.3	3.4	4.1
Pleasant Valley*	194	Great Salt Lake Basin	2.8	2.8	2.2	2.7	2.6	3.8
Pleasant Valley*	88	Truckee River Basin	3.5	3.5	2.7	3.3	3.3	4.2
Pueblo Valley	1	Northwest Region	3.1	3.1	2.5	3.0	3.0	3.7
Pumpernickel Valley*	65	Humboldt River Basin	3.3	3.3	2.6	3.1	3.2	4.0
Pyramid Lake Valley	81	Truckee River Basin	3.6	3.5	2.8	3.4	3.5	4.4
Queen Valley*	116	Central Region	4.1	3.9	3.1	3.8	3.8	5.0
Quinn River Valley	33B	Black Rock Desert Region	2.8	2.7	2.1	2.3	2.5	3.8
Quinn River Valley	33A	Black Rock Desert Region	3.1	3.1	2.5	3.0	3.1	3.7
Railroad Valley	173B	Central Region	3.5	3.5	2.8	3.4	3.4	4.2
Railroad Valley	173A	Central Region	3.7	3.7	3.0	3.5	3.7	4.5
Ralston Valley	141	Central Region	4.0	3.9	3.1	3.9	3.9	4.8
Rawhide Flats*	123	Central Region	3.4	3.3	2.6	3.2	3.3	4.2
Red Rock Valley	99	Western Region	2.6	2.6	2.0	2.5	2.4	3.4
Rhodes Salt Marsh Valley*	119	Central Region	4.0	3.8	3.0	3.7	3.8	4.8
Rock Creek Valley*	62	Humboldt River Basin	2.7	2.7	2.1	2.6	2.6	3.7
Rock Valley*	226	Death Valley Basin	5.1	4.5	3.5	3.8	5.1	5.7

Appendix 15 cont.

BASIN NAME	BASIN NUMBER	BASIN REGION	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
Rose Valley*	199	Colorado River Basin	3.3	3.2	2.5	3.0	3.0	4.2
Ruby Valley	176	Central Region	2.5	2.6	2.0	2.5	2.4	3.0
Sage Hen Valley*	5	Northwest Region	2.9	2.8	2.2	2.7	2.7	3.9
Salmon Falls Creek Area	40	Snake River Basin	2.6	2.5	1.9	2.3	2.3	3.5
San Emidio Desert	22	Black Rock Desert Region	3.2	3.2	2.6	3.2	3.2	3.8
Sano Valley*	20	Black Rock Desert Region	3.5	3.5	2.8	3.4	3.5	4.1
Sarcobatus Flat	146	Central Region	4.2	4.0	3.2	3.7	4.2	5.2
Silver State Valley*	32	Black Rock Desert Region	3.3	3.3	2.6	3.1	3.2	4.0
Skedaddle Creek Valley*	98	Western Region	3.5	3.5	2.8	3.4	3.5	4.1
Smith Creek*	134	Central Region	3.0	2.9	2.3	2.8	2.7	4.1
Smith Valley	107	Walker River Basin	3.1	3.0	2.4	2.9	3.0	3.9
Smoke Creek Desert	21	Black Rock Desert Region	3.4	3.4	2.7	3.3	3.4	4.0
Snake Valley*	195	Great Salt Lake Basin	3.0	2.9	2.3	2.8	2.8	3.9
Soda Spring Valley	121A	Central Region	3.9	3.7	2.9	3.6	3.7	4.6
Soda Spring Valley*	121B	Central Region	3.8	3.6	2.8	3.5	3.6	4.6
South Fork Area*	46	Humboldt River Basin	2.5	2.5	1.9	2.3	2.3	3.2
South Fork Owyhee River Area	35	Snake River Basin	1.8	1.9	1.5	2.0	1.8	3.1
Spanish Springs Valley*	85	Truckee River Basin	3.3	3.3	2.6	3.2	3.3	3.9
Spring Valley	184	Central Region	3.0	3.0	2.4	2.9	2.9	3.9
Spring Valley	201	Colorado River Basin	3.0	2.9	2.3	2.8	2.6	4.1
Starr Valley Area	43	Humboldt River Basin	2.4	2.3	1.8	2.2	2.2	3.3
Steptoe Valley	179	Central Region	2.9	2.8	2.2	2.7	2.6	3.9
Stevens Basin*	152	Central Region	2.7	2.7	2.1	2.6	2.5	3.9
Stingaree Valley*	125	Central Region	3.4	3.2	2.5	3.1	3.0	4.4
Stone Cabin Valley*	149	Central Region	3.7	3.7	2.9	3.6	3.6	4.6

Appendix 15 cont.

