Final Environmental Assessment for Hurricane Recovery and Installation Development

Tyndall Air Force Base, Florida

Volume II: Appendices

March 2020

U.S. AIR FORCE

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APPENDIX A List of Buildings to be Demolished

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Bldg	Name	Asbestos Status	Lead Based Paint Status	Bldg Square Footage	Year Built	FMSF #	SHPO NR	SHPO Project Number
24	ACFT Shelter	Unknown	Unknown	6,300	1974	BY1392	DNE	2019-1801-B
26	ACFT Shelter (Garage Door Closures Only)	Unknown	Unknown	6,300	1974	BY1393	DNE	2019-1801-B
124	CES WAREHOUSE	Unknown	Unknown	2,400	1992	N/A	DNE	2019--615
126	EGRESS SHOP	Unknown	Unknown	5,745	1985	N/A	DNE	2020-941
127	LIFT STATION FOR WEST SECTION OF FLIGHTLINE FROM B290	Unknown	Unknown	328	1943	N/A	DNE	2020-941
150	GENERATOR BLDG	Unknown	Unknown	420	1944	N/A	DNE	2020-941
156	HANGAR 3	Detected	Unknown	43,787	1943	BY1094	DNE	2013-519, 2019-1801
162	44 FS OPS (RESERVES)	Unknown	Detected	1,000	1963	N/A	DNE	2020-941
164	95 FS OPS	Detected	Unknown	14,322	1963	N/A	DNE	2020-941
165	PAVILION NORTH OF B164	Unknown	Unknown	400	1992	N/A	DNE	2019-615
179	PAVILION HANGAR 2 (B180)	Unknown	Unknown	500	1981	N/A	DNE	2020-941
180	HANGAR 2	Detected	Detected	41,554	1959	N/A	DNE	2010-388-B
181	SHP A/M ORGL	Unknown	Unknown	2,010	1995	N/A	DNE	2020-941
182	HANGAR 1	Detected	Unknown	41,329	1959	N/A	DNE	2010-388-B
183	PAVILLION AT HANGAR 1, B182	Unknown	Unknown	440	1994	N/A	DNE	2019-615
187	PAVILION LOCATED BEHIND BLDG 188	Unknown	Unknown	550	1993	N/A	DNE	2019-615
188	ARMAMENT SYS	None Detected	Unknown	10,212	1976	N/A	DNE	2020-941
220	CONTROL TOWER	Unknown	Unknown	7,778	2001	N/A	DNE	2020-941
223	WEG SQDN OPS	Detected	Unknown	10,626	1963	N/A	DNE	2019-1801-B
224	AVIATION OPERATIONS BUILDING	Unknown	Detected	11,514	1976	N/A	DNE	2019-615
226	WEG HQ/83 FWS	Unknown	Unknown	41,000	1987	N/A	DNE	2019-1801
228	PAVILION BEHIND BLDG 224	Unknown	Unknown	1,000	1991	N/A	DNE	2019-1801-B
235	FIRE SUPPRESSION PUMPHOUSE	Unknown	Unknown	1,440	1962	N/A	DNE	2020-941
239	TINY "T" TEST CELL	Unknown	Unknown	4,124	1969	N/A	DNE	2019-1801
246	WEAPONS TRAILER MAINTENANCE	Detected	Unknown	12,056	1959	BY1405	DNE	2010-388-B
249	COLD STORAGE	Detected	Unknown	9,230	1960	BY1406	DNE	2010-388-B
256	DRONE SUBSCALE MX	Detected	Unknown	26,871	1960	BY1407	DNE	2019-1801
259	PAVILION WEST OF B258	Unknown	Unknown	510	1993	N/A	DNE	2019-615
262	MXS STORAGE	Unknown	Unknown	1,040	1969	N/A	DNE	2020-941
263	AGE FUEL PUMP	Unknown	Unknown	550	1969	N/A	NEV	2020-xxx
265	BASE SUPPY	Unknown	Unknown	135,247	N/A	N/A	DNE	2020-941
266	BASE SUPPLY	Detected	Unknown	135,247	1998	BY1140	DNE	2019-1801
270	GATE HOUSE	Unknown	Unknown	85	1987	N/A	DNE	2020-941

Bldg	Name	Asbestos Status	Lead Based Paint Status	Bldg Square Footage	Year Built	FMSF #	SHPO NR	SHPO Project Number
272	STORAGE	Unknown	Unknown	408	1987	N/A	DNE	2020-941
273	FIRE SUPPRESSION PUMPHOUSE	Unknown	Unknown	3,300	1987	N/A	DNE	2020-941
274	DRONE MAINTENANCE	Unknown	Unknown	6,532	2004	N/A	DNE	2019-1801
280	HANGAR 4 (F-22 PAINT BOOTHS/WEAPONS LOAD TRNG)	Detected	Detected	66,771	1955	BY1141	DNE	2019-1801
295	F-22 LO/CRF	Unknown	Unknown	30,525	2003	N/A	DNE	2019-1801
311	WEG CLASSIFIED STORAGE FAC	Unknown	Unknown	6,052	2000	N/A	DNE	2019-1801
318	LIFT STA #24	Unknown	Unknown	144	1973	N/A	DNE	2019-615
323	HUSH HOUSE #2	Unknown	Unknown	1,080	1993	N/A	DNE	2020-941
325	HUSH HOUSE #1 PAD	Unknown	Unknown	1,864	1976	N/A	DNE	2020-941
333	VERTICAL ACFT EXTERNAL TANK STORAGE	Unknown	Unknown	11,700	2004	N/A	DNE	2020-941
433	PATIO (2 FS)	Unknown	Unknown	480	1954	N/A	DNE	2019-615
474	WEST ZONE	Unknown	Unknown	4,374	1991	N/A	DNE	2019-1801
503	ACMI OPERATIONS	Unknown	Unknown	9,508	1987	N/A	DNE	2020-941
504	FIRE SUPPRESSION PUMPHOUSE	Unknown	Unknown	1,462	1987	BY1411	DNE	2010-388-B
505	COMM ADMIN	Unknown	Unknown	2,975	1995	N/A	DNE	2020-941
509	VACANT	Unknown	Unknown	280	1988	N/A	DNE	2020-941
522	RAPTOR REPAIR	Unknown	Unknown	37,082	1987	N/A	DNE	2019-1801
526	LOX CART MAINTENANCE	Unknown	Unknown	960	2002	N/A	DNE	2020-941
530	44 FG ADMIN/WING IA-IP	Detected	Unknown	11,129	1943	N/A	DNE	2019-1801
532	AAFES FAST FOOD	None Detected	Unknown	3,120	1943	N/A	DNE	2019-615
542	325 MXG/44 MXS	Unknown	Unknown	21,400	1996	N/A	DNE	2019-1801
546	FLT SIM PHYSI	Detected	Unknown	23,917	1955	BY1144	DNE	2019-1801
549	FTD CLASSROOMS	Unknown	Unknown	38,486	1986	N/A	DNE	2019-1801
559	VEHICLE MAINT	Unknown	Unknown	3,466	1983	N/A	DNE	2019-615
561	NO DESCRIPTION	Unknown	Unknown	4,059	1965	N/A		
630	AIREY GATE HOUSE	Unknown	Unknown	200	2004	N/A	DNE	2020-941
631	OVERHEAD PROTECTION FOR AIREY GATE HOUSE	Unknown	Unknown	3,685	2017	N/A	DNE	2019-615
645	PATIO (CONS)	Unknown	Unknown	776	1990	N/A	DNE	2019-615
651	PAVILION BEHIND BLDG 649	Unknown	Unknown	400	2006	N/A	DNE	2019-615
703	CHAPEL 1	Detected	Unknown	4,238	1943	BY1117	NREI	2020-941
705	STORAGE AFRC	Unknown	Detected	400	1977	N/A	DNE	2020-941
745	FAMILY SUPPORT CENTER/AIRMANS	Detected	Unknown	6,936	1943	N/A	DNE	2019-1801

Bldg	Name	Asbestos Status	Lead Based Paint Status	Bldg Square Footage	Year Built	FMSF #	SHPO NR	SHPO Project Number
	ATTIC							
747	FAMILY SUPPORT/AMN'S ATTIC	Detected	Unknown	10,778	1943	N/A	DNE	2019-1801
821	PATIO (COMM)	Unknown	Unknown	340	1988	N/A	DNE	2019-1801
856	AFCEC ADMIN	Detected	Unknown	7,287	1943	N/A	DNE	2019-1801-B
909	DISASTER PREP	Unknown	Unknown	10,636	1943	N/A	DNE	2020-941
912	AAFES VENDOR	Detected	Unknown	1,615	1960	BY1414	DNE	2019-1801-B
914	BOWLING CENTER	Detected	Unknown	15,600	1967	N/A	DNE	2019-1801
916	BASE LIBRARY	Detected	Unknown	11,574	1943	N/A	DNE	2019-1801
928	CAR WASH AAFES	Unknown	Unknown	N/A	1993	N/A	DNE	2020-941
934	SKILLS DEVELOP/CROSS FIT	Unknown	Unknown	14,551	1979	N/A	DNE	2019-1801
960	BURGER KING	Unknown	Unknown	3,520	1987	N/A	DNE	2019-1801-B
1013	EOD TEMPORARY LOCATION DURING B729 RENOVATIONS	Detected	Detected	6,936	1943	N/A	DNE	2019-1801-S, 2019-1801
1014	RESTROOMS	Unknown	Unknown	129	1976	N/A	DNE	2019-1801
1015	HONOR GUARD/CANADIAN AF	Detected	Unknown	8,942	1943	N/A	DNE	2019-1801
1016	LINEN EXCHANGE/CIVIL AIR PATROL/AFCEC STORAGE	Detected	Detected	6,936	1943	N/A	DNE	2019-1801
1017	SCORE BOOTH FALCON FIELD	Unknown	Unknown	432	1989	N/A	DNE	2019-1801-S, 2019-1801
1036	MS DORM	Detected	Unknown	31,559	1978	N/A	DNE	2019-1801-M, 2019-1801
1045	PAVILION NORTH OF B1046	Unknown	Unknown	440	1993	N/A	DNE	2019-615
1046	MED GP DORM	Detected	Unknown	31,818	1978	N/A	DNE	2019-1801
1060	DORM VAQ	Unknown	Unknown	41,611	1984	N/A	DNE	2019-1801-D, 2019-1801
1126	SCORE BOOTH FEDERAL FIELD	Unknown	Unknown	648	1991	N/A	DNE	2019-1801-S, 2019-1801
1132	STORAGE FOR BALLFIELDS	Unknown	Unknown	1,530	1984	N/A	DNE	2020-941
1149	DORM	Detected	Unknown	38,562	1978	N/A	DNE	2019-1801
1150	DORM	Unknown	Unknown	13,700	1987	N/A	DNE	2019-1801
1151	DORM DAYROOM QUADS	Unknown	Unknown	2,615	1987	N/A	DNE	2019-1801-D, 2019-1801-B
1152	DORM	Unknown	Unknown	12,109	1987	N/A	DNE	2019-1801-D, 2019-1801
1153	DORM DAYROOM	Unknown	Unknown	3,315	1987	N/A	DNE	2019-1801-D, 2019-1801-B

Bldg	Name	Asbestos Status	Lead Based Paint Status	Bldg Square Footage	Year Built	FMSF #	SHPO NR	SHPO Project Number
1154	DORM	Unknown	Unknown	12,109	1987	N/A	DNE	2019-1801-D, 2019-1801-B
1155	DORM DAYROOM	Unknown	Unknown	2,615	1987	N/A	DNE	2019-1801-D, 2019-1801-B
1156	TECH TRAINING STUDENT HOUSING	Unknown	Unknown	13,700	1987	N/A	DNE	2019-1801-T, 2019-1801-B
1255	GATR SITE	Unknown	Unknown	3,554	2005	BY1418	DNE	2010-388-B
1262	STORAGE NATURAL RESOURCES	Unknown	Unknown	3,053	1996	N/A	DNE	2020-941
1263	LATRINE AT SKEET RANGE	Unknown	Unknown	400	2005	N/A	DNE	2020-941
1286	OLD STORAGE FACILITY	Unknown	Unknown	231	1959	BY1423	DNE	2019-1801-O, 2019-1801-B
1287	ADC	Unknown	Unknown	1,550	1954	N/A	DNE	2020-941
1305	RELIGION EDUCATION CENTER	Detected	Unknown	7,597	1943	N/A	DNE	2019-1801
1307	BILLETING MAINTENANCE/STORAGE/LAUNDRY	Unknown	Detected	8,244	1943	N/A	DNE	2019-1801
1309	VET CLINIC/HOME DAYCARE MGT	Detected	Unknown	7,081	1943	N/A	DNE	2019-1801
1314	TLF	Unknown	Unknown	5,280	1985	N/A	DNE	2019-1801-T, 2019-1801
1315	TLF	Unknown	Unknown	3,531	1985	N/A	DNE	2019-1801-T, 2019-1801
1316	TLF	Unknown	Unknown	3,531	1985	N/A	DNE	2019-1801-T, 2019-1801
1317	VOQ	Unknown	Unknown	4,010	1985	N/A	DNE	2019-1801-V, 2019-1801
1318	TLF	Unknown	Unknown	2,640	1985	N/A	DNE	2019-1801-T, 2019-1801
1332	SAND DOLLAR INN BILLETING OFFICE	Detected	Unknown	6,815	1943	N/A	DNE	2019-1801
1352	STORAGE	Unknown	Unknown	6,171	1963	N/A	DNE	2019-1801-S, 2019-1801-B
1360	VOQ	Unknown	Unknown	20,674	1987	N/A	DNE	2019-1801-V, 2019-1801
1361	VOQ	Unknown	Unknown	20,698	1987	N/A	DNE	2019-1801-V, 2019-1801
1380	VOQ	Detected	Unknown	17,738	1959	N/A	DNE	2019-1801
1381	VOQ	Detected	Unknown	18,229	1970	N/A	DNE	2019-1801
1406	AFOSI BLDG (NOTE* Comm Hub)	Detected	Unknown	8,901	1943	N/A	DNE	2019-1801

Bldg	Name	Asbestos Status	Lead Based Paint Status	Bldg Square Footage	Year Built	FMSF #	SHPO NR	SHPO Project Number
1410	CHILD CARE CTR	None Detected	Unknown	23,062	1983	N/A	DNE	2019-1801
1454	O'CLUB	Unknown	Unknown	21,806	1995	N/A	DNE	2019-1801-O, 2019-1801
1476	COMM AND CTR STORAGE	Unknown	Unknown	5,228	1943	BY1178	DNE	2020-941
1506	THRIFT SHOP STORE	Unknown	Unknown	12,548	1944	N/A	DNE	2019-1801
1540	POOL	Unknown	Unknown	5,220	1965	N/A	DNE	2020-941
1541	POLL WATER TRMT	Unknown	Unknown	419	1965	N/A	DNE	2019-1801-P, 2019-1801-B
1550	CAC RUN OPERATIONS/NCO CLUB (BAR)	Detected	Unknown	36,467	1977	N/A	DNE	2019-1801-C, 2019-1801-B
1580	VAQ DORM	Detected	Detected	6,296	1943	N/A	DNE	2019-1801
1582	VAQ DORM	Detected	Unknown	6,422	1943	N/A	DNE	2019-1801-V
1618	ROTC OBSTACLE COURSE	Unknown	Unknown	N/A	1998	N/A	DNE	2019-615
1652	TYNDALL BEACH REC BLDG	Unknown	Unknown	2,446	1965	N/A	DNE	2020-941
1680	DORM	Detected	Unknown	29,329	1969	N/A	DNE	2020-941
1708	PEST MGMT STORAGE	Unknown	Unknown	2,080	1994	N/A	DNE	2019-1801-C, 2019-1801B
1723	CE SUPPORT BLDG	Unknown	Unknown	1,102	1945	N/A	DNE	2020-941
1769	STORAGE SERE	Unknown	Unknown	800	1995	N/A	DNE	2020-941
1812	PODS STORAGE/SHOP	Unknown	Unknown	16,405	1996	N/A	DNE	2019-1801-P, 2019-1801
1818	SPECIAL PROJECTS	Unknown	Unknown	3,750	1991	BY1430	DNE	2019-1801-S, 2019-1801
1820	PAVILION @ 1800 AREA	Unknown	Unknown	270	2001	N/A	DNE	2019-615
2399	GIRL SCOUT HUT	Unknown	Unknown	1,267	1972	N/A	DNE	2019-1801-G, 2019-1801-B
2580	VISITOR CENTER/PASS & ID	Unknown	Unknown	2,432	2005	N/A	DNE	2020-941
2600	COMMERCIAL GATE INSPECTION FACILITY	Unknown	Unknown	640	2006	N/A	DNE	2020-941
2610	COMMERCIALGATE INSPECTION AREA BLDG	Unknown	Unknown	670	2013	N/A	DNE	2020-941
2893	FIRE STATION QUARTERS	None Detected	Unknown	3,540	1958	N/A	DNE	2010-388-B
2894	FIRE STATION VEHICLE BLDG	Unknown	Unknown	969	1981	N/A	DNE	2020-941
2899	MWR/NAF STORAGE	Unknown	Unknown	4,020	1958	BY1433	DNE	2019-1801-M

Bldg	Name	Asbestos Status	Lead Based Paint Status	Bldg Square Footage	Year Built	FMSF #	SHPO NR	SHPO Project Number
3001	SECURITY FORCE TRAINING	Unknown	Unknown	2,910	1960	BY1434	DNE	2010-388-B
3002	STORAGE	Unknown	Unknown	936	1960	BY1435	DNE	2010-388-B
3015	GOLF CART BARN	Unknown	Unknown	6,433	1999	N/A	DNE	2019-1801-G, 2019-1801-B
3017	GOLF STORAGE	Unknown	Unknown	2,269	1972	N/A	DNE	2019-1801-G, 2019-1801-B
3018	GOLF CLUBHSE	Unknown	Unknown	4,020	1987	N/A	DNE	2019-1801-G, 2019-1801-B
3027	GOLF COUSRE STORAGE	Unknown	Unknown	999	1988	N/A	DNE	2020-941
3029	GOLF COURSE CLUB HOUSE	Detected	Unknown	9,952	1941	BY1193	DNE	2019-1801-G, 2019-1801-B
3034	GOLF STORAGE	Unknown	Unknown	255	1988	N/A	DNE	2019-1801-G, 2019-1801-B
3133	TLF SUPPORT	Unknown	Unknown	2,824	1970	N/A	DNE	2017-3504
3134	WOOD MANOR III	Unknown	Unknown	2,682	1970	N/A	DNE	2017-3504
3135	TLF	Unknown	Unknown	2,682	1970	N/A	DNE	2017-3504
3136	TLF	Unknown	Unknown	2,682	1970	N/A	DNE	2017-3504
3137	TLF	Unknown	Unknown	3,137	1970	N/A	DNE	2020-941
3138	TLF	Unknown	Unknown	2,682	1970	N/A	DNE	2017-3504
3139	TLF	Unknown	Unknown	2,682	1970	N/A	DNE	2017-3504
3140	TLF	Unknown	Unknown	3,137	1970	N/A	DNE	2020-941
3141	TLF	Unknown	Unknown	2,682	1970	N/A	DNE	2017-3504
3142	TLF	Unknown	Unknown	3,137	1970	N/A	DNE	2020-941
3143	TLF	Unknown	Unknown	2,682	1970	N/A	DNE	2017-3504
3144	TLF	Unknown	Unknown	2,682	1970	N/A	DNE	2017-3504
3146	TLF	Unknown	Unknown	2,682	1970	BY2383	DNE	2017-3504
3148	TLF	Unknown	Unknown	2,450	1970	BY2382	DNE	2017-3504
3149	TLF	Unknown	Unknown	3,137	1970	N/A	DNE	2020-941
3150	TLF	Unknown	Unknown	2,682	1970	N/A	DNE	2017-3504
3152	TLF	Unknown	Unknown	2,682	1970	N/A	DNE	2017-3504
3153	TLF	Unknown	Unknown	2,682	1970	N/A	DNE	2017-3504
3154	TLF	Unknown	Unknown	2,450	1970	N/A	DNE	2017-3504
3155	TLF	Unknown	Unknown	3,137	1970	N/A	DNE	2020-941
3156	TLF	Unknown	Unknown	2,682	1970	N/A	DNE	2017-3504
3158	TLF	Unknown	Unknown	2,682	1970	N/A	DNE	2017-3504
3159	TLF	Unknown	Unknown	2,682	1970	N/A	DNE	2017-3504

Bldg	Name	Asbestos Status	Lead Based Paint Status	Bldg Square Footage	Year Built	FMSF #	SHPO NR	SHPO Project Number
3160	TLF	Unknown	Unknown	3,137	1970	N/A	NEV	2020-xxx
3161	TLF	Unknown	Unknown	2,450	1970	N/A	DNE	2017-3504
3162	TLF	Unknown	Unknown	2,682	1970	N/A	DNE	2017-3504
3163	TLF	Unknown	Unknown	2,682	Unk	N/A	Unk	Unk
3164	TLF	Unknown	Unknown	2,682	1970	N/A	DNE	2017-3504
3216	YOUTH CENTER STORAGE	Unknown	Unknown	800	1992	N/A	DNE	2020-941
3285	PAVILIONS FELIX LAKE REC AREA	Unknown	Unknown	300	1997	N/A	DNE	2019-1801-P, 2019-1801-B
3350	FELIX LAKE BX SHOPPETTE	Unknown	Unknown	5,591	1999	N/A	DNE	2020-941
3351	FELIX LAKE GAS STATION TANKS	Unknown	Unknown	N/A	1999	N/A	DNE	2020-941
4025	SABRE GATE	Unknown	Unknown	200	2006	N/A	DNE	2020-941
4027	HUNTING/FISHING CHECK STATION	Unknown	Unknown	382	Unk	N/A	DNE	2020-941
4572	LATRINE HERITAGE PARK	Unknown	Unknown	683	Unk	N/A	DNE	2020-941
4580	PAVILIONS HERITAGE PARK	Unknown	Unknown	4,033	1984	N/A	DNE	2019-1801-P, 2019-1801-B
5007	STORAGE	Unknown	Unknown	128	1989	N/A	DNE	2019-1801-S, 2019-1801-B
5008	SWING SPACE STORAGE (OLD SHOAL POINT SHOPPETTE)	Unknown	Detected	3,104	1955	N/A	DNE	2019-1801-S, 2019-1801-B
5009	PICNIC AREA AT B5008	Unknown	Unknown	N/A	1955	N/A	DNE	2020-941
5013	BONITA BAY MWR	Unknown	Unknown	4,888	1987	N/A	DNE	2020-941
5018	STORAGGE MWR	Unknown	Unknown	120	1988	N/A	DNE	2020-941
5024	STORAGE BONITA BAY MWR	Unknown	Unknown	240	1988	N/A	DNE	2020-941
5030	MARINA DOCK/PIERS/BOAT RAMPS	Unknown	Unknown	N/A	1987	N/A	DNE	2020-941
5033	ATRS STORAGE	Unknown	Unknown	241	1992	N/A	DNE	2020-941
6002	LATRINE 6000 AREA REC SITE	Unknown	Unknown	393	1993	N/A	DNE	2019-1801-L, 2019-1801-B
6004	STORAGE	Unknown	Unknown	1,040	1943	N/A	DNE	2020-941
6005	STORAGE	Unknown	Unknown	2,500	1985	N/A	DNE	2019-1801-S, 2019-1801
6006	EXERCISE COMMAND CENTER	Unknown	Unknown	528	1996	N/A	NEV	2020-xxx
6008	CE STORAGE	Unknown	Unknown	3,200	1994	N/A	DNE	2019-1801-C, 2019-1801
6010	CE STORAGE	Unknown	Unknown	3,200	1994	N/A	DNE	2019-1801-C, 2019-1801
6014	BE STORAGE	Unknown	Unknown	3,200	1943	N/A	DNE	2020-941

Bldg	Name	Asbestos Status	Lead Based Paint Status	Bldg Square Footage	Year Built	FMSF #	SHPO NR	SHPO Project Number
6015	PAVILION WEST OF 6006	Unknown	Unknown	600	1996	N/A	DNE	2019-1801-P, 2019-1801
6016	BCE REFUSE CONTRACTOR	Unknown	Unknown	1,505	1943	N/A	DNE	2020-941
6021	SHOP	Unknown	Unknown	4,130	1943	N/A	DNE	2019-1801-S, 2019-1801
6022	POWERPRO MX SHOP	Unknown	Unknown	1,330	1943	N/A	DNE	2019-1801
6023	STORAGE	Unknown	Unknown	1,330	1943	N/A	DNE	2019-1801-S, 2019-1801
6027	CES WORKSHOP	Detected	Unknown	9,748	1943	N/A	DNE	2019-1801
6028	SHOP	Unknown	Unknown	1,020	1945	N/A	DNE	2019-1801
6030	GROUND MX SHOP	Unknown	Unknown	4,000	1962	N/A	DNE	2019-1801-G, 2019-1801
6032	WEIGHT SCALES	Unknown	Unknown	61	1942	N/A	DNE	2019-1801
6033	POWER PRO STOR	Unknown	Unknown	4,000	1993	N/A	DNE	2020-941
6034	POWERPRO STORAGE	Unknown	Unknown	1,125	1995	N/A	DNE	2019-1801-P, 2019-1801
6060	SABER CONTRACTOR STORAGE	Unknown	Unknown	6,360	1992	N/A	DNE	2019-1801-S, 2019-1801
6063	STORAGE	Unknown	Unknown	192	1982	N/A	DNE	2019-1801-S, 2019-1801
6067	CE UTILITIES	Unknown	Unknown	1,500	1991	N/A	DNE	2019-1801
7027	STORAGE	Unknown	Unknown	5,000	1988	BY1445	DNE	2019-1801-S, 2019-1801
7029	MUNITIONS STORAGE	Unknown	Unknown	5,000	1985	BY1447	DNE	2019-1801-M, 2019-1801
7030	STORAGE	Unknown	Unknown	5,000	1983	BY1448	DNE	2019-1801-S, 2019-1801
7031	STORAGE MUNITIONS	Unknown	Unknown	5,000	1988	BY1449	DNE	2019-1801-S, 2019-1801
7033	MUNITION ADMIN	Unknown	Unknown	3,220	1983	BY1451	DNE	2010-388-B
7040	SHP MSL AS	Unknown	Unknown	3,200	1987	BY1452	DNE	2019-1801-S, 2019-1801
7062	NO NAME	Unknown	Unknown	6,501	2017	N/A	DNE	2020-941
8522	SUBSCALE DRONE MX BLDG	Unknown	Unknown	1,695	1961	BY1454	DNE	2019-1801-S, 2019-1801

Bldg	Name	Asbestos Status	Lead Based Paint Status	Bldg Square Footage	Year Built	FMSF #	SHPO NR	SHPO Project Number
8523	SUB SCALE WELL HOUSE	Unknown	Unknown	54	1961	BY1455	DNE	2019-1801-S, 2019-1801
8531	SUBSCALE DRONE OFFICE	Unknown	Unknown	390	1978	BY1461	DNE	2010-388-B
9306	DRONE STORAGE	Unknown	Unknown	7,000	1991	BY1465	DNE	2019-1801-D, 2019-1801
9349	DRONE CTL TOWER - NORTH	Unknown	Unknown	75	1985	N/A	DNE	2020-941
9350	DRONE CTL TOWER - WEST	Unknown	Unknown	75	1985	N/A	DNE	2020-941
9400	SATELLITE FIRE STATION-SILVER FLAG	Unknown	Unknown	4,320	2002	N/A	DNE	2020-941
9420	SILVER FLAG SHOOTING RANGE	Unknown	Unknown	N/A	1998	N/A	DNE	2020-941
9421	SILVER FLAG STORAGE	Unknown	Unknown	240	1998	N/A	DNE	2020-941
9432	HEALTH STORAGE	Unknown	Unknown	6,000	2009	N/A	DNE	2019-1801-E, 2019-1801
9443	RESEARCH FIRE EQUIPMENT STORAGE	Unknown	Unknown	6,495	1998	N/A	DNE	2019-1801-R, 2019-1801
9496	MULTI PURPOSE REC BLDG	Unknown	Unknown	733	1999	N/A	DNE	2019-1801-M, 2019-1801
9497	MISC REC BLDG	Unknown	Unknown	3,288	1999	N/A	DNE	2019-1801-M, 2019-1801
9525	METAL STORAGE BLDG @ SKY TEN	Unknown	Unknown	2,011	2008	N/A	DNE	2020-941
9545	DRONE MAINT/RECOVERY BLDG	Unknown	Unknown	1,200	1996	N/A	DNE	2019-1801-D, 2019-1801-B
9704	PAINT SHOP STORAGE	Unknown	Unknown	409	1958	BY1467	DNE	2019-1801-P, 2019-1801
9705	WELL #13	Unknown	Unknown	210	1958	BY1468	DNE	2019-1801-W, 2019-1801
9706	AFRL ADMIN	Detected	Unknown	9,523	1958	BY1469	DNE	2019-1801-A, 2019-1801
9708	FIRE TECH ADMIN	Unknown	Unknown	3,400	1986	BY1470	DNE	2019-1801-F, 2019-1801
9709	BOAT STORAGE	Unknown	Unknown	4,120	1967	N/A	DNE	2019-1801-B
9710	VEHICLE BODY SHOP	Unknown	Unknown	2,479	1983	N/A	DNE	2019-1801-V, 2019-1801-B
9716	PARACHUTE TRAINING TOWER	Unknown	Unknown	122	1968	N/A	DNE	2019-1801-P, 2019-1801-B
9718	FIRE RESEARCH LAB	Unknown	Unknown	3,200	1988	BY1471	DNE	2019-1801-F, 2019-1801-B

Bldg	Name	Asbestos Status	Lead Based Paint Status	Bldg Square Footage	Year Built	FMSF #	SHPO NR	SHPO Project Number
9719	GRAPHICS SHOP/STORAGE	Unknown	Unknown	2,400	1988	BY1472	DNE	2019-1801-G, 2019-1801-B
9720	FABRICATION SHOP	Unknown	Unknown	13,166	1974	BY1473	DNE	2019-1801-F, 2019-1801
9721	STORAGE	Unknown	Unknown	96	1993	N/A	DNE	2019-1801-S, 2019-1801-B
9722	PAVILION FOR 9700 AREA	Unknown	Unknown	1,400	1977	N/A	DNE	2019-1801-P, 2019-1801-B
9725	ROBOTICS PROTOTYPE	Unknown	Unknown	25,650	1977	BY1474	DNE	2019-1801-R, 2019-1801-B
9727	RANGE CONTROL FACILITY	Unknown	Unknown	1,700	2000	N/A	DNE	2019-1801-R, 2019-1801
9729	AFRL BALLISTICS FACILITY	Unknown	Unknown	3,322	2007	N/A	DNE	2019-1801-A, 2019-1801
9730	VEH MX SHOP	Unknown	Unknown	25,114	1983	N/A	DNE	2019-1801-V, 2019-1801
9732	AFRL EXERCISE FAC	Unknown	Unknown	1,200	2004	N/A	DNE	2019-1801-A, 2019-1801-B
9733	CE SHOPS AFRL	Unknown	Unknown	5,632	1983	N/A	DNE	2019-1801-C, 2019-1801
9735	AFCEC/DHS EXLOSIVE LAB	Unknown	Unknown	9,000	1983	N/A	DNE	2019-1801-A, 2019-1801-B
9737	PAVEMENTS LAB STORAGE SHED	Unknown	Unknown	1,000	2008	N/A	DNE	2020-941
9738	ROBOTICS LAB	Unknown	Unknown	29,797	1984	BY1475	DNE	2019-1801-R, 2019-1801
9739	VEHICLE PARKING SHED	Unknown	Unknown	2,200	2008	N/A	DNE	2020-941
9742	STRUCT/MATL LAB	Unknown	Unknown	14,461	1984	BY1476	DNE	2019-1801-S, 2019-1801-B
9766	STORAGE SHED	Unknown	Unknown	2,400	2005	N/A	DNE	2019-1801-S, 2019-1801-B
9768	GAS MASK REPAIR SHOP	Unknown	Unknown	1,507	1991	BY1477	DNE	2019-1801-G, 2019-1801-B
20499	GOV FUEL PUMP OVERHEAD PROTECTION	Unknown	Unknown	5,700	N/A	N/A	DNE	2019-615
29408	DHS EXP PREP (DOG HOUSE)	Unknown	Unknown	240	2012	N/A	DNE	2020-941
42275	WASTEWATER TREATMENT LAGOON	Unknown	Unknown	N/A	N/A	N/A	DNE	2020-941
N of	SEPTIC LAGOON	Unknown	Unknown	N/A	N/A	N/A	DNE	2020-941

Bldg	Name	Asbestos Status	Lead Based Paint Status	Bldg Square Footage	Year Built	FMSF #	SHPO NR	SHPO Project Number
1735								

Notes:
DNE: Determined Ineligible for Listing
N/A: Not applicable, or not available
NEV: Needs to be Evaluated
NREI: Individual National Register Eligible

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APPENDIX B Agency Coordination and Public Involvement

Note: Not all letter attachments are included in this EA due to page length considerations, but are included in the administrative record of the EA. Copies of these materials can be requested from Tyndall AFB at: 325 CES/CEIEC, 540 Mississippi Ave Building 36270 , Tyndall AFB, FL 32403

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APPENDIX B.1 Early Agency Notification

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DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Ms. Donna L. Barber
Chief, Installation Management Flight
325th Civil Engineer Squadron
540 Mississippi Ave
Tyndall AFB FL 32403

Mr. Chris Stahl, Coordinator
Office of Intergovernmental Programs
Department of Environmental Protection
3900 Commonwealth Blvd, Mail Station 47
Tallahassee FL 32399

Dear Mr. Stahl

The United States Air Force (Air Force), is preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with the recovery efforts at Tyndall Air Force Base (AFB), Florida. The EA is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

Under the Proposed Action, the 325th Fighter Wing at Tyndall AFB, proposes to repair several facilities, demolish 264 buildings, construct 26 individual facilities, construct multiple facilities in three separate complex areas, conduct drainage improvements, and new or upgraded utilities spanning six planning areas throughout Tyndall AFB; Flightline Area, Support Area, 9700 Area-Crooked Island (AF Civil Engineering Center Research, Development, Testing & Evaluation), Subscale Drone Area, Silver Flag Area, and Munitions Area. These projects are being proposed as a result of the devastation caused by Hurricane Michael, October 10, 2018.

The EA for recovery assesses the potential environmental impacts associated with this Proposed Action, and examines the cumulative effects when combined with past, present, and any future proposals. As part of the Air Force's Environmental Impact Analysis Process, we request your input in identifying general or specific issues or areas of concern you feel should be addressed in the environmental analysis.

To ensure the Air Force has sufficient time to consider your input in the preparation of the Draft EA, please forward written issues or concerns to Mr. Jose J. Cintron at

jose.cintron.1@us.af.mil, (850) 283-4341, or via mail at Jose J. Cintron, 325 CES/CEIE, 540 Mississippi Ave, Tyndall AFB FL 32403-501 within 30 days of receipt of this letter. Thank you in advance for your assistance in this effort.

Sincerely

BARBER.DONNA.L.1029350945 Digitally signed by BARBER.DONNA.L.1029350945 Date: 2019.10.15 16:56:49 -05'00'

DONNA L. BARBER, GS-13, DAF

Attachment:
1. Figure 1 – Proposed Action Area Areas

DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Ms. Donna L. Barber
Chief, Installation Management Flight
325th Civil Engineer Squadron
540 Mississippi Ave
Tyndall AFB FL 32403

Dr. Timothy A. Parsons
State Historic Preservation Officer
Division of Historical Resources
500 South Bronough Street
Tallahassee FL 32399

Dear Dr. Parsons

The United States Air Force (Air Force), is preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with the recovery efforts at Tyndall Air Force Base (AFB), Florida. The EA is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

Under the Proposed Action, the 325th Fighter Wing at Tyndall AFB, proposes to repair several facilities, demolish 264 buildings, construct 26 individual facilities, construct multiple facilities in three separate complex areas, conduct drainage improvements, and new or upgraded utilities spanning six planning areas throughout Tyndall AFB; Flightline Area, Support Area, 9700 Area-Crooked Island (AF Civil Engineering Center Research, Development, Testing & Evaluation), Subscale Drone Area, Silver Flag Area, and Munitions Area. These projects are being proposed as a result of the devastation caused by Hurricane Michael, October 10, 2018.

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jose.cintron.1@us.af.mil, (850) 283-4341, or via mail at Jose J. Cintron, 325 CES/CEIE, 540 Mississippi Ave, Tyndall AFB FL 32403-501 within 30 days of receipt of this letter. Thank you in advance for your assistance in this effort.

Sincerely

BARBER.DONNA.L.1029350945
Digitally signed by BARBER.DONNA.L.1029350945
Date: 2019.10.15 16:53:12 -05'00'

DONNA L. BARBER, GS-13, DAF

Attachment:
1. Figure 1 – Proposed Action Area Areas

DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Ms. Donna L. Barber
Chief, Installation Management Flight
325th Civil Engineer Squadron
540 Mississippi Ave
Tyndall AFB FL 32403

Dr. Sean M. Blomquist
U.S. Fish and Wildlife Service
1601 Balboa Avenue
Panama City FL 32405

Dear Mr. Blomquist

The United States Air Force (Air Force), is preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with the recovery efforts at Tyndall Air Force Base (AFB), Florida. The EA is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

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jose.cintron.1@us.af.mil, (850) 283-4341, or via mail at Jose J. Cintron, 325 CES/CEIE, 540 Mississippi Ave, Tyndall AFB FL 32403-501 within 30 days of receipt of this letter. Thank you in advance for your assistance in this effort.

Sincerely

BARBER.DONNA.L.1029350945
Digitally signed by BARBER.DONNA.L.1029350945
Date: 2019.10.15 16:59:46 -05'00'

DONNA L. BARBER, GS-13, DAF

Attachment:
1. Figure 1 – Proposed Action Area Areas

DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

OCT 3 1 2019

Colonel Brian S. Laidlaw
Commander
325th Fighter Wing
501 Airey Avenue, Suite 1
Tyndall AFB FL 32403-5549

Mr. James Floyd
Principal Chief
The Muscogee (Creek) Nation
P.O Box 580
Okmulgee OK 74447

Dear Principal Chief Floyd

The United States Air Force (Air Force) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act to evaluate potential environmental impacts associated with the recovery efforts at Tyndall Air Force Base (AFB), Florida. Per Section 306108 of the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR Part 800, the Air Force is accounting for various environmental concerns and engaging early with tribal governments as it formulates the undertaking.

Under the Proposed Action, the 325th Fighter Wing at Tyndall AFB proposes to repair several facilities, demolish 264 buildings, construct 26 individual facilities, construct multiple facilities in three separate complex areas, conduct drainage improvements, and construct or upgrade utilities spanning six planning areas throughout Tyndall AFB: Flightline Area, Support Area, 9700 Area-Crooked Island (AF Civil Engineer Center Research, Development, Testing & Evaluation), Subscale Drone Area, Silver Flag Area, and Munitions Area. These projects are being proposed as a result of the devastation caused by Hurricane Michael, October 10, 2018.

In accordance with the NHPA, the Air Force would like to initiate government-to-government consultation regarding the Hurricane Michael Recovery Projects. The Air Force requests your input in identifying any issues or areas of concern you feel should be addressed in the environmental analysis. Additionally, please let us know if you believe this undertaking might adversely affect any historic properties of religious and cultural significance to the Muscogee (Creek) Nation.

To ensure the Air Force has sufficient time to consider your input in the preparation of the Draft EA, please forward written issues or concerns to Mr. Jose J. Cintron at: jose.cintron.1@us.af.mil, (850) 283-4341, or via mail at Jose J. Cintron, 325 CES/CEIE, 540

Mississippi Ave, Tyndall AFB FL 32403 within 30 days of receipt of this letter. Thank you in advance for your assistance in this effort.

Sincerely

BRIAN S. LAIDLAW, Colonel, USAF
Commander

Attachment:
Figure 1 – Proposed Action Areas

cc:
Ms. Corain Lowe-Zepeda
Tribal Historic Preservation Officer
The Muscogee (Creek) Nation
Office of the Administration
PO Box 580
Okmulgee OK 74447

DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

OCT 3 1 2019

Colonel Brian S. Laidlaw
Commander
325th Fighter Wing
501 Airey Avenue, Suite 1
Tyndall AFB FL 32403-5549

Mr. Ryan Morrow
Town King
Thlopthlocco Tribal Town
P.O. Box 188
Okemah OK 74859-0188

Dear Town King Morrow

The United States Air Force (Air Force) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act to evaluate potential environmental impacts associated with the recovery efforts at Tyndall Air Force Base (AFB), Florida. Per Section 306108 of the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR Part 800, the Air Force is accounting for various environmental concerns and engaging early with tribal governments as it formulates the undertaking.

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To ensure the Air Force has sufficient time to consider your input in the preparation of the Draft EA, please forward written issues or concerns to Mr. Jose J. Cintron at: jose.cintron.1@us.af.mil, (850) 283-4341, or via mail at Jose J. Cintron, 325 CES/CEIE, 540

Mississippi Ave, Tyndall AFB FL 32403 within 30 days of receipt of this letter. Thank you in advance for your assistance in this effort.

Sincerely

BRIAN S. LAIDLAW, Colonel, USAF
Commander

Attachment:
Figure 1 – Proposed Action Areas

cc:
Mr. Emman Spain
Tribal Historic Preservation Officer
Thlopthlocco Tribal Town
P.O. Box 188
Okemah OK 74859-0188

DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

OCT 3 1 2019

Colonel Brian S. Laidlaw
Commander
325th Fighter Wing
501 Airey Avenue, Suite 1
Tyndall AFB FL 32403-5549

Mr. Billy Cypress
Chairman
Miccosukee Tribe of Indians of Florida
Tamiami Station
P.O. Box 440021
Miami FL 33144

Dear Chairman Cypress

The United States Air Force (Air Force) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act to evaluate potential environmental impacts associated with the recovery efforts at Tyndall Air Force Base (AFB), Florida. Per Section 306108 of the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR Part 800, the Air Force is accounting for various environmental concerns and engaging early with tribal governments as it formulates the undertaking.

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In accordance with the NHPA, the Air Force would like to initiate government-to-government consultation regarding the Hurricane Michael Recovery Projects. The Air Force requests your input in identifying any issues or areas of concern you feel should be addressed in the environmental analysis. Additionally, please let us know if you believe this undertaking might adversely affect any historic properties of religious and cultural significance to the Miccosukee Tribe of Indians of Florida.

To ensure the Air Force has sufficient time to consider your input in the preparation of the Draft EA, please forward written issues or concerns to Mr. Jose J. Cintron at:

jose.cintron.1@us.af.mil, (850) 283-4341, or via mail at Jose J. Cintron, 325 CES/CEIE, 540 Mississippi Ave, Tyndall AFB FL 32403 within 30 days of receipt of this letter. Thank you in advance for your assistance in this effort.

Sincerely

BRIAN S. LAIDLAW, Colonel, USAF
Commander

Attachment:
Figure 1 – Proposed Action Areas

cc:
Mr. Fred Dayhoff
Section 106 and NAGPRA Coordinator
Miccosukee Tribe of Indians of Florida
HC 61 SR Box 68 Old Loop Road
Ochopee FL 34141

DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

OCT 3 1 2019

Colonel Brian S. Laidlaw
Commander
325th Fighter Wing
501 Airey Avenue, Suite 1
Tyndall AFB FL 32403-5549

Mr. Marcellus Osceola Jr.
Chairman
Seminole Tribe of Florida
6300 Stirling Road
Hollywood FL 33024

Dear Chairman Osceola

The United States Air Force (Air Force) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act to evaluate potential environmental impacts associated with the recovery efforts at Tyndall Air Force Base (AFB), Florida. Per Section 306108 of the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR Part 800, the Air Force is accounting for various environmental concerns and engaging early with tribal governments as it formulates the undertaking.

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To ensure the Air Force has sufficient time to consider your input in the preparation of the Draft EA, please forward written issues or concerns to Mr. Jose J. Cintron at: jose.cintron.1@us.af.mil, (850) 283-4341, or via mail at Jose J. Cintron, 325 CES/CEIE, 540

Mississippi Ave, Tyndall AFB FL 32403 within 30 days of receipt of this letter. Thank you in advance for your assistance in this effort.

Sincerely

BRIAN S. LAIDLAW, Colonel, USAF
Commander

Attachment:
Figure 1 – Proposed Action Areas

cc:
Dr. Paul N. Backhouse
Tribal Historic Preservation Officer
Ah-Ta-Thi-Ki Museum
30290 Josie Billie Highway, PMB 1004
Clewiston FL 33440

DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

OCT 3 1 2019

Colonel Brian S. Laidlaw
Commander
325th Fighter Wing
501 Airey Avenue, Suite 1
Tyndall AFB FL 32403-5549

Mr. Gregory Chilcoat
Principal Chief
Seminole Nation of Oklahoma
P.O. Box 1498
Wewoka OK 74884

Dear Principal Chief Chilcoat

The United States Air Force (Air Force) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act to evaluate potential environmental impacts associated with the recovery efforts at Tyndall Air Force Base (AFB), Florida. Per Section 306108 of the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR Part 800, the Air Force is accounting for various environmental concerns and engaging early with tribal governments as it formulates the undertaking.

Under the Proposed Action, the 325th Fighter Wing at Tyndall AFB proposes to repair several facilities, demolish 264 buildings, construct 26 individual facilities, construct multiple facilities in three separate complex areas, conduct drainage improvements, and construct or upgrade utilities spanning six planning areas throughout Tyndall AFB: Flightline Area, Support Area, 9700 Area-Crooked Island (AF Civil Engineer Center Research, Development, Testing & Evaluation), Subscale Drone Area, Silver Flag Area, and Munitions Area. These projects are being proposed as a result of the devastation caused by Hurricane Michael, October 10, 2018.

In accordance with the NHPA, the Air Force would like to initiate government-to-government consultation regarding the Hurricane Michael Recovery Projects. The Air Force requests your input in identifying any issues or areas of concern you feel should be addressed in the environmental analysis. Additionally, please let us know if you believe this undertaking might adversely affect any historic properties of religious and cultural significance to the Seminole Nation of Oklahoma.

To ensure the Air Force has sufficient time to consider your input in the preparation of the Draft EA, please forward written issues or concerns to Mr. Jose J. Cintron at: jose.cintron.1@us.af.mil, (850) 283-4341, or via mail at Jose J. Cintron, 325 CES/CEIE, 540

Mississippi Ave, Tyndall AFB FL 32403 within 30 days of receipt of this letter. Thank you in advance for your assistance in this effort.

Sincerely

BRIAN S. LAIDLAW, Colonel, USAF
Commander

Attachment:
Figure 1 – Proposed Action Areas

cc:
Mr. Theodore Isham
Tribal Historic Preservation Officer
Seminole Nation of Oklahoma
12555 NS 3540 Road
Seminole OK 74868

DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

OCT 3 1 2019

Colonel Brian S. Laidlaw
Commander
325th Fighter Wing
501 Airey Avenue, Suite 1
Tyndall AFB FL 32403-5549

Ms. Stephanie A. Bryan
Tribal Chair
Poarch Band of Creek Indians
5811 Jack Springs Road Building 500
Atmore AL 36502

Dear Chairwoman Bryan

The United States Air Force (Air Force) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act to evaluate potential environmental impacts associated with the recovery efforts at Tyndall Air Force Base (AFB), Florida. Per Section 306108 of the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR Part 800, the Air Force is accounting for various environmental concerns and engaging early with tribal governments as it formulates the undertaking.

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To ensure the Air Force has sufficient time to consider your input in the preparation of the Draft EA, please forward written issues or concerns to Mr. Jose J. Cintron at: jose.cintron.1@us.af.mil, (850) 283-4341, or via mail at Jose J. Cintron, 325 CES/CEIE, 540

Mississippi Ave, Tyndall AFB FL 32403 within 30 days of receipt of this letter. Thank you in advance for your assistance in this effort.

Sincerely

BRIAN S. LAIDLAW, Colonel, USAF
Commander

Attachment:
Figure 1 – Proposed Action Areas

cc:
Ms. Carolyn White
Regulatory Affairs Division Director and
Acting Tribal Historic Preservation Officer
Poarch Band of Creek Indians
5811 Jack Springs Road
Atmore AL 36502

APPENDIX B.2 Notice of Availability of Draft EA and Agency Correspondence

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Notice of Availability of Draft EA

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NOTICE OF AVAILABILITY

DRAFT ENVIRONMENTAL ASSESSMENT FOR HURRICANE RECOVERY AND INSTALLATION DEVELOPMENT AT TYNDALL AIR FORCE BASE, FLORIDA

325th Air Fighter Wing / Published January 16, 2020

The U.S. Air Force (Air Force) announces the availability of the Draft Environmental Assessment (EA) evaluating the implementation of 28 hurricane recovery and installation development projects at Tyndall Air Force Base, Florida. These projects (collectively referred to as the Proposed Actions) are needed to recover mission capabilities impacted by Hurricane Michael and rebuild Tyndall AFB to a fully operational base. The Proposed Actions will provide new facilities and infrastructure, as well as execute repair, demolition and functionality improvements necessary to support the 325th Fighter Wing mission and tenant units.

The analysis contained in the Draft EA indicates the Proposed Actions would not have a significant impact on the environment. Multiple alternatives to the Proposed Actions were evaluated, including a No Action Alternative, and the Air Force determined that only the Proposed Actions satisfied established selection criteria. No practicable alternatives that would avoid or further minimize impacts to floodplains and wetlands are available. In accordance with Executive Order (EO) 11988, *Floodplain Management*, EO 11990, *Protection of Wetlands,* impacts to these resources would be minimized through design and construction best practices. Therefore, a Finding of No Significant Impact (FONSI)/Finding of No Practicable Alternative (FONPA) is being proposed based on analysis contained in the Draft EA.

The Air Force invites public participation through the solicitation of comments on the Draft EA and Draft FONSI/FONPA. Public comments will be accepted through February 14, 2020.

The Draft EA and Draft FONSI/FONPA can be accessed on the Tyndall Air Force Base website at : http://www.tyndall.af.mil/

Hard copies of the Draft EA and Draft FONSI/FONPA are available at the following location:

Bay County Public Library
898 W 11th St.
Panama City, FL 32401

Please provide written comments to:

325 CES/CEANC
Attn: Draft Environmental Assessment for Hurricane Recovery and Installation Development at Tyndall Air Force Base, Florida
540 Mississippi Ave Building 36270
Tyndall AFB, FL 32403

U.S. AIR FORCE

Privacy Notice

Letters or other written comments provided may be published in the Final EA. As required by law, substantive comments will be addressed in the Final EA and made available to the public. Any personal information provided will be kept confidential. Private addresses will be compiled to develop a mailing list for those requesting copies of the Final EA. Names, personal home addresses and phone numbers will not be published in the Final EA.

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Tribal Correspondence

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DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

JAN 13 2020

Colonel Brian S. Laidlaw
Commander
325th Fighter Wing
501 Airey Avenue, Suite 1
Tyndall AFB FL 32403-5549

Mr. Ryan Morrow
Town King
Thlopthlocco Tribal Town
P.O. Box 188
Okemah OK 74859-0188

Dear Town King Morrow

The United States Air Force is planning demolition, construction and renovation of numerous facilities throughout Tyndall Air Force Base (AFB) that were severely damaged by Hurricane Michael in 2018. With these Proposed Actions, 28 individual projects spanning six planning areas throughout the installation would be constructed. Three additional projects have been identified which cover more than one planning area, which would demolish 264 buildings, conduct drainage improvements, and construct or upgrade utilities across the installation. The purpose of implementing the Proposed Actions at Tyndall AFB is to recover mission capabilities impacted by Hurricane Michael. The need for the Proposed Actions is to rebuild Tyndall AFB to a fully operational base, thereby providing new facilities/infrastructure, as well as executing repair, demolition and functionality improvements necessary to support the 325th Fighter Wing mission and tenant units.

An initial scoping letter that requested your comments on the Proposed Actions was mailed to you on October 31, 2019. Since then, the Air Force prepared a draft Environmental Assessment (EA) to analyze the potential impacts of the Proposed Actions. Based on the analysis conducted in the EA, the Air Force determined that the Proposed Actions would have no effect on cultural resources. On October 15, 2019, the Air Force initiated consultation with the Florida State Historic Preservation Officer (SHPO). A preliminary finding from the SHPO is pending.

In accordance with the National Historic Preservation Act and its implementing regulations at 36 Code of Federal Regulations 800.2(c)(2)(ii), the Air Force would like to initiate government-to-government consultation with the Thlopthlocco Tribal Town on this proposed action. A copy of the draft EA and associated draft Finding of No Significant Impact (FONSI) are enclosed for your review and comment.

Please provide your comments within 30 days of receipt of this letter. Address all questions and comments to Mr. Jose J. Cintron at jose.cintron.1@us.af.mil, (850) 283-4341, or via mail at

Jose J. Cintron, 325 CES/CEIE, 540 Mississippi Ave, Tyndall AFB FL 32403. Thank you in advance for your assistance in this effort.

Sincerely

BRIAN S. LAIDLAW, Colonel, USAF

Attachment:
Draft EA/FONSI

cc:
Mr. Emman Spain
Tribal Historic Preservation Officer
Thlopthlocco Tribal Town
P.O. Box 188
Okemah OK 74859-0188

DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

JAN 13 2020

Colonel Brian S. Laidlaw
Commander
325th Fighter Wing
501 Airey Avenue, Suite 1
Tyndall AFB FL 32403-5549

Mr. Billy Cypress
Chairman
Miccosukee Tribe of Indians of Florida
Tamiami Station
P.O. Box 440021
Miami FL 33144

Dear Chairman Cypress

The United States Air Force is planning demolition, construction and renovation of numerous facilities throughout Tyndall Air Force Base (AFB) that were severely damaged by Hurricane Michael in 2018. With these Proposed Actions, 28 individual projects spanning six planning areas throughout the installation would be constructed. Three additional projects have been identified which cover more than one planning area, which would demolish 264 buildings, conduct drainage improvements, and construct or upgrade utilities across the installation. The purpose of implementing the Proposed Actions at Tyndall AFB is to recover mission capabilities impacted by Hurricane Michael. The need for the Proposed Actions is to rebuild Tyndall AFB to a fully operational base, thereby providing new facilities/infrastructure, as well as executing repair, demolition and functionality improvements necessary to support the 325th Fighter Wing mission and tenant units.

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In accordance with the National Historic Preservation Act and its implementing regulations at 36 Code of Federal Regulations 800.2(c)(2)(ii), the Air Force would like to further government-to-government consultation with the Miccosukee Tribe of Indians of Florida on this proposed action. A copy of the draft EA and associated draft Finding of No Significant Impact (FONSI) are enclosed for your review and comment.

Please provide your comments within 30 days of receipt of this letter. Address all questions and comments to Mr. Jose J. Cintron at jose.cintron.1@us.af.mil, (850) 283-4341, or via mail at Jose J. Cintron, 325 CES/CEIE, 540 Mississippi Ave, Tyndall AFB FL 32403. Thank you in advance for your assistance in this effort.

Sincerely

BRIAN S. LAIDLAW, Colonel, USAF

Attachment:
Draft EA/FONSI

cc:
Mr. Fred Dayhoff
Section 106 and NAGPRA Coordinator
Miccosukee Tribe of Indians of Florida
HC 61 SR Box 68 Old Loop Road
Ochopee FL 34141

DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

JAN 1 3 2020

Colonel Brian S. Laidlaw
Commander
325th Fighter Wing
501 Airey Avenue, Suite 1
Tyndall AFB FL 32403-5549

Mr. James Floyd
Principal Chief
The Muscogee (Creek) Nation
P.O. Box 580
Okmulgee OK 74447

Dear Principal Chief Floyd

The United States Air Force is planning demolition, construction and renovation of numerous facilities throughout Tyndall Air Force Base (AFB) that were severely damaged by Hurricane Michael in 2018. With these Proposed Actions, 28 individual projects spanning six planning areas throughout the installation would be constructed. Three additional projects have been identified which cover more than one planning area, which would demolish 264 buildings, conduct drainage improvements, and construct or upgrade utilities across the installation. The purpose of implementing the Proposed Actions at Tyndall AFB is to recover mission capabilities impacted by Hurricane Michael. The need for the Proposed Actions is to rebuild Tyndall AFB to a fully operational base, thereby providing new facilities/infrastructure, as well as executing repair, demolition and functionality improvements necessary to support the 325th Fighter Wing mission and tenant units.

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In accordance with the National Historic Preservation Act and its implementing regulations at 36 Code of Federal Regulations 800.2(c)(2)(ii), the Air Force would like to further government-to-government consultation with the Muscogee (Creek) Nation on this proposed action. A copy of the draft EA and associated draft Finding of No Significant Impact (FONSI) are enclosed for your review and comment.

Please provide your comments within 30 days of receipt of this letter. Address all questions and comments to Mr. Jose J. Cintron at jose.cintron.1@us.af.mil, (850) 283-4341, or via mail at

Jose J. Cintron, 325 CES/CEIE, 540 Mississippi Ave, Tyndall AFB FL 32403. Thank you in advance for your assistance in this effort.

