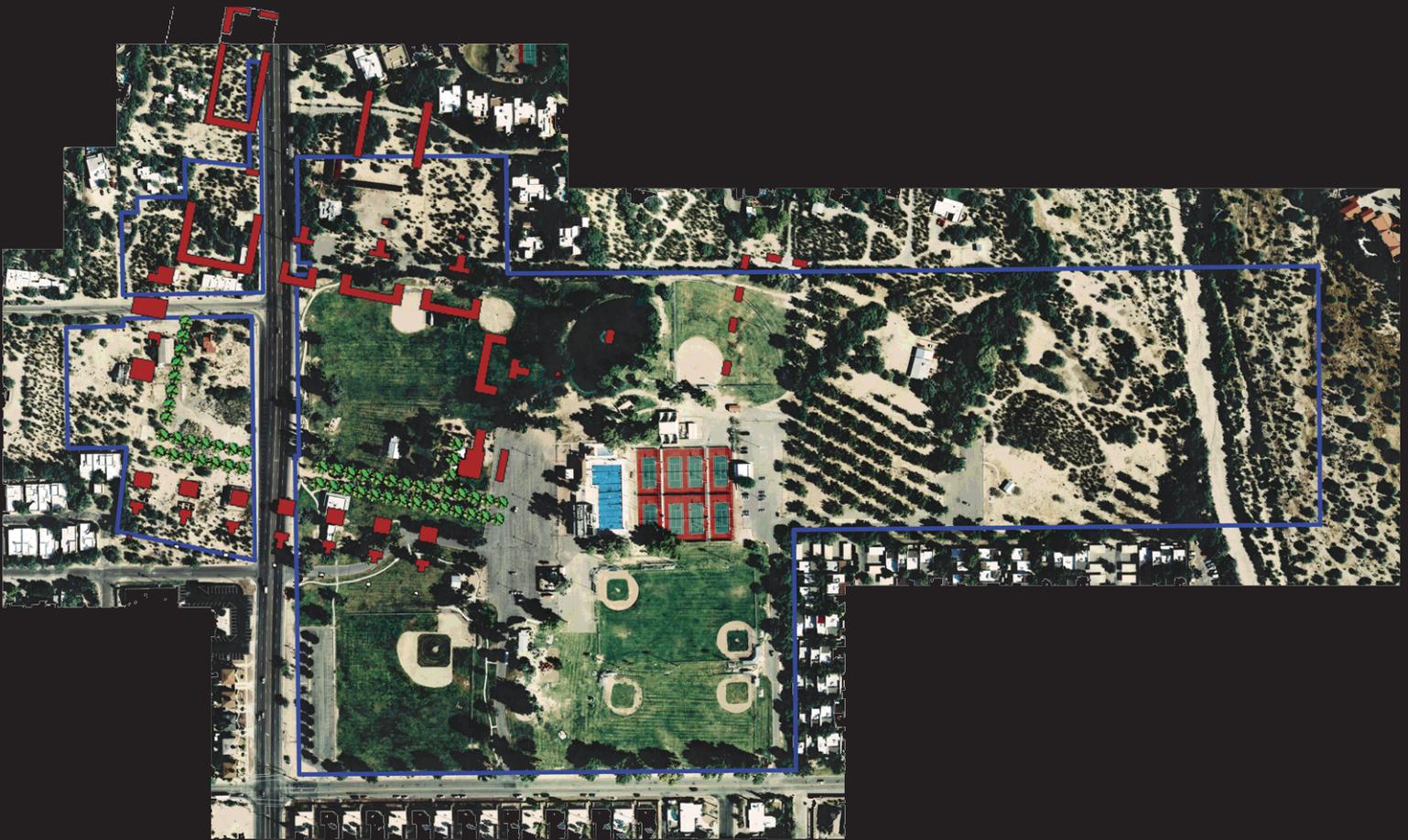


POSTER
FROST
ASSOCIATES, INC.

ARCHITECTURE
PLANNING
URBAN DESIGN



Fort Lowell Park Master Plan

Background Report
May 2009

Fort Lowell Park Master Plan

Background Report

Final Report

May 2009

Prepared under contract to:
Pima County Cultural Resources
and Historic Preservation Office

Pima County Public Works Center
201 N. Stone Avenue, 6th Floor
Tucson, Arizona 85701-1207
Tel: 520.740.6684
Fax: 520.243.1610

Project Team:



317 North Court Avenue
Tucson, Arizona 85701
Tel: 520.882.6310
Fax: 520.882.0725

Poster Frost Associates
Architects/Planners/Project Manager

SAGE Landscape Architecture and Environmental
Landscape Architecture and Environmental

Wood, Patel and Associates
Civil and Hydrology

Desert Archaeology, Inc.
Prehistoric and Historic Archaeology

ConsultEcon
Economic/Marketing/Business

Crocker Ltd.
Adobe Conservation

TLCP Structural Inc.
Structural Engineers

Bruce Hilpert
Interpretation

Burns Wald-Hopkins Shambach Architects
Consulting Architects

John Welch
Tribal Liaison

Compusult, Inc.
Cost Estimating

Stakeholders

Pima County Board of Supervisors

Richard Elías, Chairman, Supervisor, District 5
Ann Day, Supervisor, District 1
Ramón Valadez, Supervisor, District 2
Sharon Bronson, Supervisor, District 3
Raymond J. Carroll, Supervisor, District 4

Pima County Staff

C.H. Huckelberry, Pima County Administrator

Pima County Cultural Resources and Historic Preservation Office

Linda Mayo, Cultural Resources Manager
Loy Neff, Program Coordinator
Simon Herbert, Program Coordinator

Fort Lowell Restoration Advisory Committee

Members

Larry Hecker, Chair
Elaine Hill
Frank McClure
Anne Woosley
Peggy Sackheim
Patsy Waterfall
David Yubeta

City of Tucson Mayor and Council

Bob Walkup, Mayor
Mike Letcher, City Manager
Regina Romero, Ward One
Rodney Glassman, Ward Two
Karin Uhlich, Ward Three
Shirley Scott, Ward Four
Steve Leal, Ward Five
Nina J. Trasoff, Ward Six

City of Tucson Staff

Jim Conroy, Parks and Recreation, East District
Midge Irwin, Parks and Recreation, East District
Jonathan Mabry, Historic Preservation Officer
Lynne Birkinbine, Environmental Manager

Table of Contents

List of Figures

List of Tables

Introduction, Overview and Historic Context.....i

Executive Summary.....vii

Section 1: Historical Summary.....1

Environmental Background	3
Prehistory and History to 1873	4
Fort Lowell (1873-1891)	9
Fort Lowell After the 1891 Abandonment	13
Fort Lowell's Contribution to Natural History	15
Farming and Ranching	16
Cadets and Boy Scouts	18
Fort Lowell Area Sanitariums	19
The Ghosts of Fort Lowell, Tourism, and Early Interest in Preservation	20
The Fort Lowell Cemetery	22
Fort Lowell and Craycroft Roads	23
Adkins Steel, Bolsius Apartments, and Donaldson / Hardy Property	24
Fort Lowell Park	25
Archaeology	27
The Hardy Site	31
References Cited	34

Section 2: Physical Setting..... 42

Project Planning Boundary Progression	44
Planning Boundaries	45
Zoning	46
Tucson Medical Center – Planned Area Development	47
Existing Land Use	48
Old Fort Lowell Neighborhood Plan	49
Circulation and Parking	50
Trails and Neighborhood Connections	52
Adkins Parcel Environmental Clean-up	61
Flood Control / Floodplain Management	62
Utilities, Easements and Wells	65

Section 3: Natural Resources and Recreation..68

Existing Site Conditions	70
Existing Park Facilities, Features, and Amenities	76
Maintenance Operations	89
Recreational Activities	92
Visual Resources	98
Circulation	103
Threat Assessment / Remedies	106

Section 4: Layout and Building Assessment....109

Fort Lowell Site Layout	111
Adkins Parcel	113
Officer's Quarters Overview	114
Officer's Quarters # 1	115
Officer's Quarters # 2	116
Officer's Quarters # 2 – Kitchen	118
Officer's Quarters # 3	119
Adkins-Era Buildings	123
Adkins Residence	124
Adkins Steel Fabrication Shed	126
Former Adobe Residence (RC Magor Residence)	128
Quarter Master and Commissary Storehouses	129
Commissary Apartments	130
Donaldson / Hardy Property	131
Fort Lowell Cavalry Corral Ruins	132
Donaldson House	134
Fort Lowell Park	135
Fort Lowell Hospital Ruins	136
Fort Lowell Cavalry Band Quarters Ruins	138
Fort Lowell Infantry Kitchen Ruins	139
Fort Lowell Cavalry Infantry Quarters Ruins	140
Fort Lowell Park Maintenance Building	141
Fort Lowell Museum	142

Section 5: Interpretive Resources and Audience 145

Introduction	147
Issues in Interpretation: <i>Administration, Resources and Audience</i>	148
Existing Audience and Users	151
Potential Audience and Users	153
Potential Partnerships	155
Interpretive Techniques	157
Conclusion	158

Section 6: Baseline Market Evaluation for Fort Lowell Park and Review of Comparable Historic Forts.....	159
Market Context	161
Review of Historic Forts in the Southwest	172
Fort Apache Historic Park	174
Fort Bowie National Historic Site	176
Fort Concho National Historic Landmark	178
Fort Davis National Historic Site	181
Fort Huachuca Museum	183
Fort Verde State Historic Park	184
Yuma Quartermaster Depot State Historic Park	186
Summary Review of Historic Forts	188
 Appendix A: Boundary Survey.....	 191
 Appendix B: Potential Partnership Groups, Organizations and Institutions.....	 202

List of Figures

1.	2008 Aerial with Overlay of Fort Lowell (PFA).....	cover
2.	Location of Fort Lowell Park within the City of Tucson (PFA).....	i
3.	Project Planning Progression (PFA).....	ii
4.	Prehistoric and Historic Period Overlay.....	v
5.	Aerial Image of Fort Lowell Park.....	vi
6.	Ruins of the Officer's Quarters around 1904 (AHS).....	1
7.	Fourth Cavalry Band (AHS).....	1
8.	Cottonwood Lane looking west around 1889 (AHS).....	1
9.	Location of Fort Lowell, Redrawn by Don Bufkin.....	8
10.	1876 map of Fort Lowell (AHS 12880).....	9
11.	Military Reservation (NA).....	10
12.	1881 Map (NA).....	11
13.	Fort Lowell, Parade Ground looking south (AHS).....	12
14.	Fort Lowell, 1904 (AHS).....	14
15.	Irrigation ditches located in the Fort Lowell area (Turner et al.)	16
16.	Photograph of Fort Lowell Officer's Row, with officer's quarters no. 1 on the far right (AHS 27089).....	20
17.	Fort Lowell Cemetery (Edith Tompkins manuscript collection, MS 790, AHS, Tucson).....	22
18.	A 1937 map of Fort Lowell, drafted by Charles Maguire (AHS 12887).....	23
19.	Fort Lowell and Extant Historic Structures Showing Modern Orthography (ASP2 Fort Maps, DA).....	29
20.	Archaeological sketch of Officer's Quarters #4 and #5 (from Alfred E. Johnson, "Archaeological Investigations at Fort Lowell", 1960).....	30
21.	Hardy Site Location Map. By Charles Sternberg.....	31
22.	Tested and Excavated Areas at the Hardy Site. By Steven Gregonis.....	31
23.	Hardy Site Excavated Features. By Steven Gregonis....	32
24.	Hardy Site with Maintenance Shed in Background (PFA)..	32
25.	Hardy Site Interpretive Signage.....	33
26.	Cluttered View North at the Hardy Site (PFA).....	33
27.	Craycroft Road, looking north towards Catalina Mountains (PFA).....	42
28.	Rillito River, just east of Craycroft Road (PFA).....	42
29.	San Pedro Chapel (PFA).....	42
30.	Property Ownership (2006-present) (PFA).....	44
31.	Neighborhood Planning Boundaries (PFA).....	45
32.	San Pedro Chapel, 2008 (PFA).....	45
33.	Zoning Map (Pima County Mapguide. Modified by PFA).....	46
34.	Proposed Pedestrian Circulation for Tucson Medical Center (Tucson Medical Center PAD).....	47
35.	Outline of Tucson Medical Center PAD (Tucson Medical Center PAD).....	47
36.	Proposed Building Heights for Tucson Medical Center (Tucson Medical Center PAD).....	47
37.	Existing Land Use. Aerial Image (2005 Pima County Mapguide).....	48
38.	Old Fort Lowell Neighborhood Plan - General Development Plan	49
39.	Existing paved parking lots showing the approximate number of parking spaces (PFA).....	50
40.	Craycroft Road, north of Fort Lowell Road, looking south. 2008 (PFA).....	50
41.	Fort Lowell Park main parking lot looking southwest, 2008 (PFA).....	50
42.	Craycroft Road Existing Typical Section (WPA).....	51
43.	The multi-use path along the south side of the Rillito River Park currently ends at Craycroft Road. Future plans are to continue the path to a proposed path along the Pantano Wash (PFA).....	52
44.	Tucson Conceptual Urban Pathway System showing existing and proposed multi-use trails. (City of Tucson Parks and Recreation Ten-Year Strategic Service Plan (2006) authored by Planners Ink).....	52
45.	Old Fort Lowell Neighborhood (in green) showing	

List of Figures

existing (solid orange) and proposed (dashed orange) trails and points of interest. Fort Lowell Park is shown in blue (<i>2005 Pima County Aerial modified by PFA</i>).....	53
46. Photo Keyplan (<i>PFA</i>).....	55
47. Rillito River path, south bank near Swan Road. (<i>PFA</i>).....	55
48. Rillito River path, equestrian path at south bank. (<i>PFA</i>).....	55
49. St. Gregory School from Rillito River path (<i>PFA</i>).....	55
50. Termination of Rillito River path at Craycroft Rd. bridge (<i>PFA</i>).....	56
51. Craycroft Rd. looking south at the Rillito River bridge (<i>PFA</i>).....	56
52. Along the Alamo Wash, south of the Rillito River. (<i>PFA</i>).....	56
53. N. Hill Farm Dr. at Rillito River Path (<i>PFA</i>).....	56
54. Corbett ditch looking east (<i>PFA</i>).....	56
55. Mesquite Wash Trail, West of Craycroft Rd (<i>PFA</i>).....	56
56. Photo Keyplan (<i>PFA</i>).....	57
57. San Pedro Chapel as seen from Fort Lowell Road (<i>PFA</i>).....	57
58. Walking path along E. Fort Lowell Rd (<i>PFA</i>).....	57
59. E. Fort Lowell Road approaching N. Beverly Ave. (<i>PFA</i>).....	58
60. N. Beverly Ave. at E. Fort Lowell Road intersection (<i>PFA</i>).....	58
61. N. Beverly Ave. between Glenn St. & Fort Lowell Rd. (<i>PFA</i>).....	58
62. Alamo / Arcadia wash just south of E. Glenn St. (<i>PFA</i>).....	58
63. E. Glenn St. at N. Beverly Ave., looking north (<i>PFA</i>).....	58
64. E. Fort Lowell Road, approaching the Adkins Parcel (<i>PFA</i>).....	58
65. Photo Keyplan (<i>PFA</i>).....	59
66. Grant Rd. & Craycroft Rd. intersection looking west. (<i>PFA</i>).....	59
67. Approaching Fort Lowell Park, north of Glenn St. (<i>PFA</i>).....	59
68. Craycroft Rd., approaching Adkins parcel from south (<i>PFA</i>).....	59
69. Craycroft Road north of Fort Lowell Park. (<i>PFA</i>).....	60
70. Approaching Fort Lowell Road from the north. (<i>PFA</i>).....	60
71. Low-density residential property east of Craycroft Rd. (<i>PFA</i>).....	60
72. Low-density residential property east of Craycroft Rd. (<i>PFA</i>).....	60
73. Craycroft Road at St. Gregory. View looking south (<i>PFA</i>).....	60
74. Looking north along Craycroft near the Corbett Ditch (<i>PFA</i>).....	60
75. Site before removal of metal scrap and equipment (<i>PFA</i>).....	61
76. Adkins Parcel (2005) looking south before the purchase of the property by the City of Tucson. Significant clean-up to the site has occurred.	61
77. Looking northeast towards Officers Quarters #3 before clean-up around the site (<i>PFA</i>).....	61
78. On-site surface erosion east of the Donaldson House and Cavalry Corrals, August 2008 (<i>PFA</i>).....	62
79. Adkins and Commissary Parcels existing drainage conditions. (<i>WPA</i>).....	63
80. Fort Lowell Park, Hardy Site North and East existing drainage conditions (<i>WPA</i>).....	64
81. Fort Lowell Park and Adkins Site Existing Utilities (<i>WPA</i>).....	67
82. Pantano Wash natural area (<i>PFA</i>).....	68
83. Fort Lowell Soccer Shootout (<i>PFA</i>).....	68
84. Fort Lowell Pool (<i>PFA</i>).....	68
85. Mixed vegetation (<i>SAGE</i>).....	70
86. Fort Lowell Pond (<i>SAGE</i>).....	70
87. Exercise Trail (<i>SAGE</i>).....	70

List of Figures

88. Picnicking Ramada (<i>SAGE</i>).....	70	116. Veteran's Memorial (<i>PFA</i>).....	81
89. Pecans in summer (<i>SAGE</i>).....	71	117. Bench looking onto playground (<i>PFA</i>).....	81
90. Pecans in winter (<i>SAGE</i>).....	71	118. Stone and Concrete Planter Bench by pond (<i>PFA</i>).....	81
91. Lower Pecan Orchard (<i>SAGE</i>).....	71	119. Michael Mulholland Memorial Bench before painting, 2005 (<i>PFA</i>).....	82
92. Fort Lowell Park Existing Site Conditions (<i>SAGE</i>).....	72	120. Michael Mulholland Memorial Bench after painting, 2009 (<i>PFA</i>).....	82
93. Riparian Woodland Display (<i>SAGE</i>).....	73	121. Dick Cook Memorial Bench; red tinted concrete to match painted terra cotta color theme (<i>PFA</i>).....	82
94. Vegetated drainage canal (<i>SAGE</i>).....	73	122. Ramada #1 (<i>PFA</i>).....	83
95. Sonoran Desert Scrub (<i>SAGE</i>).....	73	123. Ramada #2 (<i>PFA</i>).....	83
96. Hackberry tree at Ramada 7 (<i>SAGE</i>).....	74	124. Ramada #3 (<i>SAGE</i>).....	83
97. Cottonwoods by Fort Lowell Museum (<i>SAGE</i>).....	74	125. Ramada #4 (<i>PFA</i>).....	83
98. Screened low density housing to the north (<i>SAGE</i>).....	74	126. Ramada #5 (<i>PFA</i>).....	84
99. Erosion at Pantano Wash (<i>SAGE</i>).....	75	127. Ramada #6 (<i>PFA</i>).....	84
100. Drainage channel along southern boundary (<i>SAGE</i>).....	75	128. Ramada #7 (<i>SAGE</i>).....	84
101. Ballfields (<i>SAGE</i>).....	76	129. Wheelchair accessible, open air restroom (<i>PFA</i>).....	85
102. Fort Lowell Tennis Center (<i>SAGE</i>).....	76	130. Prefabricated Steel Restroom (<i>PFA</i>).....	85
103. Neglected racquetball courts (<i>SAGE</i>).....	76	131. Tennis Center Restrooms (<i>PFA</i>).....	85
104. Pond in winter (<i>SAGE</i>).....	77	132. Typical Type A picnicking area (<i>PFA</i>).....	86
105. Fitness Trail (<i>SAGE</i>).....	77	133. Typical Type B Picnicking Areas (<i>PFA</i>).....	86
106. Cottonwood Lane Rededication Plaque (<i>SAGE</i>).....	77	134. Accessible Picnicking Area without connecting path (<i>PFA</i>).....	86
107. Fort Lowell Museum (<i>SAGE</i>).....	77	135. Typical Blue Drinking Fountain (<i>PFA</i>).....	87
108. Hardy/Donaldson Site (<i>SAGE</i>).....	78	136. Drinking Fountain Near Tennis Courts (<i>PFA</i>).....	87
109. Adkins Parcel (<i>SAGE</i>).....	78	137. Typical newer drinking fountain. (<i>PFA</i>).....	87
110. Hohokam Pit House Exhibit (<i>SAGE</i>).....	78	138. Park Snack Bar (<i>PFA</i>).....	87
111. Restroom with Accessible facilities (<i>SAGE</i>).....	78	139. Accessible parking near museum (<i>SAGE</i>).....	88
112. Fort Lowell Park Historic/Archaeological Inventory (<i>SAGE</i>).....	79	140. Main parking lot (<i>SAGE</i>).....	88
113. The Bugler Statue at Craycroft Road (<i>PFA</i>).....	80	141. Tennis parking lot (<i>SAGE</i>).....	88
114. Memorial to Rugged Pioneer Soldiers (<i>PFA</i>).....	80	142. Park & Ride lot (<i>SAGE</i>).....	88
115. Memorial Flag Pole (<i>PFA</i>).....	80		

List of Figures

143. Maintenance trucks for quick transport to fix a broken drinking fountain (PFA).....	89	169. # 2: Cottonwood Lane, looking west (SAGE).....	99
144. Maintenance Building (SAGE).....	89	170. # 3: View of pond near Ramada 4 (SAGE).....	99
145. Landscaping Maintenance (PFA).....	89	171. # 4: View of Catalina Mountains from Parade Grounds (SAGE).....	99
146. Sports Field Maintenance (PFA).....	89	172. # 5: Parade Grounds, looking southwest (SAGE).....	99
147. Dog Amenities (PFA).....	90	173. # 6: Pond edge, looking north from Ramada 6 (SAGE).....	99
148. Typical trash can, painted with City of Tucson Parks and Recreation Images (PFA).....	90	174. # 7: Pond edge, looking south (SAGE).....	100
149. Typical green metal trash can (PFA).....	90	175. # 9: Riparian area, looking south (SAGE).....	100
150. Mobile mini and chain link storage area by Snack Bar (PFA).....	91	176. # 10: View of mesquite bosque from Ramada 7 (SAGE).....	100
151. Old Snack Shack (PFA).....	91	177. # 11: View of Catalinas from Ramada 5 (SAGE).....	100
152. The Fort Lowell Shootout (SAGE).....	92	178. # 12: View of Catalinas from lower Pecan Grove (SAGE).....	100
153. Fort Lowell Pool (SAGE).....	92	179. # 13: View of Catalinas & Pantano Wash (SAGE).....	100
154. Fort Lowell Tennis Center (SAGE).....	93	180. # 1: View of Craycroft Road (SAGE).....	101
155. Fort Lowell Ball Fields (SAGE).....	93	181. # 2: Craycroft Road from Cottonwood Lane (SAGE).....	101
156. Sand Volleyball Court (SAGE).....	93	182. # 3: Hohokam Exhibit and Maintenance Building, looking east (SAGE).....	101
157. Current Use Analysis (SAGE).....	94	183. # 5: Maintenance building from Riparian Area (SAGE).....	102
158. Fitness Equipment (SAGE).....	95	184. # 6: View of maintenance yard debris (SAGE).....	102
159. Playground (SAGE).....	95	185. # 7: Adjacent parking near lower Pecan Grove (SAGE).....	102
160. Jogger using Fitness Trail (SAGE).....	95	186. # 8: View of debris in Pantano Wash (SAGE).....	102
161. Maintenance Yard (SAGE).....	95	187. Main Entry Monumentation along Craycroft Road (SAGE).....	103
162. The Hohokam Interpretive Site at Fort Lowell (SAGE).....	96	188. Entry Monumentation along Glenn Street (SAGE).....	103
163. Viewing the ruins of the Fort Lowell Hospital (SAGE).....	96	189. Secondary Vehicular Entry Signage (SAGE).....	103
164. The Fort Lowell Museum (SAGE).....	96	190. Secondary Vehicle Entrance (SAGE).....	103
165. The Pond at Fort Lowell Park (SAGE).....	97	191. Parking Areas within the Park (SAGE).....	104
166. The Riparian Area at Fort Lowell Park (SAGE).....	97	192. Main parking area looking east (SAGE).....	104
167. The lower Pecan Grove near the Pantano Wash (SAGE).....	97	193. Accessible Parking Spaces within the Park (SAGE).....	104
168. # 1: View towards Catalina Mountains along Craycroft (SAGE).....	99		

List of Figures

194. Pedestrian Bridges within Park (<i>SAGE</i>).....	104	218. HABS Documentation of Kitchen #2, 1940 (<i>NPS</i>).....	118
195. Beginning of Fort Lowell Fitness Trail (<i>SAGE</i>).....	105	219. Existing Floor Plan (<i>BCA/BWS</i>).....	118
196. Way-finding signage in Historic Core (<i>SAGE</i>)	105	220. Officer's Quarter #3, November, 2007 (<i>PFA</i>).....	119
197. Poorly marked Fort Lowell Fitness Trail near Ramada 5 (<i>SAGE</i>).....	105	221. HABS Documentation of Officer's Quarter #3, facing west, 1940150 (<i>NPS</i>).....	119
198. Sidewalk leading to Donaldson Property (<i>SAGE</i>).....	105	222. Bracing of ceiling and roof framing, Officer's Quarter #3, 2007 (<i>PFA</i>).....	119
199. Officer's Quarters ruins (<i>PFA</i>).....	109	223. Existing Floor Plan (<i>BCA/BWS</i>).....	120
200. Hardy Site (<i>PFA</i>).....	109	224. <i>Contrapared</i> , east side, Officer's Quarter #3, 2008 (<i>PFA</i>).....	121
201. Adkin's Parcel structures (<i>PFA</i>).....	109	225. Bracing at window lintel at west wall. 2007 (<i>PFA</i>).....	121
202. 1876 Plan of Fort Lowell. Redrawn by Don Bufkin.....	111	226. Bracing of southwest corner parapet, Officer's Quarter #3, 2007 (<i>PFA</i>).....	121
203. Parade ground and flag pole at Fort Lowell. View facing southwest (<i>Courtesy of Haynes Collection, AHS</i>).....	112	227. HABS documentation, 1940 (<i>NPS</i>).....	122
204. Adkins parcel from Fort Lowell Road, 2008 (<i>PFA</i>).....	113	228. HABS documentation, west elevation, 1940 (<i>NPS</i>).....	122
205. Officer's Quarters #2, northwest corner with sacrificial cap, 2008 (<i>PFA</i>).....	113	229. Adkins Residence water tower and windmill structure facing southwest, August 2008. Condition of windmill structure is poor with significant rusting of support steel. (<i>PFA</i>).....	123
206. Adkin's Residence, southwest corner (<i>PFA</i>).....	113	230. Adkins Parcel in 2005 (<i>Microsoft Virtual Earth</i>).....	123
207. Adkins Property (<i>PFA</i>).....	113	231. 1940s aerial photo of Adkins Buildings from the Magee Collection held at the Arizona Historic Society. RC Magor residence is located at lower left portion of image. Adkins Residence, prior to circa 1950 addition, is visible in the center of the photograph. Officer's Quarters #1 visible at lower right. The reconstructed commissary buildings are located in the upper left portion of the image (<i>AHS</i>).....	123
208. Officer's Quarter #1, 2, & 3, Historical plan	114	232. Adkins Residence looking southeast, August 2008 (<i>PFA</i>).....	124
209. Officer's Quarter #1, 2, & 3, Existing site plan (<i>BCA/BWS</i>)	114	233. Adkins Residence west adobe wall, August 2008 (<i>PFA</i>).....	125
210. Officer's Quarter #1, 2, & 3, ca. 1940s. Note that Officer's Quarters #1 has been changed into an outbuilding	114	234. Adkins Residence east wall wood fascia, August 2008 (<i>PFA</i>).....	125
211. Officer's Quarter #1, facing southwest, 2008 (<i>PFA</i>).....	115	235. Adkins Residence looking northeast, November 2007 (<i>PFA</i>).....	125
212. Officer's Quarter #1, basal deterioration, 2008 (<i>PFA</i>).....	115	236. Floor Plan Adkin's Residence (<i>PFA</i>).....	125
213. Officer's Quarter #2 and Kitchen, looking northwest, 2007 (<i>PFA</i>).....	116		
214. Existing Floor Plan (<i>BCA/BWS</i>).....	117		
215. Structural Cracking, Officer's Quarter #2, 2008 (<i>PFA</i>).....	117		
216. HABS Documentation, northeast view, 1940 (<i>NPS</i>).....	118		
217. Officer's Quarter #2, Kitchen, 2007 (<i>PFA</i>).....	118		

List of Figures

237. View from Fort Lowell Road looking southeast towards Adkins residence (left) and Adkins Steel Fabrication Shed, August 2008 (PFA).....	126	256. Cavalry Corral Wall, looking north, August 2008 (PFA).....	132
238. View looking northwest, August 2008 (PFA).....	126	257. Fort Lowell Cavalry Corral Ruins (PFA).....	132-133
239. Interior view looking southeast, August 2008 (PFA).....	126	258. Cavalry Corral Wall and <i>contrapared</i> , looking west, August 2008 (PFA).....	133
240. Steel column at north concrete stem wall, August 2008 (PFA).....	126	259. Protective shelter, looking northwest, August 2008 (PFA).....	133
241. Floor Plan Adkins Steel Fabrication Shed (PFA).....	127	260. Donaldson House Floor Plan (PFA).....	134
242. View of Adkins Parcel looking northwest towards former RC Magor Residence (left) and Adkins Steel Fabrication Shed, Nov. 2007 (PFA).....	128	261. Donaldson House, south-facing entry, August 2008 (PFA).....	134
243. View of former adobe residence looking west, August, 2008 (PFA).....	128	262. Donaldson House, roof ponding in July 2008 before emergency stabilization (PFA).....	134
244. View of former adobe residence looking southwest, Nov. 2007 (PFA).....	128	263. Fort Lowell Ruins, ca. 1940s (AHS, modified by DA).....	135
245. Fort Lowell Road approaching Craycroft Road. Commissary on left, July 2008 (PFA).....	129	264. Fort Lowell Park, former Parade Ground looking southeast, 2008 (PFA).....	135
246. Interior of Commissary Apartments courtyard facing east, July 2008 (PFA).....	129	265. Fort Lowell Park (PFA).....	135
247. Stone foundation from Fort- Era root cellar at western edge of Commissary, July 2008 (PFA).....	129	266. Sheltered Hospital Ruins, facing north, July 2008 (PFA).....	136
248. Commissary Property (PFA).....	129	267. Fort Lowell Hospital Ruins, looking northwest, HABS -1937 (NPS).....	137
249. South side of the Commissary, ca. 1910 (AHS).....	130	268. Hospital Ruins, facing northeast, July 2008 (PFA).....	137
250. Pete, Nan and Charles Bolsius, 1934 (A.P. Bolsius Collection).....	130	269. Hospital Ruins, basal deterioration, July 2008 (PFA).....	137
251. Charles Bolsius workshop, August 2008 (PFA).....	130	270. Hospital Ruins, further basal deterioration, July 2008 (PFA).....	137
252. Overlay analysis of Cavalry Corral Area showing existing features. Excerpted from Desert Archaeology, Adkins Steel Assessment, 2008. Corrals are indicated by an "s". Donaldson House is shown southwest of the corrals (PFA).....	131	271. Cavalry Band Members in front of their living quarters (AHS).....	138
253. Artist's sketch of buildings at Fort Lowell, including Infantry Company quarters, in foreground, and Cavalry and Quartermaster Corrals (AHS).....	131	272. Cavalry Band Quarters Ruins facing west, 2008 (PFA).....	138
254. Donaldson / Hardy Property (PFA).....	131	273. Cavalry Band Quarters Ruins facing towards Craycroft Road, 2008 (PFA).....	138
255. Donaldson House Adobe Cottage, August 2008 (PFA).....	132	274. Kitchen ruins at the northern edge of the park. July 2008 (PFA).....	139
		275. Detail of kitchen ruins. July 2008 (PFA).....	139
		276. Northern edge of Fort Lowell park showing kitchen ruins beyond, August 2008. (PFA).....	139

List of Figures

277. Artist's sketch showing Cavalry Infantry Quarters, in foreground, facing northeast (<i>AHS</i>).....	140	<i>Virtual Earth</i>).....	161
278. Cavalry Infantry Quarters Ruins facing west. 2008 (<i>PFA</i>).....	140	299. Map of Location of Fort Lowell Park (<i>Microsoft Virtual Earth</i>).....	161
279. Cavalry Infantry Quarters Ruins (fenced) facing southwest, 2008 (<i>PFA</i>).....	140	300. Map of Primary Resident Market for Fort Lowell Park (ESRI, TeleAtlas, and ConsultEcon, Inc.).....	164
280. Maintenance Building, facing south, 2008 (<i>PFA</i>).....	141	301. Map of Resident Market Area for Fort Lowell Park (ESRI, TA, CE).....	164
281. Floor Plan Fort Lowell Park Maintenance Building (<i>PFA</i>).....	141	302. Picture of Fort Apache Historic Park (http://www.backcountrysafaris.us/Picture%20004.jpg).....	175
282. Maintenance Building Interior, facing north, 2008 (<i>PFA</i>).....	141	303. Fort Bowie Park Map (<i>NPS</i>).....	177
283. Fort Lowell Museum, facing west, 2008 (<i>PFA</i>).....	142	304. Picture of Fort Bowie (http://www.panoramio.com/photos/original/907003.jpg).....	177
284. Fort Lowell Museum, facing southeast, 2008 (<i>PFA</i>).....	142	305. Picture of Fort Concho (http://pics4.city-data.com/cpicc/cfiles3800.jpg).....	179
285. Overlay of existing park features and original layout of Fort Lowell. Note offset of reconstructed Officer's Quarters and Kitchen to the north and east. (<i>Excerpted from DA, Adkins Steel Assessment, 2008</i>).....	142	306. Map of Fort Concho (http://www.fortconcho.com/tour.html).....	180
286. Floor Plan Fort Lowell Museum (<i>PFA</i>).....	143	307. Picture of Fort Davis (http://upload.wikimedia.org/wikipedia/commons/archive/8/8d/20070303064856!USA_Fort_Davis_pano_TX.jpg).....	182
287. Fort Lowell Museum - Kitchen Reconstruction, facing northeast, 2008 (<i>PFA</i>).....	144	308. Fort Davis National Historic Site (http://venturavelo.org/db1/00091/venturavelo.org/_uimages/Fort-DavisTX.jpg).....	182
288. Fort Lowell Museum - Kitchen Reconstruction, failing adobe and plaster, east elevation, 2008 (<i>PFA</i>).....	144	309. Postcard of Fort Huachuca (http://www.459thsignal.org/photogallery/Fort%20Huachuca%20Post%20Card.jpg).....	183
289. Floor Plan Fort Lowell Museum Kitchen Reconstruction (<i>PFA</i>).....	144	310. Picture of Fort Verde (http://lh6.ggpht.com/_aup3l7mpcB4/RyFG0YcvUQI/AAAAAAAAAFJk/MDAqqGEdLsA/Fort+Verde+Sign_1.jpg).....	185
290. Multiple interpretations at the Fort Lowell Hospital Ruins (<i>PFA</i>).....	145	311. Picture of Yuma Quartermaster Depot State Historic Park (http://azstateparks.com/Parks/YUQU/gallery_02.html).....	187
291. Fort Lowell Museum (<i>PFA</i>).....	145	312. Overview of 2008 Boundary Survey (<i>S&S</i>).....	189
292. Cottonwood Row relocated (<i>PFA</i>).....	145	313. 2008 Boundary Survey (Adkins Parcel and Commissary Apartments) (<i>S&S</i>).....	190
293. Interpretive Signs at the Hohokam Exhibit (<i>PFA</i>).....	147	314. 2008 Boundary Survey (Fort Lowell Park Along Craycroft Road) (<i>S&S</i>).....	191
294. Bugler Statue on Craycroft Road (<i>PFA</i>).....	147	315. 2008 Boundary Survey (Donaldson / Hardy Property) (<i>S&S</i>).....	192
295. Fort Lowell Soccer Shootout (<i>PFA</i>).....	159	316. 2008 Boundary Survey (Fort Lowell Park Recreational Area) (<i>S&S</i>).....	194
296. Fort Lowell Museum (<i>PFA</i>).....	159		
297. Fort Lowell Pool (<i>PFA</i>).....	159		
298. Map of Tucson Metropolitan Area (<i>Microsoft</i>			

List of Figures

317. 2008 Boundary Survey (Area West of the Pantano Wash)
(S&S).....195

Image Sources / Photography Credits

<i>AHS</i>	Arizona Historical Society
<i>BCA/BWS</i>	Adapted from BCA Report by BWS Architects
<i>CE</i>	ConsultEcon, Inc.
<i>DA</i>	Desert Archaeology, Inc.
<i>ESRI</i>	Environmental Research Institute, Inc.
<i>NA</i>	National Archives
<i>NPS</i>	National Park Service
<i>PFA</i>	Poster Frost Associates
<i>S & S</i>	S & S Survey Inc.
<i>SAGE</i>	SAGE Landscape Architecture and Environmental
<i>TA</i>	TeleAtlas
<i>WPA</i>	Wood, Patel, and Associates

List of Tables

1. Recreational Activities and User Characteristics in Fort Lowell Park (City of Tucson Parks and Recreation Department and ConsultEcon, Inc.).....	162	and ConsultEcon, Inc.).....	181
2. Estimated Recreational Program Users in 2007, Based on City of Tucson Parks and Recreation Department Bookings (City of Tucson Parks and Recreation Department and ConsultEcon, Inc.).....	163	13. Fort Huachuca Museum (Facility profiled, The Official Museum Directory 2008, and ConsultEcon, Inc.).....	183
3. Resident Market Estimated 2006 and Projected 2011 Population for Fort Lowell Park (ESRI and ConsultEcon, Inc.).....	165	14. Fort Verde State Historic Park (Facility profiled, The Official Museum Directory 2008, and ConsultEcon, Inc.).....	184-185
4. Estimated 2006 Age Distribution in Resident Market Area for Fort Lowell Park (ESRI and ConsultEcon, Inc.).....	165	15. Yuma Quartermaster Depot State Historic Park (Facility profiled, The Official Museum Directory 2008, and ConsultEcon, Inc.).....	186-187
5. Estimated Number of Households, Average Household Size, and Family Households in the Resident Market Area, 2006 (ESRI and ConsultEcon, Inc.).....	166		
6. Households by Income Group in the Resident Market Area, 2006 for Fort Lowell Park (ESRI and ConsultEcon, Inc.).....	166		
7. Selected Tucson and Tucson-Area Attractions Ranked by Attendance (Facilities profiled, Arizona Office of Tourism: Arizona 2006 Tourism Facts, Arizona State Parks, American Association of Museums: Official Museum Directory 2008; Association of Zoos and Aquariums: Member Directory 2008; National Park Service Public Use Statistics Office, and ConsultEcon, Inc.).....	168-170		
8. Fort Apache Historic Park (Facility profiled, and ConsultEcon, Inc.).....	174-175		
9. Fort Bowie National Historic Site (Facility profiled, The Official Museum Directory 2008, National Park Service Public Use Statistics Office, and ConsultEcon, Inc.).....	176		
10. Fort Concho National Historic Landmark (Facility profiled, The Official Museum Directory 2008, National Park Service Public Use Statistics Office, and ConsultEcon, Inc.).....	178-179		
11. Fort Concho Schedule of Revenues and Expenditures ¹ / Primarily lease income from office building (City of San Angelo, TX FY2007-FY2008 Operating Budget.).....	180		
12. Fort Davis National Historic Site (Facility profiled, The Official Museum Directory 2008, National Park Service Public Use Statistics Office,			

Introduction, Overview and Historic Context

Fort Lowell Park is a 70-acre City of Tucson Parks and Recreation multi-use regional facility that provides a variety of activities for Tucson residents. But Fort Lowell Park is very much more than that. It is an important historical site with rich and surviving historic resources that brings to life many important eras of Tucson’s history. It is a recreation site that serves children and adults in a compact and efficient hub of activity. And it is a natural site that adjoins a valued riparian habitat and has the potential of being a major piece in an interconnected network of local and regional open space.

For centuries, people of the valley of El Rio Santa Cruz and its tributaries have made their home in the area known today as Fort Lowell Park. Since 700 AD, Hohokam people (700 – 1300 AD), Territorial-era homesteaders (both Anglo and Mexican after the 1854 Gadsden Purchase), the

United States Military (1873 – 1891), Mexican immigrants (early 1900s), Mormon settlers (early 1900s), Anglo artists/craft persons/business-people (1920s and especially 1940s on) have called this area home. These diverse inhabitants have each left their own indelible mark on the land in the form of archeological resources, historic buildings and ruins, work structures, plant materials, landforms, irrigation and other features of the landscape.

