



University of Utah Environmental Assessment

Utah Anchors: A Community Broadband Project

Broadband Technology
Opportunities Program
National Telecommunications
Information Administration

November 2010

---3RD DRAFT---
For Comment Only

Prepared for:
Frank Monteferrante, PhD
Environmental Compliance Specialist
NTIA BTOP Program
1401 Constitution Avenue NW
Washington, DC 20230

Table of Contents

Executive Summary..... 12

Chapter 1 Purpose and Need..... 17

Chapter 2 Proposed Action 18

 2.1 Project Description 18

 2.1.1 Existing Contracted Facilities and Services 19

 2.1.2 Physical Activities Related to Installation 22

 2.1.3 CAI Related Activities 24

 2.2 Alternatives 24

 2.2.1 No Action Alternative..... 24

 2.2.2 Preferred Alternative 24

 2.2.3 Alternatives Considered but Eliminated from Further Discussion 25

Chapter 3 Existing Environment..... 26

Chapter 4 Environmental Consequences..... 52

Chapter 5 Environmental Permits and Regulatory Requirements 75

Chapter 6 List of Preparers 77

Chapter 7 References..... 78

List of Appendices

Appendix A	List of Sites – Areas of Construction
Appendix B	List of Cities – Topography Maps
Appendix C	Air Quality Standards
Appendix D	Geology and Soils - List of Soils by Project
Appendix E	List of Wetland maps and FEMA flood maps by Project
Appendix F	Biological Resources
	F1...Endangered, Threatened, Proposed and Candidate Species, Counties of Utah
	F2...U.S. Fish and Wildlife Consultation Letter
Appendix G	Historic, Cultural, and Structural Resource Assessment Reports by SWCA Environmental Consultants
	G1...SWCA Historical Archeological Surveys and Findings
	G2...SWCA Historical Structural Surveys and Findings
	G3...State Historic Preservation Office Correspondence and Concurrence Letters
Appendix H	List of Cities – City Zoning Information
Appendix I	Minority Enrollments in Utah Anchors Project School Sites Poverty Status per City and County
Appendix J	Ecoregion Map of Utah
Appendix K	Brownfield locations—State of Utah
Appendix L	U.S. Army Corps of Engineers Consultation
Appendix M	Environmental Assessment Correspondence

Utah Anchors Community Broadband Project Environmental Assessment Legend	
Green = Evaluated, no additional assessment required	
Purple = Historical and Cultural Archeological Class III Survey	
Brown = Selective Historic Reconnaissance Level Architectural Survey National Historic Registry Eligible and Listed	
Yellow = Flood Plain. No additional assessment required.	

Key: References below refer to the Appendices and page number

For example: C-1 refers to Appendix C, page 1.
F2-10 refers to Appendix F2, page 10.