Sincerely

BRIAN S. LAIDLAW, Colonel, USAF

Attachment:
Draft EA/FONSI

cc:
Ms. Corain Lowe-Zepeda
Tribal Historic Preservation Officer
Muscogee (Creek) Nation
Office of the Administration
P.O. Box 580
Okmulgee OK 74447

DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

JAN 1 3 2020

Colonel Brian S. Laidlaw
Commander
325th Fighter Wing
501 Airey Avenue, Suite 1
Tyndall AFB FL 32403-5549

Ms. Stephanie A. Bryan
Tribal Chair
Poarch Band of Creek Indians
5811 Jack Springs Road Building 500
Atmore AL 36502

Dear Chairwoman Bryan

The United States Air Force is planning demolition, construction and renovation of numerous facilities throughout Tyndall Air Force Base (AFB) that were severely damaged by Hurricane Michael in 2018. With these Proposed Actions, 28 individual projects spanning six planning areas throughout the installation would be constructed. Three additional projects have been identified which cover more than one planning area, which would demolish 264 buildings, conduct drainage improvements, and construct or upgrade utilities across the installation. The purpose of implementing the Proposed Actions at Tyndall AFB is to recover mission capabilities impacted by Hurricane Michael. The need for the Proposed Actions is to rebuild Tyndall AFB to a fully operational base, thereby providing new facilities/infrastructure, as well as executing repair, demolition and functionality improvements necessary to support the 325th Fighter Wing mission and tenant units.

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In accordance with the National Historic Preservation Act and its implementing regulations at 36 Code of Federal Regulations 800.2(c)(2)(ii), the Air Force would like to further government-to-government consultation with the Poarch Band of Creek Indians on this proposed action. A copy of the draft EA and associated draft Finding of No Significant Impact (FONSI) are enclosed for your review and comment.

Please provide your comments within 30 days of receipt of this letter. Address all questions and comments to Mr. Jose J. Cintron at jose.cintron.1@us.af.mil, (850) 283-4341, or via mail at

Jose J. Cintron, 325 CES/CEIE, 540 Mississippi Ave, Tyndall AFB FL 32403. Thank you in advance for your assistance in this effort.

Sincerely

BRIAN S. LAIDLAW, Colonel, USAF

Attachment:
1. Draft EA/FONSI

cc:
Mr. Larry Haikey
Tribal Historic Preservation Officer
Poarch Band of Creek Indians
5811 Jack Springs Road, Building 500
Atmore AL 36502

DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

JAN 1 3 2020

Colonel Brian S. Laidlaw
Commander
325th Fighter Wing
501 Airey Avenue, Suite 1
Tyndall AFB FL 32403-5549

Mr. Gregory Chilcoat
Principal Chief
Seminole Nation of Oklahoma
P.O. Box 1498
Wewoka OK 74884

Dear Principal Chief Chilcoat

The United States Air Force is planning demolition, construction and renovation of numerous facilities throughout Tyndall Air Force Base (AFB) that were severely damaged by Hurricane Michael in 2018. With these Proposed Actions, 28 individual projects spanning six planning areas throughout the installation would be constructed. Three additional projects have been identified which cover more than one planning area, which would demolish 264 buildings, conduct drainage improvements, and construct or upgrade utilities across the installation. The purpose of implementing the Proposed Actions at Tyndall AFB is to recover mission capabilities impacted by Hurricane Michael. The need for the Proposed Actions is to rebuild Tyndall AFB to a fully operational base, thereby providing new facilities/infrastructure, as well as executing repair, demolition and functionality improvements necessary to support the 325th Fighter Wing mission and tenant units.

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In accordance with the National Historic Preservation Act and its implementing regulations at 36 Code of Federal Regulations 800.2(c)(2)(ii), the Air Force would like to initiate government-to-government consultation with the Seminole Nation of Oklahoma on this proposed action. A copy of the draft EA and associated draft Finding of No Significant Impact (FONSI) are enclosed for your review and comment.

Please provide your comments within 30 days of receipt of this letter. Address all questions and comments to Mr. Jose J. Cintron at jose.cintron.1@us.af.mil, (850) 283-4341, or via mail at

Jose J. Cintron, 325 CES/CEIE, 540 Mississippi Ave, Tyndall AFB FL 32403. Thank you in advance for your assistance in this effort.

Sincerely

BRIAN S. LAIDLAW, Colonel, USAF

Attachment:
Draft EA/FONSI

cc:
Mr. Theodore Isham
Tribal Historic Preservation Officer
Seminole Nation of Oklahoma
12555 NS 3540 Road
Seminole OK 74868

DEPARTMENT OF THE AIR FORCE
325TH FIGHTER WING (ACC)
TYNDALL AIR FORCE BASE FLORIDA

JAN 1 3 2020

Colonel Brian S. Laidlaw
Commander
325th Fighter Wing
501 Airey Avenue, Suite 1
Tyndall AFB FL 32403-5549

Mr. Marcellus Osceola Jr.
Chairman
Seminole Tribe of Florida
6300 Stirling Road
Hollywood FL 33024

Dear Chairman Osceola Jr

The United States Air Force is planning demolition, construction and renovation of numerous facilities throughout Tyndall Air Force Base (AFB) that were severely damaged by Hurricane Michael in 2018. With these Proposed Actions, 28 individual projects spanning six planning areas throughout the installation would be constructed. Three additional projects have been identified which cover more than one planning area, which would demolish 264 buildings, conduct drainage improvements, and construct or upgrade utilities across the installation. The purpose of implementing the Proposed Actions at Tyndall AFB is to recover mission capabilities impacted by Hurricane Michael. The need for the Proposed Actions is to rebuild Tyndall AFB to a fully operational base, thereby providing new facilities/infrastructure, as well as executing repair, demolition and functionality improvements necessary to support the 325th Fighter Wing mission and tenant units.

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In accordance with the National Historic Preservation Act and its implementing regulations at 36 Code of Federal Regulations 800.2(c)(2)(ii), the Air Force would like to initiate government-to-government consultation with the Seminole Tribe of Florida on this proposed action. A copy of the draft EA and associated draft Finding of No Significant Impact (FONSI) are enclosed for your review and comment.

Please provide your comments within 30 days of receipt of this letter. Address all questions and comments to Mr. Jose J. Cintron at jose.cintron.1@us.af.mil, (850) 283-4341, or via mail at

Jose J. Cintron, 325 CES/CEIE, 540 Mississippi Ave, Tyndall AFB FL 32403. Thank you in advance for your assistance in this effort.

Sincerely

BRIAN S. LAIDLAW, Colonel, USAF

Attachment:
Draft EA/FONSI

cc:
Dr. Paul N. Backhouse
Tribal Historic Preservation Officer
Ah-Ta-Thi-Ki Museum
30290 Josie Billie Highway, PMB 1004
Clewiston FL 33440

February 19, 2020

Mr. Jose J. Cintron
325 CES/CEIE
540 Mississippi Ave.
Tyndall AFB, FL 32403
Phone: 850-283-4341
Email: jose.cintron.1@us.af.mil

Subject: Hurricane Michael Recovery and Installation Development Draft Environmental Assessment (EA)
THPO Compliance Tracking Number: 0032230-05

Dear Mr. Cintron,

Thank you for contacting the Seminole Tribe of Florida – Tribal Historic Preservation Office (STOF-THPO), Compliance Section regarding the Hurricane Michael Recovery and Installation Development Draft Environmental Assessment (EA). The proposed undertakings do fall within the STOF Area of Interest. We have reviewed the documents you provided and would like to make the following comments.

- Based on the information you provided to us in the EA and the cultural resource report appendices, it is apparent that there are National Register of Historic Places eligible or possibly eligible historic properties within at least some of the proposed 31 project areas. And,

- Since the Seminole Tribe of Florida will not be signatories to the proposed Tyndall Programmatic Agreement we request ongoing consultation pursuant to Section 106 of the National Historic Preservation Act, and in consideration of the federal governments Trust Responsibilities and other directives. Consultation requests can be directed to the STOF-THPO, Compliance Review Section for all proposed undertakings. This includes those undertakings described in the EA.

We appreciate the opportunity to provide these comments. Please feel free to contact us with any questions or concerns.

Respectfully,

Bradley M. Mueller, MA, Compliance Specialist
STOF-THPO, Compliance Review Section
30290 Josie Billie Hwy, PMB 1004
Clewiston, FL 33440

Office: 863-983-6549 ext 12245
Fax: 863-902-1117
Email: bradleymueller@semtribe.com
Web: www.stofthpo.com

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DEPARTMENT OF THE AIR FORCE
325TH CIVIL ENGINEER SQUADRON (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Mr. José J. Cintron
Chief, Environmental Element
325th Civil Engineer Squadron
540 Mississippi Road (Building 36270)
Tyndall AFB FL 32403-5014

Billy Cypress, Chairman
Miccosukee Tribe of Indians of Florida
Tamiami Station
PO Box 440021
Miami, FL 33144

Re: Demolition of 80 Facilities
Tyndall Air Force Base (AFB), Bay County, Florida (TY-20-0022)

Dear Principle Chief Cypress

In accordance with the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR 800), Tyndall AFB is initiating consultation for a proposed undertaking. The undertaking consists of the demolition of eighty facilities located on the main base. All of the buildings will be demolished for the construction and rebuild of Tyndall AFB.

The undertaking will require capping underground utilities at the main, demolition of the buildings, removal of the buildings; foundations, staging of debris piles, and removal of the demolished materials off-base. Based on these activities, Tyndall AFB recommends that the area of potential effect (APE) for each facility will extend to a depth of 6 feet, and consist of the footprint of each building and a 50 meter buffer surrounding each structure (Atch 1).

Attachment two (Atch 2) lists each property, including brief descriptions. All of the buildings are military facilities constructed during World War II (n=9), the Cold War (n=39), or Post-Cold War (n=28). There are 2 previously evaluated for listing on the National Register of Historic Places (NRHP), and determined to be eligible (8BY1117 & 8BY1178). The remaining facilities (n=78) have not been formally assessed.

Tyndall AFB recommends these facilities are not eligible as they do not meet the criteria for listing on the NRHP:

1) Destroyed facilities from Hurricane Michael: 265, 909, 1652, 5009, 9349, 9350
2) Recreational and Dorms: 1540, 1680

3) Support facilities (storage, generator buildings, pump houses, etc.): 127, 150, 179, 235, 262, 263, 270, 272, 325, 509, 705, 1132, 1723, 3027, 3216, 5018, 5024, 5030, 5033, 6004, 6016, 42260, 42275, N of 1735
4) Post-Cold War facilities: 181, 220, 273, 323, 333, 505, 526, 630, 928, 1262, 1263, 1769, 2580, 2600, 2610, 3350, 3351, 4025, 4572, 6033, 7062, 9400, 9420, 9421, 9525, 9737 ,9739, 29408

Tyndall AFB recommends that no additional documentation is required for the buildings listed in bullets 1-4. However, photographs of the buildings addressed are attached for reference (Atch 3). Tyndall AFB therefore holds that none of the buildings qualifies as historic properties that would be adversely affected by this undertaking.

Facility 5013 is the Morale Welfare Recreation Marina facility to support water recreational activities for base personnel. Although there are minor alterations or additions to the original design of the facility, it did not have an important role during the Cold War and lacks exceptional significance as a support facility. Extensive damage occurred during Hurricane Michael and the cost of the repairs exceeds the property's value. Therefore, Tyndall AFB recommends it not eligible for the NRHP and would not be adversely affected by this undertaking.

Facility 217 used to be the Air Traffic Control Tower when constructed in the mid to late 1950s. The facility was used until the construction of the new Air Traffic Control Tower in 2001. At that time, the facility was partially demolished, taking away the top observation area of the tower (Atch 3). Therefore, Tyndall AFB recommends it not eligible for the NRHP and would not be adversely affected by this undertaking.

Facility 1287 is a 1.550 sq. ft. facility originally used as a radar receiver building when constructed in 1952. The attached report (Atch 4) briefly describes the facility and its function. Major modifications occurred in 1986 when the building was converted into a veterinary clinic and extensive damage occurred during Hurricane Michael. The cost of the repairs exceeds the property's value. Therefore, Tyndall AFB recommends facility 1287 is not eligible for the NRHP and would not be adversely affected by this undertaking.

In February of 2019, Facility 1476 (8BY1178) was previously consulted on with your office as 'not evaluated' and was determined as not eligible (DHR: 2019-615). However, our records showed that this facility is actually an eligible building for the NRHP (DHR: 2015-0494B). However, due to the significant damage from Hurricane Michael and is considered a health and safety hazard, Tyndall AFB recommends it is no longer eligible for the NRHP and therefore would not be adversely affected by this undertaking.

Facilities 3137, 3140, 3142, 3149, 3155, and 3160 are TLF housing. Previous consultation (DHR-2017-3504) on this style of housing has determine they are not eligible for listing on the NRHP. Therefore, Tyndall AFB recommends these remaining 6 facilities are not eligible for the NRHP and would not be adversely affected by this undertaking. As agreed in the previous consultation of one type of each housing unit will be evaluated for NRHP listing, Facility 3160 was selected as an example of A-42 type housing and will be documented for your review prior to demolition.

The following facilities are under evaluation and a more detailed report with a state resource form and NRHP evaluation will be submitted to the State Historic Preservation Office (SHPO) for your review once it has been finalized. But due to the time sensitize nature for the rebuild of Tyndall AFB, it is recommended that they will not be eligible for listing on the NRHP. These facilities have either been heavily altered or renovated and do not meet criterion "G" for exceptional significance for buildings less than 50 years old. Photographs of the buildings addressed are attached for reference (Atch 3).

- Facility 126: is a 5.745 sq. ft. facility, currently used as a maintenance shop, which was the original purpose when constructed in 1985. Additions were made in 2013 to the west side of the facility. As a support facility for maintenance of aircrafts during Cold War, it lacks exceptional significance.
- Facility 149: is a 12.175 sq. ft. facility, used as a base post operations administrative facility originally built in 1943. There have been extensive renovations and several additions to the facility. Due to the amount of renovations, facility 149 lacks integrity.
- Facility 162: is a 1.000 sq. ft. facility originally used as a bottle gas storage building. It was altered around 1985 to be an administrative facility. As a support facility during Cold War, it lacks exceptional significance.
- Facility 164: is a 14.322 sq. ft. squadron facility. There were substantial additions to the original facility, which was originally only 4.496.45 sq. ft. Due to the amount of additions, the facility lacks integrity of the original design and lacks exceptional significance during the Cold War.
- Facility 188: is a 10.212 sq. ft. facility originally used as a weapons systems shop. It had some alterations and additions in the 1980s. As a support facility during Cold War, it lacks exceptional significance.
- Facility 503: is a 9.508 sq. ft. facility. The use of the building has been the same since it was constructed in 1987. Although the facility has not been altered, it is a standard military facility and has no exceptional significance during the Cold War.
- Facility 2894: is a 969 sq. ft. facility that was the Capehart Fire Station. This facility is still currently the fire station vehicle building but is separated into two facilities and has no exceptional significance during Cold War operations.
- Facility 4027: is a 382 sq. ft. facility designed to support the entrance gate to base housing. It had minor alterations in 2001 but has no exceptional significance as a support facility during Cold War operations.
- Facility 6014: is a 3.200 sq. ft. storage facility built in 1943. It has some minor alterations but has remaining elements from original construction. As a support facility during Cold War, it lacks exceptional significance.
- Facility 3160 will be addressed in this document to record the A-42 type housing.

Facility 703 is eligible for listing on the NRHP and will have an adverse effect from this undertaking. Tyndall AFB recommends further documentation and continuing consultation with your office, to include the development of a plan to mitigate the adverse effects of this undertaking.

Tyndall AFB recommends that the effects of the undertaking on buried deposits cannot be determined at this time, and an archaeological monitor will be present during all ground disturbing activity during demolition to minimize any potential adverse effects. In the event of any unexpected discoveries of intact archaeological deposits or human remains, all work will cease and Tyndall AFB will initiate additional consultation with your office.

Tyndall AFB is not aware of any historic properties of religious or tribal significance located within the APE. However, we request the assistance of the Miccosukee Tribe of Indians of Florida in identifying these resources and any effect the undertaking will have on these properties. In the event of any unexpected discoveries of intact archaeological deposits or human remains, all work near the find will cease and Tyndall AFB will initiate additional consultation with your office.

Tyndall AFB respectfully requests expedited review for this undertaking, as described in 36 CFR 800.12(b), since it is a part of the essential and immediate emergency response by the U.S. Air Force to Hurricane Michael. Any questions may be directed to jose.cintron.1@us.af.mil or 850-283-4341.

Sincerely

CINTRON.JOSE.J.1182275146 Digitally signed by CINTRON.JOSE.J.1182275146 Date: 2020.02.26 13:37:37 -06'00'

JOSÉ CINTRON, GS-12, DAF

Attachments:
1. Map of Facility Locations
2. Building Summary List
3. Photographs of Current Conditions
4. Facility 1287 Historic Report Package

Sent via email to:
kevind@miccosukeetribe.com; yalmeida@miccosukeetribe.com; hopel@miccosukeetribe.com

DEPARTMENT OF THE AIR FORCE
325TH CIVIL ENGINEER SQUADRON (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Mr. José J. Cintron
Chief, Environmental Element
325th Civil Engineer Squadron
540 Mississippi Road (Building 36270)
Tyndall AFB FL 32403-5014

Mr. David J. Proctor
Traditional Cultural Advisor
Muscogee (Creek) Nation
PO Box 580
Okmulgee, OK 74447

Re: Demolition of 80 Facilities
Tyndall Air Force Base (AFB), Bay County, Florida (TY-20-0022)

Dear Mr. Proctor,

In accordance with the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR 800), Tyndall AFB is initiating consultation for a proposed undertaking. The undertaking consists of the demolition of eighty facilities located on the main base. All of the buildings will be demolished for the construction and rebuild of Tyndall AFB.

The undertaking will require capping underground utilities at the main, demolition of the buildings, removal of the buildings; foundations, staging of debris piles, and removal of the demolished materials off-base. Based on these activities, Tyndall AFB recommends that the area of potential effect (APE) for each facility will extend to a depth of 6 feet, and consist of the footprint of each building and a 50 meter buffer surrounding each structure (Atch 1).

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Tyndall AFB recommends these facilities are not eligible as they do not meet the criteria for listing on the NRHP:

1) Destroyed facilities from Hurricane Michael: 265, 909, 1652, 5009, 9349, 9350
2) Recreational and Dorms: 1540, 1680

3) Support facilities (storage, generator buildings, pump houses, etc.): 127, 150, 179, 235, 262, 263, 270, 272, 325, 509, 705, 1132, 1723, 3027, 3216, 5018, 5024, 5030, 5033, 6004, 6016, 42260, 42275, N of 1735
4) Post-Cold War facilities: 181, 220, 273, 323, 333, 505, 526, 630, 928, 1262, 1263, 1769, 2580, 2600, 2610, 3350, 3351, 4025, 4572, 6033, 7062, 9400, 9420, 9421, 9525, 9737 ,9739, 29408

Tyndall AFB recommends that no additional documentation is required for the buildings listed in bullets 1-4. However, photographs of the buildings addressed are attached for reference (Atch 3). Tyndall AFB therefore holds that none of the buildings qualifies as historic properties that would be adversely affected by this undertaking.

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Facility 703 is eligible for listing on the NRHP and will have an adverse effect from this undertaking. Tyndall AFB recommends further documentation and continuing consultation with your office, to include the development of a plan to mitigate the adverse effects of this undertaking.

Tyndall AFB recommends that the effects of the undertaking on buried deposits cannot be determined at this time, and an archaeological monitor will be present during all ground disturbing activity during demolition to minimize any potential adverse effects. In the event of any unexpected discoveries of intact archaeological deposits or human remains, all work will cease and Tyndall AFB will initiate additional consultation with your office.

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Tyndall AFB respectfully requests expedited review for this undertaking, as described in 36 CFR 800.12(b), since it is a part of the essential and immediate emergency response by the U.S. Air Force to Hurricane Michael. Any questions may be directed to jose.cintron.1@us.af.mil or 850-283-4341.

Sincerely

CINTRON.JOSE.J.1182275146 Digitally signed by CINTRON.JOSE.J.1182275146 Date: 2020.02.26 13:40:08 -06'00'

JOSÉ CINTRON, GS-12, DAF

Attachments:
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4. Facility 1287 Historic Report Package

Sent via email to: Section106@mcn-nsn.gov; djproctor@mcn-nsn.gov; clowe@mcn-nsn.gov

DEPARTMENT OF THE AIR FORCE
325TH CIVIL ENGINEER SQUADRON (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Mr. José J. Cintron
Chief, Environmental Element
325th Civil Engineer Squadron
540 Mississippi Road (Building 36270)
Tyndall AFB FL 32403-5014

Larry D. Haikey, MS, Tribal Historic
Preservation Officer
Poarch Band of Creek Indians
5811 Jack Springs Road
Atmore, AL 36502

Re: Demolition of 80 Facilities
Tyndall Air Force Base (AFB), Bay County, Florida (TY-20-0022)

Dear Mr. Haikey,

In accordance with the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR 800), Tyndall AFB is initiating consultation for a proposed undertaking. The undertaking consists of the demolition of eighty facilities located on the main base. All of the buildings will be demolished for the construction and rebuild of Tyndall AFB.

The undertaking will require capping underground utilities at the main, demolition of the buildings, removal of the buildings; foundations, staging of debris piles, and removal of the demolished materials off-base. Based on these activities, Tyndall AFB recommends that the area of potential effect (APE) for each facility will extend to a depth of 6 feet, and consist of the footprint of each building and a 50 meter buffer surrounding each structure (Atch 1).

Attachment two (Atch 2) lists each property, including brief descriptions. All of the buildings are military facilities constructed during World War II (n=9), the Cold War (n=39), or Post-Cold War (n=28). There are 2 previously evaluated for listing on the National Register of Historic Places (NRHP), and determined to be eligible (8BY1117 & 8BY1178). The remaining facilities (n=78) have not been formally assessed.

Tyndall AFB recommends these facilities are not eligible as they do not meet the criteria for listing on the NRHP:

1) Destroyed facilities from Hurricane Michael: 265, 909, 1652, 5009, 9349, 9350
2) Recreational and Dorms: 1540, 1680

3) Support facilities (storage, generator buildings, pump houses, etc.): 127, 150, 179, 235, 262, 263, 270, 272, 325, 509, 705, 1132, 1723, 3027, 3216, 5018, 5024, 5030, 5033, 6004, 6016, 42260, 42275, N of 1735
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CINTRON.JOSE.J.1182275146 Digitally signed by CINTRON.JOSE.J.1182275146 Date: 2020.02.26 13:56:05 -06'00'

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DEPARTMENT OF THE AIR FORCE
325TH CIVIL ENGINEER SQUADRON (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Mr. José J. Cintron
Chief, Environmental Element
325th Civil Engineer Squadron
540 Mississippi Road (Building 36270)
Tyndall AFB FL 32403-5014

Mr. Greg Chilcoat
Principal Chief
Seminole Nation of Oklahoma
PO Box 1498
Wewoka, OK 74884

Re: Demolition of 80 Facilities
Tyndall Air Force Base (AFB), Bay County, Florida (TY-20-0022)

Dear Principal Chief Chilcoat

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DEPARTMENT OF THE AIR FORCE
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TYNDALL AIR FORCE BASE FLORIDA

Mr. José J. Cintron
Chief, Environmental Element
325th Civil Engineer Squadron
540 Mississippi Road (Building 36270)
Tyndall AFB FL 32403-5014

Paul N. Backhouse, Ph.D., Tribal Historic
Preservation Officer
Seminole Tribe of Florida
30290 Josie Billie Highway, PMB 1004
Clewiston, FL 33440

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- Facility 164: is a 14.322 sq. ft. squadron facility. There were substantial additions to the original facility, which was originally only 4.496.45 sq. ft. Due to the amount of additions, the facility lacks integrity of the original design and lacks exceptional significance during the Cold War.
- Facility 188: is a 10.212 sq. ft. facility originally used as a weapons systems shop. It had some alterations and additions in the 1980s. As a support facility during Cold War, it lacks exceptional significance.
- Facility 503: is a 9.508 sq. ft. facility. The use of the building has been the same since it was constructed in 1987. Although the facility has not been altered, it is a standard military facility and has no exceptional significance during the Cold War.
- Facility 2894: is a 969 sq. ft. facility that was the Capehart Fire Station. This facility is still currently the fire station vehicle building but is separated into two facilities and has no exceptional significance during Cold War operations.
- Facility 4027: is a 382 sq. ft. facility designed to support the entrance gate to base housing. It had minor alterations in 2001 but has no exceptional significance as a support facility during Cold War operations.
- Facility 6014: is a 3.200 sq. ft. storage facility built in 1943. It has some minor alterations but has remaining elements from original construction. As a support facility during Cold War, it lacks exceptional significance.
- Facility 3160 will be addressed in this document to record the A-42 type housing.

Facility 703 is eligible for listing on the NRHP and will have an adverse effect from this undertaking. Tyndall AFB recommends further documentation and continuing consultation with your office, to include the development of a plan to mitigate the adverse effects of this undertaking.

Tyndall AFB recommends that the effects of the undertaking on buried deposits cannot be determined at this time, and an archaeological monitor will be present during all ground disturbing activity during demolition to minimize any potential adverse effects. In the event of any unexpected discoveries of intact archaeological deposits or human remains, all work will cease and Tyndall AFB will initiate additional consultation with your office.

Tyndall AFB is not aware of any historic properties of religious or tribal significance located within the APE. However, we request the assistance of the Seminole Tribe of Florida in identifying these resources, and any effect the undertaking may have on these properties. In the event of any unexpected discoveries of intact archaeological deposits or human remains, all work near the find will cease and Tyndall AFB will initiate additional consultation with your office.

Tyndall AFB respectfully requests expedited review for this undertaking, as described in 36 CFR 800.12(b), since it is a part of the essential and immediate emergency response by the U.S. Air Force to Hurricane Michael. Any questions may be directed to jose.cintron.1@us.af.mil or 850-283-4341.

Sincerely

CINTRON.JOSE.J.1182275146 Digitally signed by CINTRON.JOSE.J.1182275146 Date: 2020.02.26 14:25:04 -06'00'

JOSÉ CINTRON, GS-12, DAF

Attachments:
1. Map of Facility Locations
2. Building Summary List
3. Photographs of Current Conditions
4. Facility 1287 Historic Report Package

Sent via email to: THPOCompliance@semtribe.com; Annemullins@semtribe.com; Victoriamenchaca@semtribe.com

DEPARTMENT OF THE AIR FORCE
325TH CIVIL ENGINEER SQUADRON (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Mr. José J. Cintron
Chief, Environmental Element
325th Civil Engineer Squadron
540 Mississippi Road (Building 36270)
Tyndall AFB FL 32403-5014

Mr. Galen Cloud
Tribal Historic Preservation Officer
Thlopthlocco Tribal Town
PO Box 188
Okemah, OK 74859-0188

Re: Demolition of 80 Facilities
Tyndall Air Force Base (AFB), Bay County, Florida (TY-20-0022)

Dear Mr. Cloud

In accordance with the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR 800), Tyndall AFB is initiating consultation for a proposed undertaking. The undertaking consists of the demolition of eighty facilities located on the main base. All of the buildings will be demolished for the construction and rebuild of Tyndall AFB.

The undertaking will require capping underground utilities at the main, demolition of the buildings, removal of the buildings; foundations, staging of debris piles, and removal of the demolished materials off-base. Based on these activities, Tyndall AFB recommends that the area of potential effect (APE) for each facility will extend to a depth of 6 feet, and consist of the footprint of each building and a 50 meter buffer surrounding each structure (Atch 1).

Attachment two (Atch 2) lists each property, including brief descriptions. All of the buildings are military facilities constructed during World War II (n=9), the Cold War (n=39), or Post-Cold War (n=28). There are 2 previously evaluated for listing on the National Register of Historic Places (NRHP), and determined to be eligible (8BY1117 & 8BY1178). The remaining facilities (n=78) have not been formally assessed.

Tyndall AFB recommends these facilities are not eligible as they do not meet the criteria for listing on the NRHP:

1) Destroyed facilities from Hurricane Michael: 265, 909, 1652, 5009, 9349, 9350
2) Recreational and Dorms: 1540, 1680

3) Support facilities (storage, generator buildings, pump houses, etc.): 127, 150, 179, 235, 262, 263, 270, 272, 325, 509, 705, 1132, 1723, 3027, 3216, 5018, 5024, 5030, 5033, 6004, 6016, 42260, 42275, N of 1735
4) Post-Cold War facilities: 181, 220, 273, 323, 333, 505, 526, 630, 928, 1262, 1263, 1769, 2580, 2600, 2610, 3350, 3351, 4025, 4572, 6033, 7062, 9400, 9420, 9421, 9525, 9737 ,9739, 29408

Tyndall AFB recommends that no additional documentation is required for the buildings listed in bullets 1-4. However, photographs of the buildings addressed are attached for reference (Atch 3). Tyndall AFB therefore holds that none of the buildings qualifies as historic properties that would be adversely affected by this undertaking.

Facility 5013 is the Morale Welfare Recreation Marina facility to support water recreational activities for base personnel. Although there are minor alterations or additions to the original design of the facility, it did not have an important role during the Cold War and lacks exceptional significance as a support facility. Extensive damage occurred during Hurricane Michael and the cost of the repairs exceeds the property's value. Therefore, Tyndall AFB recommends it not eligible for the NRHP and would not be adversely affected by this undertaking.

Facility 217 used to be the Air Traffic Control Tower when constructed in the mid to late 1950s. The facility was used until the construction of the new Air Traffic Control Tower in 2001. At that time, the facility was partially demolished, taking away the top observation area of the tower (Atch 3). Therefore, Tyndall AFB recommends it not eligible for the NRHP and would not be adversely affected by this undertaking.

Facility 1287 is a 1.550 sq. ft. facility originally used as a radar receiver building when constructed in 1952. The attached report (Atch 4) briefly describes the facility and its function. Major modifications occurred in 1986 when the building was converted into a veterinary clinic and extensive damage occurred during Hurricane Michael. The cost of the repairs exceeds the property's value. Therefore, Tyndall AFB recommends facility 1287 is not eligible for the NRHP and would not be adversely affected by this undertaking.

In February of 2019, Facility 1476 (8BY1178) was previously consulted on with your office as 'not evaluated' and was determined as not eligible (DHR: 2019-615). However, our records showed that this facility is actually an eligible building for the NRHP (DHR: 2015-0494B). However, due to the significant damage from Hurricane Michael and is considered a health and safety hazard, Tyndall AFB recommends it is no longer eligible for the NRHP and therefore would not be adversely affected by this undertaking.

Facilities 3137, 3140, 3142, 3149, 3155, and 3160 are TLF housing. Previous consultation (DHR-2017-3504) on this style of housing has determine they are not eligible for listing on the NRHP. Therefore, Tyndall AFB recommends these remaining 6 facilities are not eligible for the NRHP and would not be adversely affected by this undertaking. As agreed in the previous consultation of one type of each housing unit will be evaluated for NRHP listing, Facility 3160 was selected as an example of A-42 type housing and will be documented for your review prior to demolition.

The following facilities are under evaluation and a more detailed report with a state resource form and NRHP evaluation will be submitted to the State Historic Preservation Office (SHPO) for your review once it has been finalized. But due to the time sensitize nature for the rebuild of Tyndall AFB, it is recommended that they will not be eligible for listing on the NRHP. These facilities have either been heavily altered or renovated and do not meet criterion "G" for exceptional significance for buildings less than 50 years old. Photographs of the buildings addressed are attached for reference (Atch 3).

- Facility 126: is a 5.745 sq. ft. facility, currently used as a maintenance shop, which was the original purpose when constructed in 1985. Additions were made in 2013 to the west side of the facility. As a support facility for maintenance of aircrafts during Cold War, it lacks exceptional significance.
- Facility 149: is a 12.175 sq. ft. facility, used as a base post operations administrative facility originally built in 1943. There have been extensive renovations and several additions to the facility. Due to the amount of renovations, facility 149 lacks integrity.
- Facility 162: is a 1.000 sq. ft. facility originally used as a bottle gas storage building. It was altered around 1985 to be an administrative facility. As a support facility during Cold War, it lacks exceptional significance.
- Facility 164: is a 14.322 sq. ft. squadron facility. There were substantial additions to the original facility, which was originally only 4.496.45 sq. ft. Due to the amount of additions, the facility lacks integrity of the original design and lacks exceptional significance during the Cold War.
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- Facility 3160 will be addressed in this document to record the A-42 type housing.

Facility 703 is eligible for listing on the NRHP and will have an adverse effect from this undertaking. Tyndall AFB recommends further documentation and continuing consultation with your office, to include the development of a plan to mitigate the adverse effects of this undertaking.

Tyndall AFB recommends that the effects of the undertaking on buried deposits cannot be determined at this time, and an archaeological monitor will be present during all ground disturbing activity during demolition to minimize any potential adverse effects. In the event of any unexpected discoveries of intact archaeological deposits or human remains, all work will cease and Tyndall AFB will initiate additional consultation with your office.

Tyndall AFB is not aware of any historic properties of religious or tribal significance located within the APE. However, we request the assistance of the Thlopthlocco Tribal Town in identifying these resources, and any effect the undertaking may have on these properties. In the event of any unexpected discoveries of intact archaeological deposits or human remains, all work near the find will cease and Tyndall AFB will initiate additional consultation with your office.

Tyndall AFB respectfully requests expedited review for this undertaking, as described in 36 CFR 800.12(b), since it is a part of the essential and immediate emergency response by the U.S. Air Force to Hurricane Michael. Any questions may be directed to jose.cintron.1@us.af.mil or 850-283-4341.

Sincerely

CINTRON.JOSE.J.1182275146 Digitally signed by CINTRON.JOSE.J.1182275146 Date: 2020.02.26 14:26:44 -06'00'

JOSÉ CINTRON, GS-12, DAF

Attachments:
1. Map of Facility Locations
2. Building Summary List
3. Photographs of Current Conditions
4. Facility 1287 Historic Report Package

Sent via email to: thpo@tttown.org

FDEP Clearinghouse
Correspondence

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Jose' J. Cintron
Tyndall Air Force Base
325 CES/CEANC
119 Alabama Avenue, Mail Stop 42
Tyndall AFB, Florida 32403-5014

RE: Department of Defense, Department of the Air Force, Draft Environmental Assessment for Hurricane Recovery and Installation Development at Tyndall Air Force Base, Bay County, Florida
SAI # FL202001158817C

Dear Jose':

Florida State Clearinghouse staff has reviewed the proposal under the following authorities: Presidential Executive Order 12372; § 403.061(42), Florida Statutes; the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended; and the National Environmental Policy Act, 42 U.S.C. §§ 4321-4347, as amended.

The Florida Department of Environmental Protection's Northwest District and the Florida Fish and Wildlife Conservation Commission have reviewed the proposed actions received and several programs have submitted comments. These have been attached and are incorporated into this document hereto.

If prehistoric or historic artifacts, such as pottery or ceramics, projectile points, dugout canoes, metal implements, historic building materials, or any other physical remains that could be associated with Native American, early European, or American settlement are encountered at any time within the project site area, the permitted project shall cease all activities involving subsurface disturbance in the vicinity of the discovery. The applicant shall contact the Florida Department of State, Division of Historical Resources, Compliance Review Section at (850)-245-6333. Project activities shall not resume without verbal and/or written authorization. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately and the proper authorities notified in accordance with Section 872.05, Florida Statutes. If you have any questions, please see the attached letter and contact Jason Aldridge, Historic Sites Specialist, by email at Jason.Aldridge@dos.myflorida.com, or by telephone at 850.245.6344 or 800.847.7278.

Based on the information submitted and minimal project impacts, the state has no objections to the subject project and, therefore, it is consistent with the Florida Coastal Management Program (FCMP). Thank you for the opportunity to review the proposed plan. If you have any questions or need further assistance, please don't hesitate to contact me at (850) 717-9076.

Sincerely,

Chris Stahl

Chris Stahl, Coordinator
Florida State Clearinghouse
Florida Department of Environmental Protection
3800 Commonwealth Blvd., M.S. 47
Tallahassee, FL 32399-2400
ph. (850) 717-9076
State.Clearinghouse@floridadep.gov

Review_Request_FL202001158817C_DRAFT ENVIRONMENTAL ASSESSMENT FOR HURRICANE RECOVERY AND INSTALLATION DEVELOPMENT AT TYNDALL AIR FORCE BASE, BAY COUNTY

DEPARTMENT OF DEFENSE, DEPARTMENT OF THE AIR FORCE, DRAFT ENVIRONMENTAL ASSESSMENT FOR HURRICANE RECOVERY AND INSTALLATION DEVELOPMENT AT TYNDALL AIR FORCE BASE, BAY COUNTY, FLORIDA

Document:
ftp://ftp.dep.state.fl.us/pub/outgoing/State_Clearinghouse_Downloads/200116_Tyndall%20AFB%20Hurricane%20Recovery%20Draft%20EA_rev4d_rfs.pdf

Summary: The Air Force is planning demolition, construction and renovation of numerous facilities throughout Tyndall AFB that were severely damaged by Hurricane Michael in 2018 (collectively referred to as the Proposed Actions). With these Proposed Actions, 28 individual projects spanning six planning areas throughout the installation would be constructed. Three additional projects have been identified which cover more than one planning area, and would demolish 264 buildings, conduct drainage improvements, and construct or upgrade utilities across the installation. The purpose of implementing the Proposed Actions at Tyndall AFB is to recover mission capabilities impacted by Hurricane Michael. The need for the Proposed Actions is to rebuild Tyndall AFB to a fully operational base, thereby providing new facilities/infrastructure, as well as executing repair, demolition and functionality improvements necessary to support existing missions and tenant units.

Air – They need to make sure that all materials are disposed of properly from demolition activities. Also, ensure the proper asbestos surveys and notifications are submitted prior to demolition.

If any portable crushers are brought onsite to reduce materials, they need to ensure that each crusher has an air general permit and is in compliance with the conditions of their permit.
Asbestos Information - Nonmetallic Mineral Processing Plants

ERP – Based on the information received, it appears that the project will require authorization for wetland impacts and stormwater treatment. The applicant is advised to contact FDEP for further permitting guidance.

Potable Water – Construction of potable water utilities beyond the Tyndall AFB master meter are not required to obtain DEP potable water permits as the system is a consecutive system of Bay County at this time. Connections directly to Bay County's water system may require DEP potable water permitting. A determination request can be made by emailing a description and drawing(s) to Epost.nwdwf@FloridaDEP.gov.

Solid Waste – The Area Constraints Maps do not appear to identify areas with unresolved petroleum discharges. The "Active Restoration Site" depictions/figures do not appear to identify the site-specific contaminants or differentiate non-RCRA sites from the RCRA Solid Waste Management Units (SWMUs) and Areas-of-Concern (AOCs). Demolition and construction activities in these areas will need to be carefully coordinated with the DoD and RCRA Permitting groups within the Division of Waste Management in Tallahassee.

Due to the presence of PFOA/PFAS and pesticides in groundwater at Tyndall Air Force Base, any activities requiring dewatering with surface water discharge may require installing and maintaining groundwater treatments systems for contaminants of concern during dewatering operations.

Demolition and construction activities adjacent to and within 500-feet of the Gulf Power Substation Arsenic plume will need to be coordinated with the FDEP Northwest District Office.

Wastewater – It is anticipated that wastewater collection system construction permitting will be needed. Permit determinations are recommended and can be requested by emailing a description and drawing(s) to Epost.nwdwf@FloridaDEP.gov.

For dewatering of produced groundwater directly or indirectly to surface water or a conveyance connected to surface water: if the site is contaminated and does not meet surface water standards without treatment, dewatering cannot be authorized under the *Generic Permit for Stormwater Discharge from Large and Small Construction Activities* or the *Generic Permit for Discharge of Groundwater from Dewatering Operations.* These two permits are only appropriate when surface water criteria will be met without treatment. Some of the applicable rules for dewatering near contamination are found in 62-302, F.A.C. (surface water quality standards), 62-777, F.A.C. (contaminated cleanup target levels), and 62-780, F.A.C. (contaminated site cleanup criteria). Please consult with the department regarding dewatering.

Division of Waste Management Comments:

Here are the Federal Programs Section's comments pertaining to the Draft Environmental Assessment for Hurricane Recovery and Installation Development at Tyndall AFB.

1. This Environmental Assessment (EA) has been prepared to evaluate the potential impacts on the natural and human environment associated with the Hurricane Michael Recovery Program at Tyndall Air Force Base (TAFB). "The purpose of implementing the installation development projects at TAFB is to recover mission capabilities at TAFB, impacted by Hurricane Michael. The impact of the hurricane caused extensive damage to the base's mission, facilities, infrastructure and natural resources areas. The proposed actions would include construction of new facilities and infrastructure, renovations, consolidation, and demolition as well as management of natural resources to restore mission capabilities." Based on the fact the proposed actions in the EA are construction and demolition in nature, the Waste Cleanup Program/Federal Programs Section (the Department) does not have promulgated standards to compel action under this type of effort. Our comments are to the EA should be considered recommendations and to be considered observations, unless the construction and demolition activities are conducted on the several known Installation Restoration Program (IRP) sites identified on TAFB. If this is the case, then certain State of Florida environmental regulations (i.e. Chapter 62-780, Florida Administrative Code) may apply.
2. Contractor personnel should wear personal protection equipment that meet all Federal, State, and U.S. Air Force (USAF) requirements during all construction and demolition activities.
3. The contractor completing these activities should follow applicable Federal, State, and USAF regulations during all construction and demolition activities.
4. Contractor and Air Force personnel should report any spills or discharges discovered during construction and demolition activities.
5. Based on subsection 62-532.500(5), and the governing Water Management District, the contractor, and the USAF should be aware of all monitoring wells, injection wells, extraction wells, and sparge wells, etc. If any of these wells are found within the area of the construction and demolition activities they will have to be properly abandoned, as appropriate. Also, these

wells may need to be reinstalled, as necessary. The contractor and the USAF should evaluate if permits are needed for well abandonment and installation activities from TAFB and the Water Management District.

6. The contractor and the USAF should be aware of any remedial systems operating in or near the construction and demolition activity area. The systems may need to be shut down for a period of time during demolition activities, and possibly removed and then replaced, due to these activities. Contact the appropriate owner/operator of the wells and/or systems before removing.
7. TAFB should notify contractor and subcontractor personnel working on site of Land Use Controls (LUCs) in or near any of the construction and demolition areas which could potentially affect this work. Certain TAFB permits may be required if demolition activities are conducted within LUC areas.
8. The USAF should make all contractors completing these construction and demolition activities aware of the Environmental Restoration Program (ERP) as discussed in Section 3.10, Hazardous Materials / Waste and Solid Waste, and subsection 3.10.5, Environmental Restoration Program. As stated in subsection 3.10.5 and subsection 4.9.1.5, a variety of IRP sites are collocated with the Proposed Actions and planned construction activities. Implementation of the Proposed Actions could affect or be affected by IRP sites (please refer to Table 4.9-2 in the EA for an appraisal of likely potential impacts to each site based on the site status, as well as the planned activities associated with each of the Proposed Actions). An ERP Waiver to Construct Memorandum would be required for development over any applicable ERP sites. In order to receive a waiver, there are several criteria which must be adequately addressed (please see subsection 4.9.1.5 for more details)
9. The contractor and USAF should communicate any questions that arise before and during field activities to the TAFB Civil Engineering Group and to the TAFB Partnering Team (USAF, U.S. Army Corps of Engineering, U.S. EPA, the Department, and associated contractors) as appropriate.

Please contact me, John Winters, or Heather Perkins if you have any questions pertaining to the Department's review and comments to this EA.

Respectfully,
Roger Durham
Remedial Project Manager
Federal Programs Section
Division of Waste Management
Florida Department of Environmental Protection

Florida Fish and Wildlife Conservation Commission

Commissioners
Robert A. Spottswood
Chairman
Key West

Michael W. Sole
Vice Chairman
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Gary Lester
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Executive Director
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Thomas H. Eason, Ph.D.
Assistant Executive Director

Jennifer Fitzwater
Chief of Staff

850-487-3796
850-921-5786 FAX

Managing fish and wildlife resources for their long-term well-being and the benefit of people.

620 South Meridian Street
Tallahassee, Florida
32399-1600
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800-955-8771 (T)
800 955-8770 (V)

MyFWC.com

February 5, 2020

Chris Stahl, Coordinator
Florida State Clearinghouse
Florida Department of Environmental Protection
3800 Commonwealth Blvd., M.S. 47
Tallahassee, FL 32399-2400
Chris.Stahl@dep.state.fl.us
State.Clearinghouse@dep.state.fl.us

Re: SAI FL202001158817C, Department of the Air Force, Draft Environmental Assessment for Hurricane Recovery and Installation Development at Tyndall Air Force Base, Bay County

Dear Mr. Stahl:

Florida Fish and Wildlife Conservation Commission (FWC) staff reviewed the Draft Environmental Assessment for Hurricane Recovery and Installation Development at Tyndall Air Force Base (AFB). We provide the following comments and recommendations for your consideration in accordance with Chapter 379, Florida Statutes (F.S.), the National Environmental Policy Act (NEPA), and the Coastal Zone Management Act/Florida's Coastal Management Program.

Project Description

The Department of the Air Force has prepared a Draft Environmental Assessment (EA) to evaluate the potential environmental impacts associated with the demolition, construction, and renovation of many facilities located throughout Tyndall AFB that were damaged by Hurricane Michael in October 2018. The proposed action consists of the construction of 28 individual projects in six planning areas, three projects that cover more than one planning area, the demolition of 268 buildings, drainage improvements, and utility construction. These projects include recreational facilities, a drone maintenance complex, and an engineering RDT&E (research, development, testing, and evaluation) facility with a new fire station. Several buildings along the Flightline Area would be demolished and reconstructed, along with drainage improvements. Many buildings in the Support Area would also be demolished and reconstructed, including the 325th Fighter Wing Headquarters, a US Army Corps of Engineers complex, and an emergency management/emergency operations complex.

The proposed action is situated on approximately 1,164 acres of land located on Tyndall AFB. The proposed project site contains airfield (419.5 acres), institutional (363.7 acres), pine plantation (196.1 acres), rural open (46.2 acres), coastal scrub (37.8 acres), community recreational facilities (28.3 acres), wet flatwoods (25.1 acres), high pine and scrub (21.2 acres),beach dune (8.9 acres), utilities (4.3 acres), marina (3.3 acres), hydric pine plantation (2.2 acres), shrub and brushland (2.1 acres), urban open land (1.6 acres), freshwater forested wetlands (1.5 acres), marsh (1.0 acres), estuarine (1.0 acres), wet prairie (0.3 acres), and mesic flatwoods (0.1 acres). The proposed project would impact approximately 77.7 acres of jurisdictional wetlands, although Tyndall AFB would attempt to avoid minimize to reduce wetland impacts during the permitting process. Tyndall AFB would consider the purchase of wetland credits from a permitted wetland mitigation bank and would also consider on-site and off-site in-kind mitigation.

Potentially Affected Resources

The *Draft Environmental Assessment* (January 2020), which was prepared by Gulf South Research Corporation and AECOM on behalf of U.S. Air Force, includes a Biological Evaluation that addresses potential impacts to listed species that may result from the demolition, renovation, and construction activities outline in the proposed action. Listed species surveys were conducted as a part of field reviews during October and November 2019. The report indicates that no listed wildlife species were observed during the field reviews.

FWC staff also conducted a geographic information system (GIS) analysis of the project area. Our analysis confirmed the information in the report and also found that the project site contains, is adjacent to, or occurs near:

- U.S. Fish and Wildlife (USFWS) Consultation Area for:
  - Red-cockaded woodpecker (*Picoides borealis*, Federally Endangered [FE])

- Documented occurrence of red knot (*Calidris canutus rufa*, Federally Threatened [FT]), and piping plover (*Charadrius melodus*, FT)

- Documented nesting for snowy plover (*Charadrius nivosus*, State Threatened [ST]), least tern (*Sterna antillarum*, ST), black skimmer (*Rynchops niger*, ST), and American oystercatcher (*Platalea ajaja*, FT)

- Potential nesting areas for the loggerhead sea turtle (*Caretta caretta*, FT) and the green sea turtle (*Chelonia mydas*, FE)

- Potential habitat for the following state- and federally listed species:
  - St. Andrew's beach mouse (*Peromyscus polionotus peninsularis,* FE)
  - Choctawhatchee beach mouse (*Peromyscus polionotus allophrys,* FE)
  - Eastern indigo snake (*Drymarchon corais couperi*, FT)
  - Reticulated flatwoods salamander (*Ambystoma bishopii*, FE)
  - Leatherback sea turtle (*Dermochelys coriacea*, FE)
  - Kemp's ridley sea turtle (*Lepidochelys kempi*, FE)
  - Gopher tortoise (*Gopherus polyphemus*, ST)
  - Southeastern American kestrel (*Falco sparverius paulus*, ST)
  - Florida pine snake (*Pituophis melanoleucus mugitus*, ST)

- Potential habitat for the Florida black bear (*Ursus americanus floridanus* - East Panhandle Bear Management Unit)

- Existing and proposed conservation lands:
  - Tyndall AFB Wildlife Management Area
  - Tyndall Critical Wildlife Area (CWA)

Comments and Recommendations

<u>Debris Removal</u>

The overall proposed action as presented in the Draft EA consists of many smaller actions which often involve renovation or demolition of storm-damaged buildings that total nearly 2 million square feet, and could potentially produce an equivalent amount of debris. This large amount of debris may require several staging areas; however, it is not clear from the assessment that

potential debris staging areas have been identified and evaluated for potential impacts. In addition, the construction projects may need a staging area, but it is also not clear from the Draft EA that potential construction staging areas have been identified and evaluated. Potential staging areas could result in impacts to protected wildlife species. FWC staff recommend identification and evaluation of these areas either as part of the assessment or that the Draft EA include a commitment to survey and evaluate potential staging area sites for impacts to protected wildlife species.

Wildlife Surveys

Although the Biological Evaluation was provided and site visits were conducted during field reviews and no listed species were observed during those site visits, it is not uncommon for wildlife resources to change between seasons or years. In addition, the proposed action involves multiple components that would be implemented in phases over five-year period, and potential wildlife utilization can change during that timeframe. In order to better identify the potential for impacts, surveys for listed species should be completed prior to any phases of clearing or development, and particularly for any staging areas that were not identified in the Draft EA. Species-specific wildlife surveys are time sensitive, and FWC staff recommends that all wildlife surveys follow established survey protocols approved by the USFWS and the FWC and that the surveys are conducted at the appropriate time of year. Surveys should also be conducted by qualified biologists with recent documented experience for each potential species. Basic guidance for conducting wildlife surveys may be found in the Florida Wildlife Conservation Guide at http://myfwc.com/conservation/value/fwcg/.

Beach-nesting Birds

State-listed seabirds and shorebirds overwinter and nest in the beach dune habitat within and adjacent to the proposed project site. Between 2017 and 2018, FWC staff documented approximately 337 instances of imperiled beach nesting shorebird nesting within one mile of the proposed work activities. Existing site conditions may also support beach-nesting bird breeding habitat and clearing associated with construction may create conditions conducive for nesting. Cleared sites such as areas that have undergone surface scraping and that leave open sandy soils may attract ground-nesting species such as least terns, black skimmers, or other imperiled beach-nesting birds (IBNB). IBNB nests have been documented on a variety of disturbed sites, including construction sites). Nesting has occurred on nearby projects in similar locations and with similar soil composition. For one example, least terns deposit their eggs in shallow depressions or scrapes in the substrate, possibly lined with pebbles, grasses, or coquina shells. In addition, to the beach dune areas and cleared sites with exposed bare soils, imperiled beach nesting birds can also utilize buildings with gravel rooftops for nesting and have been documented nesting on these types of buildings on Tyndall AFB.

Egg-laying usually begins in early April and colonies may range in size from a few breeding pairs to many hundreds. FWC staff recommends the following measures to reduce nesting potential during construction:

- Conduct construction and/or demolition activities outside of the breeding season (generally April, but potentially as early as mid-February, through August), if feasible,
- Clear the site only when ready to build,
- Avoid leaving cleared areas or potentially suitable nesting sites (such as gravel rooftops) with little to no activity for an extended amount of time, and
- Monitor daily proposed works sites during the nesting season any cleared sites to ensure no active nests of ground nesting birds are present prior to the commencement of construction or demolition activities.

If nesting is observed within or adjacent to a demolition or construction work site prior to or after the start of work, we recommend coordinating with FWC staff at the end of this letter to discuss nest buffers and other avoidance and minimization measures. For additional information, please refer to FWC's Breeding Bird Protocol for Florida's Seabirds and Shorebirds located at the following web address: https://public.myfwc.com/crossdoi/shorebirds/PDF-files/BreedingBirdProtocol.pdf

Sea Turtle Lighting

The beaches at Tyndall AFB support nesting by loggerhead and green sea turtles and occasionally leatherback and Kemp's ridley turtles. The base has an active Sea Turtle Program that surveys and marks all sea turtle nests on the base's approximately 18 miles of beaches under an FWC marine turtle permit. During January 2019, FWC staff participated in a meeting with staff from the Tyndall AFB and the U.S. Fish and Wildlife Service to discuss appropriate lighting to minimize impacts to coastal wildlife including sea turtles and beach mice.

FWC supports the base's efforts to reduce and minimize lighting impacts to coastal wildlife during hurricane recovery activities. For implementation, FWC staff recommends an exterior lighting plan be developed. The plan should specify long wavelength (560 nanometers or shorter) lamps with the lowest lumen output necessary to meet the required design foot candles. Lamps should be installed in full cut-off, fully shielded fixtures mounted at the lowest height possible. To minimize visibility of lights from the adjacent beach, bollards – 42 inches or less in height – should be utilized in parking areas. Poles along roadways should be limited to 15 to 18 feet in height. In addition, restoration of coastal vegetation should include taller, shrubby plants that can serve as a barrier to landward lights and block sky glow. FWC staff are available for assistance and can be contacted at wildlifelighting@myfwc.com for specific lighting questions during development of lighting plans for post-hurricane reconstruction at Tyndall AFB. Additional information is available http://myfwc.com/wildlifehabitats/managed/sea-turtles/.

Black Bear

FWC has received 186 reports of human-bear conflicts within a one-mile radius of the project site since 2006. Florida black bears are frequently observed on Tyndall AFB which is within the West Panhandle Bear Management Unit identified in the 2019 Bear Management Plan. The Integrated Natural Resources Management Plan (INRMP) for Tyndall AFB includes management objectives to maintain the current population, reduce negative human-bear interactions, remove bear attractants from populated areas on base, and educate the public. FWC staff recommend that Tyndall AFB continue to follow and implement these management objectives, since proactive planning may help prevent or reduce future conflicts with bears. Additional information about Florida black bears can be found on our website at http://www.myfwc.com/wildlifehabitats/managed/bear.

Gopher Tortoise

Although a field review was conducted with no gopher tortoises observed, gopher tortoises have been documented on Tyndall AFB and could occur in any of the proposed project locations. Due to the documented presence of gopher tortoise burrows on the adjacent property, and the phased development of the site over many years, FWC staff recommends that the applicant refer to the FWC's Gopher Tortoise Permitting Guidelines (Revised January 2017) (http://www.myfwc.com/license/wildlife/gopher-tortoise-permits/) as necessary for technical assistance and survey methodology.

Florida Pine Snake

Although Florida pine snakes have been not been documented on Tyndall AFB, they can occur in xeric (well-drained), upland habitat, which is present throughout the base property. Florida pine snakes are naturally secretive and can spend up to 80 percent of their time in underground refuges such as stump holes, gopher tortoise burrows, and the burrows of nine-banded armadillos and mice. This species is often associated with southeastern pocket gophers (*Geomys pinetis*), however, they can persist and thrive in areas without this species. Florida pine snakes are active from March through October but show the greatest activity in May, June, July, and October when they move more frequently and travel farther distances. Additional information can be found in the Florida Pine Snake Species Conservation Measures and Permitting Guidelines (https://myfwc.com/media/11571/floridapinesnakeguidelines-2018.pdf). If a Florida pine snake is observed during construction, FWC staff recommends that work activities cease and the snake be allowed to leave with no support or hinderance. It would also contribute to FWC's research efforts if sightings are reported to the staff member at the close of this letter, preferably with a photograph and GPS coordinates.

FWC staff appreciates the opportunity to provide input on this project. If you have specific technical questions regarding the content of this letter, please contact Bryan Phillips at (850) 767-3646 or by email at Bryan.Phillips@MyFWC.com. All other inquiries may be directed to FWCConservationPlanningServices@MyFWC.com.

Sincerely,

Jason Hight
Land Use Planning Program Administrator
Office of Conservation Planning Services

jh/bwp
ENV 2-3-3
Tyndall_AFB_Hurricane_Recovery_EA_40995_02052020

CC: Sean Blomquist, USFWS, sean_blomquist@fws.gov

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SHPO Correspondence

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DEPARTMENT OF THE AIR FORCE
325TH CIVIL ENGINEER SQUADRON (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Ms. Donna L. Barber
Chief, Installation Management Flight
325th Civil Engineer Squadron
540 Mississippi Ave
Tyndall AFB FL 32403

Dr. Timothy A. Parsons
State Historic Preservation Officer
Division of Historical Resources
500 South Bronough Street
Tallahassee FL 32399

Dear Dr. Parsons

The United States Air Force has prepared a Draft Environmental Assessment (EA) to evaluate the potential environmental impacts associated with the recovery efforts at Tyndall Air Force Base (AFB), Florida. The Draft EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

The Air Force is planning demolition, construction and renovation of numerous facilities throughout Tyndall AFB that were severely damaged by Hurricane Michael in 2018 (collectively referred to as the Proposed Actions). With these Proposed Actions, 28 individual projects spanning six planning areas throughout the installation would be constructed. Three additional projects have been identified which cover more than one planning area, and would demolish 264 buildings, conduct drainage improvements, and construct or upgrade utilities across the installation. The purpose of implementing the Proposed Actions at Tyndall AFB is to recover mission capabilities impacted by Hurricane Michael. The need for the Proposed Actions is to rebuild Tyndall AFB to a fully operational base, thereby providing new facilities/infrastructure, as well as executing repair, demolition and functionality improvements necessary to support existing missions and tenant units.