Today’s Fort Lowell Park was itself assembled over an extended period of time. In 1957, the largest single parcel (37 acres) was sold by the Boy Scouts to Pima County. The original plans for the site were to remove the Fort-era ruins, except the hospital, and use the site entirely for recreation. However, by 1963, community interest in the Park’s historic resources led to the preservation of other historic Fort-era buildings and the reconstruction of an Officer’s Quarters

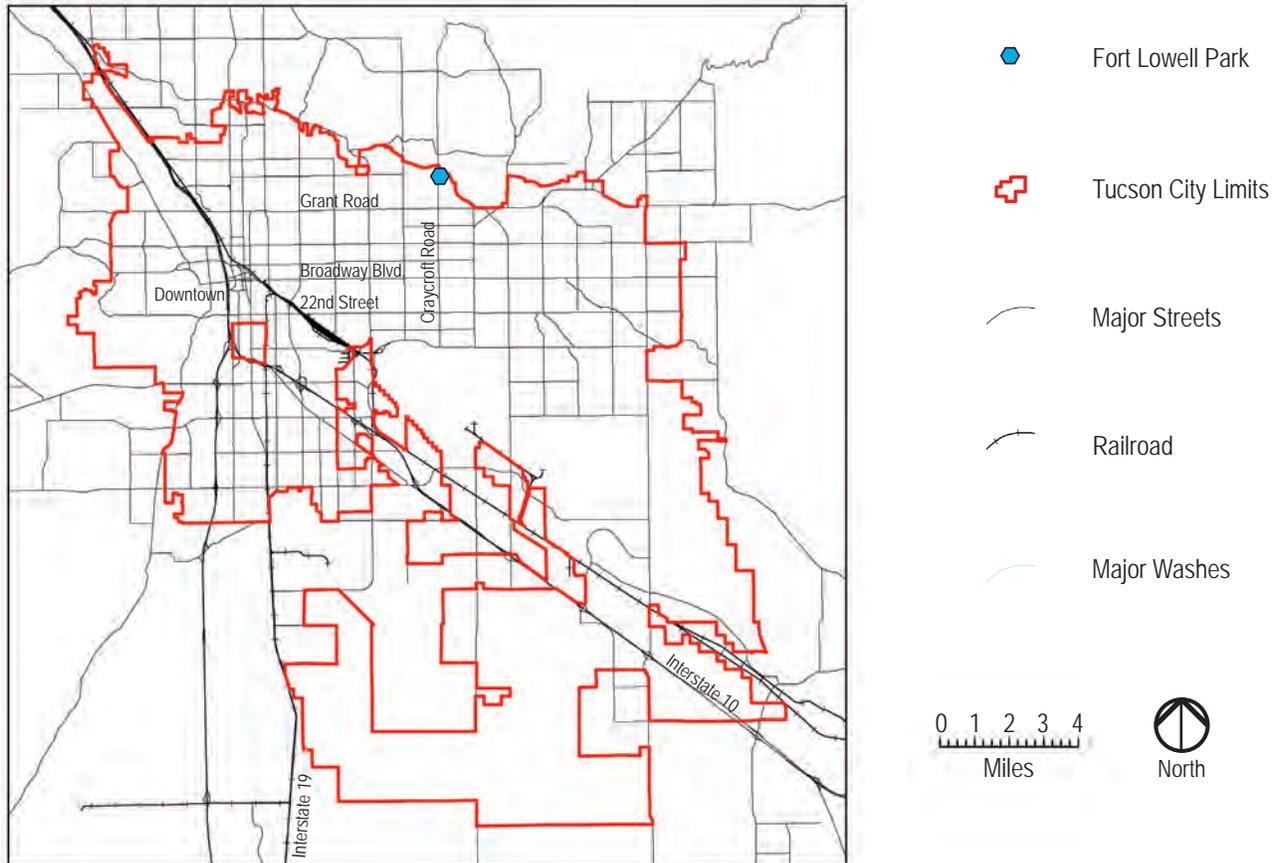


Figure 2: Location of Fort Lowell Park within the City of Tucson (redrawn from COT Department of Urban Planning and Design)

Introduction, Overview and Historic Context

east of Craycroft. In 1972, 3 additional acres were sold to Pima County by the Boy Scouts. In 1975, Pima County acquired 20 acres at the eastern end of the park that contained a large portion of the prehistoric Hardy site and the pecan orchard. Finally assembled, the ownership of the now-60 acre park on the eastern side of Craycroft was transferred from Pima County to the City of Tucson in 1984.

In 1985, the City of Tucson acquired the 3-acre Donaldson / Hardy parcel north of the park. This parcel contains the Donaldson / Hardy House and associated features. This parcel also includes remnants of the Fort-era Cavalry Corrals / Hay Yard and an area rich in Hohokam artifacts. Sensing a need for a long term approach to this recently-acquired property, in 1985 the City of Tucson Department of Parks and Recreation embarked on a Fort Lowell Park Master Plan.

In 2002, Fort Lowell Park began to expand west of Craycroft Road with the acquisition of the “Commissary Apartments” from private owners. This parcel on the north side of Fort Lowell Road was originally the Fort Lowell Quartermaster and Commissary Storehouses and were “adaptively –reconstructed” in the 1930s by the Bolsius family. The parcel currently contains five leased apartments managed by a property management company on behalf of the City of Tucson.

Finally, with the assistance of 2004 Pima County Cultural Resources Bonds and a land swap, the City of Tucson acquired the Adkins Parcel and began site clean-up, inventory and emergency stabilization of historic resources. This parcel had been owned by the Adkins Family since 1928. The Adkins family operated the “Adkins Rest Ranch” (a health sanatorium serving tuberculosis sufferers) until around 1950. The Adkins Trucking and Steel Manufacturing Company began operating on the site in 1934. By the 1950s, the Adkins were manufacturing steel tanks almost exclusively and

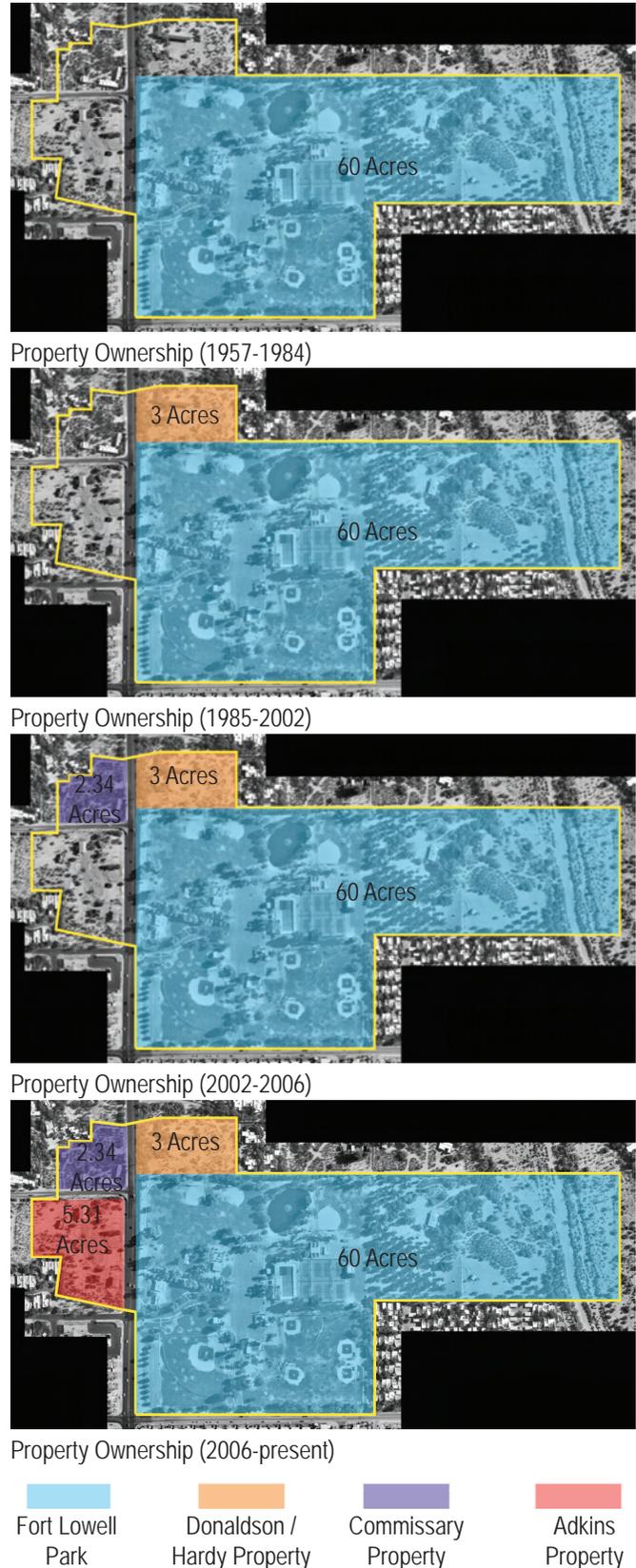


Figure 3: Project Planning Progression

Introduction, Overview and Historic Context

continued in business on the site until the Spring of 2007 when ownership was assumed by the City of Tucson. Thus assembled the site reached its current size of 70 acres.

With the acquisition of the Adkins parcel and its fragile and diverse historic resources, the need for a new Master Plan became obvious and imperative. In 2007, Pima County and the City of Tucson recognized the need to undertake a long term plan for the site and, in the short term, the need for an organized plan to expend the remaining funds from the \$2.5 million in the Fort Lowell portion of the Pima County Question No.4.4 – Parks and Recreation, Cultural Resources Bond Program.

The first step in this process was the execution of an Intergovernmental Agreement (IGA) between the City of Tucson and Pima County executed in March of 2007. Next was the organization of the Fort Lowell Restoration Advisory Committee in May 2007. With Larry Hecker as chair, three persons were appointed by the City of Tucson Mayor and City Council (Elaine Hill, Frank McClure and Ann Woosley) and three were appointed by the Pima County Board of Supervisors (Peggy Sackheim, David Yubeta, and Patsy Waterfall). The charge of this committee, as defined by the IGA, as follows:

- Advise on the scope of work for the Master Plan
- Advise on selection of the Master Plan consultant
- Meet monthly with the Master Plan consultant, City of Tucson and Pima County staff
- Review and Advise on:
 1. Background Reports,
 2. Preparation of alternative concept plans,
 3. Development of the Preferred Alternative,
 4. Business and Management Plan,
 5. Treatment plans for historic buildings,
 6. Integration and treatment of resources,
 7. Interpretation and long-term use,

8. Schedule for implementation,
 9. Administration and maintenance.
- Submit prepared plans to City of Tucson Mayor and City Council and Pima County Board of Supervisors
 - Recommend Master Plan and Restoration Plan to City of Tucson Mayor and City Council and Pima County Board of Supervisors

In the spring of 2008, Poster Frost Associates and its team of sub-consultants were selected to undertake the Historic Fort Lowell Park Master Plan and Restoration Plan. Work began on the project in June of 2008 and is projected to be completed in the late summer or fall of 2009.

Parallel to the work of the Advisory Committee and the Historic Fort Lowell Park Master Plan and Restoration Plan, Pima County and the City of Tucson have been engaged in an on-going effort to protect and preserve the fragile resources, particularly on the Adkins site. In 2007, Sellers and Sons working for Pima County on an “On-Call” contract, worked to shore up and stabilize existing historic structures, improve drainage from the buildings, and build “sacrificial” protective caps on the deteriorating adobe walls. In 2007-2008, Burns Wald-Hopkins Shambach Architects was engaged to prepare Building Assessment Reports for the key Adkins Parcel structures. In February of 2008, the reports *Adkins Steel Parcel, Fort Lowell Officer's Quarters No. 1, 2 and 3 Building Condition Assessment* and *Adkins Steel Parcel Adkins Residence Building Condition Assessment* were issued.

Ongoing efforts continue in the stabilization and protection of these Fort Lowell historic resources. In February of 2009, David Yubeta and the National Park Service led an adobe repair workshop with City and County staff under the “Vanishing Treasures” NPS program. Further interventions are planned for March and April of 2009. Environmental clean-up also continues with

Introduction, Overview and Historic Context

environmental testing and remediation led by the City of Tucson. The ongoing work includes:

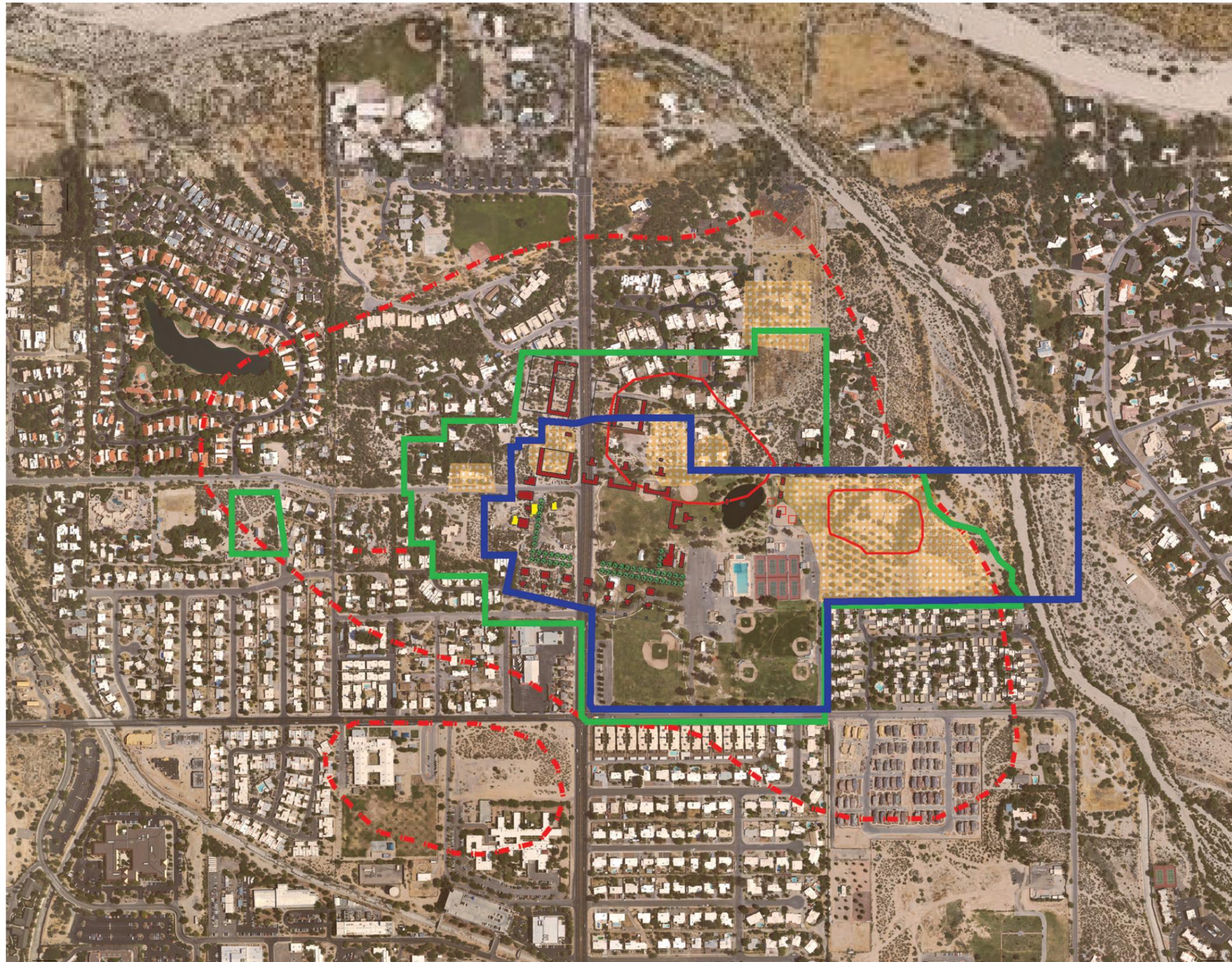
- Testing of soils in 2008 on Adkins Parcel. These found levels of significant contaminants.
- These contaminants will have to be removed and/or mitigated.
- The site has been closed to general public until the mitigation is complete.
- The City of Tucson has applied for a Federal grant for this clean-up effort.

The comprehensive Scope of Work for the Historic Fort Lowell Park Master Plan and Restoration Plan is as follows:

- Prepare Background Report that documents existing site, utilities, easements, and wells, existing uses, buildings and infrastructure, uses, zoning, land use and traffic planning, activities and programs, ownership, visual and landscape resources, flood control/floodplain management, buildings/archaeology, threat assessment/remedies, analysis of potential users, information gaps and needs, and partnership opportunities
- Present Background Report (Public Meeting #1)
- Development of three Alternative Concept Plans that identify compatible use options. The alternative concept plans will propose concepts for cultural/natural resource conservation, preservation treatment and maintenance, long-term curation plan, alternative concepts/themes for uses, and potential visitor experience. Present those three concepts to the public (Public Meeting #2)
- Using public input from the Public Meetings, additional stakeholder meetings, and input from the on the Fort Lowell Restoration Advisory Committee, utilize the three Alternative Concept Plans to evolve a Preferred Concept Plan
- Develop an overall Master Plan Feasibility Study for the Preferred Concept Plan that integrates public opinion and stakeholder input,

market analysis, capital costs, and operating costs.

- Develop a Restoration Plan for the near term preservation of the historic structures, including a treatment plan, a detailed budget for Adkins properties, recommendations for interpretation and management, recommendations for maintenance and operations, and a schedule for completion of the Adkins site.
- Develop a Business Plan that analyzes capital costs, user groups, attendance, maintenance, and quantifies operating expenses and revenue opportunities.
- Presentation of Draft Report of Final Plan to (in order): Fort Lowell Historic Zone Advisory Board, Fort Lowell Neighborhood Association, Tucson Pima County Historic Commission State Historic Preservation Office, Fort Lowell Restoration Advisory Committee, City of Tucson Mayor and City Council and Pima County Board of Supervisors



Prehistoric and Historic Period Overlay

-  National Register of Historic Places Fort Lowell Multiple Resource Area Boundary
-  Fort Lowell Park Master Plan Boundary
-  Prehistoric Hohokam Hardy Site (A.D. 700 - A.D. 1300)
-  Relatively Undisturbed Area of the Hardy Site
-  Area of Known Hardy Site Artifact Concentration. Other Areas of High Concentration Have Not Been Surveyed, But Likely Exist in the Neighborhood.
-  Fort Lowell Era Buildings (1873-1891)
-  Fort Lowell Era Cottonwood Lane Alignment
-  Adkins Era Buildings (1928-2006)



Prehistoric Hardy Site Info Provided in: *The Hardy Site at Fort Lowell Park* by Linda M. Gregonis.

Figure 4: Prehistoric and Historic Period Overlay



Figure 5: Aerial Image of Fort Lowell Park

Executive Summary

This Background Report is intended as the baseline document for the Historic Fort Lowell Park Master Plan and Restoration Plan. This baseline of information insures that all decision-makers - from everyday interested citizens, to stakeholders, to advisory committee members, to City and County staff, and to elected officials - have sufficient information and the same knowledge of existing facts and conditions on which to base future policy and development direction for Fort Lowell Park. Armed with this wealth of background information about the past and the present, participants in the Fort Lowell Park Master Plan and Restoration Plan can make the very best decisions about the future.

The following Background Report content is organized into six major content sections: Historical Summary, Physical Setting, Natural Resources and Recreation, Layout and Building Assessment, Interpretive Resources and Audience, and Baseline Market Evaluation for Fort Lowell Park and Review of Comparable Historic Forts. The summary of the data presented in these content chapters is as follows:

Historical Summary

The history of the Tucson desert basin is marked by the relationship between the people who have lived here and their proximity to our life-giving riparian environments. This section summarizes the history of the site through a series of historical periods: Paleoindian Period (11,500? -7500 B.C.), Archaic Period (7500-2100 B.C.), Early Agricultural Period (2100 B.C.-A.D. 50), Early Ceramic Period (A.D. 50-500), Hohokam Sequence [the first period of human occupation of this Fort Lowell site] (A.D. 500-1450), Protohistoric Period (A.D. 1450-1697), Spanish and Mexican Periods (A.D. 1697-1856), and the American Period (1856-Present).

The report further details the key historical role of the US Military and the establishment of Fort Lowell in 1873: the 1856 establishment of a temporary military post in downtown Tucson,

its conversion into a permanent military post in 1866, its role in protecting the Tucson community from Apache raids, and the relocation of that post to the current Fort Lowell site in March of 1873. The report details the elements of the Fort construction and its evolution as a military facility. By the mid-1880s the role of the fort was winding down with the final subjugation of the Apaches and with the surrender of Geronimo in 1886. It became increasingly apparent that the number of military posts in Arizona could be reduced. The decision was made to abandon Fort Lowell, and, on 14 February 1891, the last soldiers left the fort. In April 1891, the fort was transferred to the Department of the Interior to be sold as surplus property.

The historical summary of the Fort Lowell area details the evolution of the site after the army abandonment in 1891. The period immediately after the US Army left was marked by a variety of claims and/or occupations of the site. Many were successful in obtaining land within the greater Fort Lowell reservation. Eventually the Fort was offered for sale and in 1896 the Department of the Interior, General Land Office, had authorized the sale of buildings and the land. Afterwards, some buildings became the residences of local Mexican families, although little is known about these individuals. Other buildings decayed due to neglect and vandalism.

The historical report continues with a discussion of Fort Lowell's Contribution to Natural History in the years from 1885 through the first decade of the 1900s including the important work of the naturalists Dr. Edgar Mearns and William Wightman Price. The report further documents the extensive Farming and Ranching that occurred at the site beginning as early as the 1860s and including the involvement of Anglo, Chinese and Mormon communities. The extensive and ongoing involvement of the Boy Scouts and the Cadets started as early as 1896 (University of Arizona

Executive Summary

Military Cadets) and 1912 when the newly formed Boy Scout troop spend a week at the site. The Boy Scouts involvement continued for decades, ultimately owning the site by 1945 and building the protective roof over the Hospital Building in the 1950s. The early 1900s also saw the opening of at least three sanitariums in and around Fort Lowell. Sanitarium patients hoped for a cure from whatever health problem they had. Many had tuberculosis, and some died from the disease while convalescing at Fort Lowell. Dollie Cate operated a sanitarium from 1908 to 1928. Mrs. Cate sold her sanitarium to Harvey and Fronia Adkins in February 1928. The Adkins had moved to Tucson to try to cure their daughter Minerva's tuberculosis, but Minerva Adkins died from the disease in 1927. The Adkins operated a rest home in the Officers Quarters into the 1940s.

Fort Lowell significantly represents Tucson's early interest in historic preservation. Interest in the historical nature of the site began in 1918, when the Chamber of Commerce considered the placement of a sign at the former Fort explaining its significance. The first preservation efforts took place in the late 1920s and continued through the 1963 reconstruction of Officers Quarters #5. Obviously, this intent has gained strength and is the basis for this Fort Lowell Park Master Plan and Restoration Plan. The report continues with a discussion of the subsequent uses of the site and the involvement of three key families and their respective contributions: Adkins Steel, the Bolsius Apartments (the Commissary), and Donaldson/Hardy property east of Craycroft Road. The history of Fort Lowell Park is documented including the 1957 acquisition by Pima County, the reconstruction of the Officers Quarters #5 and the re-establishment of Cottonwood Lane, the development of the Park's recreational facilities and the City of Tucson's acquisition from Pima County. Finally the report documents the key elements of site archaeology.

Physical Setting

The physical setting of Fort Lowell Park presents the baseline set of facts, infrastructure and regulatory environment that will, to a large extent, determine what Master Plan development is feasible on the site. Fort Lowell Park lies within the Old Fort Lowell Neighborhood Association and the Fort Lowell Multiple Resources Area, listed on the National Register of Historic Places. The entire Park is also within the City's Fort Lowell Historic District; all Park development requires compliance with the *Fort Lowell Historic Preservation Zone: Design Review Guidelines* and review by the Fort Lowell Historic Zone Advisory Board and the Tucson-Pima County Historical Commission.

The project boundaries are definitively established and consist of four distinct sections that correspond to the 1957-2006 incremental growth of Fort Lowell Park: the original Fort Lowell Park (60 acres - 1957), the Donaldson/Hardy parcel (3 acres - 1985), the Commissary Apartments (2.34 acres - 2002), and the Adkins parcel (5.31 acres - 2006). The portion of the site west of Craycroft is zoned HR-1, the center portion of the site, between Craycroft and the Pantano River, is zoned HRX-2, and the portion east of the Pantano River is zoned RX-2. Critical land uses in the neighborhood include Tucson Medical Center, St. Gregory Preparatory School, low and medium density residential, the East Lawn Palms Mortuary & Cemetery, natural open space and a few parcels of vacant land.

Adjacent transportation includes the very-busy Craycroft Road with a 30,000 daily vehicles, with much lower counts on Glenn and Fort Lowell Road. The park has 330 existing parking spaces on site. Fort Lowell Park is in the midst of a network of trails and urban pathways. These connections are likely to grow as plans for the future are implemented.

The City of Tucson has undertaken significant

Executive Summary

environmental clean-up of the Adkins Parcel. The City of Tucson is applying for a Brownfields cleanup grant that will be used to remove the contaminated soil. Site drainage is divided into 13 different watersheds that are mainly characterized by sheet flow that generally flows north and west. There is an existing storm drain system in Craycroft Road. Potable and reclaimed water are supplied by Tucson Water; reclaimed water pipes are in Craycroft Road and Glenn Street. In the Adkins Site, there are three wells that extend to a depth of approximately 100-feet, and all are reportedly dry. There are also five septic tanks located on the Adkins Site, none of which have permits. Electric service is provided by the Tucson Electric Power Company, Gas service is provided by Southwest Gas Corporation. Cable service is provided by Cox and Comcast Communications (North of Fort Lowell and East of Craycroft).

Natural Resources and Recreation

Existing site conditions are a mix of recreational turf fields, mature trees of both native and not-native varieties, a remnant pecan grove, a Cottonwood Lane east of Craycroft Road, a riparian woodland display and native vegetation at the eastern boundary of the park and on the Adkins Parcel.

The current Fort Lowell Park offers a wide variety of recreational opportunities for the surrounding communities that encompass both active and passive uses. There are extensive recreation facilities on site including: eight sports fields, five of which are well-lit, eight lighted tennis courts, four abandoned racquetball courts that are in a state of disrepair, a half-acre park pond that has become a focal point and habitat for ducks, fish, turtles and many avian species and a one-mile fitness trail that meanders throughout the Park. The centrally located swimming pool complex, built in 1967, is heated and open year round.

Seven ramadas are used extensively and are

scattered throughout the east-of-Craycroft portion of the Park. Currently there are six restroom facilities within the Park; two are attached to ramadas, two are free-standing, one is in the tennis center and one is in the pool complex.

Fort Lowell Park has extensive interpretive elements depicting a range of eras of the Park's occupation. There is extensive statuary and monumentation including the Chief Trumpeter, Memorial to Rugged Pioneer Soldiers, the Memorial Flagpole, a Veterans Memorial and other memorial benches and planters.

Interpretation of the pre-historic Hardy site is located north centrally in Fort Lowell Park. The Hardy site is a large and well-preserved archaeological site that underlies a large portion of the neighborhood. In the late 1970s, embracing the opportunity for providing interpretation to the public of Tucson's earliest inhabitants, the Arizona State Museum created a pithouse exhibit and interpretive pamphlet.

While Fort Lowell Park offers mainly positive views both off-site and on-site, there are specific areas within the Park that will need additional visual mitigation in order to enhance the visitor's experience. Pedestrian circulation throughout the Park is fragmented and provides little opportunity for continuous paved travel from one side of the Park to the other. Internal pedestrian circulation is primarily driven by convenience and users tend to take the path of least resistance whether or not it is a designated walking space.

The threats and remedies on site include: safety issues, conflicting use intensities, infrastructure issues, property damage, maintenance issues, environmental issues and natural landscape preservation.

Layout and Building Assessment

The key elements of the historic Fort structure fall

Executive Summary

into two categories: 1) the spatial character of Fort Lowell itself, dominated by the Parade Ground and, 2) the various Fort-era buildings themselves, which, in turn, spatially defined the Parade Ground space. Underlying this later occupation is the pre-historical archaeological remains of the Hohokam.

The construction of the Fort began in 1873. By the middle of 1875, the Hospital, all four barracks buildings and the Officer's Quarters were complete. The west end of the Parade Ground was further enclosed by the Bakery and Adjutant's Office.

A line of seven Officer's Quarters was constructed along the south side of the parade ground. Officer's Row was further defined by two rows of cottonwood trees that were planted to the north of the Officer's Quarters. Each of the seven original Officer's Quarters, starting with #1 to the west, had its own kitchen and privy. Describing their current building conditions (from west to east): #1 is a remnant ruin, #2 is largely intact but in a ruined condition, #3 is in relatively good condition (the best of the remaining historic structures), #4 the Commanding Officers Quarters is gone and lies under Craycroft Road, #5 has been reconstructed (1963) but approximately 30 feet north of its original location, #'s 6 and 7 are gone with perhaps only below-grade foundation features remaining.

On the Adkins site, the Adkins family constructed their residence, the fabrication shed, a water tower and windmill and several outbuildings and a variety of cast-in-place concrete elements. The Adkins Residence is a small vernacular bungalow constructed around 1934 by Marion Adkins. It is in fair condition. The Adkins Steel Fabrication Shed, constructed about 1950 at the north end of the Adkins Parcel, is an innovative, site-built, rectangular structure measuring 36 feet x 60 feet with a height of 20 feet above finished grade. A severely dilapidated adobe residence was built by or for the Magor Family, probably in the 1940s,

and later acquired by the Adkins family.

The Quartermaster and Commissary Storehouses were located at the northwest corner of the Parade Ground. The site is currently occupied by the Commissary Apartments, a 1930s "adaptive-reconstruction" by the Bolsius family of a badly decayed Fort-era Commissary building.

Portions of the original Fort-era Cavalry Corrals were obtained by the City of Tucson through the purchase of the Hardy / Donaldson property, north of the Park, in 1984. The remaining Fort-era adobe walls were covered by a protective steel shelter in 1998. The Donaldson House was constructed adjacent to the corrals in the 1940s. At the same time, a small cottage was built into the footprint of the corrals.

Significant portions of Fort Lowell were originally located on the eastern parcel that has been designated as Fort Lowell Park since 1963. The Hospital, Infantry Company's Quarters, four Officer's Quarters and Cottonwood Lane, as well as many ancillary structures, were originally located on this parcel. Visible remains from the Fort-era are limited to the Hospital ruins and small portions of the Band Quarters and Company Kitchens. The most important structure is the Hospital, now a ruin, but with a protective roof to delay deterioration.

Interpretive Resources and Audience

Fort Lowell Park is a unique and exciting interpretive resource that can provide the public with a greater understanding of the prehistory, history and natural environment of the City of Tucson and its surrounding region. The Park's collection of archaeological remains, adobe ruins, historic buildings and adjacent riparian areas are representative of the forces and different peoples that shaped modern Tucson.

The interpretive goal of the master planning will be

Executive Summary

to enhance public understanding of all the stories and layers of history present at Fort Lowell Park by:

- Improving the visibility of the historic resources at Fort Lowell Park allowing more visitors to experience the historical and cultural aspects of the park.
- Clarifying spatial order of various historic periods on the site.
- Improving visitor orientation with wayfinding, interpretive trails, signage, and landscaping.
- Connecting to other sites across the region that have similar historical themes.
- Working in active partnership with ancestral Native American communities and other cultural traditions to develop an appropriate understanding and interpretation of historical events.

Fort Lowell Historic Park holds potential to become an exciting educational resource that greatly expands the parks current function as a recreational facility. To accomplish this goal, the City of Tucson and project planners must

- Resolve questions of administrative jurisdiction and levels of support for interpretive facilities and operations
- Recognize and develop design solutions to challenges presented by the location of and access to the park's parks historic and natural resources
- Develop an interpretive focus and themes that interpret complex cultural and historical issues with sensitivity and relevance
- Design park facilities that will integrate and attract recreational users into the park's historic and cultural interpretive areas
- Provide park facilities that can accommodate a wide array of interpretive activities and special events
- Assess potential audience and partnership needs and provide appropriate park facilities

Baseline Market Evaluation for Fort Lowell Park and Review of Comparable Historic Forts

This Market Evaluation section provides an overview of preliminary research into the potential of expanded heritage education offerings at Fort Lowell Park. First, the park and its location are evaluated from a market perspective. Second, existing recreational features and heritage museum utilization are reviewed. Third, available resident and tourist market information is presented. Finally, the experience of five historic forts in Arizona and two in Texas are presented to inform the evaluation the future potential for the development of new heritage elements at Fort Lowell Park.

While Fort Lowell Park has the potential to draw on tourist markets, resident markets will be a primary source of visitation. The geographic reach and available resident markets for a project depend on the size and quality of the attraction, its accessibility and location, the presence of other nearby attractions, regional transportation networks, and marketing and promotional efforts. Currently, there are an estimated 135,000 recreational uses in Fort Lowell Park annually, with a high degree of repeat usage due to the athletic teams. The additional utilization from the Fort Lowell Shoot Out would bring the total annual recreational usage at 150,000 people, not including informal park usage.

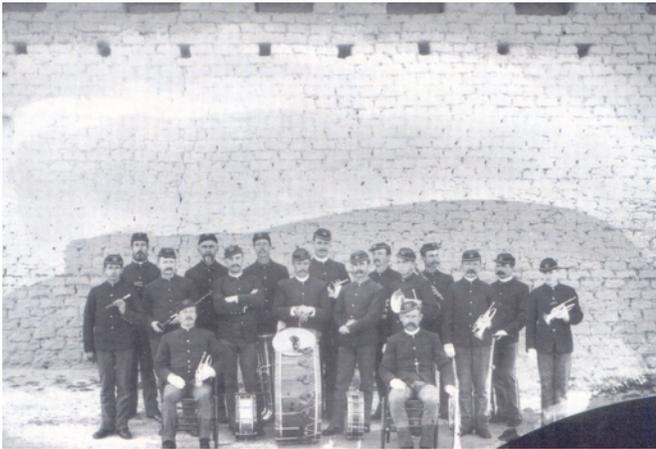
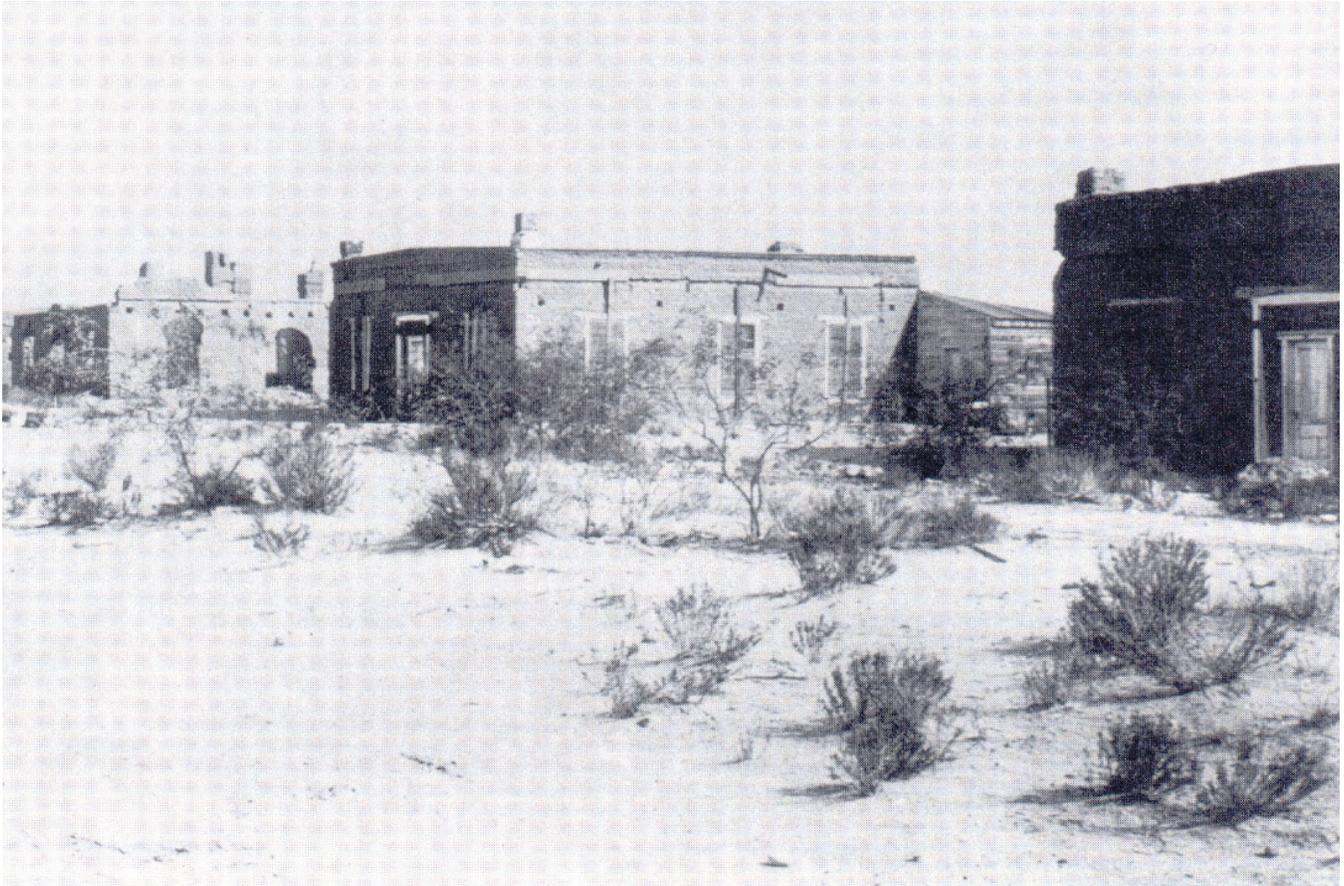
As an attraction primarily focused on cultural history and heritage, Fort Lowell Park will likely have broad appeal to multiple age segments including school-age children, families with children, and older adults. Comparative attraction data, showing selected Tucson and regional attractions and provide a summary of attendance, ticket prices, and descriptions is included in this section.

The final section provides an overview of the concepts, visitor experience and operations of

Executive Summary

historic forts located in Arizona, as well as two historic forts located in Texas. The experience of existing historic forts can inform the development of new and expanded heritage elements and programming at Fort Lowell Park. The data provides information on facilities, ticket prices, attendance, visitor characteristics, operating budgets, educational programming, events and partnerships. It should be noted that there are no “perfect” comparable projects to Fort Lowell Park, as each site will have its own unique circumstances. These historic forts include:

- Fort Apache Historic Park in Whiteriver, AZ
- Fort Bowie National Historic Site in Bowie, AZ
- Fort Concho National Historic Landmark in San Angelo, TX
- Fort Davis National Historic Site in Fort Davis, TX
- Fort Huachuca Museum in Sierra Vista, AZ
- Fort Verde State Historic Park in Camp Verde, AZ
- Yuma Quartermaster Depot State Historic Park in Yuma, AZ



Historical Summary

Contributed by Desert Archaeology, Inc. and Poster Frost Associates

Previous Page:

Figure 6: (Top) Ruins of the Officers' Quarters around 1904

Figure 7: (Left) Fourth Cavalry Band

Figure 8: (Right) Cottonwood Lane looking west around 1889

Environmental Background

The Fort Lowell area has been a magnet for human activity for over 1,000 years. The Rillito, now a dry creek bed, once ran intermittently year-round. The lush environment along the Rillito, which included tall cottonwood trees and mesquite bosques, drew a variety of mammals, birds, reptiles, and insects. In turn, these plant and animal resources and the ready availability of water drew humans to the area.

Fort Lowell is located within the eastern portion of the Tucson Basin, a short distance south of the Rillito River and immediately west of Pantano Wash. Much of the surrounding area is now covered by residential housing, but it once supported vegetation typical of the Arizona Uplands subdivision of the Sonoran Desert Scrub series (Hansen 1996). Spicer (2004) recently prepared a lengthy list of plants and wildlife present in the Fort Lowell area during historic and modern times. In 1895 the area around the fort was described as: “On the south, the great plain of Tucson, bare or covered with brushy Larrea or mesquite, stretches away for scores of miles; on the north rise gravelly hills which slope up to the mountains. These hills are covered with giant cacti and other desert shrubs. Along the bed of the Rillito grow cottonwood, willow, mesquite, walnut and ash trees (Price 1895:197).

The vegetation present within the city-owned properties at Fort Lowell is a combination of plantings and natural growth. The most prominent landscaping element is a double row of cottonwood trees originally planted in the early 1960s to replicate Officer’s Row, although at a different alignment than the original trees. The current rows include some of the 1960s trees, as well as more recent replacements. Scattered throughout the Fort Lowell Park area are a variety of other trees, including non-native species within the current Park. A pecan orchard is present on the east side of the park. More natural vegetation, including mesquite and palo verde trees, is present on the

east side of the park, adjacent to the Pantano Wash, and on the Donaldson/Hardy and Quartermasters and Commissary Storehouse properties.

The vegetation, along with a man-made pond and a nearby small water feature provide habitat for a variety of animals. Among those observed during visits to the project area in 2007 were egrets, several species of ducks, vermilion flycatchers, ground squirrels, and small lizards.