Utah Community Anchor Site Name	Noise	Air Quality	Geology and Soils	Water Resources	Biological Resources	Historic and Cultural	Land Use/ Infrastructure	Socio-economic	Human Health Safety
Bountiful Library (South Davis)	p 16	C-1	D-1	E-1	F2-10	G-1	H-3	Ch 3 –pgs 22-23, Appx I	Appx J
Adult Education Center (Tooele District)	p 16	C-1	D-2	E-2	F2-10	G-1	H-57	Ch 3 –pgs 22-23, Appx I	Appx J
Amer. Prep Academy	p 16	C-1	D-3	E-3	F2-10	G-1	H-10	Ch 3 –pgs 22-23, Appx I	Appx J
Arrowhead Elementary	p 16	C-1	D-5	E-4	F2-10	G-2	H-48	Ch 3 –pgs 22-23, Appx I	Appx J
Bear River Charter School	p 16	C-1	D-7	E-6	F2-10	G-1	H-27	Ch 3 –pgs 22-23, Appx I	Appx J
Beaver City Library	p 16	C-1	D-8	E-7	F2-10	G-1	H-1	Ch 3 –pgs 22-23, Appx I	Appx J
Beehive Science & Tech Academy	p 16	C-1	A-8	A-8	A-8	G-1	A-8	Ch 3 –pgs 22-23, Appx I	Appx J
Bloomington Elementary	p 16	C-1	D-9	E-8	F2-10	G-1	H-53	Ch 3 –pgs 22-23, Appx I	Appx J
Bluffdale Elementary	p 16	C-1	D-11	E-9	F2-10	G-1	H-2	Ch 3 –pgs 22-23, Appx I	Appx J
Bonneville Elementary	p 16	C-1	D-12	E-10	F2-10	G-1	H-34	Ch 3 –pgs 22-23, Appx I	Appx J
Brigham City Carnegie Library	p 16	C-1	D-113	E-108	F2-10	G-1	H-4	Ch 3 –pgs 22-23, Appx I	Appx J
Bunderson Elementary	p 16	C-1	D-13	E-11	F2-10	G-1	H-4	Ch 3 –pgs 22-23, Appx I	Appx J
Canyon Rim Academy K-6	p 16	C-1	D-14	E-12	F2-10	G-1	H-46	Ch 3 –pgs 22-23, Appx I	Appx J
Cedar City Public Library in the Park	p 16	C-1	D-15	Ch 3- pg 6,E-13	F2-10	G-1	H-5	Ch 3 –pgs 22-23, Appx I	Appx J
Centerville Library (Davis County)	p 16	C-1	D-16	E-14	F2-10	G-1	H-6	Ch 3 –pgs 22-23, Appx I	Appx J
Centro De Familia - Head Start Admin	p 16	C-1	A-111	A-111	A-111	G-1	A-111	Ch 3 –pgs 22-23, Appx I	Appx J
Clearfield Library (Davis County)	p 16	C-1	D-17	E-15	F2-10	G-1	H-7	Ch 3 –pgs 22-23, Appx I	Appx J
Columbia Elementary	p 16	C-1	D-18	E-16	F2-10	G-1	H-62	Ch 3 –pgs 22-23, Appx I	Appx J
Coral Canyon Elementary	p 16	C-1	D-19	E-17	F2-10	G-1	H-59	Ch 3 –pgs 22-23, Appx I	Appx J

NEPA and NHPA Assessment

Utah Community Anchor Site Name	Noise	Air Quality	Geology and Soils	Water Resources	Biological Resources	Historic and Cultural		Land Use/ Infrastructure	Socio-economic	Human Health Safety
						G-1	H-53			
Coral Cliffs Elementary	p 16	C-1	D-20	E-18	F2-10	G-1	H-53	Ch 3 –pgs 22-23, Appx I	Appx J	Appx J
Corrine Early Learning Center	p 16	C-1	D-21	E-19	F2-10	G-1		G-1	H-8	Ch 3 –pgs 22-23, Appx I