An initial scoping letter that requested your comments on the Proposed Actions was mailed to you on October 15, 2019. Since then, the Air Force prepared a draft EA to analyze the potential impacts of the Proposed Actions. The draft EA assesses the potential environmental impacts associated with the Proposed Actions, and examines the cumulative effects when combined with past, present, and any future proposals. A copy of the draft EA and associated draft Finding of No Significant Impact (FONSI) are enclosed for your review and comment.

Please provide your comments within 30 days of receipt of this letter. Address all questions and comments to Mr. Jose J. Cintron at jose.cintron.1@us.af.mil, (850) 283-4341, or via mail at

Jose J. Cintron, 325 CES/CEIE, 540 Mississippi Ave, Tyndall AFB FL 32403. Thank you in advance for your assistance in this effort.

Sincerely

BARBER.DONNA.L.1029350945 Digitally signed by BARBER.DONNA.L.1029350945 Date: 2020.01.13 12:37:19 -06'00'

DONNA L. BARBER, GS-13, DAF

Attachment:
Draft EA/FONSI

DEPARTMENT OF THE AIR FORCE
325TH CIVIL ENGINEER SQUADRON (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Mr. José J. Cintron
Chief, Environmental Element
325th Civil Engineer Squadron
540 Mississippi Road (Building 36270)
Tyndall AFB FL 32403-5014

Dr. Timothy A. Parsons
State Historic Preservation Officer
Division of Historical Resources
500 South Bronough Street
Tallahassee FL 32399

Re: Demolition of 80 Facilities
Tyndall Air Force Base (AFB), Bay County, Florida (TY-20-0022)

Dear Dr. Parsons

In accordance with the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR 800), Tyndall AFB is initiating consultation for a proposed undertaking. The undertaking consists of the demolition of eighty facilities located on the main base. All of the buildings will be demolished for the construction and rebuild of Tyndall AFB.

The undertaking will require capping underground utilities at the main, demolition of the buildings, removal of the buildings; foundations, staging of debris piles, and removal of the demolished materials off-base. Based on these activities, Tyndall AFB recommends that the area of potential effect (APE) for each facility will extend to a depth of 6 feet, and consist of the footprint of each building and a 50 meter buffer surrounding each structure (Atch 1).

Attachment two (Atch 2) lists each property, including brief descriptions. All of the buildings are military facilities constructed during World War II (n=9), the Cold War (n=39), or Post-Cold War (n=28). There are 2 previously evaluated for listing on the National Register of Historic Places (NRHP), and determined to be eligible (8BY1117 & 8BY1178). The remaining facilities (n=78) have not been formally assessed.

Tyndall AFB recommends these facilities are not eligible as they do not meet the criteria for listing on the NRHP:

1) Destroyed facilities from Hurricane Michael: 265, 909, 1652, 5009, 9349, 9350
2) Recreational and Dorms: 1540, 1680

3) Support facilities (storage, generator buildings, pump houses, etc.): 127, 150, 179, 235, 262, 263, 270, 272, 325, 509, 705, 1132, 1723, 3027, 3216, 5018, 5024, 5030, 5033, 6004, 6016, 42260, 42275, N of 1735
4) Post-Cold War facilities: 181, 220, 273, 323, 333, 505, 526, 630, 928, 1262, 1263, 1769, 2580, 2600, 2610, 3350, 3351, 4025, 4572, 6033, 7062, 9400, 9420, 9421, 9525, 9737 ,9739, 29408

Tyndall AFB recommends that no additional documentation is required for the buildings listed in bullets 1-4. However, photographs of the buildings addressed are attached for reference (Atch 3). Tyndall AFB therefore holds that none of the buildings qualifies as historic properties that would be adversely affected by this undertaking.

Facility 5013 is the Morale Welfare Recreation Marina facility to support water recreational activities for base personnel. Although there are minor alterations or additions to the original design of the facility, it did not have an important role during the Cold War and lacks exceptional significance as a support facility. Extensive damage occurred during Hurricane Michael and the cost of the repairs exceeds the property's value. Therefore, Tyndall AFB recommends it not eligible for the NRHP and would not be adversely affected by this undertaking.

Facility 217 used to be the Air Traffic Control Tower when constructed in the mid to late 1950s. The facility was used until the construction of the new Air Traffic Control Tower in 2001. At that time, the facility was partially demolished, taking away the top observation area of the tower (Atch 3). Therefore, Tyndall AFB recommends it not eligible for the NRHP and would not be adversely affected by this undertaking.

Facility 1287 is a 1.550 sq. ft. facility originally used as a radar receiver building when constructed in 1952. The attached report (Atch 4) briefly describes the facility and its function. Major modifications occurred in 1986 when the building was converted into a veterinary clinic and extensive damage occurred during Hurricane Michael. The cost of the repairs exceeds the property's value. Therefore, Tyndall AFB recommends facility 1287 is not eligible for the NRHP and would not be adversely affected by this undertaking.

In February of 2019, Facility 1476 (8BY1178) was previously consulted on with your office as 'not evaluated' and was determined as not eligible (DHR: 2019-615). However, our records showed that this facility is actually an eligible building for the NRHP (DHR: 2015-0494B). However, due to the significant damage from Hurricane Michael and is considered a health and safety hazard, Tyndall AFB recommends it is no longer eligible for the NRHP and therefore would not be adversely affected by this undertaking. An update for the master site file will be submitted if your concurrence with the evaluation of this resource stands as not eligible.

Facilities 3137, 3140, 3142, 3149, 3155, and 3160 are TLF housing. Previous consultation (DHR-2017-3504) on this style of housing has determine they are not eligible for listing on the NRHP. Therefore, Tyndall AFB recommends these remaining 6 facilities are not eligible for the NRHP and would not be adversely affected by this undertaking. As agreed in the previous consultation of one type of each housing unit will be evaluated for NRHP listing, Facility 3160

was selected as an example of A-42 type housing and will be documented for your review prior to demolition.

The following facilities are under evaluation and a more detailed report with a state resource form and NRHP evaluation will be submitted to the State Historic Preservation Office (SHPO) for your review once it has been finalized. But due to the time sensitize nature for the rebuild of Tyndall AFB, it is recommended that they will not be eligible for listing on the NRHP. These facilities have either been heavily altered or renovated and do not meet criterion "G" for exceptional significance for buildings less than 50 years old. Photographs of the buildings addressed are attached for reference (Atch 3).

- Facility 126: is a 5.745 sq. ft. facility, currently used as a maintenance shop, which was the original purpose when constructed in 1985. Additions were made in 2013 to the west side of the facility. As a support facility for maintenance of aircrafts during Cold War, it lacks exceptional significance.
- Facility 149: is a 12.175 sq. ft. facility, used as a base post operations administrative facility originally built in 1943. There have been extensive renovations and several additions to the facility. Due to the amount of renovations, facility 149 lacks integrity.
- Facility 162: is a 1.000 sq. ft. facility originally used as a bottle gas storage building. It was altered around 1985 to be an administrative facility. As a support facility during Cold War, it lacks exceptional significance.
- Facility 164: is a 14.322 sq. ft. squadron facility. There were substantial additions to the original facility, which was originally only 4.496.45 sq. ft. Due to the amount of additions, the facility lacks integrity of the original design and lacks exceptional significance during the Cold War.
- Facility 188: is a 10.212 sq. ft. facility originally used as a weapons systems shop. It had some alterations and additions in the 1980s. As a support facility during Cold War, it lacks exceptional significance.
- Facility 503: is a 9.508 sq. ft. facility. The use of the building has been the same since it was constructed in 1987. Although the facility has not been altered, it is a standard military facility and has no exceptional significance during the Cold War.
- Facility 2894: is a 969 sq. ft. facility that was the Capehart Fire Station. This facility is still currently the fire station vehicle building but is separated into two facilities and has no exceptional significance during Cold War operations.
- Facility 4027: is a 382 sq. ft. facility designed to support the entrance gate to base housing. It had minor alterations in 2001 but has no exceptional significance as a support facility during Cold War operations.
- Facility 6014: is a 3.200 sq. ft. storage facility built in 1943. It has some minor alterations but has remaining elements from original construction. As a support facility during Cold War, it lacks exceptional significance.
- Facility 3160 will be addressed in this document to record the A-42 type housing.

Facility 703 is eligible for listing on the NRHP and will have an adverse effect from this undertaking. Tyndall AFB recommends further documentation and continuing consultation with your office, to include the development of a plan to mitigate the adverse effects of this undertaking.

Tyndall AFB recommends that the effects of the undertaking on buried deposits cannot be determined at this time, and an archaeological monitor will be present during all ground disturbing activity during demolition to minimize any potential adverse effects. In the event of any unexpected discoveries of intact archaeological deposits or human remains, all work will cease and Tyndall AFB will initiate additional consultation with your office.

Tyndall AFB respectfully requests expedited review for this undertaking, as described in 36 CFR 800.12(b), since it is a part of the essential and immediate emergency response by the U.S. Air Force to Hurricane Michael. Any questions may be directed to jose.cintron.1@us.af.mil or 850-283-4341.

Sincerely

CINTRON.JOSE.J.1182275146 Digitally signed by CINTRON.JOSE.J.1182275146 Date: 2020.02.26 13:33:50 -06'00'

JOSÉ CINTRON, GS-12, DAF

Attachments:

1. Map of Facility Locations
2. Building Summary List
3. Photographs of Current Conditions
4. Facility 1287 Historic Report Package

Sent via email to: Timothy.Parsons@dos.myflorida.com; Jason.Aldridge@dos.myflorida.com

FLORIDA DEPARTMENT of STATE

RICK SCOTT
Governor

KEN DETZNER
Secretary of State

Mr. Jose Cintron
Chief, Environmental Element
325th Civil Engineer Squadron
119 Alabama Avenue, Mail Stop 42
Tyndall Air Force Base, Florida 32403-5014

November 26, 2018

Re: DHR Project No.: 2018-5941 / Received by DHR: November 16, 2018
Demolition of Nineteen Buildings Damaged from Hurricane Michael
Tyndall Air Force Base, Bay County

Dear Mr. Cintron:

This office reviewed the referenced projects for possible impact to historic properties listed, or eligible for listing, in the *National Register of Historic Places.* The review was conducted in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended and *36 CFR Part 800: Protection of Historic Properties*.

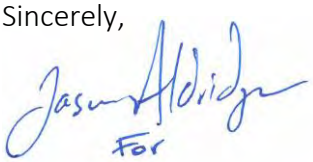
Facilities 111 (8BY1395), 113 (8BY1396), 186 (8BY1403), 432 (8BY1142), 449 (8BY1099), 450 (8BY1100), and 453 (8BY1101): This office has previously determined that the facilities did not appear to meet the criteria for listing in the *National Register.* Therefore, we concur with your finding that the proposed demolitions will have no effect on the historic properties.

Facilities 107, 108, 109, 421, 422, 425, 427, 431, 451, 457, and 458: Based on the information provided, this office concurs with your findings that the facilities do not appear to meet the criteria for listing on the *National Register* and the proposed demolitions will have no effect on historic properties.

Facility 462: We note that Tyndall AFB will evaluate the facility's *National Register* eligibility and submit the findings to our office. Once we receive the documentation we will do our best to expedite the review.

This office would like to thank you on the thoroughness of your submittal. If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservationist, by electronic mail *scott.edwards@dos.myflorida.com*, or at 850.245.6333 or 800.847.7278.

Sincerely,



Timothy A. Parsons, Ph.D.
Director, Division of Historical Resources
and State Historic Preservation Officer

FLORIDA DEPARTMENT of STATE

RON DESANTIS
Governor

LAUREL M. LEE
Secretary of State

Mr. Jose Cintron
Chief, Environmental Element
325th Civil Engineer Squadron
119 Alabama Avenue, Mail Stop 42
Tyndall Air Force Base, Florida 32403-5014

February 8, 2019

Re: DHR Project No.: 2019-615 / Received by DHR: February 4, 2014
Demolition Phases II and III of Sixty-one Buildings Damaged from Hurricane Michael
Tyndall Air Force Base, Bay County

Dear Mr. Cintron:

This office reviewed the referenced projects for possible impact to historic properties listed, or eligible for listing, in the *National Register of Historic Places.* The review was conducted in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended and *36 CFR Part 800: Protection of Historic Properties*.

Based on the information provided, this office concurs with your findings that the 61 facilities listed below do not appear to meet the criteria for listing on the *National Register* and the proposed demolitions will have no effect on historic properties.

Facilities: 83, 120, 124, 131, 138, 165, 166, 168, 169, 183, 187, 205, 224, 248, 259, 269, 310, 314, 316, 318, 322, 334, 371, 375, 419, 421, 422, 427, 433, 451, 470, 499, 529, 532, 559, 571, 578, 580, 631, 645, 651, 726, 731, 735, 802, 822, 1045, 1131, 1260, 1333, 1470, 1476, 1479, 1618, 1707, 1820, 2699, 5020, 5025, 5026, and 20499.

If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservationist, by electronic mail *scott.edwards@dos.myflorida.com*, or at 850.245.6333 or 800.847.7278.

Sincerely,

Jason Aldridge
For

Timothy A. Parsons, Ph.D.
Director, Division of Historical Resources
and State Historic Preservation Officer

FLORIDA DEPARTMENT of STATE

RON DESANTIS
Governor

LAUREL M. LEE
Secretary of State

Mr. Jose Cintron
Chief, Environmental Element
325th Civil Engineer Squadron
119 Alabama Avenue, Mail Stop 42
Tyndall Air Force Base, Florida 32403-5014

June 4, 2019

Re: DHR Project No.: 2019-1801
Demolition Phase IV – 113 Facilities Damaged from Hurricane Michael
Tyndall Air Force Base, Bay County

Dear Mr. Cintron:

This office reviewed the referenced projects for possible impact to historic properties listed, or eligible for listing, in the *National Register of Historic Places.* The review was conducted in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended and *36 CFR Part 800: Protection of Historic Properties*.

Facilities 156 – Hangar 3 (BY1094) and 280 - Hangar 4 (BY1141): This office previously determined that that these facilities appeared to meet the criteria for listing in the *National Register.* However, due to recent damage from Hurricane it is the opinion of this office that the facilities no longer retain sufficient historical integrity and therefore, do not appear to meet the criteria for listing in the *National Register.* Since Facilities 156 and 280 are no longer considered eligible, we concur that the demolition of these facilities will have no effect on historic properties.

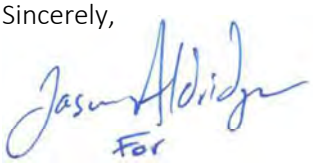
Facilities 256 (BY1407), 266 (BY1140), 546 (BY1144), 1805 (BY1429), 1818 (BY1430), 7027 (BY1445), 7029 (BY1447), 7030 (BY1448), 7031 (BY1449), 7040 (BY1452), 8520 (BY1453), 8522 (BY1454), 8523 (BY1455), 8533 (BY1462), 9306 (BY1465), 9704 (BY1467), 9705 (BY1468), 9706 (BY1469), 9708 (BY1470), 9720 (BY1473), and 9738 (BY1475): This office has previously determined that the facilities did not appear to meet the criteria for listing in the *National Register.* Therefore, we concur with your finding that the proposed demolitions will have no effect on the historic properties.

Facilities 16, 42, 45, 208, 216, 225, 226, 227, 239, 257, 268, 274, 295, 311, 335, 370, 474, 522, 530, 531, 542, 549, 745, 747, 821, 845, 914, 916, 934, 1013, 1014, 1015, 1016, 1017, 1036, 1046, 1060, 1126, 1149, 1150, 1152, 1246, 1259, 1305, 1307, 1309, 1314, 1315, 1316, 1317, 1318, 1332, 1360, 1361, 1380, 1381, 1404, 1406, 1410, 1454, 1506, 1580, 1582, 1812, 6005, 6008, 6010, 6015, 6021, 6022, 6023, 6027,

6028, 6030, 6032, 6034, 6060, 6063, 6067, 9432, 9443, 9444, 9456, 9461, 9496, 9497, 9727, 9729, 9730, and 9733: Based on the information provided, this office concurs with your findings that the facilities do not appear to meet the criteria for listing on the *National Register* and the proposed demolitions will have no effect on historic properties.

If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservationist, by electronic mail *scott.edwards@dos.myflorida.com*, or at 850.245.6333 or 800.847.7278.

Sincerely,



Timothy A. Parsons, Ph.D.
Director, Division of Historical Resources
and State Historic Preservation Officer

FLORIDA DEPARTMENT of STATE

RON DESANTIS
Governor

LAUREL M. LEE
Secretary of State

Mr. Jose Cintron
Chief, Environmental Element
325th Civil Engineer Squadron
119 Alabama Avenue, Mail Stop 42
Tyndall Air Force Base, Florida 32403-5014

March 27, 2020

Re: DHR Project No.: 2020-941
Proposed Demolition of Eighty (80) Facilities
Tyndall Air Force Base, Bay County

Dear Mr. Cintron:

This office reviewed the referenced projects for possible impact to historic properties listed, or eligible for listing, in the *National Register of Historic Places.* The review was conducted in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended and *36 CFR Part 800: Protection of Historic Properties*.

We note that Facilities 265, 909, 1652, 5009, 9349, and 9350 were destroyed during Hurricane Michael in 2018.

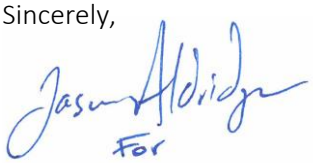
Facilities: 126, 127, 149, 150, 162, 164, 179, 181, 188, 217, 220, 235, 262, 270, 272, 273, 323, 333, 325, 503, 505, 509, 526, 630, 705, 928, 1132, 1262, 1263, 1287, 1476, 1540, 1680, 1723, 1769, 2580, 2600, 2610, 2894, 3027, 3137, 3140, 3142, 3149, 3155, 3160, 3216, 3350, 3351, 4025, 4027, 4572, 5013, 5018, 5024, 5030, 5033, 6004, 6014, 6016, 6033, 7062, 9400, 9420, 9421, 9525, 9737, 9739, 29408, 42260, 42275, and the facility North of 1735. Based on the information provided, this office concurs with your findings that the facilities do not appear to meet the criteria for listing on the *National Register* and the proposed demolitions will have no effect on historic properties.

In addition to documenting Facility 3160, this office recommends that Faculty 2894 [Capehart Fire Station] be recorded as well on a Florida Master Site File *Historic Structure* Form and submitted to our office.

Facility 703 has been determined to appear to meet the criteria for listing in the *National Register.* Therefore, we concur that the proposed demolition would constitute an adverse effect on the historic facility. We look forward to receiving addition documentation and continuing consultation with your office in order to avoid, minimize or mitigate the adverse effect.

If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservationist, by electronic mail *scott.edwards@dos.myflorida.com*, or at 850.245.6333 or 800.847.7278.

Sincerely,



Timothy A. Parsons, Ph.D.
Director, Division of Historical Resources
and State Historic Preservation Officer

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FLORIDA DEPARTMENT of STATE

RON DESANTIS
Governor

LAUREL M. LEE
Secretary of State

Mr. Jose Cintron
Chief, Environmental Element
325th Civil Engineer Squadron
119 Alabama Avenue, Mail Stop 42
Tyndall Air Force Base, Florida 32403-5014

June 7, 2019

Re: DHR Project No.: 2019-1801-B
Demolition Phase IV – 53 Facilities Damaged from Hurricane Michael
Tyndall Air Force Base, Bay County

Dear Mr. Cintron:

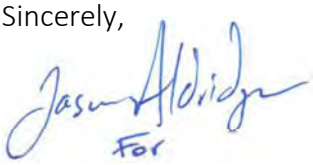
This office reviewed the referenced projects for possible impact to historic properties listed, or eligible for listing, in the *National Register of Historic Places.* The review was conducted in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended and *36 CFR Part 800: Protection of Historic Properties*.

Facilities 24 (BY1392), 26 (BY1393), 214 (BY2057), 912 (BY1414), 1286 (BY1423), 1467 (BY2313), 2899 (BY1433), 3029 (BY1193), 3218 (BY1436), 9718 (BY1471), 9719 (BY1472), 9725 (BY1474), 9742 (BY1476), and 9768 (BY1477). This office has previously determined that the facilities did not appear to meet the criteria for listing in the *National Register.* Therefore, we concur with your finding that the proposed demolitions will have no effect on the historic properties.

Facilities 219, 223, 228, 324, 856, 960, 1151, 1153, 1154, 1155, 1156, 1352, 1541, 1542, 1550, 1708, 2399, 2691, 2698, 3015, 3017, 3018, 3034, 3285, 4580, 5007, 5008, 6002, 9455, 9467, 9545, 9709, 9710, 9716, 9721, 9722, 9732, 9735, and 9766. Based on the information provided, this office concurs with your findings that the facilities do not appear to meet the criteria for listing on the *National Register* and the proposed demolitions will have no effect on historic properties.

If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservationist, by electronic mail *scott.edwards@dos.myflorida.com*, or at 850.245.6333 or 800.847.7278.

Sincerely,



Timothy A. Parsons, Ph.D.
Director, Division of Historical Resources
and State Historic Preservation Officer

FLORIDA DEPARTMENT of STATE

RON DESANTIS
Governor

LAUREL M. LEE
Secretary of State

Mr. Jose Cintron
Chief, Environmental Element
325th Civil Engineer Squadron
540 Mississippi Avenue, Mail Stop 42
Tyndall Air Force Base, Florida 32403-5014

November 19, 2019

Re: DHR Project No.: 2019-6976 / Received by DHR: November 13, 2019
Historic Building Evaluation Report - Building 462
Tyndall Air Force Base, Bay County

Dear Mr. Cintron:

Our office reviewed the referenced project in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended.

Based on the information provided, this office concurs that Building 462 does not appear to meet the criteria for listing on the National Register of Historic Places.

We find the submitted historical structure form complete and sufficient. We note that the form has been assigned the identification number 8BY2643 and will be forwarded to the Florida Master Site File Office.

We would like to compliment your office on the thoroughness of the documentation. If you have any questions concerning our comments, please contact Scott Edwards, Historic Preservationist, by electronic mail *scott.edwards@dos.myflorida.com*, or at 850.245.6333 or 800.847.7278.

Sincerely,

Jason Aldridge
For

Timothy A. Parsons, Ph.D.
Director, Division of Historical Resources
and State Historic Preservation Officer

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USFWS Correspondence

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DEPARTMENT OF THE AIR FORCE
325TH CIVIL ENGINEER SQUADRON (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Ms. Donna L. Barber
Chief, Installation Management Flight
325th Civil Engineer Squadron
540 Mississippi Ave
Tyndall AFB FL 32403

Dr. Sean M. Blomquist
U.S. Fish and Wildlife Service
1601 Balboa Avenue
Panama City FL 32405

Dear Dr. Blomquist

The United States Air Force has prepared a Draft Environmental Assessment (EA) to evaluate the potential environmental impacts associated with the recovery efforts at Tyndall Air Force Base (AFB), Florida. The Draft EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

The Air Force is planning demolition, construction and renovation of numerous facilities throughout Tyndall AFB that were severely damaged by Hurricane Michael in 2018 (collectively referred to as the Proposed Actions). With these Proposed Actions, 28 individual projects spanning six planning areas throughout the installation would be constructed. Three additional projects have been identified which cover more than one planning area, and would demolish 264 buildings, conduct drainage improvements, and construct or upgrade utilities across the installation. The purpose of implementing the Proposed Actions at Tyndall AFB is to recover mission capabilities impacted by Hurricane Michael. The need for the Proposed Actions is to rebuild Tyndall AFB to a fully operational base, thereby providing new facilities/infrastructure, as well as executing repair, demolition and functionality improvements necessary to support existing missions and tenant units.

An initial scoping letter that requested your comments on the Proposed Actions was mailed to you on October 15, 2019. Since then, the Air Force prepared a draft EA to analyze the potential impacts of the Proposed Actions. The draft EA assesses the potential environmental impacts associated with the Proposed Actions, and examines the cumulative effects when combined with past, present, and any future proposals. A copy of the draft EA and associated draft Finding of No Significant Impact (FONSI) are enclosed for your review and comment.

Please provide your comments within 30 days of receipt of this letter. Address all questions and comments to Mr. Jose J. Cintron at jose.cintron.1@us.af.mil, (850) 283-4341, or via mail at

Jose J. Cintron, 325 CES/CEIE, 540 Mississippi Ave, Tyndall AFB FL 32403. Thank you in advance for your assistance in this effort.

Sincerely

BARBER.DONNA.L.1029350945 Digitally signed by BARBER.DONNA.L.1029350945 Date: 2020.01.13 12:34:51 -06'00'

DONNA L. BARBER, GS-13, DAF

Attachment:
Draft EA/FONSI

DEPARTMENT OF THE AIR FORCE
325TH CIVIL ENGINEER SQUADRON (ACC)
TYNDALL AIR FORCE BASE FLORIDA

Mr. José J. Cintron
Chief, Environmental Element
325th Civil Engineer Squadron
540 Mississippi Ave
Tyndall AFB FL 32403-5014

Dr. Sean Blomquist
Acting Project Leader
U.S. Fish and Wildlife Service
1601 Balboa Ave.
Panama City, FL 32405

Dear Dr. Blomquist

This letter is to inform you that Tyndall Air Force Base (AFB) is submitting a Biological Assessment (Attachment 1) and requesting consultation with your office in accordance with Section 7 of the Endangered Species Act. New information reveals effects of an action that may affect listed species in a manner not previously considered. Currently, Tyndall AFB is undergoing infrastructure design planning, demolition, and construction related the rebuild effort as a result of damage incurred from Hurricane Michael on October 10, 2018. The project is ongoing and is scheduled to be completed by November 2021.

Surveys for the presence of federally threatened, endangered, candidate species, and species proposed for listing were conducted from August 27 to October 24, 2019 as part of the Biological Evaluation for the proposed infrastructure construction. During surveys of the proposed gate complex locations, a population of federally threatened *Euphorbia telephioides* (Telephus Spurge) was discovered. A thorough survey of the area allowed us to determine that 295 plants were present within the boundary of the proposed commercial gate area.

Tyndall AFB has made the determination that the current construction plan will adversely impact the entire population of *Euphorbia telephioides* at the site. Tyndall's recommendation is to restore and enhance former slash pine plantations that were clearcut subsequent to Hurricane Michael to improve habitat for the other two known populations of *Euphorbia telephioides* on Tyndall AFB. Restoration will involve reforesting with longleaf pine seedlings coupled with low intensity, frequent fire promoting burning during the growing season on a 2-3 year fire return interval. We anticipate population numbers of *Euphorbia telephioides* to increase on Tyndall AFB as a result of sound forest management practices.

Should you have any questions, comments, or recommendations, please contact me at (850) 283-4341 or e-mail: jose.cintron.1@us.af.mil.

Sincerely

CINTRON.JOSE.J.1182275146 Digitally signed by CINTRON.JOSE.J.1182275146 Date: 2020.01.22 13:21:07 -06'00'

JOSÉ CINTRON, GS-12, DAF

Attachment:
1. Biological Assessment to Determine Impacts to Federally-Listed Species from Tyndall AFB's Hurricane Reconstruction Program.

Biological Assessment to Determine Impacts to Federally-Listed Species from Tyndall Air Force Base's Hurricane Reconstruction Program

1. Introduction

This document is being submitted to fulfill requirements under Section 7 of the Endangered Species Act (ESA). Briefly, this report addresses potential impacts to all federally-listed threatened and endangered (T&E) species associated with the recovery of Tyndall Air Force Base (AFB) from the damage incurred by a major hurricane in October 2018. This Biological Assessment (BA), conducted by the 325th Civil Engineer Environmental Element, Natural Resources (325 CES/CEIEN), is meant to initiate the consultation process with the U.S. Fish and Wildlife Service (USFWS) pursuant to Section 7 of the ESA. The objectives of this BA are to:

1. Describe the affected environment and its likelihood to support any T&E species.
2. Name federally listed T&E species occurring or potentially occurring on Tyndall AFB and describe their range, habitat and their occurrence in the action area.
3. Describe the effects of the proposed action on each listed species or critical habitat.
4. Describe conservation measures that have the potential to impact, either beneficially or adversely, those documented species.
5. Determine and quantify what effects the proposed activities will likely have on federally listed species.

2. Location

Tyndall AFB is located in the southeast corner of Bay County in the Florida panhandle and covers approximately 30,000 acres (12,140 hectares [ha]), approximately 13 miles (20 kilometers [km]) east of Panama City, Florida. The base is a combination of developed and natural areas located on a peninsula that is bisected by U.S. Highway 98. The base is approximately 18 miles (29 km) long and 3 miles (4.8 km) wide, and is surrounded by East Bay, St. Andrew Bay, and the Gulf of Mexico (GOM) to the north, west, and south, respectively. Crooked Island West (CIW) and Crooked Island East (CIE), which form St. Andrew Sound, are barrier spits on the Gulf. Tyndall AFB is composed of approximately 23,350 acres (9,449 ha) of unimproved land, 1,080 acres (437 ha) of semi-improved land, and 4,840 acres (1,958.7 ha) of improved land.

3. Proposed Action

On 10 October 2018, Tyndall Air Force Base (AFB) took a direct hit from Hurricane Michael, with maximum sustained wind speeds of 160 mph. Installation infrastructure was severely damaged and utility networks, communications, and roadways were disrupted/impacted. Over 200 facilities were considered damaged beyond repair from an economical standpoint. Base infrastructure that sustained storm damage included facilities on the flightline, support side, and 9700 Areas. The demolition and reconstruction activities associated with the proposed action will be initiated in FY20 and are proposed to be completed within 6 years from the initiation of construction.

Under the Proposed Action, Tyndall AFB, proposes to repair several facilities, demolish 264 buildings, construct 26 individual facilities, construct multiple facilities in three separate

complex areas, conduct drainage improvements, and new or upgraded utilities spanning six planning areas throughout Tyndall AFB; Flightline Area, Support Area, 9700 Area-Crooked Island (AF Civil Engineering Center Research, Development, Testing & Evaluation), Subscale Drone Area, Silver Flag Area, and Munitions Area. The reconstruction program will meet current mission requirements and improve mission efficiencies by realigning mission sets that would provide capacity for future growth.

Construction of a Commercial Gate (30.060237, -85.579629) with an entry and large vehicle inspection station on the Support Side of the installation is a component of the installation reconstruction (Figure 1). The proposed Commercial Gate Complex area is 33.5 acres that will include one Gate House (500 SF), two Lane Houses (900 SF), six lanes (three in and three out) and one Vehicle Inspection Port (3,740 SF) (AECOM 2019). The vehicle inspection port is a two-bay building for authorizing and inspecting larger/heavy duty vehicles entering at the Commercial Gate and includes six active/passive for the protection of restricted or controlled areas or any area where threat of terrorism is imminent. Supporting facilities include a canopy (4,500 SF) and overwatch facility (900 SF). The perimeter fence will span the site of the gates' primary and supporting facilities and will be 11,000 LF. Heavy equipment will used to clear the site of all vegetation, and expose and level the area in advance of construction of buildings and road paving. Anticipated construction timeline is July through November 2021. There is no proposed alternative location for this project.

Figure 1. Proposed Action Area

4. Action Area

The action area for the proposed Commercial Gate (Figure 1) encompasses 33.5 acres of previously forested land with a native groundcover component. The action area was recently cleared of timber that was damaged as a result of Hurricane Michael. Elevation ranges from 24-28 feet above mean sea level. Soil is a sandy, well-drained soil (Resota Fine Sand) with a white, fine sand surface about 1-2 mm thick with a brown, sandy, organic layer underneath (over 1" thick). Woody debris is abundant as a result of tree removal activities debris is primarily less than 1" in diameter covering the surface of the soil throughout the area leaving only small areas of exposed bare soil.

Overstory is absent (clear cut all damaged timber), midstory consists primarily of dense clumps of *Quercus myrtifolia* and *Quercus minima* with other shrubs and small trees present including *Conradina canescens, Chrysoma pauciflosculosa*, *Lyonia ferruginia, Lyonia fruticosa, Lyonia lucida, Ilex vomitoria, Ilex glabra, Pinus elliottii, Persea palustris,* and *Serenoa repens*. Dominant herbaceous species present in the understory include *Licania michauxii, Dichanthelium aciculare, Crocanthemum* spp., *Heterotheca subaxillaris, Tragia urens, Euphorbia telephioides, Andropogon* spp., *Liatris spicata*, *Smilax auriculata, Vitis rotundifolia, Smilax glauca, Rubus trivialis, Smilax laurifolia,* and *Smilax bona-nox*.

5. Protected Resources Present

As part of the Programmatic Environmental Assessment for Hurricane Recovery and Installation Development at Tyndall AFB, surveys for federally listed and candidate species were conducted and a Biological Evaluation was prepared. During surveys of the action area (proposed commercial gate location), a population of federally threatened *Euphorbia telephioides* (Telephus Spurge) was discovered. A thorough survey of the area allowed us to determine that 295 plants were present within the boundary of the action area (Figure 2). Meander surveys were conducted throughout most the 33.5 acre action area where access was possible. Skilled Botanists employed by the Longleaf Alliance conducted to surveys and provided a description of the Action Area. Waypoints were recorded when plants or clusters were observed and subsequently mapped (Figure 2).

Figure 2. *Euphorbia telephioides* within Proposed Action Area

The population of *E. telephioides* was discovered 08/27/2019 and a formal population count was conducted in October 2019 revealing the presence of 295 stems. Within the 33.5-acre action area, 2.7 acres is occupied by *E. telephioides*. The area occupied extends along 150 yards of the sand road (Ohio Avenue) to a maximum distance of 80 yards to the east of the road and 75 yards to the west of the road. The population inhabits 0.5 acre area on the east side of Ohio Avenue and 1.33 acres on the west side of Ohio Avenue. The population of *E. telephioides* in the action area is located on the highest sand ridge and is classified as Scrub (FNAI 2010).

E. telephioides is a perennial herbaceous plant species listed as federally threatened and state endangered and is currently restricted to coastal (within 4 miles of the coast) Bay, Franklin, and Gulf counties in the Florida panhandle (USFWS 2007). Populations of this species have been observed on a variety of sites including xeric scrub pine to mesic pine flatwoods, disturbed sandy roads, and less commonly in wetlands with seepage slope species. Telephus spurge can also be found in pine flatwoods or upland pine communities with a longleaf pine and/or slash pine overstory and herbaceous understory dominated by wiregrass, other grasses, and forbs that have historically been burned on a 2 to 3 year fire return interval. It is generally found inhabiting sites with sandy, acidic soil with little to no litter and low organic and moisture content (Peterson and Campbell 2007). This species is characterized as ephemeral in that it can appear suddenly and

be abundant at newly disturbed sites but may not be there upon re-survey a few years later (USFWS 2007). Large tuberous roots allow this species to survive underground when subjected to suboptimal or poor habitat conditions. The primary threats to telephus spurge include habitat degradation and destruction caused by commercial timber production, inadequate prescribed fire management, fire exclusion, and urban development.

Prescribed fire is the most important management tool for improving or maintaining critical habitat for telephus spurge at Tyndall AFB as this species is thought to respond with prolific emergence following fire (M. Kaeser, Personal Observation). The Tyndall Natural Resources Staff and USFWS hve been working to promote more burning during the growing season as well as burning on an 18-30 month fire return interval, benefiting *E. telephioides* and its habitat. Future longleaf pine restoration efforts in clearcut areas (storm damaged areas) coupled with low intensity, frequent fire will improve potential habitat for *E. telephioides* on Tyndall (INRMP 2015). Monitoring for populations of *E. telephioides* are conducted annually on the two other known populations (Figure 3). Population counts conducted in 2018 documented 13,058 stems at the PQM Lake Site (North of Highway 98) and 6,367 stems at the EOD Range Site (South of Highway 98).

Figure 3. Other locations of telephus spurge on Tyndall AFB

6. Effects of Action on Protected Resources
It is anticipated that the entire population (295 stems) of *E. telephioides* present within in the action area will be impacted. Due to the location of *E. telephioides* within the action area, the proposed action that will involve removing groundcover, infrastructure construction, and pavement of new roads will result in the permanent destruction of the habitat and population. We conclude that the proposed action MAY AFFECT, LIKELY TO ADVERSELY AFFECT the population of *E. telephioides* in the action area.

Tyndall AFB, USFWS Liaison (Melanie Kaeser) contacted the USFWS Panama City Field Office by way of phone and email. History of contacts made with the service is outlined below in Section 8 – History of Contacts Made with USFWS.

7. Cumulative Effects Analysis
Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant section 7 of the act (USFWS and NMFS 1998).

There are no planned future State, Tribal, local, or private actions in the action area precluding the need for assessing cumulative effects.

8. History of Contacts Made with USFWS
Date: 15 November 2019
Contact Name: Dr. Vivian Negron-Ortiz (USFWS Botanist)
Field Office: Panama City Office
Contacted By: Melanie Kaeser (USFWS Liaison – Tyndall AFB)
Type of Contact: phone call
Outcome of Call: Vivian suggested that Tyndall AFB provide her with a description of alternative sites (stated in Biological Evaluation). Avoidance of all impacts to the population of the federally threatened *Euphorbia telephioides* was recommended because this plant species can't be translocated. Melanie provided shapefiles and number of plants found to Vivian after the call. If impacts are unavoidable, Tyndall will have to outline direct and indirect effects, conservation measures, etc.

Date: 12 December 2019
Contact Name: Dr. Sean Blomquist (USFWS Acting Project Leader), Dr. Vivian Negron-Ortiz (USFWS Botanist)
Field Office: Panama City Field Office
Contacted By: Melanie Kaeser (USFWS Liaison – Tyndall AFB)
Type of Contact: Email
Outcome of Email: Melanie contacted USFWS office stating that there were no proposed alternative sites for the commercial gate and impacts to a population of Euphorbia telephioides will be unavoidable. Vivian recommended initiation of consultation stating "To initiate consultation, please review the information here https://www.fws.gov/panamacity/section7.html,

and submit accordingly. Important is to agree upon possible recommendations for this population."

List of Preparers

1. Melanie Kaeser, Liaison/Supervisory Fish and Wildlife Biologist – Tyndall AFB
2. Jose Cintron, Environmental Flight Chief – Tyndall AFB

7. Literature Cited

AECOM, July 2019. Tyndall Air Force Base Recovery Plan and Analysis of Alternatives Report. Prepared for Air Force Engineer Center.

Florida Natural Areas Inventory (FNAI). 2010. Guide to the natural communities of Florida: 2010 edition. Florida Natural Areas Inventory, Tallahassee, FL.

Kaeser, M. 2018. Personal Observation.

Peterson, C.L. and C.C. Campbell. 2007. Seed collection and research on eight rare plant species of the Florida Panhandle region. USFWS grant agreement 401815G173.

Tyndall Air Force Base Integrated Natural Resources Management Plan (INRMP). July 16, 2015. Tyndall Air Force Base, Florida.

U.S. Fish and Wildlife Service. 2007. Euphorbia telephioides (telephus spurge) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service southeast region. Panama City Field Office. Panama City, Florida.

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United States Department of the Interior

FISH AND WILDLIFE SERVICE

Panama City Field Office
1601 Balboa Ave
Panama City, FL 32405

Tel: (850) 769-0552
Fax: (850) 763-2177

March 25, 2020

Mr. José J. Cintron
Chief, Environmental Element
325th Civil Engineer Squadron
540 Mississippi Ave
Tyndall AFB FL 32403-5014

Subject: Biological Opinion – Construction of a Commercial Gate
FWS Log **#:** 04EF3000-2020-I-0145

Dear Mr. Cintron:

This letter transmits the enclosed biological opinion (BO) of the U.S. Fish and Wildlife Service (Service) for the Construction of a Commercial Gate. The Tyndall AFB proposes to construction of a Commercial Gate (Action), a 33.5 acre area that will include one Gate House, two Lane Houses, six lanes, and one Vehicle Inspection Port; total of 5,140 SF. The effect of the Action will result in direct loss of 295 *E. telephioides* plants with corresponding loss of habitat (2.7 acres). The Service received on 01/24/2020, your letter requesting formal consultation for the Action described in 'Biological Assessment to Determine Impacts to Federally-Listed Species from Tyndall Air Force Base's Hurricane Reconstruction Program.' You determined that the Action is likely to adversely affect the population of *E. telephioides*. The Service concurs with this determination, for reasons we explain in section 2 of the BO.

The enclosed BO answers your request for formal consultation, and concludes that the Action is not likely to jeopardize the continued existence of the *E. telephioides*. This finding fulfills the requirements applicable to the Action for completing consultation under §7(a)(2) of the Endangered Species Act (ESA) of 1973, as amended.

The BO includes an Incidental Take Statement and Conservation Recommendations. Tyndall AFB agreed to implement several measures that the Service considers necessary or appropriate to improve knowledge of species requirements to meet the ultimate goal of the ESA; see section 6 of the BO.

Reinitiating consultation is required if the Tyndall AFB retains discretionary involvement or control over the Action (or is authorized by law) when:

a. the amount or extent of incidental take is exceeded;

b. new information reveals that the Action may affect listed species or designated critical habitat in a manner or to an extent not considered in this BO;
c. the Action is modified in a manner that causes effects to listed species or designated critical habitat not considered in this BO; or
d. a new species is listed or critical habitat designated that the Action may affect.

A complete administrative record of this consultation is on file in our office at the letter-head address. If you have any questions about the BO, please contact Dr. Negrón-Ortiz by phone at 8507690552 ex. 45231or by email at vivian_negronortiz@fws.gov.

Sincerely,

Dr. Sean Blomquist
Acting Field Supervisor

Enclosure

Biological Opinion

Construction of a Commercial Gate
Tyndall Air Force Base

FWS Log #: 04EF3000-2020-I-0145

Prepared by:

U.S. Fish and Wildlife Service
Panama City Field Office
1601 Balboa Ave.
Panama City, FL 32405

Dr. Sean Blomquist, Acting Field Supervisor

Date

TABLE OF CONTENTS

CONSULTATION HISTORY

This section lists key events and correspondence during the course of this consultation. Key events and correspondence prior to receiving the Biological Assessment (BA) are detailed in the Tyndall Air Force Base's BA pages 6 and 7.

Other key correspondence:

01/24/2020 The Service received via email a copy of the Air Force Base's BA for the proposed project.
03/19/2020 The Service corresponded via email with Melanie Kaeser (USFWS Liaison – Tyndall AFB) recommending several conservation recommendations.
03/20/2020 The USFWS Liaison – Tyndall AFB responded via email to the Service that Tyndall approved the suggested conservation recommendations.

A complete administrative record of this consultation is on file in the Service's Panama City Field Office (PCFO).

BIOLOGICAL OPINION

1. INTRODUCTION

A biological opinion (BO) is the document that states the findings of the U.S. Fish and Wildlife Service (Service) required under section 7 of the Endangered Species Act of 1973, as amended (ESA), as to whether a Federal action is likely to:

- jeopardize the continued existence of species listed as endangered or threatened; or
- result in the destruction or adverse modification of designated critical habitat.

The Federal action addressed in this BO is the Tyndall Air Force Base's (Tyndall AFB) proposed Construction of a Commercial Gate (the Action). This BO considers the effects of the Action on *Euphorbia telephioides* (telephus spurge). There is no USFWS designated critical habitat for this species; therefore this BO does not address critical habitat.

The Service concludes that the proposed Federal action is *not* likely to *jeopardize the continued existence* of this listed species and fulfills the Federal agency's responsibilities under §7(a)(2) of the ESA.

> "*Jeopardize the continued existence* means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR §402.02).

2. PROPOSED ACTION

Hurricane Michael damaged the installation infrastructure at Tyndall Air Force. The Tyndall AFB proposed a reconstruction program to meet and improve their current mission requirements. One action is the construction of commercial gate. For a detailed description of the proposed action, see Tyndall AFB's BA pages 1-2.

2.1. Construction of a Commercial Gate

One element of the reconstruction program is the construction of a Commercial Gate, a 33.5 acre area that will include one Gate House, two Lane Houses, six lanes, and one Vehicle Inspection Port; total of 5,140 SF (BA 2020). Land clearing will include removal of all existing vegetation using heavy equipment. The BA (2020) projected a construction timeline from July through November 2021. Alternative location for this project was not suggested. For more information, see Tyndall AFB's BA page 2.

To compensate for impacts that are caused by the Action activity, the Tyndall AFB agreed (via email message dated 03/20/2020) to conservation measure # 2 (see Section 6).

2.2. Other Activities Caused by the Action

A BO evaluates all consequences to species or critical habitat caused by the proposed Federal action, including the consequences of other activities caused by the proposed action, that are reasonably certain to occur (see definition of "effects of the action" at 50 CFR §402.02). Additional regulations at 50 CFR §402.17(a) identify factors to consider when determining whether activities caused by the proposed action (but not part of the proposed action) are reasonably certain to occur. These factors include, but are not limited to:

(1) past experiences with activities that have resulted from actions that are similar in scope, nature, and magnitude to the proposed action;
(2) existing plans for the activity; and
(3) any remaining economic, administrative, and legal requirements necessary for the activity to go forward.

In its request for consultation, the Tyndall AFB did not describe, and the Service is not aware of, any additional activities caused by the Action that are not included in the previous description of the proposed Action. Therefore, this BO does not address further the topic of "other activities" caused by the Action.

2.3. Action Area

The action area is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR §402.02). Delineating the action area is necessary for the Federal action agency to obtain a list of species and critical habitats that may occur in that area, which necessarily precedes any subsequent analyses of the effects of the action to particular species or critical habitats.

It is practical to treat the action area for a proposed Federal action as the spatial extent of its direct and indirect "modifications to the land, water, or air" (a key phrase from the definition of "action" at 50 CFR §402.02). Indirect modifications include those caused by other activities that

would not occur but for the action under consultation. The action area determines any overlap with critical habitat and the physical and biological features therein that we defined as essential to the species' conservation in the designation final rule. For species, the action area establishes the bounds for an analysis of individuals' exposure to action-caused changes, but the subsequent consequences of such exposure to those individuals are not necessarily limited to the action area.

Figure 1 [also see Fig. 1 from BA (2020)] shows the location of activities that the proposed Action would cause and the spatial extent of reasonably certain changes to land, water, or air caused by these activities, based on the descriptions and analyses of these activities in sections 2.1. The Action Area for this BO includes 33.5 acres of formerly forested land that was impacted by Hurricane Michael, and subsequent cleared of timber. According to the BA (2020), the Action will impact 295 *E. telephioides* stems (Fig. 1) and associated habitat.

2.4. Figure

Fig. 1. Action area (orange) and telephus spurge plants (green) to be impacted by the construction of a Commercial Gate.

3. SOURCES OF CUMULATIVE EFFECTS

A BO must predict the consequences to species caused by future non-Federal activities within the action area, *i.e.*, cumulative effects. "Cumulative effects are those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation" (50 CFR §402.02). Additional regulations at 50 CFR §402.17(a) identify factors to consider when determining whether activities are reasonably certain to occur. These factors include, but are not limited to: existing

plans for the activity; and any remaining economic, administrative, and legal requirements necessary for the activity to go forward.

In its request for consultation, Tyndall AFB did not describe, and the Service is not aware of, any future non-Federal activities that are reasonably certain to occur within the Action Area. Therefore, we anticipate no cumulative effects that we must consider in formulating our opinion for the Action.

4. EUPHORBIA TELEPHIOIDES

This section provides the Service's biological opinion of the Action for the *E. telephioides*. The primary references for this section are the most recent 5-year review of the species written in 2015, and Negrón-Ortiz and Kaeser 2020 (*In Press*) study.

4.1. Status of *E. telephioides*

This section summarizes best available data about the biology and condition of the *E. telephioides* throughout its range that are relevant to formulating an opinion about the Action. The Service published its decision to list this species as threatened on June 8, 1992 (57 FR 19813). A recovery plan was approved on June 22, 1994. A 5-year status review was completed in March 2008 and updated in 2015. No critical habitat has been designated for this species.

Euphorbia telephioides meets the definition of a threatened species because the present threat of habitat modification via development and road construction and maintenance remains significant. In addition, the criteria for delisting the species, i.e., protect and manage 15 populations distributed throughout the species' historical range for 10 years, have not been met. The plant's distribution has remained stable, and few long-term extirpations have been documented. Consultation under section 7 of the Act has resulted in minimizing impacts from powerline maintenance and a few developments.

4.1.1 Species Description

Euphorbia telephioides is a perennial herbaceous plant of about 30-40 cm in height. The leaves are alternate and somewhat succulent, an adaptation to decrease evaporation during seasonal water stress. It has one to three, occasionally more low stems conveying a bushy appearance, and possesses a long tuberous root. It is polygamodioecious, with staminate (male), pistillate (female), and monoecious plants. Flowering is from March through August with terminal umbellate inflorescences modified into reddish-green cyathia. Ovaries develop into capsules with explosive dehiscence when ripe.

4.1.1. Life History

Euphorbia telephioides plants are long-lived, possess a long-tuberous root, and are adapted to disturbance events such as fire. This species is composed of males, females, and monoecious plants with labile gender expression. Adults and seedlings exhibit winter dormancy and non-

synchronized summer dormancies as well as prolonged vegetative dormancy that help minimize exposure to seasonally stressful environmental conditions. Seeds possess a physiological dormancy, tolerate fire to a certain degree of intensity, and persist in the field less than one year; thus, soil seed bank is unlikely to maintain populations in the face of environmental stochasticity. Seedlings can resprout back after fire, but their long-term contribution to *E. telephioides* persistence is unknown.

This species occurs in xeric to mesic pine flatwoods and in scrubby pinelands dominated by longleaf pineand/or slash pine with an understory composed of wiregrass and other native herbaceous species on well-managed sites. *Euphorbia telephioides* can persist on sites with a midstory shrub component that encroaches in the absence of frequent prescribed fire, but those conditions may become unsuitable over time. Uncommonly, *E. telephioides* has been found in wetlands with seepage slope species and in small thick clumps of wiregrass surrounded by pine or cypress (Rountree et al. 2005). *Euphorbia telephioides* also ocurs in upland communities, which have been historically burned on a two to three year fire return interval, and locally abundant along disturbed sandy, sunny roads, and in bedded pine plantations sites.

4.1.2. Numbers, Reproduction, and Distribution

Euphorbia telephioides is restricted to the Florida panhandle, to coastal Bay, Franklin, and Gulf counties. Currently, there are 41 known sites, with the majority (78%) occurring on private land (Table 1). Development has resulted in extirpation and high fragmentation of 29% of current sites (Table 1).

Recruitment is low, but established seedlings can resprout after winter and summer dormant periods. Long-term seedling survival is unknown and necessary for the persistence of this species in the wild. In addition, *E. telephioides* does not respond well to transplantation.

Fire is an important management tool needed to maintain the ecosystems where this species occurs. In the absence of fire, shrubs encroach the midstory becoming unnaturally dense in turn decreasing the presence of the herbaceous understory. Many *E. telephioides* locations originally described with abundant plants have been found in subsequent surveys to be variably altered, thus possibly interfering with the search for telephus spurge.

Table 1. Number of *E. telephioides* sites. Data were summarized from USFWS 2015.

Site	# of sites	# extirpated	# fragmented	# Managed land: private (P), State (S)
Bay	6	2	1	6P
Gulf	23	3	1	18P, 5S
Franklin	12	4	1	8P, 4S
Total	41	9	3	32(P), 9(S)

4.1.3. Conservation Needs and Threats

Habitat destruction and modification are the primary threats identified in the Recovery Plan for *E. telephiodes*, and remain the main threats to date for this plant. Timbering (clearcutting, mechanical site preparation, and pine plantations), urban development, and fire management and

suppression (declining fire frequency reduces telephus spurge abundance in areas where it was previously observed in great quantities) in this region had changed the ecosystems and extirpated some populations (Table1). Use of herbicides within powerline ROWs may also adversely affect telephus spurge.

Euphorbia telephioides is at risk of decline from Sea level rise (SLR) because its seeds are not dispersed over large distances impeding the inland migration of this species. As more coastline is inundated with water, urban development will expand, decreasing the amount of suitable habitat and impeding the ability of this species to move landward.

Therefore, locating and protecting new populations, identifying prospective sites for reintroductions, translocation, and augmentation such as areas that will not be affected by SLR and future development, and management are necessary to conserve this species.

4.2. Environmental Baseline for *E. telephioides*

This section describes the best available data about the condition of the *E. telephioides* in the Action Area without the consequences caused by the proposed Action.

4.2.1. Action Area Numbers, Reproduction, and Distribution

Euphorbia telephioides site was discovered on 08/27/2019, and a complete survey was conducted in October 2019. According to the BA (2020), 2.7 acres (of the total 33.5-acre Action area) is occupied with 295 *E. telephioides* stems. The area occupied extends along 150 yards of the sand road (Ohio Avenue) to a maximum distance of 80 yards to the east of the road and 75 yards to the west of the road (taken verbatim from BA 2020).

4.2.2. Action Area Conservation Needs and Threats

It is unknown the *E. telephioides* vital rates (mortality, growth, and reproduction) in the action area since it was recently discovered. The main threats to date for this species are habitat destruction and modification; therefore, locating, protecting and managing new populations are top actions needed for recovery.

4.3. Effects of the Action on *E. telephioides*

In a BO for a listed species, the effects of the proposed action are all reasonably certain consequences to the species caused by the action, including the consequences of other activities caused by the action. Activities caused by the action would not occur but for the action. Consequences to species may occur later in time and may occur outside the action area.

The Construction of a Commercial Gate complex will be impacting *E. telephioides* plants because the Action will occur in habitat occupied by this species. The Action involves removing groundcover, infrastructure construction, and pavement of new roads. The effect of the Action will result in direct loss of all *E. telephioides* plants with corresponding loss of habitat (2.7 acres;

Fig. 1). The disturbance would be compensated by implementing several of the conservation recommendations specified in the BO.

4.4. Cumulative Effects on *E. telephioides*

In section 3, we did not identify any activities that satisfy the regulatory criteria for sources of cumulative effects. Therefore, cumulative effects to *E. telephioides* are not relevant to formulating our opinion for the Action.

4.4.1. Summary and Conclusion for *E. telephioides*

In this section, we summarize and interpret the findings of the previous sections (status, baseline, effects, and cumulative effects) relative to the purpose of the BO for the species, which is to determine whether the Action is likely to jeopardize its continued existence.

There are two other documented *E. telephioides* sites within Tyndall AFB. This is an estimated number of sites given that other areas on the installation with suitable habitat have not be surveyed to date. Although, this new population within the Action was not previously documented, it will be permanently impacted. However, the Action would not have noticeable effect on the survival and recovery of *E. telephioides.* The Service has evaluated several development projects in Bay County in past years, and has conducted formal consultation for *E. telephioides* for one of these projects.

The species' recovery potential is high, as the management needs are well understood and documented to have a high probability of success. However, the species is in conflict with development and growth due to the high degree of habitat destruction. In many *E. telephioides* populations, the total numbers of plants are numerous, and can be maintained with adequate management and conservation, yet, a few extirpations have been documented. As developmental pressures increase, the status of this species could potentially change from threatened to endangered.

Cumulative Effects

After reviewing the status of the species, the environmental baseline for the Action Area, the effects of the Action and the cumulative effects, it is the Service's biological opinion that the Action, resulting in the loss of 2.7 acres occupied by 295 *E. telephioides* stems, is not likely to jeopardize the continued existence of ***E. telephioides***. No critical habitat has been designated for this species; therefore, none will be affected

5. INCIDENTAL TAKE STATEMENT

ESA §9(a)(1) and regulations issued under §4(d) prohibit the take of endangered and threatened fish and wildlife species without special exemption. The term "take" in the ESA means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (ESA §3(19)). In regulations, the Service further defines:

- "harm" as "an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering;" (50 CFR §17.3) and
- "incidental take" as "takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant" (50 CFR §402.02).

Under the terms of ESA §7(b)(4) and §7(o)(2), taking that is incidental to a Federal agency action that would not violate ESA §7(a)(2) is not considered prohibited, provided that such taking is in compliance with the terms and conditions of an incidental take statement (ITS).

This BO evaluated effects of the Action on the threatened *E. telephioides*. ESA §7(b)(4) and §7(o)(2), which provide the authority for issuing an ITS, do not apply to listed plant species. However, ESA §9(a)(2) prohibits certain acts with respect to endangered plant species, including:

(a) remove and reduce to possession from areas under Federal jurisdiction;
(b) maliciously damage or destroy on areas under Federal jurisdiction; and
(c) remove, cut, dig up, or damage or destroy on any other area in knowing violation of any law or regulation of any State or in the course of any violation of a State criminal trespass law.

Regulations issued under ESA §4(d) extend the prohibition under (a) above to threatened plant species (50 CFR §17.71). The damage or destruction of endangered and threatened plants that is incidental to (not the purpose of) an otherwise lawful activity is not prohibited.

6. CONSERVATION RECOMMENDATIONS

§7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by conducting conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary activities that an action agency may undertake to avoid or minimize the adverse effects of a proposed action, implement recovery plans, or develop information that is useful for the conservation of listed species. The Service offers the following recommendations that are relevant to the listed species addressed in this BO and that we believe are consistent with the authorities of the Tyndall AFB. Tyndall AFB agreed to implement recommendation #2 in the email correspondence dated 03/20/2020.