The elevation of the project area averages approximately 2,390 ft above sea level. The area slopes downward to the north and, during times of heavy precipitation, water runs across the Fort Lowell Park area in broad sheets towards the Rillito.

Portions of the project area, with Fort Lowell Park, have been heavily disturbed by the construction of roads and recreational facilities. Much of this work took place in the 1960s and 1970s, prior to the enactment of the cultural resource ordinance by the City of Tucson. The depth of ground disturbance is not known and there is a possibility that intact cultural resources may be present beneath existing roads, parking lots, and facilities. Other areas have seen less disturbance, including the Quartermaster and Commissary Storehouse Property and the Donaldson/Hardy parcels, and the likelihood of undisturbed subsurface cultural resources is much higher in these areas.

Prehistory and History to 1873

The history of the Southwest and of the Tucson Basin is marked by a close relationship between people and the natural environment. Environmental conditions have strongly influenced subsistence practices and social organization, and social and cultural changes have, in turn, made it possible to more efficiently exploit environmental resources. Through time, specialized adaptations to the arid region distinguished people living in the Southwest from those in other areas. Development of cultural and social conventions also became more regionally specific, and by A.D. 650, groups living in the Tucson Basin can be readily differentiated from those living in other areas of the Southwest. Today, the harsh desert climate no longer isolates Tucson and its inhabitants, but life remains closely tied to the unique resources of the Southwest.

Paleoindian Period (11,500?-7500 B.C.)

Archaeological investigations suggest the Tucson Basin was initially occupied some 13,000 years ago, a time much wetter and cooler than today. The Paleoindian period is characterized by small, mobile groups of hunter-gatherers who briefly occupied temporary campsites as they moved across the countryside in search of food and other resources (Cordell 1997:67). The hunting of large mammals, such as mammoth and bison, was a particular focus of the subsistence economy. A Clovis point characteristic of the Paleoindian period (circa 9500 B.C.) was collected from the Valencia site, AZ BB:13:74 (ASM), located along the Santa Cruz River in the southern Tucson Basin (Doelle 1985:183). Another Paleoindian point was found in Rattlesnake Pass, in the northern Tucson Basin (Huckell 1982). These rare finds suggest prehistoric use of the Tucson area probably began at this time. Paleoindian use of the Tucson Basin is supported by archaeological investigations in the nearby San Pedro Valley and elsewhere in southern Arizona, where Clovis points have been discovered in association with extinct mammoth and bison remains (Huckell 1993, 1995). However, because Paleoindian sites have yet to be found in

the Tucson Basin, the extent and intensity of this occupation are unknown.

Archaic Period (7500-2100 B.C.)

The transition from the Paleoindian period to the Archaic period was accompanied by marked climatic changes. During this time, the environment came to look much like it does today. Archaic period groups pursued a mixed subsistence strategy, characterized by intensive wild plant gathering and the hunting of small animals. The only early Archaic period (7500-6500 B.C.) site known from the Tucson Basin is found in Ruelas Canyon, south of the Tortolita Mountains (Swartz 1998:24). However, middle Archaic period sites dating between 3500 and 2100 B.C. are known from the bajada zone surrounding Tucson, and, to a lesser extent, from floodplain and mountain areas. Investigations conducted at middle Archaic period sites include excavations along the Santa Cruz River (Gregory 1999), in the northern Tucson Basin (Roth 1989), at the La Paloma development (Dart 1986), and along Ventana Canyon Wash and Sabino Creek (Dart 1984; Douglas and Craig 1986). Archaic period sites in the Santa Cruz floodplain were found to be deeply buried by alluvial sediments, suggesting more of these sites are present, but undiscovered, due to the lack of surface evidence.

Early Agricultural Period (2100 B.C.-A.D. 50)

The Early Agricultural period (previously identified as the Late Archaic period) was the period when domesticated plant species were first cultivated in the Greater Southwest. The precise timing of the introduction of cultigens from Mexico is not known, although direct radiocarbon dates on maize indicate it was being cultivated in the Tucson Basin and several other parts of the Southwest by 2100 B.C. (Mabry 2007). By at least 400 B.C., groups were living in substantial agricultural settlements in the floodplain of the Santa Cruz River. Recent archaeological investigations suggest canal irrigation also began sometime during this period.

Prehistory and History to 1873

Several Early Agricultural period sites are known from the Tucson Basin and its vicinity (Diehl 1997; Ezzo and Deaver 1998; Freeman 1998; Gregory 2001; Huckell and Huckell 1984; Huckell et al. 1995; Mabry 1998, 2007; Roth 1989). While there is variability among these sites—probably due to the 2,150 years included in the period—all excavated sites to date contain small, round, or oval semisubterranean pithouses, many with large internal storage pits. At some sites, a larger round structure is also present, which is thought to be for communal or ritual purposes.

Stylistically distinctive Cienega, Cortaro, and San Pedro type projectile points are common at Early Agricultural sites, as are a range of ground stone and flaked stone tools, ornaments, and shell jewelry (Diehl 1997; Mabry 1998). The fact that shell and some of the material used for stone tools and ornaments were not locally available in the Tucson area suggests trade networks were operating. Agriculture, particularly the cultivation of corn, was important in the diet and increased in importance through time. However, gathered wild plants such as tansy mustard and amaranth seeds, mesquite seeds and pods, and agave hearts were also frequently used resources. As in the preceding Archaic period, the hunting of animals such as deer, cottontail rabbits, and jackrabbits, continued to provide an important source of protein.

Early Ceramic Period (A.D. 50-500)

Although ceramic artifacts, including figurines and crude pottery, were first produced in the Tucson Basin during the Early Agricultural period (Heidke and Ferg 2001; Heidke et al. 1998), the widespread use of ceramic containers marks the transition to the Early Ceramic period (Huckell 1993). Undecorated plain ware pottery was widely used in the Tucson Basin by about A.D. 50, marking the start of the Early Agua Caliente phase (A.D. 50-350).

Architectural features became more formalized

and substantial during the Early Ceramic period, representing a greater investment of effort in construction, and perhaps more permanent settlement. A number of pithouse styles are present, including small, round, and basin shaped houses, as well as slightly larger subrectangular structures. As during the Early Agricultural period, a class of significantly larger structures may have functioned in a communal or ritual manner.

Reliance on agricultural crops continued to increase, and a wide variety of cultigens including maize, beans, squash, cotton, and agave were an integral part of the subsistence economy. Populations grew as farmers expanded their crop production to floodplain land near permanently flowing streams, and it is assumed that canal irrigation systems also expanded. Evidence from archaeological excavations indicates trade in shell, turquoise, obsidian, and other materials intensified and that new trade networks developed.

Hohokam Sequence (A.D. 500-1450)

The Hohokam tradition developed in the deserts of central and southern Arizona sometime around A.D. 500, and is characterized by the introduction of red ware and decorated ceramics: red on buff wares in the Phoenix Basin and red on brown wares in the Tucson Basin (Doyel 1991; Wallace et al. 1995). Red ware pottery was introduced to the ceramic assemblage during the Tortolita phase (A.D. 500-700). The addition of a number of new vessel forms suggests that, by this time, ceramics were utilized for a multitude of purposes.

Through time, Hohokam artisans embellished this pottery with highly distinctive geometric figures and life forms such as birds, humans, and reptiles. The Hohokam diverged from the preceding periods in a number of other important ways: (1) pithouses were clustered into formalized courtyard groups, which, in turn, were organized into larger village segments, each with their own roasting area and cemetery; (2) new burial practices appeared

Prehistory and History to 1873

(cremation instead of inhumation), in conjunction with special artifacts associated with death rituals; (3) canal irrigation systems were expanded and, particularly in the Phoenix Basin, represented huge investments of organized labor and time; and (4) large communal or ritual features, such as ballcourts and platform mounds, were constructed at many village sites.

The Hohokam sequence is divided into the pre Classic (A.D. 500-1150) and Classic (A.D. 1150-1450) period. At the start of the pre-Classic, small pithouse hamlets and villages were clustered around the Santa Cruz River. However, beginning about A.D. 750, large, nucleated villages were established along the river or its major tributaries, with smaller settlements in outlying areas serving as seasonal camps for functionally specific tasks such as hunting, gathering, or limited agriculture (Doelle and Wallace 1991). At this time, large, basin shaped features with earthen embankments, called ballcourts, were constructed at a number of the riverine villages. Although the exact function of these features is unknown, they probably served as arenas for playing a type of ball game, as well as places for holding religious ceremonies and for bringing different groups together for trade and other communal purposes (Wilcox 1991; Wilcox and Sternberg 1983).

Between A.D. 950 and 1150, Hohokam settlement in the Tucson area became even more dispersed, with people utilizing the extensive bajada zone as well as the valley floor (Doelle and Wallace 1986). An increase in population is apparent, and both functionally specific seasonal sites, as well as more permanent habitations, were now situated away from the river; however, the largest sites were still on the terraces just above the Santa Cruz. There is strong archaeological evidence for increasing specialization in ceramic manufacture at this time, with some village sites producing decorated red on brown ceramics for trade throughout the Tucson area (Harry 1995; Heidke 1988, 1996; Huntington

1986).

The Classic period is marked by dramatic changes in settlement patterns and possibly in social organization. Aboveground adobe compound architecture appeared for the first time, supplementing, but not replacing, the traditional semisubterranean pithouse architecture (Haury 1928; Wallace 1995). Although corn agriculture was still the primary subsistence focus, extremely large Classic period rock-pile field systems associated with the cultivation of agave have been found in both the northern and southern portions of the Tucson Basin (Doelle and Wallace 1991; Fish et al. 1992).

Platform mounds were also constructed at a number of Tucson Basin villages sometime around A.D. 1275-1300 (Gabel 1931). These features are found throughout southern and central Arizona, and consist of a central structure deliberately filled to support an elevated room upon a platform. The function of the elevated room is unclear; some were undoubtedly used for habitation, whereas others may have been primarily ceremonial. Building a platform mound took organized and directed labor, and the mounds are thought to be symbols of a socially differentiated society (Doelle et al. 1995; Elson 1998; Fish et al. 1992; Gregory 1987). By the time platform mounds were constructed, most smaller sites had been abandoned, and Tucson Basin settlement was largely concentrated at only a half-dozen large, aggregated communities. Recent research suggests that aggregation and abandonment in the Tucson area may be related to an increase in conflict and possibly warfare (Wallace and Doelle 1998). By A.D. 1450, the Hohokam tradition, as presently known, disappeared from the archaeological record.

Protohistoric Period (A.D. 1450-1697)

Little is known of the period from A.D. 1450, when the Hohokam disappeared from view, to A.D.

Prehistory and History to 1873

1697, when Father Kino first traveled to the Tucson Basin (Doelle and Wallace 1990). By that time, the Tohono O'odham people were living in the arid desert regions west of the Santa Cruz River, and groups who lived in the San Pedro and Santa Cruz valleys were known as the Sobaipuri (Doelle and Wallace 1990; Masse 1981). Both groups spoke the O'odham language and, according to historic accounts and archaeological investigations, lived in oval jacal surface dwellings rather than pithouses. One of the larger Sobaipuri communities was located at Bac, where the Spanish Jesuits, and later the Franciscans, constructed the mission of San Xavier del Bac (Huckell 1993; Raveslout 1987). However, due to the paucity of historic documents and archaeological research, little can be said regarding this inadequately understood period.

Spanish and Mexican Periods (A.D. 1697-1856)

Spanish exploration of southern Arizona began at the end of the seventeenth century A.D. Early Spanish explorers in the Southwest noted the presence of Native Americans living in what is now the Tucson area. These groups comprised the largest concentration of population in southern Arizona (Doelle and Wallace 1990). In 1757, Father Bernard Middendorf arrived in the Tucson area, establishing the first local Spanish presence.

Fifteen years later, construction of the San Agustín Mission near a Native American village at the base of A Mountain was initiated, and by 1773, a church was completed (Dobyns 1976:33).

In 1775, the site for the Tucson Presidio was selected on the eastern margin of the Santa Cruz River floodplain. In 1776, Spanish soldiers from the older presidio at Tubac moved north to Tucson, and construction of defensive and residential structures began. The Tucson Presidio was one of several forts built to counter the threat of Apache raiding groups who had entered the region at about the same time as the Spanish (Thiel et al. 1995; Wilcox 1981). Spanish colonists soon arrived to farm the relatively lush banks of the Santa Cruz River, to mine the surrounding hills, and to graze cattle. Many indigenous settlers were attracted to the area by the availability of Spanish products and the relative safety provided by the presidio. The Spanish and Native American farmers grew corn, wheat, and vegetables, and cultivated fruit orchards. The San Agustín Mission was known for its impressive gardens (Williams 1986).

In 1821, Mexico gained independence from Spain, and Mexican settlers continued farming, ranching, and mining activities in the Tucson

Prehistory and History to 1873

Basin. By 1831, the San Agustín Mission had been abandoned (Elson and Doelle 1987; Hard and Doelle 1978), although settlers continued to seek the protection of the presidio walls.

American Period (1856-Present)

Through the 1848 settlement of the Mexican American War and the 1853 Gadsden Purchase, Mexico ceded much of the Greater Southwest to the United States, establishing the international boundary at its present location. The U.S. Army established its first outpost in Tucson in 1856, and in 1873, founded Fort Lowell at the confluence of the Tanque Verde Creek and Pantano Wash, to guard against continued Apache raiding.

Railroads arrived in Tucson and the surrounding areas in the 1880s, opening the floodgates of Anglo-American settlement. With the surrender of Geronimo in 1886, Apache raiding ended, and the settlement in the region boomed. Local industries associated with mining and manufacturing continued to fuel growth, and the railroad supplied the Santa Cruz River valley with the commodities it could not produce locally. Meanwhile,

homesteaders established numerous cattle ranches in outlying areas, bringing additional residents and income to the area (Mabry et al. 1994).

A military post was initially established by the U.S. Army in the downtown portion of Tucson in 1856, following the departure of the Mexican military in March of that year. The post was not permanent, and the soldiers occasionally left the community unprotected when, for example, they were stationed elsewhere or when the Confederate Army took control of the village for a few months in 1862 (Peterson 1976).

On 29 August 1866, the military post at Tucson was made permanent, with the post officially named Camp Lowell on 11 September 1866 (Peterson 1976; Post Returns, NARA microfilm 63, roll 942). The camp was located south of modern-day Broadway Boulevard, and remained at that location until 1873. It served as a supply depot for other camps in Arizona until 1871. Soldiers occasionally left the fort to patrol or to pursue Apaches (Peterson 1976).

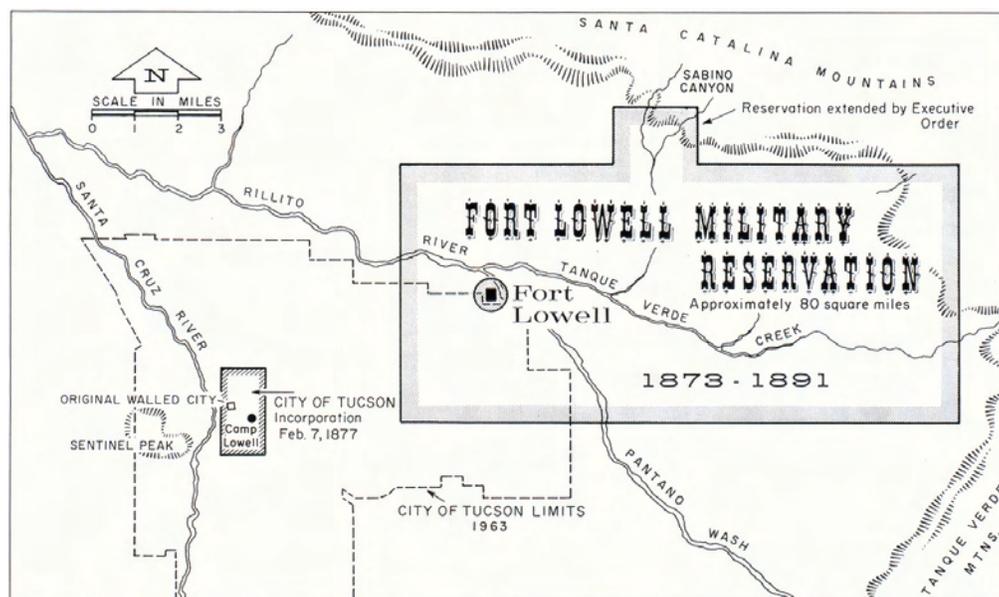


Figure 9: Location of Fort Lowell, Redrawn by Don Bufkin

Fort Lowell (1873-1891)

For various reasons, such as the need for expansion, poor living conditions (soldiers bunked in tents), the prevalence of malaria in the Santa Cruz River environs, and civilian complaints about drunken soldiers, commanders recommended that the camp be relocated along the Rillito, at a point along the creek 6 miles northeast of Tucson. On 10 March 1873, the decision to move the camp reached Tucson, and near the end of March 1873, the troops were relocated, initially living in canvas tents (Peterson 1976).

Construction of permanent buildings soon began. Contracts for the production of adobe bricks were assigned to the lowest bidder. In October 1873, Lord & Williams won with a bid of \$30.60 per 1,000 bricks “in the wall” (Arizona Citizen 1873a).

Work was well underway in September 1873, when it was reported that:

We were out at Camp Lowell Wednesday and found about forty men, citizens and soldiers, employed putting a roof on the commanding officer's building and the guard-house. These buildings are well constructed as far as they have gone. Gen. Carr and Maj. Furey are much embarrassed in prosecuting the work, by not having any means to work with. They have not even transportation and of course until they are better supplied, but little progress can be hoped for. In exploring the country a few days since for the purpose of laying off a military reserve, they discovered a few miles north of the post a beautiful little lake of pure water, filled with fish” (Arizona Citizen 1873b).

The project area was mapped by the Surveyor General's Office (later the Government Land Office), and a map was completed on 31 December 1873. At that time, the northeast quarter of Section 35 had some trees, a house near the northwestern corner, and a small canal running off Rillito Creek (or perhaps a road; the map is not clear). The commanding officer's building at Camp Lowell is

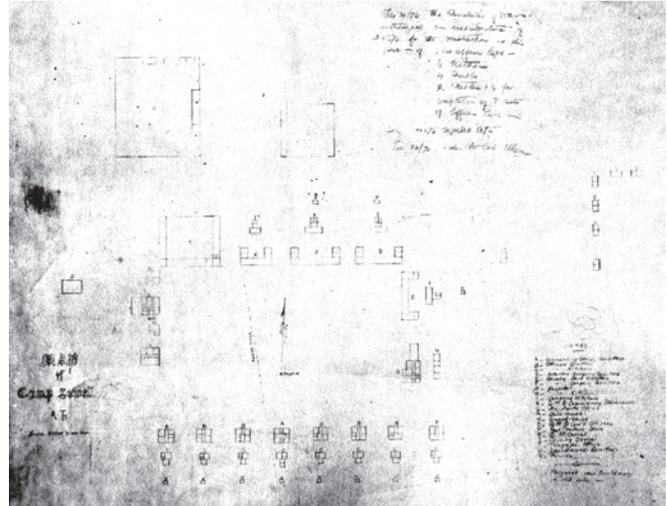


Figure 10: 1876 map of Fort Lowell

depicted on the map, suggesting it was completed at that time.

Work paused in 1874, when construction funds were withheld. Soldiers were also out following raiding Apaches. In December, the commander of the fort went to Prescott, and his complaints led to the provision of funding to complete the fort (Peterson 1976:8-9). Initial construction continued into 1875.

Building Camp Lowell

The building of this camp has been in slow progress for about two years. We learn that only about \$19,000 have been expended so far in the work, and that it will require \$10,000 more to complete the post in proper shape. We are pleased to learn by this dispatch of the present advancement of the work:

CAMP LOWELL, June 22. - The construction of Camp Lowell is now nearly completed. In all, there are seven sets of officers quarters, two sets of quarters for infantry and one for cavalry companies, and one for regimental band, besides suitable and well built offices for the post adjutant and quartermaster, also guard house, store-houses, corrals, etc. Considering the limited means for

Fort Lowell (1873-1891)

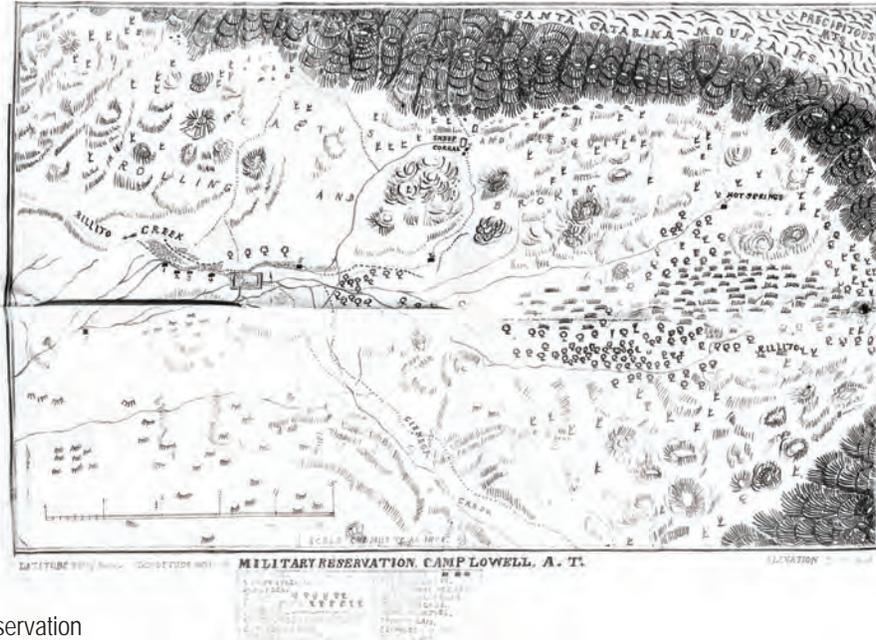


Figure 11: Military Reservation

its construction and the lack of their seasonable availability, the post has been well and cheaply built, and is now among the best of the Territory... (Arizona Citizen 1875a).

In August it was reported that:

Col. John N. Andrews, Eighth Infantry, showed us around during our short stay, and we were surprised to see the many good buildings, and the air of comfort on every hand...The quarters of the officers and men are substantially finished, although much is to be done in the way of putting the grounds around including the parade ground, in nice order... (Arizona Citizen, 1875b).

At completion, the fort was centered around a large parade ground with a flagstaff in its center south side. The seven officer's quarters were located along the southern edge with a double row of cottonwood trees along their front, known as Officer's Row. In April 1885 it was reported that the officer's quarters were shaded and screened by "a beautiful paling of living ocotillos" (Mearns 1907:109). The commanding officer's quarters was in the center, with three officer's quarters on each side. Adobe walls enclosed the backyards of each

of the houses, and a picket fence framed their front (Peterson 1976:13). A map drafted in 1876 shows the layout of the post. A clearer version was re-drawn for publication in 1976, some errors were introduced in this version.

On the western side of the parade ground were the adjutant's office, bake house, guardhouse, quartermaster and commissary offices, and the post trader's store. The quartermaster and commissary's warehouse, quartermaster corral, blacksmith shop, cavalry band headquarters, cavalry company quarters, infantry company quarters, three company kitchens, cavalry corral, and at least two privies were on the northern side of the parade ground. The infantry company quarters, a kitchen, and a privy, the hospital and its kitchen, and at least eight married non-commissioned officer's quarters were on the eastern side of the parade ground (Peterson 1976). A telegraph office was also present, but is not depicted on the 1876 map (AHS photo 12880). Additional wood structures—barracks, sheds, and equipment buildings—were constructed in the mid-1880s, when the fort was at full capacity (Peterson 1976:15). Two additional non-commissioned officer's quarters were built along the eastern side of Officer's Row in the late

Fort Lowell (1873-1891)

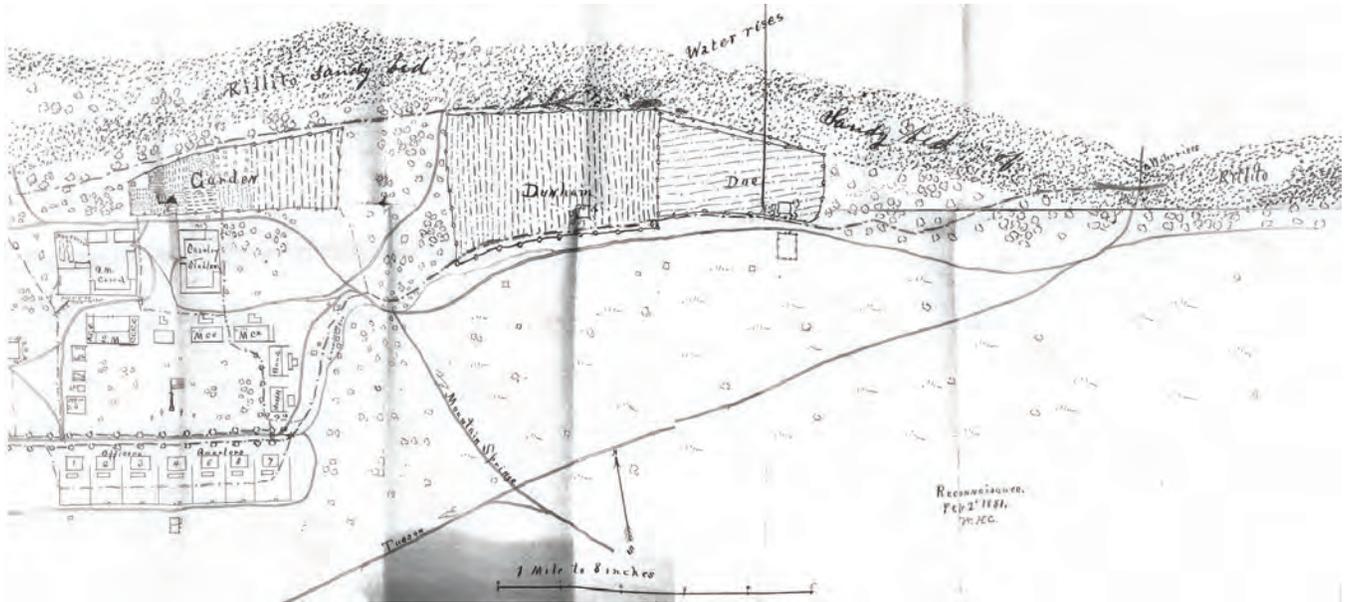


Figure 12: 1881 Map

1880s.

The original buildings at the fort had adobe brick walls. Pine beams brought from the Santa Catalina Mountains were laid across the tops of the walls. Over these beams, saguaro ribs were positioned, and earth was packed on top. During the rainy seasons of 1876, 1877, and 1878 the roofs leaked, and earth and mud fell into the rooms (Weaver 1947:73). Tin roofs were not installed until sometime after mid-1879. Porches and screen doors were added in 1882; the milled lumber and other materials required were easier to transport after the 1880 railroad arrival in Tucson. Overall, little money was spent for maintenance, repair, and new construction at the fort (Peterson 1976:10).

An average of 10 officers and 140 enlisted men were stationed at Fort Lowell, with the number of men increasing in 1883, from one company to three companies, due to the increased military efforts against the Apache (Schuler 2000; Weaver 1947:76). The highest number of officers stationed at one time at the fort was 18. There was usually more than one officer living in each of the seven officer's quarters at the post. The number of rooms allotted varied by rank, with a lieutenant receiving

one room, a captain two rooms, a major three rooms, and a colonel four rooms (David Faust, personal communication 2007). Enlisted men lived in barracks along the northern side of the parade ground. Despite the physical separation of Tucson and the post, soldiers and civilians frequently traveled between the two, often participating in social and sporting events.

During the 1870s and 1880s, the post was a supply depot for other camps and forts in Arizona. The Fort Lowell military reservation was increased in size in the early 1880s to ensure a good supply of water. Seventeen ranches were expropriated by the government, with the owners complaining that they were not fully compensated. During this process three maps were prepared by fort employees, showing the location of ranches and water sources (NARA Record Group 49, Division K, Boxes 13 and 14).

Many of the people living on the reservation refused to leave. A list prepared in June 1887 contains 56 household with a total of 55 men, 58 woman, and 157 children. The majority was Mexican-Americans, but a few European-Americans, an African-American woman, and

Fort Lowell (1873-1891)



Figure 13: Fort Lowell, Parade Ground looking south

several Chinese men were counted (NARA Record Group 49, Division K, Box 14).

Soldiers at the post participated in sorties against hostile Native Americans, most commonly, various groups of Apaches. Camp Lowell officially became Fort Lowell in 1879. The mid-1880s saw the final subjugation of the Apaches, with the surrender of Geronimo in 1886. As Apache issues decreased in the next few years, the U.S. Army began to focus its efforts along the U.S.-Mexico border. It became increasingly apparent that the number of military posts in Arizona could be reduced. The decision was made to abandon Fort Lowell, and, on 14 February 1891, the last soldiers left the fort. In April 1891, the fort was transferred to the Department of the Interior to be sold as surplus property (Peterson 1976:14-17).

Fort Lowell After the 1891 Abandonment

The removal of soldiers from the fort probably led to the systematic salvaging of furniture, ordinance, and other useful items by the United States military. Some of the building materials were apparently stripped from structures and taken to Fort Yuma for reuse (David Faust, personal communication 2007). Immediately after the abandonment, various individuals made claims for land taken by the government in 1886 to enlarge the military reservation. Among these were Mary A. Miller, the widow of Edwin Miller, who had purchased the land from William Kirkland in the early 1870s, and the heirs of J. P. Fuller, who had purchased Agua Caliente in 1873 (NARA Record Group 49, Division K, Boxes 13 and 14).

A caretaker, W. C. Dunn, was appointed to watch over the abandoned fort, apparently in 1892. William Crawford Dunn, born in Virginia in 1836, was a former soldier in Company B of the 3rd US Cavalry and had been wounded in the recently concluded Indian wars (NARA Record Group 49, Division K, Boxes 13 and 14; William C. Dunn Civil War Pension Index, online at www.ancestry.com).

Dunn sent a series of letters to the Government Land Office detailing happenings on the fort reservation. In December 1892, the six laundresses quarters were reported to be useless, other buildings were in good repair although some needed roof work, and that the Adjutant's Office was in use as a schoolhouse. In February 1893 a military officer asked to salvage the flagpole for re-use elsewhere. In June, he noted that Dr. C. N. Goff wanted to occupy two of the buildings and that David Dunham had dug a well on fort land.

In one letter on 8 November 1893 to the commissioner of the Government Land Office, Dunn reported:

“Domingo Valencia unlawfully occupying government buildings and a corral, I notified

him to leave, but he pays no attention to the order, he says for me to put him out if I have the authority. He has set at defiance all my authority, and by example and advise are citing others of his nationality to do the same, if he is allowed to remain I cannot be responsible, for my own life is not secure, I could be murdered and the murderer across the line into Mexico before the authorities in Tucson would know anything about it. This man is not a citizen of the US Government, consequently I must respectfully request his removal...” (NARA Record Group 49, Division K, Box 13). *Mr. Valencia moved to San Xavier afterward and worked as a farmer, dying from a heart attack there in 1934 (Domingo Valencia Standard Certificate of Death, online at <http://genealogy.az.gov>).*

Interest in obtaining the land of Fort Lowell arose in the mid-1890s. Henry Ransom, an African-American resident of Tucson, attempted to claim 160 acres of the fort in 1895 (apparently unsuccessfully) (Arizona Daily Citizen 1895). Many others were successful in obtaining land within the greater Fort Lowell reservation including George Doe, Chesley Aldrich, Bradford Daily, Alexander Wilkins, Carmen Romero, Jesus Salazar, and Tomas Gonzales (NARA Record Group 49, Division K, Box 13). The main core of the fort remained within federal ownership.

In 1896, the Arizona Daily Citizen reported that the Department of the Interior, General Land Office, had authorized the sale of buildings and the land for the NE ¼ of NE ¼ and the SE ¼ of NE ¼ of Section 35 (west of modern-day Craycroft Road). The buildings located on the NW ¼ of SW ¼ of Section 36 were also to be sold, but the land was to be kept for school purposes, with the buildings to be removed, or the land leased by the purchaser (Arizona Daily Citizen 1896).

An auction was held on 18 November 1896, and many of the buildings were sold. Records held at the National Archives in Washington, D.C.,

Fort Lowell After the 1891 Abandonment

include a list of these buildings and who purchased them (NARA Record Group 49, Division K, Box 13). The auction raised a total of \$1,080. The purchasers stripped the windows, doors, and their frames; beams, tin roofing, and wood flooring. Many items were later incorporated the materials into homes built in downtown Tucson (Fort Lowell ephemeral file, AHS). Afterwards, some buildings became the residences of local Mexican-American families, although little is known about these individuals. Other buildings decayed due to neglect and vandalism.



Figure 14: Fort Lowell, 1904

Fort Lowell's Contribution to Natural History

The fort area was known for its mammals, birds, reptiles, insects, and plants and beginning as early as 1870 was visited by naturalists on collecting expeditions. Dr. Edgar Mearns, who collected at the fort in 1885 and 1893, reported that the fort was a “well known collecting ground of Messrs. Bendire, Henshaw, Nelson, F. Stephens, Brown, Scott and Price” (Mearns 1907:110). Mearns sent the Smithsonian an example of the Common Side-blotched lizard in a jar of alcohol. H. W. Henshaw and J. H. Rutter sent specimens of two species of horned lizard to the Smithsonian in 1874 (Government Printing Office 1900:311, 414, 436). Herbert Brown sent information on hummingbirds at Fort Lowell to the Smithsonian in 1889-1890 (Government Printing Office 1891:333). Brown (1848-1913) was a Tucson resident who befriended ornithologist E. W. Nelson in 1883 and afterwards became known as the local bird expert, corresponding with and sending specimens to professional ornithologists, as well as identifying as least one previously unknown bird species, *Colinus ridgwayi*, the masked bob-white quail (Brown 1892; Nelson 1913; Scott 1888). Insects were collected at the fort in 1891 by Professor F. A. Gulley of the University of Arizona and A. B. Cordley (University of Arizona 1892:47).

In 1893 and 1894, William Wightman Price, a student from Stanford University, collected at least 700 specimens of bird skins, eggs, nests, and mammals in the area around the fort (*Tombstone Epitaph Prospector*, 1 May 1894). At least 14 different species of reptiles were among these collections, including an example of a box turtle (California Academy of Sciences 1897). He was assisted in 1894 by B. C. Condit, M. P. Anderson, and L. H. Miller (Price 1895:161).

The type plant of *Bouteloua micrantha*, a type of grama grass, was collected at Fort Lowell (New York Botanical Garden 1909:620). The type specimens for Miller's Skunk (*Mephitis milleri*, collected 1897) and the White-throated Wood Rat

(*Neotoma intermedia albigula*, collected 1894) were also found at Fort Lowell (Elliot 1905:217, 410; Miller and Rehn 1901:105, 214).

In the late nineteenth and early twentieth centuries John Gill Lemmon (1832-1908), a Civil War veteran and published plant explorer, along with his wife Sara Allen Plummer Lemmon collected significant amounts of information and specimens from the Fort Lowell Park area. Newly documented specimen in the Lemmon's collection found in 1880 at or near Camp Lowell include: *Coreocarpus arizonicus*, *Laphamia lemmoni*, and *Laphamia lemmoni* var. *pedata*. The Lemmon's impact in and around Tucson was such that they became the namesake of highest peak in the region, Mount Lemmon (Crosswhite, 1979).

Specimens collected at Fort Lowell were deposited in the collections of the University of Arizona, Smithsonian Institution, Stanford University, Harvard University, the Field Museum in Chicago (Elliot 1905), and the British Museum in London (Hargit 1890:17).

The wildlife drew hunters as well as naturalists. In October 1904, Tom Herndon and William Dunn were reported to have shot 32 ducks at Fort Lowell, including mallard, teal, and canvasbacks (Tucson Citizen, 29 October 1904). In August 1911, Dr. C. A. Schrader and K. L. Hart shot about 100 mourning doves there (Tucson Citizen, 12 August 1911).

Farming and Ranching

A major reason for the presence of so much wildlife was the Rillito, a creek that flowed year-round in the 19th century. As early as the 1860s ranchers and farmers were moving to the area along the creek to raise crops and herd cattle and sheep. An 1867 newspaper article noted that three ranches, owned by G. H. Oury, Dr. Goodwin, and Peter Brady, were present along the Rillito, growing corn, melons, and other vegetables. The ranch of Mr. Oury had an acequia constructed on it to bring water to fields (Arizona Weekly Journal Miner, 14 September 1867).

Documents at the National Archives describe the removal of many of these ranchers and farmers in 1886 as Fort Lowell expanded. Many individuals felt that they had not received proper compensation for their land and improvements. After the fort was abandoned in 1891, these lands became available and were purchased by local farmers and ranchers.

In June 1900, Robert Cole reported that he was raising 100,000 melons at Fort Lowell and was expecting his second crop of strawberries to be ready for the market soon (Tucson Citizen, 19 June 1900). The same month saw Ed Grindell raising Belgian hares as well, but he was also experimenting with white leghorn chickens

(Tucson Citizen, 27 June 1900). The market for Belgian hares died out by 1903, apparently they were considered a food fad, similar to the consumption of oysters in the 1880s. Cole and other farmers focused on raising “garden truck”-onions, squash, cabbage, strawberries, cantaloupes, and watermelons (Tucson Citizen, 9 October 1903). Mr. Cole owned several portions of Fort Lowell, including the Fort Lowell-Adkins Steel property, in the early 1900s.

Farmers dug their own irrigation ditches: “water rights on the agricultural land along the Rillito are obtained by the ranchers according to methods used when the valleys were first settled. The rancher find a source of supply in the river sufficient to irrigate the land he owns, and then proceeds to dig his ditch to carry the water to his land, in some instances ranchers have to construct a ditch five miles in length. The rancher can irrigate his land whenever he chooses to, and he pays nothing for the water” (Weekly Republican, 19 April 1900).

The 1880 arrival of the railroad brought many overseas Chinese to Tucson. They helped construct the railroad berm and tracks and about 400 men chose to remain behind, seeking new

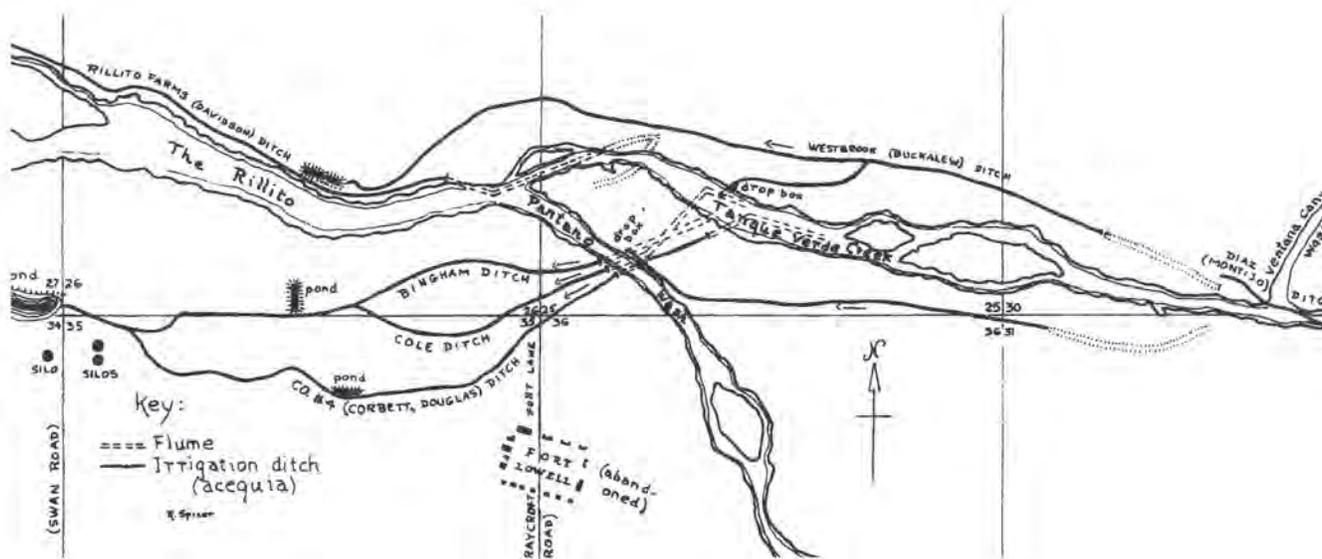


Figure 15: Irrigation ditches located in the Fort Lowell area

Farming and Ranching

employment opportunities. A small number had settled at Fort Lowell, working as personal servants for members of the military or as produce gardeners. After the fort closed, a small number of Chinese farmers remained in the area (Thiel 1997a).

The Chinese immigrants suffered discrimination with the Chinese Exclusion Acts of 1882 and 1892. They were required to carry identification papers and could be deported if forged documents were found. The local Chinese inspector occasionally raided the fields along the Rillito, searching for men who were in the United States illegally. In one case, Inspector B. F. Jossey pursued Lim Cheung, who fled into a water ditch near Fort Lowell and was nearly drowned (Tucson Citizen, 8 March 1900). In 1915, a group of Chinese farmers at Fort Lowell confronted a Mexican man, called “No Nose, from the horrible deformity of his face,” and shot him as he was trying to steal potatoes. The thief had an 18-inch-long knife, half of a sack of potatoes, and two empty sacks. He had apparently been stealing potatoes for several nights, and died from his wounds (Tucson Citizen, 9 July 1915).