Davis County Library - Farmington	p 16	C-1	D-22	E-20	F2-10	G-1		H-13	Ch 3 –pgs 22-23, Appx I	Appx J
Dee Elementary	p 16	C-1	D-23	E-21	F2-10	G-1		H-34	Ch 3 –pgs 22-23, Appx I	Appx J
Delta City Library	p 16	C-1	D-119	E-114	F2-10	G-1		H-9	Ch 3 –pgs 22-23, Appx I	Appx J
Diamond Valley Elementary	p 16	C-1	D-24	E-22	F2-10	G-2		H-53	Ch 3 –pgs 22-23, Appx I	Appx J
Discovery Elementary	p 16	C-1	D-26	E-23	F2-10	G-1		H-4	Ch 3 –pgs 22-23, Appx I	Appx J
District Early Learning Center (Tooele District)	p 16	C-1	D-27	E-24	F2-10	G-1		H-57	Ch 3 –pgs 22-23, Appx I	Appx J
District Transportation Building	p 16	C-1	D-28	E-25	F2-10	G-1		H-4	Ch 3 –pgs 22-23, Appx I	Appx J
Dixie Downs Elementary	p 16	C-1	D-29	E-26	F2-10	G-1		H-53	Ch 3 –pgs 22-23, Appx I	Appx J
Dual Immersion Academy K-6	p 16	C-1	D-30	E-27	F2-10	G-1		H-46	Ch 3 –pgs 22-23, Appx I	Appx J
East Elementary (Tooele School District)	p 16	C-1	D-31	E-28	F2-10	G-1		H-57	Ch 3 –pgs 22-23, Appx I	Appx J
East Elementary (Washington School District)	p 16	C-1	D-32	E-29	F2-10	G-1		H-53	Ch 3 –pgs 22-23, Appx I	Appx J
Elk Meadows Elementary	p 16	C-1	D-33	E-30	F2-10	G-1		H-51	Ch 3 –pgs 22-23, Appx I	Appx J
Excelsior Academy	p 16	C-1	D-34	E-31	F2-10	G-1		H-12	Ch 3 –pgs 22-23, Appx I	Appx J
Foothill Elementary	p 16	C-1	D-35	E-32	F2-10	G-1		H-4	Ch 3 –pgs 22-23, Appx I	Appx J
Freedom Academy K-7	p 16	C-1	D-36	E-33	F2-10	G-1		H-41	Ch 3 –pgs 22-23, Appx I	Appx J
George Washington Academy	p 16	C-1	D-38	E-34	F2-10	G-1		H-53	Ch 3 –pgs 22-23, Appx I	Appx J
Gramercy Elementary	p 16	C-1	D-39	E-35	F2-10	G-1		H-34	Ch 3 –pgs 22-23, Appx I	Appx J
Guadalupe Schools K-3	p 16	C-1	D-40	Ch 3- pg 6,E-36	F2-10	G-1		H-46	Ch 3 –pgs 22-23, Appx I	Appx J
Hawthorn Academy	p 16	C-1	D-41	E-37	F2-10	G-1		H-62	Ch 3 –pgs 22-23, Appx I	Appx J
Hayden Peak Elementary	p 16	C-1	D-42	E-38	F2-10	G-1		H-62	Ch 3 –pgs 22-23, Appx I	Appx J
Heritage Elementary (Washington District)	p 16	C-1	D-43	E-39	F2-10	G-1		H-53	Ch 3 –pgs 22-23, Appx I	Appx J
Herriman Elementary	p 16	C-1	D-44	E-40	F2-10	G-1		H-16	Ch 3 –pgs 22-23, Appx I	Appx J
Highland City Library	p 16	C-1	D-45	E-41	F2-10	G-1		H-17	Ch 3 –pgs 22-23, Appx I	Appx J
Hillcrest Elementary	p 16	C-1	D-46	E-42	F2-10	G-1		H-34	Ch 3 –pgs 22-23, Appx I	Appx J
Horace Mann Elementary	p 16	C-1	D-47	E-43	F2-10	G-1		H-34	Ch 3 –pgs 22-23, Appx I	Appx J