BASIN NAME	BASIN NUMBER	BASIN REGION	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
Stonewall Flat*	145	Central Region	4.2	4.0	3.2	3.8	4.0	5.0
Summit Lake Valley*	27	Black Rock Desert Region	3.1	3.1	2.5	3.1	3.1	3.8
Sun Valley*	86	Truckee River Basin	3.3	3.2	2.6	3.2	3.3	3.7
Surprise Valley*	14	Northwest Region	3.2	3.2	2.6	3.1	3.2	3.9
Susie Creek Area*	50	Humboldt River Basin	2.5	2.5	2.0	2.4	2.4	3.3
Swan Lake Valley*	7	Northwest Region	3.1	3.0	2.4	2.9	2.9	3.9
Teels Marsh Valley*	114	Central Region	4.0	3.8	3.0	3.7	3.8	4.8
Thousand Springs Valley	189D	Great Salt Lake Basin	2.9	2.9	2.2	2.8	2.6	4.0
Thousand Springs Valley	189A	Great Salt Lake Basin	2.2	2.2	1.7	2.1	2.0	3.6
Thousand Springs Valley*	189B	Great Salt Lake Basin	2.5	2.5	1.9	2.4	2.3	3.5
Thousand Springs Valley*	189C	Great Salt Lake Basin	2.6	2.6	2.0	2.5	2.4	3.6
Three Lakes Valley*	168	Central Region	4.9	4.4	3.5	3.8	4.9	5.6
Three Lakes Valley*	211	Colorado River Basin	5.3	4.7	3.7	3.9	5.2	6.0
Tikapoo Valley*	169A	Central Region	4.2	3.9	3.1	3.7	4.0	4.9
Tikapoo Valley*	169B	Central Region	4.6	4.1	3.3	3.6	4.5	5.2
Tippett Valley*	185	Central Region	2.8	2.8	2.2	2.7	2.6	3.8
Tracy Segment	83	Truckee River Basin	3.5	3.4	2.7	3.2	3.3	4.3
Truckee Canyon Segment*	91	Truckee River Basin	3.3	3.2	2.6	3.1	3.2	3.8
Truckee Meadows	87	Truckee River Basin	3.4	3.4	2.7	3.3	3.5	4.0
Tule Desert*	221	Colorado River Basin	4.0	3.5	2.8	3.1	4.0	4.4
Upper Reese River Valley	56	Humboldt River Basin	2.6	2.5	2.0	2.4	2.3	3.6
Virgin River Valley	222	Colorado River Basin	4.4	3.8	3.0	2.9	4.5	4.8
Virgin Valley	4	Northwest Region	2.8	2.7	2.1	2.6	2.5	4.0
Walker Lake Valley	110A	Walker River Basin	3.5	3.5	2.8	3.4	3.5	4.4
Walker Lake Valley	110C	Walker River Basin	3.8	3.6	2.9	3.5	3.7	4.6

Appendix 15 cont.

BASIN NAME	BASIN NUMBER	BASIN REGION	ALFALFA NIWR (ft)	HIGHLY MANAGED PASTURE GRASS NIWR (ft)	LOW MANAGED PASTURE GRASS NIWR (ft)	GRASS HAY NIWR (ft)	TURF GRASS NIWR (ft)	SHALLOW OPEN WATER NIWR (ft)
Walker Lake Valley*	110B	Walker River Basin	3.7	3.5	2.8	3.4	3.5	4.5
Warm Springs Valley*	84	Truckee River Basin	3.3	3.2	2.6	3.1	3.2	4.0
Warner Valley*	13	Northwest Region	3.1	3.1	2.5	3.0	3.0	3.9
Washoe Valley	89	Truckee River Basin	3.7	3.8	2.9	3.5	3.5	4.7
Whirlwind Valley*	60	Humboldt River Basin	3.0	3.0	2.4	2.9	2.9	3.7
White Plains*	74	Humboldt River Basin	3.5	3.4	2.8	3.3	3.4	4.3
White River Valley	207	Colorado River Basin	3.2	3.2	2.5	3.0	3.0	4.0
Willow Creek Valley	63	Humboldt River Basin	2.4	2.5	2.0	2.4	2.4	3.9
Winnemucca Lake Valley*	80	Truckee River Basin	3.5	3.4	2.7	3.3	3.4	4.2
Winnemucca Segment	70	Humboldt River Basin	3.4	3.4	2.7	3.2	3.3	4.2
Yucca Flat*	159	Central Region	4.6	4.2	3.3	3.8	4.5	5.3

Appendix 16. Mean annual Net Irrigation Water Requirement (NIWR) for selected HAs and crops. Values of the NIWR were either assigned or averaged for HAs with multiple stations according to the number of valid years used in computing the station annual average NIWR. The NIWR for corn is the average of silage, field, and sweet corn crops. For other areas and crops of interest, see electronic statistical summaries. Descriptions of the electronic statistical summaries are given in Appendix 9.

Basin Name	Basin Number	Garden Vegetables (general) NIWR (ft)	Corn NIWR(ft)	Spring Wheat NIWR (ft)	Winter Wheat NIWR (ft)	Garlic NIWR (ft)	Onion NIWR (ft)	Potatoes (baking-late harvest) NIWR (ft)	Potatoes (processing -early harvest) NIWR (ft)	Grapes NIWR (ft)	Melons NIWR (ft)
Carson Desert	101	2.8	2.6	2.0	2.1					2.4	1.7
Carson Valley	105	2.7	2.5	1.9	2.2						
Diamond Valley	153	2.2	2.2	2.0	2.1						
Lovelock Valley	73	3.4	3.1	2.3	2.5			2.9	2.5		
Mason Valley	108	2.7	2.4	1.9	2.0	2.3	2.4				
Paradise Valley	69	2.6	2.8	2.3	2.5	2.5	2.6	2.7	2.4		
Smith Valley	107	2.6	2.5	2.0	2.2	2.4	2.5				
Lake Valley	183	2.3	2.4	2.2	2.5	2.5	2.5	2.6	2.4		