The area west of the fort was the Mormon settlement of Binghampton, settled by members of the Farr family in December 1909 (http://parentseyes.arizona.edu/studentprojects/binghampton/where_is_binghampton.htm). By the middle of 1910, Binghampton farmers were harvesting watermelon and cantaloupe, and growing alfalfa and other produce (Tucson Citizen, 12 August 1910). In 1911, community members were building a large dairy barn, growing hay and alfalfa, and planting orchards of peaches, apples, apricots, and plums, along with crops of strawberries and watermelons (Tucson Citizen, 10 June 1911).

Cadets and Boy Scouts

The University of Arizona started a military cadet program in 1896, continuing it into the early 20th century. The battalion was open to male students, who wore summer or winter uniforms to class and practiced military exercises. The battalion often used Fort Lowell as a training ground. In 1902 it was reported that: “The university battalion has received 8,000 rounds of ammunition from the government and before the school closes for the year, the battalion will go onto camp at Fort Lowell. At that time they will hold target practice every day and go through the regular army camp life under the direction of Captain Cole” (Tucson Citizen, 17 April 1902). The cadets marched out to Fort Lowell in early May “They intend to go through the whole routine, and a mess wagon will accompany them. All the cadets have orders to attend” (Tucson Citizen, 1 May 1902). The cadet program continued to march out to Fort Lowell, traveling back and forth from the University to Fort Lowell twice in the spring of 1920 (Tucson Citizen, 9 April 1920).

The Boy Scouts of Tucson also marched out to the fort for camping adventures. In April 1912, the newly formed troop camped out just to the north of the fort. The next day, the “program for the day

is a thorough search of the ruins for an old cannon seen there several years ago and for arrow heads and other relics of the days when this was one of the outposts of the frontier.” The boys spent a week at the fort (Tucson Citizen, 3 April 1912). They were led by a pair of University of Arizona cadets, who had practical experience in camping (Tucson Citizen, 2 April 1912). Another group camped at the fort for several days in April 1914 (Tucson Citizen, 11 April 1914).

The Boy Scouts would continue to have a presence at the fort into the 1950s. George Babbitt, a former postmaster for Flagstaff, had purchased the east half of Fort Lowell from the State of Arizona. The Arizona State Museum had been caring for the property since the 1930s, including doing some stabilization work on the hospital ruins. In 1941, the president of the University of Arizona decided to end that involvement. Babbitt purchased the land for \$9,000. He later returned the land to the state and the Boy Scouts purchased it for \$220 in September 1945 (Tucson Citizen, 11 September 1945).

The Boy Scouts would go on to build a protective roof over part of the hospital in the mid-1950s.

Fort Lowell Area Sanitariums

The early 1900s also saw the opening of at least three sanitariums in and around Fort Lowell. Dollie Cate operated one in Officers Quarters 1 through 3 on what was later known as the Fort Lowell-Adkins Steel property, beginning in 1908 (Thiel et al. 2008).

Mrs. Nellie Swan operated another, in the old John “Pie” Allen post sutler’s store, on the north side of Fort Lowell Road. Her place was called the Swan Ranch and was in operation as early as 1916 (Tucson Citizen, 5 September 1916). In December 1917, Mrs. A. V. Grossetta chaperoned a group of young people who sang Christmas carols to convalescents staying at the Swan and Cate ranches in 1917 (Tucson Citizen, 27 December 1917).

In November 1918, the Citizen reported that: “life is pretty dull for the patients at the ranch sanitariums conducted by Mrs. Swan and Mrs. Cate respectively. The patients are young men, most of whom have not resided here long enough for the strangeness and loneliness to quite wear off. Their means are usually limited and they are somewhat put to it for diversion. ‘The boys are get tired of reading magazine and long for the greater satisfaction of good books,’ says Mr. Clark, speaking of the matter. ‘I am able to provide them with recent magazines but when it comes to books, I must invite the public to share with me in this kindly and neighborly service. There ought to be some private libraries which would like to contribute from the wealth of their cases to starting new shelves for the sick at Fort Lowell” (Tucson Citizen, 20 November 1918).

Sanitarium patients hoped for a cure from whatever health problem they had. Many had tuberculosis, and some died from the disease while convalescing at Fort Lowell, including Ernest Bunnell, a 17-year-old in 1911, Chris Steppish in 1915, and Earl Palmatier, a 32-year-old who died at Mrs. Swan’s Fort Lowell Ranch from tuberculosis in 1919

(Tucson Citizen, 9 October 1911; 18 September 1915, 24 January 1919; A. Earle Palmatier, Original Certificate of Death, online at <http://genealogy.az.gov>).

Mrs. Swan sold her sanitarium, then called the Fort Lowell Health Resort, to members of the St. John family in 1925 (Pima County DRE 103:484), and the operation of the sanitarium ceased sometime in the next few years.

Dollie Cate operated a sanitarium from 1908 to 1928, taking care of tubercular patients in Officers Quarters 1, 2, and 3 with the help of two nieces. She was born in 1871 in Tennessee and had moved to Tucson with her husband Dixie in search for a cure for his tuberculosis. Unfortunately, he died in 1908. Mrs. Cate’s sold her sanitarium to Harvey and Fronia Adkins in February 1928. The Adkins had moved to Tucson to try to cure their daughter Minerva’s tuberculosis, but like Dixie Cate, Minerva Adkins died from the disease in 1927 (Thiel et al. 2008). The Adkins operated a rest home in the Officers Quarters into the 1940s.

A proposal to establish a tuberculosis sanitarium within the ruins of Fort Lowell, east of Craycroft road, was made in 1902 but did not come to fruition (Tucson Citizen, 3 April 1902).

The Ghosts of Fort Lowell, Tourism, and Early Interest in Preservation

The early 1900s saw several people claiming to have seen a ghost in the ruins of the fort. Mexican residents of the area reported seeing a ghost wandering about in December 1900 through April 1901. In one case, the form of a man appeared in smoke from a fireplace and in another case a woman saw a ghost climb a rope out of a well and float over the ruins (Arizona Daily Citizen, 14 December 1900, 9 January 1901, 13 April 1901).

The ruins of the fort became a popular spot for visitors. The decaying walls were a big draw, and were also a convenient place to hang strings of chili peppers, the “entire courtyard surrounding the barracks was festooned with these scarlet garlands, and the sunlight made this picture dazzling” (Anonymous 1910:221). Many picnickers and campers traveled from Tucson to spend time in the fort, posing for pictures and looking for mementoes (Tucson Citizen, 21 July 1917, 2 March 1920). Not everyone was interested in seeing the ruins. A Major Brown, who was stationed at the fort in

1890, visited Tucson in 1912 and told a newspaper reporter that “I like to think of Fort Lowell as it used to be, and I don’t care to see it in ruins” (Tucson Citizen, 12 April 1912).

Several silent movies were filmed within the ruins. In December 1917, Douglas Fairbanks arrived in Tucson and motored out to Fort Lowell for a day of filming. Allan Dwan directed the film, “Headin’ South,” with Frank Campeau playing the movie’s villain. The plot consisted of Fairbanks’ character as a Canadian infiltrating a band of villains, rescuing some women in distress, and capturing the head villain before returning to Canada with his new girlfriend (Tucson Citizen, 30 December 1917; <http://www.tcm.com/tcmdb/title.jsp?stid=497853>). The movie was released in February 1918.

In May 1919, the film “Chasing Rainbows” (also called “Sadie”) was partially filmed at the fort. This silent movie starred Gladys Brockwell



Figure 16: Photograph of Fort Lowell Officer’s Row, with officer’s quarters no. 1 on the far right

The Ghosts of Fort Lowell, Tourism, and Early Interest in Preservation

and William Scott and told the story of Sadie, a waitress who discovers that her boyfriend was married, moved to the desert, falls in love with her boss, and after some complications, marries him (Tucson Citizen, 24 May 1919). The film was released in August 1919 and is still extant (<http://www.tcm.com/tcmdb/title.jsp?stid=493425>).

Interest in the historical nature of the site began in 1918, when the Chamber of Commerce considered the placement of a sign at the fort explaining its significance (Tucson Citizen, 14 August 1918). The first preservation efforts took place in the late 1920s. The Tucson Chamber of Commerce had a historical commission which passed a resolution asking the State Legislature to pass a bill establishing the fort as a State Historic Monument, with the Arizona State Museum to manage the monument. On 15 March 1929, the State Senate passed Senate Bill 100, which withdrew 40 acres of State land on which the majority of the fort stood, from sale or homestead entry. The land was placed in trust for the State of Arizona with the Arizona State Museum supervising its use (City of Tucson Parks & Recreation Department 1985).

The Fort Lowell Cemetery

Recent excavations at the National Cemetery in downtown Tucson, conducted by Statistical Research, Inc., uncovered portions of the military cemetery where soldiers from Camp Lowell and Fort Lowell were buried from 1862 until 1881 (O'Mack 2006:117). A new cemetery was established, probably in 1881, to the east of Fort Lowell. In March 1883, an estimate was provided to fence and place gates around this cemetery (Fort Lowell, MS 266, folder 2, AHS/SAD).

First Lieutenant William Carter prepared the 1883 inspection report for Fort Lowell and wrote: "I wish to call attention to the discreditable condition of the soldiers graves in the town of Tucson, seven miles from this Post. The fence has been torn down by the City authorities and a street run through the cemetery. The stones and headboards are disappearing and the graves will soon disappear, under the desecrating hands of the Tucson rabble, who seem to feel licensed by the action of the authorities. It is recommended that some action be taken to have the graves of men who died in uniform protected, or else remove the remains to another and more fitting resting place" ("Annual Report of Public Buildings [1883]," Fort Lowell, MS 266, folder 2, AHS/SAD).

In the mid-1880s, seventy-four burials were removed from the National Cemetery and re-interred at this cemetery (O'Mack 2006:21-26). This cemetery was in use until the fort was abandoned in 1891.

A proposal for disinterment was published in area newspapers in January 1892, with 19 February 1892 given as the deadline for submittals. The bids were for "disinterring, disinfecting, boxing and removing remains of soldiers, their families and others, together with the headstones...and delivering them at the nearest railroad station" (Santa Fe Daily New Mexican, 19 January 1892).

David Dunham, a farmer living near the fort, was

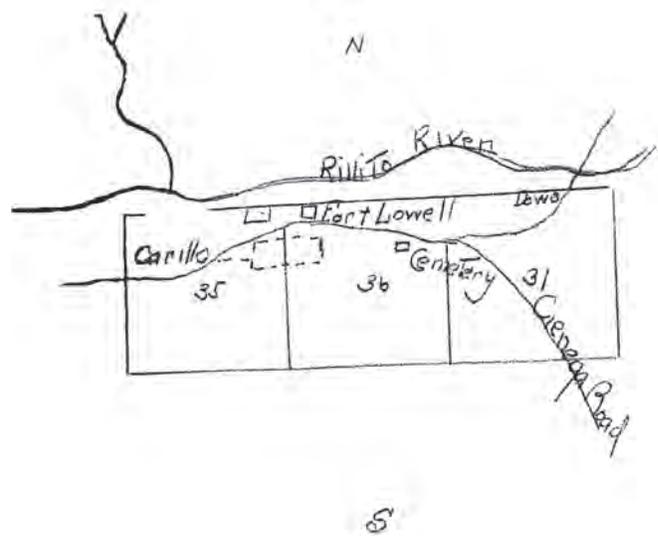


Figure 17: Fort Lowell Cemetery

the lowest bidder (Arizona Weekly Journal-Miner, 9 March 1892). Removal of bodies began in May. A newspaper reported:

A ghastly sight met the eyes yesterday of parties engaged in removing the remains of a soldier from Fort Lowell to the National Cemetery. The evidence were plain that James Deviney, a member of "L" Troop, Fourth Cavalry, who died four years ago, was buried alive. The head of the body was found turned over to the left and the right arm lying straight down by the side. The left arm was thrown over the left thigh and the lower limbs were crossing each other. From the appearance and position of the lower jaw and portions of the face which was yet intact, it is clear that animation returned after burial and that he subsequently died in great agony (Philadelphia Inquirer, 30 May 1892).

Captain Roger Bryan supervised the removal from May through July 1892 (Bryan 1914:99). Eighty burials were disinterred and taken to the San Francisco National Cemetery (including west side burials 1275-1296, 1053-1055, 1059, 1063, and 1366-1387). Some burials, including those of civilians, were left in place (Edith C. Tompkins

The Fort Lowell Cemetery

collection, MS 790, AHS/SAD).

The exact location of the Fort Lowell Cemetery is not known. A map in the Edith Tompkins manuscript collection suggests it was located on the southern side of “Cienaga Road” southeast of the fort in the northeast quarter of Section 36 (MS 790, AHS/SAD). The cemetery was relocated on private property in 1952, when members of the local Post 549 of the Veteran’s of Foreign War received information from the U.S. Army Command. A photograph in a local newspaper clearly shows grave depressions and the base of a grave marker (Arizona Daily Star 1952). It is believed that houses have been built on the location.

Fort Lowell and Craycroft Roads

Two roads bisect the city-owned properties at Fort Lowell. East Fort Lowell Road runs east-west between the Fort Lowell-Adkins Steel property and the Quartermaster and Commissary Storehouse property. The 60-ft-wide right-of-way for this road was formally established by the Pima County Engineer on 25 September 1916 (Pima County Misc. Records, 14:581).

North Craycroft Road runs north-south along the dividing line between Sections 35 and 36. Originally the road terminated at the fort, but it was extended through to the north in 1929 (Pima County Roads, 1:151). The 1980s saw the widening of Craycroft and the replacement and installation of utilities beneath the street and adjacent sidewalk (Dart 1988; Huntington 1982).

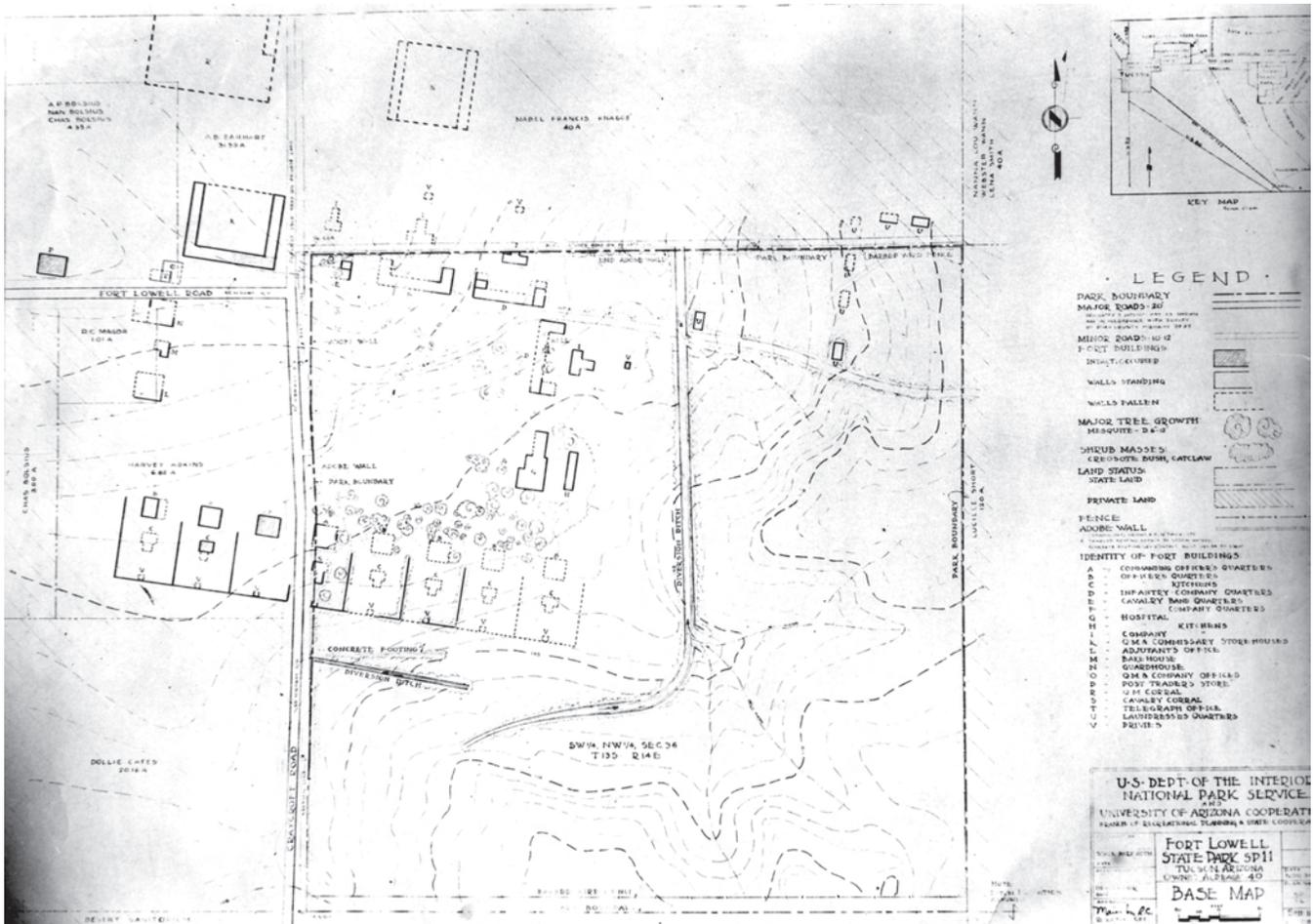


Figure 18: A 1937 map of Fort Lowell, drafted by Charles Maguire

Adkins Steel, Bolsius Apartments, and Donaldson / Hardy Property

Portions of Fort Lowell were sold to private citizens beginning in 1896. During the 20th century these properties saw modern usage.

The Adkins family had purchased the southwestern portion of the fort from Dollie Cate in 1928. Initially they operated a rest home but in the 1930s son Marion Adkins started the Adkins Trucking and Steel Manufacturing Company. The family built two small adobe homes, a concrete-clad manufacturing barn, a windmill, and several other buildings on the property. Steel tank production lasted up into the 2000s (Thiel et al. 2008).

Charles, Peter, and Nan Bolsius came to Tucson from New Mexico and California and worked to restore the former John “Pie” Allen Sutler’s Store into a house in the 1930s. Beginning in the 1940s they did the same to the Quartermaster and Commissary Storehouse, rebuilding walls from the foundations up. Hard-carved doors, lintels, and cupboards decorate the apartments they created within the ruins (Thiel 1997b).

John and Janet Donaldson purchased the former Cavalry Corral portion of the fort in 1947. They built a house on the property and lived there until 1978. They sold the property to Craig and Susan Hardy, who lived there until they sold the land to the City of Tucson in 1984. The house was used by several non-profit groups until the early 1990s and has stood vacant since that time (Thiel 1994).

Fort Lowell Park

Pima County purchased the property containing most of historic Fort Lowell on 7 August 1957, with deeds describing it as the east 500 ft and the south 760 ft of the Southwest ¼ of the Northwest ¼ of Section 36 (Pima County Daily Docket 1163:155). They reportedly paid the Catalina Scouts \$50,000. The county then established the Fort Lowell Historical and Recreational Area (Fort Lowell ephemeral file, 1950s, AHS). The County had already closed the park in July 1957 due to increased vandalism, with adobe walls being knocked over (Tucson Citizen, 1 August 1957).

Pima County soon prepared plans to develop the park for recreation. Initial plans called for replanting the cottonwood trees on Officer's Row, construction of a museum, and creation of picnic areas (Tucson Citizen, 1 August 1957). These plans were scrapped and new plans drawn up that included destruction of much of the fort area for athletic fields. Concerned citizens organized and presented an alternate plan to the county. A committee was established in 1960 to plan reconstruction of the commanding officer's quarters and its kitchen. Archaeologist Al Johnson spent 16 days excavating these structures, privies, and a trash dump (Arizona Daily Star 1960; MS 265, AHS). The cost of reconstruction was calculated to be \$40,000. The Junior League donated \$10,000, Pima County \$28,000, the Sheriff's Posse of Pima County \$1,500, and the Civil War Centennial Committee \$150. Architect William Goldblatt prepared plans for the new buildings, including visiting a home on N. Euclid Avenue that incorporated an original door from an officer's quarters. Construction began in 1962, and the dedication ceremony was held on Veteran's Day, 11 November 1963 (Arizona Daily Star, 12 November 1963; Goldblatt 1964; Tucson Citizen, 12 November 1963; Dedication brochure on file at the Arizona Historical Society). About 700 people attended the opening ceremony for the new museum, with George Babbitt serving as keynote speaker (Arizona Daily Star, 12 November 1963).

The reconstructed officer's quarters and kitchen were built with a concrete block core with unfired adobe brick veneer. Sahuaro ribs, oak, and pine logs were obtained from the region. Milled lumber, including redwood, was imported, Fired bricks and wall caps were locally made (Goldblatt 1964).

Concurrently, Pima County began development of other portions of the park. A contract for site grading and the placement and compaction of 24,000 cubic yards of fill was let in 1961 (Tucson Citizen, 9 May 1961). A deep well turbine pump was installed that same year, probably for watering the area to promote grass growth (Tucson Citizen, 14 June 1961). A contract to install sewer lines within the park was given to the E. P. Huniker Construction Company in May 1963 (Tucson Citizen, 1 May 1963). Craycroft and Glenn Roads, adjacent to the park, were proposed for paving and the installation of curbs and sewers in 1964, with the work completed the following year. By 1963, an estimated \$55,000 had been spent on the park (Tucson Citizen, 14 June 1963, 18 February 1964, 5 February 1965).

A swimming pool, a wading pool, and bath house were built in 1967, four years after local residents petitioned the county for this improvement (Tucson Citizen, 14 June 1963; 21 April 1967). The existing sewers were not big enough to handle the pool overflow, so a small pond was constructed on the park to hold this water. Several ramadas were also constructed for use by picnickers and people attending sporting events. The Little League had run an electrical line to one ramada for an automatic pitching machine, which was judged to be a public safety hazard. The Little League also complained about the condition of the baseball field (Tucson Citizen, 1 June 1967). The construction of the retaining pond proved difficult. A sand layer was discovered and a vinyl liner was required to keep the water in place (Tucson Citizen, 4 December 1967). By 1970, the park

Fort Lowell Park

had ramadas, a major baseball field, six Pee Wee League fields, playground equipment, a museum, a swimming pool, and a wading pool (Tucson Citizen, 17 June 1970). An archery range was to be installed in the northeast corner of the park in 1971 (Tucson Citizen, 19 August 1971). Tennis courts were in place by November 1972 (Tucson Citizen, 27 November 1972). Soccer was being played at the park by November 1974 (Tucson Citizen, 8 November 1974). Additional baseball fields and a racquetball court were to be constructed in 1975, leading one Tucson resident to complain that the park was favoring recreation over history and archaeology (Tucson Citizen, 24 December 1974).

A variety of cultural and sports events took place within the park. In April 1965, a Pioneer Jubilee was held that included a Mormon chuck wagon supper and a “pageant honoring the American pioneer. Music and dancing” (Tucson Citizen, 10 April 1965). Arts and crafts fairs were held at the park in the late 1960s, with items made in a Crafts Center at the park offered for sale. Among the crafts taught at the center were decoupage, fabric painting, porcelain painting, and ceramics (Tucson Citizen, 17 May 1969). Swimming competitions were also held at the newly completed pool in the late 1960s (Tucson Citizen, 22 July 1969). Other events included Cavalry Field Days, Easter Egg hunts, potluck suppers, wedding receptions, family reunions, and meetings. In March 1973, the 100th anniversary of the establishment of the fort at the location was marked by a large celebration, including a pageant “If Adobes Could Talk.” The pageant had a variety of vignettes including “Portrayal of Papago Culture,” “Tucson-the Mexican Village,” “Won Toi’s Celestial Restaurant,” and “Fort Lowell in Summer” (Tucson Citizen, 10 March 1973; pageant program, Fort Lowell ephemeral file, AHS). The Tierra del Sol Garden Club planted an Aleppo pine in the park for Arbor Day in 1974, the third tree the group had placed in the park (Tucson Citizen, 8 February 1974). A Senior Now center was present in 1977,

serving hot meals to senior citizens (Tucson Citizen, 20 September 1977).

In 1971, the publication of Tucson’s Historic Districts noted that Fort Lowell was one of five remaining historic areas the city should consider as possible historic districts. Three years later, local residents and property owners petitioned the Pima County Planning and Zoning Commission to make Fort Lowell a historic zone. The spring of 1976 saw planning students from the University of Arizona canvassing the neighborhood to determine which buildings and structures might be considered historic (Bieg et al. 1976:3-4). The Fort Lowell Multiple Resource Area was nominated to the National Register of Historic Places in 1977, and was listed on the National Register on 10 April 1978 (National Register form). Inventory forms created during this process are housed at AHS (MS 265, binder in file).

The recreated officer’s quarters within the park suffered major damage in a storm in 1982. The following year saw the restoration of the building and the adjacent kitchen (Arizona Daily Star, 12 August 2008).

The City of Tucson acquired the park from Pima County on 4 October 1984 (Pima County DRE 7387:553). A Master Plan was prepared the following year that discussed the historic and archaeological character of Fort Lowell, existing conditions, citizen participation, project objectives, and a plan (City of Tucson parks & Recreation Department 1985). The City went on to acquire the Donaldson/Hardy property in 1984, the Quartermaster and Commissary Storehouse/Bolsius property in 2002, and the Fort Lowell-Adkins Steel property in 2006. A new master planning process was established by Pima County in 2007.

Archaeology

A relatively small amount of archaeological work has been conducted within the City-owned properties at Fort Lowell. Unfortunately, extensive artifact collecting has taken place throughout the area, prior to the acquisition of the land, and many Fort-era features have been destroyed. Some of these artifacts are now on display in the Fort Lowell Museum.

Prehistoric Archaeology

Prehistoric archaeological resources were first noted at Fort Lowell in 1884 by Adolf Bandelier (Gregonis 1997:viii). On Thanksgiving Day in 1917, Dt. Robert F. Gilder, an archaeologist at the University of Nebraska, spent several hours wandering about the ruins. He was surprised to find prehistoric pottery sticking out of the adobe walls. His explorations led him to some borrow pits, where the dirt for the adobe was mined, and there he found additional pottery. Badger holes were another source of pottery and grinding stones. Gilder collected examples of pottery, two ceramic disks, and five manos, probably for the University of Nebraska collections (Tucson Citizen, 1 December 1917).

An archaeological excavation was conducted between 1976 and 1978 by the Arizona State Museum. Linda Gregonis subsequently prepared a site card for the Hardy site in 1979. This prehistoric Hohokam site encompasses a large area surrounding historic Fort Lowell.

The 1976-1978 excavations took place on the eastern side of the park near the pecan grove; 36 features were documented in a relatively small area. These included nine pit structures, “caliche borrow pits, possible storage pits, a work area, roasting pits, a cemetery-offertory area, and enigmatic groups of postholes” (Gregonis 1997:11). The features dated from about A.D. 650 to A.D. 1300, and indicate the occupation was both lengthy and intensive.

Two Snaketown phase (A.D. 700-750) features were documented, consisting of a pithouse and a possible storage pit. Only a small portion of the pithouse was uncovered, and its orientation is unknown. Other features from this phase are likely located nearby.

Two nearby pithouses may date to either the late Snaketown or the early Cañada del Oro phase (A.D. 750-850). Only small portions were uncovered. A plastered cemetery-offertory area and three caliche borrow pits dating to this phase were also located. The caliche was mined to make plaster, probably for pithouse floors. The cemetery-offertory area yielded human remains in two small pits, a number of reconstructible vessels, and a human figurine (Gregonis 1997:11, 31).

A number of pithouses and pits dating to the Rillito phase (A.D. 850-950) were located. Most of the Rillito phase features were heavily damaged by later prehistoric construction activities, so only fragments of the houses survived.

In contrast, the three Late Rincon (possibly Tanque Verde) phase (A.D. 1100-1300) pithouses were well preserved. Two of the pithouses were arranged in a courtyard setting; two roasting pits, an activity area, and an ash pile dating to this period were also uncovered.

A few Tanque Verde phase artifacts, dating to about A.D. 1150-1300, were found scattered throughout the area.

Sometime around A.D. 500 populations in southern and central Arizona began to aggregate into large villages. These villages would remain the focal point of habitation for the next 600 years. Though information about the Hardy site is limited, it appears to be one of these primary villages (Gregonis 1997). Located above the confluence of the Pantano and Tanque Verde washes, occupants of the Hardy site would have

Archaeology

been well positioned to take advantage of arable land and relatively plentiful water. While the exact size of the village is not known, Gregonis (1997) shows 14 trash mounds at the site. At other sites in the Tucson Basin, trash mounds have shown to be reliable indicators of pithouse clusters or courtyard groups. The number of trash mounds identified, in conjunction with the likelihood that many others were destroyed, points to a village-sized population living at the Hardy site.

Ceramics dating from the Sweetwater phase (circa A. D. 650-700) and a possible structure dating to that same time indicate settlement of the village occurred during the phase of early village formation in southern Arizona (Gregonis 1997). Habitation continued through the succeeding Colonial period (A.D. 750-950) and Sedentary period (A.D. 950-1150). Like many of the large villages, the Hardy site appears to have been abandoned by the Tanque Verde phase (A.D. 1150-1300), with the inhabitants moving to the nearby University Indian Ruin, AZ BB:9:33 (ASM) (Gregonis 1997).

Historical Archaeology

Fort Lowell was assigned site number AZ BB:9:40 (ASM) by William Wasley in August 1960 (ASM site card). Additional site numbers have been assigned to the fort by other archaeologists—AZ BB:9:72 (ASM) for the band quarters and kitchen and AZ BB:9:324 (ASM) for the quartermaster's dump—but both should be considered part of site BB:9:40.

Alfred Johnson excavated a portion of Fort Lowell in 1960, prior to construction of a parking lot (Johnson 1960). During Johnson's project, one of the officer's quarters was completely excavated, the commanding officer's quarters were partially excavated, three other officer's quarters were tested, and several outhouses were excavated, as was a trash-filled pit. Johnson (1960) noted that buildings were constructed from unfired adobe

bricks measuring 20 inches by 12 inches by 4 inches (50 cm by 30 cm by 10 cm). Interior walls of these structures were plastered, whereas exterior walls were left unplastered.

Artifacts from this excavation are housed at ASM and a brief examination of the artifacts indicates that many are from the post-fort period and represent items discarded by Mexican families living in the abandoned structures, as shown by items with maker's marks that postdate 1891.

Excavations in 1982 uncovered the bandquarter's kitchen, where members of the regimental band had a mess hall, kitchen, and storage room during the fort's occupation (Huntington 1982). This structure is located on the east side of Craycroft Road and widening of that road necessitated the project, which documented the structure and recovered associated artifacts. At about the same time, excavations were conducted at the cavalry stables and corral, resulting in the documentation of standing portions of the wall, as well as recovering a small number of artifacts (Huntington 1982).

In 1988, the Institute for American Research (now Desert Archaeology, Inc.) conducted monitoring of water line trenches dug along the eastern side of North Craycroft Road, between Glenn Street and St. Gregory's High School (Dart 1988). Eight archaeological features were documented. Three of these features, two pithouses and a roasting pit, were prehistoric. One pithouse yielded Middle Rincon phase (A.D. 1000-1100) ceramics. Five other features dated to the Historic era. Four were associated with Fort Lowell and consisted of the area of the commanding officer's quarters, two pits, and a midden area. Another feature was a possible irrigation ditch from the Fort Lowell occupation or later.

Monitoring of the emergency stabilization work for the second officer's quarters and kitchen was

Fort Lowell and Extant Historic Ruins Showing Modern Orthography

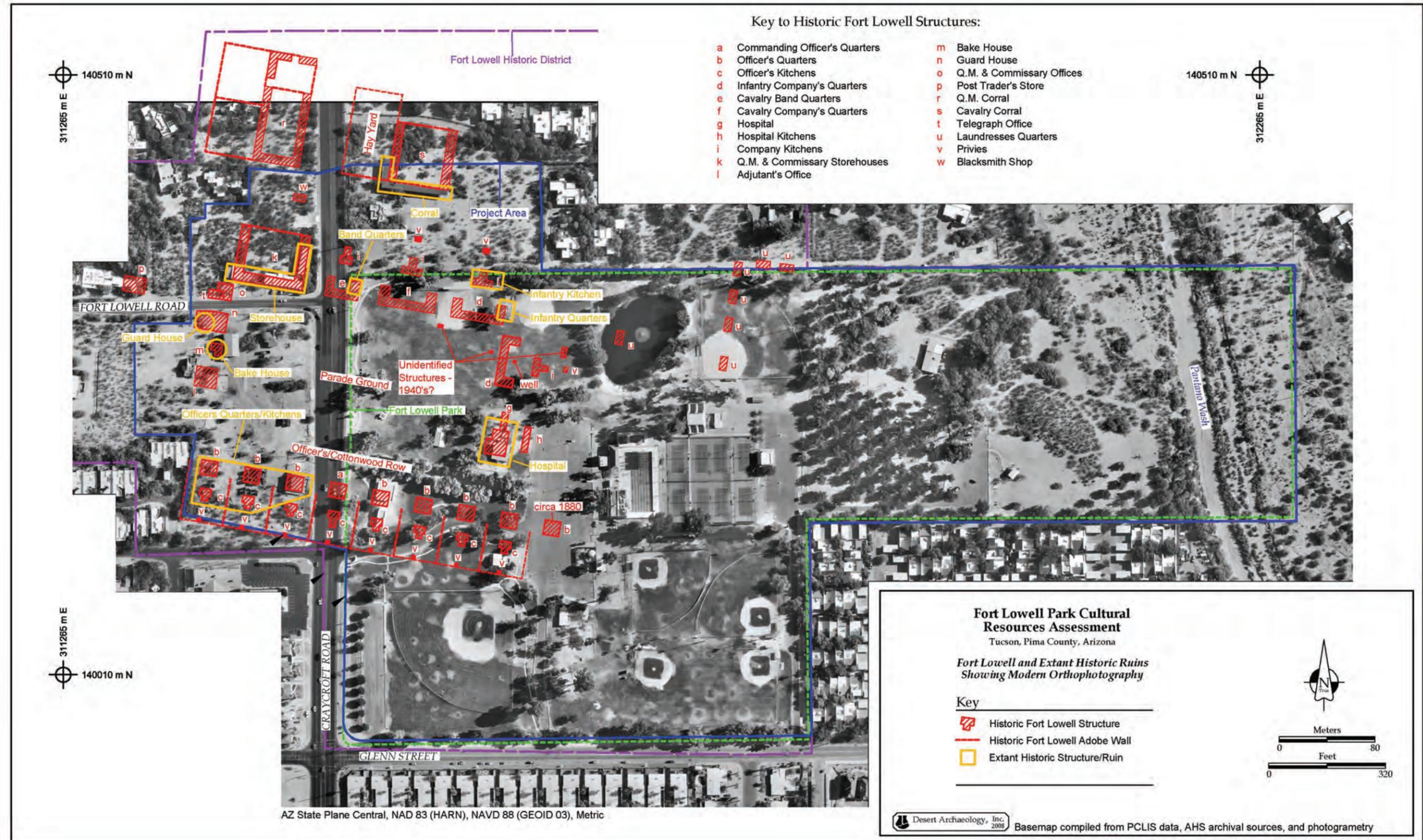


Figure 19: Fort Lowell and Extant Historic Structures Showing Modern Orthography

Archaeology

conducted in August 2007. Portions of the wooden floor in the southeastern room of this quarters were removed so that wall bracing elements could be installed. A whiteware cup and a stoneware Dundee Marmalade jar were found beneath the floor, suggesting additional fort-era refuse may be present in this and other rooms. Newspapers from the 1930s were present beneath the deteriorated linoleum on the south side of the quarters, in the area of a former porch. Other newspapers from 1920 were present beneath the cement capping elements that once lined the parapet of the quarters and its adjacent kitchen (Thiel et al. 2008).

Archaeological Summary

Previous archaeological work suggests the prehistoric occupation of the site occurred between A.D. 650-750 and A.D. 1000-1300. However, it would not be surprising if evidence for occupation during the intervening years were eventually located. The presence of pit structures along

Craycroft Road and at the eastern edge of the modern Fort Lowell Park, as well as artifacts over a much larger area, indicates this was a large and significant site. Many areas almost certainly remain undisturbed, despite the site's development.

Fort Lowell-era (1873-1891) archaeological features are located within the park, the Fort Lowell-Adkins Steel property, the City of Tucson-owned portion of the fort in the Quartermaster and Commissary Storehouse area, and privately owned parcels north of the warehouse area. While artifact collecting activities have undoubtedly destroyed important features and artifact assemblages, the likelihood is high that other features have survived.

Post-Fort Lowell features (1891-onward) relating to occupation of the site by post-fort residents, are also likely present. These should include irrigation ditches or acequias, trash-filled pits, adobe mining pits, privies, and wells.

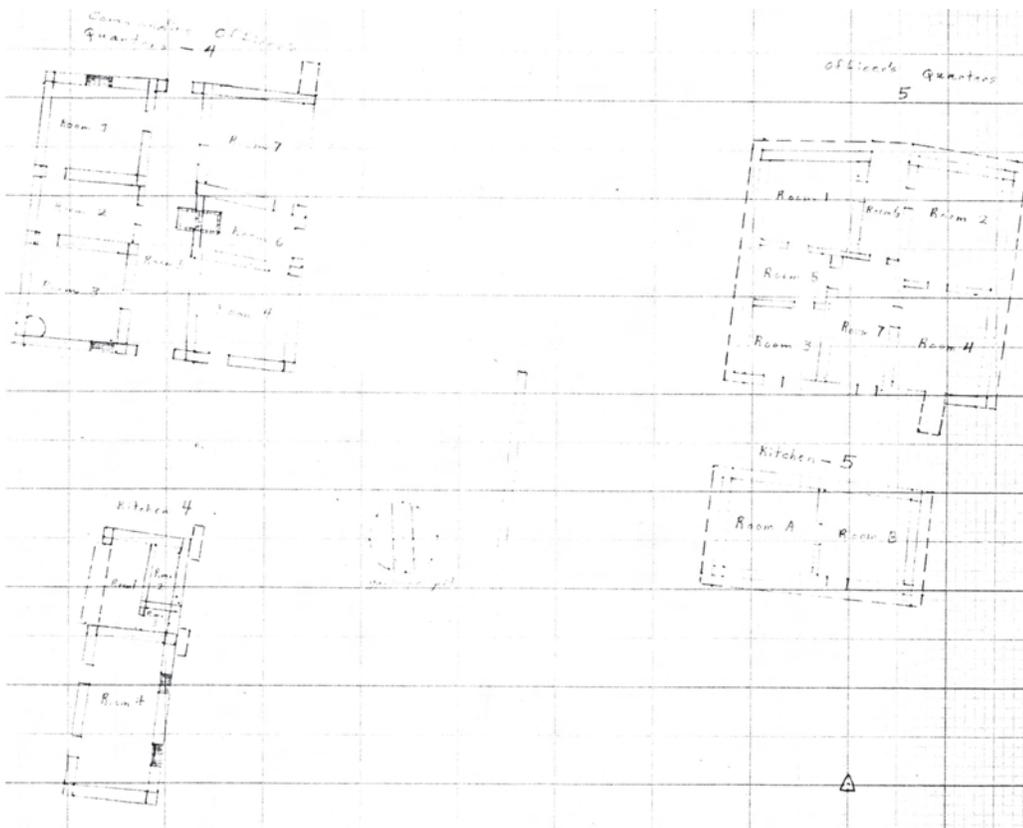


Figure 20: Archaeological sketch (Johnson, 1960) of Officer's Quarters #4 and #5.

The Hardy Site

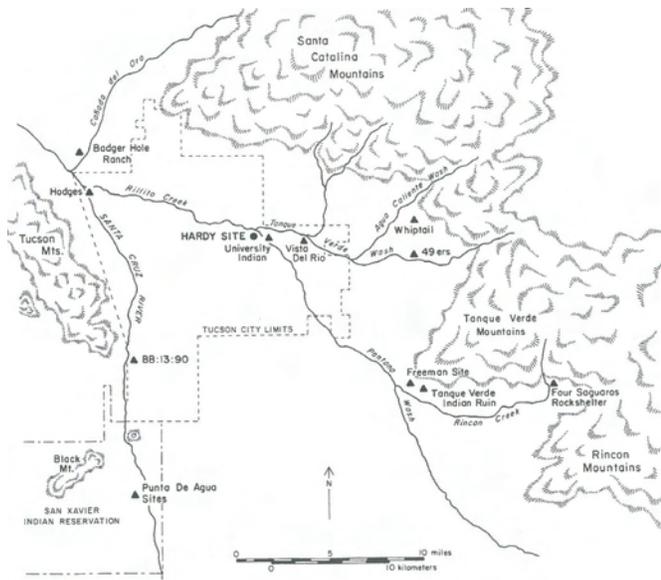


Figure 21: Hardy Site Location Map. By Charles Sternberg

Historical Overview

In 1975, the Arizona State Museum was informed by an amateur archaeologist that Hohokam artifacts had been exposed during construction at Fort Lowell Park. Having recently been purchased by Pima County, Fort Lowell Park was unique in its undisturbed material. Because of the intention to use the area for recreational use, the Arizona State Museum embraced the opportunity for providing interpretation on Tucson’s earliest inhabitants to large numbers of the public.