NEPA and NHPA Assessment

Utah Community Anchor Site Name	Noise	Air Quality	Geology and Soils	Water Resources	Biological Resources	Historic and Cultural	Land Use/ Infrastructure	Socio-economic	Human Health Safety
Horizon Elementary -	p 16	C-1	D-48	E-44	F2-10	G-1	H-59	Ch 3 –pgs 22-23, Appx I	Appx J
Hurricane Library	p 16	C-1	D-49	E-45	F2-10	G-1	H-18	Ch 3 –pgs 22-23, Appx I	Appx J
Hyrum Library	p 16	C-1	D-50	E-46	F2-10	G-1	H-19	Ch 3 –pgs 22-23, Appx I	Appx J
Iron County Bookmobile Repository Library	p 16	C-1	D-116	E-111	F2-10	G-1	H-11	Ch 3 –pgs 22-23, Appx I	Appx J
James Madison Elementary	p 16	C-1	D-51	E-47	F2-10	G-1	H-35	Ch 3 –pgs 22-23, Appx I	Appx J
John Hancock School K-8	p 16	C-1	D-52	E-48	F2-10	G-1	H-40	Ch 3 –pgs 22-23, Appx I	Appx J
Jordan Hills Elementary	p 16	C-1	D-53	A-50	A-50	G-1	H-62	Ch 3 –pgs 22-23, Appx I	Appx J
Jordan Valley School	p 16	C-1	A-50	E-49	F2-10	G-1	A-50	Ch 3 –pgs 22-23, Appx I	Appx J
Karl Maeser Preparatory Academy	p 16	C-1	D-110	E-105	F2-10	G-1	H-26	Ch 3 –pgs 22-23, Appx I	Appx J
Kaysville Library (Davis County)	p 16	C-1	D-54	E-50	F2-10	G-1	H-21	Ch 3 –pgs 22-23, Appx I	Appx J
Lake View Elementary	p 16	C-1	D-55	E-51	F2-10	G-1	H-4	Ch 3 –pgs 22-23, Appx I	Appx J
Lakeview Academy K-9	p 16	C-1	D-56	E-52	F2-10	G-1	H-49	Ch 3 –pgs 22-23, Appx I	Appx J
Layton Library	p 16	C-1	D-114	E-109	F2-10	G-1	H-24	Ch 3 –pgs 22-23, Appx I	Appx J
LaVerkin Elementary	p 16	C-1	D-57	E-53	F2-10	G-1	H-23	Ch 3 –pgs 22-23, Appx I	Appx J
Lehi City Public Library	p 16	C-1	D-58	E-54	F2-10	G-1	H-25	Ch 3 –pgs 22-23, Appx I	Appx J
Liberty Academy K-12	p 16	C-1	D-59	E-55	F2-10	G-1	H-44	Ch 3 –pgs 22-23, Appx I	Appx J
Lincoln Academy K-9	p 16	C-1	D-60	E-56	F2-10	G-1	H-40	Ch 3 –pgs 22-23, Appx I	Appx J
Lincoln Elementary	p 16	C-1	D-61	E-57	F2-10	G-1	H-35	Ch 3 –pgs 22-23, Appx I	Appx J
Logan Library	p 16	C-1	D-62	E-58	F2-10	G-1	H-27	Ch 3 –pgs 22-23, Appx I	Appx J
Midas Creek Elementary	p 16	C-1	D-63	E-59	F2-10	G-1	H-43	Ch 3 –pgs 22-23, Appx I	Appx J
Monte Vista Elementary	p 16	C-1	D-64	E-60	F2-10	G-1	H-51	Ch 3 –pgs 22-23, Appx I	Appx J
Monticello Library	p 16	C-1	D-120	E-115	F2-10	G-1	H-28	Ch 3 –pgs 22-23, Appx I	Appx J
Morgan County Library	p 16	C-1	D-65	E-61	F2-10	G-1	H-29	Ch 3 –pgs 22-23, Appx I	Appx J
Mountainland Head Start	p 16	C-1	A-130	A-130	A-130	G-1	A-130	Ch 3 –pgs 22-23, Appx I	Appx J
Mountain Shadows Elementary	p 16	C-1	D-66	E-62	F2-10	G-1	H-54	Ch 3 –pgs 22-23, Appx I	Appx J
Mountain View Elementary	p 16	C-1	D-67	E-63	F2-10	G-1	H-4	Ch 3 –pgs 22-23, Appx I	Appx J
Mtn. Green Elementary	p 16	C-1	D-68	E-64	F2-10	G-1	H-30	Ch 3 –pgs 22-23, Appx I	Appx J
Murray Public Library	p 16	C-1	A-121	A-121	A-121	G-1	A-116	Ch 3 –pgs 22-23, Appx I	Appx J