1. Avoid impacting *E. telephiodes* plants in the Action area.
2. If impacts to the plants with corresponding habitat cannot be avoided, then:

    a. *In*- and *ex- situ* plant relocation and post-transplanting monitoring.
    A knowledgeable botanist/consultant should be onsite to advise responsible groups on how to transplant plants to the proposed relocation site. A relocation plan as well as a post-transplanting monitoring plan should be developed in collaboration with FWS botanist. The plants should be monitored for at least five years and an annual report, including a copy of all data collected, be provided to the Service. For this recommendation, all *E. telephioides* sexual morphs should be identified, collected and transplanted.

b. Collect seeds from female and monoecious plants and test viability (germination potential) using tetrazolium staining solution or other approaches
c. Conduct root tip squashes from actively growing root tips for the study of chromosome number and ploidy-level.
d. Collect and plant seeds, if available, into a suitable habitat within the Tyndall AFB, and monitor germination and seedling survival over time, preferably > 5 years. An annual report should be provided to the Service.
e. Collect voucher specimens (e.g., herbarium specimens, samples for DNA analyses, preserve material and seeds) and distribute to herbaria, botanical gardens i.e., Bok Tower Garden, Atlanta Bot. Garden, and interested scientists.

3. Integrate *E. telephioides* plants as part of the facilities' green space. Landscaping and restoration initiatives such as planting native species obtained within the Action are encouraged. Since impacts to the plants with corresponding habitat cannot be avoided, relocation of some plants to facilities' green space (once the Action is completed) is also recommended.

4. Develop a comprehensive management plan or a programmatic BO for federally listed plant species occurring at Tyndall AFB. The documents should addresses cumulative impacts to the species, and issues such as protection, monitoring and management.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, we request notification of the conservation recommendations carried out.

7. REINITIATION NOTICE

Formal consultation for the Action considered in this BO is concluded. Reinitiating consultation is required if the Tyndall AFB retains discretionary involvement or control over the Action (or is authorized by law) when:

a. the amount or extent of incidental take is exceeded;
b. new information reveals that the Action may affect listed species or designated critical habitat in a manner or to an extent not considered in this BO;
c. the Action is modified in a manner that causes effects to listed species or designated critical habitat not considered in this BO; or
d. a new species is listed or critical habitat designated that the Action may affect.

In instances where the amount or extent of incidental take is exceeded, the Tyndall AFB is required to immediately request a reinitiation of formal consultation.

8. LITERATURE CITED

Negrón-Ortiz, V., and M. Kaeser. 2020. Timing and patterns of size, reproduction, and seed germination in Florida endemic *Euphorbia telephioides* (Euphorbiaceae): management and conservation implications. Natural Area J. *In Press.*

Rountree, A., J. Tobe, and J. Busalacchi. 2005. Report: Threatened and Endangered Species Survey. Shallow Reed Site, Gulf County, FL.

Tyndall Air Force Base BA. 2020. Biological Assessment to determine impacts to federally-listed species from Tyndall Air Force Base's Hurricane Reconstruction Program. Report.

U.S. Fish and Wildlife Service (USFWS). 2015. *Euphorbia telephioides* (Telephus spurge) 5-Year Review: Summary and Evaluation. https://ecos.fws.gov/docs/five_year_review/doc4483.pdf.

APPENDIX C Biological Assessment

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Biological Evaluation to Determine Impacts to Federally-Listed Species from Tyndall Air Force Base's Hurricane Reconstruction Program

1. Introduction

This document is being submitted to fulfill requirements under Section 7 of the Endangered Species Act (ESA). Briefly, this report addresses potential impacts to all federally-listed threatened and endangered (T&E) species associated with the recovery of Tyndall Air Force Base (AFB) from the damage incurred by a major hurricane in October 2018. This Biological Evaluation (BE), conducted by the 325th Civil Engineer Environmental Element, Natural Resources (325 CES/CEIEN), is meant to initiate the consultation process with the U.S. Fish and Wildlife Service (USFWS) pursuant to Section 7 of the ESA. The objectives of this BE are to:

1. Describe the affected environment and its likelihood to support any T&E species.
2. Name federally listed T&E species occurring or potentially occurring on Tyndall AFB and describe their range, habitat and their occurrence in the action area.
3. Describe the effects of the proposed action on each listed species or critical habitat.
4. Describe conservation measures that have the potential to impact, either beneficially or adversely, those documented species.
5. Determine and quantify what effects the proposed activities will likely have on federally listed species.

2. Location

Tyndall AFB is located in the southeast corner of Bay County in the Florida panhandle and covers approximately 30,000 acres (12,140 hectares [ha]), approximately 13 miles (20 kilometers [km]) east of Panama City, Florida. The base is a combination of developed and natural areas located on a peninsula that is bisected by U.S. Highway 98. The base is approximately 18 miles (29 km) long and 3 miles (4.8 km) wide, and is surrounded by East Bay, St. Andrew Bay, and the Gulf of Mexico (GOM) to the north, west, and south. Crooked Island West (CIW) and East (CIE), which form St. Andrew Sound, are barrier spits on the Gulf. Tyndall AFB is composed of approximately 23,350 acres (9,449 ha) of unimproved land, 1,080 acres (437 ha) of semi-improved land, and 4,840 acres (1,958.7 ha) of improved land.

3. Proposed Action

On 10 October 2018, Tyndall Air Force Base (AFB) took a direct hit from Hurricane Michael, with maximum sustained wind speeds of 160 mph. Installation infrastructure was severely damaged and utility networks, communications, and roadways were disrupted/impacted. Over 200 facilities were considered damaged beyond repair from an economical standpoint. Base infrastructure that sustained storm damage included facilities on the flightline, support side, and 9700 Areas. The demolition and reconstruction activities associated with the proposed action will be initiated in FY20 and are proposed to be completed within 5 years from the initiation of construction.

Under the Proposed Action, Tyndall AFB, proposes to repair several facilities, demolish 264 buildings (Figure 1), construct 26 individual facilities, construct multiple facilities in three separate complex areas, conduct drainage improvements, and new or upgraded utilities spanning

six planning areas throughout Tyndall AFB; Flightline Area, Support Area, 9700 Area-Crooked Island (AF Civil Engineer Center Research, Development, Testing & Evaluation), Subscale Drone Area, Silver Flag Area, and Munitions Area (Figure 2). The reconstruction program will meet current mission requirements and improve mission efficiencies by realigning mission sets that would provide capacity for future growth.

Figure 1. Tyndall AFB environmental assessment building demolitions

Figure 2. Tyndall AFB environmental assessment project areas

The proposed actions will affect previously undeveloped land. The proposed action will include but is not limited to construction of new facilities, street lighting, exterior building lighting, parking areas, street modifications, sidewalks, storm water management and treatment, landscaping, utility corridors, and associated water, wastewater, electrical, and gas lines. The primary objectives of the reconstruction program are to develop Tyndall AFB in a resilient and sustainable manner that will focus on efficient land use through building consolidation, creation of walkable campuses, and addressing flood and storm surge risks.

4. Species Descriptions

Table 1 provides information about the federally listed threatened and endangered species known to occur on Tyndall AFB (TAFB) and the Gulf of Mexico (GOM).

Table 1. Federally Listed T&E Species Associated with Tyndall AFB

Scientific Name	Common Name	Federal Status	Location
Reptiles			
Caretta caretta	Atlantic loggerhead sea turtle	T	TAFB,GOM
Chelonia mydas	Atlantic green sea turtle	E	TAFB,GOM
Dermochelys coriacea	Leatherback sea turtle	E	TAFB,GOM
Lepidochelys kempi	Kemp's Ridley sea turtle	E	TAFB,GOM
Birds			
Charadrius melodus	Piping plover	T	TAFB
Calidris canutus rufa	Red Knot	T	TAFB
Mammals			
Peromyscus polionatus allophrys	Choctawhatchee beach mouse	E	TAFB
Peromyscus polionatus peninsularis	St. Andrews beach mouse	E	TAFB
Plants			
Euphorbia telephioides	Telephus spurge	T	TAFB
Pinguicula ionantha	Godfrey's butterwort	T	TAFB

E – Endangered; T – Threatened; T(S/A) – threatened due to similarity of appearance

Sea Turtles

Four species of sea turtles occur in the nearshore GOM waters off Tyndall AFB and are known to nest on Tyndall's GOM barrier islands. These species include the Atlantic loggerhead sea turtle, Atlantic green sea turtle, leatherback sea turtle, and Kemp's ridley sea turtle. The loggerhead is the most common of the four species to nest on Tyndall's beaches with occasional nesting by leatherback, green, and Kemp's Ridley sea turtles. The peak nesting period is June and July, with an average of 50 nests per year (INRMP 2015). Green sea turtle and leatherback sea turtle nesting was first documented on Tyndall in 1998 and 2001, respectively. A Kemp's Ridley was first observed laying a nest on Tyndall in 2016 during which Natural Resources staff recorded video footage to confirm identity of this rare event.

Atlantic loggerhead sea turtle (*Caretta caretta*)

The loggerhead sea turtle is federally and state listed as threatened in the Florida panhandle. This species was originally listed as threatened throughout its global range in 1978 but the listing status was revised in 2011 by creating 9 distinct population segments of which 4 segments are federally threatened and the other 5 segments are federally endangered (USFWS Federal Register July 27, 2011). Nesting females typically come ashore to dig nests and deposit eggs between 1 May and 31 August with peak nesting activity occurring in June and July. Nests are dug between the mean high water (MHW) mark and the dune line with nests periodically created in the dunes. Within one nesting season, individual loggerheads are known to nest from 1 to 7

times. On-shore threats to the loggerhead sea turtle include degradation or destruction of nesting habitat from coastal development, hatchling disorientation due to beachfront lighting, and nest depredation. The loggerhead is the most common nesting sea turtle on Tyndall and is known to nest on Shell Island, CIE, CIW, and occasionally Buck Beach (INRMP 2015). Critical habitat has not been designated for loggerhead sea turtles along the Gulf Coast of Florida.

Atlantic green sea turtle *(Chelonia mydas*)
Populations of the green sea turtle are listed as federally endangered in Florida and on the Pacific Coast of Mexico with all other populations listed as threatened in its eastern range of North America (USFWS Federal Register July 28, 1978). Green sea turtles usually nest between June and September and a nesting female can lay as many as 9 nests in a season (NMFS and USFWS Recovery Plan 1991). This species typically breeds at 2 to 4 year intervals and very rarely breeds every year. On-shore threats to this species are the same as threats for loggerhead sea turtles. Green sea turtle nesting events are fairly uncommon on Tyndall's beaches with the exception of the 2019 nesting season during which 20 green sea turtle nests were documented. There has been no designation of critical habitat for green sea turtles along Florida's Gulf coast.

Kemp's ridley sea turtle (*Lepidochelys kempii*)
The Kemp's ridley sea turtle is listed as federally endangered under the ESA throughout its global range (USFWS Federal Register December 2, 1970). The range of the Kemp's ridley includes the Gulf coasts of Mexico and the U.S., and the Atlantic coast of North America as far north as Nova Scotia and Newfoundland. Nesting is essentially limited to the beaches of the western Gulf of Mexico, primarily in Tamaulipas and Veracruz, Mexico with a few historical records in Campeche, Mexico. The major habitat for Kemp's ridleys is the nearshore and inshore waters of the northern Gulf of Mexico. Kemp's ridley sea turtles nest from April to July with mean clutch sizes of approximately 100 eggs. Females can breed annually and mean number of nests per season is 2.5. On-shore threats to this species are the same as threats for loggerhead sea turtles. The first confirmed Kemp's ridley nest on Tyndall was detected on May 24, 2016 on CIW. Critical habitat has not been designated for Kemp's ridley sea turtles along the Gulf Coast of Florida.

Leatherback sea turtle (*Dermochelys coriacea*)
The leatherback sea turtle is listed as federally endangered under the ESA throughout its global range (USFWS Federal Register June 2, 1970). Only infrequent nesting activity has been documented for the leatherback in northwest Florida (Longieliere et al. 1997). The nesting and hatching season for the leatherback extends from May 1 through September 30, with nest incubation ranging from 60 to 75 days occurring on 2-3 year intervals (Longieliere et al. 1997). Since 2001, there have been 3 documented cases of leatherback turtle nesting on Tyndall AFB. Critical habitat has not been designated for leatherback turtles along the Gulf coast of Florida.

Tyndall AFB Sea Turtle Monitoring and Management
The primary objectives of the Tyndall AFB sea turtle monitoring program are to 1) collect data annually to determine the distribution and abundance of sea turtle nesting activity on 18 miles of Tyndall's GOM beaches, and 2) provide nest location information for military mission avoidance purposes. Additional data gathered during nesting surveys includes incubation period, nest depredation, hatchling disorientation, and nest success (hatchling emergence). Surveys are

conducted in accordance with data collection and reporting protocols defined in the Marine Turtle Permit. Sea turtle nesting surveys are conducted five times per week on CIE, CIW, and the federal section of Shell Island (18 miles of beach in total) from 1 May to 31 August. The surveys are designed to 1) locate the crawls of nesting female turtles, 2) determine crawl status (i.e. nesting crawl vs. false crawl), 3) species identification, and 4) nest protection. Data collected for each crawl and/or nest includes GPS coordinates of crawl/nest, crawl length and width, presence of dunes in the vicinity, distance from MHW mark to dunes, and dune height. If a body pit is identified at the crawl site, eggs are located and wire screens are secured over nest site to deter predation. Post-hatching surveys are conducted 1 September to 31 October to determine nest success. Nests are assessed for evidence of hatching activity, predation, inundation, and storm damage and continue to be monitored until 3 days after hatchlings have emerged.

The primary objective of sea turtle management at Tyndall AFB is to support the military mission while meeting the legal requirements of the ESA. Tyndall's 18 miles of undeveloped beaches provide a valuable land to sea transition zone for training purposes and also serve as high quality habitat for nesting sea turtles. The primary goals of sea turtle conservation and management at Tyndall AFB include 1) locating and protecting nests, 2) nest relocation when necessary, 3) predator removal, 4) resolution of beach lighting issues, 5) beach driving restrictions, and 6) restoration and protection of nesting habitat. In addition to using screening to protect nests, predator control in the form of trapping and removing predators from Tyndall's beaches is conducted.

Lighting has only occasionally been problematic for sea turtles on Tyndall's beaches resulting in hatchling disorientation. Artificial lighting problems are identified and addressed as quickly as possible. Currently, the only lighting issues on Tyndall beaches are from urban glow originating from Panama City and Mexico Beach but incidences of hatchling disorientation resulting from urban glow have been minimal. Additionally, a wildlife friendly lighting plan is being developed for Tyndall AFB and will be incorporated in the rebuilding of the base infrastructure reducing the potential for sea turtle disorientation caused by artificial lighting.

Piping Plover (*Charadrius melodus*)

In 1986, the Atlantic Coast piping plover was listed as threatened (U.S. Fish and Wildlife Service 1988), the Great Lakes piping plover listed as endangered, and the Northern Great Plains piping plover listed as threatened under the ESA. The piping plover breeds in 3 geographic regions in the United States and are therefore divided into 3 breeding populations which include the Atlantic Coast, Great Lakes and North Great Plains. All three populations winter along beaches and barrier islands from North Carolina to Florida, and along the Florida Gulf Coast to Texas, Mexico, and the Caribbean (USFWS Great Lakes Piping Plover Recovery Plan 2003). Piping plover preferred wintering habitat used for foraging and roosting includes beaches, salt marshes, coastal lagoons, and sand, mud, and algal flats (USFWS Great Lakes Piping Plover Recovery Plan 2003). Piping plovers consistently winter along Tyndall's shoreline during the non-breeding (wintering and migrating) season from July 15 through May 15. Concentration is highest in areas containing pools and low elevation beach sites that are washed over and exposed by tidal fluctuations. Tyndall's over-wintering population normally reaches 18 percent of all birds utilizing Florida as an over-wintering location. Portions of the barrier islands on Tyndall AFB

have been designated Critical Wildlife Habitat for the piping plover. Primary threats to the piping plover on wintering grounds include degradation and destruction of habitat, human disturbance, and predators.

Piping Plover Critical Habitat and Species Management

Critical habitat designation for wintering and breeding grounds for the piping plover was published in the Federal Register on 10 July 2001 (USFWS 2001) (Unit FL–5: Shell/Crooked Islands 1789 ha (4419 ac) in Bay County). Piping plover critical habitat is a term defined in the Endangered Species Act, 1973 that refers to specific geographic areas that contain the essential habitat features necessary for the conservation of threatened and/or endangered species. At the time of designation, the critical habitat areas do not necessarily have to be occupied by piping plovers. Critical habitat areas may require special protection or management considerations for current populations as well as potential population increases necessary to achieve species recovery.

The primary management for piping plovers on Tyndall AFB consist of maintaining suitable wintering habitat for foraging, sheltering, and roosting. Management activities conducted at Tyndall that benefit non-breeding piping plovers include 1) predator removal, 2) beach driving restrictions, 3) construction and maintenance of boardwalks, and 4) Critical Wildlife Area and Critical Habitat designations. Specific coastal dune protection and restoration measures at Tyndall AFB that may benefit piping plovers include 1) construction of elevated boardwalks on CIE and NCO beach to eliminate pedestrian traffic in and around dunes and prevent erosion, and 2) protection of dunes (via sand fence installation) newly vegetated with sea oats to encourage establishment of vegetated dunes. Tyndall recreation regulations also requires pedestrians to access the beach via marked roads or boardwalks and to stay out of sand dunes at all times (2015-2016 Hunting, Fishing and General Recreation Regulations).

Red Knot (*Calidris canutus rufa*)

The U.S. Fish and Wildlife Service listed the rufa red knot as federally threatened under the ESA in December 2014. The red knot migrates annually between its breeding grounds in the Canadian Arctic and several wintering regions, including the southeastern United States, northeastern GOM, northern Brazil, the southern tip of South America (USFWS 2014). Staging and stopover areas in the wintering regions are used for resting and foraging. They winter at intertidal marine habitats near coastal inlets, estuaries, and bays. Wintering grounds for the red knot include coastal sites from Massachusetts and California southward to southern South America. Knots and other shorebirds depend on quiet, intertidal beach locations as resting sites during high tides. Migrating and wintering knots use marine habitats including sandy beaches, salt marshes, lagoons, mudflats of estuaries and bays, and mangrove swamps that contain an abundance of invertebrate prey. The red knot is observed at Tyndall AFB during migration, on CIE, CIW, and Shell Island. Primary threats to the piping plover on wintering grounds include degradation and destruction of habitat, human disturbance, and predators. The red knot occurs in small numbers at Tyndall AFB during migration. It has similar habitat requirements and is present during similar time periods as the piping plover.

The primary management for red knots at Tyndall AFB include maintaining suitable wintering habitat for foraging, sheltering, and roosting. Management activities conducted at Tyndall that

benefit this species include 1) predator removal, 2) beach driving restrictions, 3) construction and maintenance of boardwalks, and 4) Critical Wildlife Area and Critical Habitat designations. Details about predator removal, beach driving restrictions, boardwalk construction maintenance, and Critical Wildlife Area and Critical Habitat designations can be found in the piping plover management section above.

Choctawhatchee Beach Mouse (*Peromyscus polionotus allophrys*)
The Choctawhatchee beach mouse was federally listed as endangered under the ESA in June 1985 and populations are currently known to occur in Bay, Okaloosa, and Walton Counties in the Florida panhandle (USFWS 1987, USFWS 2006). They inhabit coastal dunes on Shell Island and CIW at Tyndall AFB and their distribution ranges from Choctawhatchee Bay to St. Andrew Bay, Florida. The Choctawhatchee beach mouse was detected on Shell Island as early at 1950. In 1998, Shell Island and CIW became connected at East Pass due to the accretion of sand that had expanded southward on the eastern end of the federal portion of Shell Island (USFWS 2010). The connection of Shell Island and CIW provided the opportunity for Choctawhatchee beach mice inhabiting Shell Island to expand their range to CIW. Presence of the Choctawhatchee beach mouse on CIW was confirmed by trapping events in 2000 and the presence of the Choctawhatchee beach mouse continues to be monitored on CIW and Shell Island to date.

St. Andrews Beach Mouse (*Peromyscus polionotus peninsularis*)
The St. Andrew beach mouse was federally listed as endangered in November 1998 under the ESA (USFWS 2010). Prior to the 1980's there were two populations of this subspecies, one known to occur on CIE at Tyndall AFB and the other occurring on St. Joseph Peninsula, Gulf County, Florida. However, a1992-1993 trapping event on CIE produced zero captures of the St. Andrew beach mouse and the subspecies was therefore thought to be extirpated from CIE. Re-introduction of 43 individuals to CIE from the St. Joseph Peninsula State Park population occurred between November 1997 and December 1998 (USFWS 2010) and the presence of the St. Andrew beach mouse continues to be monitored on CIE to date.

Choctawhatchee and St. Andrews Beach Mouse Habitat, Threats, and Management
The Choctawhatchee beach mouse and St. Andrew beach mouse inhabit primary, secondary, and inland tertiary dunes within well-developed coastal dune ecosystems (USFWS 2010). They are burrow-inhabiting animals but move around within their home range to forage, breed, and maintain other burrows that they have created (USFWS 1987). Principal threats that have led to the decline of the Choctawhatchee beach mouse and the St. Andrew beach mouse include habitat degradation or loss due to land development, catastrophic storm events, and human recreational activity on dunes. Other potential threats include shoreline erosion, predators, and artificial beach lighting.

The primary goals of beach mouse conservation and management at Tyndall AFB consist of 1) dune restoration and protection, 2) predator removal, 3) resolution of beach lighting issues, and 4) beach driving restrictions, 5) designation of critical habitat. Additional coastal dune protection measures on CIE, CIW, and Shell Island at Tyndall AFB include the construction and maintenance of boardwalks, sand fence installation, and beach driving restrictions. Specific coastal dune protection and restoration measures at Tyndall AFB include 1) construction of an elevated boardwalk on CIE and NCO beach (access point for CIW and Shell Island) to eliminate

pedestrian traffic in and around dunes, and 2) protection of dunes (via sand fence installation) newly vegetated with sea oats to encourage establishment of vegetated dunes. Predator control in the form of trapping and removing predators from Tyndall's beaches is conducted. Artificial light pollution is minimized on all Tyndall GOM beaches during the sea turtle nesting season (May 1 to August 30) which directly benefits the nocturnal Choctawhatchee and St. Andrew beach mice. Prior to the approval of the INRMP, critical habitat had been designated for the St. Andrew beach mouse on CIE and Choctawhatchee beach mouse on CIW and Shell Island to ensure protection of their coastal dune habitat.

Godfrey's Butterwort (*Pinguicula ionantha*)

Godfrey's butterwort is listed as federally threatened and state endangered and is known to occur in Bay, Calhoun, Franklin, Gulf, Liberty, and Wakulla counties in the Florida panhandle (USFWS 1994). It is a carnivorous plant that inhabits herb bogs, flatwoods depressions, savannas, and ditches adjacent to the aforementioned habitats historically embedded within the longleaf pine matrix (Godfrey and Wooten 1981, Wunderlin and Hansen 2011). Godfrey's butterwort often occurs in areas that are seasonally inundated with shallow water. Ecosystem degradation is the primary threat to this species resulting from commercial forest production, inadequate prescribed fire management, fire exclusion, and urban development. Other threats include shading from the overstory pines and midstory shrubs, drainage of wetlands, and water quality degradation (USFWS 1994).

Prescribed fire is the most important management tool for improving or maintaining critical habitat for Godfrey's butterwort at Tyndall AFB. Commercial timber production coupled with fire exclusion had been the primary reasons for ecosystem degradation at Tyndall AFB since the 1960's. Re-introduction of prescribed fire began in 1996 when the Forestry Department began a prescribed fire program across the base. Seasonality of prescribed fire may be one of the most important factors related to Godfrey's butterwort habitat improvement due to its habitat preferences (wettest edges of the ecotone between herbaceous wetlands and upland pine flatwoods). Since 1996, Tyndall NRS has been working to accomplish more growing season burns as well as promote burning through wetlands. Mechanical removal of the shrub layer in wetlands began in 2018 to improve critical habitat for Godfrey's butterwort and other T&E species that have been difficult to manage with prescribed fire.

Telephus spurge (*Euphorbia telephioides*)

Telephus spurge is a perennial herbaceous plant species listed as federally threatened and state endangered and is currently restricted to coastal (within 4 miles of the coast) Bay, Franklin, and Gulf counties in the Florida panhandle (USFWS 2007). Populations of this species have been observed on a variety of sites including xeric scrub pine to mesic pine flatwoods, disturbed sandy roads, and less commonly in wetlands with seepage slope species. Telephus spurge can also be found in pine flatwoods or upland pine communities with a longleaf pine and/or slash pine overstory and herbaceous understory dominated by wiregrass, other grasses, and forbs that have historically been burned on a 2 to 3 year fire return interval. It is generally found inhabiting sites with sandy, acidic soil with little to no litter and low organic and moisture content (Peterson and Campbell 2007). This species is characterized as ephemeral in that it can appear suddenly and be abundant at newly disturbed sites but may not be there upon re-survey a few years later (USFWS 2007). Large tuberous roots allow this species to survive underground when subjected

to suboptimal or poor habitat conditions. The primary threats to telephus spurge include habitat degradation and destruction caused by commercial timber production, inadequate prescribed fire management, fire exclusion, and urban development.

Commercial timber production coupled with fire exclusion had been the primary reasons for ecosystem degradation at Tyndall AFB. Prescribed fire is the most important management tool for improving or maintaining critical habitat for telephus spurge at Tyndall AFB as this species is thought to respond with prolific emergence following fire (M. Kaeser, Personal Observation). The Tyndall NRS has been working to promote more burning during the growing season as well as burning on an 18-30 month fire return interval, benefiting telephus spurge and its critical habitat. Longleaf pine restoration efforts in slash pine plantations (pine flatwoods) and former sand pine plantations coupled with low intensity, frequent fire will improve potential habitat for telephus spurge on Tyndall

5. Effects of Proposed Actions on Federally Listed Species

Flightline Area

The ***Flightline area*** (Figure 3) construction occurs entirely within the previously existing flightline footprint. The area was filled and leveled and no natural communities occur in the footprint of the construction. This area does not support any T&E species or habitat and will have NO EFFECT on T&E species or their habitats. The ***Airfield Drainage*** proposed action area is contained within the current footprint of the flightline. NO EFFECT on T&E species and suitable habitat was not found.

Figure 3. Tyndall AFB environmental assessment airfield drainage areas

Munitions Area
The proposed action within the ***Munitions area*** is within an already developed area, does not contain any natural habitats, and will therefore have NO EFFECT on T&E species.

Support Area
With the exception of the ***Gate Complexes*** and ***Site Development and Infrastructure*** proposed actions, the proposed projects in the ***Support Area*** are within previously developed/altered areas that contain no natural habitat and will have NO EFFECT on T&E species.

The proposed ***Gate Complex*** sites were closely examined for presence of T&E species. The Airey and Tyndall Gate areas did not contain any natural habitat or presence of T&E therefore will have NO EFFECT. Habitat that might support T&E species was present in portions of the Cleveland site area but no T&E species were observed and therefore will have NO EFFECT on T&E species. The survey of the alternative site did result in the discovery of a population of Telephus Spurge (federally threatened) and thus MAY AFFECT, LIKELY TO ADVERSELY AFFECT the listed species.

Figure 4. Locations of federally threatened *Euphorbia telephioides*

Utilities proposed action area (Figure 5) contains about 6 acres of natural dune habitat on the mainland but due to the proposed action and lack of connectivity with current barrier island beach mouse habitat, we conclude that the action will have NO EFFECT on T&E species and does not contain suitable habitat for T&E species.

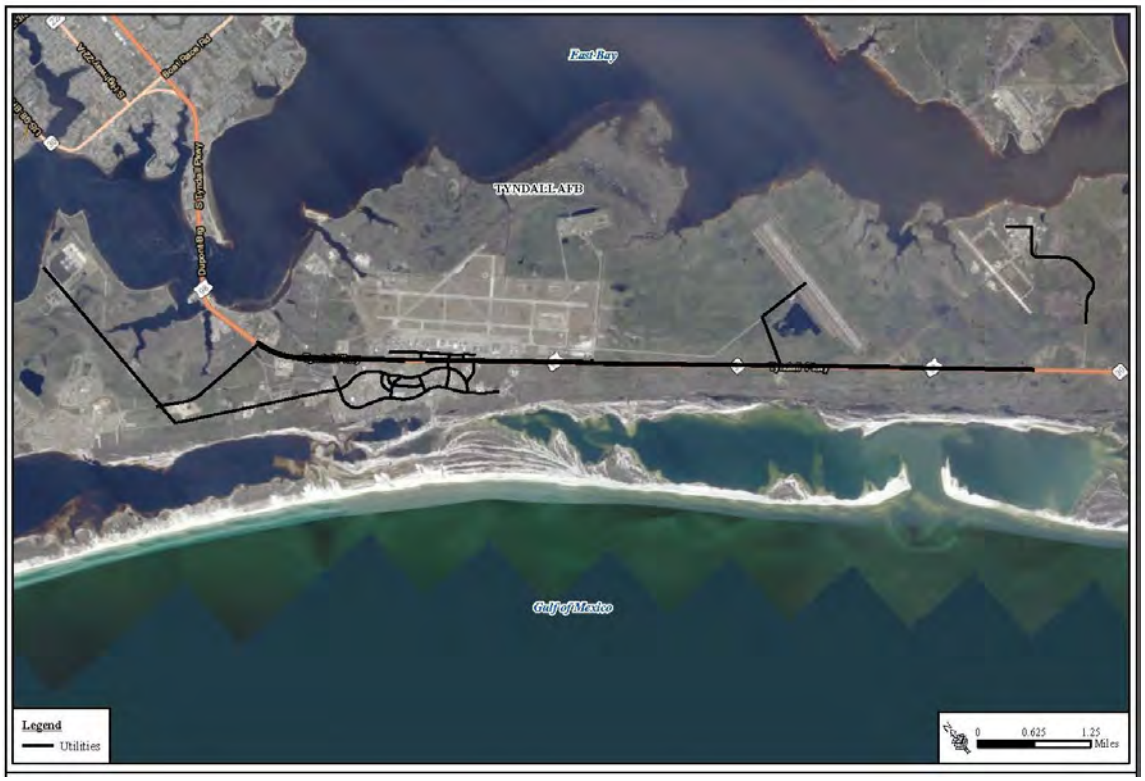

Figure 5. Tyndall AFB environmental assessment project utilities

Sabre Area
Proposed actions within ***Sabre Area*** will have NO EFFECT on T&E species and does not contain suitable habitat for T&E species.

Subscale Area
Proposed actions within ***Subscale area*** will have NO EFFECT on T&E species and does not contain suitable habitat for T&E species.

Silver Flag Area
The only T&E species that could potentially occur in the ***Red Horse Rebuild*** proposed action area is the federally threatened plant, Godfrey's butterwort. However, no plants were observed in the project area during recent surveys therefore will have NO EFFECT.

Potential habitat for both of Tyndall AFB's federally listed plant species is present in the 9700 area proposed action area but the absence of fire in the wetland habitats has allowed surrounding vegetation to overgrow subsequently making it difficult to detect threatened wetland species that

may currently exist there. No T&E species were observed during the surveys and therefore will have NO EFFECT on T&E species.

The following table (Table 2) provides a summary of the impact determinations for each of the Tyndall AFB T&E species, based on the evaluation.

Table 2. Summary of Impact Determinations for Tyndall T&E Species

SPECIES COMMON NAME	NO EFFECT	MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT	MAY AFFECT, LIKELY TO ADVERSELY AFFECT
Atlantic loggerhead sea turtle	X*		
Atlantic green sea turtle	X*		
Leatherback sea turtle	X*		
Kemp's ridley sea turtle	X*		
Choctawhatchee beach mouse	X		
St. Andrews beach mouse	X		
Piping plover	X		
Red knot	X		
Telephus spurge			X
Godfrey's butterwort	X		

***if allowances are made to avoid impact from lighting disturbance**

6. Conclusion

The U.S. Fish and Wildlife Service will be given the opportunity to evaluate all proposed actions and potential effects to T&E species relating to the Hurricane Reconstruction Program at Tyndall AFB. The U.S. Fish and Wildlife Service will be notified immediately if any of the actions considered in this biological evaluation are modified or if additional information on federally listed species becomes available, as re-initiation of consultation may be required. If impact to listed species occurs beyond what has been considered in this assessment, all operations will cease and the Service will be notified. Any modifications or conditions resulting from consultation with the Service will be implemented prior to commencement of activities.

7. Literature Cited

AECOM, July 2019. Tyndall Air Force Base Recovery Plan and Analysis of Alternatives Report. Prepared for Air Force Engineer Center.

Godfrey, R.K. and J.W. Wooten. 1981. Aquatic and Wetland Plants of the Southeastern United States (Dicotyledons). The University of Georgia Press, Athens, Georgia.

Kaeser, M. 2018. Personal Observation.

Keppner, L. 2019. Personal communication.

Longieliere, T. J., G. O. Bailey, and H. L. Edmiston, 1997. Rare Nesting Occurrence Of The Leatherback Sea Turtle, Dermochelys Coriacea, In Northwest Florida. Poster paper presented at the 1997 annual symposium on sea turtle conservation and biology. March 4-8. Orlando, Florida.

National Marine Fisheries Service and U.S. Fish and Wildlife Service, 1991. Recovery Plan for U.S. Population of Loggerhead Turtle (Caretta caretta).

Peterson, C.L. and C.C. Campbell. 2007. Seed collection and research on eight rare plant species of the Florida Panhandle region. USFWS grant agreement 401815G173.

Tyndall Air Force Base Integrated Natural Resources Management Plan. July 16, 2015. Tyndall Air Force Base, Florida.

U.S. Fish and Wildlife Service. 1970. Conservation of Endangered Species and Other Fish and Wildlife. Federal Register, Vol. 35, No. 106. June 2, 1970.

U.S. Fish and Wildlife Service. 1970. List of Endangered Foreign Fish and Wildlife. Federal Register, Vol. 35, No. 233. December 2, 1970.

U.S. Fish and Wildlife Service. 1978. Listing and Protecting Loggerhead
Sea Turtles as Threatened Species and Populations of Green and Olive Ridley Sea Turtles as Threatened Species or Endangered Species. Federal Register, Vol. 43, No. 146. July 28, 1978.

U.S. Fish and Wildlife Service. 1987. Recovery plan for the Alabama beach mouse (*Peromyscus polionotus ammobates*), Perdido Key beach mouse (*P. p. trisyllepsis*), and Choctawhatchee beach mouse (*P. p. allophrys*). U.S. Fish and Wildlife Service, Atlanta, Georgia.

U.S. Fish and Wildlife Service (USFWS), 1988. Recovery Plan for Piping Plovers Breeding on the Great Lakes and Northern Great Plains. Twin Cities, MN. 160 pp.

U.S. Fish and Wildlife Service. 1994. Recovery plan for four plants of the lower Apalachicola region, Florida: *Euphorbia telephoides*, (Telephus spurge), *Macbridea alba* (white birds-in-a-nest), *Pinguicula ionantha* (Godfrey's butterwort), and *Scutellaria floridana* (Florida skullcap). U.S. Fish and Wildlife Service, Atlanta, Georgia.

U.S. Fish and Wildlife Service. 2001. Endangered and Threatened Wildlife and Plants; Final Determination of Critical Habitat for Wintering Piping Plovers. Federal Register, Vol. 66 , No. 132. July 10, 2001.

U.S. Fish and Wildlife Service. 2003. Recovery Plan for the Great Lakes Piping Plover (*Charadrius melodus*). U.S. Fish and Wildlife Service, Fort Snelling, Minnesota.

U.S. Fish and Wildlife Service. 2006. 5-Year Review: Summary and Evaluation for the Choctawhatchee Beach Mouse. U.S. Fish and Wildlife Service, Atlanta, Georgia.

U.S. Fish and Wildlife Service. 2007. Euphorbia telephioides (telephus spurge) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service southeast region. Panama City Field Office. Panama City, Florida.

U.S. Fish and Wildlife Service. 2010. Recovery plan for the St. Andrew Beach Mouse (*Peromyscus polionotus peninsularis*). U.S. Fish and Wildlife Service, Atlanta, Georgia.

U.S. Fish and Wildlife Service. 2011. Endangered and Threatened Species; Determination of Nine Distinct Population Segments of Loggerhead Sea Turtles as Endangered or Threatened. Federal Register, Vol. 76, No. 184. September 22, 2011.

U.S. Fish and Wildlife Service. 2014. Endangered and Threatened Wildlife and Plants; Threatened Species Status for the Rufa Red Knot. Federal Register, Vol. 79, No. 238. December 11, 2014.

Wunderlin, R.P. and B.F. Hansen. 2011. Guide to the Vascular Plants of Florida. Third edition. University of Florida Press, Gainesville, FL.

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APPENDIX D Cultural Resources Survey Reports

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FINAL REPORT

HURRICANE MICHAEL RECOVERY
PHASE I ARCHAEOLOGICAL SURVEY
AT TYNDALL AIR FORCE BASE, BAY COUNTY, FLORIDA

Prepared for:
Air Force Civil Engineer Center

and

U.S. Army Corps of Engineers, Mobile District

US Army Corps of Engineers®
Mobile District

Prepared by:
Bretton Somers, Ph.D., RPA
and
Ryan A. Hale, M.S., RPA

GSRC

December 2019

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Contract Number: W91278-16-D-0004
Delivery Order W9127819F0265

Bretton M. Somers, PhD, RPA
Principal Investigator

December 2019

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ABSTRACT

Gulf South Research Corporation (GSRC) personnel have completed a Phase I archaeological investigation of 342 acres (ac) at Tyndall Air Force Base (AFB) in Bay County, Florida under U.S. Army Corps of Engineers, Mobile District (CESAM) contract W91278-16-D-0004, Delivery Order W9127819F0265. The investigation was developed for Air Force Civil Engineer Center (AFCEC) and is being conducted in support of Hurricane Michael Recovery efforts at Tyndall AFB under Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and with its implementing regulations (16 United States Code [U.S.C.] 470f). Other applicable Federal cultural resources laws include the Native American Graves Protection and Repatriation Act (NAGPRA) (25 USC 3001-3013) and the Archaeological Resources Protection Act (ARPA) of 1979 (Public Law 96-95; 16 U.S.C. 470 *aa-mm),* as amended.

Hurricane recovery efforts include the removal of debris, demolition of damaged structures and buildings, and the construction of new infrastructure. This investigation has been conducted to evaluate areas selected for new construction. Three land areas selected for new construction totaling 342 acres have been identified to be surveyed in this investigation and include the Flightline Area (242 acres), the Munitions Area (82 acres), and the 8500 Area (18 acres).

The investigation consisted of an intensive Phase I archaeological survey including background research and a field survey with pedestrian surface inspection, supplemented with shovel testing along transects to identify and document all archaeological resources within the assigned project areas. Fieldwork was conducted over 12 days from October 8 until October 25, 2019.

Survey of these areas was initially conducted at a high probability intensity level with shovel test pits (STPs) excavated at 25 meter (m) intervals along transects. This intensity level was adjusted to moderate probability (50-m intervals) for the Flightline Area and moderate and low (100-m intervals) probability for the Munitions Area when it was observed that deposits in the those areas were highly disturbed. The 8500 Area was surveyed entirely at high probability intensity. Each of the three areas is highly developed with numerous structures, paved areas, water runoff control features, and utilities. A total of 148 STPs were excavated during this investigation with an additional 126 not excavated due to impediments of the built environment. Only two STPs were positive and both were in the Flightline Area. Both positive STPs were delineated and determined to be isolated objects (IOs).

IO 1 consists of a single Leon Weeden Island (ca. 1,600-1,100 B.P.) type projectile point; it was recovered from TR 4 STP 5 at approximately 60-70 centimeters below ground surface (cmbgs). Additional STPs excavated to delineate the find were all negative. Deposits in the STP do not suggest the find is part of an intact cultural deposit.

IO 2 consists of one unidentified (UID) small mammal bone and two cervical vertebra from a small mammal. The remains are not charred nor do they exhibit any cut marks or other evidence related to human activity or anything to suggest they are cultural artifacts. The faunal materials were recovered from a depth of approximately 60-70 cmbgs. The deposits in the STP do not suggest the faunal remains are part of an intact cultural deposit.

Neither IO qualifies as an archaeological site nor do they possess integrity or criteria to be considered for NRHP eligibility. No NRHP eligible archaeological resources have been recorded within the Flightline Area, Munitions Area, and 8500 Area during this investigation. As a result, no adverse effects will occur to archaeological resources as a result of the proposed Hurricane Michael recovery actions in the three project areas. No further work is recommended.

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INTRODUCTION

This technical report describes the investigation conducted for Air Force Civil Engineer Center (AFCEC) by Gulf South Research Corporation (GSRC) that included an archaeological survey of up to 200 acres (ac) (59.08 hectares [ha]) at Tyndall Air Force Base (AFB) in Bay County, Florida (Figure 1). The investigation was conducted under U.S. Army Corps of Engineers, Mobile District (CESAM) contract W91278-16-D-0004, Delivery Order W9127819F0265. The investigation consisted of an intensive Phase I archaeological survey including background research and a field survey with pedestrian surface inspection supplemented with shovel testing along transects to identify and document all archaeological resources within the assigned project areas.

This project is being conducted in support of Hurricane Michael Recovery efforts at Tyndall AFB under Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and with its implementing regulations (16 United States Code [U.S.C.] 470f). Other applicable Federal cultural resources laws include the Native American Graves Protection and Repatriation Act (NAGPRA) (25 USC 3001-3013) and the Archaeological Resources Protection Act (ARPA) of 1979 (Public Law 96-95; 16 U.S.C. 470 *aa-mm),* as amended.

All work was conducted in accordance with Air Force Instruction (AFI) 32-7065 Cultural Resources Management, the Standard Operating Procedures identified in the *U.S. Air Force Integrated Cultural Resources Management Plan for Tyndall Air Force Base* (ICRMP) (Tyndall AFB 2016), Florida Division of Historical Resources (DHR) Guidelines for Use by Historic Preservation Professionals, and the Secretary of Interior's Guidelines for Local Surveys: A Basis for Preservation Planning (National Register Bulletin Number 24). This investigation was conducted by professional archaeologists meeting the qualifications specified in the Secretary of the Interior's Professional Qualification Standards (*Federal Register*, Vol. 48, No. 190, Thursday, September 29, 1983, pp. 44738-44739). Dr. Bretton Somers is the project principal investigator and is a Registered Professional Archaeologist. All research was conducted in accordance with the professional and ethical standards of the Register of Professional Archaeologists.

Project Background

On 10 October 2018, Tyndall AFB received a direct impact from Category 4, Hurricane Michael. The hurricane caused extensive damage to infrastructure (facilities, roads, fences etc.), natural resources (wetlands, forestry areas), and mission capability (aircraft departed, personnel losses, and economic impacts). Following the storm, Tyndall AFB initiated recovery efforts to evaluate the damage and actions needed to ensure the base was safe for personnel to return. Hurricane recovery efforts include the removal of debris, demolition of damaged structures and buildings, and the construction of new infrastructure. Additionally, new facilities will need to be constructed to replace those that have been lost. Three land areas selected for new construction have been identified to be surveyed in this investigation and include the Flightline Area, The Munitions Area, and the 8500 Area (Figure 2). The Flightline Area measures 242 acres (ac) and consists of a relatively level, built up area beside the Tyndall AFB airfield. The area includes numerous structures, paved areas, water diversion structures, and utilities mostly designed to service air field needs. A large portion of the 242-acre Flightline Area was not shovel tested due to the existing built environment; shovel testing was confined to non-built areas.

Figure 1. Vicinity Map

October 2019

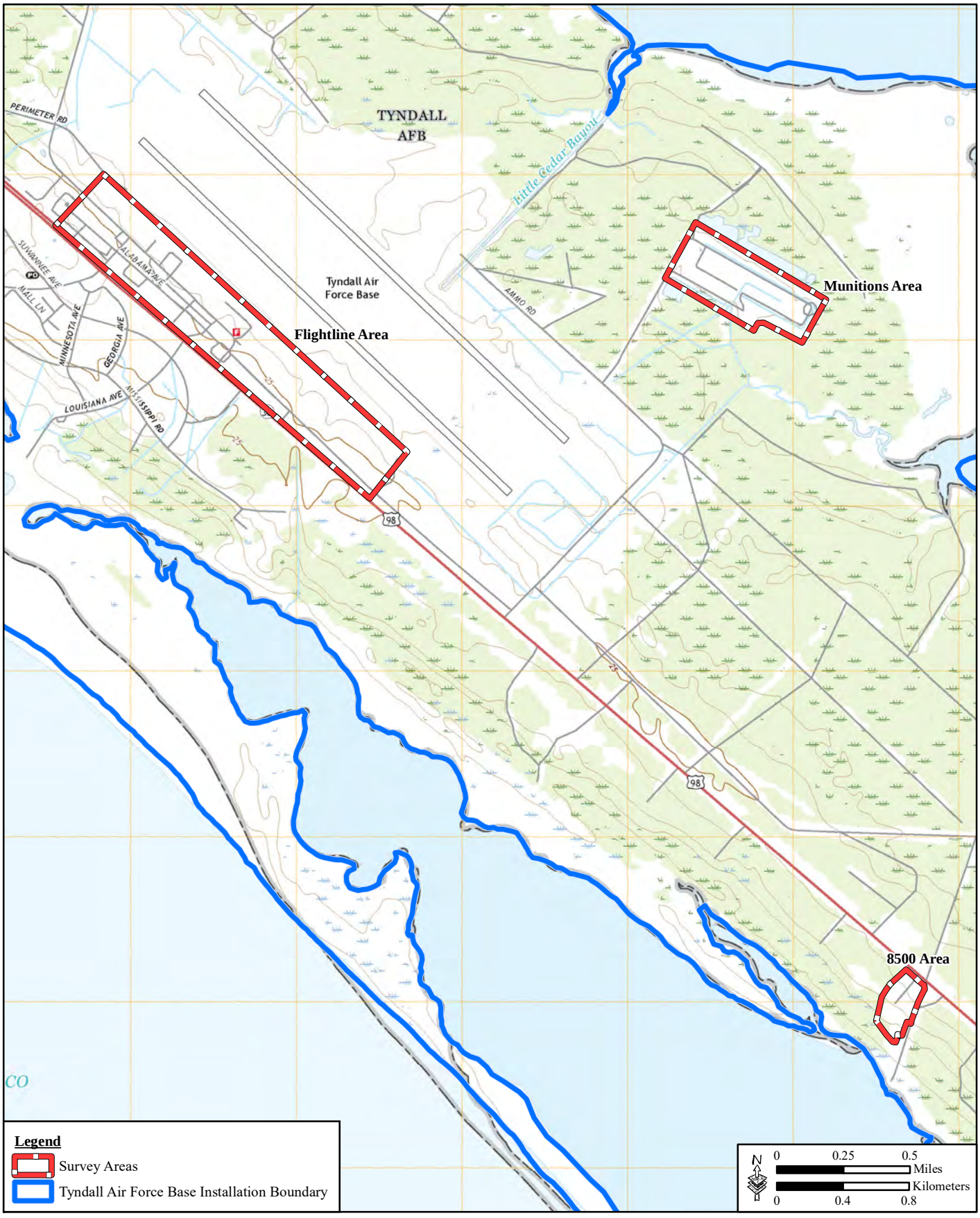

Figure 2. Portion of the Long Point, FL 7.5-minute topographic quadrangle showing the cultural survey areas.

October 2019

The Munitions Area measures 82 ac and similarly consists of a relatively level, built up area with numerous ammunition storage bunkers and facilities for servicing the storage, removal, and safety of keeping munitions in the area. Shovel testing in the Munitions Area was also limited to non-built areas.

The 8500 Area measures 18 ac and is less developed than the other two survey areas. The northern half of the of the parcel is level where several buildings, paved areas, and a loop road currently exist and the southern half of the parcel slope downward toward St. Andrew's Sound to the south. Shovel testing in the 8500 Area was also limited in the vicinity of built areas.

Reporting Conventions

Cultural resources specialists typically express measurements using the metric system when reporting on indigenous archaeological sites and English measurements when discussing non-indigenous properties. In this report, measurements derived from United States Geological Survey (USGS) maps or other sources in which English measurements are used, are given only in English dimensions. Thus, distances are given in miles (mi) and survey areas are given in ac. Scientific measurements of survey coverage, excavations, distances to the nearest water sources, and indigenous resources will be expressed in metric units. Metric-English conversions are provided for clarity where appropriate or as originally presented.

ENVIRONMENTAL SETTING

Legal Description

Tyndall AFB is located in Bay County, Florida, approximately 6.0 mi south of Panama City. The facility is situated along 18 mi of a northwest trending peninsula that is landlocked on its southeastern side. The peninsula is bordered by East Bay to the north, St. Andrews Bay to the northwest, west and southwest, and St. Andrews Sound to the southeast. The peninsula is attached by a small isthmus to Shell Island to the south and southwest that shields it from the Gulf of Mexico. Township and Range are situated on a slightly irregular polygonal system due to Tyndall AFB's peninsular location and the irregular coastlines that coincide with this setting. Table 1 summarizes the Township, Range, and Sections within which the project-related areas are located.

Table 1. Public Land Survey System Subdivisions of the Project Areas.

Survey Area	Township	Range	Section(s)
Flightline Area	5S	13W	6 and 7
	5S	14W	1
Munitions Area	5S	13W	4 and 9
8500 Area	5S	13W	21

Climate

The climate of Bay County is heavily influenced by the Gulf of Mexico and considered moderate, with high humidity and warm temperatures present most of the year. Summers are long, warm, and humid and winters are mild to cool. Average annual rainfall for the area is 152.4 centimeters (cm) (60 inches [in]) (Duffee et al. 1984). Thunderstorms are frequent during summer months occurring 1 to 3 days a week. Occasionally, the passage of tropical disturbances and hurricanes occur capable of producing heavy rains and winds in excess of 200 miles per hour occur during the late summer months at an average rate of about one storm every 8 years.

Geomorphology

Tyndall AFB lies within the Gulf Coast Lowlands, a subdivision of the northern or proximal geomorphic zone, as described by White (1970). The development of the Gulf Coast Lowlands occurred over the past 5 million years as shifts in groundwater related to glaciation events led to the development of karst landforms (Rupert and Arthur 1990). This karst development, in association with processes of erosion and sedimentation by high-standing Pleistocene seas, has produced a series of eight marine terraces in Bay County. Tyndall AFB is located on the two southernmost and lowest in elevation, the Pamlico Terrace at 8 to 25 feet above mean sea level (amsl) and the Silver Bluff Terrace 0 to 10 feet amsl (Duffee et al. 1984).

Soils

A number of factors influence soil formation, including parent material, climate, effect of biological organisms, surface relief, and time (Duffee et al. 1984). Additionally, impacts such as those from tropical storms and mechanical disturbances can mix and redeposit soils. As illustrated in Figures 3 through 5 and Table 2, seven soil types are plotted across the three project areas including: Arents 0 to 5 percent slopes; Urban land; Pickney fine sand; Leon sand 0 to 2 percent slopes; Rutlege sand, 0 to 2 percent slopes; Osier

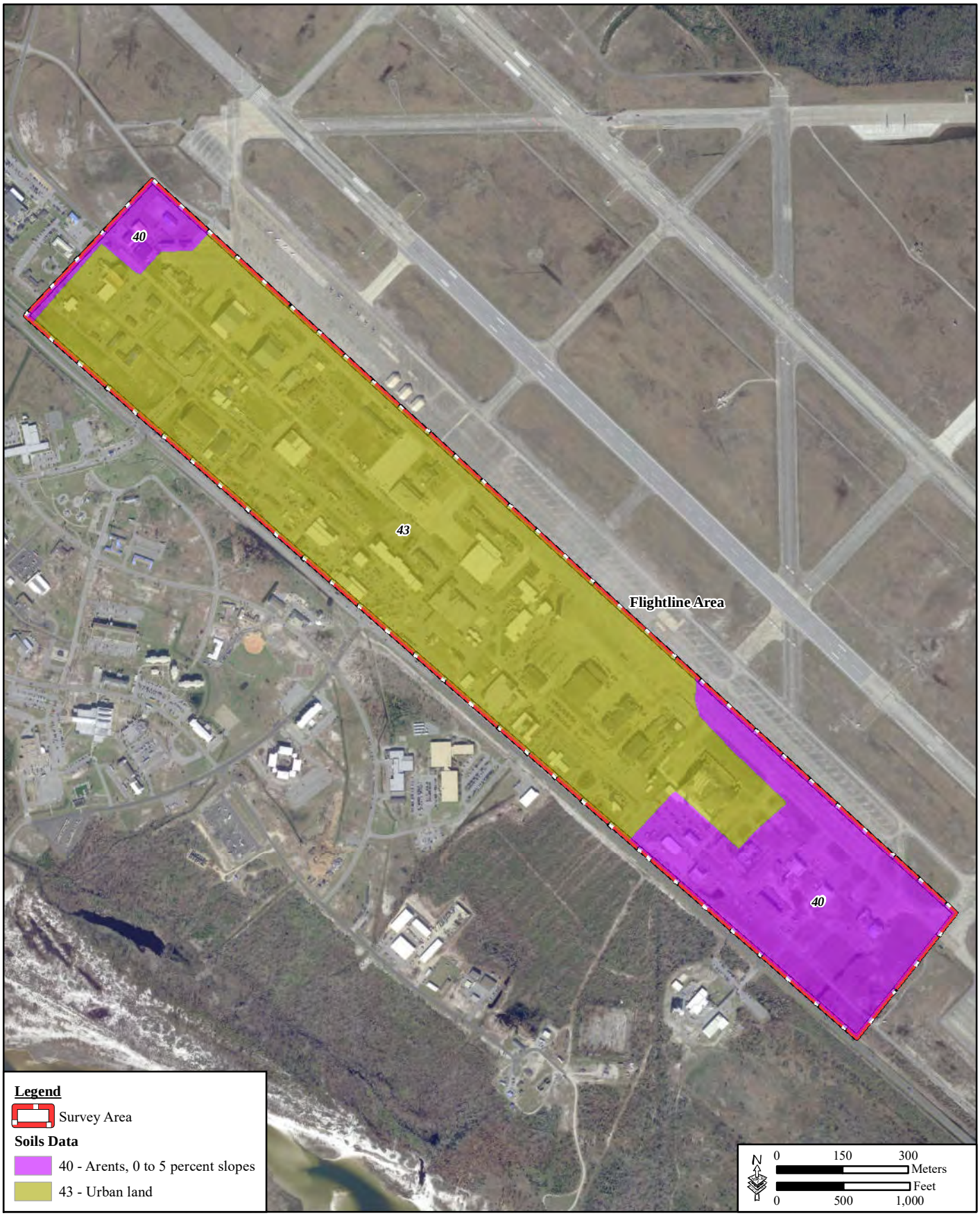

Figure 3. Map showing the soils data for the Flightline Area.

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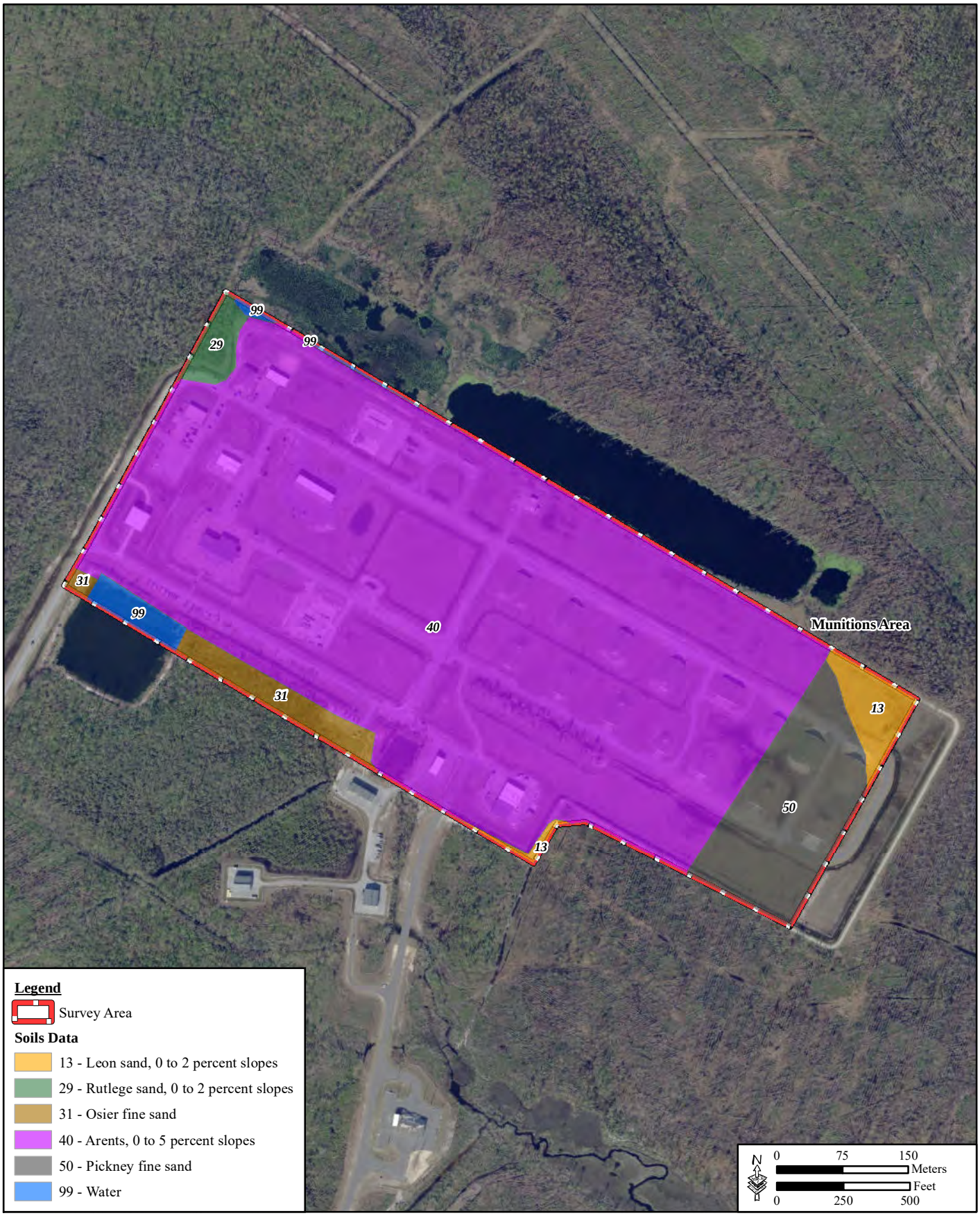

Figure 4. Map showing the soils data for the Munitions Area.