Supported by Pima County Parks and Recreation and funded by a planning grant from the National Endowment for the Humanities, museum staff conducted background research, developed a display at the Fort Lowell Museum, installed the outdoor exhibit, and prepared an accompanying booklet. A portion of the site was excavated over

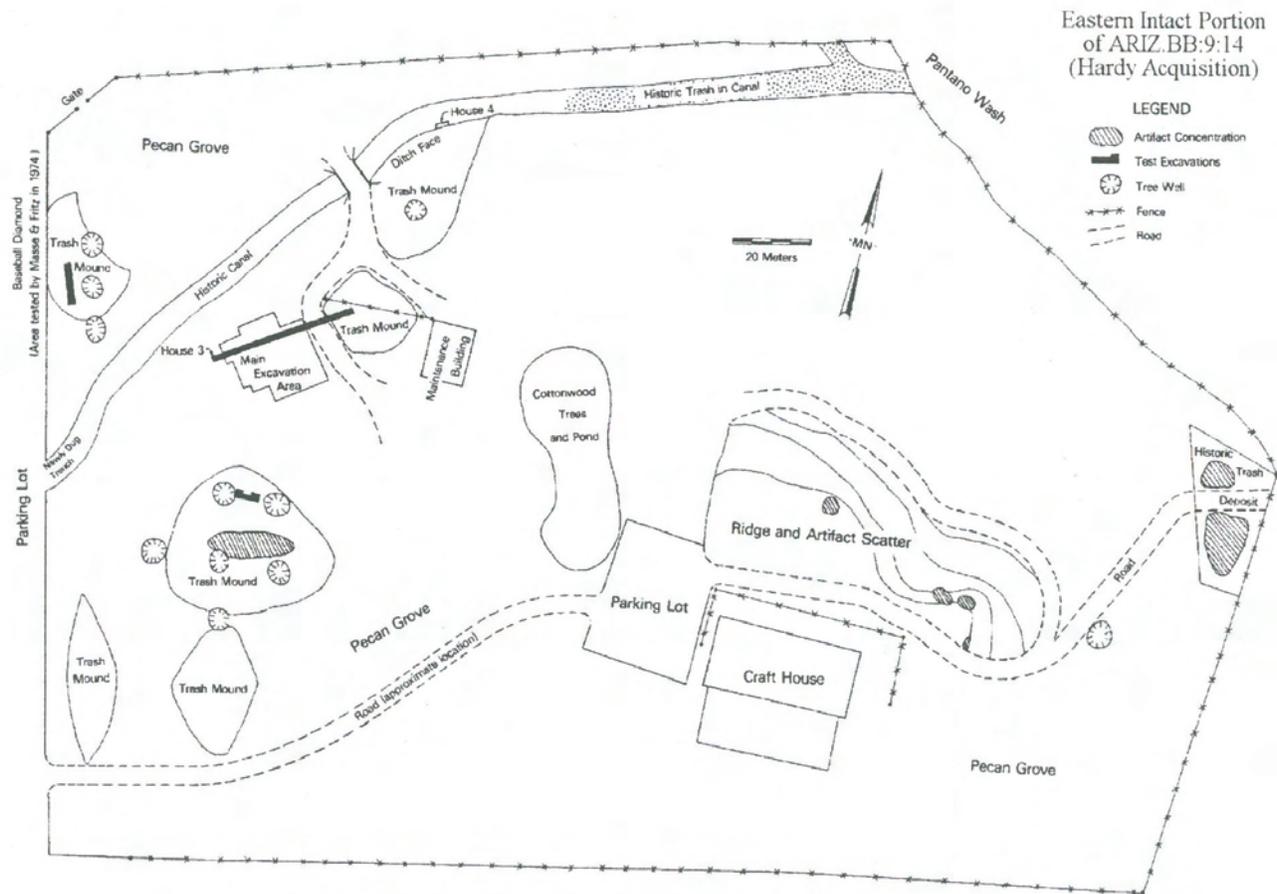


Figure 22: Tested and excavated areas at the Hardy Site. By Steven Gregonis

The Hardy Site

a two-year period by students from the University of Arizona Department of Anthropology, and by local amateur archaeologists. From the beginning, the public was involved in the preservation of Arizona's cultural heritage.

The exhibit at Fort Lowell Park was opened in April of 1979, and was accompanied by a booklet entitled "Hohokam Indians of the Tucson Basin," by Linda M. Gregonis and Karl J. Reinhard. The booklet was prepared as a layman's guide to the Hohokam archaeology of the Tucson Basin, to elaborate on the information provided by the exhibit's interpretive panels.



Figure 24: Hardy Site with Maintenance Shed in Background

Interpretation of the Hardy site is located north centrally in Fort Lowell Park. It lies just west of

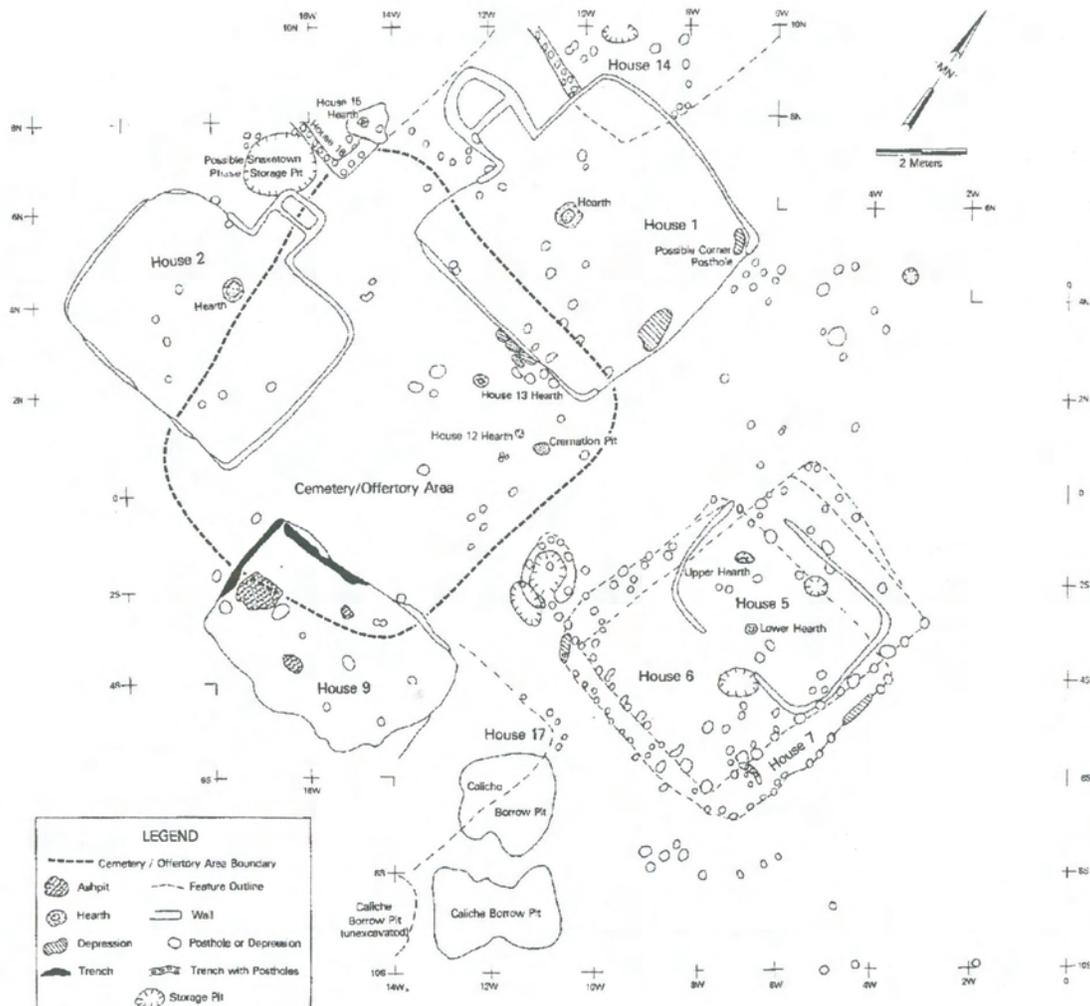


Figure 23: Hardy Site Excavated Features. By Steven Gregonis.

The Hardy Site



Figure 25: Hardy Site Interpretive Signage



Figure 26: Cluttered view north at the Hardy Site

the maintenance shed, an east of the sport fields. It is separated from the fields to the west by a wash and screen of vegetation. This both enhances the site as well as detracts from it. On the upside, the screen of vegetation differentiates the archaeological interpretive zone from the sporting zone, and increases the sense of stepping back in time. On the other hand, the wash and vegetative screen fragment the two zones, and hide the site from visitors to the more prominent sport fields.

The main point of interest at the Hardy Site is the reconstructed outline, a square with a protruding entry vestibule, of a Hohokam house. It is overlaid by a grid of sixteen wood posts, one at each corner,

and in the interior identifying the structure of the shelter. The site is well-maintained, although there is a small renegade creosote bush growing in the southwest corner of the house border. Eleven interpretive signs are located in an array around the archaeological display itself. They offer interpretive images and graphics on various topics including: “Death and Dress”, “Inside a Hohokam House”, “The Tucson Basin in A.D. 1150”, “Tucson in 1875”, “Archaeological Work”, “O’odham Traditional Food Production”, “Trash Disposal”, “Houses Built in Pits”, “Life in a Hohokam Village”, and “The Tucson Basin”.

The site itself is well done and interesting, especially if the visitor takes the time to read the interpretive signs. The engraved aluminum interpretive panels have expressive graphics of drawings and geometric borders, along with informative, easily understood text etched on the panels. The panels themselves are a dull grey, with charcoal black etching. The panels lack of contrast makes them difficult to read in the shade or from far away. The panels collect minimal dust and bugs, but are still legible. Panels are attached to hollow square steel posts. The posts of panels dealing with Native American Culture are black, while those dealing with siting or archaeological information are silver. The interpretive signs are in good condition and should be maintained.

The main downfall of the Hardy Site is its adjacency to the maintenance area. Trash dumpsters, mobile minis, and dirt piles can be seen to the northwest, through the screen of trees. Orange and white alert tripods give the site the feel of a construction zone. The maintenance shed and its adjacent chain link terra-cotta painted fencing disrupt the historic feel. The large open dirt field is unattractive and maintenance vehicles are often parked around it. Electric poles detract from the positive views north to the Catalina Mountains. The site slopes west from the maintenance staging area down towards the wash west of the Hardy Site.

References Cited

- Anonymous
1910 Curing Chilis in Arizona. *Technical World Magazine*, volume 13:221.
- Arizona Citizen*
1873a Article about adobe brick bids. 11 October, p. 3. Tucson
1873b Article about construction of fort. 20 September, p. 3. Tucson.
1875a Camp Lowell. 26 June, p. 2. Tucson.
1875b Local matters. 7 August, p. 3. Tucson.
- Arizona Daily Citizen*
1895 Article about Henry Ransom. 19 February, p. 3. Tucson.
1896 Fort Lowell. 12 September, p. 1. Tucson.
1900 A Ghost has Come to Lowell. 14 December, p. 1. Tucson.
1901 The Fame of Ft. Lowell's Ghost. 9 January, p. 1. Tucson
1901 The Ghost Again Appears at Fort Lowell. 13 April, p. 1. Tucson.
- Arizona Daily Star*
1952 Old Army records disclose location of abandoned Ft. Lowell Cemetery. 16 November, p. 16A. Tucson.
1960 Archaeologist unearths 'secrets' of old Fort Lowell. 16 September, p. 13. Tucson.
1963 Flag Flies Again at Historic Site. 12 November. Tucson.
2008 Fixing Up a Crumbling Fort. 12 August, p. B4. Tucson.
- Arizona Weekly Journal-Miner*
1867 Pima County. 14 September, p. 4. Prescott.
1892 Bids for Disinterment. 9 March, p. 3. Prescott.
- Bieg, John, John Jones, and Ann Levison
1976 *Fort Lowell*. Committee on Urban Planning, University of Arizona, Tucson.
- Brown, Herbert
1892 The Habits and Nesting of Palmer's Thrasher. *Zoe*, volume 3:243-248.
- Bryan, Roger B.
1914 *An Average American Army Officer*. Buck-Molina Co., San Diego.
- California Academy of Sciences
1897 *Proceedings of the California Academy of Sciences*. Volume VI. San Francisco.
- Casa Grande Dispatch*
1928 Here Friday. 27 January, p. 1. Casa Grande, Arizona.
- City of Tucson Parks & Recreation Department
1985 *Fort Lowell Master Plan*. Tucson.
- Cordell, Linda
1997 *Archaeology of the Southwest*. 2nd ed. Academic Press, New York.
- Crosswhite, Frank S.
1979 "J.G. Lemmon & Wife," Plant Explorers in Arizona, California, and Nevada. *Desert Plants*, volume 1, issue 1.
- Dart, Allen
1984 *Archaeological Site Significance Evaluations for Cienega Ventana Project*. Technical Report No. 84-8. Institute for American Research, Tucson.
1986 *Archaeological Investigations at La La Paloma: Archaic and Hohokam Occupations at Three Sites in the Northeastern Tucson Basin, Arizona*. Anthropological Papers No. 4. Institute for American Research, Tucson.
1988 *Monitoring for Archaeological Material During 1988 Construction of Effluent Water Pipeline Through Historic Fort Lowell and the Prehistoric Hardy Site*. Technical Report No. 88-4. Institute for American Research, Tucson.

References Cited

- Diehl, Michael W.
1997 *Archaeological Investigations of the Early Agricultural Period Settlement at the Base of A-Mountain, Tucson, Arizona*. Technical Report No. 96-21. Center for Desert Archaeology, Tucson.
- Dobyns, Henry F.
1976 *Spanish Colonial Tucson: A Demographic History*. University of Arizona Press, Tucson.
- Doelle, William H.
1985 Projectile Points. In *Excavations at the Valencia Site: A Preclassic Hohokam Village in the Southern Tucson Basin*, edited by W. H. Doelle, pp. 178-183. Archaeological Papers No. 3. Institute for American Research, Tucson.
- Doelle, William H., and Henry D. Wallace
1986 *Hohokam Settlement Patterns in the San Xavier Project Area, Southern Tucson Basin*. Technical Report No. 84-6. Institute for American Research, Tucson.
- 1990 The Transition to History in Pimería Alta. In *Perspectives on Southwestern Prehistory*, edited by P. E. Minnis and C. L. Redman, pp. 239-257. Westview Press, Boulder.
- 1991 The Changing Role of the Tucson Basin in the Hohokam Regional System. In *Exploring the Hohokam: Prehistoric Desert Peoples of the American Southwest*, edited by G. J. Gumerman, pp. 279-345. University of New Mexico Press, Albuquerque.
- Doelle, William H., David A. Gregory, and Henry D. Wallace
1995 Classic Period Platform Mound Systems in Southern Arizona. In *The Roosevelt Community Development Study: New Perspectives on Tonto Basin Prehistory*, edited by M. D. Elson, M. T. Stark, and D. A. Gregory, pp. 385-440. Anthropological Papers No. 15. Center for Desert Archaeology, Tucson.
- Douglas, John E., and Douglas B. Craig
1986 *Investigations of Archaic and Hohokam Sites on the Flying V Ranch, Tucson, Arizona*. Anthropology Series, Archaeological Report No. 13. Pima Community College, Tucson.
- Doyel, David E.
1991 Hohokam Cultural Evolution in the Phoenix Basin. In *Exploring the Hohokam: Prehistoric Desert Peoples of the American Southwest*, edited by G. J. Gumerman, pp. 231-278. University of New Mexico Press, Albuquerque.
- Elliot, David G.
1905 *Mammals of the North American Continent, the West Indies, and the Neighboring Seas*. Zoological Series Vol. VI. Field Columbian Museum, Chicago.
- Elson, Mark D.
1998 *Expanding the View of Hohokam Platform Mounds: An Ethnographic Perspective*. Anthropological Papers No. 63. University of Arizona Press, Tucson.
- Elson, Mark, and William H. Doelle
1987 *Archaeological Assessment of the Mission Road Extension: Testing at AZ BB:13:6 (ASM)*. Technical Report No. 87-6. Institute for American Research, Tucson.
- Ezzo, Joseph A., and William L. Deaver
1998 *Watering the Desert: Late Archaic Farming at the Costello-King Site*. Technical Series No. 68. Statistical Research, Inc., Tucson.
- Fish, Suzanne K., Paul R. Fish, and John H.

References Cited

- Madsen (editors)
1992 *The Marana Community in the Hohokam World*. Anthropological Papers No. 56. University of Arizona Press, Tucson.
- Freeman, Andrea K. L. (editor)
1998 *Archaeological Investigations at the Wetlands Site, AZ AA:12:90 (ASM)*. Technical Report No. 97-5. Center for Desert Archaeology, Tucson.
- Gabel, Norman E.
1931 Martinez Hill Ruins: An Example of Prehistoric Culture of the Middle Gila. Unpublished Master's thesis, Department of Anthropology, University of Arizona, Tucson.
- Goldblatt, William
1964 Tucson's Ft. Lowell Being Restored. *Arizona Architect*, volume 7:12-13.
- Government Printing Office
1891 *Annual Report of the Board of Regents of the Smithsonian Institution*. Washington, D.C.
1900 *Annual Report of the Board of Regents of the Smithsonian Institution*. Washington, D.C.
- Gregonis, Linda M.
1997 *The Hardy Site at Fort Lowell Park, Tucson, Arizona*. Archaeological Series No. 175. Arizona State Museum, University of Arizona, Tucson.
- Gregory, David A.
1987 The Morphology of Platform Mounds and the Structure of Classic Period Hohokam Sites. In *The Hohokam Village: Site Structure and Organization*, edited by D. E. Doyel, pp. 183-210. American Association for the Advancement of Science, Southwestern and Rocky Mountain Division, Glenwood Springs, Colorado.
- Gregory, David A. (editor)
1999 *Excavations in the Santa Cruz River Floodplain: The Middle Archaic Component at Los Pozos*. Anthropological Papers No. 20. Center for Desert Archaeology, Tucson.
2001 *Excavations in the Santa Cruz River Floodplain: The Early Agricultural Period Component at Los Pozos*. Anthropological Papers No. 21. Center for Desert Archaeology, Tucson.
- Hansen, Eric
1996 *Desert Plants for the Botanically Challenged: A Pocket Field Guide to the Plants and Plant Communities of the Arizona Sonoran Desert*. Publications in Anthropology No. 2. Center for Indigenous Studies in the Americas, Phoenix.
- Hard, Robert J., and William H. Doelle
1978 *The San Agustín Mission Site, Tucson, Arizona*. Archaeological Series No. 118. Arizona State Museum, University of Arizona, Tucson.
- Hargit, Edward
1890 *Catalogue of the Picariae in the Collection of the British Museum*. British Museum, Natural History, London.
- Harry, Karen G.
1995 Community-based Craft Specialization: The West Branch Site. Paper presented at the Fall Meeting of the Arizona Archaeological Council, Flagstaff, Arizona.
- Haury, Emil W.
1928 Tanque Verde Pithouses. Paper presented at the Annual Meeting of the American

References Cited

- Association for the Advancement of Science, Flagstaff, Arizona.
- Heidke, James M.
1988 Ceramic Production and Exchange: Evidence from Rincon Phase Contexts. In *Recent Research on Tucson Basin Prehistory: Proceedings of the Second Basin Conference*, edited by W. H. Doelle and P. R. Fish, pp. 387-410. Anthropological Papers No. 10. Institute for American Research, Tucson, Arizona.
- 1996 Production and Distribution of Rincon Phase Pottery: Evidence from the Julian Wash Site. In *A Rincon Phase Occupation at Julian Wash, AZ BB:13:17 (ASM)*, by J. B. Mabry, pp. 47-71. Technical Report No. 96-7. Center for Desert Archaeology, Tucson.
- Heidke, James M., and Alan Ferg
2001 Ceramic Containers and Other Artifacts of Clay. In *Excavations in the Santa Cruz River Floodplain: The Early Agricultural Period Component at Los Pozos*, edited by D. A. Gregory, pp. 163-194. Anthropological Papers No. 21. Center for Desert Archaeology, Tucson.
- Heidke, James M., Elizabeth J. Miksa, and Michael K. Wiley
1998 Ceramic Artifacts. In *Archaeological Investigations of Early Village Sites in the Middle Santa Cruz Valley: Analyses and Synthesis*, edited by J. B. Mabry, pp. 471-544. Anthropological Papers No. 19. Center for Desert Archaeology, Tucson.
- Henry, Bonnie
1990 *The Dead Around Us*. Arizona Daily Star, 28 October, page E1.
- Huckell, Bruce B.
1982 *The Distribution of Fluted Points in Arizona: A Review and An Update*. Archaeological Series No. 145. Arizona State Museum, University of Arizona, Tucson.
- 1993 *Archaeological Testing of the Pima Community College Desert Vista Campus Property: The Valencia North Project*. Technical Report No. 92-13. Center for Desert Archaeology, Tucson.
- 1995 *Of Marshes and Maize: Preceramic Agricultural Settlements in the Cienega Valley, Southeastern Arizona*. Anthropological Papers No. 59. University of Arizona Press, Tucson.
- Huckell, Bruce B., and Lisa W. Huckell
1984 Excavations at Milagro, a Late Archaic Site in the Eastern Tucson Basin. Ms. on file, Arizona State Museum, University of Arizona, Tucson.
- Huckell, Bruce B., Lisa W. Huckell, and Suzanne K. Fish
1995 *Investigations at Milagro, a Late Preceramic Site in the Eastern Tucson Basin*. Technical Report No. 94-5. Center for Desert Archaeology, Tucson.
- Huntington, Frederick W.
1982 *Archaeological Data Recovery at AZ BB:9:72 (ASM), the Band Quarters Kitchen and Corral Wall at Fort Lowell, and AZ BB:9:54 (ASM), a Rincon Phase Habitation Site, Craycroft Road, Tucson, Arizona*. Archaeological Series No. 163. Arizona State Museum, University of Arizona, Tucson.
- 1986 *Archaeological Investigations at the West Branch Site: Early and Middle Rincon Occupation in the Southern Tucson Basin*. Anthropological Papers No. 5. Institute for American Research, Tucson.
- Johnson, Alfred E.

References Cited

- 1960 Archaeological Investigations at Fort Lowell. Ms. on file, Arizona State Museum Library, University of Arizona, Tucson.
- Mabry, Jonathan B.
2007 Chronology. In *Las Capas: Early Irrigation and Sedentism in a Southwestern Floodplain* (Draft), edited by J. B. Mabry, pp. 67-94. Anthropological Papers No. 28. Center for Desert Archaeology, Tucson.
- Mabry, Jonathan B. (editor)
1998 *Archaeological Investigations of Early Village Sites in the Middle Santa Cruz Valley: Analyses and Synthesis*. Anthropological Papers No. 19. Center for Desert Archaeology, Tucson.
- Mabry, Jonathan B., James E. Ayres, and Regina L. Chapin-Pyritz
1994 *Tucson at the Turn of the Century: The Archaeology of Block 83*. Technical Report No. 92-10. Center for Desert Archaeology, Tucson.
- Maguire, Charles B.
1938 Research Data on Old Fort Lowell, Tucson, Arizona: Assembled and compiled by Camp S.A. 11-A, National Park Service, 1937-1938. Ms. on file, Fort Lowell ephemeral file, 1930s, Arizona Historical Society, Tucson.
- Masse, W. Bruce
1981 A Reappraisal of the Protohistoric Sobaipuri Indians of Southeastern Arizona. In *The Protohistoric Period in the American Southwest, A.D. 1450-1700*, edited by D. R. Wilcox and W. B. Masse, pp. 28-56. Anthropological Research Papers No. 29. Arizona State University, Tempe.
- Mearns, Edgar A.
1907 *Mammals of the Mexican Boundary of the United States*. Bulletin 56, part 1, United States National Museum. Government Printing Office, Washington, D.C.
- Miller, Gerrit S., and James A. G. Rehn
1901 *Systematic Results of the Study of North American Land Mammals*. Proceedings of the Boston Society of Natural History, Volume 30. Society of Natural History, Boston.
- Nelson, E. W.
1913 Herbert Brown- A Biographical Note. *The Condor*, volume XV:186-187.
New York Botanical Garden
1909 *North American Flora*. New York Botanical Garden, New York City.
- O'Mack, Scott
2006 *Tucson's National Cemetery: Additional Archival Research for the Joint Courts Complex Project*, Tucson, Arizona. Technical Report No. 06-56. Statistical Research, Inc., Tucson.
- Peterson, Thomas H.
1976 Fort Lowell, A.T. Army Post during the Apache Campaigns. *The Smoke Signal* No. 8. Tucson Corral of the Westerners, Tucson.
Philadelphia Inquirer
1892 He was Buried Alive. 30 May, p. 7. Philadelphia.
- Price, W. W.
1895 Itinerary of the Expedition and Description of the Region Explored. In *Bulletin American Museum of Natural History*. Volume VII, pp. 194-199.
- Ravesloot, John C. (editor)
1987 *The Archaeology of the San Xavier Bridge*

References Cited

- Site (AZ BB:13:14), Tucson Basin, Southern Arizona*. Archaeological Series No. 171. Arizona State Museum, University of Arizona, Tucson.
- Roth, Barbara J.
1989 *Late Archaic Settlement and Subsistence in the Tucson Basin*. Ph.D. dissertation, Department of Anthropology, University of Arizona, Tucson. University Microfilms International, Ann Arbor, Michigan.
- Santa Fe Daily New Mexican*
1892 Proposals for Disinterments. 19 January, p. 1. Sante Fe.
- Schuler, Harold H.
2000 We served at Fort Lowell: a biographical sketch of the 314 United States Army officers who served at Fort Lowell, Arizona, 1866-1891. Ms. on file, Fort Lowell Museum, Arizona State Historical Society, Tucson.
- Scott, W. E. D.
1888 *Notes on Arizona Birds*. L. S. Foster, New York.
- Sonnichsen, C. L.
1982 *Tucson: The Life and Times of an American City*. University of Oklahoma Press, Norman.
- Spicer, Barry
2004 *Common Native Plants and Wildlife of the Old Fort Lowell Neighborhood and Immediate Vicinity*. Fort Lowell Historic District Board, Tucson.
- Swartz, Deborah L.
1998 *Archaeological Investigations at Small Sites on the Upper Bajada of the Tortolita Mountains, Northern Tucson Basin*. Technical Report No. 97-3. Center for Desert Archaeology, Tucson.
- Thiel, J. Homer
1994 *An Archival and Architectural Study of the Donaldson/Hardy House at the Northeast Corner of Fort Lowell and Craycroft Roads*. Letter Report No. 94-126. Desert Archaeology, Inc., Tucson.
- 1997a Archaeological Investigations of a Chinese Household. In *Archaeological Investigations of a Chinese Gardener's Household, Tucson, Arizona* (Revised), by J. H. Thiel, pp. 37-55. Technical Report No. 96-22. Center for Desert Archaeology, Tucson.
- 1997b Historical, Archaeological, and Architectural Evaluation of a Property at the Northwest Corner of Craycroft and Fort Lowell Roads. Letter Report No. 97-148. Desert Archaeology, Inc., Tucson.
- Thiel, J. Homer, M. L. Brack, and Tyler S. Theriot
2008 Cultural Resources Assessment for the Fort Lowell-Adkins Steel Property within Historic Fort Lowell, Tucson, Pima County, Arizona. Technical Report No. 2008-08. Desert Archaeology, Inc., Tucson.
- Thiel, J. Homer, Michael K. Faught, and James M. Bayman
1995 *Beneath the Streets: Prehistoric, Spanish, and American Period Archaeology in Downtown Tucson*. Technical Report No. 94-11. Center for Desert Archaeology, Tucson.
- Tombstone Epitaph Prospector*
1894 Note about Stanford student. 1 May, p. 4. Tombstone, Arizona.
- Tucson Citizen*
1900 Brief News Items of the Town. 19 June, p. 4. Tucson.
- 1900 Catching Chinaman. 8 March, p. 8. Tucson.

References Cited

- 1900 Left in a Heap on the Desert. 27 June, p. 1. Tucson.
- 1902 The City News in Paragraphs. 17 April, p. 5. Tucson.
- 1902 The City News in Paragraphs. 1 May, p. 5. Tucson.
- 1902 A Second Sanitarium Proposed for Tucson. 3 April, p. 5. Tucson.
- 1903 Farming in the Valley, Fish and Game in the Rincons. 9 October, p. 5. Tucson.
- 1904 The City News in Paragraphs. 29 October, p. 5. Tucson.
- 1910 Farming on the Rillito. 12 August, p. 2. Tucson.
- 1911 Big Barns are Being Built by Rillito Company. 10 June, p. 7. Tucson.
- 1911 Ernest Echo Bunnell. 9 October, p. 5. Tucson.
- 1911 Tucson Hunters Get Many White Wings. 12 August, p. 7. Tucson.
- 1912 Boy Scouts Go Into First Camp. 2 April, p. 8. Tucson.
- 1912 Major Declines to See Ruins of Fort. 12 April, p. 8. Tucson.
- 1912 Young Scouts Enjoy Life in Camp. 3 April, p. 8. Tucson.
- 1914 Boy Scouts Enjoy Camp at Fort Lowell. 11 April, p. 4. Tucson.
- 1915 Chinese Shoot “No-Nose” Who was Stealing Potatoes. 9 July, p. 1. Tucson.
- 1915 Chris Steppish Dies at Fort Lowell. 18 September, p. 3. Tucson.
- 1916 Health Seeker in Tucson Kills Self on Public Street. 5 September, p. 1. Tucson.
- 1917 Camp Fire Girls’ Picnic. 21 July, section 1, p. 8. Tucson.
- 1917 Fairbanks Gets into Makeup for Cowboy Part. 30 December, p. 6. Tucson.
- 1917 Motorists Sing Christmas Carols for Convalescents. 27 December, p. 3. Tucson.
- 1917 Prehistoric Pottery in Ft. Lowell Walls. 1 December, p. 8. Tucson.
- 1918 Proposal to Sign Points of Interest. 14 August, p. 8. Tucson.
- 1918 Sick at Fort Lowell Would Appreciate Books. 20 November, p. 3. Tucson.
- 1919 City News in Brief. 24 January, p. 5. Tucson.
- 1919 Movie Stars to Film Sob Story in Sabino Canyon. 24 May, p. 4. Tucson.
- 1920 Social Items. 2 March, section 1, p. 4. Tucson.
- 1920 University Briefs. 9 April, p. 7. Tucson.
- 1945 Old Ft. Lowell Tract Bought by Boy Scouts. 11 September, p. 1. Tucson.
- 1957 County Closes Ft. Lowell To Save It From Vandals. 1 August, p. 33. Tucson.
- 1961 Notice of Call for Bids. 9 May, p. 32. Tucson.
- 1961 Notice of Call for Bids. 14 June, p. 34. Tucson.
- 1963 Dedication of Fort Lowell. 12 November, p. 17. Tucson.
- 1963 Fort Lowell Park Residents Petition County for Pool. 14 June, p. 22. Tucson.
- 1963 Minutes, Board of Supervisors’ Meeting. 1 May, p. 19. Tucson.
- 1964 County Joins in Craycroft, Glenn Paving. 18 February, p. 22. Tucson.
- 1965 Resolution No. 6061. 5 February, p. 36. Tucson.
- 1965 Colorful Events Crowd Festival Week Calendar. 10 April, p. 5. Tucson.
- 1967 Notice of Call for Bids. 21 April, p. 26. Tucson.
- 1967 Minutes, Board of Supervisors’ Meeting. 1 June, p. 21. Tucson.
- 1967 Minutes, Board of Supervisors’ Meeting. 4 December, p. 42. Tucson.
- 1969 Arts and Crafts on Agenda. 17 May, p. 42. Tucson.
- 1969 Pima Long Swim Meet Scheduled. 22 July, p. 17. Tucson.
- 1970 Park Nobody Knows: Five Points. 17 June, p. 60, s 1-62.
- 1971 \$1 Million Ok’d For Parks, Recreation. 19 August, p. 4. Tucson.
- 1972 Tennis lessons being offered. 27 November,

References Cited

- p. 41. Tucson.
- 1973 Fort Lowell: Anniversary of a Century-Old Sentinel. 10 March, pp. 48-50. Tucson.
- 1974 Clubs planting new trees. 8 February, p. 23. Tucson.
- 1974 Recreation roundup. 8 November, p. 48. Tucson.
- 1974 Get priorities straight. 24 December, p. 16. Tucson.
- 1977 Breaking Bread. 20 September, p. 15. Tucson.
- University of Arizona
- 1892 Annual Report of the Board of Regents of the University of Arizona College of Agriculture and Agricultural Experiment Station. Tucson.
- Wallace, Henry D.
- 1995 *Archaeological Investigations at Los Morteros, a Prehistoric Settlement in the Northern Tucson Basin*. Anthropological Papers No. 17. Center for Desert Archaeology, Tucson.
- Wallace, Henry D., and William H. Doelle
- 1998 Classic Period Warfare in Southeastern Arizona. Paper presented at the 63rd Annual Meeting of the Society for American Archaeology, Seattle.
- Wallace, Henry D., James M. Heidke, and William H. Doelle
- 1995 Hohokam Origins. *Kiva* 60:575-618.
- Weaver, John M.
- 1947 Fort Lowell. Unpublished Master's thesis. University of Arizona, Tucson.
- Weekly Republican*
- 1900 New of the Town. 19 April, p. 8. Phoenix.
- Wilcox, David R.
- 1981 The Entry of Athapaskans into the American Southwest: The Problem Today. In *The Protohistoric Period in the North American Southwest, A.D. 1450-1700*, edited by D. R. Wilcox and W. B. Masse, pp. 213-256. Anthropological Research Papers No. 24. Arizona State University, Tempe.
- 1991 Hohokam Social Complexity. In *Chaco and Hohokam: Prehistoric Regional Systems in the American Southwest*, edited by P. L. Crown and W. J. Judge, pp. 253-275. School of American Research Press, Santa Fe.
- Wilcox, David R., and Charles Sternberg
- 1983 *Hohokam Ballcourts and Their Interpretation*. Archaeological Series No. 160. Arizona State Museum, University of Arizona, Tucson.
- Williams, Jack S.
- 1986 San Agustín del Tucson: A Vanished Mission Community of the Pimería Alta. *The Smoke Signal* No. 47. Tucson Corral of the Westerners, Tucson.



Physical Setting

Contributed by Poster Frost Associates and Wood, Patel and Associates

Previous Page:

Figure 27: (Top) Craycroft Road, looking north towards Catalina Mountains

Figure 28: (Left) Rillito River, just east of Craycroft Road

Figure 29: (Right) San Pedro Chapel

Project Planning Boundary Progression

This overview provides a brief history of the expansion of the Fort Lowell Park boundaries since 1957 when the Boy Scouts sold approximately 37 acres to Pima County for initial park construction. Over several decades, Pima County, and more recently, the City of Tucson have acquired additional parcels that contain both prehistoric archaeological, Fort-Era cultural resources and portions of the Pantano Wash and its flood plain.

By 1960, plans were in place to remove the Fort-era ruins, except the hospital, and use the entire site for recreation. The reconstruction of Commanding Officer's Quarters in 1963 heralded an interest in preservation of the site's historic features. The Boy Scouts sold their remaining three acres to Pima County in 1972. In 1975, Pima County acquired 20 acres at the eastern end of the park that contain a large portion of the prehistoric Hardy site and portions of an agricultural property and its pecan orchard. Ownership of the property was transferred from Pima County to the City of Tucson in 1984.

The three acre Donaldson / Hardy parcel north of the park was acquired in 1985. This parcel includes remnants of the Fort-era Cavalry Corrals and Hay Yard, an area rich in Hohokam artifacts and the mid 20th century Donaldson / Hardy house.

The Fort Lowell Quartermaster and Commissary Storehouses, located at the NW corner of Craycroft and Fort Lowell Roads were acquired in 2002. The Commissary Buildings were "adaptively reconstructed" in the 1930s by the Bolsius family. The property is currently leased as five apartments that are managed by a property management company on behalf of the city,

With the assistance of 2004 Pima County Bonds, The City of Tucson acquired the Adkins Parcel in 2006. Site clean-up, inventory and emergency stabilization of historic resources proceeded the Master Plan. The entire project planning boundary is approximately 70 acres.

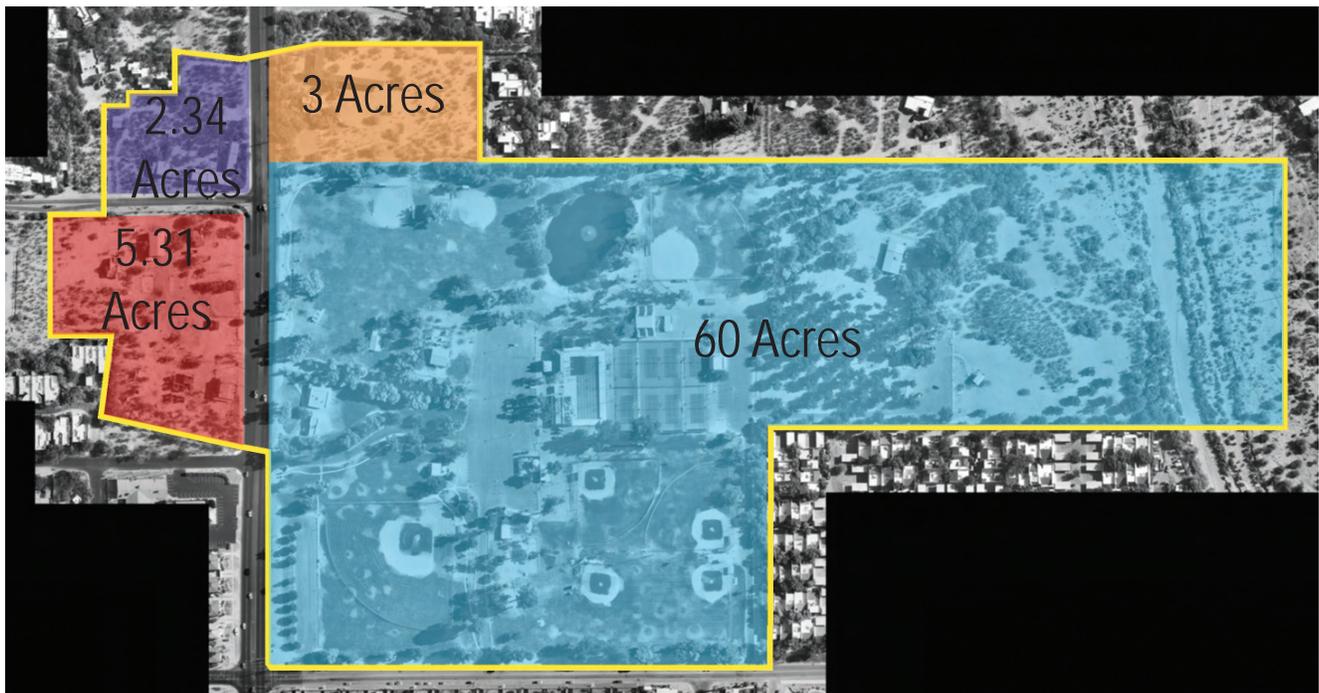


Figure 30: Property Ownership (2006-present)

Planning Boundaries

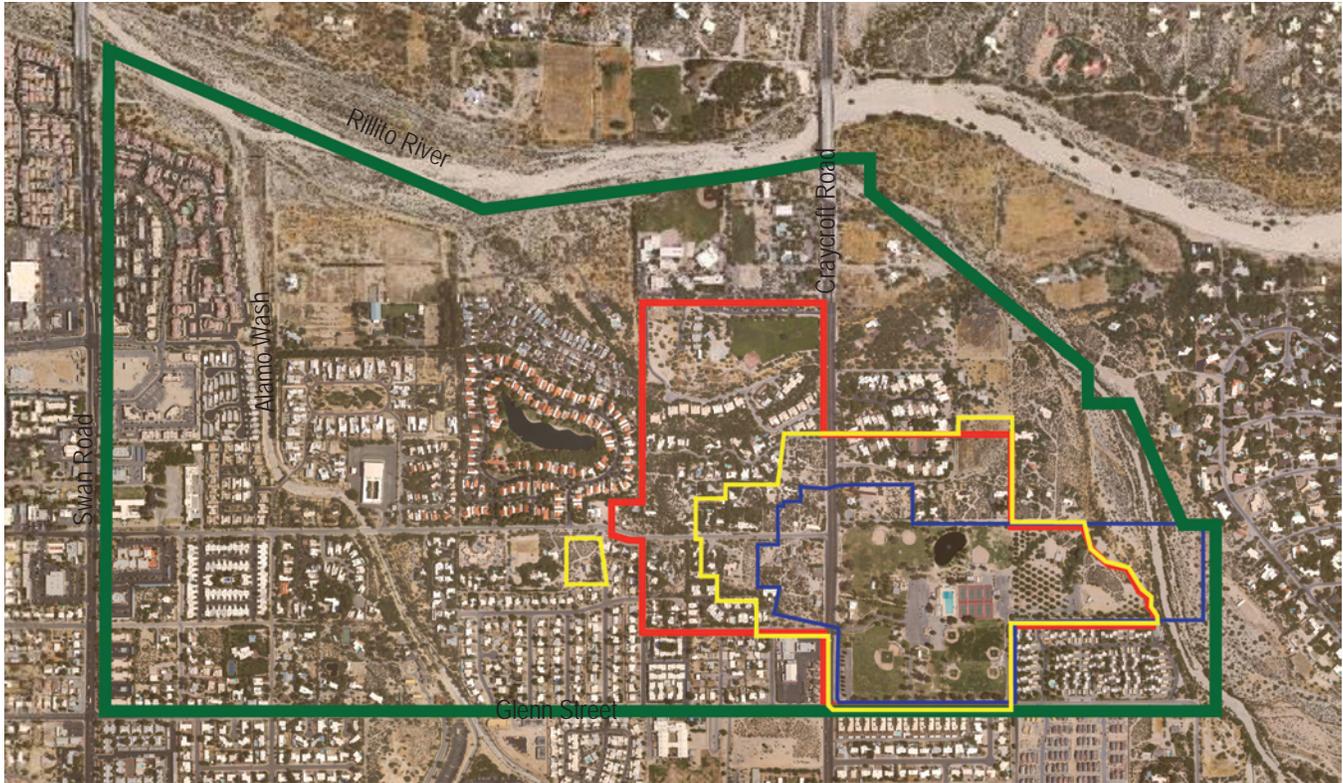


Figure 31: Neighborhood Planning Boundaries

Fort Lowell Park and the Adkins Parcel are included within a number of existing distinctive planning boundaries. The blue outline in the graphic above represents the planning boundary for Fort Lowell Park and the Adkins Parcel. At the broadest scale, Fort Lowell Park is in Old Fort Lowell Neighborhood, which is shown outlined in green on the graphic above.