NEPA and NHPA Assessment

Utah Community Anchor Site Name	Noise	Air Quality	Geology and Soils	Water Resources	Biological Resources	Historic and Cultural	Land Use/ Infrastructure	Socio-economic	Human Health Safety
New Harmony Library	p 16	C-1	D-69	E-65	F2-10	G-1	H-31	Ch 3 –pgs 22-23, Appx I	Appx J
Nibley Elem School	p 16	C-1	D-70	E-66	F2-10	G-1	H-32	Ch 3 –pgs 22-23, Appx I	Appx J
Noah Webster Academy K-6	p 16	C-1	A-120	A-120	A-120	G-1	A-116	Ch 3 –pgs 22-23, Appx I	Appx J
Northlake Elementary	p 16	C-1	D-71	E-67	F2-10	G-1	H-57	Ch 3 –pgs 22-23, Appx I	Appx J
Ogden Preparatory Academy K-4	p 16	C-1	D-72	E-68	F2-10	G-1	H-35	Ch 3 –pgs 22-23, Appx I	Appx J
Ogden Weber CAP Head Start	p 16	C-1	A-112	A-112	A-112	G-1	A-112	Ch 3 –pgs 22-23, Appx I	Appx J
Open Classroom K-8	p 16	C-1	D-73	E-69	F2-10	G-1	H-46	Ch 3 –pgs 22-23, Appx I	Appx J
Oquirrh Elementary	p 16	C-1	D-74	E-70	F2-10	G-1	H-62	Ch 3 –pgs 22-23, Appx I	Appx J
Qquirrh Mountain Charter School	p 16	C-1	D-78	E-74	F2-10	G-1	H-21	Ch 3 –pgs 22-23, Appx I	Appx J
Orem Public Library	p 16	C-1	A-121	A-121	A-121	G-1	A-116	Ch 3 –pgs 22-23, Appx I	Appx J
Park City Library	p 16	C-1	D-75	Ch 3- pg 6,E-71	F2-1 0	G-1	H-37	Ch 3 –pgs 22-23, Appx I	Appx J
Parowan Public Library	p 16	C-1	D-117	E-112	F2-10	G-1	H-38	Ch 3 –pgs 22-23, Appx I	Appx J
Payson Library	p 16	C-1	D-115	E-110	F2-10	G-1	H-39	Ch 3 –pgs 22-23, Appx I	Appx J
Pleasant Grove Library	p 16	C-1	D-76	E-72	F2-10	G-1	H-40	Ch 3 –pgs 22-23, Appx I	Appx J
Polk Elementary	p 16	C-1	D-77	E-73	F2-10	G-1	H-35	Ch 3 –pgs 22-23, Appx I	Appx J
President Millard Fillmore Library	p 16	C-1	D-121	E-116	F2-10	G-1	H-14	Ch 3 –pgs 22-23, Appx I	Appx J
Quest Academy	p 16	C-1	D-79	E-75	F2-10	G-1	H-60	Ch 3 –pgs 22-23, Appx I	Appx J
Red Mountain Elementary	p 16	C-1	D-80	E-76	F2-10	G-1	H-20	Ch 3 –pgs 22-23, Appx I	Appx J
Richfield Public Library	p 16	C-1	D-122	E-77	F2-10	G-1	H-42	Ch 3 –pgs 22-23, Appx I	Appx J
Riverside Elementary (Jordan School District)	p 16	C-1	D-81	E-78	F2-10	G-1	H-63	Ch 3 –pgs 22-23, Appx I	Appx J
Riverside Elementary (Washington School District)	p 16	C-1	D-82	E-79	F2-10	G-1	H-59	Ch 3 –pgs 22-23, Appx I	Appx J
Rose Creek Elementary	p 16	C-1	D-83	E-80	F2-10	G-1	H-43	Ch 3 –pgs 22-23, Appx I	Appx J
Rose Springs Elementary	p 16	C-1	D-84	E-81	F2-10	G-1	H-54	Ch 3 –pgs 22-23, Appx I	Appx J
Rural Utah Child Development Head Start	p 16	C-1	D-118	E-113	F2-10	G-1	H-61	Ch 3 –pgs 22-23, Appx I	Appx J
Salina Public Library	p 16	C-1	A-129	A-129	A-129	G-1	H-45	Ch 3 –pgs 22-23, Appx I	Appx J
Salt Lake CAP Head Start	p 16	C-1	A-113	A-113	A-113	G-1	A-113	Ch 3 –pgs 22-23, Appx I	Appx J
Salt Lake Center for Science Education 6-9	p 16	C-1	A-86	A-86	A-86	G-1	A-86	Ch 3 –pgs 22-23, Appx I	Appx J
Sandstone Elementary	p 16	C-1	D-85	E-82	F2-10	G-1	H-53	Ch 3 –pgs 22-23, Appx I	Appx J