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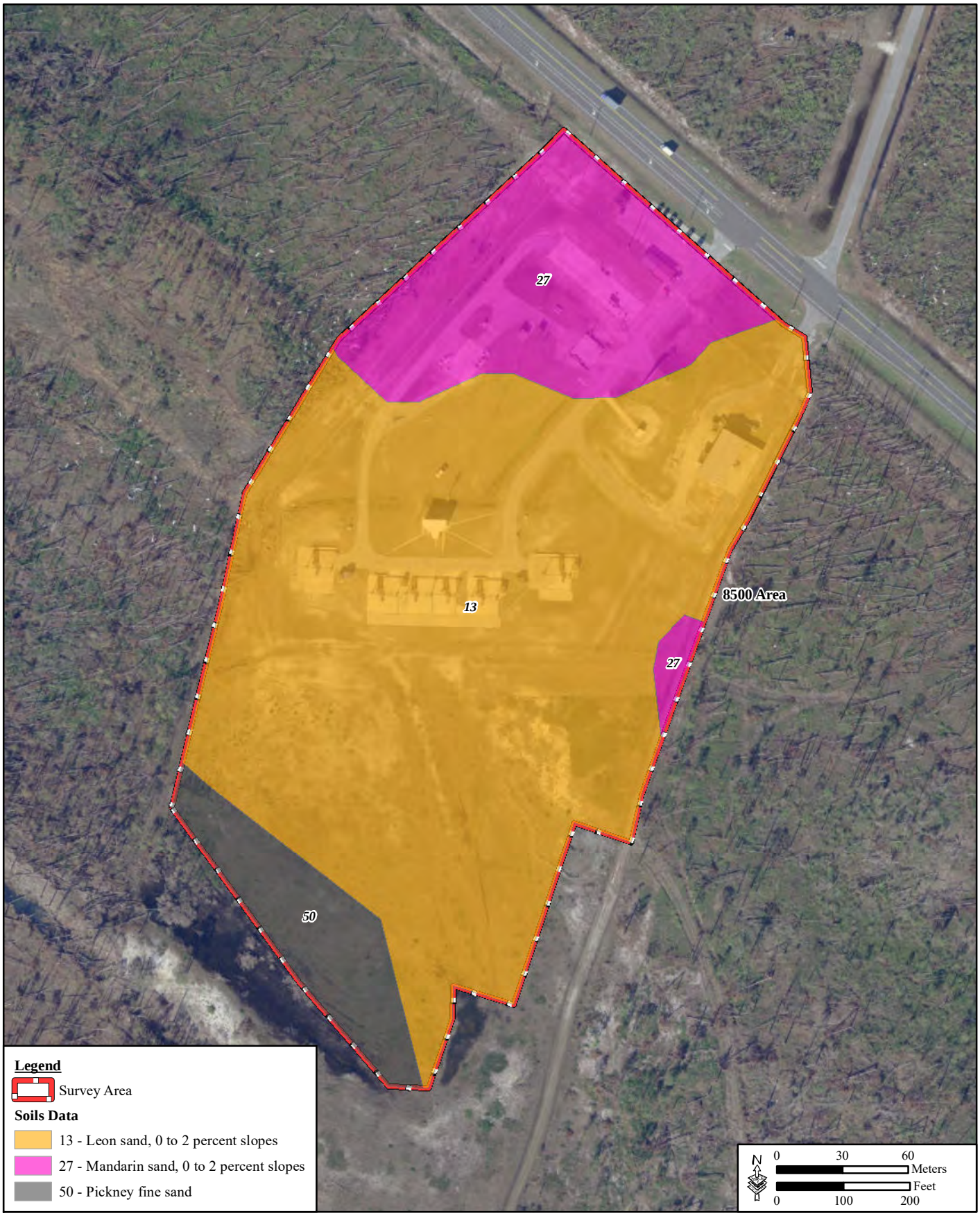

Figure 5. Map showing the soils data for the 8500 Area.

October 2019

fine sand, and Mandarin, 0 to 2 percent slopes (Soil Survey Staff 2019, Duffee et al. 1984). A description of each soil type follows.

Table 2. Soil Units within Project Survey Areas.

Project Survey Area	Map Symbol	Soil Type	Acres (sum)
Flightline	43	Urban land	178.81
Flightline	40	Arents 0 to 5 percent slopes	63.52
Munitions	50	Pickney fine sand	7.54
Munitions	13	Leon sand 0 to 2 percent slopes	1.88
Munitions	40	Arents 0 to 5 percent slopes	67.79
Munitions	29	Rutlege sand 0 to 2 percent slopes	1.04
Munitions	31	Osier fine sand	2.11
Munitions	99	Water	1.14
8500	13	Leon sand 0 to 2 percent slopes	13.09
8500	50	Pickney fine sand	1.36
8500	27	Mandarin 0 to 2 percent slopes	3.46

Arents 0 to 5 percent slopes. This soil unit consists of land created by human induced earthmoving activities including dredging, cutting, filling, and levelling. Slopes are generally manufactured and smooth. A variety of soil color is possible depending on mixture of parent material and is mostly sandy in texture within Bay County (Soil Survey Staff 2019, Duffee et al. 1984).

Urban land. This soil unit is primarily those areas consisting of high densities of residential, commercial, and industrial developments. The surface of these areas is typically graded, and the original soils may have been altered by cutting, filling, shaping, and grading, or may have been overlain by concrete or other surface coverings (Soil Survey Staff 2019, Duffee et al. 1984).

Pickney fine sand. This soil unit is a very deep and very poorly drained sandy soil situated on nearly level flats and slightly depressional areas in the coastal lowlands. Slopes are primarily flat to less than 1 percent. The surface layer is black sand to a depth of approximately 76.2 cm (30 in). A subsurface layer of dark gray fine sand extends to a depth of 116.8 cm (46 in). The substratum extends to a depth of 203.2 cm (80 in) and is composed of gray or light gray fine sand (Soil Survey Staff 2019, Duffee et al. 1984).

Leon sand 0 to 2 percent slopes. This soil unit is a very deep and poorly drained sandy soil of the coastal lowlands. Slopes are generally less than 2 percent and are situated in areas of nearly level flatwoods. The surface consists of dark gray sand to about 7.62 cm (3 in). A gray sand subsurface extends to a depth of 38.1 cm (15 in) and is underlain by subsoil that extends to 203.2 cm (80 in). The subsoil consists of three distinct parts that include a dark reddish brown and dark brown sand upper part, a light brownish gray and very pale brown sand middle part, and a very dark brown sand lower part (Soil Survey Staff 2019, Duffee et al. 1984).

Rutlege sand 0 to 2 percent slopes. This soil unit occurs along drainageways on nearly level to slightly depressional surfaces. The surface layer is typically black sand to a depth of 33.0 cm (13 in) followed by very dark gray sand to 55.9 cm (22 in). Subsoil consists of gray sand to 139.7 cm (55 in) and light gray sand mottled with yellow and brown to 203.2 cm (80 in) (Soil Survey Staff 2019, Duffee et al. 1984).

Osier fine sand. This soil unit is a somewhat poorly drained soil in nearly level or in slightly depressional areas and flatwoods. The surface layer is typically black fine sand to a depth of 20.3 cm (8 in) followed

by a subsurface of dark gray fine sand to 86.1 cm (34 in). Subsoil is a dark gray fine sand to 109.2 cm (43 in), dark gray fine sand to 152.4 cm (60 in) and then brown and gray fine sand to 203.5 cm (80 in) (Soil Survey Staff 2019, Duffee et al. 1984).

Mandarin 0 to 2 percent slopes. This soil unit is a somewhat poorly drained soil in nearly level or very gently sloping environments on ridges and knolls in the flatwoods. Typically the surface layer is gray sand to a depth of about 17.8 cm (7 in). A subsurface layer is composed of white sand to a depth of 63.5 cm (25 in). Subsoil is dark brown sand to 91.4 cm (36 in) and then brown and dark brown sand to 142.2 cm (56 in). A substratum consisting of light brownish gray sand occurs to 203.5 cm (80 in) (Soil Survey Staff 2019, Duffee et al. 1984).

Flora and Fauna

The Florida panhandle lies entirely within the Coastal Plain physiographic province. This region is further subdivided into the Northern Highlands and the Gulf Coast Lowlands, the latter of which encompasses the southern portion of Bay County and the Tyndall AFB project area (Rupert 1993). The predominant natural communities on the facility are estuarine tidal marsh, scrub habitat, mesic flatwoods, scrubby flatwoods, wet flatwoods, beach dunes, and baygall.

Tidal marsh habitat occurs in the coastal zone and includes areas where the natural community is predominantly herbaceous. These areas are typically protected from large waves by a topographic barrier such as a shoreline slope or barrier island. This habitat may have distinct vegetation zones dominated by a single species of grass or rush. Seaward edges are typically dominated by saltmarsh cordgrass (*Spartina alterniflora*) while higher and less frequently flooded areas are dominated by needle rush (*Juncus roemerianus*). Other species present may include Carolina sea lavender (*Limonium carolinianum*), wand loosestrife (*Lythrum lineare*), and perennial saltmarsh aster (*Symphyotrichum tenuifolium*). Freshwater influx from the uplands may influence the landward edges of the marsh, which may contain species such as needle rush, and sawgrass (*Cladium jamaicense*), as well as several species of *Spartina* cordgrass (Florida Natural Areas Inventory [FNAI 2010]).

Scrub habitat is a unique plant community characterized by the dominance of evergreen woody shrubs and herbaceous perennials with extremely limited or no tree canopy. It develops on dry, xeric, sandy ridges and dunes typically behind beaches. Common plants found in scrub habitat include sand pine *(Pinus clausa)*, Florida rosemary *(Ceratiola ericoides)*, saw palmetto *(Serenoa repens)*, threeawns *(Aristida* spp.*)*, hairsedges *(Bulbostylis spp.)*, and sandyfield beachsedge *(Rhynchospora megalocarpa)* (FNAI 2010).

Mesic flatwoods habitat is characterized by an open canopy of pines, principally longleaf pine *(Pinus palustris)* and a dense ground layer of low shrubs, grasses, and forbs. Common plants of the mesic flatwoods include slash pine *(Pinus elliottii)*, saw palmetto, galberry *(Ilex glabra)*, coastalplain staggerbush *(Lyonia fruticosa)*, wiregrass *(Aristida stricta)*, dropseeds *(Sporobolus curtissii)*, panigrasses *(Dichanthelium* spp.*)*, and broomsedges *(Andropogon* spp.*)* (FNAI 2010).

Scrubby flatwoods habitat includes an open canopy of widely spaced pine trees with a low, shrubby understory of scrub oak *(Quercus* spp.*)* and saw palmetto. The primary canopy species is longleaf and slash pine. One of four species of scrub oak and typical plants found in the mesic flatwoods including saw palmetto are also present. Wiregrass, broomsedge bluestem *(Andropogon virginicus)*, and little bluestem *(Schizachyrium scoparium)* are some of the grasses found within the scrubby flatwoods (FNAI 2010).

Wet flatwoods are pine forests with little or no midstory, but with a dense groundcover of herbs, grasses, and low shrubs. Dominant pines include longleaf pine, slash pine, and pond pine *(Pinus serotina)*. The groundcover may include sweetbay *(Magnolia virginiana)*, swamp bay *(Persea palustris)*, titi *(Cyrilla recemiflora)*, and wax myrtle *(Myrica cerifera)*. Herbs include wiregrass, blue maidencane *(Amphicarpum muhlenbergianum)*, toothache grass *(Ctenium aromaticum)*, beaksedges *(Rhynchospora chamanni, R. latifolia,* and *R. compressa),* and pitcher plants *(Sarracenia* spp.*)* (FNAI 2010).

Beach dune communities contain predominantly herbaceous cover of typically coastal specific plants. Sea oats *(Uniola paniculata)* typically builds this community, whose stems trap windblown sand grains from the beach. Other grasses tolerant of sand burial may include bitter panicgrass *(Panicum amarum)* and saltmeadow cordgrass *(Spartina patens)*. Camphorweed *(Heterotheca subaxillaris)* may grow with sea oats along with creeping species such as beach morning glory *(Ipomoea imperati)* and railroad vine *(Ipomoea pestcaprae* ssp. *brasiliensis)*, as well as salt-tolerant grasses such as seashore paspalum *(Paspalum vaginatum)* and seashore dropseed *(Sporobolus virginicus)* (FNAI 2010).

Baygall is an evergreen forested wetland of bay species located in a pronounced surface depression. Bay species found in baygalls include loblolly bay *(Gordonia lasianthus)*, sweetbay, and swamp bay *(Persea palustris)*. Examples of understory vegetation include fetterbush *(Lyonia lucida)*, large gallberry *(Ilex coriacea)*, dahoon *(Ilex cassine)*, black titi *(Cliftonia monophylla)*, and wax myrtle. Other trees may be found in the canopy along with the bays. These may include loblolly pine, sweetgum *(Liquidambar styraciflua)*, and swamp tupelo *(Nyssa sylvatica* var. *biflora)* (FNAI 2010).

The variety of habitats found within the project area support a great number of mammals, birds, reptiles, and amphibians. Mammalian species common to the area include common raccoon *(Procyon lotor),* coyote *(Canis latrans)*, swamp rabbit *(Sylvilagus aquaticus)*, and river otter *(Lontra canadensis)*. Other species likely to occur in the project area include white-tailed deer *(Odocoileus virginianus)*, Virginia opossum *(Didelphis virginiana)*, and common muskrat *(Ondatra zibethicus)*.

Florida is home to 142 native species of amphibians and reptiles (Krysko et al. 2011). Common species within the area of Tyndall AFB and the central Florida panhandle include American alligator *(Alligator mississippiensis)*, green anole *(Anolis carolinensis)*, bluestripe ribbon snake *(Thamnophis sirtalis sauritus)*, southern black racer *(Coluber constrictor priapus)*, and Florida cottonmouth *(Agkistrodon piscivorus conanti)* (Krysko et al. 2011). The area is also within the range of the Eastern indigo snake (*Drymarchon corais couperi*) that is Federally listed as a threatened species due to habitat loss (Krysko et al. 2011).

During a study conducted between 1961 and 1963, Cooley (1978) identified 180 species of bony fishes in and around Pensacola's estuary system. Several of the more common species encountered during these surveys included southern codling (*Urophycis floridana*), gafftopsail catfish (*Bagre marinus*), sand weakfish (*Cynoscion arenarius*), gulf menhaden (*Brevoortia patronus*), and flathead mullet (*Mugil cephalus*).

According to the bird checklist for Tyndall AFB (Department of Defense [DoD] Partners in Flight [PIF] 2013), 253 resident, migratory, and wintering avian species have been recorded on the Tyndall AFB facility. Common resident species that utilize the various habitats found on the facility for breeding and nesting purposes include northern cardinal (*Cardinalis cardinalis*), common yellowthroat (*Geothlypis trichas*), fish crow (*Corvus ossifragus*), European starling (*Sturnus vulgaris*), sanderling (*Calidris alba*), laughing gull (*Leucophaeus atricilla*), mourning dove (*Zenaida macroura*), and great blue heron (*Ardea herodias*). Migrant species include those birds that utilize the variety of habitats on Tyndall AFB as stopover sites during their annual southbound (spring) or northbound (fall) migrations. Included among these are lesser yellowlegs (*Tringa flavipes*), semipalmated sandpiper (*Calidris pusilla*), pectoral

sandpiper (*Calidris melanotos*), red-eyed vireo (*Vireo olivaceus*), blue grosbeak (*Passerina caerulea*), indigo bunting (*Passerina cyanea*), and Baltimore oriole (*Icterus galbula*). Numerous species also travel from more northerly latitudes to winter on the facility including common loon (*Icterus galbula*), dunlin (*Calidris alpina*), piping plover (*Charadrius melodus*), semipalmated plover (*Charadrius semipalmatus*), horned grebe (*Podiceps auritus*), American robin (*Turdus migratorius*), yellow-rumped warbler (*Dendroica coronata*), savannah sparrow (*Passerculus sandwichensis*), swamp sparrow (*Melospiza georgiana*), American goldfinch (*Spinus tristis*), and numerous species of waterfowl (DoD PIF 2013).

CULTURAL SETTING

Prehistoric Context

The prehistory of the Florida Panhandle/Northwestern Florida region extends deep into remote antiquity, is unquestionably complex, and as a result has many unresolved controversies. A comprehensive discussion of the prehistoric record and the divergent opinions of specialists are beyond the scope of this investigation. The following discussion is intended to be general in nature with a focus on major trends in the regional culture history[1].

The exact timing of the first human migration into North America is still a subject of considerable debate. The general consensus among archaeologists, based on datable archaeological evidence from contexts with credible integrity, suggests that humans were in North America by the end of the Late Pleistocene epoch—sometime around 11,200 years Before Present (B.P.) to 10,900 B.P. (Anderson et al. 1996; Grayson 1993; Milanich 1994; Taylor et al. 1996; Beck and Jones 2007). By this time, human populations were established in the Americas as far south as Chile. Most scholars agree that the then-extant Bering Land Bridge was the primary access point for the earliest Americans, and it is possible that additional populations crossed via coastal routes.

The landscape encountered by the initial inhabitants of the Bay County area has changed dramatically from an upland river valley to a coastal bay. Florida supported interior forests, grasslands, and a coastal plain that was 100 miles wider than today (Weisman 2003:216). With lower sea level, the current location of Tyndall AFB would have been 60 to 70 miles from the Late Pleistocene coastline. Since that period, global climatic change has led to a rise in sea levels, inundating earlier coastlines and rivers. Climate change from a cooler, drier climate to one more mesic and warm with maritime influences has altered the available resources for people inhabiting the area. Throughout the geographic flux of the last 12,000 years, humans have maintained a presence in the region, and while the material remains of some of the earliest inhabitants of the region have been inundated by rising seawater along the continental shelf, the current project area locality was available for human occupation and use throughout this time.

Scholars recognize six major cultural periods for northwestern Florida. These cultural periods are distinguished by what has been interpreted as substantive changes in life ways as represented by the material remains of the inhabitants of the region over time. The timing of these periods is debated and somewhat arbitrary, as major changes in life ways and the material culture from which they are interpreted likely occurred over time, with various permutations over the landscape and not simultaneously on an absolute date. Nevertheless, changes in material culture form the chronological and interpretive backbone of prehistory and will be conformed to here.

The major culture periods generally recognized for northwestern Florida include the Paleoindian Period, Archaic Period, Woodland Period, Mississippian Period (some scholars combine this with the Woodland Period), Protohistoric Period, and the Historic Period (Table 3). Each of the major periods is further divided into multiple sub-periods and local phases based on the nature of the local archaeological record. Each of the local phases in Table 3 will be briefly summarized below. A more comprehensive synthesis of the prehistory and history of Tyndall AFB is provided in the *U.S. Air Force Integrated Cultural Resources Management Plan Tyndall Air Force Base* (Tyndall AFB 2016).

[1] Prehistoric dates and Table 3 dates are provided in years Before Present (B.P.), with protohistoric and historic dates in conventional *Anno Domini*.

Table 3. Cultural Chronology of Northwestern Florida.[*]

Culture Period	Subperiod	Phase/Culture(s)	Approximate Years B.P.
Historic		American	195 - present
		European	350 - 195
Protohistoric		Bear Point	550/450 - 350
Mississippian		Fort Walton - Pensacola	1050 – 550/450
Woodland	Late Woodland	Weeden Island - Wakulla	1650 - 1050
	Middle Woodland	Santa Rosa-Swift Creek	1740 - 1650
	Early Woodland	Deptford	2500 - 1740
Archaic	Late Archaic		5000 - 2500
	Middle Archaic		7000 - 5000
	Early Archaic		9500 - 7000
Paleoindian			12,000 – 9500

[*] Adapted from Milanich (1994).

The Paleoindian and Archaic Periods

Little is known of the earliest human inhabitants of the Florida Panhandle/northwestern Florida area. Rising sea levels since the end of the Pleistocene have inundated many coastal sites and destroyed others that were once exposed to human occupation (Faught 2004). Small groups of mobile hunter-gatherers are also difficult to detect archaeologically. Much of our understanding from this period is derived from rare lithic assemblages in securely dated contexts. The majority of Paleoindian sites discovered in Florida are in areas of karstic geologic formations to the east. Scholars have hypothesized that during the arid conditions that prevailed during the Late Pleistocene to Early Holocene, these karstic formations trapped water, forming watering holes where game animals would gather (Dunbar and Waller 1983; Dunbar et al. 1989). Such locations would provide opportunistic ambush locations for Paleoindians to kill prey and as a result, numerous archaeological sites of Paleoindian age have been located in these settings (Dunbar and Waller 1983; Dunbar et al. 1989). Paleoindian groups in Florida exploited large game animals and are recognized by large, distinctive projectile points. The lanceolate points, when combined with the spear-thrower, allowed the Paleoindians to hunt large mammals such as mammoth, mastodon, sloth, dire wolf, as well as bison, deer, and a variety of smaller game. The most characteristic Paleoindian tool identified in Florida is the Suwannee-type projectile point, although Clovis points have also been found. Numerous Suwannee points have been recovered in association with springs and rivers, where they were presumably used to ambush prey (Dunbar and Waller 1983; Dunbar et al. 1989; Milanich 1994; Milanich and Fairbanks 1980:39).

Additional diagnostic tools from the Paleoindian Period include unifacial scrapers, endscrapers, discoidal scrapers, and oblong scrapers, as well as adzes, spokeshaves, flaked knives, retouched flakes, blade tools, and oval stone weights presumably used for bolas (Milanich 1994:51; Milanich and Fairbanks 1980:39). Underwater excavations, such as those at Warm Mineral Springs, have given us a rare window into Paleoindian perishable tools of bone and shell. These include antler projectile points, socketed bone handles, an oak log mortar, and even a boomerang similar to those used by Australian Aborigines (Milanich 1994:53; Milanich and Fairbanks 1980:42).

As the climate gradually warmed around 9500 B.P., precipitation increased, sea levels rose, and plant and animal populations changed dramatically. The changing climate ultimately resulted in denser inland vegetation, which expanded the habitat of some species but reduced that of others. The populations of

megafauna were particularly vulnerable to changes in the climate and potentially under increased pressure from human predation, eventually became extinct (Milanich and Fairbanks 1980:45).

The Paleoindian Period is followed by the Archaic Period, which is marked by climate change and a shift from the hunting of large game animals to a more varied hunting and gathering lifestyle. Projectile points became progressively smaller, reflecting increased reliance on smaller and more furtive game. It also marks the beginnings of horticultural subsistence practices. The warmer and wetter conditions mentioned above also favored some plant species, such as the wild ancestors of corn, beans, squash, sunflower, and goosefoot. Human populations in the Americas began an intense economic relationship with these plant species, and in the process domesticated many of them whether through intentional selective breeding or by inadvertently scattering their seeds while harvesting and transporting them (Smith 2006).

Artifacts from Archaic Period sites typically include a wide variety of chipped stone projectile points, ranging from large points with concave stems in the Early Archaic (Arredondo), to notched varieties in the Late Archaic (Putnam, Layfayette and Clay). A higher population density than in previous periods is attested to by the fact that stemmed Middle Archaic points are the most frequently found type in Florida (Milanich and Fairbanks 1980:51-57). Some larger sites are known to be located near lithic quarries, though isolated quarry locations also exist. Lithic technology was an integral part of the Archaic economy, though less is known of perishable commodities and tools. Surviving bone tools include fish hooks, antler handles, awls and punches (Milanich and Fairbanks 1980:54).

A variety of ground stone implements can be found at sites dating to the Late Archaic Period (5000 to 2500 B.P.) along with evidence for semi-sedentary villages with formative agricultural practices. It is likely that social groups would aggregate seasonally into large communities at select times of the year, and disperse into smaller groups at other times. Larger settlements are known to cover more than 6 ac and produce hundreds of stone tools when surface collected (Milanich and Fairbanks 1980:50). Archaic peoples in Florida also constructed highly visible ring-shaped shell middens, some of which are 6 meters (m) in height and devoid of habitation debris. These seem to be deliberate monuments constructed during feasting events associated with aggregations of the population (Wallis 2007:216).

The anaerobic environment of some underwater sites in Florida have resulted in the excellent preservation of cultural materials and offer archaeologists unique insights into Archaic ways of life. For example, low water levels at Newnans Lake in the year 2000 revealed more than 100 well-preserved wooden Archaic Period canoes (Wheeler et al. 2003). The canoes were generally fire-hollowed logs with a narrow beam and shallow depth. The canoes would not have been very stable in open water, but would be a rapid form of transportation in experienced hands. The discovery at Newnans Lake confirms that canoe technology was an important part of the Archaic adaptation to aquatic environments, and was already in place by 4500 to 5000 B.P. (Wheeler et. al. 2003:546).

At Tyndall AFB, a possible Late Archaic cemetery was discovered at site 8BY165, which also contains Deptford Phase and Weeden Island Phase components. The cemetery included the burial of three to four individuals. Although no artifacts were found in association with the burials radiocarbon dates of cal 353-358 BC (2143 BP 1σ error 29) were obtained for the Woodland Period component of the site situated in the deposit above the cemetery suggesting an earlier Archaic Period date for the cemetery. The presence of the cemetery suggests Archaic Period people returned to the location periodically (Tyndall AFB 2016).

Radiocarbon dates were also obtained from an additional Late Archaic site (8BY09) at Tyndall AFB. Radiocarbon dates from 8BY09 suggest the site was occupied from 2,510 and 3,500 BP (840-470 B.C.)(Tyndall AFB 2016).

Paleoindian and Archaic Period sites are relatively rare in northwest Florida. The National Register of Historic Places (NRHP) listed Thomas Creek Archaeological District (8SR338[2]) in Santa Rosa County and the Page-Ladson site (8JE591) between Jefferson and Taylor counties as among the few regional sites with evidence of Paleoindian and Archaic Period occupations. The continuing rise of sea levels has inundated many coastal sites, including shell middens that have only been recently identified by divers (Milanich and Fairbanks 1980:50). The rising sea level associated with Holocene warming have affected the cultural record of Florida dramatically, and many surviving sites are now miles offshore, while others have been severely damaged or destroyed by erosion (Weisman 2003:216-217).

The Formative Period: Woodland and Mississippian Cultures

Deptford Phase (2500 to 1740 B.P.)

The early Woodland Period in northwest Florida is defined by increasing sedentism, population growth, the appearance of burial mounds, and a marked increase in plant domestication. Pottery and ceramic production technology had already been introduced by Late Archaic times and continued to develop and flourish in the Woodland Period (Milanich and Fairbanks 1980:60). From this point forward, most scholars primarily differentiate chronological phases by changes in pottery types. The Deptford Phase is recognized by sand-tempered pottery stamped with carved wooden paddles, and is further differentiated by distinct methods that include Simple-Stamped, Check-Stamped, and Linear Check-Stamped types. Malleated pottery (roughened with a paddle wrapped in cord) and smooth-walled types are also present and recognized methods of this early phase (Milanich and Fairbanks 1980:65). Deptford Phase ceramics have non-spiculate, non-micaceous grit and sand paste (Cordell 1993).

More than 500 Deptford Phase sites have been documented in north Florida, and there is potential for many more to be discovered. Four Deptford Phase sites are listed on the NRHP in northwest Florida and include the Fort Walton Mound (8OK6), the Waddells Mill Pond site (8JA65), the Yent Mound (8FR5), and the Pierce site (8FR14). Each of these sites also contains later occupational components. One archaeological district containing Deptford Phase sites, the Thomas Creek Archaeological District (8SR338), is also listed on the NRHP. Additional Deptford phase sites important to the regional prehistory include the Trestle Bridge, Hawkshaw (8ES1287), Pirate's Bay, Tucker, Carrabelle (8FR2), and Oakland Mound (8JE53) sites.

Deptford Phase sites are frequently located in live oak-magnolia hammocks adjacent to salt marshes (Milanich and Fairbanks 1980:68). At the time, these locations would have provided a wide range of edible plants and animals, and archaeological evidence indicates that Deptford Phase populations exploited nearly all of the available resources. Additional habitats, each supporting a variety of economically important species, were located nearby and were easily accessible by canoe or overland travel (Milanich and Fairbanks 1980:69). Data from Hawkshaw (8ES1287), Moccasin Mound (8SR85), and the Tucker site indicate that Deptford Phase populations exploited such estuarine resources as oyster, rangia, marsh clam, and several species of bony fish, as well as terrestrial animals such as deer, small mammals, and reptiles (Bense 1985:161-2; Claassen 1985:128; Milanich 1973:57). At Hawkshaw (8ES1287), there is also evidence of extensive gathering in the form of hickory nuts and acorns (Bense 1985:162). However, there is currently no evidence for the cultivation of domesticated plants from any Deptford Phase sites in northwest Florida, despite the evidence for increasing sedentism and increasing population. This may be a consequence of limited data from a small range of sites or the limited number of paleoethnobotanical studies conducted at Deptford Phase sites to date.

[2] Florida Master Site File site numbers are provided where available. Some named sites have not been assigned formal site numbers, whereas some site numbers have no associated names.

Deptford Phase sites typically consist of three types: shell middens, inland middens, and burial mounds. Of the three site types, shell middens are the most common, the most visible, and the most well-known/documented. Local examples include the Hawkshaw site (8ES1287) in Pensacola, and the Pirate's Bay site on Choctawhatchee Bay. Deptford shell middens are often circular, ranging from 6 m to 9 m in diameter, and represent the accumulation of refuse from individual households. At sites with longer occupations, the middens can overlap, and sometimes form a larger communal midden. Fully excavated examples of Deptford Phase houses are oval shaped, can be as large as 6.7 m to almost 10 m in length, and tend to be arranged in a linear pattern parallel to the marsh. It has been estimated that each house was inhabited by five to six individuals and that Deptford Phase villages had five to 10 houses at any given time (Milanich and Fairbanks 1980:72-73).

Inland sites tend to be smaller than coastal sites, and can be more difficult to detect archaeologically. Compared to coastal locations, inland sites are relatively small and ephemeral, containing only artifact scatters with very limited assemblages and occasionally shallow middens. Inland sites are typically located around lakes and along rivers in the Tallahassee Hills (Tesar 1980:77) and in the pine forests of the Apalachicola National Forest (Forney 1985:101). Deptford Phase sites are also found on river channels, springheads on tributaries of streams, or adjacent to lakes and marshes in such places as the Upper Apalachicola River (White 1981), the Lower Apalachicola River Valley (Henefield and White 1986), the Choctawhatchee Bay area (Thomas and Campbell 1985:73) and in the Escambia River Valley (Bense 1985:163). Milanich (1973:56) suggests that this distribution indicates primary settlement along the coast, but sporadic or seasonal use of inland sites. Some researchers (White 1986:203; Tesar 1980:78), however, argue for a more intensive interior occupation. Given the lower visibility of interior sites compared to coastal sites, this issue remains unresolved.

Deptford Phase populations also constructed burial mounds, which occur late in the Deptford sequence and are quite rare, but can occur in a variety of ecological settings (Sears 1962). Deptford Phase examples of burial mound sites include Crystal River, Yent (8FR5), and Pierce (8FR14). The famous Yent Mound and Pierce Mound A are located on the coast (Sears 1962:6), but the Oakland Mound (8JE53) is found in inland Jefferson County (Tesar 1980:75). Although the exact dates of both Yent and Pierce are controversial (possibly dating to the post-Deptford Santa Rosa and Swift Creek phases), the Oakland Mound (8JE53) is securely dated to the Deptford Phase (Morrell 1960). Regardless of its exact chronological sequence, the Yent Mound represents the first clear evidence of the elaborate mortuary ceremonialism that characterizes the mortuary rituals of later periods.

Based on evidence from Yent, Sears (1962) identified a complex of ceremonial items he called the “Yent Complex.” Although Deptford Phase sites are found across northern Florida, Yent Complex artifacts are confined to northwest Florida, along the Gulf Coast and including the current project area. The elaborate ceremonialism attested to by the Yent Complex may have been a result of contact both with more complex Woodland societies of the north (e.g., Adena, Hopewell, Cartersvile, and Copena) and with Gulf coastal plains peoples such as Tchefuncte (Milanich and Fairbanks 1980: 84). Supporting this hypothesis is the fact that many exotic items originating in these areas were found in early excavations.

Yent Complex mounds are round or oblong, and range from 18 m to 30 m in diameter (Sears 1962:5-6). Although many of the burials found in the mounds date from subsequent phases (Santa Rosa-Swift Creek through late Fort Walton), these structures eventually contained hundreds of burials indicating sustained use. Burial types within the mounds were diverse and include flexed, bundle, and single skull burials, as well as the occasional extended burial at Crystal River. The variation in burial types is further evidence that the mounds were used continuously for long spans of time (Sears 1962:4-5).

Funerary offerings associated with the Yent Complex are numerous and diverse, and include ceramic forms not normally found in Deptford Phase village sites. Mortuary vessels include a wide range of

unique and elaborate forms. At least some of these forms are thought to have been used to prepare ceremonial or medicinal teas, such as the infamous "black drink" (*Ilex vomitoria*) made from yaupon holly, which was used in historic periods to induce vomiting during religious ceremonies (Milanich 1994). Many of the ceramic vessels were ceremonially "killed" by punching a hole through the bottom, presumably so that the spirit of the vessel could accompany the dead to the afterlife or to prevent reuse (Milanich and Fairbanks 1980:86-87).

Other, more exotic items found in association with burials include copper panpipes, copper plates, and copper ear spools. One pair of copper earspools from Crystal River was silver plated and inset with pearls (Milanich 1994; Milanich and Fairbanks 1980:86). Cut carnivore teeth, plummets made from copper or stone, soapstone pipes, and an array of shell, bone, and copper ornaments are also known from burial contexts (Sears 1962:6-8; Weisman 2003:212). The chronological timing of the introduction of many of these exotic objects is uncertain due to the fact that the mounds were investigated before modern archaeological methods and techniques were employed. However, Deptford Phase sites may include insipient forms of an increasingly elaborate ceremonialism associated with mortuary practices on the Gulf Coast throughout later periods (Milanich and Fairbanks 1980:88).

Santa Rosa-Swift Creek Phase (1740 to 1650 B.P.)

The Santa Rosa-Swift Creek Phase is a local cultural manifestation characterized by overlapping evidence of the Santa Rosa and Swift Creek cultural phases. The Santa Rosa-Swift Creek Phase represents the Middle Woodland Subperiod in northwest Florida. It is recognized by innovative pottery technology, mound burials, and a ceremonial complex which appears to have been heavily influenced by cultures to the north (Milanich and Fairbanks 1980:117). As mentioned above, artifacts of the Yent Complex may actually belong to the Santa Rosa-Swift Creek Phase and postdate Deptford. However, there is a considerable continuity between the Early and Middle Woodland Periods, and Santa Rosa or Swift Creek Phase components are found at all the Deptford Phase sites listed on the National Register.

Santa Rosa and Swift Creek are conceptualized as both the pottery styles and the heterogeneous groups that made, used, and distributed them. Complicating the issue is that these pottery types overlap in both time and space. In northwestern Florida, Santa Rosa pottery designs are influenced by cultures in the Lower Mississippi Valley (e.g., Marksville) and in Mobile Bay. By contrast, Swift Creek appears to have originated in Georgia and is found exclusively east of the Apalachicola Valley, except in mortuary contexts where Swift Creek ceramics occasionally occur as exotic grave goods. Wallis (2007:212) suggests that Swift Creek is best thought of as composed "of cultural groups that were distinct in many ways [yet] participated in a vast mélange of complicated stamped pottery production, exchange, and use". Santa Rosa and Swift Creek pottery series co-exist west of the Apalachicola Valley (as far as Mobile Bay) where they are referred to as Santa Rosa-Swift Creek.

Accordingly, both Santa Rosa and Swift Creek pottery series exhibit considerable internal diversity. The Santa Rosa pottery series includes Alligator Bayou Incised, Basin Bayou Incised, Santa Rosa Stamped, Santa Rosa Punctated, and fine paste, thin-walled plain ware. Likewise, Swift Creek pottery types include Swift Creek Complicated Stamped, St. Andrews Complicated Stamped, New River Complicated Stamped, West Florida Cordmarked, and Crooked River Complicated Stamped. Basal sherds with tetrapods and scalloped and/or crenellated-edged rims are also diagnostic of Swift Creek pottery (Milanich and Fairbanks 1980:90, 120-123).

Swift Creek lithic tools are generally made from imported chert and occasional exotic items, such as fossils and micaceous schist (White 1986:209). Locally available raw materials were used as well, but the nonlocal lithic materials were acquired through trade relationships within the Hopewell interaction sphere centered in the Mississippi valley to the west. Projectile point types include Swift Creek, Savannah

River, Bakers Creek; all of which are stemmed. Some examples are resharpened, and may have been hafted as knives rather than projectile points (Milanich and Fairbanks 1980:119-120).

Santa Rosa and Swift Creek sites in northwest Florida are not particularly well understood at present. Fewer sites are known from this phase than from other periods and few excavations have been conducted at Santa Rosa or Swift Creek sites. Many of the excavations were small-scale or took place decades ago, before current methods and techniques became available or common. Finally, the majority of previous investigations have been carried out at coastal sites, skewing our sample and resulting knowledge towards coastal occupations (Tesar 1980:596). Santa Rosa-Swift Creek sites listed in the NRHP include the Porter's Bar (8FR1), Hartsfield (8LE120A), Yon Mound and Village (8LI2), and Bird Hammock (8WA30) sites. Other important sites include Green Point (8FR11), 8BY73, Refuge Tower (8WA14), Snow Beach (8WA52), and Third Gulf Breeze (8SR8) sites. At Tyndall AFB Swift Creek pottery has been documented at the Hare Hammock site (8BY1347) a ring-midden village (Tyndall AFB 2016).

Known site types include inland villages, scattered inland campsites, coastal villages in strand hammocks, and coastal shell middens. Coastal sites are best known through shell middens, which have been discovered directly on the beach (e.g., Third Gulf Breeze [8SR8]), in estuaries (e.g., 8BY73 and Depot Creek [8GU56]), or slightly inland in coastal hammocks (e.g., Bird Hammock [8WA30]). Coastal shell middens can be horseshoe or circular shaped, rectangular, or linear. Circular, horseshoe-shaped, or rectangular shell middens have cleared internal areas and tend to be much larger (e.g., Bird Hammock [8WA30], Snow Beach [8WA52], and 8BY73). While the size and depth of the circular, semicircular, or rectangular middens is thought to indicate permanent villages, the linear middens are smaller and may indicate temporary special-use camps (Milanich and Fairbanks 1980:118).

Inland sites have received less attention, likely as a function of survey coverage in interior areas (Tesar 1980:596). Where good coverage exists (e.g., the Apalachicola River Valley), most sites are located near the river (e.g., 8JA205, 8JA227). A fewer number of sites are located on high bluffs (e.g., Beaver Dam Creek [8LI208]) or at the edge of swamps (e.g., the Roy Whitfield site [8GU52]) (White 1986:204; Henefield and White 1986:123). Likewise, Swift Creek sites in the Tallahassee Hills are most often near lakes and swamps (e.g., 8LE471, 8LE484) (Tesar 1980:595).

Most of our information about the subsistence economy of Santa Rosa and Swift Creek populations is derived from coastal sites such as Third Gulf Breeze (8SR8), Snow Beach 8WA52), Refuge Tower (8WA14) and 8BY73. Inhabitants of these sites exploited estuarine resources, including oyster, scallops, and fish (Phelps 1969:15; Bense and Watson 1979:109). Terrestrial animals such as deer, small mammals, reptiles, and birds were also hunted. Available faunal data suggest that exploitation of coastal resources primarily occurred during summer months (Phelps 1969:15). Very little modern paleobotanical work has been done for this phase. Bense and Watson (1979:109) indicate reliance on hickory nuts and acorns from 8BY73, but other evidence for the use of wild or domesticated plant foods is lacking. Phelps (1969) reports a squash seed, but it remains the only evidence of horticulture reported to date, despite evidence of growing populations and residential stability.

Burial mounds are commonly found adjacent to the larger coastal shell middens (e.g., the Porter's Bar site [8FR1]) and to larger inland village sites (Milanich and Fairbanks 1980:118). The inland mounds have not been investigated extensively at this time. Mayport Mound (8DU96) seems to have grown gradually over a period of five centuries as successive interments and associated grave offerings were deposited and covered by earth (Wallis 2007:218-219). Early excavations of less than half of this mound by Sahlins and others revealed over 50 individuals, along with an assortment of mica, tobacco pipes, projectile points, celts, shell beads, and various copper and hematite artifacts (Wallis 2007: 218-219). Pottery caches with shell cups are known at some sites and are thought to indicate the continuity of medicinal tea use. Overall, evidence suggests that Santa Rosa and Swift Creek ceremonial traditions were transitional and

shows continuity between the previous Deptford Phase and later Weeden Island traditions, as also observed in the continuity of site use (Milanich and Fairbanks 1980:124, Wallis 2007:226).

Weeden Island-Wakulla Phase (1650 to 1050 B.P)

The Weeden-Island-Wakulla Phase represents the Late Woodland Subperiod in Northwestern Florida. This period sees the dramatic fluorescence of the elaborate ceremonialism originating in the Deptford Phase, and its subsequent replacement with a new form of ceremonialism influenced by the complex polities of the Mississippi Valley and its surrounding cultural sphere. The Weeden Island Phase is the most well-known of the Woodland Period archaeological cultures, with more than 1,000 sites documented to date. Five NRHP-eligible Weeden Island Phase sites (Porter's Bar [8FR1], Pierce, Yon Mound and Village [8LI2], Fort Walton Mound [8OK6], Bird Hammock [8WA30]), and the Thomas Creek Archaeological District [8SR388]) all have earlier habitation components indicative of cultural continuity with earlier phases. Other important Weeden Island sites include Aspalaga (8GD1), Torreya (8LI8), Sycamore (8GD13), Refuge Tower (8WA14), and Tucker.

The term "Weeden Island" was originally defined by Gordon Willey (1949) to include both Middle and Late Woodland subperiods on the Gulf Coast. Because of this, his use of the term included what we would now term Swift Creek and Santa Rosa. Subsequent scholars have also divided Weeden Island into two (White 1986), three (Thomas and Campbell 1985), or five (Percy and Brose 1974) distinct chronological phases.

Despite chronological discrepancies among scholars, the Weeden Island-Wakulla Phase is recognized by a wide range of pottery types. These include Carrabelle Incised, Carrabelle Punctated, Keith Incised, Weeden Island Incised, Weeden Island Punctated, Weeden Island Plain, Wakulla Check Stamped, complicated stamped, and corncob marked (Milanich and Fairbanks 1980:137, 141). Early in the sequence, ceramic types tend to be incised or punctated, while stamped varieties become more predominant later in the sequence. Effigy vessels are also documented earlier in the sequence for the Weeden Island-Wakulla Phase. It was originally believed that the effigy vessels and some well-made decorated vessels were the product of ceramic specialists; however, subsequent investigations at the McKeithen site (8CO17) in north Florida do not support the idea of specialist production (Cordell 1984).

Lithic assemblages include small triangular projectile point with a flat or concave bases, scrapers, choppers, knives, and hammerstones (Milanich 1974:22). A microlithic tool assemblage has also been documented at Weeden Island Palm Court (8BY43) in Bay County (Tesar 1965; Morse and Tesar 1974).

Weeden Island sites resemble those of the preceding period, and consist of coastal shell middens, inland middens, and burial mounds. Again, coastal shell middens are the most well-known and documented sites. The sites can be located directly on the coast (such as the Tucker site) or near estuaries and coastal swamps (Mound Field site [8WA8]). The coastal sites may be accompanied by one or more burial mounds (Milanich and Fairbanks 1980:132).

Inland Weeden Island-Wakulla sites have been located along ravines, on riverbanks, around lakes, along creeks, and on ridge tops near springs (White 1986:209; Tesar 1980:603; Percy and Brose 1974:18; Percy and Jones 1976:113). They take the form of small, sporadically used campsites or larger villages (Milanich and Fairbanks 1980:125). The latter have been interpreted as small, seasonal villages (Milanich 1974) or year-round settlements that moved every few years (Percy and Brose 1974:20). Smaller campsites are often within proximity to the larger villages, suggesting sporadic special-use locations rather than settlements (Milanich and Fairbanks 1980:125).

Examples of Weeden-Island-Wakulla village sites take a variety of forms. At the Torreya site (8LI8), several houses were arranged in a semicircle shape around a springhead (Milanich and Fairbanks

1980:126, Percy and Brose 1974:18). Likewise, the site of Aspalaga (8GD1) manifests as a circular midden some 900 m in diameter with a denser midden and three mounds in the center. However, the dating of the latter two features is uncertain, and they may postdate the Weeden-Island-Wakulla phase (Milanich and Fairbanks 1980:126). At Sycamore (8GD13) a single oval house approximately 9 m long by 6 m wide was discovered (Milanich 1974:28).

It has been argued that early Weeden Island occupation was centered on the coast but shifted inland during late Weeden Island times because of agriculture. However, it is possible that this perceived pattern is a result of increased survey coverage in recent years within inland settings (New World Research 1984). Available data suggest that Late Weeden Island subsistence was based on a broad spectrum of aquatic and terrestrial fauna and flora. Although maize agriculture is documented, it seems to have been used as a supplement rather than a staple at this time. Even inland middens can have significant accumulations of freshwater shell (White 1986:208). For example, subsistence at the Sycamore site (8GD13) in the upper Apalachicola Valley has yielded evidence of deer, numerous other mammals, shellfish, fish, nuts, acorns, fruits, and maize (Milanich 1974:33). A broad range of subsistence resources has also been recovered from Mack Bayou (8WL101), with a preponderance of estuarine and shallow coastal water species dominating the assemblage. Terrestrial species were limited to those likely to be taken at the forest edge. A large quantity of fish bones from the sheepshead fish (A*rchosargus probatocephalus*), known for its unusual dentition, were also recovered (Mikell 2012).

Weeden Island-Wakulla is known for spectacular earthen mounds which are fairly numerous along the coast and along the Apalachicola River. Mounds are usually found near or within habitation sites and can measure up to 42 m in extent and up to 1.5 m high. The Aspalaga site (8GD1) includes a crescent-shaped village, a midden, and three or four mounds grouped in a triangle or square (Milanich 1974:1). The size and complexity of this site has led Milanich to argue that this site was a regional center of some kind (Milanich and Fairbanks 1980:137, Milanich et al. 1984:191-192). Examples of excavated mounds suggest that significant status differences were forming between social groups. Some groups (thought to be distinct lineages) had higher proportions of status goods, such as slate gorgets, shell ornaments, and clay pipes (Milanich and Fairbanks 1980:134).

Mounds were used continuously and exhibit elaborate ceremonialism in their construction. At the McKeithan site, burials were defleshed in one location, stored in a charnel house, and eventually buried at even intervals around the mound. They were accompanied by ceramic effigy vessels, numerous ornaments, and a variety of stone and shell ornaments including plummets, pendants, beads, and shell drinking cups. A chiefly personage or ritual specialist inhabiting one of the mounds was apparently buried in his house, which was then burnt and buried (Milanich and Fairbanks 1980:135-141).

Although some researchers explain Weeden Island-Wakulla by invoking a hypothetical invasion by Mississippian peoples, it is now generally thought that Weeden Island represents a local development influenced by events to the west and north (Weinstein and Dumas 2008:215). As mentioned above, there is clear cultural continuity between the Weeden Island-Wakulla Phase and preceding periods. In addition, the elaborate mound burial practices in early Weeden Island are lacking in the more dispersed settlement patterns of late Weeden Island occupations. Although some population movement may have occurred, it seems likely that interaction between local groups and the more complex societies of the Mississippi Valley led to the "Mississippianization" of late Weeden Island groups. This process continues into the next phase and is manifest through growing social and political complexity and increasing status differences (Mikell 1992:54; Milanich and Fairbanks 1980:143).

Fort Walton-Pensacola Phase (1050 to 550/450 B.P.)

The Fort Walton-Pensacola Phase represents the Mississippian Period in northwest Florida and is defined by distinctive ceramics, large agricultural villages, and temple mounds (Marrinan and White 2007:292).

This period sees a greater integration of this region into the larger Mississippian interaction sphere, with the concomitant growth of large agricultural communities, monumental architecture, and social inequality. It also marks the end of pre-contact indigenous cultural development in Florida. There seems little doubt that the Fort Walton-Pensacola Phase populations are ancestral to the Apalachee, Chatot, and Pensacola people encountered by Narváez and by de Soto in the sixteenth century. Direct evidence of Spanish colonial contact has been identified at Pensacola culture sites (Milanich and Fairbanks 1980:194).

As originally defined, Fort Walton type ceramics are found east of the Apalachicola River, and Pensacola-type ceramics are found west of the river. However, there is considerable overlap in the distribution of these ceramic types. Both Pensacola and Fort Walton have a complex ceramic sequence, with a wide variety of types and variants, some found only in mortuary contexts. Distinctively Pensacola ceramic types include but are not limited to Pensacola Incised, D'Olive Incised, and D'Olive Engraved. The use of shell temper predominates in the west, while sand or grit temper is most common in the east. The majority of Pensacola ceramics found in residential contexts are simple plain wares, as was the case in Weeden Island (Milanich and Fairbanks 1980:203). The distribution of Pensacola and Fort Walton ceramics may correspond to distinct ethnic groups later in the protohistoric and historic periods, although this issue is uncertain and needs further exploration (Milanich and Fairbanks 1980:194, Marrinan and White 2007:292).

Weinstein and Dumas (2008) see the introduction of shell temper as signaling an intrusion of people into the northern Gulf Coast from the Moundville polity to the north. They cite high frequencies of late Woodland ceramic forms at important Pensacola sites (e.g., Bottle Creek [1BA2]) and a lack of transitional forms from Weeden Island types (Weinstein and Dumas 2008:204-205). In contrast, lithic types show continuity with Weeden Island types, except for the addition of small, triangular projectile points similar to those found at Mississippian sites throughout the Southeast (Milanich and Fairbanks 1980:196). Regardless, ceramic data suggest that Fort Walton and Pensacola Phase populations had similar ways of life, shared many cultural similarities, and were closely intertwined by innumerable social and economic relationships.

Important Pensacola Phase sites include the Bottle Creek Indian Mounds (1BA2), Butcherpen Mound (8SR29), Dauphin Island Mound, the Hickory Ridge Cemetery Archaeological District (8ES1280), the Naval Live Oaks Cemetery (8SR36), and the Fort Walton Mound (8OK6). Although Fort Walton is the site from which the "Fort Walton Culture" derives its name, the site itself has since been reassigned to the Pensacola culture.

Pensacola sites are found throughout northwest Florida and are located either directly on the coastal strand or inland. As is the case in the preceding periods, coastal sites are better investigated and more thoroughly documented. These range from small, linear shell middens representing temporary camps to very large (up to 200 m) and substantial shell middens indicative of villages. Larger villages had multiple temple mounds and obviously served as places central to the surrounding population (Milanich and Fairbanks 1980:195).

One of the largest of these central places is Bottle Creek (1BA2), located in the delta of Mobile Bay. This site includes at least 18 platform mounds, the largest measuring an astonishing 14 m high. Although the Pensacola culture was named for sites around the Pensacola and Choctawhatchee bays, there is a high frequency of Pensacola-related sites around both Mobile and Perdido bays. This has led Weinstein and Dumas (2008:204) to hypothesize that Bottle Creek was the center of the Pensacola culture.

Mound building during the Fort Walton-Pensacola Phase takes on a different character than in earlier periods, showing clear Mississipian influences. The use of mounds as collective burials becomes less common, with non-elites typically buried in cemeteries such as Hickory Ridge (8ES1280). The dead

were accompanied to the afterlife by a variety of grave offerings, including shell (e.g., *Whelk columellae)*, projectile points, greenstone celts, mica, and hematite.

In contrast to earlier periods, mounds constructed during this phase seem to have functioned both as platforms for chiefly residences and as chiefly tombs. On the death of a chief, his residence was burned and the entire mound was capped by a fresh layer of soil. In this way, mounds became larger over time. Chiefly personages were buried with symbols of their office, including copper and shell ornaments and fine ceramics. Repoussé copper breast plates have also been found, with cloth remnants suggesting they were attached to garments (Milanich and Fairbanks 1980:198). Although it is possible that the chiefs of smaller villages were subordinate to and derived authority from chiefs of larger settlements, the exact political relations between Pensacola culture sites is likely to remain obscure until more systematic work is done.

In terms of subsistence practices, both Pensacola and Fort Walton show considerable continuity with Weeden Island, with the exception of a growing reliance on plant cultivation (Mikell 1992:54; Milanich 1994). Inland Pensacola and Fort Walton sites tend to be located in areas with fertile, easily worked soil. This pattern is interpreted as reflecting the growing importance of maize cultivation. Large quantities of corn kernels have been recovered from sites in this time range. Presumably, inland sites were inhabited by horticulturalists who supplemented their traditional wild foods with maize, beans, and curcurbits (Milanich 1994; Milanich and Fairbanks 1980:197). Evidence of maize cultivation is also present at coastal sites, despite acidic forest soils. However, locally abundant estuarine resources probably formed the backbone of the subsistence system at coastal sites as they had in earlier times (Mikell 1992:54-55). European trade goods such as glass, silver and gold objects, and iron tools were first introduced by the end of the Fort Walton-Pensacola Phase (Milanich and Fairbanks 1980:196). Despite thousands of years of indigenous cultural development resulting in sophisticated and populous polities, European contact would prove to be devastating to indigenous populations. The tribal leaders recognized and often resisted Spanish colonial intrusion, but were gravely afflicted by diseases such as smallpox.

The Protohistoric Period

As discussed above, clear evidence of European contact is already attested to in the archaeological record in the later components of many Fort Walton-Pensacola culture sites. Although the first *recorded* European expedition to Florida was conducted by Ponce de Leon in 1513, the native inhabitants had already been in contact with the Spanish. Slavers, intent on capturing labor for use on plantations in the Caribbean, had been making forays into northwest Florida for years by the time that formal exploration began. The frequency of these interactions is indicated by the fact that one of the Native Americans encountered by de Leon already spoke Spanish on his arrival (Milanich and Fairbanks 1980:213). It is easy to imagine that many of these early and undocumented interactions with slavers were hostile in character, and may explain the ferocious native resistance encountered by early Spanish explorers. Cabeza de Vaca reports that the inhabitants of Pensacola Bay received the Spanish as friends, but then attacked them in the night without warning. Likewise, Hernando de Soto's interactions with the Apalachee and the Mabilians (from which the city of Mobile gets its name) were fairly disastrous, at least from the Spanish perspective (Weisman 2003:214).

Regardless of native efforts at resistance, these early encounters were destined to spread new European diseases to the region. The foremost of these was smallpox, which is believed to have killed well over half of the population of the New World. Smallpox is often fatal in children and the elderly. As such, it causes a demographic collapse while simultaneously eliminating the repositories of traditional cultural knowledge. Neither indigenous peoples nor contemporary Spaniards had a contagion theory of disease, and refugees from one settlement became carriers to the next. Investigations of burial mounds along the de Soto route show high rates of native mortality after his expedition, probably because of disease

(Weisman 2003:214). In northwest Florida, archaeological correlates to these events include a declining site density reflecting smaller populations, the decline of mound building and chiefly burials, and a decline in local craftsmanship coupled with an increasing proportion of European imports (Milanich and Fairbanks 1980:227).

The historical identity of the protohistoric peoples of coastal northwestern Florida is controversial. Inhabitants of the area east of the Apalachicola River Valley were recorded as "Apalachee" by the Narváez and de Soto expeditions, but west of the river cultural identities become more difficult and more controversial to reconstruct. Some identify the Pensacola archaeological culture with the "Mabilians" encountered by de Soto. However, as Marrinan and White (2007:312) point out, significant cultural changes could have occurred in this area both before the Spanish Entrada and because of it. As is described below, a series of population movements is associated with this period. In fact, the historic Pensacola tribe from which the area was named was formed from Muskogean speaking Apalachee who moved west into the modern Pensacola area in the early eighteenth century. Given the confused accounts of early recorded expeditions, complex population movements, possibly fluid ethnic divisions, and uncertainty about the degree to which ceramic styles represent cultural or ethnic identity, caution must be used in assigning the late Protohistoric populations to known historical groups.

In the earlier Protohistoric Period, material culture shows substantial continuity with earlier periods. In terms of ceramics, late Fort Walton-Pensacola (Bottle Creek subphase) gives way to the Bear Point subphase (550 to 300 B.P.) in northwest Florida. This phase is characterized by shell-tempered ceramics including Pensacola Incised, Pensacola Plain, Bell Plain, Mississippi Plain, D'Olive Incised, Moundville Incised, and Moundville Engraved (Mikell 1992:56). Ethnohistoric information for the time range in this area is very sparse. However, we have already seen that the preceding Fort Walton and Pensacola cultures were closely intertwined through social and economic ties. During the final stages of the Fort Walton-Pensacola Phase, these close cultural relationships had intensified. The proportion of Pensacola type ceramics increases during this phase, suggesting a "rapid increase in the inclusion of both ceremonial and secular Pensacola ceramics into a mature Fort Walton ceramic tradition" (Mikell 1992:61). By the time of European contact, the Pensacola culture was tightly integrated to groups both east and west, with western ties to the Bottle Creek area and by extension the Mississipian region perhaps predominating. It is perhaps significant that the historic Pensacola Apalachee eventually migrated to the Pensacola region rather than elsewhere, as they would have had local support.