Fort Lowell Park is within the City of Tucson’s Fort Lowell Historic District. This overlay zone is outlined in red. See the zoning map included within this report for additional information. In addition to the provisions in the City’s Land Use Code, projects within the local historic district should follow the framework provided in the *Fort Lowell Historic Preservation Zone: Design Review Guidelines*. The Fort Lowell Historic District Advisory Board and Tucson-Pima County Historical Commission have governance over all changes made in the overlay zone.

The areas outlined in yellow represent the



Figure 32: San Pedro Chapel, 2008

boundaries for properties listed on the National Register of Historic Places. The Fort Lowell Multiple Resource Area was listed on the National Register of Historic Places in 1978. The nomination is well documented in a publication produced by the planning students who completed the historic survey in 1976. San Pedro chapel was listed on the National Register of Historic Places in 1992. The chapel is also a local historic landmark.

Zoning

Fort Lowell Park is within the City of Tucson’s Fort Lowell Historic District. The local historic zone is outlined in red on the graphic below.

According to the City of Tucson’s Land Use Code, “The Historic Preservation Zone (HPZ) is an overlay zone superimposed over underlying zoning. The HPZ applies to specifically mapped areas where there is an individual historically important structure, a group of surviving related structures in their original setting, or an archaeological site which gives a historic dimension to the city. To identify each of the HPZ historic districts or Historic Landmarks on the City of Tucson Zoning Maps, the preface “H” is added to the assigned residential, office, commercial, or industrial zone designation.”

Tucson Medical Center (TMC) is in the immediate vicinity of Fort Lowell Park. A Planned Area Development (PAD) for TMC was approved in 2007, which provides an overview of how the campus will be redeveloped in the future. Selections from the PAD document are included on the next page. A trails system is proposed along Craycroft Road and the Alamo Wash.

The area east of the Pantano Wash is under Pima County’s jurisdiction.

City of Tucson Zoning Designations

Overlay Zones	Zones	Description
HR-1	R-1	This zone provides for urban, low density, single-family, residential development, together with schools, parks, and other public services necessary for a satisfactory urban residential environment.
HRX-2	RX-2	This zone provides for suburban, low density, single-family, residential development and other compatible neighborhood uses.
HSR	SR	This zone provides for very low density, large lot, single-family, residential development and suburban ranch uses. Uses which would adversely affect the open space, agricultural, or natural characteristics of this zone are not permitted.
	R-2	This zone provides for medium density, single-family and multifamily, residential development, together with schools, parks, and other public services necessary for an urban residential environment.
	O-2	This zone provides for office, medical, civic, and other land uses which provide reasonable compatibility with adjoining residential uses. Typical development within this zone is two-story office or medical projects.
PAD		The purpose of the Planned Area Development (PAD) zone is to enable and encourage comprehensively planned development in accordance with adopted plans and policies.

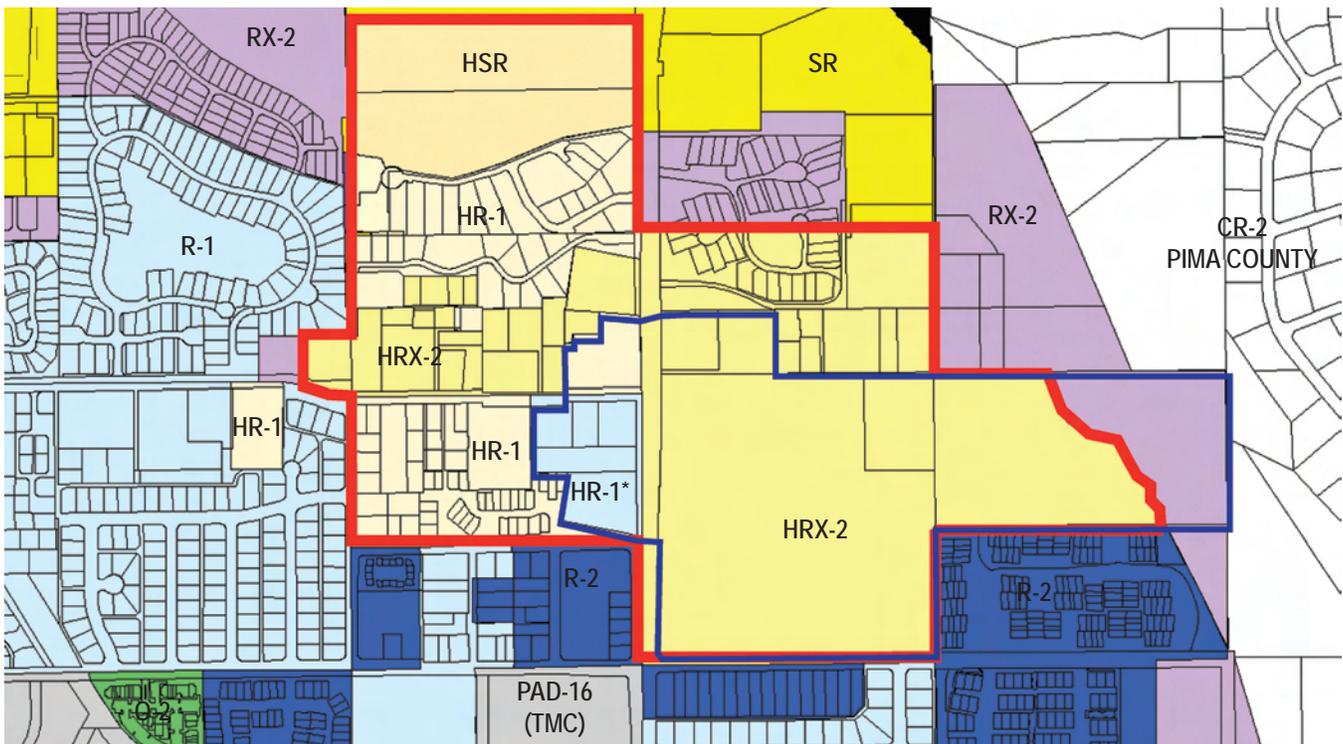


Figure 33: Zoning Map

* Note: Adkins Parcel was recently rezoned and is now included in the local historic overlay zone.

Tucson Medical Center - Planned Area Development

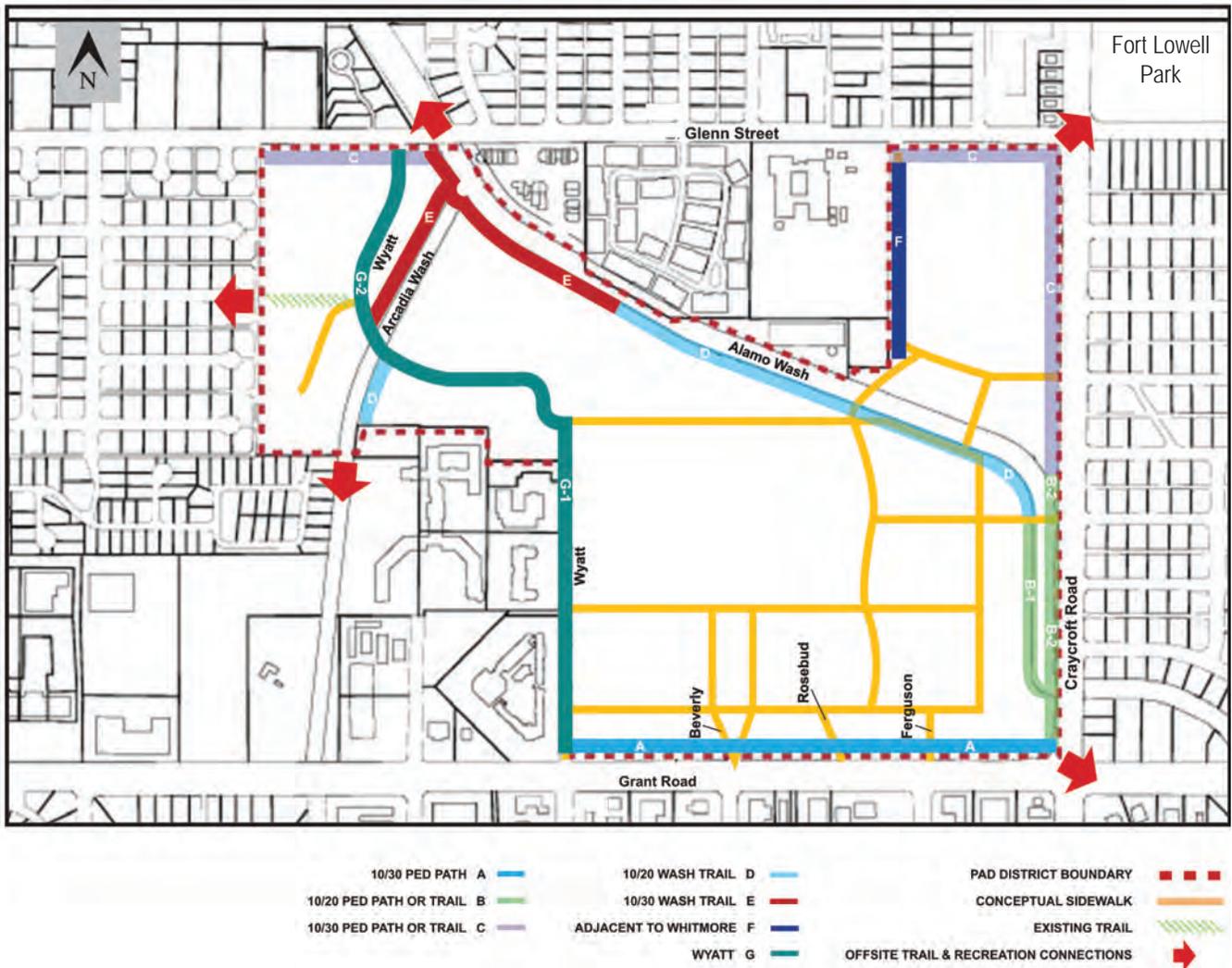


Figure 34: Proposed Pedestrian Circulation for Tucson Medical Center

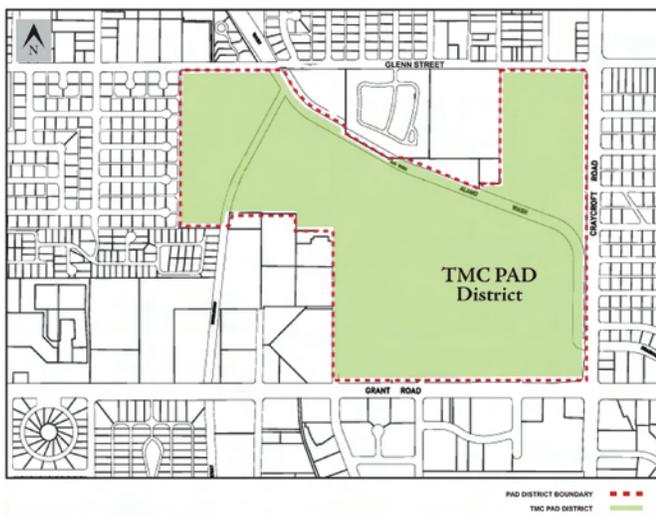


Figure 35: Outline of Tucson Medical Center PAD

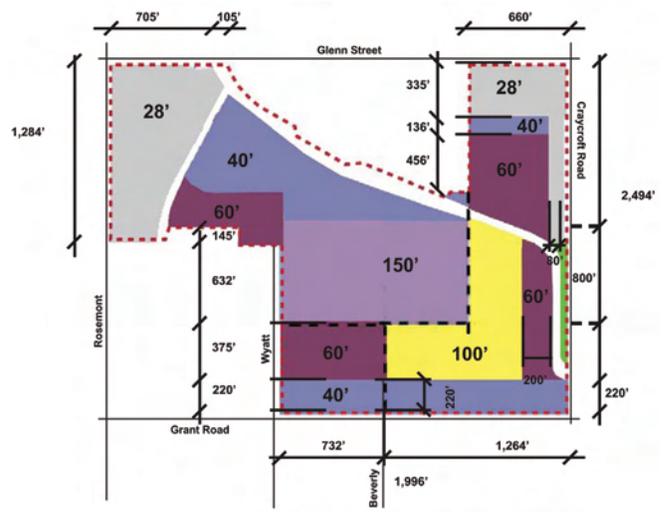


Figure 36: Proposed Building Heights for Tucson Medical Center

Existing Land Use

The neighborhoods surrounding Fort Lowell Park, including the Old Fort Lowell Neighborhood, are comprised of a mix of residential, commercial and institutional uses. Residential densities range from detached single family residences on five-acre lots to attached and multi-family housing units. Commercial developments are located along the Grant and Swan Road corridors. Tucson Medical Center occupies approximately 128.2 acres extending from the northwest corner of Grant and Craycroft Roads.

The Old Fort Lowell Neighborhood Plan (OFLNP) provides guidance on how development can be balanced with the preservation of natural, historic and human resources. The plan was initially created in 1984 and has been reaffirmed and amended in recent years. Vacant and other potentially developable parcels north of the park will have to comply with the priorities included in the OFLNP.

Existing Uses

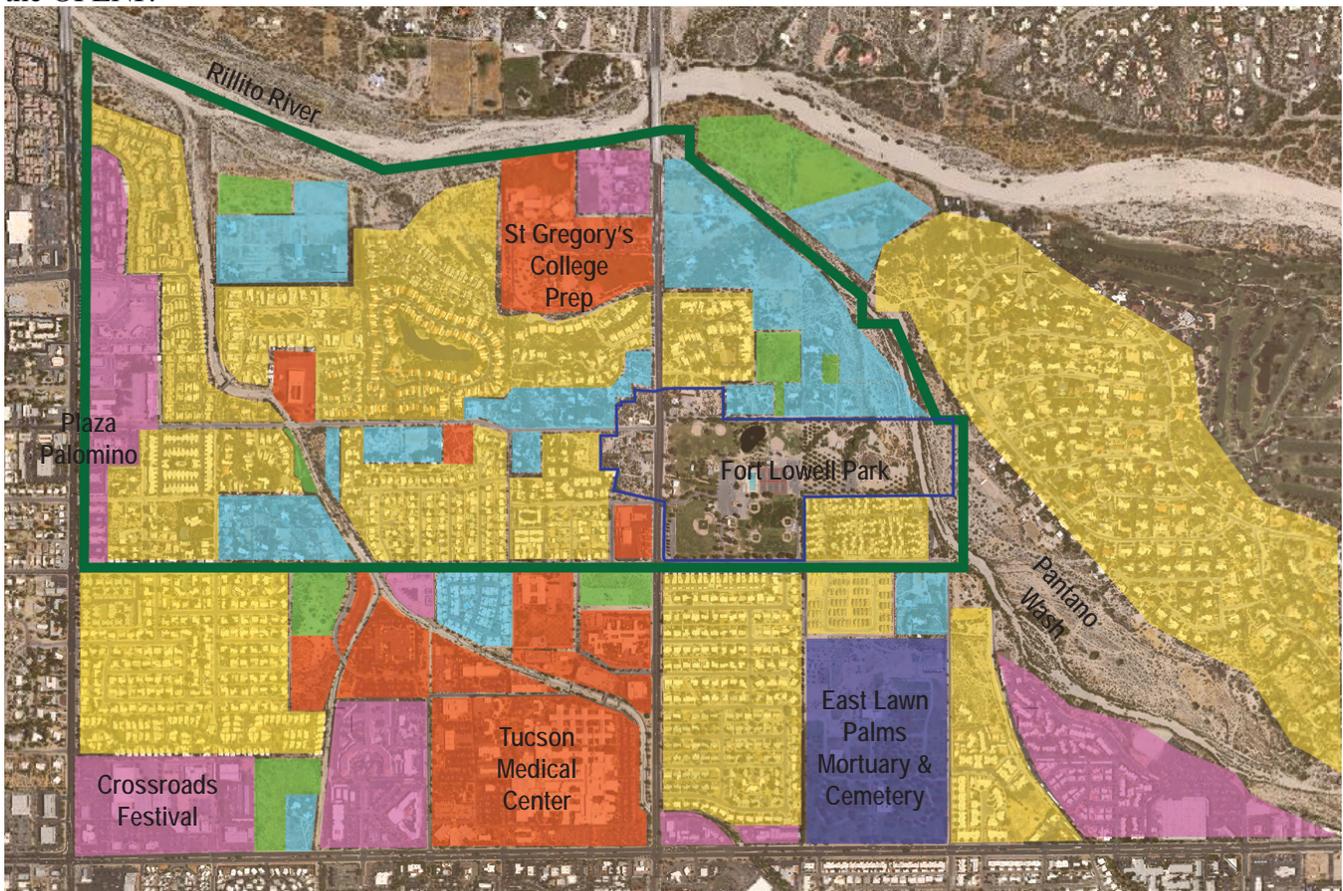


Figure 37: Existing Land Use. Aerial Image

Circulation and Parking

Automobile traffic along Craycroft Road is estimated at 30,000 vehicles per day. See the following page for a typical section through Craycroft Road, including utilities.

Vehicle counts for Fort Lowell and Glenn Roads are unavailable.

Access to the parking areas serving the park east of Craycroft Road is from Craycroft Road and Glenn Street. A small parking area serves the Hardy /

Donaldson property. Parking for the Commissary Apartments consists of a few spaces along Fort Lowell Road and a small gravel lot north of the property. The Adkins Parcel is currently accessed from gates along Fort Lowell and Craycroft Roads.

See the Natural Resources and Recreation chapter for additional information about the condition of existing on-site parking.

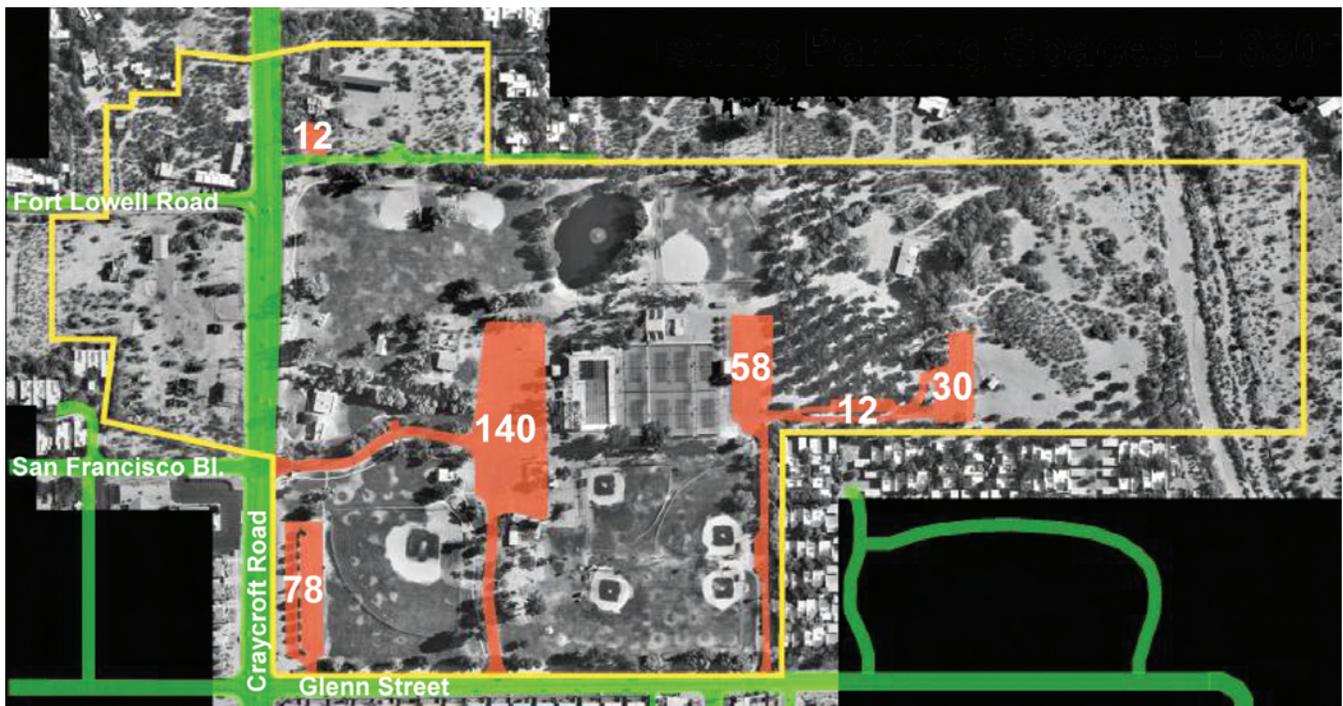


Figure 39: Existing paved parking lots showing the approximate number of parking spaces.

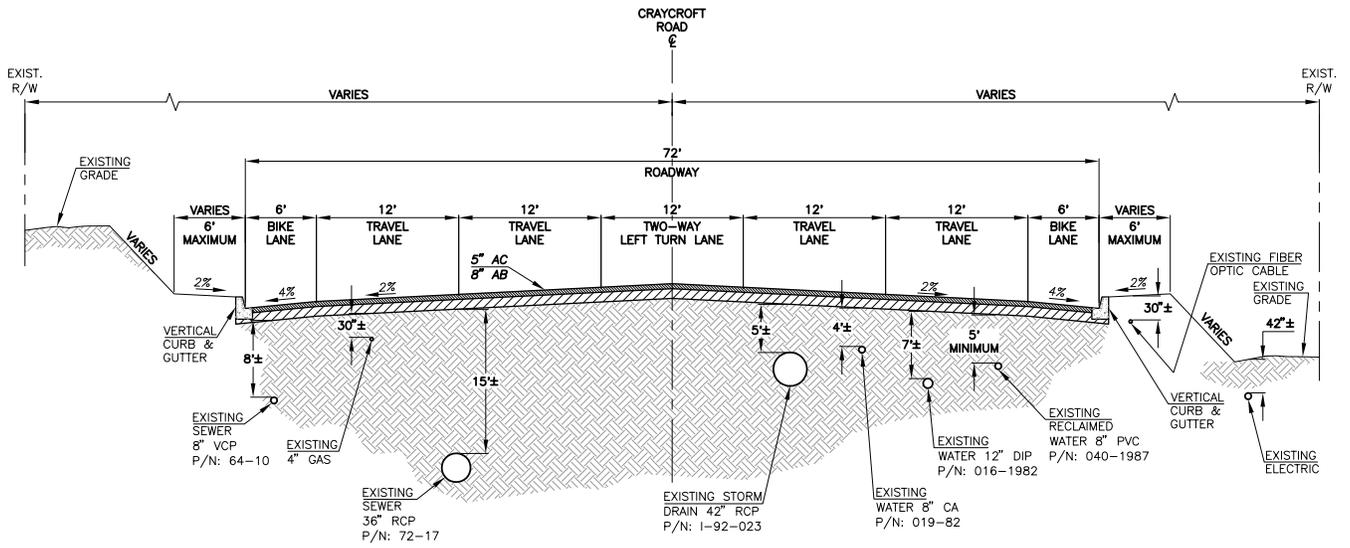


Figure 40: Craycroft Road, north of Fort Lowell Road, looking south, 2008



Figure 41: Fort Lowell Park main parking lot, looking southwest, 2008

Circulation and Parking



NOTES:
 PIPE DEPTH DIMENSIONS AND ALIGNMENTS ARE APPROXIMATE AND FOR INFORMATIONAL PURPOSES ONLY.
 LOCATION AND DEPTHS OF UTILITIES SHOULD BE VERIFIED PRIOR TO FURTHER ANALYSIS.
 REFERENCE: PCDOT P/N: 1-92-023

NOT TO SCALE

Figure 42: Craycroft Road Existing Typical Section

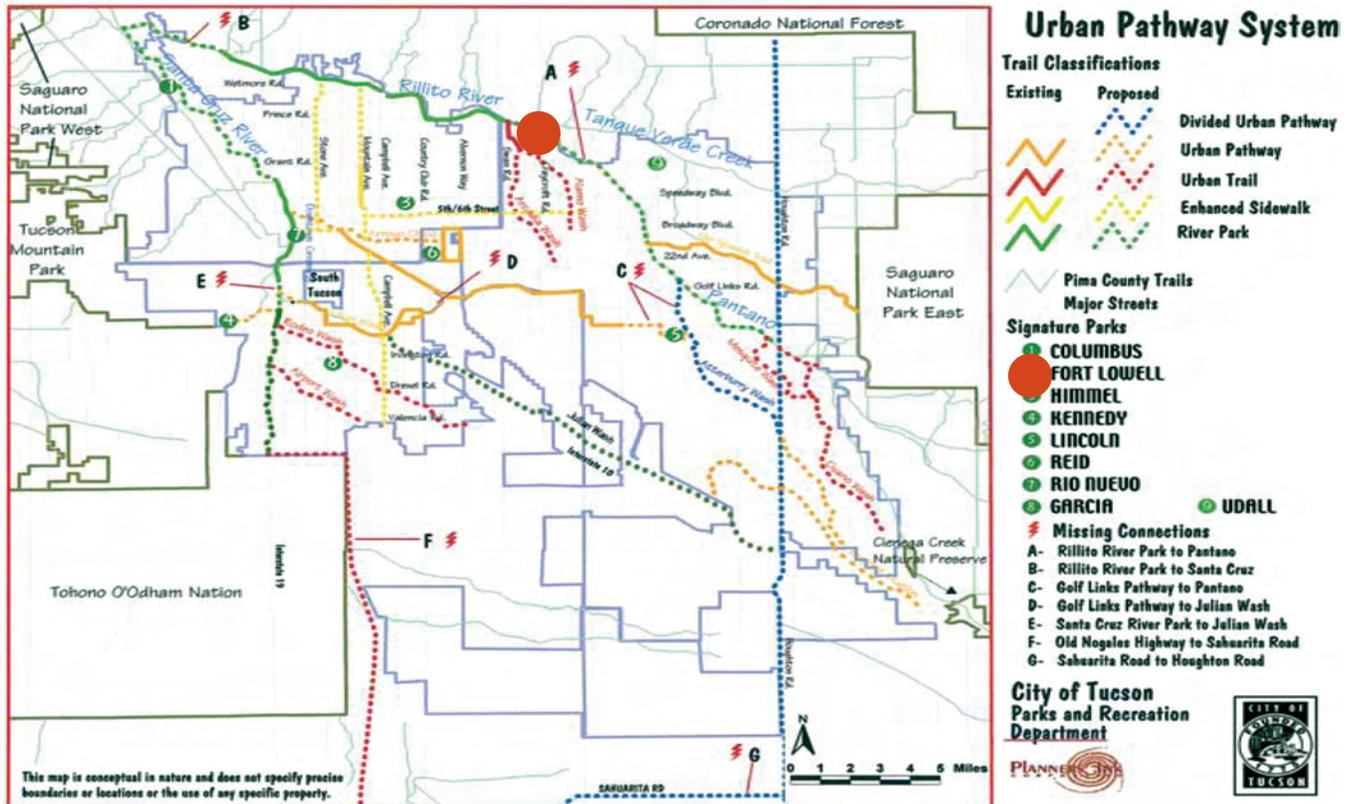
Trails and Neighborhood Connections



Figure 43: The multi-use path along the south side of the Rillito River Park currently ends at Craycroft Road. Future plans are to continue the path to a proposed path along the Pantano Wash.

Fort Lowell Park can serve as an important node in the trails systems for both the neighborhood and the region. A developed trails system will provide residents and visitors a linkage to the neighborhood’s historical sites and natural amenities. Trails can be both recreational and educational and help promote livability and a healthy lifestyle by encouraging less automobile activity.

Fort Lowell Park is ideally located adjacent to both existing and proposed neighborhood and regional trails. Neighborhood trails include the pedestrian trail along Fort Lowell Road that leads from Swan to Craycroft. In the future, this trail may be extended as far as McCormick Park at Columbus Boulevard and Fort Lowell Road. The Alamo Wash trail follows the Alamo Wash through the neighborhood from southeast and northwest. The Alamo Wash trail connects the neighborhood with Tucson Medical Center (TMC). The Arcadia Wash



Trails and Neighborhood Connections

flows into the Alamo Wash near the TMC property line at Glenn Street. It is anticipated that both the Alamo and Arcadia Washes will be improved as part of the redevelopment of TMC's campus. TMC and the Adkins parcel were both used as tuberculosis sanatoriums in the early decades of the 20th Century. A comprehensive trails system that links TMC with Fort Lowell Park could be used to link these complimentary resources.

Several trails are currently used or being planned for in the neighborhood. The neighborhood would like to extend the trail along Fort Lowell Road, west of Craycroft, through Fort Lowell Park to the Pantano Wash. Pima County's Comprehensive Trails Master Plan includes completion of a multi-use trail along the Pantano Wash. The Pantano Wash is being completed in segments as money

and opportunity become available. No time frame has been given for the completion of Pantano multi-use trail adjacent to Fort Lowell Park. Once complete, the Pantano Wash trail will provide a critical link to the heavily-used Rillito River multi-use path to the north and an array of trails in development or proposed to the southeast. The Master Plan should take into account how the eastern edge of the park will interface with this important connection. The eastern edge of the park can be an important gateway for bicyclists, equestrian users, and hikers who will have improved access to the park upon connectivity of the park with region's multi-use trails system.

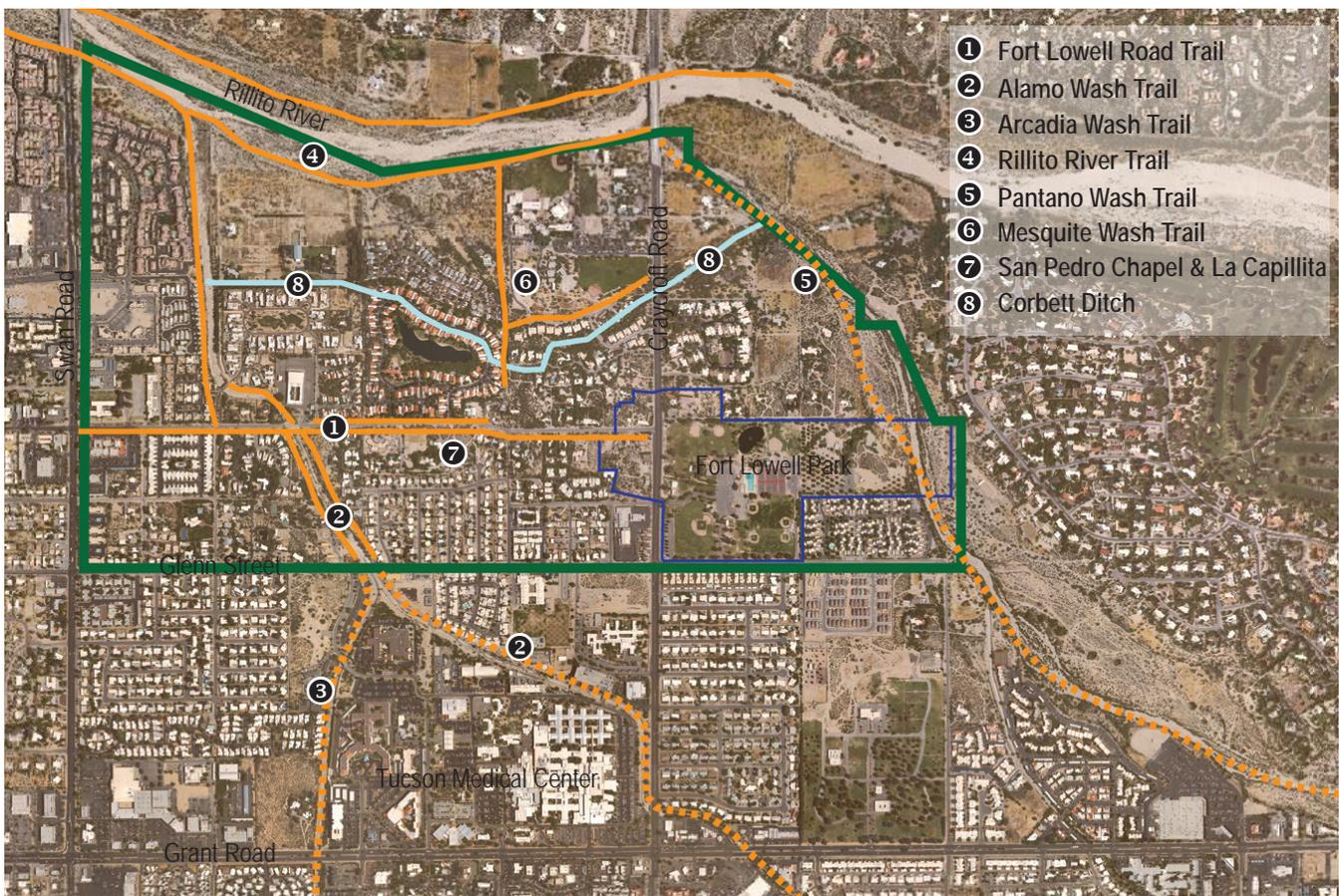


Figure 45: Old Fort Lowell Neighborhood (in green) showing existing (solid orange) and proposed (dashed orange) trails and points of interest. Fort Lowell Park is shown in blue

This Page is Blank

Trails and Neighborhood Connections

Legend

-  Fort Lowell Park Master Plan Planning Boundary
-  Old Fort Lowell Neighborhood Association
-  Corbett Ditch alignment
-  Existing Trails
-  Future Proposed Trails



Figure 46: Photo Keyplan

The Rillito River forms the northern edge of the Old Fort Lowell Neighborhood. Multi-use paths along the stabilized northern and southern banks of the river provide connectivity to the west, as far as the Santa Cruz River. The multi-use path currently ends at the Craycroft Road bridge. Future extension of the path along the Pantano Wash could provide additional access to Fort Lowell Park for walkers, joggers and bicyclists.



Figure 48: Rillito River path, equestrian path at south bank.



Figure 47: Rillito River path, south bank near Swan Road.



Figure 49: St Gregory School from the Rillito River path.

Trails and Neighborhood Connections



Figure 50: Termination of Rillito River path at Craycroft Rd. bridge.



Figure 53: N. Hill Farm Dr. at the Rillito River path.



Figure 51: Craycroft Rd. looking south at the Rillito River bridge.



Figure 54: Corbett ditch looking east.



Figure 52: Along the Alamo Wash, south of the Rillito River..



Figure 55: Mesquite Wash Trail, West of Craycroft Rd.

Trails and Neighborhood Connections

Legend

-  Fort Lowell Park Master Plan Planning Boundary
-  Old Fort Lowell Neighborhood Association
-  Corbett Ditch alignment
-  Existing Trails
-  Future Proposed Trails



Figure 56: Photo Keyplan

Fort Lowell Road forms the backbone of the Old Fort Lowell Neighborhood. Fort Lowell Road connects many of the neighborhood’s historic building and structures, including San Pedro Chapel and many of the residences and businesses started in the decades following abandonment of Fort Lowell. Furthermore, Fort Lowell Road maintains a rural landscape character defined by native vegetation and a minimal road right-of-way. In recent years, a walking path has been added to Fort Lowell Road to promote additional connectivity. Amenities along this walking path include benches and interpretive signage. The Alamo and Arcadia washes provide connections to areas north and south of Fort Lowell Road. Multi-modal connections within the neighborhood resources and between other locations in the city should be considered in the planning for Fort Lowell Park.



Figure 57: San Pedro Chapel as seen from Fort Lowell Road.



Figure 58: Walking path along E. Fort Lowell Rd.

Trails and Neighborhood Connections



Figure 59: E. Fort Lowell Road approaching N. Beverly Ave.



Figure 62: Alamo / Arcadia wash just south of E. Glenn St.



Figure 60: N. Beverly Ave. at E. Fort Lowell Road intersection.



Figure 63: E. Glenn St. at N. Beverly Ave., looking north.



Figure 61: N. Beverly Ave. between Glenn St. & Fort Lowell Rd.



Figure 64: E. Fort Lowell Road, approaching the Adkins Parcel.

Trails and Neighborhood Connections

Legend

-  Fort Lowell Park Master Plan Planning Boundary
-  Old Fort Lowell Neighborhood Association
-  Corbett Ditch alignment
-  Existing Trails
-  Future Proposed Trails



Figure 65: Photo Keyplan

Craycroft Road is a major north / south arterial road running through the Old Fort Lowell Neighborhood. This major corridor provides good access to the park from the south and the north. At the same time, Craycroft Road bisects the historic Parade Ground at Fort Lowell and will have to be sensitively accommodated in the Master Plan. Besides Fort Lowell Park, Craycroft Road is used to access other important destinations including Tucson Medical Center and St. Gregory School. The opportunity to further differentiate these locations, through the use of distinctive landscaping or other features should be considered.



Figure 67: Approaching Fort Lowell Park, north of Glenn St.



Figure 66: Grant Rd. & Craycroft Rd. intersection looking west.



Figure 68: Craycroft Rd., approaching Adkins parcel from south.

Trails and Neighborhood Connections



Figure 69: Craycroft Road north of Fort Lowell Park



Figure 72: Low-density residential property east of Craycroft Rd.



Figure 70: Approaching Fort Lowell Road from the north.



Figure 73: Craycroft Road at St. Gregory. View looking south.



Figure 71: Off-site adobe wall ruins west of Craycroft Rd.



Figure 74: Looking north along Craycroft near the Corbett Ditch.

Adkins Parcel Environmental Clean-up

The City of Tucson has undertaken significant environmental clean-up of the Adkins Parcel. During the summer of 2007, the City removed equipment, scrap material and underground storage tanks from the Adkins Steel Manufacturing operation on the site. Environmental site assessment, including soil testing, has determined the presence of polynuclear aromatic hydrocarbons and metals above the Soil Remediation Levels

determined safe by the State of Arizona. The City of Tucson is applying for a Brownfields cleanup grant that will be used to remove the contaminated soil.



Figure 75: Site before removal of metal scrap and equipment.



Figure 77: Looking northeast towards Officers Quarters #3 before clean-up around the site.



Figure 76: Adkins Parcel (2005) looking south before the purchase of the property by the City of Tucson. Significant clean-up to the site has occurred.

Flood Control / Floodplain Management

The existing Fort Lowell Park, Hardy Site North and the Hardy Site East will be described together due to close proximity and similar drainage patterns. This area has been divided into 13 different drainage areas. These drainage areas are comprised of sheet flow over turf soccer and baseball fields, natural terrain with sparse desert brush, paved parking lots and driveways, and a density of approximately two buildings/structures per acre. The Fort Lowell Park and the Hardy Site North generally flow to the northwest corner of the property. Runoff that flows onto Craycroft Road drains into the existing 48-inch reinforced concrete pipe (RCP) storm drain system between East Glenn Street and East Fort Lowell Road. This runoff proceeds through the RCP to the Rillito Wash outfall approximately 0.5 miles north of the project site. The Hardy Site East generally flows to the west into the Pantano Wash, and east into an improved drainage channel, that discharges into the Pantano Wash. During an interview on August 26, 2008, City of Tucson Parks and Recreation Department Maintenance Personnel reported that this channel had a breakout at the tennis court parking lots during offsite inflow events. This channel is under-fit and it is recommended to widen and or lower the channel. Further detail of this area will be needed for design analysis.