NEPA and NHPA Assessment

Utah Community Anchor Site Name	Noise	Air Quality	Geology and Soils	Water Resources	Biological Resources	Historic and Cultural	Land Use/ Infrastructure	Socio-economic	Human Health Safety
Santa Clara Elementary	p 16	C-1	D-87	E-83	F2-10	G-2	H-48	Ch 3 –pgs 22-23, Appx I	Appx J
Smithfield Elem School	p 16	C-1	D-88	E-84	F2-10	G-1	H-50	Ch 3 –pgs 22-23, Appx I	Appx J
Sunset Elementary	p 16	C-1	D-89	E-85	F2-10	G-1	H-53	Ch 3 –pgs 22-23, Appx I	Appx J
SUU Head Start	p 16	C-1	A-127	A-127	A-127	G-1	A-127	Ch 3 –pgs 22-23, Appx I	Appx J
Syracuse Arts Academy K-6	p 16	C-1	D-90	E-86	F2-10	G-1	H-55	Ch 3 –pgs 22-23, Appx I	Appx J
Syracuse Library (Davis County Library)	p 16	C-1	D-91	E-87	F2-1 0	G-1	H-55	Ch 3 –pgs 22-23, Appx I	Appx J
Terra Linda Elementary	p 16	C-1	D-92	E-88	F2-10	G-1	H-63	Ch 3 –pgs 22-23, Appx I	Appx J
Thomas O. Smith Elementary	p 16	C-1	D-93	E-89	F2-10	G-2	G-2	H-35	Ch 3 –pgs 22-23, Appx I
Three Mile Creek Elementary	p 16	C-1	D-94	E-90	F2-10	G-1	H-4	Ch 3 –pgs 22-23, Appx I	Appx J
Timpanogos Academy K-8	p 16	C-1	D-111	E-106	F2-10	G-1	H-26	Ch 3 –pgs 22-23, Appx I	Appx J
Tooele City Library	p 16	C-1	D-95	E-91	F2-10	G-1	H-57	Ch 3 –pgs 22-23, Appx I	Appx J
Tooele County Library Book Rep.	p 16	C-1	D-96	E-92	F2-10	G-1	H-15	Ch 3 –pgs 22-23, Appx I	Appx J
Utah Academy of Sciences 10-12	p 16	C-1	D-112	E-107	F2-10	G-1	H-36	Ch 3 –pgs 22-23, Appx I	Appx J
Utah Virtual Academy K-12	p 16	C-1	D-97	E-93	F2-10	G-1	H-22	Ch 3 –pgs 22-23, Appx I	Appx J
Ute Indian Tribe Head Start Admin REMOVED FROM THE PROJECT (see letter in Appendix M)	p 16	C-1	A-135	A-135	A-135	G-1	A-135	Ch 3 –pgs 22-23, Appx I	Appx J
Wasatch County Library	p 16	C-1	D-98	E-94	F2-10	G-2	H-58	Ch 3 –pgs 22-23, Appx I	Appx J
Wasatch Elementary	p 16	C-1	D-99	E-95	F2-10	G-1	H-35	Ch 3 –pgs 22-23, Appx I	Appx J
Wasatch Peak Academy K-6	p 16	C-1	D-100	E-96	F2-10	G-1	H-33	Ch 3 –pgs 22-23, Appx I	Appx J
Washington Elementary	p 16	C-1	D-101	E-97	F2-10	G-1	H-59	Ch 3 –pgs 22-23, Appx I	Appx J
Washington Library	p 16	C-1	D-102	E-98	F2-10	G-1	H-59	Ch 3 –pgs 22-23, Appx I	Appx J
Welby Elementary	p 16	C-1	D-103	E-99	F2-10	G-1	H-51	Ch 3 –pgs 22-23, Appx I	Appx J
Willow Elementary School	p 16	C-1	A-114	A-114	A-114	G-1	A-114	Ch 3 –pgs 22-23, Appx I	Appx J
West Elementary	p 16	C-1	D-104	E-100	F2-10	G-1	H-57	Ch 3 –pgs 22-23, Appx I	Appx J
West Jordan Elementary	p 16	C-1	D-105	E-101	F2-10	G-1	H-63	Ch 3 –pgs 22-23, Appx I	Appx J
Westland Elementary	p 16	C-1	D-106	E-102	F2-10	G-1	H-63	Ch 3 –pgs 22-23, Appx I	Appx J
Westvale Elementary	p 16	C-1	D-107	E-103	F2-10	G-1	H-63	Ch 3 –pgs 22-23, Appx I	Appx J
Willard Elementary	p 16	C-1	D-108	E-104	F2-10	G-1	H-64	Ch 3 –pgs 22-23, Appx I	Appx J

List of Acronyms

APE	Area of Potential Effect
ARRA	American Recovery and Reinvestment Act of 2009
BTOP	Broadband Technology Opportunities Program
CAI	Community Anchor Institution
CO	Central Office
DEQ	Utah Department of Environmental Quality
DMARC	Point of demarcation
DO	District Office
DTS	Utah Department of Technology Services
DWDM	Dense Wave Division Multiplex
EA	Environmental Assessment
EPA	Environmental Protection Agency
FCC	Federal Communications Commission
FDP	Fiber Distribution Panel
FEMA	Federal Emergency Management Administration
FONSI	Finding of No Significant Impact
GB/s	Gigabit per second
IVC	Interactive Video Conferencing
MB/s	Megabit per second
MBR	Migratory Bird Refuge