By the Mission Period (1633-1635), the archaeological correlate of the Apalachee is called the Leon-Jefferson complex. Jefferson Ware is characterized by complex stamped ceramics, with the most common form being a bowl with a flaring rim. Given Catholic missionary presence, villages had no ceremonial mounds and burials shifted from mounds to flat cemeteries (Milanich and Fairbanks 1980:227). Houses were round, constructed of wattle and daub, and thatched with palmetto leaves. Overall, the material culture is less well made and shows less variety compared to earlier periods. Indigenous metalworking ceases, and lithic tools decrease in frequency as they are replaced by European imports. However, gunflints were manufactured locally, and broken glass was sometimes knapped into tools - as is done worldwide in colonial contexts (Milanich and Fairbanks 1980:229). The Apalachee were horticulturalists, relying on a mixture of agricultural and wild food resources. Crops included maize, beans, and curcurbits. As had been the case in previous periods, a tremendous diversity of wild resources were utilized (Milanich and Fairbanks 1980:228). They had chiefs who resided at larger settlements, and could assemble large armies of warriors from dispersed settlements (Weisman 2003 214). Like Mesoamerican populations as far south as the Yucatan, the Apalachee are described as playing the "great ball game" (Milanich and Fairbanks 1980:229-230).

Already depopulated by disease, Apalachee fortunes declined further at the beginning of Queen Ann's War of 1702. As part of a campaign against Spanish holdings, the English and allied native groups

destroyed many Apalachee missions and villages, taking over two thousand captives north to the Carolinas. Two years later Creek raids from Georgia destroyed more villages and took more captives, many which were assimilated into Creek society or sold to North Carolina slavers (Milanich and Fairbanks 1980:252). As many as 800 of the survivors fled west in 1704, becoming the historic Pensacola tribe. Other survivors no doubt persisted as well. Studies of Colonial Period St. Augustine have revealed that native women were readily accepted into Spanish households. This practice created a large and ever-growing Creole society, with these women acting as primary agents of cultural assimilation and adaptation (Weisman 2003:214). Although the distinctive Apalachee way of life comes to an end, some of their descendants survived locally by becoming incorporated into other populations or dispersing.

As discussed above, the Creek had already decimated the Apalachee, Timucua, and other northern Florida societies. Under pressure from slavers and unruly frontiersmen in Georgia, small bands of Creek migrated south into the deserted territory. In some cases they brought along culturally assimilated local captives, and sometimes settled among occasional surviving locals. These local survivals would have constituted a minority. While abandoned towns were sometimes reoccupied, the material culture shows no local precedents, instead clearly deriving from the early Creek complex to the north (Milanich and Fairbanks 1980:253).

The Creek, already quite diverse culturally, combine with local survivors and other refugees to develop a unique local cultural identity. They become known as the Seminole, the only native group to never sign a peace treaty with the United States (Milanich and Fairbanks 1980:254). As time progressed, the Seminole incorporated various other refugees, and persist despite the odds into the present. Seminole history is quite complex and is divided into five states beginning in 1716, though a complete treatment of Seminole history is beyond the scope of this summary.

Although never very populous, the early Seminole ranged widely and were experts at trading wild resources for European goods (Weisman 2003:215). Ceramic types associated with the historic Seminole include Ocmulgee Fields Incised, Walnut Roughened, and Chatahoochee Brushed. Unlike earlier local types these are malleated or scraped with a corncob, and some vessels have red paint. This difference makes it easy to distinguish early Seminole sites from those of earlier periods. Small, triangular projectile points are still in use, but most skirmishes and hunting seems to have been conducted with British flintlock muskets. Seminole burials are sometimes found placed in earlier burial mounds, often accompanied by blue or green glass beads (Milanich and Fairbanks 1980:254, 259). Settlement patterns show a changing cultural adaptation to local conditions. Early Creek settlements were generally inhabited year-round and feature a “squareground” flanked by summer and winter ritual buildings, sometimes still built on mounds. Mounds seem not to have been constructed by the early Seminole, although the squareground is retained. In addition, the settlement pattern becomes much more diffuse. This may have been in response to a growing reliance on feral cattle that had escaped from Spanish ranches (Milanich and Fairbanks 1980:255-256).

At the conclusion of the Seminole Wars of the early 1800s, the Seminole were reduced to 300 to 400 individuals. Most Seminole were forcibly resettled in the west while a few retreated into the depths of the Everglades - where they persisted. Very few sites from the later stages of Seminole history have been investigated (except by looters) and much more systematic work is needed on this period (Milanich and Fairbanks 1980:259). Today the Seminole number in the thousands, a testimony to their resilience and ability to adapt to difficult and rapidly changing conditions.

The Historic Period

European colonization of the northwestern Florida began in August of 1559, with the arrival of Spanish explorer Tristan de Luna in Pensacola Bay, who was charged with establishing a colony on the bay by the Viceroy of Mexico. Mexican scholar Carlos de Siguenza y Gongora would describe the bay nearly 100 years later as "the finest jewel possessed by His Majesty…not only here in America but in all his kingdom." Unfortunately for Luna, a powerful hurricane struck only weeks after his landing and destroyed nearly all of his ships. The surviving three ships were sent to Veracruz, Mexico, to plead for reinforcements to help the survivors, and nearly a year later ships returned and transported most of the survivors to Havana. By August of 1561, any remaining soldiers had abandoned the outpost and had returned to Mexico (Webster 2009).

The Spanish did not try to establish another settlement at Pensacola Bay until 1698, but were eventually forced to abandon the settlement in 1719 after Jean-Baptiste Le Moyne Bienville led the French to capture the settlement. Other Spanish settlements in the Tyndall AFB area consisted of forts San Marcos de Apalachee on the Wakulla River ca. 1680 to 1758 and Crevecouer, originally built by the French in present day Port St. Joe and taken over by the Spanish in 1719 when it was abandoned. For the most part, the Spanish colonial holdings in northwestern Florida were neglected and in a state of decline when the British eventually took it over. Mission wares and one Spanish period site has been found on the barrier island Tyndall AFB shares with St. Andrews State Park (Tyndall AFB 2016).

The British took control of Florida from Spain in 1763 as part of the Treaty signed to end the Seven Years' War, in which the Spanish supported the French against Britain. For their part, the British began a campaign of improving the infrastructure at Pensacola and the various forts stretched along the coast of Florida, including at Port St. Joe and St. Marks. The British sought to exploit the colony for economic gain and additionally set up trading posts to trade with the local Native Americans. However, despite the establishment of trade relationships and land agreements with the local Choctaw, Chickasaw, and Creek, British development of the region including clearcutting forests and over hunting eventually contributed to the Native Americans not having the ability to sustain their traditional way of life and either assimilated into the colony or left. Along with trading posts, associated settlements became established such as the settlement of Wells along St. Andrews Bay. The British also began extracting forest resources including timber and naval stores. The British interest in the area also included issuing land grants for the development of homesteads and industry with several issued along the East River, Deer Point, and East Bay.

British control of Florida ended during the American Revolution when the Spanish, allied with the Americans, seized the territory from the British in 1781. The Spanish continued to allow many of the industries established by the British. Many of the colonists retained allegiance with Britain, given the economic development that had occurred under their rule. Though the alliance with the newly formed United States was what had instigated Spain's retaking of Florida, American expansionism eventually threatened the ownership of the colony. In the Treaty of San Lorenzo, the border between American territory and the Spanish colony was set at the 31st parallel, which reduced the size of the Spanish colonial claim. The establishment of this border further initiated turmoil in that the native tribes including Choctaw, Chickasaw, and Creek who occupied lands straddling the border were caught between allegiances, encroaching American settlement, and American civilization programs which caused intertribal warfare to break out.

At the time of the War of 1812, Spain, threatened by American expansionism and with limited resources to defend their colony, encouraged the British to assist them and allowed them to reoccupy Pensacola and use west Florida as a staging ground to wage war on the Americans. In 1814, Andrew Jackson with a column of Choctaw, marched through the area near Tyndall AFB on their way to attack and take control

of Pensacola. After the war, the Spanish retained the colony, but further insurgencies against the Americans by the Creek rumored to be supplied by the Spanish resulted in Andrew Jackson returning to retake Pensacola to put an end to hostilities. At this point, the Spanish were unable to maintain control of the colony and ceded Florida to the Americans in 1819. A couple of homesteads dating to the period of revolving colony rulers have been found on Tyndall AFB, but the identity of the occupants have not been determined.

Florida was established as a state in 1821. Development of the area increased after statehood, but was mostly reserved for Federal use and preservation of the forests. American settlers throughout the southeast during this period were in conflict with the local Native American population as they moved into the territory once occupied by the tribes and wanted them removed. The area around Tyndall AFB served as refuge for some displaced Native American population, but they were removed after 1839. Following removal of the natives, settlement of the area through the 1840s and 1850s increased. During this period, the first pioneer to settle on the peninsula that includes Tyndall AFB, was José Massalena a former Spanish citizen and African-American freedman settled at Davis Point.

The development of St. Andrews Bay was slow due in part to seasonal occupation of the area. Salt production served as the primary mode of trade. Sawmills also began to appear along several bayous as timber and logging operations increased in the area. Cotton, cattle, and seasonal fishing also helped to support the local economy during this time. There is very little evidence from the archaeological record during this period as settlement of the peninsula may have been restricted due to the lack of homesteading tracts. Furthermore, the peninsula was used and occupied by Creek Indians, a situation in which Euro-American settlers would have been dissuaded from venturing into. The indication that Tyndall AFB footprint was avoided by white homesteaders is further supported by the fact that the first known settler of the East Peninsula was an African-American freedman—a person, who like the Native Americans, would have had limited choices in where he could live without social persecution or judgement.

During the Civil War, Florida seceded from the United States and joined the Confederate States of America. The area around St. Andrews Bay was used mostly for slat manufacturing to supply the Confederate nation. In 1863, Union ships shelled the town of St. Andrews and burned numerous structures. The Confederate surrender in 1865 left West Florida in a state of anarchy brought to the area by roaming bands of criminals, deserters, and former soldiers. Following the war, numerous former slaves settled on the peninsula in the vicinity of José Massalena's homestead.

After 1878, the Federal government released several of its forest preservation tracts for homesteading resulting in increased development of the area including the east end of the peninsula. Many homesteaders carried on the established industry of harvesting forest products such as timber and turpentine manufacture. Local settlers began to run commercial fishing boats, and inns and hotels were constructed in towns on the peninsula. In 1908 the Atlanta & St. Andrews Bay Railway, or the Bay line, was constructed, connecting St. Andrews to the rest of the state. In 1913 the state established Panama City as the seat of Bay County. Growth and development would continue during this time and archaeological sites identified at Tyndall were built or occupied during this period.

Infrastructure and industry growth in this area during the 1930s helped to stave off the worst of the Great Depression. The International Paper mill was constructed in 1930 and helped to revitalize the timber industry that had been suffering since the end of World War I. This created a need for larger ships to access Panama City and the local industries, which led to the construction of a deeper pass cut between the Gulf of Mexico and St. Andrews Bay. Highway 98 was also built during this time allowing for a permanent connection between the various towns on the peninsula and St. Andrews Bay.

Looking to expand War Department facilities along the Gulf Coast, the U.S. Army condemned 28,517.65 acres on the peninsula to establish an airfield in 1940. A number of complications were encountered during the construction of the base. Buildings were being planned for areas that were too swampy, which led to issues for the workers that included dog-flies, mosquitos, skunks, and snakes. After a years' worth of construction, only 5 percent of the 168 buildings were ready for occupancy, and the grading of the airfield was yet to be completed. Nevertheless, the base officially opened with the bombing of Pearl Harbor on December 7, 1941. At first, the airfield consisted of three runways, taxi strips, parking apron, and a technical area with a hangar, warehouse, sub-depot, ordnance facilities, and a cantonment area with 71 barracks, schools, offices and utility buildings.

Base expansion was quick and by the end of 1942 enrollment had doubled. By the end of 1943, there were approximately 10,000 personnel on base (USAF HRA 1941), including members of the 785th Women's Auxiliary Army Corp (WAAC; later WAC) Post Headquarters Company. This growth forced the base to construct additional facilities to accommodate the training and support needs of personnel. However, the end of World War II brought a swift end to the gunnery training school as well as leaving the future of the base in uncertainty. By March 1946, only 985 people remained stationed at Tyndall Field (Underwood 1991:57).

In the spring of 1946, the Air Tactical School (ATS) moved to Tyndall offering a well-defined mission during a time when the U.S. military was making drastic changes to its organization. The following year the Air Force became a separate service branch under the Department of Defense and Tyndall Field became Tyndall Air Force Base. With a new identity to go along with a new and growing threat, Tyndall AFB was critical in providing innovative and specialized training programs throughout the Cold War.

As Tyndall AFB was settling into their role in the Cold War, the U.S. jumped into the Korean War. This created a new role for Tyndall AFB. Under ATC, the Aircraft Controllers course became the USAF Aircraft Controller School. By 1951, the school was divided into two principal training divisions, general aircraft controller and tactical aircraft controller, plus a new division—ground observer corps training—for Air Force officers. For general aircraft controller training, officers learned to guide friendly aircraft to intercept enemy aircraft from the ground until the friendly aircraft's own radar could take over for the intercept. Tactical aircraft controller training included more advanced course work and officers learned to work with forward ground units.

During the Korean War, Tyndall also participated in ATC's Mutual Defense Assistance Program (MDAP) along with Randolph, Ellington, and Goodfellow AFBs. MDAP mission was to train airmen from counties friendly toward the U.S. at the time. Foreign countries participating in MDAP included France, Belgium, Netherlands, Norway, Denmark, Italy, Portugal, Yugoslavia, Greece, the United Kingdom, Iran, Turkey, the Philippines, Thailand, and the Republic of China (Sligh 2003:80).

When the Korean War concluded in 1953, Tyndall AFB stayed steadfast in the training of all-weather pilots, interceptor weapons instructors, and aircraft controllers. Furthermore, pilots in training were in need of targets to hone their skills. The 3510th Tow Target Squadron, initially located at Randolph AFB, was assigned to Tyndall AFB in 1954. Members of the squadron would tow targets behind B-29s over the Gulf of Mexico, providing USAF Advanced Flying School and the USAF IWS students an opportunity to safely practice with live ordnance (Underwood 1991:77).

By the late 1950s, technological advances in military weaponry were evident at Tyndall AFB, both in the form of new fighter aircraft and in the targets used for practice. Where targets were once towed behind aircraft, training over the Gulf of Mexico became categorically different after July 3, 1958, when the 4756th Drone Squadron became operationally ready and launched its first Q-2A (Firebee) drone. Although the first drone launched was lost in a thunderstorm, it proved nevertheless that they could be

launched from airborne B-26s and controlled from the ground (Underwood 1991:84). The Firebee drone was a significant improvement in interceptor training, providing pilots with realistic targets. Its use also allowed the IWS to more thoroughly meet its mission to evaluate interceptor training programs and maintain the marksmanship and combat readiness of interceptor pilots (Underwood 1991:84–87).

Tyndall's connections to larger air defense radar networks began in the late 1950s, and expanded throughout the 1960s. As early as 1957, an Aircraft Control and Warning (AC&W) radar site was located at Tyndall AFB (present-day Facility 1277 was originally constructed as an AC&W Operations building). The AC&W system was the Air Force's first air defense network of the Cold War. Construction on the AC&W system's 85 radar stations and 11 command and control centers began in 1949 (Weitze 2003:272). Completion of the AC&W site at Tyndall was relatively late, and occurred as the Semi-Automatic Ground Environment (SAGE) system, the second generation of air defense radar infrastructure, was beginning to come on line. The SAGE system's technology "established the need for using continuous-wave radars in conjunction with digital computers capable of handling very fast data transmission and analysis" (Weitze 2003:285).

In 1962, the U.S. experienced one of its most trying periods of the Cold War with the Cuban Missile Crisis. During the tense few days between October 22 and November 5, Tyndall AFB played an important role in the military strategy to stand firm against the Soviet Union, while at the same time, avoiding war if at all possible. Tyndall AFB went on alert on October 22 and IWS became the "combination dispatch desk, combat alert center, and living quarters for all of Tyndall's alert aircrews," thus becoming one of the key defense bases in the southeast. Two alert flights (A and B) were formed and a strict alert schedule maintained. Air crews conducted identification intercepts throughout the period, but the unknown aircraft all turned out to be either "errant airliners or USAF aircraft returning from other missions" (4757th Air Defense Squadron [IWS] 1962).

The Vietnam War brought about a number of changes to Tyndall AFB in the 1960s and early 1970s. A consequence for any base during times of war was the loss of military personnel to combat duty. At Tyndall, the reduced manpower meant that a contractor—Ryan Aeronautical Corporation— was contracted in 1967 to operate the drones. Also in that same year, the 3250th Flying Training Squadron was transferred from Randolph AFB to Tyndall AFB to start a pilot instructor training program in response to increased combat in Vietnam (Durst and Wang 1996:68; Underwood 1991:98).
U.S. military bases across the nation are obvious sites for patriotic display, however, during the nation's bicentennial; Tyndall AFB was recognized as a "Bicentennial Air Force Installation." With this special designation, Tyndall AFB flew an official bicentennial flag and received a certificate from the American Revolution Bicentennial Administration.

In the decades that followed, Tyndall AFB went through multiple reorganizations that brought in military personnel as well as a civilian workforce. Tyndall AFB has been steadfast in its ability to change as a mission dictates and be a leader in innovative technological advances. This will likely continue as Tyndall AFB pushes forward in its quest to become the Air Force Base of the Future following the devastation that hurricane Michael brought to its doorstep in October of 2018.

Previous Investigations

Preliminary search of the Florida Site Master File (FLMSF) has revealed that 29 cultural resources investigations have been conducted within 1.6 kilometers (km) (1 mi) of the selected project survey parcels (Figure 6). These investigations include cultural resources assessments, monitoring reports, historic building inventories and evaluations, and Phase I archaeological surveys similar to the one proposed in this document. Table 4 summarizes the previous investigations conducted and Figure 6 depicts the location of the investigations in relation to the current project survey parcels. Three previous

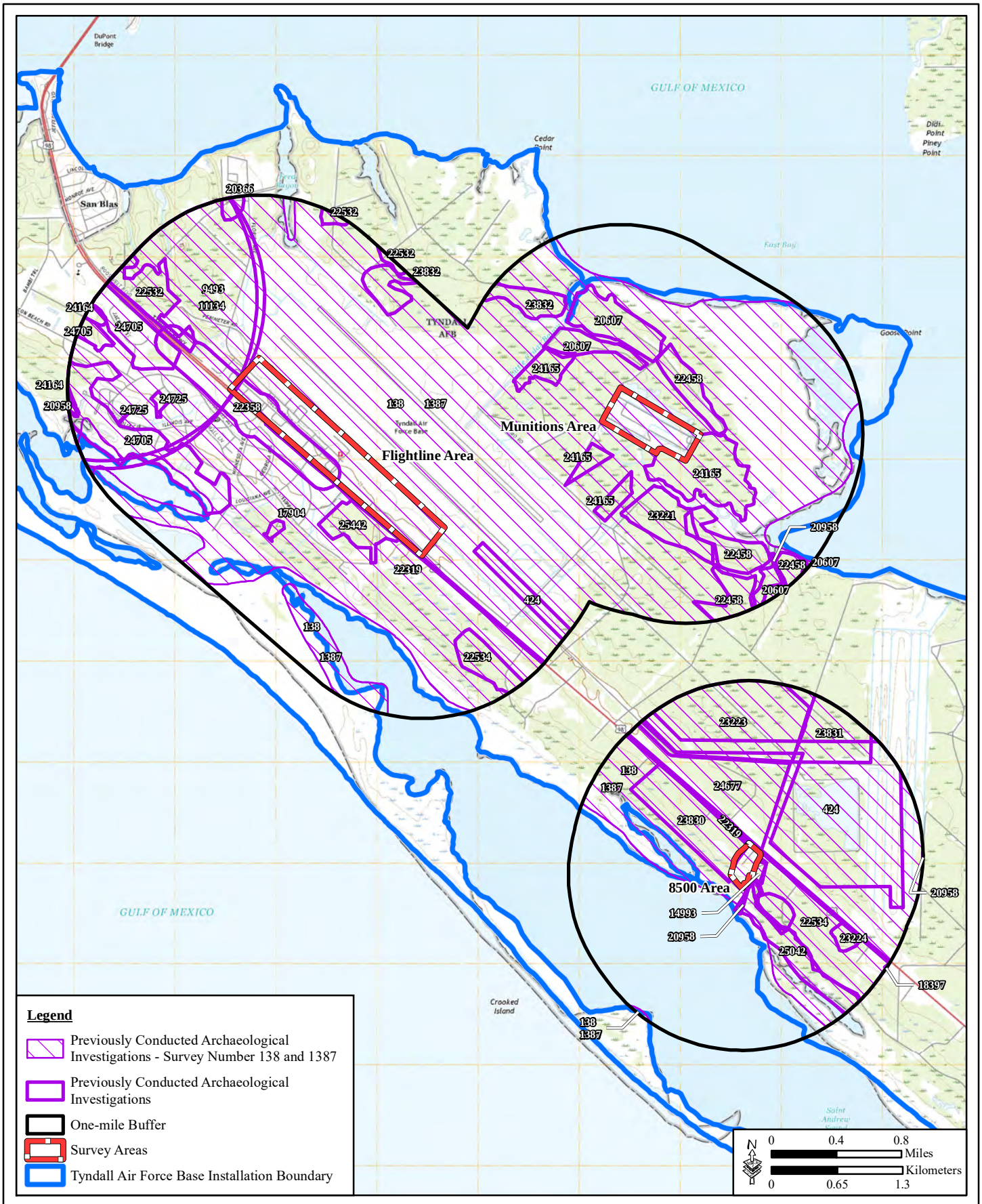

Figure 6. Portion of the Long Point, FL 7.5-minute topographic quadrangle showing the previously conducted archaeological investigations within a one-mile buffer of the cultural survey areas.

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Table 4. Previous Surveys Conducted within 1.6 Kilometers (1 Mile) of the Project Survey Areas.

Survey Number	Title	Year	Authors
138	Partial Cultural Resource Inventory of Tyndall AFB, Florida	1979	Knudsen, Gary, D. and James W. Stoutmire
424	Cultural Resources Survey of the Proposed Drone Runway and Supporting Facilities, Tyndall AFB	1976	Nielsen, Jerry
1387	Cultural resources investigation at Tyndall AFB, Bay County, Florida.	1985	Campbell, Janice L. and Prentice M. Thomas Jr.
9493	Identification and Evaluation of Historic Properties Within the One Mile Area of Potential Effects of the Proposed 160-foot Beacon Beach (Tyndall AFB) Wireless Telecommunications Tower (American Tower Corporation #224680), Bay County, Florida	2003	Parker, Brian T.
11134	Assessment of Potential Effects Upon Historic Properties: Proposed 160-Foot Panama 11 Wireless Telecommunications Tower (Sprint Site Number 224680), Bay County, Florida	2005	Parker, Brian T.
14993	Phase I Archaeological Survey of an Alternate Drone Launch System Site at Tyndall AFB, Bay County, Florida	2007	Rabby Smith, Steven
17904	Phase I Archaeological Survey of the Site DB039 Debris Dump Tract, Tyndall AFB, Bay County, Florida	2010	Rabby Smith, Steven L., RPA
18397	Cultural Resources Survey of TY-2 Cultural Resources Management Support, Tyndall AFB, Bay County, Florida	2010	Bourgeois, Carrie Williams, Christina M. Callisto, and Janice L. Campbell
20366	Limited Phase I Archaeological Investigation & Monitoring of Environmental Restoration Site LF005, Tyndall AFB, Bay County Florida	2013	Aubuchon, Benjamin, James R, Morehead, and Christina Zimmerman
20607	Cultural Resources Survey of Five Timber Tracks Contract FA4890-04-D-0009-DK13 Cultural Resources Management Support, Tyndall AFB, Bay County, Florida	2012	Callisto, Christina M. , Janice L. Campbell, and James H. Mathews
20958	Cultural Resources Survey of TY-100 & TY-101 (Task Order TY-13-0002) Contract W9128F-12-2-0002-0006 Cultural Resources Management Support, Tyndall AFB, Bay County, Florida	2014	Campbell, Janice L., Bret Kent, and James H. Mathews
22319	Cultural Resource Assessment Review Request Cultural Resource Reconnaissance Survey of SR30 (US98) from Tyndall AFB to the Gulf County Line. By Carl McMurray, February 1993.	1993	McMurray, Carl
22358	Cultural Resource Assessment Survey for the SR 30 (US 98) Alternative 7 Elevated Roadway at Tyndall AFB Entrance Bay County, Florida	2015	Bartlett, Laurel, Elizabeth, Chambless, Melissa Dye, and Jessica Fish
22458	Cultural Resources Survey of TY-112 (Task Order TY-14-0014) Contract W9128F-12-2-0002 Cultural Resources Management Support, Tyndall AFB, Bay County, Florida	2015	Campbell, Janice L., Sarah Deihl, and Erica Meyer
22532	Cultural Resources Survey of TY-111 (Task Order TY-14-0013) Contract W9128F-12-2-0002 Cultural Resources Management Support, Tyndall AFB, Bay County, Florida	2015	Campbell, Janice L., Ryan N. Clark, and James R, Morehead
22534	Cultural Resources Survey of TY-113 (Task Order TY-14-0015) Contract W9128F-12-2-0002 Cultural Resources Management Support, Tyndall AFB, Bay County, Florida	2015	Campbell, Janice L., Ryan N. Clark, and James R, Morehead
23221	Phase I Archaeological Investigation of Survey Areas TY-0134, Tyndall AFB, Bay County, Florida	2016	Benjamin Stewart, BA, Kathleen Furgerson, MA, RPA, Mark Martinkovic, MA, RPA
23223	Phase I Archaeological Investigation of Survey Area TY-0122 Tyndall AFB, Bay County, Florida	2016	Benjamin Stewart, BA, Kathleen Furgerson, MA, RPA, Mark Martinkovic, MA, RPA
23224	Archaeological Monitoring at 8By1765 in Association with GCEC Directional Bore, DHR Project No. 2015-5362 (Letter Report)	2016	TG Earnest
23830	Phase I Archaeological Investigation of Survey Area TY-0124 Tyndall AFB, Bay County, Florida	2016	Benjamin Stewart, BA, Kathleen Furgerson, MA, RPA, Mark Martinkovic, MA, RPA
23831	Phase I Archaeological Investigation of Survey Area TY-0123 Tyndall AFB, Bay County, Florida	2016	Benjamin Stewart, BA, Kathleen Furgerson, MA, RPA, Mark Martinkovic, MA, RPA
23832	Phase I Archaeological Investigation of Survey Areas TY-0131, Tyndall AFB, Bay County, Florida	2016	Furgerson, Kathleen, Mark Martinkovic, MA, RPA, and Scott Seibel
24164	Archaeological Survey of TY-142 Tyndall AFB, Bay County, Florida Task Order TY-16-0021 Contract W9128F-12-2-002	2017	Campbell, Janice L., Ryan N. Clark, and Zackery Cruze

Table 4, continued

Survey Number	Title	Year	Authors
24165	Archaeological Survey Unit TY-0137, 194 Acres, Tyndall AFB, Bay County, Florida Task Order TY-15-0004 Contract W9128F-12-2-002 Survey Unit TY-0137	2015	Bradley, Dawn M., Savannah L. Darr, and Stephen T. Mocas
24677	Archaeological Survey of TY-144 Tyndall AFB, Bay County, Florida Task Order TY-16-0022 Contract W9128F-12-2-0040	2017	Campbell, Janice L., Ryan N. Clark, and Zackery Cruze
24705	Archaeological Survey of TY-155 Tyndall AFB, Bay County, Florida Task Order TY-17-0007 Contract W9128F-12-2-0002	2017	Brannon, Shannon, Janice L. Campbell, and Ryan N. Clark
24725	Archaeological Surveys Conducted for the Upgrade for the Medical Facility Complex, Tyndall AFB, Bay County, Florida.	2017	Brown, Teresa L.
25042	Phase I Archaeological Investigation of Survey of TY-146 on Tyndall AFB, Bay County, Florida., Contract: W9128F-12-2-0002, Task Order: TY-17-0002	2017	Mikell, Gregory A.
25442	Phase I Archaeological Investigation of Survey of TY-158 and TY-159 on Tyndall AFB, Bay County, Florida., Contract: W9128F-12-2-0002, Task Order: TY-17-0014	2017	Mikell, Gregory A.
NA	Phase I Archaeological Survey – Survey Areas TY-162, TY-163, and TY-164, Tyndall Air Force Base, Bay County, Florida	2019	Bradley, Dawn M.

*Reports on file at the Florida Master Site File.

investigations overlap portions of the survey areas to be investigated in the current project. These surveys include FLMSF Survey Numbers 138 (Knudsen et al. 1979), 1387 (Campbell and Thomas 1985), and 22358 (Bartlett et al. 2015).

FLMSF Survey Number 138 was described in the report *Partial Cultural Resource Inventory of Tyndall Air Force Base.* The investigation appears to have consisted of a base-wide inventory updating a summary of all of the cultural resources known to exist on the base at that time. The project recorded 57 new resources and re-recorded eight previously reported resources that included both archaeological sites and structures (Knudsen et al. 1979). None of the sites discussed are located in current project survey areas.

FLMSF Survey Number 1387 also appears to have been a base-wide investigation reporting 29 new resources and 70 previously known resources that included both archaeological sites and structures (Campbell and Thomas 1985). The findings were described in the report titled *Cultural resources investigation at Tyndall Air Force Base, Bay County, Florida* (Campbell and Thomas 1985). None of the resources reported are located within the current survey areas.

FLMSF Survey Number 22358 is reported in *Cultural Resource Assessment Survey for the SR 30 (US 98) Alternative 7 Elevated Roadway at Tyndall Air Force Base Entrance Bay County, Florida* (Bartlett et al. 2015). The investigation partially overlapped the northwestern portion of the Flightline Area in the current investigation the investigation recorded two new resources and re-recorded 15 previously known resources that included both archaeological sites and structures (Bartlett et al. 2015). Ten of the structures were located in the Flightline Area and all were recommended ineligible for the NRHP.

Previously Reported Cultural Resources

The preliminary search of the FLMSF also revealed the presence of 31 archaeological sites (Table 5) and 205 historic structures within 1.6 km (1 mi) of the project survey areas (Figure 7). Within this population of cultural resources within 1.6 km (1 mi) of project survey areas is evidence for a continuous human presence dating from the Formative Period (Deptford Phase) to present. Sites range from prehistoric artifact scatters, middens and campsites to shell middens to historic period artifact scatters, camps, building remains, and historic wells. None of the previously reported archaeological sites are located within or overlap the current project areas. One site, the Two Palms Homestead (BY1350) is immediately to the east of the 8500 Area. The site is the remains of a twentieth century homestead with an artifact scatter and building remains and has been determined ineligible for the NRHP. Although the site has been recorded outside of the current project area there is potential for more of the site to extend into the current project given the extensive waste accumulation and resultant scatter common in industrial and post-industrial American culture.

Although historic structures are not the focus of this investigation, their presence is revealing of the historic military activity that has occurred at the installation. The Flightline Area contains 49 structures that have been evaluated dating from 1942 to the 1980s. One structure within the Flightline project area, Hangar 3 (ca. 1943) is recommended eligible for the NRHP according to the most recent ICRMP (Tyndall AFB 2016). The Munitions Area contains 15 buildings (ca.1959 to present) that have been evaluated for historic significance and all have been recommended ineligible for the NRHP. The 8500 Area also contains 15 buildings (ca.1961) to present that have been evaluated for historic significance and all have been recommended ineligible for the NRHP. Due to the destruction caused by Hurricane Michael, numerous buildings sustained severe damage, if they were not outright destroyed. Many buildings have been condemned due to the destruction and what remains of them are being demolished. At the time of writing it is not certain which buildings within the project areas are being demolished, although given that

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Table 5. Previously Reported Archaeological Sites within 1.6 Kilometers (1 Mile) of the Project Survey Areas.

Site Number	Site Name	Site Type	Cultural/Temporal Association	Survey Recommendation	SHPO Recommendation
BY00025	Mound Near Pearl Bayou	Prehistoric burial mound(s)	Weeden Island, A.D. 450-1000	Not Evaluated by Recorder	Not Evaluated by SHPO
BY00132	East Bay Historic 1	Building remains, Homestead, Land-terrestrial, Historic refuse/dump, Artifact scatter-low density (< 2 per sq meter)	Nineteenth century American, 1821-1899,Twentieth century American, 1900-present, American, 1821-present, Boom Times, 1921-1929, Depression and New Deal, 1930-1940, Ft. Walton, A.D. 1000-1500, Post-Reconstruction, 1880-1897, Spanish-American War, 1898-1916	Eligible for NRHP	Eligible for NRHP
BY00134	East Bay 4	Land-terrestrial, Artifact scatter-low density (< 2 per sq meter)	Indeterminate, Prehistoric with pottery	Ineligible for NRHP	Insufficient Information
BY00190	TAFB Aboriginal 7	Redeposited site (to this location)	Indeterminate	Ineligible	Not Evaluated by SHPO
BY00692	NN	Habitation (prehistoric), Prehistoric midden(s), Artifact scatter-low density (< 2 per sq meter)	Weeden Island, A.D. 450-1000	Not Evaluated by Recorder	Ineligible for NRHP
BY01692	TY-100-9-A	Land-terrestrial	Twentieth century American, 1900-present, World War II & Aftermath 1941-1950	Insufficient Information	Insufficient Information
BY01350	Two Palms Homestead	Building remains, Subsurface features are present, Homestead, Land-terrestrial, Historic refuse/dump, Artifact scatter-low density (< 2 per sq meter)	Twentieth century American, 1900-present	Ineligible for NRHP	Ineligible for NRHP
BY01386	TIM 3-A	Campsite (prehistoric), Subsurface features are present, Land-terrestrial, Prehistoric shell midden	Twentieth century American, 1900-present, Ft. Walton, A.D. 1000-1500, Weeden Island, A.D. 450-1000	Insufficient Information	Insufficient Information
BY01387	TIM 3-B	Subsurface features are present, Homestead, Land-terrestrial	Twentieth century American, 1900-present, Prehistoric	Insufficient Information	Insufficient Information
BY01388	TIM 4-B	Subsurface features are present, Land-terrestrial, Artifact scatter-low density (< 2 per sq meter)	Twentieth century American, 1900-present, Weeden Island, A.D. 450-1000	Ineligible for NRHP	Ineligible for NRHP
BY01496	Wet Dune Midden	Specialized site for procurement of raw materials, Land-terrestrial, Prehistoric midden(s)	Ft. Walton, A.D. 1000-1500, Weeden Island II	Insufficient Information	Not Evaluated by SHPO
BY01763	TY-113 A; Tyndall AFB Jeep Range 7	Land-terrestrial	Nineteenth century American, 1821-1899, Twentieth century American, 1900-present, Weeden Island, A.D. 450-1000	Insufficient Information	Insufficient Information
BY01765	TY-113-E	Subsurface features are present, Homestead, Land-terrestrial, Historic well	Twentieth century American, 1900-present	Insufficient Information	Insufficient Information
BY01767	TY112-B, TY112-C	Land-terrestrial	Deptford, 700 B.C.-300 B.C., Prehistoric lacking pottery, Prehistoric with pottery	Insufficient Information	Insufficient Information
BY01768	TY-113-I/J	Land-terrestrial	Ft. Walton, A.D. 1000-1500	Insufficient Information	Insufficient Information
BY01780	TY-111-B	Land-terrestrial	Weeden Island, A.D. 450-1000	Ineligible for NRHP	Ineligible for NRHP
BY01781	TY-111-C	Land-terrestrial	Nineteenth century American, 1821-1899, Twentieth century American, 1900-present, Weeden Island, A.D. 450-1000	Ineligible for NRHP	Ineligible for NRHP
BY01782	TY-111-D/E	Land-terrestrial, Prehistoric shell midden	American, 1821-present, Weeden Island, A.D. 450-1000	Not Evaluated by Recorder	Ineligible for NRHP
BY01808	FS-7	Land-terrestrial, Turpentine camp	Twentieth century American, 1900-present, Prehistoric	Ineligible for NRHP	Ineligible for NRHP
BY01947	TY-124-HSS-01	Building remains, Land-terrestrial	Twentieth century American, 1900-present	Eligible for NRHP	Insufficient Information
BY01948	TY-124-HSS-02	Building remains, Land-terrestrial	Twentieth century American, 1900-present	Eligible for NRHP	Insufficient Information

Table 5, continued

Site Number	Site Name	Site Type	Cultural/Temporal Association	Survey Recommendation	SHPO Recommendation
BY01949	TY-124 Gunnery Range Remnant	Historic earthworks, Land-terrestrial	Twentieth century American, 1900-present	Eligible for NRHP	Insufficient Information
BY01958	TY 131-01	Campsite (prehistoric), Land-terrestrial	Archaic, 8500 B.C.-1000 B.C., Prehistoric lacking pottery	Ineligible for NRHP	Ineligible for NRHP
BY02278	TY-141 N	Land-terrestrial	Twentieth century American, 1900-present	Insufficient Information	Insufficient Information
BY02299	TY-144-E	Land-terrestrial	Weeden Island, A.D. 450-1000	Ineligible for NRHP	Ineligible for NRHP
BY02300	TY-144-F	Land-terrestrial	Nineteenth century American, 1821-1899, Twentieth century American, 1900-present	Insufficient Information	Insufficient Information
BY02301	TY-144-G	Building remains, Land-terrestrial	Twentieth century American, 1900-present	Insufficient Information	Insufficient Information
BY02302	TY-144-H	Building remains, Land-terrestrial	Twentieth century American, 1900-present	Insufficient Information	Insufficient Information
BY02377	TY-155 C	Land-terrestrial	Twentieth century American, 1900-present	Ineligible for NRHP	Ineligible for NRHP
BY02378	TY-155 F	Campsite (prehistoric), Habitation (prehistoric),Land-terrestrial,Prehistoric shell midden, Historic well	Twentieth century American, 1900-present, Ft. Walton, A.D. 1000-1500, Mississippian, Weeden Island, A.D. 450-1000	Insufficient Information	Insufficient Information
BY02379	TY-155 R	Campsite (prehistoric), Land-terrestrial, Prehistoric shell midden	Ft. Walton, A.D. 1000-1500, Mississippian, Santa Rosa-Swift Creek	Insufficient Information	Insufficient Information

Figure 7. Portion of the Long Point, FL 7.5-minute topographic quadrangle showing the previously recorded archaeological sites within a one-mile buffer of the cultural survey areas.

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none of the structures are individually eligible, the hurricane destruction and subsequent demolition will not impact the integrity of other resources.

Expectations

Given the evidence revealed in the preliminary analysis of the cultural setting for the project area, the probability of encountering surface and subsurface cultural deposits is high. In addition, the area is rich with cultural resources, with 31 archaeological sites, 205 historic buildings within 1.6 km (1 mi) of the survey parcels. Thus, it can be expected that more cultural remains will be encountered. The majority of previously reported sites are from the Late Historic Period, as this area has undergone considerable development and land use during this time particularly in relation to the establishment of the military base. As such, it can be expected that the majority of cultural remains encountered in this investigation will also be from the Late Historic Period. Evidence suggests the area has been occupied as early as the Formative Period, with an increase in complexity and presumably population from the Weeden Island through Mississippian Phases.

The three project areas to be surveyed in this investigation have undergone considerable development since the 1940s. Development has consisted of land leveling, building construction, road, pavement, and water control structure construction, and installation of utilities. The majority of the soils in the Flightline Area and Munitions Area are classified as Urban and Arents; both soil types are defined as being created from modern human induced earthmoving activities including dredging, cutting, filling, and levelling. As such, soils in those areas are expected to be highly disturbed with low probability of containing intact cultural deposits.

PROJECT WORK PLAN

Research Design

This research serves to assist the U.S. Air Force in partially fulfilling its obligation as a Federal property manager under Section 106 of the NRHP to take into account the effects of undertakings on cultural resources. By surveying the proposed project areas the U.S. Air Force will determine whether the proposed actions will have adverse effects on cultural resources. Additionally, prior to conducting fieldwork a research design was developed to relate this investigation to current relevant research topics considered important to archaeological research in the area.

As an Intensive Phase I archaeological investigation, the primary goal of this research was to determine the presence or absence of cultural resources within the proposed project areas. The research topics to be addressed by this study include whether or not cultural deposits are intact and deeply buried, and the nature of these cultural deposits. Based on these observations GSRC archaeologists will attempt to provide NRHP eligibility recommendations or provide recommendations as to the level of further work required to evaluate NRHP eligibility.

Based on preliminary background research it appears the areas have had a human presence dating from the Formative Period (Deptford Phase) to present, though the majority of sites are from the Late Historic Period. In addition to presence/absence some research topics to be explored when sites are found will include:

- Can a cultural/temporal association be ascertained?
- What cultural activities were associated with these sites and are they representative of long-term occupation or temporary seasonal activity?
- Are these sites associated with particular events or individuals?
- Are these sites representative of currently known cultural and temporal human presence on the peninsula and vicinity or suggest previously unknown human activity for the area?
- How do these sites relate to other sites of similar cultural/temporal association within the vicinity and regional settlement patterns?

Project Planning/Background Research

The archival review portion of this investigation included a study of previously reported archaeological and historic site records and previous investigations on file with the Tyndall/Eglin Cultural Resources Program and the Florida DHR, as well as a search on the National Parks Service (NPS) online National Register Information System (NRIS). All previously reported archaeological and historic resources and studies within 1.6 km (1.0 mi) of the project corridor were investigated.

Additionally, a literature search of current prevailing theories and research topics of the archaeological and historical fields, as well as the formation and characteristics of the physical landscape of the project area, was conducted. Additional archival records were consulted, and included; relevant historic maps of areas investigated, aerial photographs, and soil maps. Analysis of these data assisted in establishing a contextual framework for the types and density of cultural resources in the project area, as well as understanding how this investigation relates to the body of archaeological and historic research for the project vicinity.

Fieldwork

Fieldwork was conducted in accordance with the guidelines of the Florida DHR, *Cultural Resource Management Standards and Operational Manual* (adopted 2002). This investigation included an intensive Phase I archaeological survey with pedestrian surface inspection supplemented with systematic shovel tests (STPs) excavated along transects. The intensity level for the areas to be surveyed was initially conducted with standards for high probability areas and included survey transects spaced 25 m (82 ft.) apart with shovel tests excavated at 25 m (82 ft.) intervals along transects. Given that the background investigation revealed that the soils in the Flightline and Munitions Areas are mostly Urban and Arents (soils produced predominantly from human induced earthmoving activities including dredging, cutting, filling, and levelling) it was anticipated that the deposits encountered in the field would exhibit a certain amount of disturbance. In consultation with the Eglin AFB Cultural Resource management team, it was agreed that if the deposits encountered in the project areas exhibited such disturbance to a depth of 1 m (3.3 ft.), then the shovel testing intensity would be downgraded to a moderate intensity level with shovel tests excavated at 50 m (164 ft.) intervals. If shovel testing at the moderate intensity level continued to exhibit disturbed deposits through a depth of 1 m (3.3 ft.), then the intensity level of would be further downgraded to low probability with shovel tests excavated at 100 m (328 ft.) intervals. All exposed areas were carefully examined for artifacts. Additional judgmental subsurface tests were placed in those areas considered to be likely site locations.

All shovel tests were 50 cm (19.69 in) in diameter and dug in arbitrary 10 cm (3.94 in) stratigraphic levels. All tests will were dug to a minimum of 1 m (3.3 ft.) below surface unless digging was inhibited by groundwater levels. All excavated soil was screened through 6.34 millimeter (mm) (0.25 in) hardware cloth mounted in portable wooden frames.

Field notes were taken as each shovel test was excavated. All recovered artifacts were placed in 4 mil polyethylene resealable zipper storage bags. All bags were labeled with the project name, site name and number (if applicable), provenience information, artifact type and count, date, excavator's name (or initials), and a field specimen (FS) number. Global positioning system (GPS) points were taken of the locations of all positive shovel tests and at the beginning and end of each transect. Shovel test locations were flagged with biodegradable flagging tape.

Positive shovel tests were investigated further to determine the nature of the find. In accordance with the guidelines of the Florida DHR, *Cultural Resource Management Standards and Operational Manual* (adopted 2002), single artifacts discovered in non-disturbed contexts were bracketed with at least an additional four shovel tests excavated in cardinal directions spaced 10 m (32.81 ft.) from the original find. Florida DHR defines archaeological occurrences as "the presence of one or two non-diagnostic artifacts, not known to be distant from their original context, which fit within a hypothetical cylinder of 30 m (98.43 ft.) diameter, regardless of depth below surface." If the results of bracketing yield more archaeological evidence or if the original find included more than a single artifact, additional delineation shovel tests spaced equidistant between transect shovel tests in cardinal directions will be excavated until two in a row are negative or the delineation reaches the boundary of the project survey area.

Archaeological sites were recorded with all the information necessary to complete site forms and, if possible, provide recommendations for the level of further work required to evaluate NRHP eligibility. This information is to include location, area, field maps, GPS locations of positive shovel tests and observed surface artifacts and features, observed disturbances, kinds of artifacts, features and ecofacts observed, and photographs. Diagnostic artifacts recovered from the surface and all artifacts recovered from shovel tests were collected and placed in new 4 mil polyethylene resealable zipper storage bags marked with provenience information in indelible ink on the exterior and cataloged in a field specimen inventory.

Analysis and Documentation

Laboratory analysis was initiated in the field by a detailed recording of provenience information and assigning field specimen identification numbers to artifacts. Post-field processing in the laboratory began with cross-checking field specimens with the inventory lists from the field. All artifacts and other cultural materials recovered were washed (if appropriate), stabilized, and cataloged. These materials were analyzed using categories and techniques standard to Florida archaeological practice and in accordance with the guidelines of the Florida DHR, *Cultural Resource Management Standards and Operational Manual* (adopted 2002). Prehistoric ceramics will be classified into recognized typological categories. Counts and weights, as well as position on the vessel (e.g., rim, base, body), will be determined for all sherds. Chipped stone materials were separated into waste flakes (debitage), tools, and manufacturing failures/production rejects. Stone tools will be categorized into standard typologies. The analysis of the waste flakes will follow standard protocols and categories dependent on the quantity of material recovered. Faunal remains were identified to the lowest possible taxonomic category. Freshwater shellfish will be identified to genus and species, if possible, and counts, weights, and minimum number of individuals (MNI) will be determined, if possible. Historic artifacts were identified and cataloged into standard typological or functional categories. Metal or other oxidizing materials were evaluated for their research or data recovery potential and, if warranted, stabilized appropriately. Indeterminate ferrous fragments were discarded after analysis.

All appropriate Florida Master Site File forms were generated to document the project, newly recorded resources, and site update forms for previously recorded resources within the survey area, provided something warrants an update such as the boundary, condition, etc. These forms were submitted to the DHR following review by the Tyndall/Eglin AFB Cultural Resources Manager and included as appendices in the draft and final reports. All geographic information system data was submitted in Spatial Data Standards for Facilities, Infrastructure, and Environment compliant format.

Curation

All recovered material, field notes, forms, and other project records were prepared for curation following both Federal standards (Curation of Federally-Owned and Administered Archaeological Collections; CFR Title 36, Part 79) and State of Florida DHR/AR 1A-32 curation guidelines. Artifacts and associated records shall be cataloged, packaged and labeled by the Contractor in accordance with Eglin Air Force Base Collections Requirements 2018. GSRC shall deliver the artifacts and associated records to the EAFB Curation Facility so they are ready for curation without further processing by Eglin curation staff. The Contractor shall input all cultural resource data generated by each survey into a database in accordance with EAFB Collection Requirements 2018. Artifacts were placed in new 4 mil polyethylene resalable zipper storage bags with acid-free labels that include full provenience and catalog information. Artifacts were packaged in acid-free storage boxes clearly labeled with project, dates, and provenience. All field logs and notes, analysis sheets, photographic record forms, and other documents produced during execution of this project were printed on acid-free paper and included in the curation delivery. Each box will include an inventory of contents on acid-free paper and an electronic inventory. All materials will be delivered to a curation facility to be decided in consultation with the Tyndall/Eglin AFB Cultural Resources Manager.

RESULTS

The archaeological survey of Tyndall Airforce Base was conducted during the period of October 8 through 25, 2019 over three land areas within the base, including the Flightline Area, the Munitions Area, and the 8500 Area. All three areas include numerous structures, paved areas, water diversion structures, and utilities mostly designed to service base needs. Given the built environment in all three areas, shovel testing was confined to non-built areas. All areas were subjected to pedestrian surface inspections.

Flightline Area

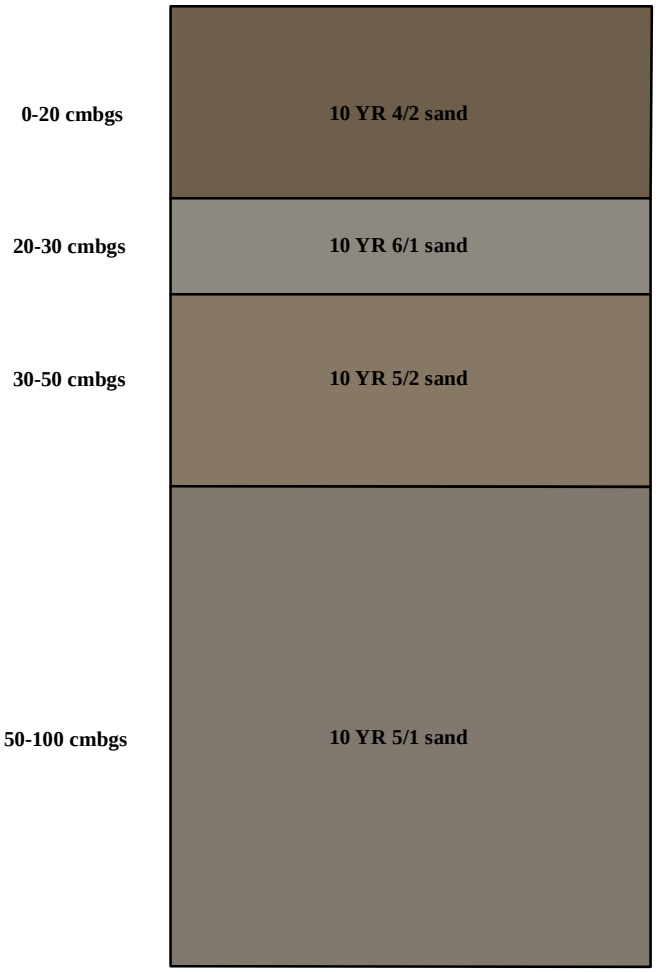
The Flightline Area is located to the north east of Highway 98 and measures 242 acres (ac) and consists of a relatively level, built up area, situated alongside the Tyndall AFB airfield (Figure 8). Soils in this area are comprised of Urban Land (178.81 ac) and Arents, 0 to 5 percent slopes (63.52 ac). Both of these soil types are described as being heavily altered by human activities that include, grading, dredging, cutting, filling, and levelling. The Flightline Area consists of a high density of residential, commercial, and industrial developments (Photograph 1). A typical STP profile recorded from the Flightline Area at STP 124 consists of four stratigraphic soil layers to a depth of 100 cmbgs (Figure 9). Stratum I is comprised of a dark grayish brown (10YR 4/2) sand that extends from 0-20 cmbgs. Stratum II extends from 20-30 cmbgs is a gray (10YR 6/1) sand. Stratum III is situated at a depth of 30-50 cmbgs is a grayish brown (10YR 5/2) sand. Stratum IV consists of a gray (10YR 5/1) sand.

Photograph 1. Tyndall Airforce Base built environment in the Flightline Area from Alabama Avenue facing east.

A total of 63 STPs were excavated within the Flightline Area with two positive for cultural materials. An additional 94 STPs were not excavated due to the presence of an obstructing element of the built environment at the location of the STP placement and where offsetting was not possible. Shovel testing in the northwestern portion of the Flightline Area was conducted at the intensity level for high probability areas at 25 m intervals. The middle portion of the Flightline Area, contains more structures, paved areas and utilities, forcing the placement of STPs to be confined to areas where the ground surface

Figure 8. Map showing the transect shovel test pits excavated during the Flightline Area survey.

October 2019



Legend

- I: 0-20 cmbgs 10 YR 4/2 sand
- II: 50-100 cmbgs 10 YR 6/1 sand
- III: 30-50 cmbgs 10 YR 5/2 sand
- IV: 20-30 cmbgs 10 YR 5/1 sand

N

0 0.1 0.2
Meters
Centimeters
0 10 20

Figure 9. Stratigraphic profile of the shovel test pits excavated within the survey area.
Flight Line STP #124

GSRC

October 2019

opportunistically could be excavated and was free of impediments. In the southeastern portion of Flightline Area, the high frequency of modern disturbance identified in the STPs became increasingly apparent. Deposits included modern trash (plastic, cellophane, glass, metal, etc.) observed in several shovel tests, as deep as a meter below surface. Soil strata were frequently disorganized in that there was little to no consistency between stratigraphic sequences from one shovel test to another even if they were located on the same landform. These observations lead to the in-the-field adjustment to reduce the intensity of the survey to moderate probability with STP intervals reduced to 50 m.

Two Isolated Occurrences (IOs) were identified in two positive STPs within the Flightline Area (Figure 10). Both IOs were identified in the western portion of the study area where STP intervals were conducted at 25 m intervals. IO 1 was recorded on transect 4 STP 5. This STP is situated just outside of the main perimeter fence line in a manicured lawn approximately 55 m (180 ft.) to the north east of Highway 98 (Photographs 2 and 3). A single Leon Weeden Island (ca. 1,600-1,100 B.P.) type projectile point was recovered from TR 4 STP 5 at approximately 60 to 70 cmbgs. The material type is a tan chert (Photograph 4). This Late Woodland, corner notched projectile point is primarily found in northern Florida and into southern Georgia and southeastern Alabama (www.projectilepoints.net/Points/Leon.html accessed October 29, 2019). The soil profile exhibited in this test pit was comprised of five stratigraphic layers (Figure 11). The first stratum was comprised of a grayish brown (10YR 5/2) sand that extended from the surface to a depth of 25 cmbgs. Situated beneath this stratum was a light gray (10YR 7/1) sand extending from 25-35 cmbgs. Following this stratum is a dark grayish brown (10YR 4/2) sand that continues from 35-55 cmbgs. Positioned below this stratum is a yellow (10YR 7/6) sand that goes from 55-65 cmbgs. The bottom stratum extends from 65-100 cmbgs and is comprised of a very pale brown (10YR 8/2) sand. In an effort to further determine the nature of this find, an additional four delineation shovel tests (D6, D7, D8, D9, D10, D11) were excavated at 10 m intervals in cardinal directions from the positive test and all were negative for cultural material (Table 6). Comparison of the soil strata recorded in the positive shovel test and the delineation shovel tests reveals the soils in the area appear to have been disturbed. No common stratigraphic sequence exists from one STP to the next. Soil colors and textures differ among STPs and in one STP the excavation was terminated due to concrete at 30 cmbgs and another was terminated at 65 cmbgs due to the presence of impassable rocks and concrete, suggesting previous construction had extended deep into deposits. This disturbance is unsurprising given the location of IO 1 is between the Highway 98 right of way and the fence line of the built up Flightline Area. Given that this was an isolated find and the resulting delineation test pits produced no further cultural materials, no further work is recommended at this location.