The Adkins Site and the Commissary/Apartment Site will be described in the same section due to close proximity and similar drainage patterns. This area has been divided into 8 different drainage areas. These drainage areas are comprised mostly of sheet flow over natural terrain, with sparse desert brush vegetation, various concrete surfaces, and approximately 2 buildings per acre. This site generally flows towards the north and northwest areas of the property. Runoff that flows onto Fort Lowell Road enters an existing 18-inch RCP storm drain which converges into a 48-inch RCP storm drain in Craycroft Road. This runoff proceeds through the RCP to the Rillito Wash outfall approximately 0.5 miles north of the project site.



Figure 78: On-site surface erosion east of the Donaldson House and Cavalry Corrals, August 2008.

A portion of the Hardy Site North currently lies within floodplain Zone X, as depicted on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Map No. 04019C1663K, Panel No. 1663K. It shall be noted that the portion of the Pantano Wash that is located within the project limits is in floodplain Zone AE, and per the FEMA FIRM Map the floodplain does not leave the confines of the western bank of the Pantano Wash, which is near the Hardy Site East.

Flood Control / Floodplain Management

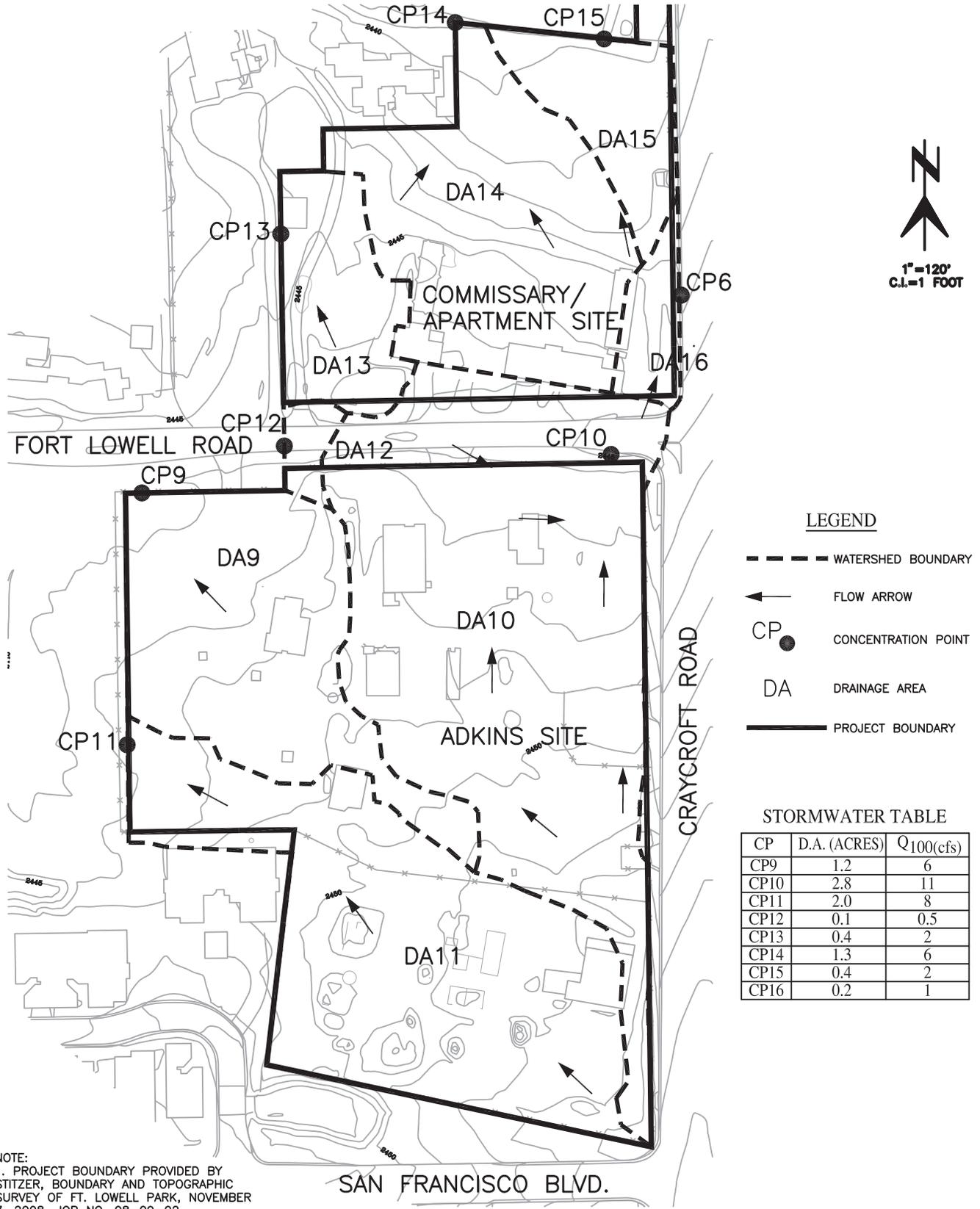
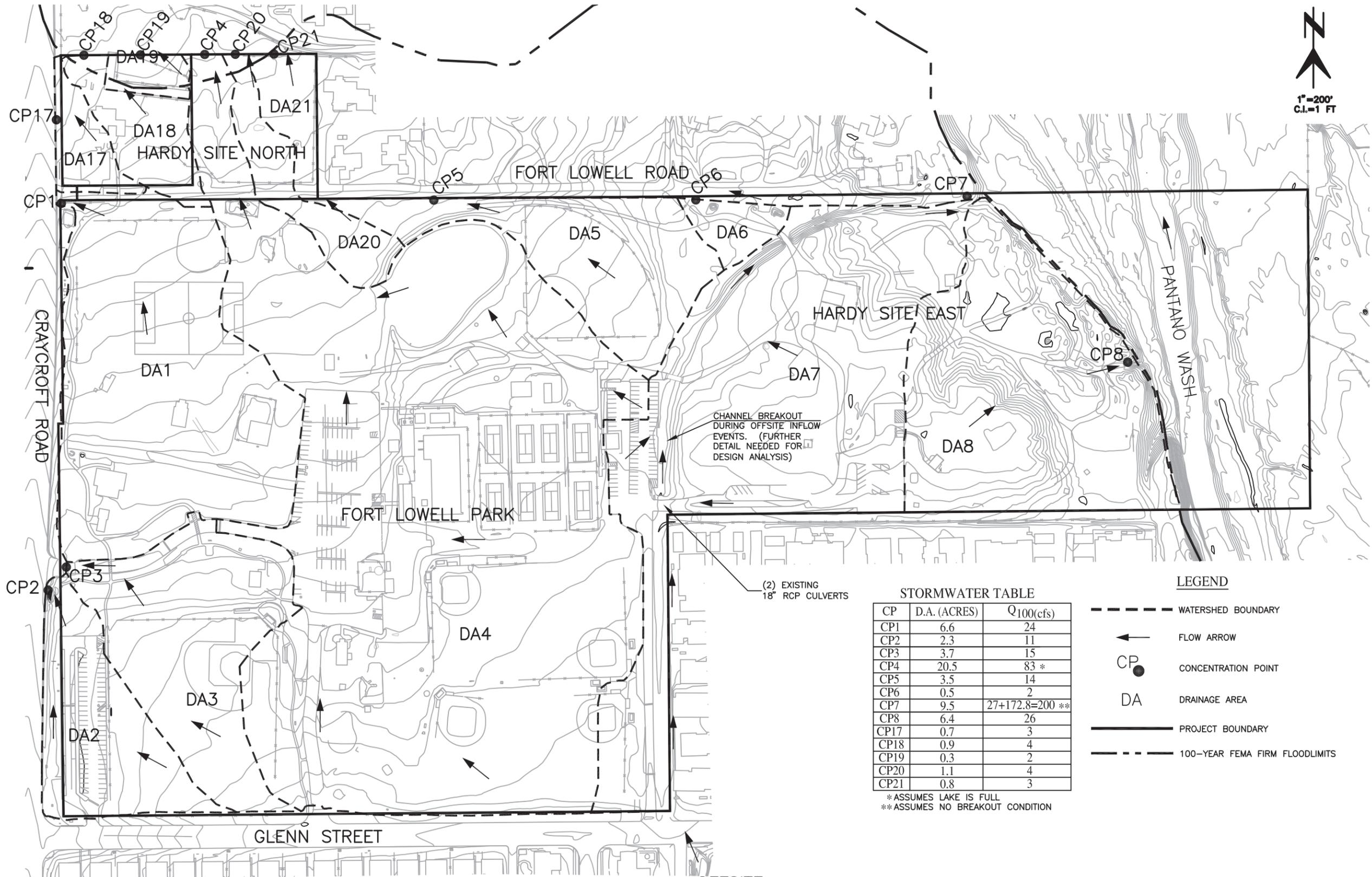


Figure 79: Adkins and Commissary Parcels existing drainage conditions.



NOTE:
 1. PANTANO WASH DRAINAGE AREA, FLOW RATES, AND CONCENTRATION POINTS HAVE BEEN EXCLUDED FROM THIS STUDY.
 2. PROJECT BOUNDARY PROVIDED BY STITZER, BOUNDARY AND TOPOGRAPHIC SURVEY OF FT. LOWELL PARK, NOVEMBER 7, 2008. JOB NO. 08-09-02

OFFSITE RUNOFF
 Q₁₀₀=172.8cfs

Figure 80: Fort Lowell Park, Hardy Site North and East, Existing Drainage Conditions

Utilities, Easements and Wells

There is an existing storm drain system in Craycroft Road. This storm drain system begins upstream at the intersection of Craycroft Road and San Francisco Boulevard and runs north to discharge into the Rillito Wash. In this section of the storm drain, the mainline is 42-inch diameter RCP with eight laterals of 18-inch or 24-inch diameter RCP pipe. Additionally, there is an independent 12-inch storm drain located in the Fort Lowell Park that allows the park swimming pool to drain to the park pond.

The following image depicts the existing utilities adjacent to and within the Park boundary. In Craycroft Road there is a 36-inch RCP sanitary sewer interceptor line that extends onto the southern edge of the Fort Lowell Park in a 20-foot easement. Running parallel to the interceptor in Craycroft Road and Glenn Street is an 8-inch vitrified clay pipe (VCP) sanitary sewer mainline. Connecting to that line in a 15-foot easement is an 8-inch VCP sewer in Fort Lowell Road north of Fort Lowell Park. This line runs through the property between Fort Lowell Park and The Hardy Site East in a 15-foot easement, then runs along the southern edge of the Hardy Site East and ends with a cleanout west of the Pantano Wash. A private sewer line enters the Fort Lowell Park off of the 8-inch mainline in Craycroft Road, and provides service to the museum and the recreational facilities.

Potable and reclaimed water are supplied by Tucson Water. In Craycroft Road, there are three potable water mains. One potable water main is an 8-inch concrete asbestos pipe (CA) located between Glenn Street and Fort Lowell Road. The second potable waterline ranges in size and material. Between Glenn Street and San Francisco Blvd., this waterline is 10-inch CA, and north of San Francisco Blvd. this waterline is 12-inch CA and also a DIP line. The last potable waterline in Craycroft Road is a 42-inch concrete cylinder (CC) interceptor line north of Fort Lowell Road. In Fort

Lowell Road north of the Adkins Site, there are two potable waterlines, one is an 8-inch CA line that connects to the 8-inch waterline in Craycroft Road, the other is a 42-inch CC interceptor line that connects to the 42-inch line in Craycroft Road. In Fort Lowell Road north of Fort Lowell Park, there is a 6-inch CA potable waterline located within a 15-foot public utility easement that connects to the 8-inch CA waterline in Craycroft Road. In Glenn Street, there is an 8-inch potable CA waterline that connects to the 8-inch CA line in Craycroft Road. Potable water in Fort Lowell Park is supplied to all the buildings and drinking fountains within the park.

Reclaimed water pipes are in Craycroft Road and Glenn Street. In Glenn Street the system is 33-inch CC interceptor line, with two 8-inch DIP services lines leading north into the Fort Lowell Park, and in Craycroft Road, the system is an 8-inch polyvinyl chloride (PVC) pipe that connects to the interceptor line in Glenn Street. The east service line in Fort Lowell Park is capped, and the west service line supplies reclaimed water to a tank located in the center of the park. Various reclaimed water lines lead from the tank to the numerous grassy fields of the Park.

In the Adkins property, there are two potable water services leading to two residential buildings. The Adkins family home was supplied from the water line in Fort Lowell Road. The Officer's Quarters building closest to Craycroft Road was supplied from the water line in Craycroft Road.

Existing wells and septic tanks have been shown in the following image. In the Adkins Site, there are three wells that extend to a depth of approximately 100-feet, and all are reportedly dry. There are also five septic tanks located on the Adkins Site, none of which have permits. In Fort Lowell Park, there are six wells, one of which extends to a depth of approximately 260-feet, located near the reclaimed water tank. This well is used as

Utilities, Easements and Wells

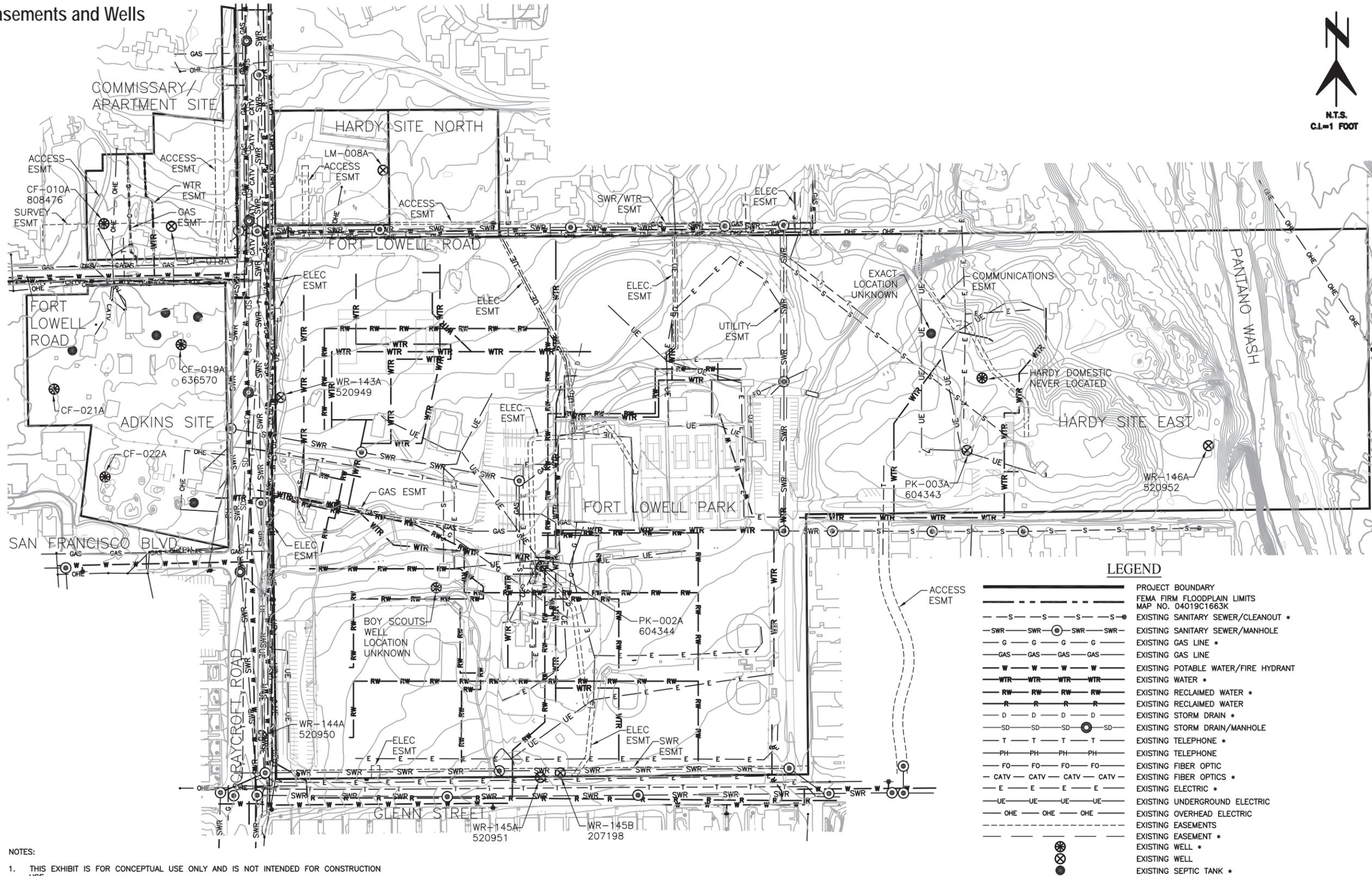
a backup supply when the reclaimed water tank supply runs low. Another well was dug by the Boy Scouts at some point in the time period from the late 1940's to the mid 1950's. Its exact location has not been located. The other four wells exist on the western and southern edges of the park. In the Hardy Site East, there are three wells, one of which is located near the parking lot and extends to a depth of approximately 260-feet. Another well was dug for the Hardy Site, but its exact location has not been found. The third well is located on the east side of the site. There is also a septic tank that serves the maintenance building, but its exact location is unknown. There are two wells in the Commissary/Apartment Site. One is located west of the Apartments and is currently in service, while the other is located north of the Apartments and is abandoned. In the Hardy Site North, there is one well located near the paved parking lot.

Gas service is provided by Southwest Gas Corporation. The mainlines are located in Craycroft Road, San Francisco Boulevard and Fort Lowell Road. The gas line in Fort Lowell Park is accessed from Craycroft Road, and the gas line for the Commissary/Apartment Site is accessed from Fort Lowell Road, in an existing gas easement.

Electric service is provided by the Tucson Electric Power Company. The mainline is located in Craycroft Road, Glenn Street and Fort Lowell Road. Fort Lowell Park and the Hardy Site East receive power throughout the site from these lines.

Cable service is provided by Cox Communications. Fiber optics lines are located in Craycroft Road and Fort Lowell Road, and supplies the Adkins Site and the Commissary/Apartment Site.

Utilities, Easements and Wells



- NOTES:
1. THIS EXHIBIT IS FOR CONCEPTUAL USE ONLY AND IS NOT INTENDED FOR CONSTRUCTION USE.
 2. SURVEY AND PROJECT BOUNDARY PROVIDED BY STITZER, BOUNDARY AND TOPOGRAPHIC SURVEY OF FT. LOWED PARK, NOVEMBER 7, 2008, JOB NO. 08-09-02.
 3. UTILITIES REPRESENTED IN THE LEGEND WITH AN ASTERISK (*) WERE GATHERED FROM CITY OF TUCSON PARKS AND RECS. MAPS AND PERSONNEL AND HAVE NOT BEEN RECORDED BY A REGISTERED LAND SURVEYOR. THESE UTILITIES HAVE BEEN PROVIDED FOR CONCEPTUAL PURPOSES ONLY AND SHOULD NOT BE CONSIDERED ACCURATE.

* INFORMATION GATHERED FROM CITY OF TUCSON PARKS AND RECS MAPS AND PERSONNEL. (SEE NOTE #3 THIS SHEET)

Figure 81: Fort Lowell Park and Adkins Site Existing Utilities



Natural Resources and Recreation

Contributed by SAGE Landscape Architecture and Environmental

Previous Page:

Figure 82: (Top) Pantano Wash natural area

Figure 83: (Left) Fort Lowell Soccer Shootout

Figure 84: (Right) Fort Lowell Pool

Existing Site Conditions

Fort Lowell Park Background

Fort Lowell Park and the adjacent properties within the planning area are naturally flat topographical and are located near Glenn and Craycroft Roads. The current park is bounded by Craycroft Road to the west and Pantano Wash to the east. Residential neighborhoods have developed to the west, north and south. The park's location near the confluence of the Rillito Creek, Tanque Verde Creek, Pantano Wash, Alamo Wash and the Mesquite wash has attracted human habitation for many generations. The study area has areas of lush vegetation associated with the park, degraded vegetation associated with impacts, recreational components, historic components and water elements. A variety of activities are available including swimming, tennis, a walking path, sport fields, ramadas, an accessible playground and a sand volleyball court.

Vegetation

A significant portion of the park is dedicated to ball fields and consequently is dominated by large areas of turf and a variety of mature park-appropriate deciduous and evergreen non-native trees. These trees are concentrated around the ramadas, the pond, along the entry drives and park perimeter. Trees species typically found in these areas are *Pinus halepensis*, *Pistacia chinensis*, *Eucalyptus microtheca*, *Prosopis velutina*, *Prosopis chilensis*,



Figure 86: Fort Lowell Pond



Figure 87: Exercise Trail



Figure 85: Mixed vegetation



Figure 88: Picnicking Ramada

Existing Site Conditions



Figure 89: Pecans in summer



Figure 90: Pecans in winter



Figure 91: Lower Pecan Orchard

Celtis reticulata, *Fraxinus sp.*, *Morus alba*, *Quercus virginiana*, *Juniperus sp.*, and *Populus fremontii*. The mature trees located in turf areas are not watered with bubblers, but receive their water needs from the turf irrigation sprinkler system.

Vines, mesquite trees, juniper, Indian fig cactus, prickly pear and an oleander hedge line the chain link delineating the northern boundary. A pecan orchard located east of the tennis courts is located between two ‘water’ features, a vegetated drainage canal and the Riparian Woodland Display. The pecan tree grove was originally planted around 1940 and some may have been replanted in the 1960s and appear to be healthy and good condition. Wide watering basins surround each tree trunk. The existing bubbler irrigation system, used to water the pecans, is old, brittle and in disrepair. In some cases the tree trunks have grown around the bubbler infrastructure. In summer the orchard produces wonderful shade but in winter the trees are leafless and the ground plane area barren. The lack of understory contrasts with the other park areas which have turf or understory. Maintenance personnel have expressed safety concerns about park visitors climbing the pecan trees. The pecans are harvested by the public.

The pecans along the remote southeastern boundary, known as the Lower Orchard, seem out of place and lack connectivity to the much larger orchard to the northwest. Many of the tree specimens appear to be struggling. The original pecan grove extended from the northern park boundary to the south at Glenn St., where the Orchard River Town Homes are now located. Many pecan trees are still found in the town home common areas, however, this connection is not obvious from the park, unless you had been to the neighborhood.

FT. LOWELL PARK EXISTING SITE CONDITIONS



LEGEND

VEGETATION

- Pecan Orchard
- Cottonwood Lane
- Riparian
 - Cottonwood, Palm, Ash, Willow, grasses, Blue Palo Verde, Mexican Palo Verde, yucca, Reeds, Acacia, Sycamore
- Native Vegetation
 - Velvet Mesquite, Blue Palo Verde, Canyon Hackberry, Cresosote, Prickly Pear, Cholla, Saguaro, Barrel Cactus, Acacia
- Park
 - Aleppo Pine, Eucalyptus, Velvet Mesquite, Chilean Mesquite, Ash, Juniper, Chinese Pistache, Canyon Hackberry, Mulberry, Cottonwood, Lawn, Southern Live Oak

LEGEND

HISTORIC ELEMENTS

- Adkins Residence
- Barracks
- Cavalry Band Quarters
- Cavalry Corral
- Canal-Historic
- Commissary
- Cottonwood Lane
- Ft. Lowell Museum
- Hohokam Pit House
- Hospital
- Guard House
- Kitchen
- Officer's Kitchen
- Officer's Quarters
- Parade Ground
- Steel Fabrication Shed
- Water Tower
- Windmill Base

PARK AMENITIES

- Ball Fields
- Bench
- Bridge
- Bleachers/Dugouts
- Entry
- Fitness Trail
- Maintenance
- Parking Lot
- Picnic Tables
- Playground Equipment
- Pond
- Ramada
- Raquetball
- Restroom
- Riparian Woodland Display
- Soldier Statue
- Swimming Pool Complex
- Tennis Courts
- Volleyball
- Well
- Lights

Limits of Study Area

Figure 92: Fort Lowell Park Existing Site Conditions



Existing Site Conditions

The vegetated drainage canal by the pecan orchard has the typical xeri-riparian vegetation consisting primarily of palo verde and mesquite trees.

The Riparian Woodland Display is located directly east of the current maintenance building. This nature display consists of a concrete lined canal, pond and is a recirculating system. It showcases riparian vegetation typically found in the surrounding Sonoran Desert. Vegetation present include blue palo verde, reeds, desert spoon, yucca, cottonwood, bear and deer grass, velvet mesquite, Arizona ash, palm trees, willows, and sycamore. An overlay of a 1958 aerial suggests that some type of water feature already existed at this location. The display is overgrown and needs periodic thinning. Routine mosquito control is also required.

Native vegetation dominates the remainder of the eastern portion of the park that includes a portion of the Pantano Wash. Typical Sonoran Desert upland species; saguaro, velvet mesquite, whitethorn acacia, prickly pear, barrel cactus, cholla, palo verde and creosote are all present in the park. Currently the banks of the Pantano Wash are in a natural state and have unrestricted access. The Pantano Wash is designated as an Important Riparian Area per Pima County Ord. 2005- FC2

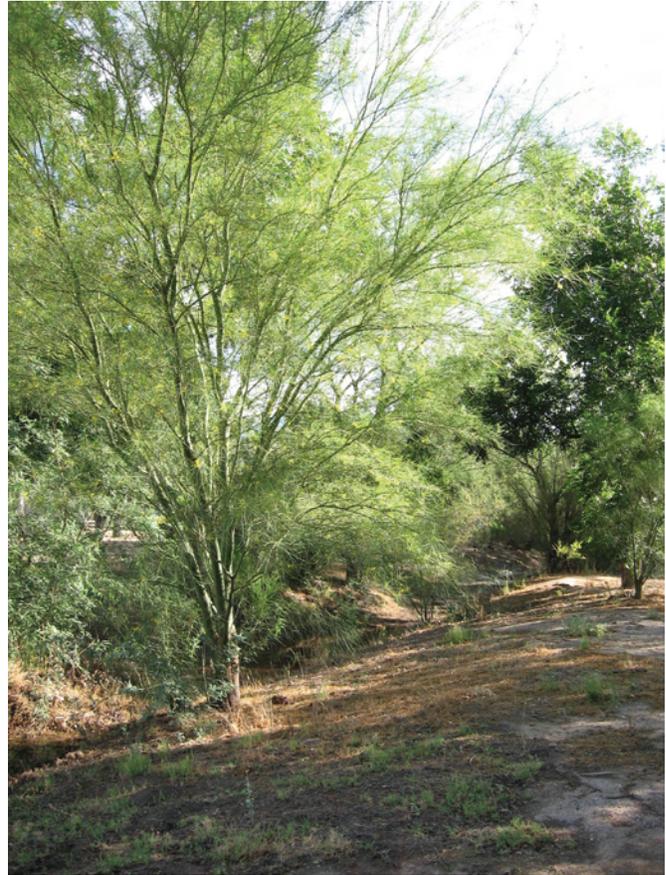


Figure 94: Vegetated Drainage Canal



Figure 93: Riparian Woodland Display



Figure 95: Sonoran Desert Scrub

Existing Site Conditions



Figure 96: Hackberry tree at Ramada 7



Figure 97: Cottonwoods by the Fort Lowell Museum



Figure 98: Screened low density housing to the north

and extends into the park to include the Riparian Woodland Display.

Supplemental plantings of native canyon hackberry and velvet mesquite have been provided around the Ramada #7 which has direct access to Pantano Wash.

The cottonwood trees that once lined Officer's Row were replanted in the mid 1960's just offset their original alignment. As in the pecan orchard, wide basins surround each tree and are watered with the bubbler irrigation system. Several trees near Craycroft Road have been replaced in recent years. In general, the cottonwoods do appear to be healthy.

The vegetation found on the Adkins Parcel and the Hardy/Donaldson parcel is scattered but consists primarily of native vegetation. Velvet mesquite, creosote, acacia sp., prickly pear, barrel cactus, cholla and saguaros have all been documented on site and are in good physical condition. The non-native pomegranate, pecan, and lemon tree present on the Adkins site are suffering from lack of water and care. The pomegranate and pecan trees are located near the Adkins residence and the lemon tree adjacent to the intact Officer's Quarters.

Screening

Perimeter chain link fencing occurs primarily along the northern and southern park boundary. The low density housing to the north is screened by a significant amount of vegetation however the town homes to the southeast have no screening at all.

Erosion

A small drainage channel is found outside the

Existing Site Conditions

chain link fence by the town homes to the south. Recent flooding and current park tree irrigation practices has caused erosion and washouts in many areas along the fence. There is concern by maintenance personnel for park security and safety for fitness trail users. Abandoned vehicles, trash and park runoff caused erosion at the wash interface is visible, causing safety concerns from park maintenance personnel.

Drainage

The overall drainage pattern within the park is south to north. The tennis courts and adjacent parking area drains into a shallow area near the northeast ball fields. The central parking area drains generally towards the pond. Part of the natural drainage system is the existing canal that connects to the drainage channel between the Glenn Street entry drive and the Orchard River Town homes. A 1958 aerial also verifies that the canal predates the park. Recent offsite development to the southeast has resulted in increased water flow into the park during peak rains. The current onsite drainage channels are not designed to handle this additional flow, resulting in flooding in the pond and historic sites on the northwest part of the park.



Figure 99: Erosion at Pantano Wash



Figure 100: Drainage channel along southern boundary

Existing Park Facilities, Features, and Amenities



Figure 101: Ballfields



Figure 102: Fort Lowell Tennis Center



Figure 103: Neglected racquetball courts

Recreation

A large portion of the park is occupied by eight sports fields, five of which are well-lit. The fields are used by a variety of park visitors including Little League baseball, softball, soccer and football. Although the fields are well maintained, they suffer from a few chronic problems. An old irrigation system provides inadequate head-to-head coverage resulting in many brown patches. Park personnel are in a constant battle with the resident gopher colony living on site. The resulting gopher holes are a hazard to the many sports participants.

Eight lighted tennis courts and the swimming pool complex are centrally located in the park. Separate parking lots service these recreational resources. The Fort Lowell pool, built in 1967, is a heated pool open year round. It serves as the Aquatic Center for City of Tucson Parks and Recreation. The 50 meter pool has a depth ranging from 3.5ft to 12 ft. making it one of the deepest in Tucson. The pool was last renovated in 1998. The competitive pool is in good condition for its age. However the pool deck, benches and dressing areas needs updating. Currently there is little or no additional shade provided around the pool. An enclosed wading pool and associated ramada is situated at the north end of the pool.

Adjacent to the pool and tennis complex are four

Existing Park Facilities, Features, and Amenities

possibly abandoned racquetball courts that are in a state of disrepair.

The half-acre park pond, originally installed to provide an area for the pool backwash, has become a focal point and habitat for much wildlife in the park. Ducks, fish, turtles and many avian species use this water source. A fountain in the center aerates the water. Benches and large shade trees provide a tranquil resting space along the perimeter. The water is now supplied from an on-site well.

A one-mile fitness trail meanders through out the park. Many of the fitness elements are in need of repair, mostly due to vandalism. The trail is unmarked in several locations and is difficult to follow. Pima County has plans to link the Pantano Wash into the River Parkway which will provide easier access between park and river parkway users and will connect with trails within the planning area.

Historic Elements

Fort Lowell Park is rich in human history. A graphic depiction of the historical locations can be found in Figure 2. The most prominent historical sites are from the Fort era. Some historic elements are fenced off to the public. Native and



Figure 105: Fitness Trail



Figure 106: Cottonwood Lane Replanting Dedication Plaque



Figure 104: Pond in winter



Figure 107: Fort Lowell Museum

Existing Park Facilities, Features, and Amenities



Figure 108: Hardy/Donaldson Site



Figure 109: Adkins Parcel



Figure 110: Hohokam Pit House Exhibit

invasive plants have “volunteered” in these sites resulting in an unkempt appearance. Some of the structures have been sheltered to protect them from the elements. Current signage is inconsistent, comprising a mixture of materials and styles. The recreated Officer’s quarters and kitchen now serve as the Fort Lowell Museum. Their new locations are not historically correct. The cottonwood trees that once lined Officer’s Row were replanted in the mid 1960’s to recreate the appearance of the row relative to the new location of the building.

The recently acquired Adkins parcel is located at the southwest corner of Craycroft and Fort Lowell Roads. The property includes the western limits of the historic Fort Lowell compound. The parcel contains three of the seven remaining Officer’s Quarters and are in various states of decline. The Hardy/Donaldson site north of Fort Lowell Park currently has several Fort structures in various states of decline as well as more recent buildings from the post-Fort era. Currently both properties are fenced off from the public.

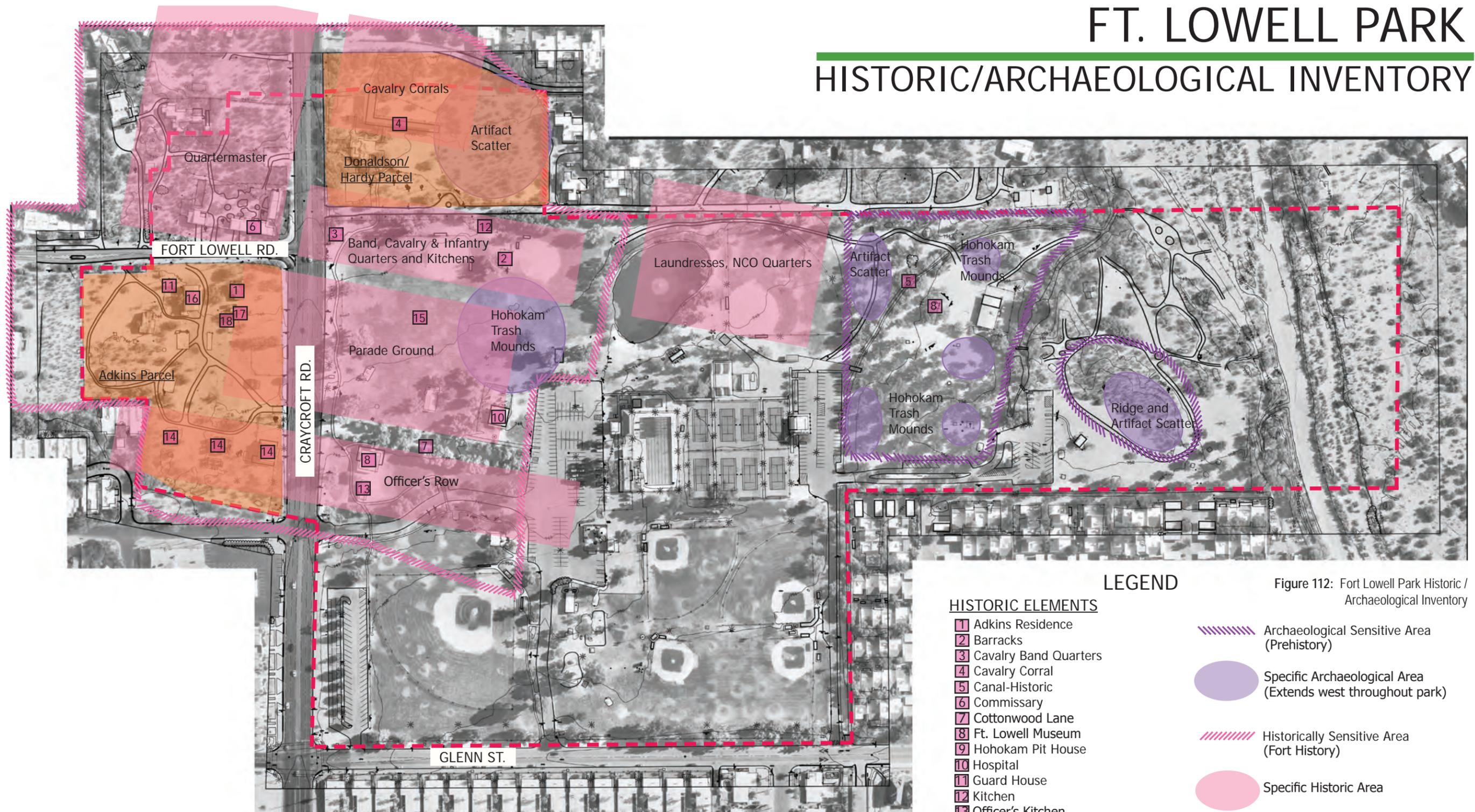
Although archaeological surveys have shown that the Hohokam lived on the site, little visual evidence is highlighted in the park. A recreated Hohokam pit house is on display in an archaeologically sensitive area, but is unfortunately located adjacent to the maintenance building.



Figure 111: Restroom with Accessible facilities

FT. LOWELL PARK

HISTORIC/ARCHAEOLOGICAL INVENTORY



LEGEND

HISTORIC ELEMENTS

- 1 Adkins Residence
- 2 Barracks
- 3 Cavalry Band Quarters
- 4 Cavalry Corral
- 5 Canal-Historic
- 6 Commissary
- 7 Cottonwood Lane
- 8 Ft. Lowell Museum
- 9 Hohokam Pit House
- 10 Hospital
- 11 Guard House
- 12 Kitchen
- 13 Officer's Kitchen
- 14 Officer's Quarters
- 15 Parade Ground
- 16 Steel Fabrication Shed
- 17 Water Tower
- 18 Windmill Base

Limits of Study Area - - - - -

-  Archaeological Sensitive Area (Prehistory)
-  Specific Archaeological Area (Extends west throughout park)
-  Historically Sensitive Area (Fort History)
-  Specific Historic Area
-  Post Fort Period

Figure 112: Fort Lowell Park Historic / Archaeological Inventory



Existing Park Facilities, Features, and Amenities

Statuary and Monuments

Statuary and monuments at Fort Lowell Park are typically located near the parade grounds. While relating primarily to Fort Lowell, they are not site specific and may be relocated as part of the Fort Lowell Master Plan.

The Bugler Statue is the most iconic and visible statuary at Fort Lowell Park. It lies on the west edge of the parade grounds, and overlooks Craycroft Road. Its prominent position cannot be missed by passing motorists. The statue created by Dan Bates and was completed in the early 1990s by the Desert Crucible Foundry. The west-facing statue consists of a sandstone plinth upon which is placed a scale frontier cavalryman on a horse, with a bugle, welcoming in the end of day. Both elements are in good condition and should be conserved, although there is minor cracking of concrete at the transition between the sandstone and metal.

A memorial to Rugged Pioneer Soldiers is



Figure 114: Memorial to Rugged Pioneer Soldiers



Figure 113: The Bugler Statue at Craycroft Road



Figure 115: Memorial Flag Pole

Existing Park Facilities, Features, and Amenities



Figure 116: Veteran's Memorial

located along Craycroft Road just north of the Bugler statue. It was erected in May of 1965 by Morgan McDermott Post #7 and The American Legion Department of Arizona. It is a concrete plinth, faced with a rustic stone veneer. A copper dedication plaque faces Craycroft Road. A small post at the top suggests that a flag once adorned the top of the monument.

A memorial flagpole is located just south of the hospital ruins. The steel flagpole is set into a concrete base that has an attached, engraved copper plaque dedicated to James Ewing (1891-1953), President of the Catalina Council from 1952 to 1953. The flagpole did not sport a flag on the day of inventory, but is otherwise in good condition.



Figure 117: Bench looking onto playground.

A veteran's memorial is situated just outside the southwest corner of the hospital ruins fence. It was erected in May 1958 by Pima County Board of Supervisors in Cooperation with the United States Bureau of Public Roads. The monument is painted concrete and is in fair condition. There is minor cracking in the concrete, and chipping paint. The copper plaque is leaching water and should be cleaned. The memorial was not originally constructed for Fort Lowell Park, and was moved from the Veteran's Overpass on Palo Verde Road.

Seating

Fort Lowell Park offers plentiful seating opportunities, from green grassy areas to spread out a picnic blanket, to metal sport bleachers, to backed planter benches. Seating elements are strategically placed around the park. Memorial benches are clustered around scenic, contemplative regions of the park, namely the Fort Lowell Pond. Other benches are situated by the playground for parents to observe their children playing. Metal bleachers flank the baseball fields for gathering spectators during sporting events.



Figure 118: Stone and Concrete Planter Bench by pond.

Typical benches follow a similar material and color scheme throughout the park. This scheme

Existing Park Facilities, Features, and Amenities

is also applied to many picnic tables around the park. Benches are monolithic concrete in a simple linear design, with no backrest. They are attached to a concrete pad, and are typically not accessed from a paved path. Photographs from 2005 reveal unpainted concrete, or peeling terra cotta colored paint. Sometime between then and early 2009, a fresh new terra cotta colored paint coat was applied to benches, picnic tables, and ramadas. There are two such benches located near Ramada #1 and the playground. They are in good condition, although the northern one is unshaded.