NEPA	National Environmental Protection Act
NHPA	National Historic Preservation Act
NOFA	Notice of Funds Availability
NRHP	National Register of Historic Places
NWR	National Wildlife Refuge
RFP	Request for Proposal
PFSA	Proposed Funded Service Area
POP	Point-of-Presence
SAC	Special Award Condition
SHPO	State Historic Preservation Officer
THPO	Tribal Historic Preservation Officer
UDOT	Utah Department of Transportation
UEN	Utah Education Network
University	University of Utah
URTA	Utah Rural Telecommunications Association
USAC	Universal Services Administration Company
USDA	United States Department of Agriculture
USF	Universal Service Fund
USFWS	United States Fish and Wildlife Services
UTN	Utah Telehealth Network
WAN	Wide Area Network

Glossary of Terms

Community Anchor	Public School, Public Library or Head Start Center
Contracted Services	End-to-end broadband Ethernet service. 1 GB or 100 MB service.
U of U/UEN Hub/PoP	UEN Aggregation site. Typically a public School District Office, College or University.
Layer 2/3 Switch	Network switch provisioned to manage and route network traffic.
Right of Way	Right of Way (ROW) is an authorization to use a specific piece of public land for a certain project, such as roads, pipelines, transmission lines, and communication sites. A ROW grant authorizes rights and privileges for a specific use of the land for a specific period of time
Telecommunication Provider	Commercial/Private provider of telecommunication services to include telephone, network and Internet services. Services are delivered via copper, microwave radio and fiber optic based services.
Physical Activities	Specific activities required to implement the Middle Mile project.

Executive Summary

The Utah Anchors NTIA BTOP Round One Infrastructure project is a Middle Mile project that will directly connect 128 community anchor institutions in Utah to the statewide education backbone, utilizing contracted end-to-end broadband services provided from common carrier Utah telecommunication providers who own the equipment and infrastructure. These broadband improvements will also benefit 59 cities and towns that currently have underserved and unserved populations that lack basic access to high-speed broadband service in their local community.

The Utah Anchors project sites are presently served by traditional copper based facilities and as such are limited to very low speed and unreliable connectivity to WAN and Internet services. For this BTOP project, the University/UEN conducted competitive Request-For-Proposals (RFP) and finalized contract awards in February 2010. The University/UEN has contracts with eight (8) local telecommunication service providers for high-speed broadband services comprising a total of 1259.25 miles of fiber for this project. 1211.62 of the total project miles will utilize existing fiber within the service provider's outside plant facilities. The contracted services will expand on existing and new Dense Wave Division Multiplexing (DWDM) technology, and other optical networking hardware. 46.96 miles of the project will require underground construction of conduit and fiber from the nearest manhole or interconnection facility to the community anchor institution (CAI) site. Less than one mile of fiber (3,533 feet or .67 miles) will be aerial installation using existing utility poles and interconnections to connect the CAI site. New fiber will be fusion spliced to the service providers' existing network facilities and cross-connections made in Central Offices. Optical transport and network hardware will be installed and provisioned to complete the broadband connection back to the school district office or UEN's nearest Point-of-Presence (PoP). This will enable the CAI site to connect into the UEN backbone network.

The work discussed in this environmental assessment includes all of the physical activity required to complete these "Middle Mile" improvements to include activities required for conduit and fiber installation, fusion fiber splicing, cross-connects, optical network equipment installation including DWDM, fiber optic patch panels, and layer 2/3 optical network switches. No new construction of buildings or structures will be required for this project.

This assessment focuses on the 47.63 miles of underground and aerial fiber installation and equipment installation required to implement the middle mile broadband services to the CAI end sites. This assessment does not address the contracted fiber facilities within the service provider's existing outside plant facilities (the 1211.62 miles of contracted services.)

The maps and network diagrams included in this Environmental Assessment include the routes and distances for installation of new conduit and fiber, and locations including street address and coordinates for all existing manholes, Central Offices, School District Offices and UEN Points-of-Presence (PoPs) where physical activity for this project will occur. In working to comply with the NTIA Special Awards Condition placed on this project, the following are addressed in this assessment:

1. Full compliance with the National Environmental Protection Act (NEPA) and the National Historic Preservation Act (NHPA)
2. A Class I cultural resource investigation performed by SWCA Environmental Consultants. The investigation determined that 14 of the 128 CAI project locations fall within 500 feet within previously documented archaeological sites located within 500 feet of the University/UEN Areas of Potential Effect (APEs). After further review, SWCA conducted an intensive cultural resource assessment that included six (6) project areas which required a Class III on-site assessment by a professional archaeologist. The Class III assessment was completed, including locations within the National Registry of Historic Places. SWCA concluded that all construction associated with this project will avoid all cultural resource sites within the APEs.
3. It is important to note that one area identified by SWCA Environmental Consultants in the Class 1 search as “undeveloped UDOT Right of Way” was surveyed by SWCA as part of a class 3 onsite survey and the area has been bladed (developed) by UDOT. SWCA also determined as part of this survey that no cultural resource areas are within the project Area of Potential Effect (APE).”
4. SWCA’s surveys and findings were provided to the Utah State Historic Preservation Office (SHPO) in their evaluation of the potential effect to historical resources. The SHPO office provided a letter concurring No Historic Properties affected for this project. In addition, the SHPO office has completed their evaluation regarding historic structures and buildings and determined no adverse affects for the proposed undertaking.
5. Consultation with the United States Fish and Wildlife Services (USFWS) has been completed and a letter confirming “no significant impact to critical habitat” has been received and a copy of the letter has been included in this Environmental Assessment.

6. No new buildings, fiber huts, or broadband facility structures will be erected as part of this project.
7. Construction will take place on established public utility Right of Way in previously developed municipal areas utilizing existing service provider facilities; one previous area that was undeveloped was recently bladed by UDOT (Diamond Valley Elementary) and evaluated by SWCA Environmental Consultants and determined to have no cultural resource areas within the project Area of Potential Effect (APE).
8. Consultation with the U.S. Army Corp of Engineers has been completed and a letter of concurrence is included in this Environmental Assessment.

Environmental Alternatives Considered

The University/UEN selected eight of Utah's telecommunication providers for this important BTOP project based on two competitive broadband Ethernet Requests for Proposals issued in fall 2008 and 2009. Evaluations for contracts awarded for Utah Anchors focused on the most responsive and cost effective proposals for the technical and functional requirements of the project. The financial evaluation centered on proposals that presented sustainable Middle Mile infrastructure with UEN as the anchor tenant connecting CAIs which could be extended to communities for residential and commercial use. Existing UEN leased Wide-Area-Network infrastructure from telecommunication providers was utilized to maximize available network resources and minimize costs.

NEPA and NHPA Assessment

Table 1. Potential Impacts of the Preferred Buried Cable, Aerial, and No Action Alternative

Resource Area	Preferred Alternative Contracted Serviced All Fiber Buried	Alternative Considered Contracted Services All Fiber Aerial	No Action
Infrastructure + = Pro - = Con	+ Leverage Existing Infrastructure from Carriers + No overbuilding + Reduced Implementation Time - Trenching and Boring + Highest Reliability	- Insufficient Right of Way - More utility infrastructure being placed underground/pole elimination + No Trenching or Boring - Weather and outdoor exposure - Moderate to High Reliability	No improvement to Community Anchor schools and libraries
Socioeconomic + = Pro - = Con	+ Provides long-term broadband and internet services to underserved and underserved populations + Economic Development in lower-income areas + Business access to new infrastructure installed by this project + New distance learning and content provided to students and library patrons	+ Provides long-term broadband and internet services to underserved and underserved populations + Economic Development in lower-income areas + Business access to new infrastructure installed by this project + New distance learning and content provided to students and library patrons	Lack basic broadband high-speed access for educational services and applications
Human Health and Safety	- Impact on traffic and pedestrian safety during construction	- Impact on traffic and pedestrian safety during installation	No impact.
Aesthetics	+ Less visible and exposed infrastructure	- More visible and exposed infrastructure	No impact.

Table 1. Potential Impacts of the Preferred Buried Cable, Aerial, and No Action Alternative

Resource Area	Preferred Alternative Contracted Serviced All Fiber Buried	Alternative Considered Contracted Services All Fiber Aerial	No Action
Geology and Soils + = Pro - = Con	+ Existing roadways with previously disturbed Right-of-Way + Best Management Practices (BMPs) to prevent soil erosion and sedimentation	+ Existing overhead utility poles utilized + No ground disturbance required + BMPs used for any pole replacements required	No impact.
Biological Resources + = Pro - = Con	+ No impacts to rivers or streams + No excavation required in wetland areas + Not likely to impact endangered species or protected habitats	+ No impacts to rivers or streams + No excavation required in wetland areas + Not likely to impact endangered species or protected habitats	No impact.
Water Resources + = Pro - = Con	+ BMPs followed to protect any water resources + No excavation required in wetland areas + No impacts to rivers or streams	+ No excavation required in wetland areas + No impacts to rivers or streams + Existing footprints utilized	No impact.