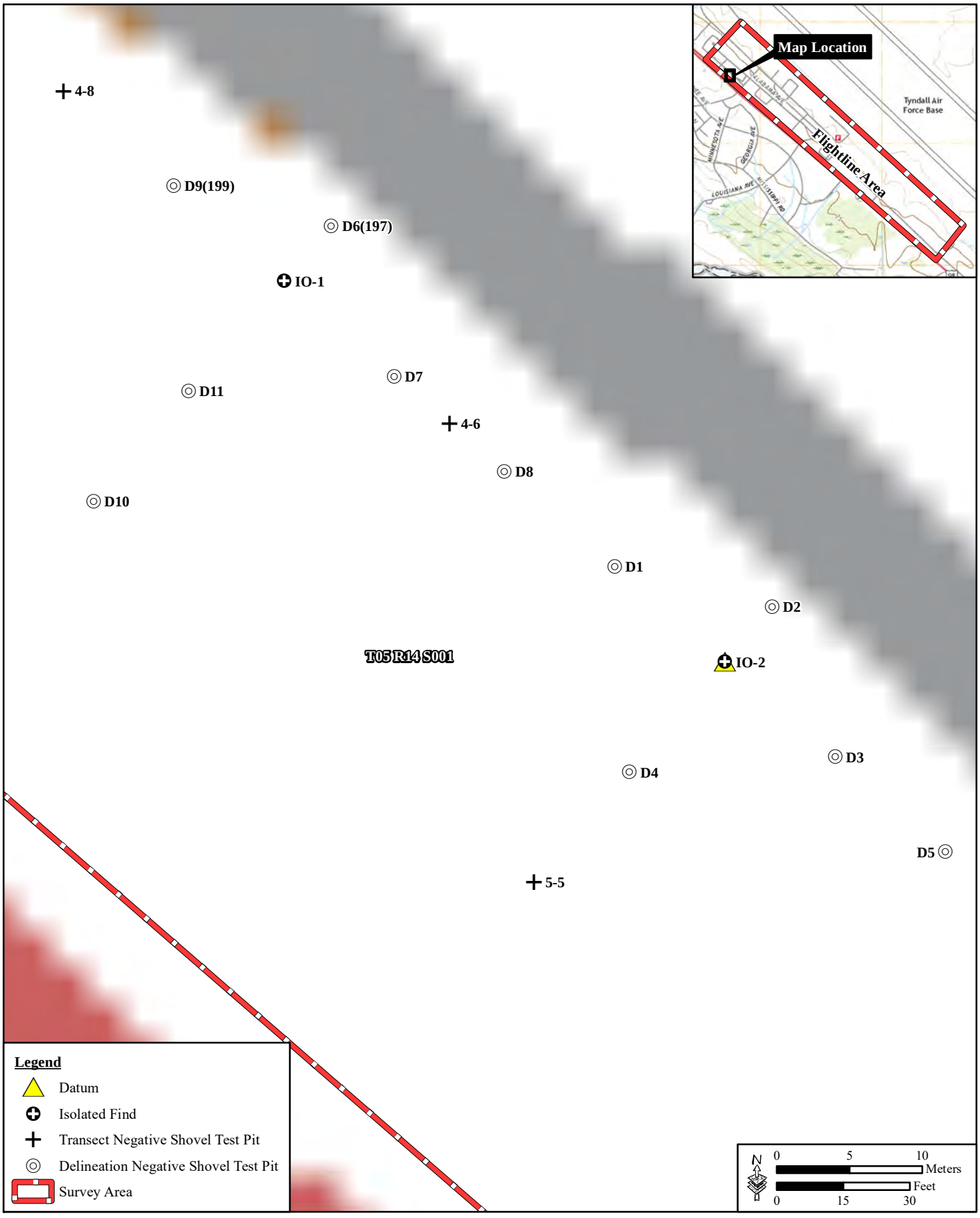
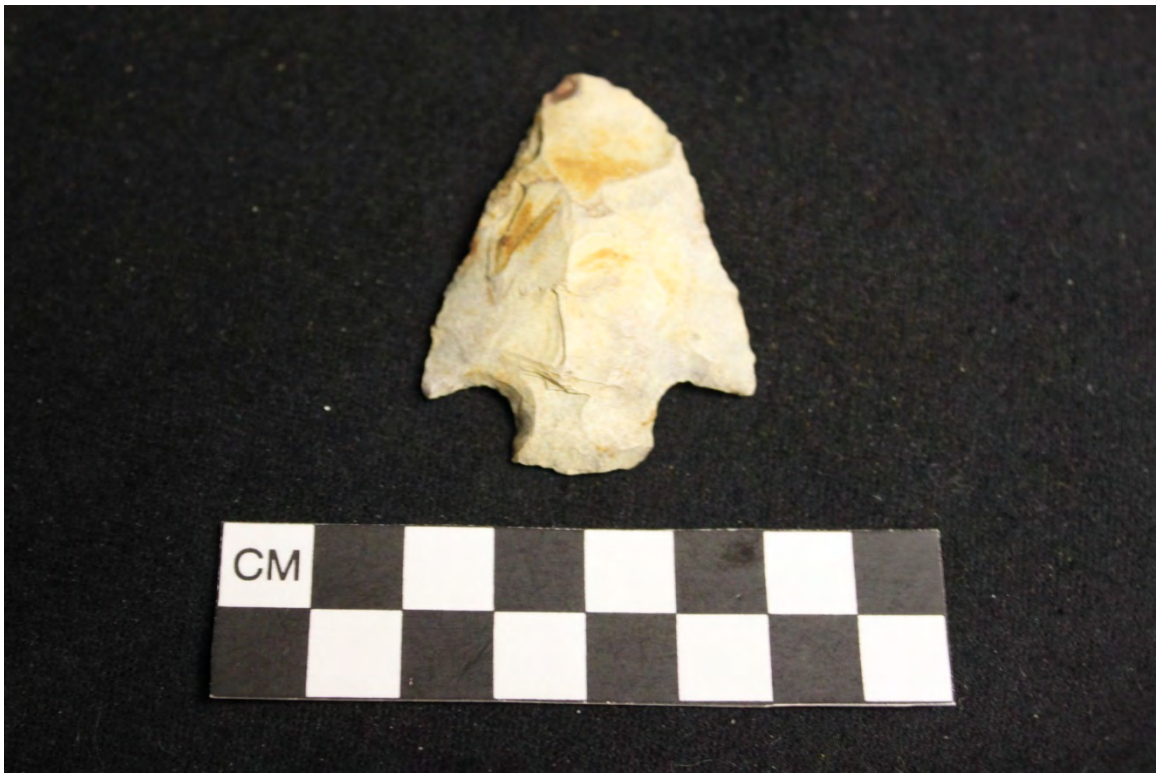


Figure 10. Site plan map of the isolated finds within the Flightline Area.

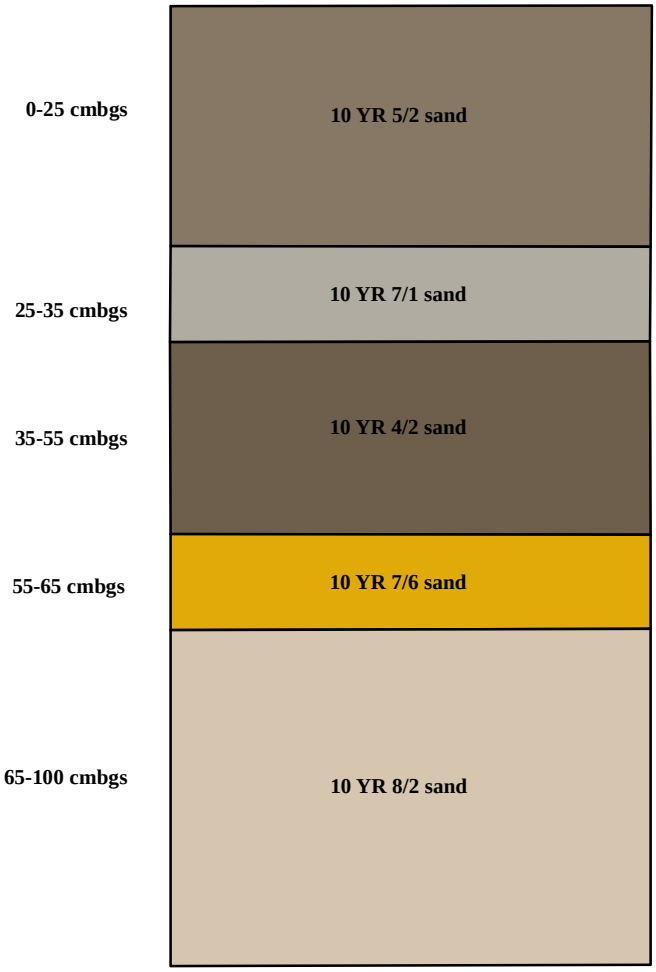
October 2019

Photograph 2. Overview of Isolated Occurrence #1 and #2 from Transect 4 STP5 facing west with perimeter fence on the right and Highway 98 to the left.

Photograph 3. Overview of Isolated Occurrence #1 and #2 from Transect 4 STP 6 facing south with Highway 98 in background.



Photograph 4. Leon type projectile point, tan chert.



Legend

- I: 0-25 cmbgs 10 YR 5/2 sand
- II: 25-35 cmbgs 10 YR 7/1 sand
- III: 35-55 cmbgs 10 YR 4/2 sand
- IV: 55-56 cmbgs 10 YR 7/6 sand
- V: 65-100 cmbgs 10 YR 8/2 sand

N

0 0.1 0.2
Meters
Centimeters
0 10 20

Figure 11. Stratigraphic profile of the shovel test pits excavated within the survey area.
IO #1 Flight Line

GSRC

October 2019

Table 6. Soil Strata Recorded in STPs Excavated to Delineate IO 1 and IO 2.

Shovel Test Number	Stratum	Depth (cmbgs)	Munsell	Soil Texture	Notes
	I	0-30	10YR 5/2 grayish brown	very fine sand	
	II	30-45	10YR 7/1	very fine sand	
D-1	III	45-50	10YR 3/6 dark yellowish brown	very compact concretion	
	I	0-20	10YR 6/1 gray	very fine sand	
	II	20-30	10YR 4/2 dark grayish brown	very fine sand	
	III	30-60	10YR 6/6 brownish yellow	very fine sand	
D-2	IV	60-100	10YR 8/1 white	very fine sand	
	I	0-20	10YR 4/2 dark grayish brown	sand	
	II	20-50	10YR 8/1 white	sand	
	III	50-80	10YR 3/3 dark brown	sand	
D-3	IV	80-100	10YR 6/3 pale brown	sand	
	I	0-30	10YR 4/2 dark grayish brown	fine sand	
	II	30-50	10 YR 5/2 grayish brown	fine sand	
	III	50-60	10 YR 3/2 very dark grayish brown	sand	
	IV	60-75	10 YR 3/6 dark yellowish brown	sand	
D-4	V	75-100	10 YR 5/6 yellowish brown	sand	
D-5	I	0-30	10YR 4/2 dark grayish brown	sand	Terminated at 30 cmbgs for PVC pipe
D-6					No Dig due to buried utility
	I	0-30	10YR 4/2 dark grayish brown	sand	
	II	30-50	10YR 2/1 black	sand	
	III	50-70	10YR 6/1 gray	sand	
D-7	IV	70-100	10YR 3/3 dark brown	sand	
D-8	I	0-30	10YR 4/2 dark grayish brown	sand	Terminated at 30 cmbgs concrete
	I	0-40	10YR 4/2 dark grayish brown	fine sand	
	II	40-75	10YR 8/1 white	fine sand	
D-9	III	75-85	10YR 2/1 black	sand	

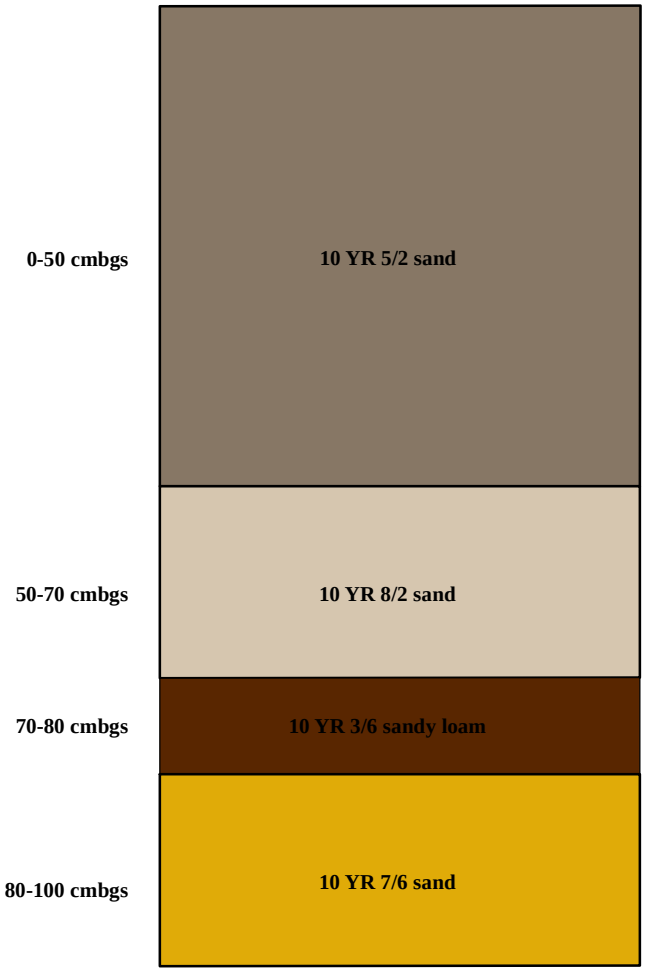
Table 6, continued

Shovel Test Number	Stratum	Depth (cmbgs)	Munsell	Soil Texture	Notes
	IV	85-100	10YR 2/2 very dark brown	sand	
	I	0-45	10YR 4/2 dark grayish brown	sand	Terminated at 65 cmbgs due to rocks and concrete
D-10	II	45-65	10YR 6/1 gray	sand	
	I	0-20	10YR 4/2 dark grayish brown	very fine sand	
	II	20-25	2.5YR 5/1 reddish gray	clay (very compact)	
	III	25-40	10YR 5/1 gray	very fine sand	
	IV	40-55	2.5Y 7/1light gray	very fine sand	
	V	55-80	10YR 6/1 gray	very fine sand	
D-11	VI	80-100	10YR 2/1 black	sand (compact)	

The second isolated occurrence, IO 2, was identified on transect 4 at STP 7. This STP is situated just outside of the main perimeter fence line in a manicured lawn approximately 55 m (180 ft.) to the north east of Highway 98. Artifacts recovered from this STP include one unidentified (UID) small mammal faunal remains (Photograph 5) and two cervical vertebra small mammal faunal remains (Photograph 6). The remains are not charred nor do they exhibit any cut marks or other evidence related to human activity. The faunal materials were recovered from a depth of approximately 60 to 70 cmbgs. This STP exhibited four stratigraphic levels (Figure 12). Stratum I extends from the surface to a depth of 50 cmbgs was a grayish brown (10YR 5/2) sand. Situated beneath this stratum and extending from 50-70 cmbgs was a very pale brown (10YR 8/2) sand. This was followed by a dark yellowish brown (10YR 3/6) sand from 70-80 cmbgs. The bottom stratum was comprised of a yellow (10YR 7/6) sand from 80 to 100 cmbgs. In an effort to further determine the nature of this find, an additional five STPs (D1, D2, D3, D4, and D5) were excavated at 10 m intervals in cardinal directions from the positive test (Table 6). No other cultural materials were identified during the delineation of this isolated positive STP. Similar to the delineation shovel tests around IO 1, the deposits recorded in the delineation STPS around IO 2 appear disturbed with no common stratigraphic sequence and evidence for deep disturbance. Given that this was an isolated find and the resulting delineation test pits produced no further cultural material, no further work is recommended at this location.

Photograph 5. Unidentified small mammal faunal.

Photograph 6. Two cervical vertebra from unidentified small mammal.



Legend

- I: 0-50 cmbgs 10 YR 5/2 sand
- II: 50-70 cmbgs 10 YR 8/2 sand
- III: 70-80 cmbgs 10 YR 3/6 sandy loam
- IV: 80-100 cmbgs 10 YR 7/6 sand

N

0 0.1 0.2
Meters
Centimeters
0 10 20

Figure 12. Stratigraphic profile of the shovel test pits excavated within the survey area.
IO #2 Flight Line

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October 2019

Munitions Area

The Munitions Area is located in the northeast section of Tyndall AFB approximately 1.18 km (.74 mi) east-northeast from the runway within the Flightline Area (Figure 13). The Munitions Area is measures 82 ac and is comprised of similar soils identified in the Flightline Area with 67.79 ac classified as Arents. In addition to the presence of the Arents soil unit, examination of topographic maps and aerial imagery (see Figures 2 and 14) of the area shows a rectilinear parcel of land surrounded by swamp suggesting this area is likely reclaimed swampland consisting of modern fill. The Munitions Area also consists of a relatively level, built up area with numerous ammunition storage bunkers and facilities for servicing the storage, removal, and safety of keeping munitions in the area (Photograph 7). The areas located outside of the perimeter fencing were shovel tested at 25 m intervals whereas the areas inside the fence were tested at 50 m intervals in the north west area, and then at 100 m intervals throughout the rest of the area. The increase between survey intervals was adjusted in the field due to increased evidence of modern disturbance identified within excavated STPs suggesting a moderate to low probability for encountering intact deposits. Furthermore, the water table was observed to be relatively shallow (80 cmbs) in this area, likely due to the area being encircled by swamp.

Photograph 7. Munitions building inside perimeter fencing with earthen bunkers in background right view from unnamed road facing north.

A total of 44 shovel tests were excavated within the Munitions Area with a total of 17 not excavated due to impediments. None of the shovel tests contained cultural materials. A typical shovel test profile was recorded from STP 47 and was excavated to a depth of 80 cmbgs where the water table was reached (Figure 14). The first stratum is comprised of a gray (10YR 5/1) sandy loam from 0-20 cmbgs. The second stratum is a very dark grayish brown (10YR 3/2) sandy loam that extends from 20-40 cmbgs. The final stratum consists of a very dark brown (10YR 3/2) sandy loam. The test was terminated at a depth of 80 cmbgs due to water filling the bottom of the test pit. Vegetation in the area mainly consisted of manicured grass with the surrounding landscape contain pine trees, palmetto, and scrub brush (Photograph 8). No cultural materials were recovered within the Munitions Area. No further work is recommended for this area.

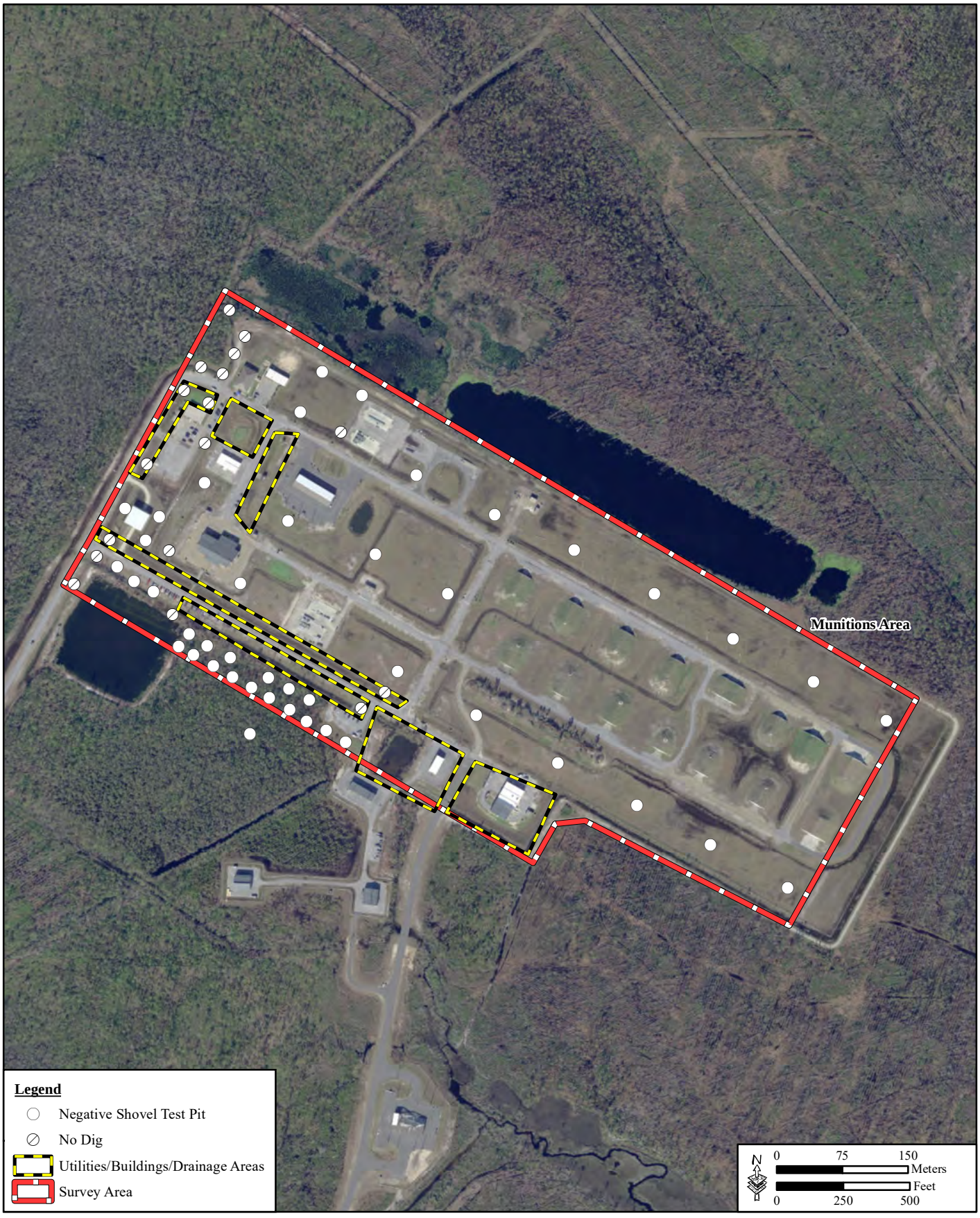
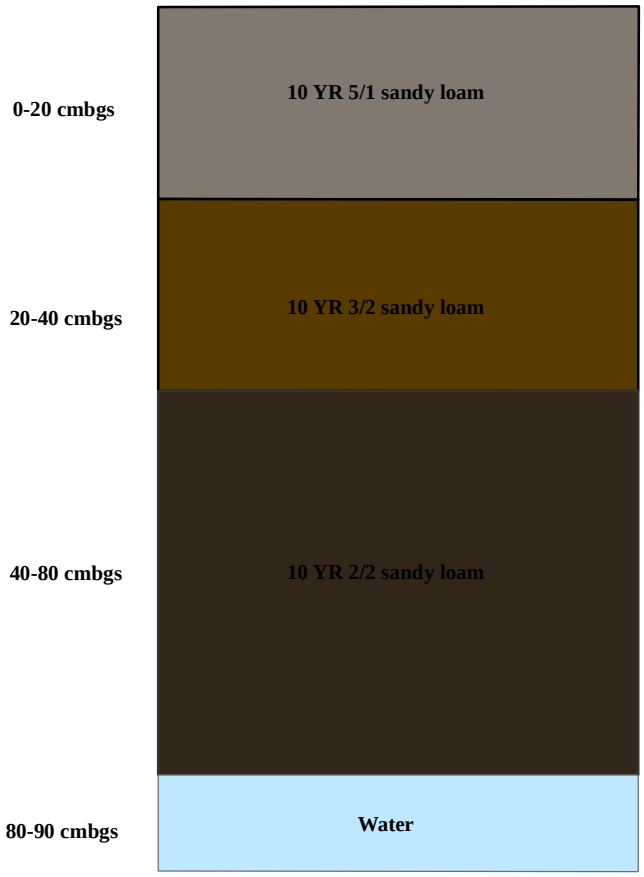


Figure 13. Map showing the transect shovel test pits excavated during the Munitions Area survey.

October 2019



Legend

- I: 0-20 cmbgs 10 YR 5/1 sandy loam
- II: 20-40 cmbgs 10 YR 3/2 sandy loam
- III: 40-80 cmbgs 10 YR 2/2 sandy loam
- IV: 80-90 cmbgs Water

N

0 0.1 0.2 Meters

0 10 20 Centimeters

Figure 14. Stratigraphic profile of the shovel test pits excavated within the survey area.
Munitions STP #47

GSRC

October 2019

Photograph 8. Munitions Area showing drainage ditch, buried utilities, and surrounding vegetation from unnamed road facing west.

8500 Area

The 8500 Area is located approximately 5.87 km (3.65 mi) to the east of the Louisiana Avenue gate along Highway 98 (Figure 15). The 8500 Area measures 18 ac and is slightly less developed than the other two areas. The northern portion of the survey area is located within perimeter fencing and is level and contains several buildings, paved areas, an earthen bunker, and a paved road (Photograph 9). The southern portion of the area is located outside of the perimeter fence and gently slopes down to St. Andrew's Sound to the south (Photograph 10). This area appears to be seasonally inundated and during this survey was observed to have standing water in the southernmost portion of the study area. Inside the perimeter fence, shovel testing was limited in the vicinity of built areas. Outside of the perimeter fence, shovel testing was conducted at 25 m intervals.

A typical shovel test profile from the 8500 Area was recorded from STP 57 and displayed four stratigraphic layers (Figure 16). The first stratum was comprised of a gray (10YR 6/1) sand that extended from the surface to a depth of 30 cmbgs. The second stratum consists of a very dark grayish brown (10YR 3/2) sand and extends from 30-40 cmbgs. Situated beneath this is a light yellowish brown (10YR 6/4) sand that extends from 40-70 cmbgs. Stratum IV was observed to be a very pale brown (10YR 8/2) sand.

A total of 41 STPs were excavated in the 8500 Area with a total of 15 STPs not excavated due to the existing built environment (Photograph 11). There were no cultural materials recorded within the 8500 Area. No further work is required for this area.

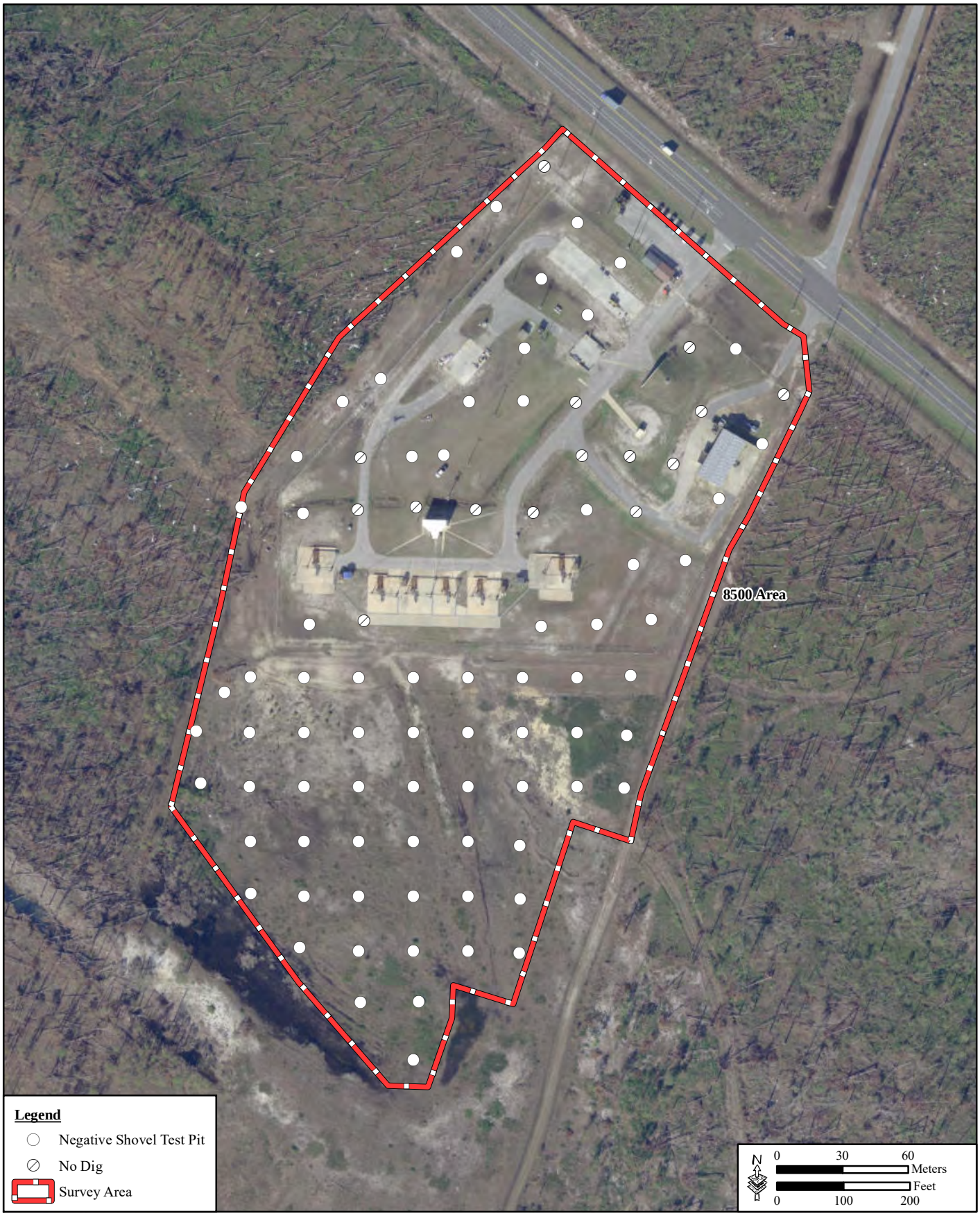
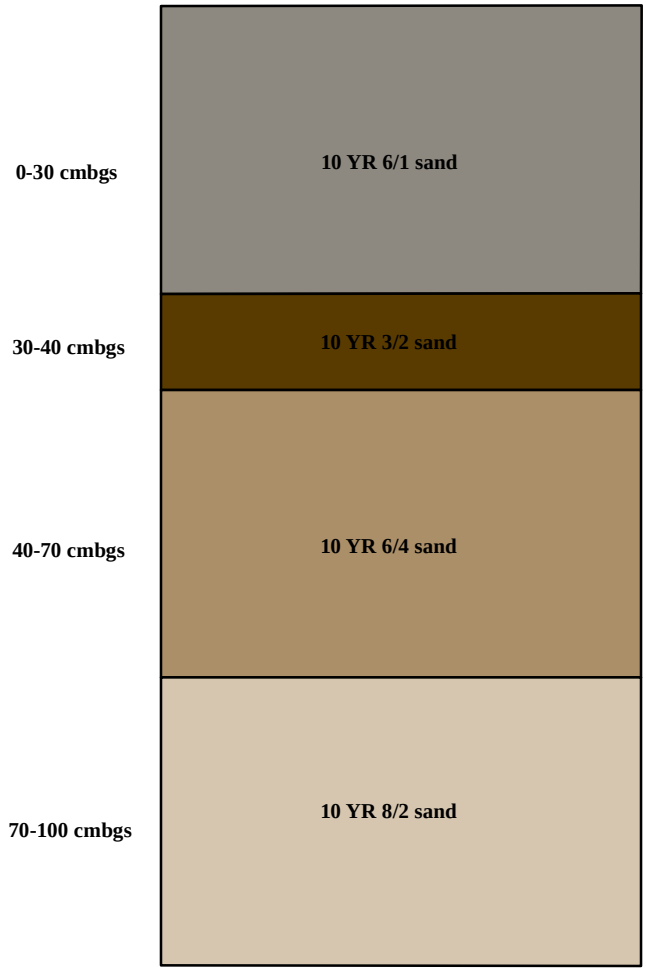


Figure 15. Map showing the transect shovel test pits excavated during the 8500 Area survey.

October 2019

Photograph 9. 8500 Area showing buildings, bunker, and paved road facing north.

Photograph 10. 8500 Area southern portion outside of perimeter fence facing south with St. Andrew's Sound in the background.



Legend

- I: 30-40 cmbgs 10 YR 6/1 sand
- II: 0-30 cmbgs 10 YR 3/2 sand
- III: 40-70 cmbgs 10 YR 6/4 sand
- IV: 70-100 cmbgs 10 YR 8/2 sand

N

0 0.1 0.2 Meters

0 10 20 Centimeters

Figure 16. Stratigraphic profile of the shovel test pits excavated within the survey area.
8500 STP #57

GSRC

October 2019

Photograph 11. Buildings located within the 8500 Area facing east.

SUMMARY AND RECOMMENDATIONS

GSRC conducted an intensive Phase I archaeological survey combining intensive pedestrian survey with systematic shovel testing along transects across the Flightline Area, The Munitions Area, and the 8500 Area totaling 342 acres at Tyndall AFB. Survey of these areas was initially conducted at a high probability intensity level with STPs excavated at 25 meter intervals along transects. This intensity level was adjusted to moderate probability (50-m intervals) for the Flightline Area and moderate and low (100-m intervals) probability for the Munitions Area when it was observed that deposits in the those areas were highly disturbed. The 8500 Area was surveyed entirely at high probability intensity. Each of the three areas is highly developed with numerous structures, paved areas, water runoff control features, and utilities. A total of 148 STPs were excavated during this investigation with an additional 126 not excavated due to impediments of the built environment. Only two STPs were positive and both were in the Flightline Area. Both positive STPs were delineated and determined to be IOs.

IO 1 consists of a single Leon Weeden Island (ca. 1,600-1,100 B.P.) type projectile point was recovered from TR 4 STP 5 at approximately 60 to 70 cmbgs. Additional STPs excavated to delineate the find were all negative. Deposits in the STP do not suggest the find is part of an intact cultural deposit.

IO 2 consists of one unidentified (UID) small mammal bone and two cervical vertebra from a small mammal. The remains are not charred nor do they exhibit any cut marks or other evidence related to human activity or anything to suggest they are cultural artifacts. The faunal materials were recovered from a depth of approximately 60 to 70 cmbgs. The deposits in the STP do not suggest the faunal remains are part of an intact cultural deposit.

Neither IO qualifies as an archaeological site nor do they possess integrity or criteria to be considered for NRHP eligibility. No NRHP eligible archaeological resources have been recorded within the Flightline Area, Munitions Area, and 8500 Area during this investigation. As a result, no adverse effects will occur to archaeological resources as a result of the proposed Hurricane Michael recovery actions in the three project areas. No further work is recommended.

REFERENCES

4757th Air Defense Squadron (IWS)
1962 "Historical Record of the 4757 Air Defense Squadron (IWS) for the period ending 31 December 1962." On File, Historical Research Agency (K-WG-4756-HI).

Anderson, D. G., L. D. O'Steen, and K. E. Sassaman
1996 Environmental and Chronological Considerations. In *The Paleoindian and Early Archaic Southeast,* edited by David G. Anderson and Kenneth E. Sassaman, pp. 3-15. University of Alabama Press, Tuscaloosa.

Beck, C. and G. T. Jones
2007 Early Paleoarchaic Point Morphology and Chronology. In *Paleoindian or Paleoarchaic? New Insights of Late Pleistocene-Early Holocene Archaeology in the Great Basin*, edited by K. Graf and D. Schmidt, pp. 23-41. University of Utah Press, Salt Lake City, Utah.

Bense, Judith A.
1985 *Hawkshaw: Prehistory and History in an Urban Neighborhood in Pensacola, Florida.* University of West Florida, Report of Investigations 7.

Bense, Judith A., and Thomas C. Watson
1979 A Swift Creek and Weeden Island "Ring Midden" in the St. Andrews Bay Drainage System on the Northwest Florida Gulf Coast. *Journal of Alabama Archaeology* 25:85-137.

Campbell, J.L and P. Thomas Jr.
1985 Cultural Resources Investigation at Tyndall AFB, Bay County, Florida.

Claassen, Cheryl
1985 Shellfish Utilization During Deptford and Mississippian Times in Escambia Bay,Florida. *The Florida Anthropologist,* 38(1-2), Part 2: 124-135

Cooley, Nelson R.
1978 *An Inventory of the Estuarine Fauna in the Vicinity of Pensacola, Florida.* Florida Marine Research Publications No. 31. Florida Department of Natural Resources Marine Research Laboratory, St. Petersburg, Florida. 119 pp.

Cordell, Ann S.
1993 Chronological Variability in Ceramic Paste: A Comparison of Deptford and Savannah Period Pottery in the St. Marys River Region of Northeast Florida and Southeast Georgia. *Southeastern Archaeology*, 12(1): 33-58.
1984 Ceramic Technology at a Weeden Island Period Archaeological Site in North Florida. Ceramic Notes No. 2. Occasional Publications of the Ceramic Technology Laboratory, Florida State Museum.

Department of Defense (DoD) Partners in Flight (PIF)
2013 Bird Checklist. Online document: http://www.dodpif.org/checklists/napf.htm. Last accessed November 13, 2013.

Duffee, E.M., R.A. Baldwin, D.L. Lewis, and W.B. Warmack
1984 *Soil Survey of Bay County Florida.* U.S. Department of Agriculture, Soil Conservation Service.

Dunbar, James S., and B. I. Waller
1983 A Distribution Analysis of the Clovis/Suwannee Pale-Indian Sites of Florida: a Geographic Approach. *The Florida Anthropologist* 36:18-30.

Dunbar, James, S., S. David Webb, and Dan Cring
1989 Culturally and Naturally Modified Bones from Paleoindian Site in the Aucilla River, North Florida. In *First International Bone Modification Conference*, edited by R. Bonnichsen, pp. 473-497, Center for the Study of the First Americans, University of Maine. Orono, Maine.

Durst, Donald M. and Charissa Y. Wang
1996 *Historic Preservation Plan for Tyndall Air Force Base Florida: Technical Synthesis*. Submitted by Hardlines: Design and Delineation, Colombus, Ohio to Interagency Archaeological Services Division, Southeast Regional Office, National Park Service, Atlanta. Contract No. 1443-RP-5000-94-014.

Faught, Michael, K.
2004 The Underwater Archaeology of Paleolandscapes, Apalachee Bay Florida. *American Antiquity*, 69(2): 275-289.

Florida Natural Areas Inventory (FNAI)
2010 Guide to the Natural Communities of Florida: 2010 Edition. Online document: http://www.fnai.org/natcom_accounts.cfm. Last accessed November 14, 2013.

Forney, Sandra Jo
1985 Prehistoric Settlement and Subsistence Systems of the Apalachicola National Forest, Florida. *The Florida Anthropologist* 38(2):98-103.

Grayson, D. K.
1993 *The Deserts Past: A Natural Prehistory of the Great Basin*. Smithsonian Institution Press, Washington D.C.

Henefield, Susan M., and Nancy Marie White
1986 *Archaeological Survey in the Middle and Lower Apalachicola Valley, Northwest Florida, 1985*. Report to the Division of Archives, History and Records Management, Tallahassee.

Knudsen, Gary D.
1979 *Partial Cultural Resource Inventory of Tyndall Air Force Base, Florida. Southeast Conservation Archaeology Center*, Florida State University, Tallahassee, Florida. Archaeological Research Reports 7. Submitted to National Park Service, Southeast Regional Archaeological Services Branch, Atlanta, Georgia, Contract Number C5917 (79). Copies available from National Park Service, Southeast Regional Archaeological Services Branch, Atlanta, Georgia.

Krysko, K. L., K. M. Enge, and P. E. Moler
2011 *Atlas of Amphibians and Reptiles in Florida.* Final Report, Project Agreement 08013, Florida Fish and Wildlife Conservation Commission, Tallahassee, USA. 524 pp.

Marrinan, Rochelle A; and White, Nancy Marie
2007 Modeling Fort Walton Culture in Northwest Florida. *Southeastern Archaeology*; 26(2): 292-318.

Mikell, G. A.
1992 8OK5: A Coastal Weeden Island Village in Northwest Florida. *The Florida Anthropologist* 45(3):195-220.
2012 Sheepshead Country: Coastal Woodland Subsistence from the Perspective of Mack Bayou and other Northwest Florida Sites. *Southeastern Archaeology* 31(1): 17-32.

Milanich, Jerald T.
1973 The southeastern Deptford culture: a preliminary definition. *Bureau of Historic Sites and Properties Bulletin* 3:51-63. Tallahassee.
1994 *Archaeology of Precolumbian Florida*. University Press of Florida, Gainesville, Florida.

Milanich, Jerald T. and Charles H. Fairbanks
1980 *Florida Archaeology*. Academic Press, New York.

Morrell, L. Ross
1960 Oakland Mound (Je53), Florida: A Preliminary Report. *The Florida Anthropologist* 13:101-108.

Morse, Dan F. and Louis D. Tesar
1974 A Microlithic Tool Assemblage from a Northwest Florida Site. *Florida Anthropologist* 27(3):89-106.

New World Research, Inc.
1984 *Cultural Resources Investigations at Eglin Air Force Base, Santa Rosa, Okaloosa, and Walton Counties, Florida: An Interim Report on Phase I*. Interim report submitted in partial fulfillment of Contract No. CX5000-2-0497 to National Park Service, Southeast Regional Office, Archeological Services Branch, Atlanta. New World Research, Inc., *Report of Investigations* 82-5.

Percy, George W., and David S. Brose
1974 Weeden Island Ecology, Subsistence, and Village Life in Northwest Florida. Paper presented at the 39th annual meeting of the Society for American Archaeology, Washington, D.C.

Percy, George W., and M. Katherine Jones
1976 An Archaeological Survey of Upland Locales in Gadsden and Liberty Counties, Florida. *The Florida Anthropologist* 29: 105-125.

Phelps, David S.
1969 Swift Creek and Santa Rosa in Northwest Florida. *Institute of Archeology and Anthropology, University of South Carolina, Notebook* 1(609): 14-24.

Rupert, Frank R.
1993 *The geomorphology and geology of Escambia County, Florida.* Florida Geological Survey, Tallahassee, Florida. 6 pp.

Rupert, Frank R. and J. D. Arthur
1990 *The geology and geomorphology of Florida's Coastal Marshes*. Open File Report 34. Florida Geological Survey, Tallahassee, Florida. 13 pp.

Sears, William H.
1962 Hopewellian Affiliations of Certain Sites on the Gulf Coast of Florida. *American Antiquity*, 28 (1): 5-18.

Sligh, Robert B.
2003 *Air Training Command and the Korean War.* Office of History and Research, Headquarters Air Education and Training Command, Randolph AFB. http://www.aetc.af.mil/shared/media/document/AFD-061109-021.pdf.

Smith, Bruce D.
2006 Eastern North America as an Independent Center of Plant Domestication. *Proceedings of the National Academy of Sciences of the United States of America*, 103(33): pp. 12223-12228.

Soil Survey Staff
2019 U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey. Online document: http://websoilsurvey.nrcs.usda.gov. Last accessed September 11, 2019.

Taylor, R. E., Haynes, C. V. and M. Stuiver
1996 Clovis and Folsom Age Estimates: Stratigraphic Context and Radiocarbon Calibration. Antiquity 70:515-525.

Tesar, Louis
1980 *The Leon County Bicentennial survey report: an archaeological survey of selected portions of Leon County, Florida.* Performed for the Florida Bicentennial Commission, City of Tallahassee, and National Park Service by the Bureau of Historic Sites and Properties, Division of Archives, History and Records Management, Florida Department of State. *Miscellaneous Project Report Series* 49.

Thomas, Prentice M., Jr. and L. Janice Campbell
1985 *Cultural resources investigations at Tyndall Air Force Base, Bay County, Florida.* New World Research, Inc. Report of Investigations 84-4.

Tyndall Air Force Base
2016 Integrated Cultural Resources Management Plan for Tyndall Air Force Base, Florida
2006 Integrated Natural Resources Management Plan for Tyndall Air Force Base, Florida.

Underwood, Jeffrey I.
1991 *Tyndall Air Force Base: A Fifty-year History, 1941-1991*. Tyndall AFB: USAF, Air Defense Weapons Center, History Office.

USAF HRA
1941. *History, Army Air Forces Flexible Gunnery School, Tyndall Field, Panama City, Florida. January 1, 1939-December 7, 1941.* Volume 1.289.29:1-14.

Wallis, Neill J.
2007 Defining Swift Creek Interactions: Earthenware Variability at Ring Middens and Burial Mounds. Southeastern Archaeology, 26 (2): 212-231.

Weinstein, Richard A., and Ashley A. Dumas
2008 The Spread of Shell Tempered Ceramics Along the Northern Coast of the Gulf of Mexico. *Southeastern Archaeology* 27(2):202-221.

Weisman, Brent R.
2003 Why Florida Archaeology Matters. *Southeastern Archaeology*, 22(2):210-226.

Weitze, K. J.
2003 *Keeping the Edge: Air Force Materiel Command Cold War Context (1945-1991),* Vol. 1-3. EDAW, Inc. through Prewitt and Associates, Inc. Submitted to Headquarters Air Force Materiel Command, Wright-Patterson Air Force Base, Ohio.

Wheeler, Ryan J., James J. Miller, Ray M. McGee, Donna Ruhl, Brenda Swann and Melissa Memory
2003 Archaic Period Canoes from Newnans Lake, Florida. *American Antiquity*, 68(3): 533-551.

White, Nancy Marie
1986 Prehistoric Cultural Chronology in the Apalachicola Valley: The Evolution of Native Chiefdoms in Northwest Florida. In *Threads of Tradition and Culture along the Gulf Coast*, edited by R.V. Evans, pp. 194-215. Gulf Coast History and Humanities Conference, Pensacola.
1981 The Curlee Site and Fort Walton Development in the Upper Apalachicola-Lower Chattahoochee Valley. *Southeastern Archaeological Conference Bulletin* 24: 24-27.

White, W. A.
1970 *The geomorphology of the Florida Penninsula*. Florida Department of Natural Resources, Geological Survey Bulletin 51.

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MANAGEMENT SUMMARY

Phase I Archaeological Survey – Survey Areas TY-162, TY-163, and TY-164, Tyndall Air Force Base, Bay County, Florida

Contract No. 8F-30176-00
Task Order TY-19-0002
Wood Project No. 928050059

November 2019

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Phase I Archaeological Survey – Survey Areas TY-162, TY-163 and TY-164, Tyndall Air Force Base, Bay County, Florida

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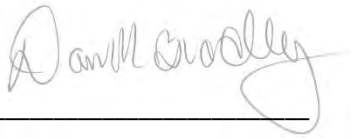

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INTRODUCTION

In May and October 2019, Wood Environment & Infrastructure Solutions, Inc. (Wood) completed a Phase I archaeological survey of approximately 854.99 acres (ac) (346 hectares [ha]) for Survey Areas TY-162, TY-163, and TY-164 (Task Order TY-19-0002) at Tyndall Air Force Base (AFB) in Bay County, Florida (**Figures 1 and 2**). The purpose of the archaeological survey was to determine if archaeological sites eligible for the National Register Historic Places (NRHP) are located within the survey areas. The survey was conducted to meet the requirements of Section 110 of the National Historic Preservation Act (NHPA) of 1966 (Public Law 89-665: 16 U.S.C. 470 et seq.), as amended, and was completed in accordance with the Secretary of the Interior's *Standards and Guidelines for Historic Preservation Projects* (Federal Register, Vol. 48, No. 190, September 1983, P. 44716-44742, et seq.), the Florida Division of Historical Resources (FDHR) Cultural Resource Management (CRM) Standards and Operations Manual *Module Three Guidelines for Use by Historic Preservation Professionals* (FDHR 2015).

The results of the survey are summarized below in **Table 1**. Approximately 30.7 acres in TY-162 and 53.6 acres in TY-164 were unable to be surveyed due to a dense amount of tree fall associated with damage from Hurricane Michael, a Category 5 storm which hit the base in October 2018. Four new archaeological sites (8BY2716, 8BY2717, 8BY2718 and 8BY2719) and one archaeological occurrence (IF 1) were identified during the survey. Sites 8BY2716 and 8BY2718 are both low density prehistoric artifact scatters, while site 8BY2717 is a low density of prehistoric artifacts recovered in shell midden deposits. Site 8BY2719 consisted of several concrete pillars found on the surface. A low density of Herty cup fragments were found in association with these pillars, but no other materials were found on the surface or during shovel testing in the area, and the function of this site has not been determined. The prehistoric archaeological occurrence (IF 1) consisted of one lithic flake recovered in a single shovel test. Analysis of the artifacts recovered during the survey and full assessment of sites identified is in progress. Therefore, all recommendations in this management summary are preliminary and subject to change.

Table 1. Summary of Newly Identified Sites within Survey Areas.

Survey Area	*Size (acres)*	*Uncleared acres**	*Survey Shovel Tests*	*Recording Shovel Tests*	*Results*
TY-162	129.4	30.7	52	15	one new prehistoric site (**8BY2718**); one historic site (**8BY2719**); one prehistoric archaeological occurrence (**IF-1**)
TY-163	350.93	n/a	204	38	two new prehistoric sites (**8BY2716** and **8BY2717**)
TY-164	314.69	53.6	260	0	no sites or archaeological occurrences identified

**Denotes areas that could not be accessed due to dense amounts of tree fall*

Additionally, four previously recorded sites extend into the TY-162 (8BY2280, 8BY2380 and 8BY2381) and TY-164 (8BY1496) survey boundaries. These sites are potentially eligible for the NRHP (see **Figures 1 and 2**).

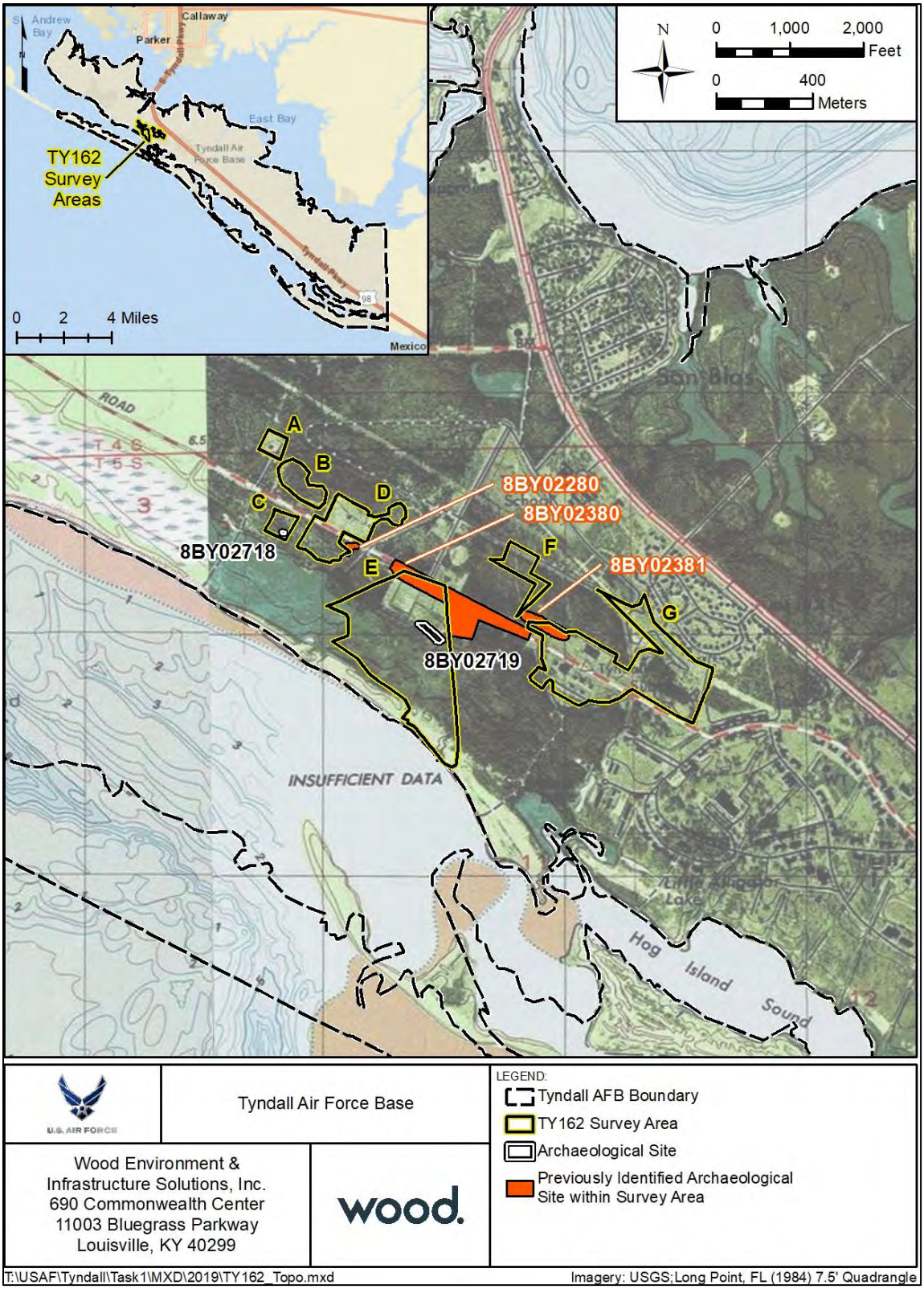


Figure 1. Location of Survey Area TY-162 shown on USGS 1977 Navarre, Florida topographic quadrangle.

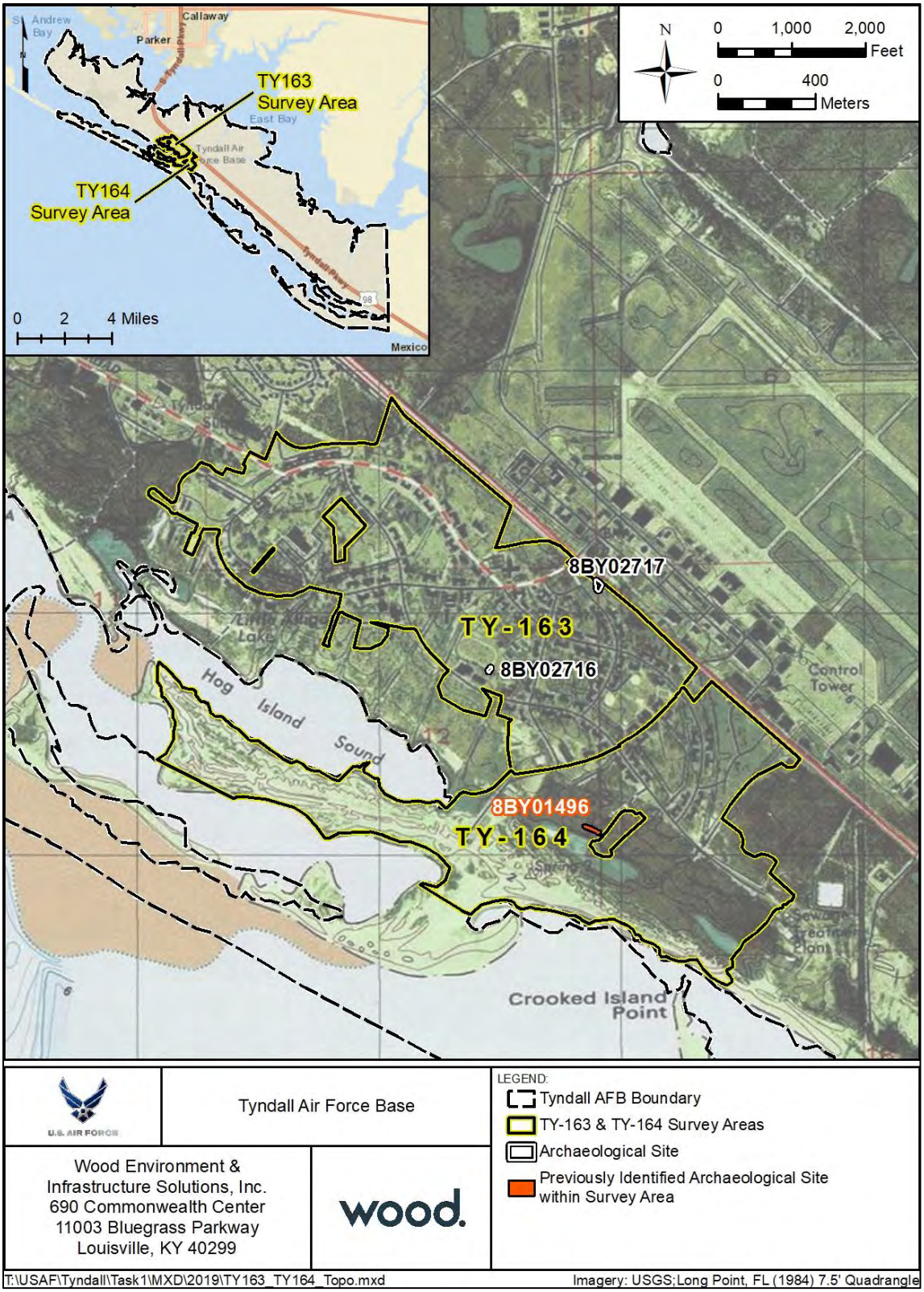


Figure 2. Location of Survey Areas TY-163 and TY-164 shown on USGS 1977 Navarre, Florida topographic quadrangle.

FIELD METHODOLOGY

Prior to accessing Tyndall AFB to conduct any survey, a TAFB 103 permit was completed for each survey area. None of the survey areas were marked as having the potential to contain unexploded ordinances (UXO).

All survey areas were assessed for their "Probability Zone" as defined in the FDHR Historic Preservation guidelines (FDHR 2015) in order to guide the level of effort necessary for survey in each area. Probability assessment of each survey area was completed via review of available topographic maps and aerial photos, review of previously recorded sites in or adjacent to the defined survey area, and consultation with the Tyndall Cultural Resource Management (CRM) staff. In-field examination of each survey area also impacted a survey area's probability zone designation. Intervals of shovel test excavations varied based on this probability determination, with shovel tests excavated at a 25-m interval in high probability zones, a 50-m interval in moderate probability zones, and a 100-m interval in low probability zones in accordance with FDHR guidelines (2015).

All shovel tests were at least 50-cm in diameter. On average, shovel tests were excavated to a depth of 100 cm below surface, unless water table was reached or a physical barrier such as concrete was encountered. Shovel tests related to the general survey of an area were labeled as "Survey Shovel Tests" or "SSTs." Soil from the shovel tests was screened through a 0.25-in (6.35-mm) hardware cloth. Measurements were recorded using the metric system, and shovel test forms and soil profile information were recorded for each test pit. Soils were described using the Munsell color chart and appropriate terminology. Photographs were taken of representative soil profiles throughout the survey area, as well as to document the general conditions within each area. Mapping for the project was completed using handheld 1-meter accuracy real-time Global Navigation satellite system (GNSS) receivers using US Global Positioning System (GPS) and Russian GNSS satellites. Signals from the satellites are processed and transferred to Apple iPad via internal Bluetooth radio broadcasters. Apple iPad applications are securely managed by users to record location, photo, and attribute information.

When cultural materials were identified, the area containing artifacts was assigned a temporary field site (FS) number and the location of the artifacts recorded using a GPS device. Site boundaries were delineated by pedestrian survey, the excavation of shovel tests at a reduced 10 m (32.8 ft) interval, or a combination of both. Shovel tests completed in association with delineation of a site or archaeological occurrence were labeled as "Recording Shovel Tests" or "RSTs." In accordance with FDHR guidelines, when only a single artifact was recovered or when one or two artifacts "non-diagnostic artifacts, not known to be distant from their original context, …fit within a hypothetical cylinder of 30 cm diameter, regardless of depth below surface," the artifact location was recorded as an archaeological occurrence rather than an archaeological site (FDHR 2015:19). Florida State Site Forms will be completed for all sites identified during the survey.

SURVEY AREA DESCRIPTION AND RESULTS

Survey Area TY-162

Survey Area TY-162 consisted of seven non-contiguous sections (A-G) totaling 129.40 ac (52.4 ha) located along Beacon Beach Road near its intersection with DeJarnette Drive (**Figures 3-5**; see **Figure 1**). Land use within this survey area was a mix of Tyndall AFB infrastructure development and open fields/wooded areas. Approximately 30.7 ac (12.4 ha) of TY-162E, south of the old rifle range, could not be surveyed due to a dense amount of tree fall (see **Figure 4**). However, examination of topographic maps, aerial photos, and visual assessment along accessible portions of this area suggest it is wet, with water observed on the surface in some portions; such wet areas tend to have lower potential to yield significant archaeological deposits. In addition to the uncleared areas, two of the survey sections on the north side of Beacon Beach Road were associated with large antenna structures marked as having radiation hazard (**Figure 6**; see **Figure 3**). Though it was uncertain whether these structures were functional, the Tyndall Communication Squadron was consulted before entering the area; it was advised that these areas be avoided, and the ground not disturbed (personal communication, July 3, 2019).

The remainder of the survey area is covered by Tyndall infrastructure development, such as the (now demolished) rifle range building, a skeet and trap range, the Force Development Center, and other such structures (**Figure 7**). Other noted disturbances included paved and graveled roads, sidewalks, a running track, parking lots, drainage ditches and ponds, and buried utilities. However, isolated areas of undeveloped land in between these structures were noted.

Background researched revealed a portion of three previously defined sites (8BY2280, 8BY2380 and 8BY2381) were located within the current TY-162 survey boundary (see **Figures 3 to 5**). Two of the sites are World War II era military sites: 8BY2380 was identified as the Turret Tower Range No. 2 and site 8BY2381 as the Skeet Range (Campbell et al. 2017). These two sites have been previously recommended as potentially eligible for the NRHP. Site 8BY2280 is a prehistoric artifact scatter site that has been recommended as potentially eligible for the NRHP (Clark et al. 2017). In consultation with Tyndall AFB CRM staff, it was determined that no additional investigations at the Phase I level were necessary within the portion of these sites that overlap with the TY-162 survey boundary. Shovel tests were excavated along the boundary of the TY-162 survey area with these previously recorded sites, with one shovel test falling just inside the boundary of site 8BY2280. No artifacts were recovered in any of these shovel tests, suggesting that these sites do not extend further into the current boundary.

Three additional previously recorded sites (8BY155, 8BY2275, and 8BY2280) were identified as adjacent to the TY-162 boundary (see **Figures 3 to 5**). None of these sites were found to extend within the current survey boundary.

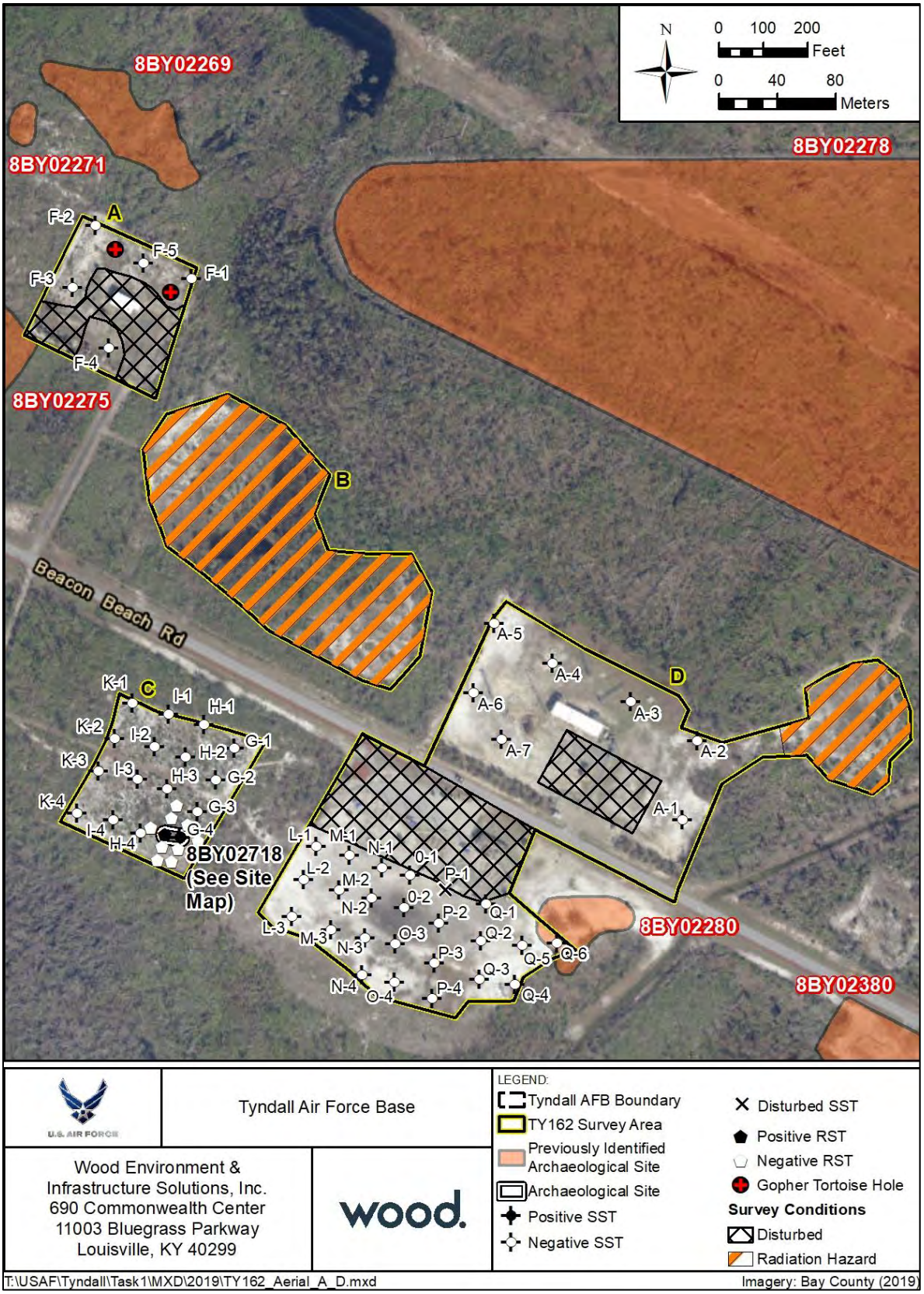


Figure 3. Survey Area TY-162 Section A-D results map.

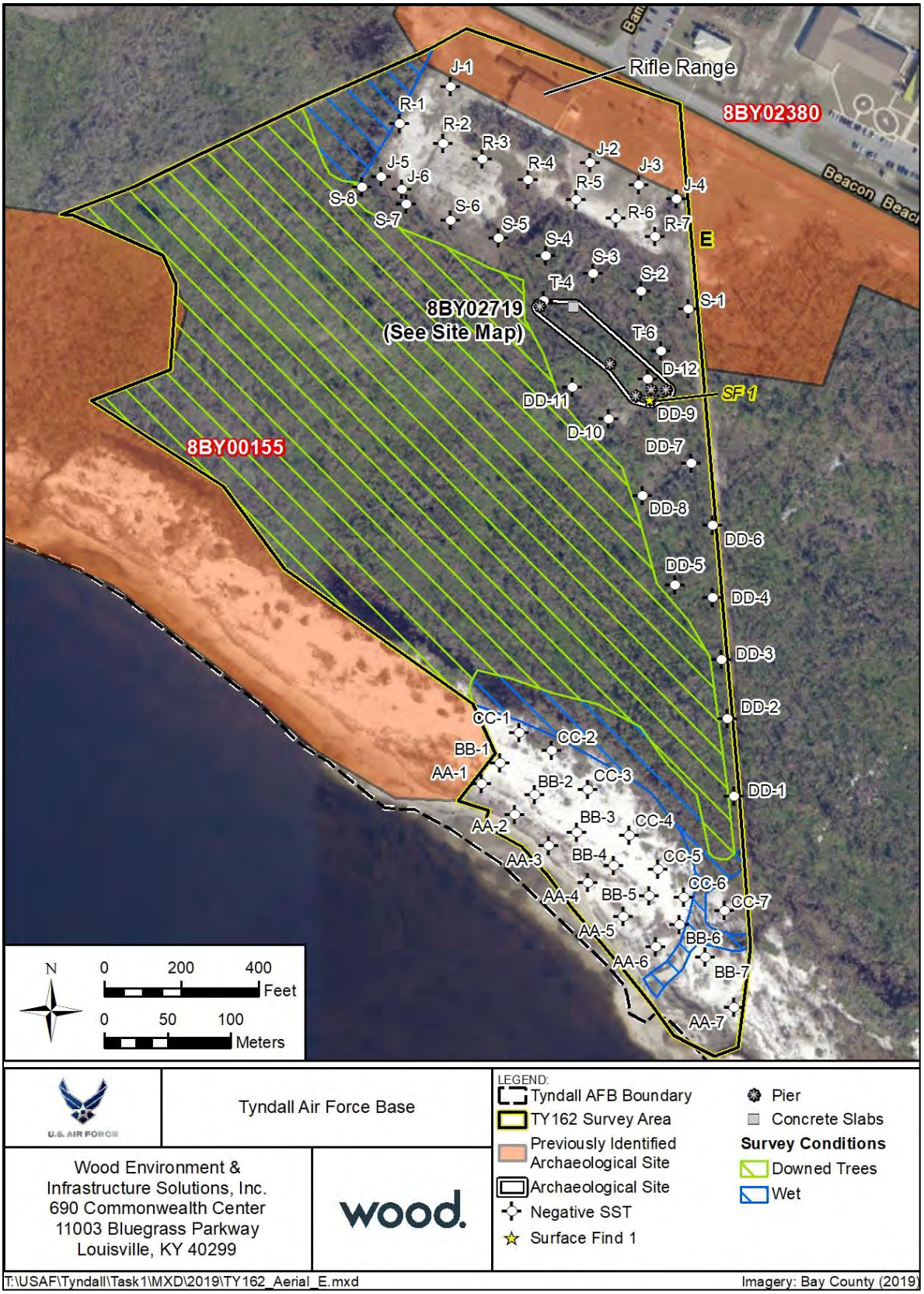


Figure 4. Survey Area TY-162 Section E results map.

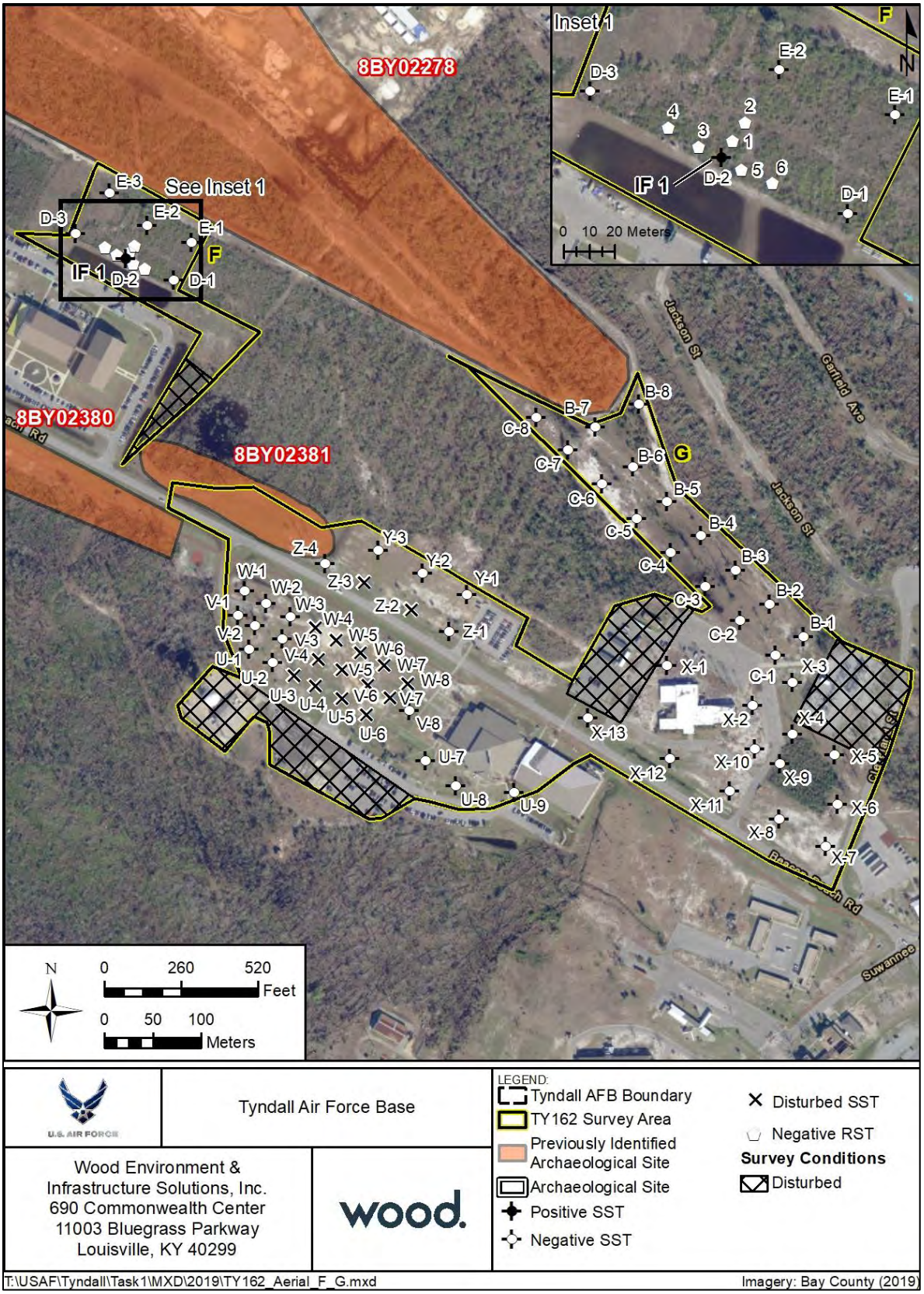


Figure 5. Survey Area TY-162 Section F and G results map.

Figure 6. Antenna with radiation hazard sign, facing southeast.

Figure 7. General view of conditions encountered in TY-162, facing east.

Overall, the observed conditions, landform, and previously recorded sites identified in the vicinity suggested that the TY-162 survey area had a high to moderate probability to yield archaeological materials and, as such, the shovel test excavation interval ranged from 25- to 50-m. A total of 52 SSTs (14.56 m^3) and 15 RSTs (4.2 m^3) were excavated within this survey area, with two new archaeological sites (8BY2718 and 8BY2719) and one archaeological occurrence (IF 1) identified (see **Figures 3 to 5**).

Site 8BY2718, located in an open field on the south side of Beacon Beach Road, consisted of one prehistoric pottery fragment and three pieces of lithic debitage recovered in two shovel tests (**Figure 8; see Figure 3**). While artifact analysis is ongoing, the overall low amount of artifacts recovered from the site suggests it is unlikely to yield additional important information concerning prehistoric occupations at Tyndall AFB and, as such, it is preliminarily recommended as not eligible for the NRHP.

Site 8BY2719 is located in a wooded area behind the former rifle range and consisted of six concrete piers and one square concrete slab noted on the surface (**Figure 9; see Figure 4**). Each pier consisted of an approximately 1.7-x-1.7-m square base supporting a smaller (0.6-x-0.6-m) pillar for a total height of approximately 1.2 m (**Figure 10**). Flat metallic elements, which may have functioned as fasteners, were noted on top of the smaller pillars. While a low density of Herty cup fragments were noted on the surface near one of the piers (SF 1), shovel tests excavated within and around this area yielded no additional cultural materials. Given that this site is bounded by areas of dense tree fall to the south and west, it could not be confirmed whether additional pier structures are present in those directions. The function of these piers is undetermined. Additional research into the history of Tyndall development, such as into World War II training activities, is necessary in an attempt to determine site function before an NRHP-eligibility determination for this site can be made.

The archaeological occurrence (IF 1) consisted of one lithic flake recovered in a single shovel test in the portion of TY-162 on the north side of Beacon Beach Road (see **Figure 5**). IF 1, on its own, lacks sufficient context for further interpretations and is unlikely to yield additional significant information on prehistoric activities on Tyndall or in the Florida Panhandle. Therefore, IF 1 is recommended as not eligible for the NRHP.

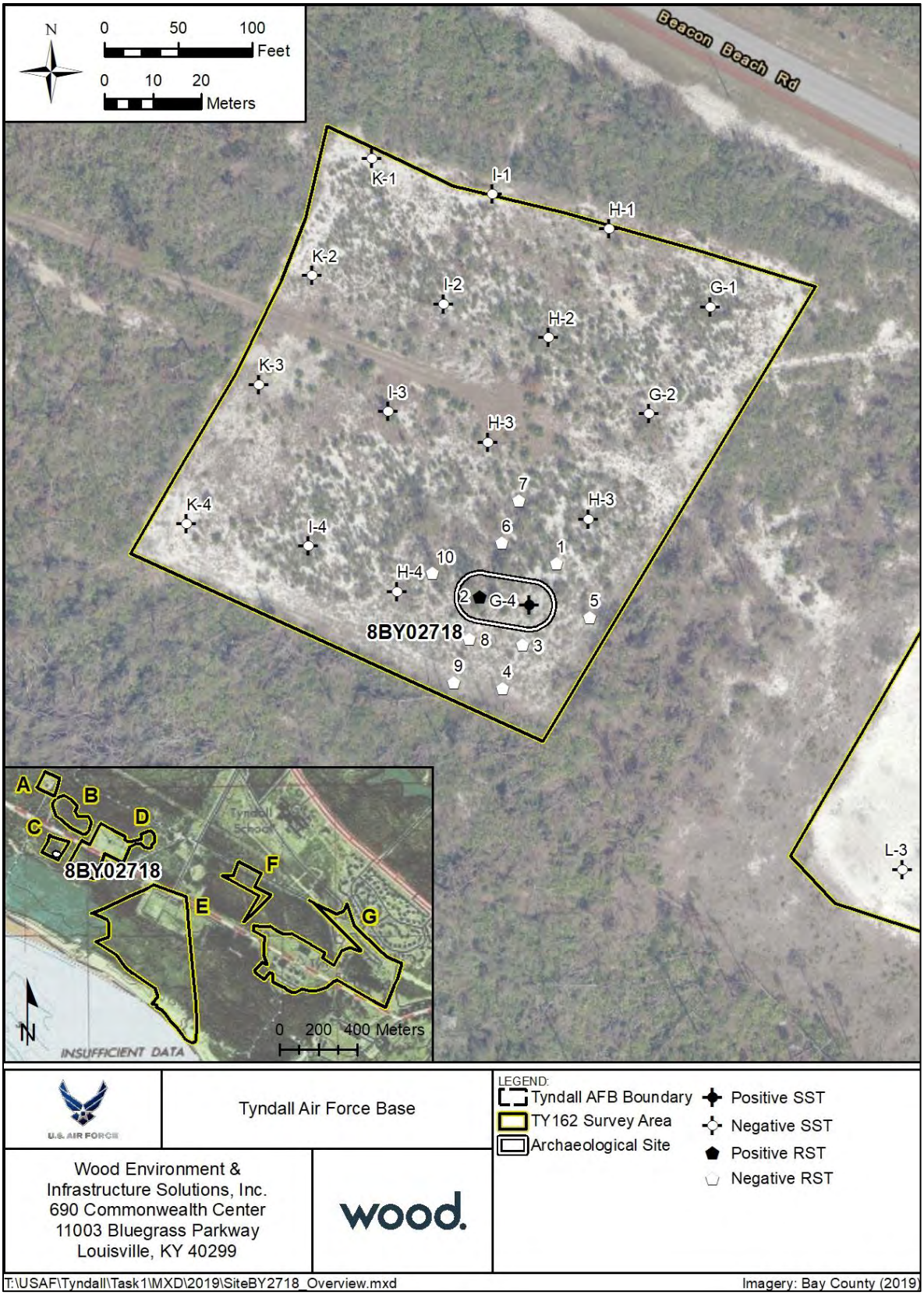


Figure 8. Site 8BY2718 results map.

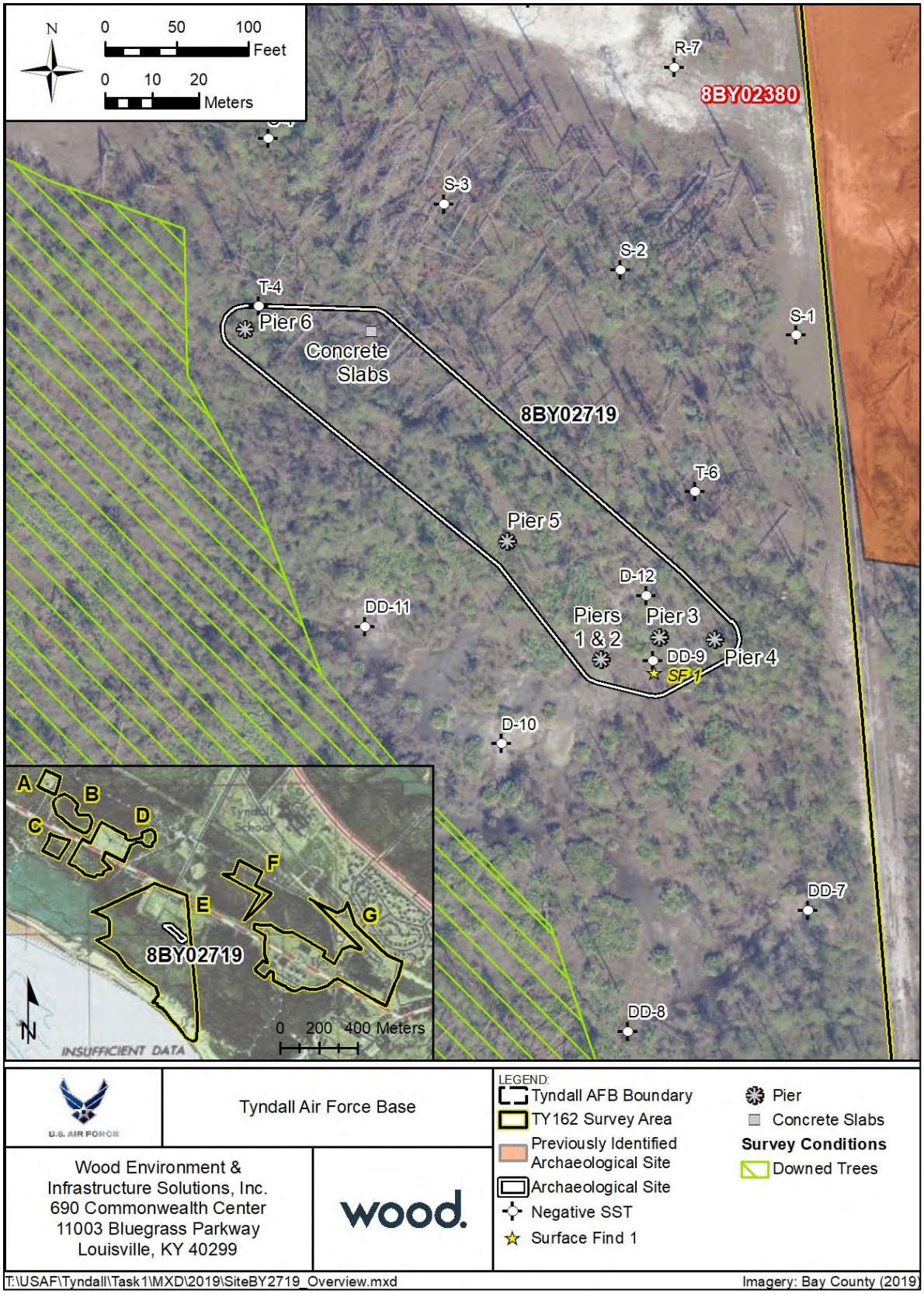


Figure 9. Site 8BY2719 results map.

Figure 10. Site 8BY2719 example of piers on the surface, facing north.

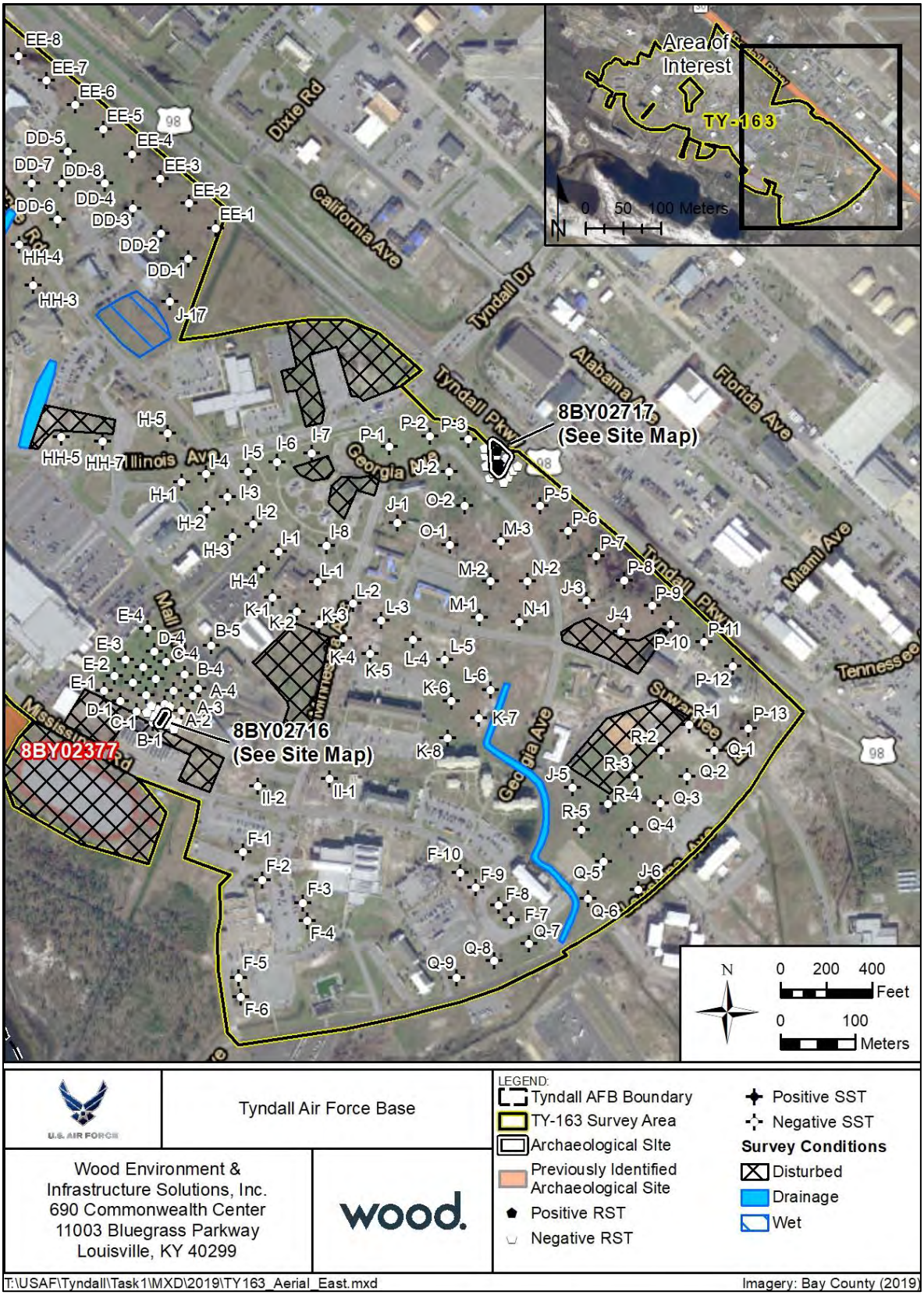
Survey Area TY-163

Survey Area TY-163 is a 350.93 ac (142 ha) area located within the portion of the main base on the south side of U.S. Highway 98 (**Figures 11 and 12**; see **Figure 2**). This survey area has been heavily developed and consisted mainly of numerous structures, roads, sidewalks, artificial drainages, ponds, recreational features such as a running track and baseball fields, and buried utilities (**Figure 13**). However, there were many areas of open fields and lawns not obviously disturbed interspersed between these developments (**Figure 14**).

Background research revealed that, while no previously recorded sites are located within the TY-163 survey boundary, two sites are located adjacently to the south. These sites are 8BY2378, a multi-component prehistoric site containing shell midden deposits spanning across Heritage Park, and site 8BY2377, a twentieth century historic refuse site (Campbell et al. 2017). While 8BY2378 was recommended as potentially eligible for the NRHP, site 8BY2377 was determined to be ineligible.

Given the landform, observed conditions, and previously recorded sites in the vicinity, TY-163 was determined to have an overall moderate potential to yield archaeological deposits. As such, shovel tests were generally excavated at no more than a 50-m interval. However, given the disturbance from Tyndall related construction and maintenance, as well as areas of debris related to Hurricane Michael cleanup efforts, some shovel test were judgmentally placed rather than adhering to a strict interval to ensure coverage of the survey area.

Figure 11. Survey Area TY-163 results map, western portion.



Tyndall Air Force Base

U.S. AIR FORCE

Wood Environment & Infrastructure Solutions, Inc.
690 Commonwealth Center
11003 Bluegrass Parkway
Louisville, KY 40299

wood.

LEGEND:
- Tyndall AFB Boundary
- TY-163 Survey Area
- Archaeological SIte
- Previously Identified Archaeological Site
- Positive RST
- Negative RST
- Positive SST
- Negative SST

Survey Conditions
- Disturbed
- Drainage
- Wet

T:\USAF\Tyndall\Task1\MXD\2019\TY163_Aerial_East.mxd

Imagery: Bay County (2019)

Figure 12. Survey Area TY-163 results map, eastern portion.

Figure 13. General conditions in Survey Area TY-163 showing disturbance, facing east.

Figure 14. General conditions in Survey Area TY-163, facing west.

A total of 204 SSTs (57.12 m^3) and 38 RSTs (10.64 m^3) were excavated within TY-163, with two new archaeological sites (8BY2716 and 8BY2717) identified (see **Figures 11 and 12**). Site 8BY2716 is a low density prehistoric artifact scatter located on the north side of Mississippi Road between the Base Exchange and the Skills and Development Center building (**Figure 15**). This site was first identified as prehistoric pottery fragments recovered during archaeological monitoring of hurricane disaster relief activities; this monitoring occurred prior to the current survey. Tyndall AFB CRM staff alerted Wood to the general location of these materials and requested that the artifacts recovered during the monitoring be incorporated into Wood's Phase I survey report. Wood has not yet received this material, so it is still unknown how many artifacts were recovered during the monitoring, though discussions with Tyndall AFB staff indicated it was a low amount of material. Shovel testing in the area, as part of the current investigation, yielded three pottery fragments and three pieces of lithic debitage in two shovel tests. While artifact analysis is ongoing, the overall paucity of material recovered from the site suggests it is unlikely to yield additional important information concerning prehistoric occupations at Tyndall AFB and, as such, it is preliminarily recommended as not eligible for the NRHP.

Site 8BY2717 is a prehistoric shell midden site located on the north side of Georgia Avenue and near the main entrance gate (**Figure 16**; see **Figure 12**). This midden, which yielded only two prehistoric pottery fragments, extended from the surface up to 25 cm below surface and consisted of a high density of shell (dominantly whelk and conk varieties) in a dark, organic matrix. Isolated areas of the midden, particularly in the northwestern portion, were disturbed by modern construction such as drainages and fenceposts; shell was exposed on the surface in association with these disturbances (**Figure 17; see Figure 16**). However, condition of the shells identified during shovel testing (mostly whole or large fragments) and the observed soil profiles in the shovel tests suggest that a majority of this midden is intact. Artifact analysis is still ongoing, so that cultural affiliation of the midden is yet undetermined. The midden's location, mainly its lack of proximity to a prominent water source, is of interest, as a majority of shell middens identified on Tyndall AFB tend to be located on landforms adjacent to larger bodies of water such as St. Andrew Bay. Excavation of larger (e.g. 1-x-1-m) units may provide additional artifacts, botanical samples, and subsequent features which would shed light on site use and strategy for its placement further inland. Therefore, although this midden is relatively small is size and yielded only a few artifacts, site 8BY2717 is recommended as potentially eligible for the NRHP. Further work is needed to evaluate the site's NRHP eligibility status.

Figure 15. Site 8BY2716 results map. Location of SF 1 is approximate.

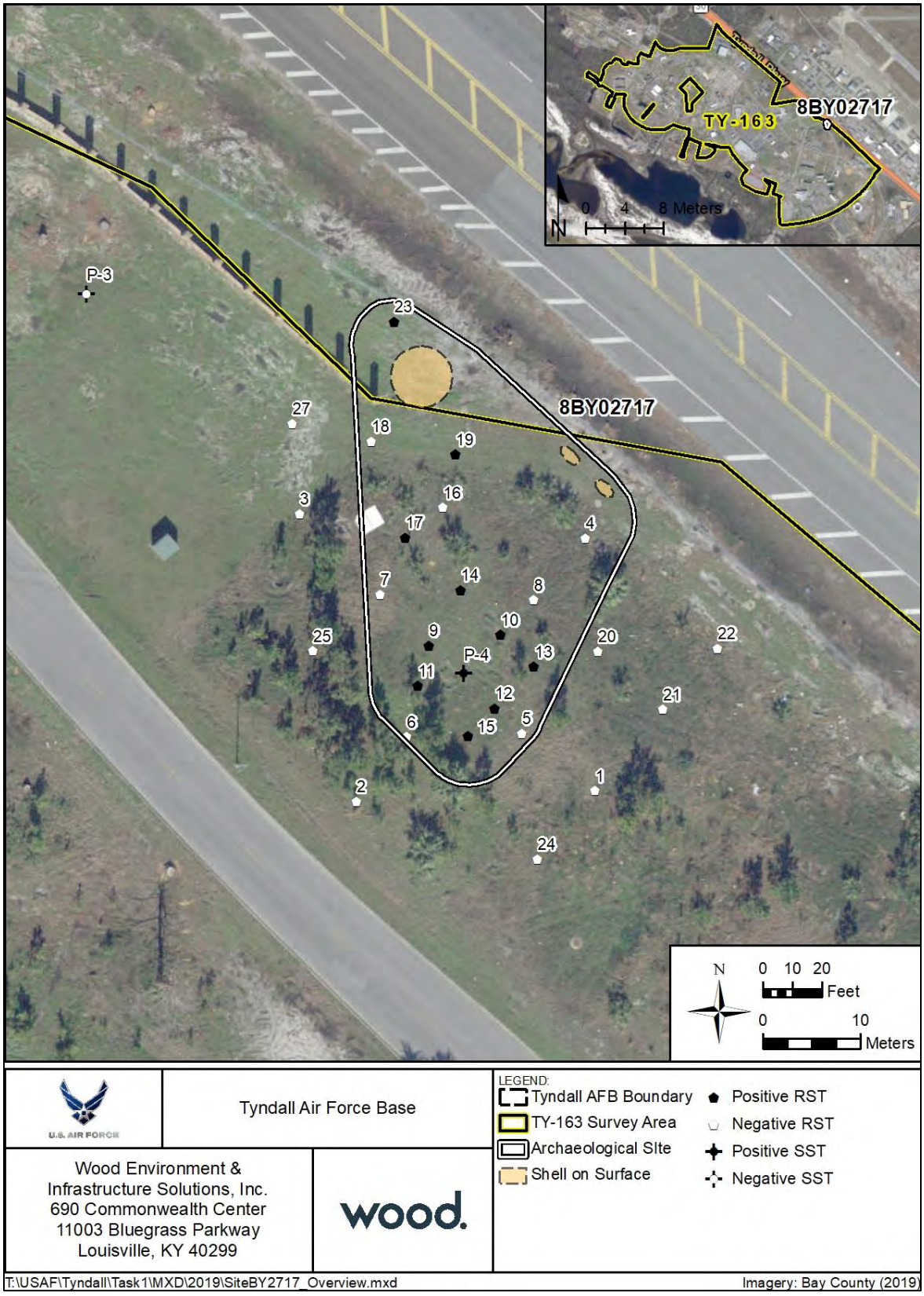


Figure 16. Site 8BY2717 results map.

Figure 17. Site 8BY2717, area of midden exposed due to subsurface disturbance, facing north.

Survey Area TY-164

Survey Area TY-164 is a 314.69 ac (127.3 ha) area located within the portion of the main base on the south side of U.S. Highway 98 and adjacently east of Survey Area TY-163 (**Figure 18 to 20**; see **Figure 2**). The northeastern portion of this survey area has been heavily developed and consisted of structures such as dorm buildings and the Human Resources Office, as well as roads, sidewalks, and artificial drainages. Other disturbances encountered include an area of dense wood chips on the surface and piles of structure debris attributed to Hurricane Michael clean-up efforts (**Figure 21**). However, like adjacent survey area TY-163, open grassy areas that were not obviously disturbed were present. In contrast, the southern and western portion TY-164 was relatively undeveloped and consisted of a coastal spit and dune landform extending along the St. Andrew Bay and St. Andrew Sound, and a low terrace landform covered in a secondary pine forest (see **Figures 18 to 20**). Vegetation on the coast dune landform varied from low grasses, short shrubs and sparse trees on and along the dunes to denser grasses and reeds in and around lower, wet pockets on the landform (**Figure 22**). Approximately 53.5 ac (21.7 ha) of the wooded area could not be surveyed due to a dense amount of tree fall. While field observations and examination of the topographic quadrangles and aerial photographs indicate that a majority of this wooded area is likely wet, one prehistoric shell midden site (8BY1496) has been previously identified on a low rise within that wooded section and within the TY-164 boundary (see **Figure 20**) and determined as potentially eligible for the NRHP (Rabbysmith 2010). The identification of this previously recorded site suggests potential for additional rises yielding prehistoric cultural materials to be present within this inaccessible portion of TY-164.

Figure 18. Survey Area TY-164 results map, western portion.

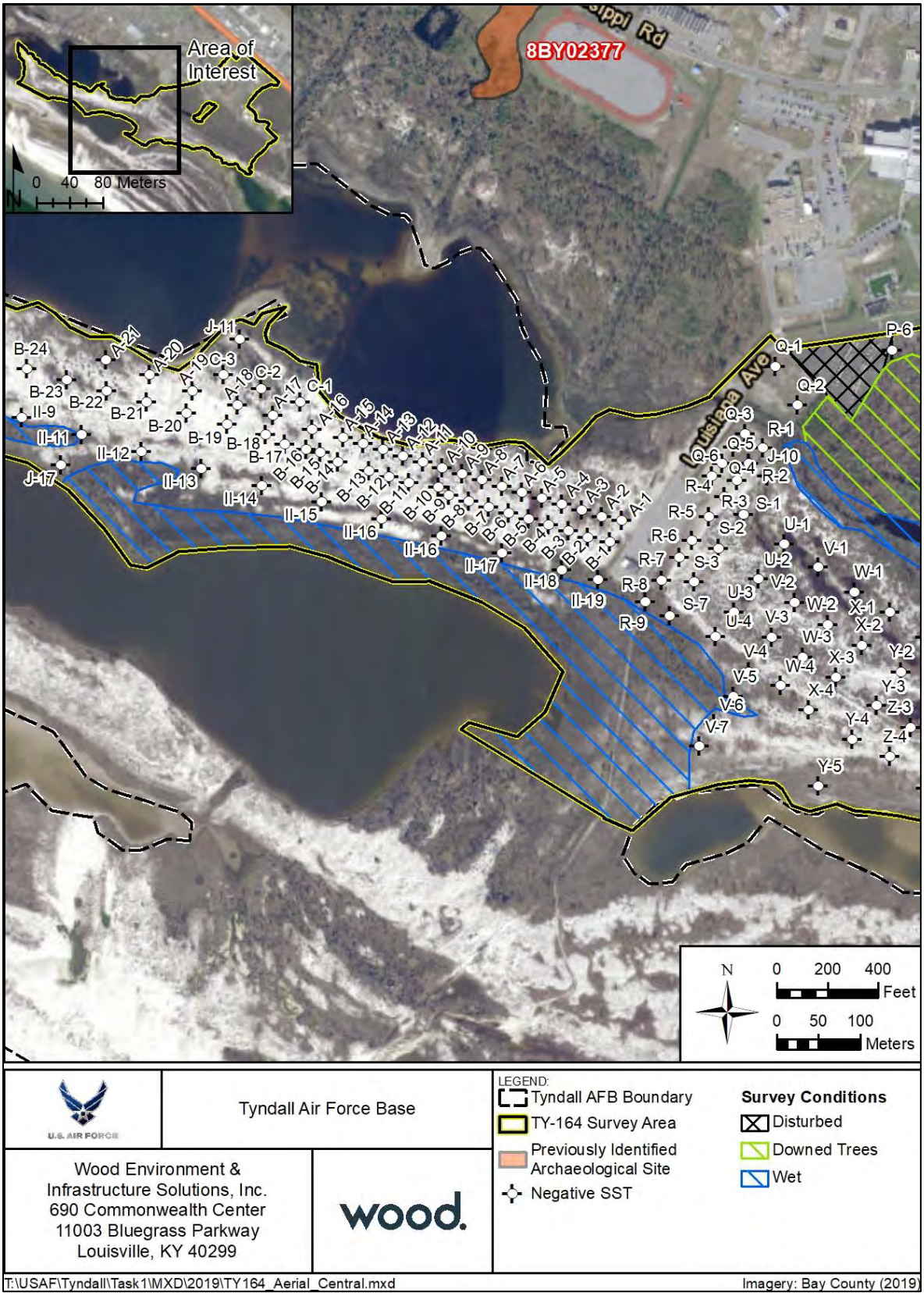


Figure 19. Survey Area TY-164 results map, central portion.

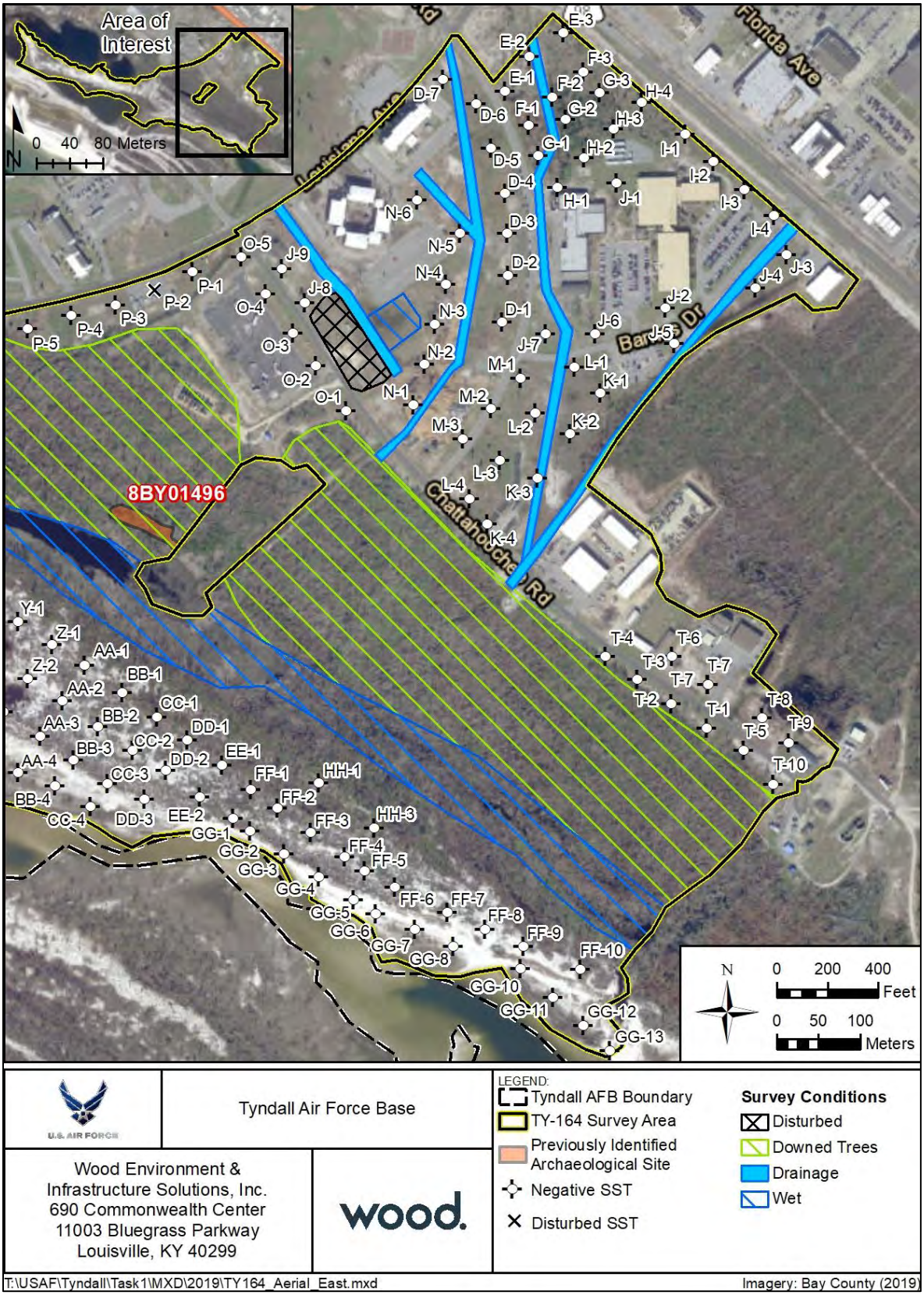


Figure 20. Survey Area TY-164 results map, eastern portion.

Figure 21. General conditions in Survey Area TY-163, facing west.

Figure 22. General conditions on dune/spit landform in Survey Area TY-164, facing west.

A small portion of the southern edge of the survey area corresponded with a raised two track access road leading to Tyndall Beach and surrounded by a low marshy, inundated area along a small lagoon feature (see **Figure 17**).

Given the variation in the encountered landforms, observed conditions and previously recorded sites in the vicinity, TY-164 ranged from having a moderate to high potential to yield archaeological deposits. As such, the interval of shovel test excavation varied from 25- to- 50-m. However, given disturbance from historic and modern Tyndall development, as well as areas of debris related to Hurricane Michael cleanup efforts, some shovel test were judgmentally placed rather than adhering to a strict interval to ensure coverage of the survey area.

A total of 260 SSTs (72.8 m^3) were excavated within this survey area (see **Figures 18 to 20**). No new archaeological sites or archaeological occurrences were recorded during survey of TY-164. However, approximately 53.6 ac of TY-164 was unable to be surveyed due to a dense amount of tree fall. While a majority of this area is likely wet, one previously recorded prehistoric shell midden site (8BY1496) is located on a low rise within this area, suggesting the potential for additional rises yielding prehistoric cultural materials to be present; therefore, completion of the survey in this area is recommended once the area can be safely accessed.

SUMMARY

Wood archaeologists completed Phase I archaeological survey of Survey Areas TY-162, TY-163 and TY-164 (Task Order TY-19-0002) at Tyndall AFB, Bay County, Florida. A total of 516 SSTs were excavated for this task order, with an additional 53 RSTs excavated during site delineations. Background research revealed portions of four previously recorded sites extend into the TY-162 (8BY2280, 8BY2380 and 8BY2381) and TY-164 (8BY1496) survey boundaries; all four sites have been previously determined as potentially eligible (**Table 2**). Shovel tests were excavated along the boundary of the three previously recorded sites in TY-162 yielded no artifacts and none of these sites were found to extend further into the current survey boundary. Site BY1496 was located in a dense are of downed trees so that survey was unable to be completed in this area.

Table 2. Sites Located within the TY-19-0002 Survey Areas and Preliminary Recommendations.

Site #	Survey Area	Preliminary Recommendation*
8BY1496	TY-164	Previously determined as potentially eligible
8BY2280	TY-162	Previously determined as potentially eligible
8BY2380	TY-162	Previously determined as potentially eligible
8BY2381	TY-162	Previously determined as potentially eligible
8BY2716	TY-163	Not eligible
8BY2717	TY-163	Potentially eligible; further work
8BY2718	TY-162	Not eligible
8BY2719	TY-162	Additional research required for recommendation
IF-1	TY-162	Not eligible

**Preliminary recommendations may change based on completion of full site analysis*

The survey resulted in the identification of three new prehistoric archaeological sites (8BY2716, 8BY2717, and 8BY2718), one new historic archaeological site (8BY2719), and one prehistoric archaeological occurrence (IF-1) [see **Table 2**]. Analysis of the artifacts recovered during the Phase I survey is in progress. Therefore, all NRHP recommendations for the newly identified sites in this management summary are preliminary recommendations and are subject to change.

Sites 8BY2716 (located in TY-162) and 8BY2718 (located in TY-163) are both low density artifact scatters preliminarily recommended as not eligible for the NRHP. Site 8BY2716, located in Survey Area TY-163, yielded prehistoric materials in association with a shell midden feature and is recommended as potentially eligible for the NRHP. Further work is needed to determine its NRHP eligibility. Site 8BY2719, located in TY-162, consisted of six concrete and metal pier features found on the surface with a low density of Herty cup fragments also found on the surface. Function of these piers could not be determined and additional research into Tyndall development to attempt to determine function is necessary before an NRHP-eligibility recommendation for this site can be made. The archaeological occurrence (IF 1), located in TY-162, consisted of a single lithic flake recovered in one shovel test; this occurrence is unlikely to yield important information concerning prehistoric occupations at Tyndall or in the Florida panhandle and, as such, it is recommended as not eligible for the NRHP.

REFERENCES

Campbell, L. Janice, Ryan N. Clark, James R. Morehead, and Shannon Brannon

2017 *Archaeological Survey of TY-155, Tyndall Air Force Base, Bay County, Florida*. PTA Report of Investigations 1501. On file, Florida Master Site File, Tallahassee, Florida. FMSF ID #24705.

Clark, Ryan N., James R. Morehead, L. Janice Campbell and Zackery Cruze

2017 *Archaeological Survey of TY-142, Tyndall Air Force Base, Bay County, Florida*. PTA Report of Investigations 1475. On file, Florida Master Site File, Tallahassee Florida. FMSF ID # 24164

FDHR (Florida Division of Historical Resources)

2015 *Module Three Guidelines for Use by Historic Preservation Professionals*. Florida Division of Historical Resources, Electronic document, http://dos.myflorida.com/media/31394/module3.pdf, accessed April 29, 2019.

Rabbysmith, Steven L.

2010 *Phase I Archaeological Survey of the Site DB039 Debris Dump Tract, Tyndall Air Force Base, Bay County, Florida*. Brockington and Associates, Inc. On file, Florida Master Site File, Tallahassee, Florida. FMSF ID #17904.

APPENDIX E Air Conformity Applicability Model Report

Note: Detailed ACAM inputs are not included in this EA due to page length considerations, but are included in the administrative record of the EA. Copies of these materials can be requested from Tyndall AFB at: 325 CES/CEIEC, 540 Mississippi Ave Building 36270 , Tyndall AFB, FL 32403

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AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: TYNDALL AFB
State: Florida
County(s): Bay
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Hurricane Recovery and Installation Development at Tyndall Air Force Base, Florida

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2020

e. Action Description:

2000-1a, 2001-1b, 2001-1c: Morale, Welfare and Recreation Facilities - Construct morale, welfare, and recreation (MWR) facilities at the Marina and at a new recreation area.

8500-1: 53 WEG Subscale Drone Facility - Construct a Subscale Drone facility complex.

9700-1: AFCEC RDT&E Facilities and Gate - Construct AFCEC Research, Development, Testing & Evaluation (RDT&E) Facilities.

9700-2: Fire Station #4 - Construct a 6,356 SF a two bay, satellite firefighting vehicle station to meet response times to the Silver Flag Training Area and AFCEC RDT&E Facilities.

F-01: 53 WEG Hangar - Construct an Aircraft Maintenance Hangar and associated facilities for the 53 WEG.

F-02: 53 WEG HQ Facility - Construct a consolidated facility with administrative and operations areas for the 53rd Test Support Squadron, 53 WEG, and 83rd Squadron Operations staff.

F-03: Tyndall AFB Gate Complexes (Flightline) - Construct Airey Gate (Flightline) entry access.

F-04: OSS Facility - Construct a consolidated Operations Support Squadron (OSS) Facility to support the 53 WEG.

F-05: WEG Parking Apron - Approximately 13,691 square yards (SY) of pavement is required to support the Weapons Evaluation Group (WEG) aircraft and provide area for aircraft operations outside of the obstruction free area.

F-06: Aerospace & Operational Physiology Facility - Construct an Aerospace Operations and Physiology as well as an Aircrew Flight and Equipment Shop.

F-07: Special Purpose Vehicle Maintenance - Construct two Vehicle Maintenance Facilities to support refueling vehicles, fire trucks and material handling equipment (MHE).

F-08: Operations Group/Maintenance Group HQ - Construct a combined Operations, Maintenance, and Reserve Group HQ.

F-09: Deployment Center/Flight Line Dining/AAFES - Construct a Deployment Center/Flight Line Dining/ Army and Air Force Exchange Service (AAFES) facility to provide space for receiving and processing personnel and baggage, kitchen, dining, and sales services.

F-10: Flightline – MSA Facilities, 7000 Area - Construct new facilities and renovate existing Munition Storage Area (MSA) facilities.

SF-01: Silver Flag Facilities - Construct multiple facilities at the Silver Flag training site, including a Vehicle Maintenance Shop, Base Engineer Covered Storage Facility, and a Technical Training Classroom.

SA-01: Civil Engineer Contracting USACE Complex - Construct a Civil Engineer Squadron (CES), Base Contracting Squadron, and United States Army Corps of Engineers (USACE) Complex.

SA-02: Logistics Readiness Squadron Complex - Construct a Logistics Readiness Squadron (LRS) Complex.

SA-03: Emergency Management, EOC, ALT CP - Construct an emergency management (EM) facility, emergency operations center (EOC), and alternate command post (ALT CP) facility to support EM actions for base operations.

SA-04: SFS Mobility Storage Facility - Construct a Mobility Storage Facility for Security Forces Squadron (SFS) to store their deployment and excess equipment.

SA-05: New Lodging Facilities - Construct new Visiting Quarters Lodging facility to provide 360 guestrooms, housekeeping spaces, and other amenities.

SA-06: Dorm Complex - Construct two five-story permanent party dormitories and one one-story technical training dormitory .

SA-07: Child Development Center - Construct large Child Development Center to support dependent children, age six week to five years, of active duty service members assigned to Tyndall AFB with full-day, part-day, and hourly child care services.

SA-08: 325 FW Headquarters Building - Construct an HQ facility to accommodate the 325 FW staff.

SA-09: Chapel - Construct a chapel complex consisting of a Base Chapel and a religious education facility, including required administrative and worship spaces.

SA-10: Community Commons Facility - The first includes a Recreation Center, Bowling Center, Base Restaurant, and Arts and Crafts Center.

SA-11: Tyndall AFB Gate Complexes (Support) - Construct entry and large vehicle inspection station.

M-01: Airfield Drainage - Construct drainage ditches for proper stormwater management.

M-02: Site Development and Utilities - Construct additional utilities that are required to align with the placement of the new facilities.

M-03: Building Demolitions - Demolish 264 buildings/structures on Tyndall AFB, totaling 1,921,2124 SF, that have either sustained damage beyond what is economically recoverable, and/or are being replaced/consolidated by individual proposed actions.

f. Point of Contact:

Name: Paul Sanford

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

Title: Aviation Environmental Planner
Organization: AECOM
Email: paul.sanford@aecom.com
Phone Number: 813-675-6843

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

_____ applicable
__X__ not applicable

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions.

"Air Quality Indicators" were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are EPA General Conformity Rule (GCR) thresholds (de minimis levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement; however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR de minimis threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons/yr is used based on the GCR de minimis threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

Analysis Summary:

2020

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.896	100	No
NOx	6.901	100	No
CO	4.108	100	No
SOx	0.017	100	No
PM 10	76.277	100	No
PM 2.5	0.279	100	No
Pb	0.000	25	No
NH3	0.018	100	No
CO2e	1820.3		

2021

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.814	100	No
NOx	10.163	100	No
CO	8.483	100	No
SOx	0.032	100	No
PM 10	62.225	100	No
PM 2.5	0.432	100	No

AIR CONFORMITY APPLICABILITY MODEL REPORT
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Pb	0.000	25	No
NH3	0.027	100	No
CO2e	2931.5		

2022

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	4.064	100	No
NOx	10.159	100	No
CO	9.629	100	No
SOx	0.058	100	No
PM 10	55.974	100	No
PM 2.5	0.461	100	No
Pb	0.000	25	No
NH3	0.020	100	No
CO2e	3380.4		

2023

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	10.117	100	No
NOx	12.323	100	No
CO	8.233	100	No
SOx	7.506	100	No
PM 10	45.288	100	No
PM 2.5	0.624	100	No
Pb	0.000	25	No
NH3	0.025	100	No
CO2e	5605.6		

2024

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.068	100	No
NOx	15.977	100	No
CO	13.052	100	No
SOx	14.950	100	No
PM 10	1.269	100	No
PM 2.5	0.811	100	No
Pb	0.000	25	No
NH3	0.017	100	No
CO2e	7602.5		

2025

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	18.690	100	No
NOx	15.699	100	No
CO	11.900	100	No

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

SOx	14.998	100	No
PM 10	1.387	100	No
PM 2.5	0.932	100	No
Pb	0.000	25	No
NH3	0.010	100	No
CO2e	9375.7		

2026 - (Steady State)

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.803	100	No
NOx	14.635	100	No
CO	8.287	100	No
SOx	15.083	100	No
PM 10	1.573	100	No
PM 2.5	1.122	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	12750.4		

None of estimated emissions associated with this action are above the GCR indicators, indicating no significant impact to air quality; therefore, no further air assessment is needed.

_____ _____

Paul Sanford, Aviation Environmental Planner DATE