The park has seven memorial benches, in the same concrete material and terra cotta color palette. Four encircle the pond, and are dedicated to Michael Mulholland, Women with Breast Cancer, Dick Cook, and Jeremiah Nuckles. Two are located by the riparian area, and are dedicated to Carlos George Roble, and Wayne and Carol. One is located at Ramada # 3, and is dedicated to William R. Rhoads. Presumably older benches are painted concrete, while newer benches forego the paint for a terra cotta tinted concrete. The difference is indistinguishable from afar. The benches are all in good condition, although one by the riparian area has minimal graffiti.

Three stone and concrete, cylindrical planter benches are clustered in the zone where the pond, pool, and tennis courts meet. Two have a concrete bench wrapping half-way around the cylindrical planter, while the third planter bench wraps completely around the planter. All three are plumbed, although one of the half-bench units has no plantings. They are all in good condition, and should be maintained.



Figure 119: Michael Mulholland Memorial Bench before painting, 2005



Figure 120: Michael Mulholland Memorial Bench after painting, 2009



Figure 121: Dick Cook Memorial Bench; red tinted concrete to match painted terra cotta color theme.

Existing Park Facilities, Features, and Amenities



Figure 122: Roofless Ramada #1

Ramadas

Ramada #1 is centrally located adjacent to the playground and in close proximity to the main parking lot. It is designed in a National Park Service style of concrete block piers and walls with a rustic stone veneer, and wood roof structure. The roof shades three concrete picnic tables underneath. A habachi grill lies just outside the ramada. This facility is one of two ramadas that have attached restrooms. It has one stall, one urinal, and one sink in the men's restroom, and two stalls and one sink in the women's restroom. Neither are accessible due to a very narrow door. The facility is in fair condition, but has drainage issues and is dirty.



Figure 123: Ramada #2

The adjacent large playground structures are shaded with large eucalyptus trees and shade canopies. The playground equipment is comprised of two swings set, two shaded play structures with 6 slides, and a stationary wagon-like structure. They are well used and appear to be in good condition. Park maintenance has expressed safety concerns over the wagon.

Ramadas #2, 3 & 4 are dispersed in the northwestern quadrant of the park, near the historic Fort Lowell buildings. Ramada #2, one of the two



Figure 124: Ramada #3



Figure 125: Ramada #4

Existing Park Facilities, Features, and Amenities

ramadas with attached restrooms, has facilities that can accommodate larger groups. The men's restroom has two urinals, one stall, and one sink, while the women's restroom has two stalls and one sink. The restroom facilities are not accessible, and there are no stall doors. The ramada has three concrete picnic tables, with a hibachi grill, and a storage closet. The facility is in fair condition.

Ramada #3 is a steel post, wood truss roof structure located just north of the main parking lot. A playful attempt at an eroded adobe wall at the north-west corner, blocks wind. The ramada shelters two concrete tables and a hibachi grill. A memorial bench is located just outside of the shelter by the grill. The structure is in fair condition, with some deterioration of the wooden beams.

Ramada #4, closest to Craycroft Road, is in use but exposed. It includes a sheltering adobe wall fragment on the north west corner of the concrete pad, and appears to originally have been covered. It includes a two concrete picnic tables, a drinking fountain, and hibachi grill. Its proximity to Craycroft Road, and its lack of shade decrease the ramada's appeal.

Ramada #5 is more exposed and is situated on the old historic home site. This facility has two concrete picnic tables, one of which is accessible. It has convenient access to the eastern most parking area from a paved pathway. The site is relatively barren with no natural shade. Nonetheless, the open area does provide opportunity for recreation. The landscaping in the immediate area is minimal and fragmented, with occasional decomposed granite. The structure is not weathering well and in need of some attention.

Ramada #6 is located between the pond, tennis courts and pool and has a different character than all other ramadas in the park. Four concrete planters with wooden seat walls anchor the



Figure 126: Ramada #5



Figure 127: Ramada #6



Figure 128: Ramada #7

Existing Park Facilities, Features, and Amenities



Figure 129: Wheelchair accessible, open air restroom



Figure 130: Prefabricated Steel Restroom



Figure 131: Tennis Center Restrooms

corners of the six bay layout, and a metal overhead lattice provides the shade as well as support for the vining plants. Mimosa, ash trees, roses and trailing jasmine provide a garden feel. The ample seating is appropriate for larger gatherings, and there is a double hibachi grill, in addition to the three concrete picnic tables. There is no accessible path leading to the ramada, but the structure and plantings are in good condition, and an asset to the Park.

Ramada #7, the most rustic, regionally appropriate picnic area is located in the more remote eastern area of the park. This privately set facility can accommodate a larger group, has an adjacent sand volleyball court and access to Pantano Wash. Durable construction materials, mortared river rock, have weathered well and are in good condition. In addition to the ramadas, numerous picnic tables are scattered throughout the pecan orchard.

Restroom Facilities

Currently there are six restroom facilities within the park, two attached to ramadas, two free standing, one in the tennis center and one in the pool complex. All are located near the sporting areas of the park, and are well-spaced. The east end of the park, however, has none nearby. Only the newest near the Craycroft Road entrance is designed specifically for the disabled, although the sport facilities are also accessible. Restrooms offer men's and women's facilities with a sink, and multiple stalls. Trash cans are consistently provided in the vicinity, as are drinking fountains. The older restrooms are clean but showing signs of wear.

The newest restroom facility is a stand-alone structure located just west of the main parking area, near the baseball field. It is the only one designed specifically for the disabled. It is an open air structure, made of concrete block walls with an adobe tint, inspired by the nearby hospital ruins.

Existing Park Facilities, Features, and Amenities

The roof structure is made of both steel and wood beams, with a corrugated metal roof that seems to hover above the planar block walls. The layout includes a sink, hand dryer, one regular stall, and one accessible stall in both the women's and the men's restrooms. The facility is in good condition and well-maintained, and should be conserved.

The second free-standing restroom facility is a prefabricated steel structure located just north of the tennis court parking lot. It is not accessible, due to 29 1/2" entry doors. The facility has three stalls (without doors) and one sink in the women's restroom, and two urinals with one stall and one sink in the men's restroom. The building was funded by the Land and Water Conservation Fund, as is noted by a wall plaque. The building is in poor condition.

The tennis building lies just east of the tennis courts, by the parking lot. It is a slump block one-story building, with a viewing porch facing the tennis courts. The men's restroom is located on the north side of the building and has one accessible stall, one urinal, and one sink. The women's restroom is located on the south side of the building and has one accessible stall, one regular stall, and one sink. The facility is in good condition, aided by the fact that all plumbing fixtures are stainless steel.

Picnic Tables

Open picnic tables can be grouped into two primary picnicking areas, with a few exceptions. Picnicking areas consistently include certain features: a table and separate benches embedded or attached to a concrete pad, an iron charcoal grill, and a trash can. Type A picnicking areas have a steel table and benches with a perforated top covered in a weather-proofing plastic material. Type B picnicking areas have concrete tables and benches, painted the typical red/beige color theme of Fort Lowell Park. The two types are interspersed throughout the park.



Figure 132: Typical Type A picnicking area



Figure 133: Typical Type B Picnicking Area



Figure 134: Accessible Picnicking Area without connecting path

Existing Park Facilities, Features, and Amenities



Figure 135: Typical Blue Drinking Fountain

Drinking Fountains

Fort Lowell Park provides sufficient drinking water opportunities. These are placed at strategic locations around the park, such as at restrooms, ramadas, ball fields, tennis courts, and at well-spaced intervals along recreational paths.

Drinking fountains come in three types. Newer stone drinking fountains are generally at restrooms and ramadas and sports fields. A dual-user drinking fountain lies in the no-man's land just east of the racketball courts. The most common drinking fountains are concrete cylinders, filled with gravel, and painted an eye-catching blue, which can be seen from afar. These drinking fountains are not accessible and should be replaced.



Figure 136: Drinking Fountain Near Tennis Courts

Concessions

The Snack Bar is now conveniently located off of the main parking lot near the ball fields and pool. The concession stand services all the park sport activities: baseball, soccer and football, and anchors the Foot Court Area that materializes during the Soccer Shootout event in winter. The concrete block building has a swamp cooler on the roof, night lighting, and metal grilles on the windows. It is outdated and in poor condition.



Figure 137: Typical newer drinking fountain



Figure 138: Park Snack Bar

Existing Park Facilities, Features, and Amenities

Parking

There are four vehicular entry points into the park that lead to separate parking lots. Each lot serves a different park activity; swimming, tennis, field sports and nature trail. The Craycroft Road entry is a nice mortared native rock structure with a wrought iron gate. The newly paved surface passes the Fort Lowell Museum complex ending at the main parking area. All other parking lots are accessed from Glenn Street. Handicap parking spaces are provided in all the parking areas, including two separate spaces near the museum complex. The outlying parking area at the corner of Craycroft and Glenn also serves as a lot for the SunTran Park & Ride program. Park access at this location is provided via a gate into the southwest ball field. There is also a small parking area adjacent to the Hardy/Donalson site. The parking lot surfaces are in fair condition, requiring monthly patching. Parking stall delineations need to be repainted in all parking areas. Overall car capacity is approximately 350 cars. For normal park activities, the current lot sizes are adequate. However, during special events like the Soccer Shootout parking spaces are insufficient. Shuttle and offsite parking must be utilized. The Pecan orchard is also used as a temporary parking area during the Soccer Shootout event.



Figure 140: Main parking lot



Figure 141: Tennis parking lot



Figure 139: Accessible parking near museum



Figure 142: Park & Ride lot

Maintenance Operations



Figure 143: Maintenance trucks for quick transport to fix a broken drinking fountain.



Figure 144: Maintenance Building

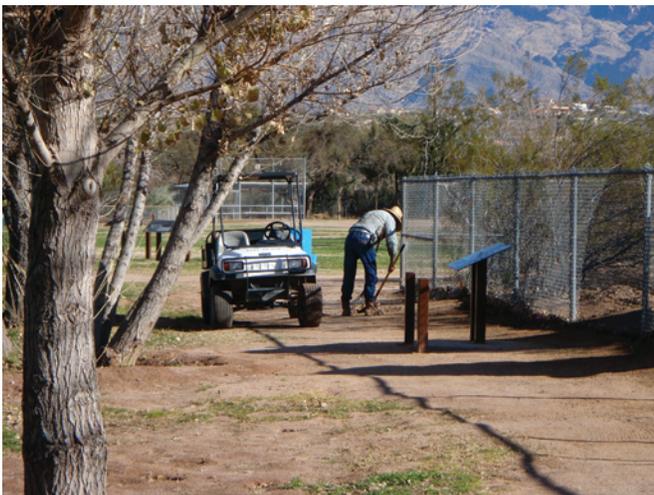


Figure 145: Landscaping Maintenance

Maintenance

The park maintenance staff occupies a historic building that previously served as the horse stables for the ranch. The well built masonry structure is in very good condition and is now used as office space, storage and staging area for all of the park maintenance needs. A fenced area adjacent to the building is used to house larger park machinery and has been targeted numerous times by vandals. An unsecured area along the northern boundary is also used for storage of planting soil, tree trimmings/compost, and miscellaneous park materials. The entire maintenance area disrupts park continuity and bisects the park into two distinct areas; the recreational park and the more natural area.

Fort Lowell Park Maintenance employees are quite visible around the park. They can be seen mowing grass, raking leaves, fixing water fountains, restocking restrooms, etc. Maintenance vehicles, such as trucks, golf carts, four wheelers, and lawn mowers can be seen cutting across fields. These add a sense of care and safety to the park, although the large vehicles can be a disruption.

Trash Cans

Fort Lowell Park provides an ample number of trash cans that encourage the public to help keep



Figure 146: Sports Field Maintenance

Maintenance Operations

the the park clean. These are placed at strategic locations around the park, and are included at every picnic table, ramada, restroom, as well as other evenly-spaced locations along pedestrian pathways. The trash cans are steel, open-top cylinders, with plastic trash bags. They are typically painted green for continuity throughout the park, that is unobtrusive, but easy to identify. They are routinely emptied by park staff. The park itself is remarkably (and pleasantly) clean and well-maintained. Park maintenance provides scoopers for dog users to assist in keeping the park clean.

Fort Lowell Park does not include recycling opportunities. Plastic and aluminum recycling bins would be an asset to the park, and contribute to its image of being well cared for. If included, such bins should be visibly distinguished from trash cans, but should be located next to trash cans.



Figure 148: Dog Amenities



Figure 147: Typical green metal trash can



Figure 149: Typical trash can, painted with City of Tucson Parks and Recreation Images.

Maintenance Operations



Figure 150: Mobile mini and chain link storage area by Snack Bar.



Figure 151: Old Snack Shack

Outlying Buildings

Numerous outlying buildings exist at Fort Lowell Park, primarily situated around the sporting facilities.

The old concession building is a small building located just north of the pool and tennis courts. The slump block square building has a shallow hip roof. A plaque dedicates its commission to the United States Young Adult Conservation Corps. The building is no longer in use, and plywood boards cover the windows on all three sides of the building, and southern door and window are covered by metal screens. The structure is in fair condition with settlement cracks on the west side. It was routinely vandalized and now just functions as a storage area for the maintenance crew.

There are several structures around the park that suggest a lack of storage. A chain link fence adjacent to the west side of the Snack Bar is reveals unsightly storage at a critical juncture between the main parking lot and sport facilities. Mobile minis adjacent to the snack shack, and in the paved area just east of the racquetball courts contribute to the unsightly, centrally located outbuildings.

Recreational Activities

The current Fort Lowell Park offers a wide variety of recreational opportunities for the surrounding communities that encompass both active and passive uses. Featuring tennis courts, softball fields, youth baseball fields, soccer fields, racquetball courts, a swimming pool, a fitness trail and locations for ultimate Frisbee and cycling, active recreational uses dominate the Park's core. Semiactive spaces exist in the lesser traveled portions of the park, such as the ball fields towards the northwest side of the property and the maintenance yard activities. Passive spaces accentuate the periphery and feature a duck pond with seating areas, numerous picnic locations, informal trails, a riparian area, ramadas, and interpretive historic elements.

These spaces generally co-exist with little conflict; however, there is little cohesion between all of the Park's amenities. Improvements can be made that will draw users across the wide range of activities that take place within the Park. Most notably perhaps is the distinct separation between the historic elements and the more traditional recreational spaces. While it is important to maintain a sense of place in terms of modern park uses versus the historic conditions, it will also be important in the final design process to highlight the unique features of the Park so that visitors can enjoy all that it has to offer. One way this can be

achieved is through improved signage and way-finding techniques as well as a reconfiguration of some of the lesser used areas to more positively integrate with the surrounding activities.

Active Uses

Fort Lowell Park offers the Tucson community a wide range of amenities and hosts a number of events that take advantage of the Park's facilities. Perhaps the most well-known sporting event that takes place at Fort Lowell Park is the Fort Lowell Shootout which happens Martin Luther King Jr. weekend each year. Currently in its 19th year, this soccer tournament involves 384 teams with as many as 6,500 kids. Drawing from the Southwest region and from areas of Europe, the Fort Lowell Shootout hosts nearly 26,000 people annually. The park is the site of the opening festivities where visitors enjoy a picnic, an 'Olympic Light Parade,' vending areas, and individual soccer competitions. The tournament consists of over 600 games at 64 fields at numerous parks in the Tucson area. Fort Lowell Park is able to provide four fields for use during the tournament, which are configured in the same location as the baseball fields during the events. The field on the northwest side of the property is used for the four to six year old games.

Fort Lowell Park also offers the best aquatic fitness and competitive pool in Tucson. As the



Figure 152: The Fort Lowell Shootout



Figure 153: Fort Lowell Pool

Recreational Activities

second deepest pool in the City, the Fort Lowell Pool is host to a number of programs including competitive team and synchronized swimming as well as swimming lessons for all age groups. The pool also helps to support the City's Inner Tube Water Polo Program. Open year-round, the 50-meter heated pool features a diving bay with one and three meter diving boards, a 25-meter lap lane area, and a separate wading pool. The biggest attendance periods are during the summer months when the four daily swimming lessons are attended by as many as 100 kids each.

The Fort Lowell Tennis Center offers kid, junior and adult classes year-round with as many as 100 to 150 weekly users of the eight lighted tennis courts. More heavily used in the winter, the Tennis Center supports league play and is in need of additional space to support the demand. Four racquetball courts are located adjacent to the Tennis Center but are in disrepair and rarely used.

Other prominent activities that takes place within the Fort Lowell Park are baseball, softball, and little league games. Offering four lighted youth baseball fields and a full size baseball field, the Park is home to the Frontier Little League. The fields are equipped with dugouts, bleachers and a concession stand. The League fields 23 teams from Tee-ball through Seniors in the Spring and Summer months. The ball field directly north of the racquetball courts supports Bobby Sox softball games and is equipped with dugouts and bleachers as well.

Fort Lowell Park also offers locations for football, volleyball, and ultimate Frisbee throughout the year. These activities are concentrated near the ball fields, although the sand volleyball court used for winter adult leagues is located near Ramada 7 in what is generally thought of as a more passive space. Other less formalized activities that exist within the park include a one-mile fitness trail with



Figure 154: Fort Lowell Tennis Center



Figure 155: Fort Lowell Ball Fields



Figure 156: Sand Volleyball Court

FT. LOWELL PARK

CURRENT USE ANALYSIS

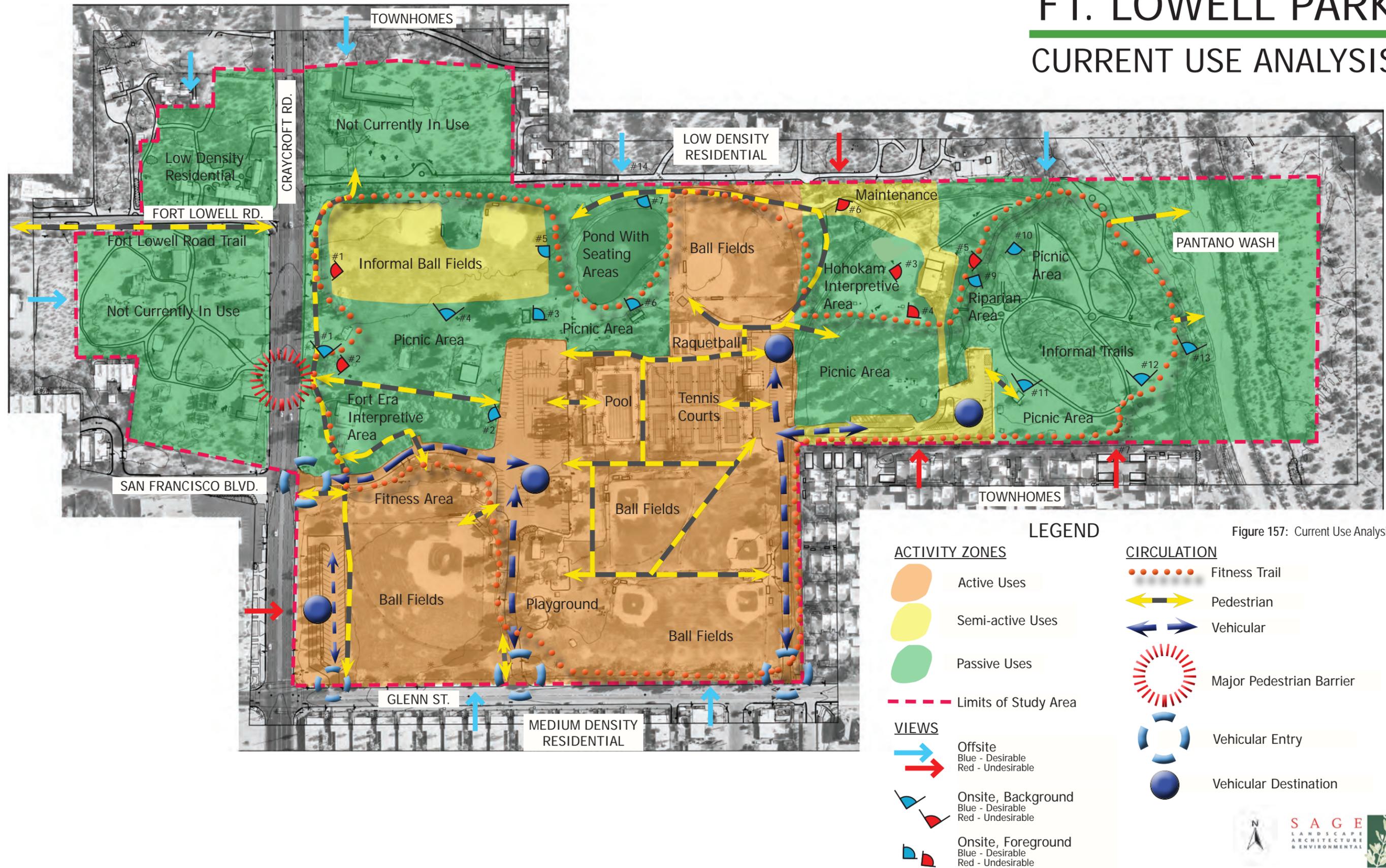


Figure 157: Current Use Analysis



Recreational Activities



Figure 158: Fitness Equipment



Figure 159: Playground



Figure 160: Jogger using Fitness Trail

exercise stations, paths for jogging and cycling, and two play areas. The fitness trail is poorly marked and the equipment is either dated or in disrepair which accounts for the relatively low-use of what could be a tremendous asset. The playgrounds are well used and consist of two separate play structures with locations for parents to sit and watch the activities.

Semi-Active Uses

The northwestern ball fields at Fort Lowell Park are the least used among the other sports areas, likely as a result of their location and lighting limitations. This area is separated from the active core by the pond, several ramadas and picnic areas, and by some of Fort Lowell's historic elements such as the hospital ruins and Cottonwood Lane. The maintenance building and yard is used by the City of Tucson staff year round to facilitate the daily operational needs of the Park. This area is primarily accessed through the parking area nearest Ramada 5. The building dates over 50 years and was once used as a stable for the former residence that was once located in the area of Ramada 5. The maintenance area houses equipment such as lawn mowers and backhoes within its fenced area and stockpiles debris and topsoil within the northernmost area of the Pecan Grove. The area



Figure 161: Maintenance Yard

Recreational Activities



Figure 162: The Hohokam Interpretive Site at Fort Lowell



Figure 163: Viewing the ruins of the Fort Lowell Hospital



Figure 164: The Fort Lowell Museum

immediately adjacent to the building is also used as overflow parking during the Fort Lowell Shootout and as a storage area for roadway construction equipment when needed. The maintenance building and yard is a hub of activity in an area mostly geared towards relaxation, picnicking, and bird-watching.

Passive Uses

Fort Lowell Park features a variety of passive recreational spaces for the Tucson community. The historic elements located throughout the Park offer great opportunities for Tucson residents to learn about the history of the area from prehistoric through modern times. The Hohokam Interpretive Site is located within the Pecan Grove immediately west of the maintenance building and features a re-constructed pit house with interpretive signage. According to Park staff, the area is infrequently visited and those that do come to the site are either homeschoolers or groups of foreign exchange students hoping to learn more about the history of the region. Many of the Park's regular users aren't aware that this area exists due to its location away from the rest of the historic structures or are hesitant to approach the exhibit because of its close proximity to the maintenance building.

The Fort Era historic elements consist of remnants of the former Fort Lowell. Featuring a museum, a re-creation of the Cottonwood Lane that once highlighted the Fort, interpretive signage, and fenced ruins of some of the original structures, these elements represent a critical part of Tucson's history. Better signage and way-finding, as well as integration with the more popular sporting activities, could bring more visibility to the Fort Era historic elements.

One notable event that takes place every February at the Park is La Reunión de El Fuerte, an event put on by the Old Fort Lowell Neighborhood Association. The event features cavalry drills, music, and tours of the historic sites at the Park,

Recreational Activities

and extends to historic sites in the neighborhood that reflects the community that grew up around the Fort ruins.

The Fort Lowell Pond is a tranquil location for watching wildlife and an ideal setting for picnicking and relaxing. The pond is approximately a half acre and fed by well water. Another desirable location for bird-watching is the Riparian area located east of the Maintenance yard. Featuring a running stream that terminates into a shady pool, the area is home to a number of riparian plants and animals such as cottonwoods, reeds, mesquites, fish, frogs, and turtles. Bird and animal watchers use the area to catch a glimpse of the riparian species, and others frequent the site to find a quiet spot to read or relax amidst the lush vegetation.

Another popular activity that takes place at the Park is picnicking. Fort Lowell Park offers numerous picnic tables in a variety of locations that can accommodate single families or large groups of people. The Park has seven ramadas that can be rented for private or corporate uses. In 2007, over 300 reservations were made for these facilities and 84 events took place with 200 people or more at each event.

The Pecan Grove at Fort Lowell Park hosts a number of widely spaced picnic areas, which used throughout the year as a location for families to enjoy a picnic in the tree shade. The area becomes more active in October through January when informal pecan pickers come to gather as many pecans as they can carry. Some visitors come daily to collect the pecans during these months. A lesser used pecan grove lies east of Ramada 5 near the Pantano Wash. This area is used primarily for family picnics and as an access point to the Pantano Wash, which provides a significant amount of natural open space for walking, hiking, wildlife-viewing, and other passive activities.



Figure 165: The Pond at Fort Lowell Park



Figure 166: The Riparian Area at Fort Lowell Park



Figure 167: The lower Pecan Grove near the Pantano Wash

Visual Resources

As part of the site analysis process, several site visits were performed by SAGE Landscape Architecture & Environmental. The park and adjoining areas were visually assessed, photographs were taken, and information was compiled. An analysis was conducted to determine areas that require additional screening or areas that should be highlighted because of their significant views. While Fort Lowell Park offers mainly positive views both off-site and on-site, there are specific areas within the Park that will need additional visual mitigation in order to enhance the visitor's experience.

Positive Views

The photographs depicted below are correlated with the graphic symbols on **Figure 158** and generally move from west to east across the site. The most significant views from within the Park and adjacent Adkins, Hardy/Donaldson sites are towards the Catalina Mountains towards the north and east as shown in photos 1, 4, 10, 11, and 12. The mountains present a commanding presence in several locations throughout the Park. These views should be highlighted in an effort to remind visitors of their location within the greater Tucson valley and the significance that the mountains had on the region throughout history.

The Park and newly acquired historic properties also offers numerous positive views of the historic and natural resources located in the area as noted in photos 2, 3, 5, 6, 7, 8, 9 and 12. Cottonwood Lane is a significant visual resource as are the expansive Parade Grounds and historic structures. It is important to note that some of the historic structures have become overgrown with vegetation making it difficult to determine what is occurring within the protected area. Increased visual access to these resources should be encouraged to draw users towards the historic elements and provide clear explanation of what once took place in the area.

The Fort Lowell Pond is also a prominent visual feature within the Park and can be seen from the active sporting areas as well as the majority of the picnic areas in the western half of the Park. The Riparian Area and Pantano Wash and associated natural open space also offer pleasant views of the differing vegetation and wildlife that can be found in Tucson.

The majority of views onto the Park from the surrounding areas are positive due to the nature of the park space. In some cases, however, the adjacent property owners have chosen to screen their views towards the Park and vice versa. An effective and visually appealing example of this is in photo 14 that is looking north towards the low-density residential housing from the pond.

Visual Resources (Positive Views)



Figure 168: #1: View towards Catalina Mountains along Craycroft



Figure 171: #4: View of Catalina Mountains from Parade Ground



Figure 169: #2: Cottonwood Lane, looking west



Figure 172: #5: Parade Ground, looking southwest



Figure 170: #3: View of pond near Ramada 4



Figure 173: #6: Pond edge, looking north from Ramada 6

Visual Resources (Positive Views)



Figure 174: # 7: Pond edge, looking south



Figure 177: # 11: View of Catalinas from Ramada 5



Figure 175: # 9: Riparian area, looking south



Figure 178: # 12: View of Catalinas from lower Pecan Grove



Figure 176: # 10: View of mesquite bosque from Ramada 7



Figure 179: # 13: View of Catalinas & Pantano Wash

Visual Resources (Negative Views)

Negative Views

The photographs depicted are correlated with the graphic symbols noted on **Figure 158** and generally move from west to east across the site. The most dominant negative views that can be seen from within the Park are Craycroft Road to the west and the maintenance activities towards the east. Photos 1 and 2 show the visual obstruction that such a busy road provides to a Park setting. This will become increasingly evident when the Adkins parcel becomes a part of the Park. Efforts should be made to screen Craycroft Road, to reduce traffic noise and to maintain the tranquil nature of the Park. Large electric boxes, on the edge of Craycroft, but within the footprint of the parade ground, are unsightly and should be relocated / screened, if possible.

The maintenance building is a functional facility that necessitates a certain amount of ‘unsightly’ activities in the area. It is the location of the maintenance building that creates negative views because it disrupts the sense of history found at the Hohokam Interpretive Site and the serenity of the Riparian Area. It also visually impacts the Pecan Grove in that the piles of debris are placed in and around picnic and walking areas. Additional screening is recommended to minimize the negative impacts that the facility has on the surrounding passive spaces.

As previously mentioned, views to the park from off-site are generally positive. However, there are some areas where the Park is located immediately adjacent to private residences such as in the lower Pecan Grove as seen in photo 7. The fence in this area could use additional screening to provide privacy to the residents as well as to mitigate views of the parking areas from the Park. Photo 8 depicts an example of debris that may be present in the Pantano Wash. Debris should be cleared periodically from the wash so that it maintains its natural character.



Figure 180: # 1: View of Craycroft Road



Figure 181: # 2: Craycroft Road from Cottonwood Lane



Figure 182: # 3: Hohokam Exhibit and Maintenance Building, looking east

Visual Resources (Negative Views)



Figure 183: # 5: Maintenance building from Riparian Area



Figure 185: # 7: Adjacent parking near lower Pecan Grove



Figure 184: # 6: View of maintenance yard debris



Figure 186: # 8: View of debris in Pantano Wash

Circulation

The two dominant types of circulation that exist within Fort Lowell Park are vehicular and pedestrian. In general, both vehicular and pedestrian circulation is poorly marked and may be found confusing to many of the Park's visitors. The circulation is fragmented and does not have a clear direction as to how users should experience the Park. Many of the difficulties that are encountered in terms of the low visitation to some of the historic elements are due to the lack of a continuous path for visitors to take around the Park. Currently, fencing limits pedestrian access/circulation to the Adkins Parcel, Hardy/Donaldson and Commissary apartments.

Vehicular

The main entry to Fort Lowell Park for vehicles is off of Craycroft Road and leads to one of four parking lots. The entry monumentation in this area is well marked and is sensitively designed to blend with the nearby historic structures.

The secondary entries to the Park are located off of Glenn Street. While signs list the activities that can be reached in each area, it is unclear to first-time visitors where some of these activities are actually located once the car is parked.

Lesser used vehicular entry drives are located



Figure 188: Entry Monumentation along Glenn Street



Figure 189: Secondary Vehicular Entry Signage



Figure 187: Main Entry Monumentation along Craycroft Road



Figure 190: Secondary Vehicle Entrance

Circulation



Figure 191: Parking Areas within the Park



Figure 192: Main parking area looking east



Figure 193: Accessible Parking Spaces within the Park

off of the eastern-most drive and lead to the maintenance areas or to the parking lot for Ramadas 5 and 7 and the Pantano Wash. Again, these areas are not clearly marked in terms of how visitors reach their destination once the car is parked.

There are four separate parking lots available at Fort Lowell Park. The main parking area is located west of the pool and is accessed from both Craycroft Road and Glenn Street. The second most used parking area is located east of the tennis courts and is accessed from Glenn Street only. Tertiary parking lots service either the eastern half of the park as previously mentioned or serve the western-most edge of the park nearest the adult baseball field. Accessible parking spaces exist within each of the four parking areas. A small parking area is also associated with Hardy/Donaldson property, which also provides access to some residences east of the property.

Pedestrian

Pedestrian circulation throughout the Park is fragmented and provides little opportunity for continuous paved travel from one side of the Park to the other. While the Fitness Trail presents a one-mile walking loop, it is poorly marked and offers little indication as to where one should go next.



Figure 194: Pedestrian Bridges within Park

Circulation

A sidewalk exists along Craycroft road that leads from the Donaldson/Hardy Property to the Fort Lowell Museum and continues onto the first segment of the Fitness Trail until it reaches the primary entry drive off of Glenn Street. Proceeding east it becomes unclear where the trail is located.

Museum and continues onto the first segment of the Fitness Trail until it reaches the primary entry drive off of Glenn Street. Proceeding east it becomes unclear where the trail is located.

Internal pedestrian circulation is primarily driven by convenience and users tend to take the path of least resistance whether or not it is a designated walking space. The historic elements are accessed from a number of directions and could be more clearly interpreted if a historic walking path were designated to include both the Fort Era elements and the Hohokam exhibit. A sign is located at the eastern end of Cottonwood Lane that gives pedestrians an orientation of the space. While helpful, the sign could be improved by integrating it with a programmed sequence of stops that interpret all of the history that has taken place on-site.

The Pecan Grove areas and further east are perhaps the least clearly marked of the pedestrian spaces. It is easy for visitors to get lost within these areas which are clearly in need of improved directional signage. Several bridges and pathways exist that offer little direction as to where one might be headed.



Figure 196: Wayfinding Signage in Historic Core



Figure 197: Poorly marked Fort Lowell Fitness Trail near Ramada 5



Figure 195: Beginning of Fort Lowell Fitness Trail



Figure 198: Sidewalk leading to Donaldson Property

Threat Assessment / Remedies

Safety Issues

Many of the parks negative issues impact public safety of the park user. There is lack of wayfinding, or cues for orienting for both the pedestrians and vehicular users. This lack of circulation clarity creates a lack of definition of use areas, confusion about hierarchy of use, and potential conflicts in uses which can create hazards. Signage provided is minimal and only effective if a user is familiar with the park and its facilities. No overall site information is readily available to provide orientation to all the park historic and recreational activities.

The four vehicular park entries lead to separate parking areas that service different park activities. Signage only occurs at two of the four entry points and only provides information regarding that specific area of the park. The formal main entry accessible from Craycroft Road has no informational signage. Craycroft Road impedes and creates a conflict of uses resulting in a hazardous condition for pedestrian circulation between the current park site, the adjacent neighborhoods, and the newly acquired historic properties to be included in the park. The integration of the new park parcels must be carefully incorporated into the park to create clear and safe circulation routes for both cars and pedestrians and to sensitively address the existing adjacent private homes.

There are many fragmented areas of the park that would benefit from interpretive signage; the stories about the pecan orchard and agriculture, the ecology of the water features, the historical elements and their relationship to each other and why the remnant native desert vegetation. Better wayfinding strategies are necessary to foster safety and for park users to find the trails, historic areas, sports fields, ramadas, picnic areas, restrooms and park entry/exit points.

Trail continuity issues extend to surrounding trail

linkages too. The Pima County proposed trail along the Pantano Wash should be considered a primary linkage for connectivity with the 50 mile Urban Trail Loop around Tucson, and should be integrated with Fort Lowell Park as a significant node for multiple non-motorized users, including equestrian, pedestrian, and bike. Trail continuity with neighborhoods and neighborhood parks should be highlighted and reinforced, providing safe circulation and access, as well as traffic calming or avoidance where possible to reduce potential conflicts.

Conflicting Use Intensities

There are currently several areas in the park where there are conflicts between adjacent uses. These conflicts occur when a high-activity area or active use area and passive use areas are located so close that one use intensity conflicts with the quality of the experience in the adjacent area. Sometimes these conflicts are created by noise, visual interference, light trespass, or access/circulation conflicts. The most noticeable conflicts are the historic fort elements which are a passive use located between ball fields in the northwest quadrant of the park and the Hohokam interpretive site (passive educational use) and Riparian Woodland Display (moderately passive use) that are directly adjacent to the un-screened maintenance area (active use).

Infrastructure Issues

Night time lighting seems adequate but not sufficient for full park usage. There are documented light trespass issues on the surrounding neighborhoods and current park lighting does not conform with the “dark-sky” ordinance.

Park infrastructure is dated and in need of improvement. The current irrigation system should be updated and enhanced to meet the parks present and future needs and most of all, to ensure the health of park vegetation. Upgrade the lighting

Threat Assessment / Remedies

system to conform to Tucson's Outdoor Lighting Ordinance and provide improved park lighting, where it is necessary. And finally, mitigate any obtrusive park activities from the surrounding neighborhoods.

Property Damage

Conversations with park maintenance personnel reveal that most vandalism occurs during the summer months when school is not in session. Tagging and stolen materials are typical. Reinforced fencing has become necessary around the area that houses park machinery.

Maintenance Operations

Maintenance operations occupy areas along the northern boundary of the current park and within the pecan orchard for storage of planting soil, compost and miscellaneous stockpiles of park materials. This unsecured area was reported as both a safety/security issue because users (mostly unsupervised children) play in the stockpiles. The location of these stockpiles also conflicts with visitor circulation.

The location of the maintenance area (spread through the center of the park and near conflicting uses) highlights and contributes to the lack of park continuity, wayfinding and interpretive issues.

Environmental Issues

Reoccurring erosion along the Pantano wash is caused by on-site drainage and normal river/wash sedimentation and hydraulic processes, and is eroding trail conditions which are causing safety issues for those using the trail system. Seasonal flooding of the park, a combination of normal onsite drainage and the increased offsite development drainage, is also causing a loss of ball field integrity and degradation of the Fort remnants in the northwest quadrant of the park. Sediment transport and accumulation from the flooding also impacts the usage some of the parks facilities by creating a maintenance problem.

In general, the current park vegetation and turf appear to be in good health. However, the current irrigation infrastructure is old and is not delivering full irrigation coverage and needs to be upgraded. The pecans and cottonwoods are irrigated with bubblers. The bubblers are old, brittle and in disrepair. In some cases the tree trunks have grown around the bubblers, which in the long run will impact the health of the trees. During the Soccer Shoot Out Event the pecan orchard is used as an overflow parking area. Although temporary, this activity could eventually negatively impact the health of the pecan orchard by compacting the soil around the roots. The pecans along the southeastern park boundary, also known as the lower orchard, are small and appear to be struggling due to lack of maintenance and irrigation. The mature park trees rely strictly on the water received from turf irrigation. The turf irrigation sprinkler system is aging and provides inadequate coverage, leaving brown patches throughout the playing fields. Most of the cottonwoods near the Fort Lowell Museum appear healthy. The smaller cottonwood trees closest to Craycroft Road were planted within the last five years. In the past, cottonwoods have been replaced with varieties other than the historic Fremont Cottonwoods. Any future plantings should be of the historic variety.

Some park passive areas lack shade which could be addressed by planting additional park trees. The native vegetation found within the park and surrounding parcels is fragmented but in good health. The native plant areas are good locations to also interpret the natural and human history of the Fort Lowell region.

Pima County has plans to link the Pantano Wash to the overall River Parkway system and the 50 mile Urban Trail Loop. To date, it is not known how the access to Fort Lowell Park will be implemented. If bank stabilization is required it may alleviate the existing flooding issues at the park interface

Threat Assessment / Remedies

but could also negatively alter the present wash ecology. The loss of available water due to new bank protection could impact the existing mesquites and riparian species found along the wash. The disturbance could also encourage the introduction of non-native vegetation and invasive species.

Cultural Landscape

Some vegetation exists from the Atkins Period on the Atkins Parcel. This vegetation should be assessed for significance and integrity along with the assessment of the structures.

The cottonwoods along Cottonwood Lane are not historic but were planted to represent the historic lane associated with the Officers Quarters. Like the misalignment of the reconstructed Fort Lowell Museum, the location of the replanted Cottonwood Lane is misplaced approximately 25 feet to the north of the original alignment.

The pecan orchard was planted in the mid-19th Century and is relevant to the post-Fort history. These historic plants representing historic periods are in varying degrees of health. Their health should be assessed, and irrigation and maintenance implemented to improve their conditions, where warranted.



Layout and Building Assessment

Contributed by Poster Frost Associates, Burns Wald-Hopkins Shambach Architects,
Crocker Ltd., and TLCP Structural Inc.

Previous Page:

Figure 199: (Top) Officer's Quarters ruins

Figure 200: (Left) Hardy Site

Figure 201: (Right) Adkins Parcel structures

Fort Lowell Site Layout

Historic Fort Lowell was moved from the center of Tucson to a site seven miles northeast of town in 1873. Military leaders recognized the natural amenities, including water and agricultural land, afforded a site at the confluence of the Rillito River and Pantano Wash. Activity at the new location began on March 20, 1873 with the clearing of brush and cactus. The site functioned as camp with tents setup for troop labor. Additional labor was secured from civilians who were paid at a rate of one dollar per day. Over the first few months, work proceeded slowly due to difficulty making adobe blocks due to the harsh summer rains and

the return of unused funds at the close of the fiscal year.

In September 1873, an appropriation of \$7,500.00 was awarded to Fort Lowell. A contract for 600,000 adobe blocks was awarded to Tucson's Lord and Williams. Work was completed on the Commanding Officer's Quarters on October 16th, 1873 followed by completion of the Guardhouse and Quartermaster's Commissary. 1874 brought more delays in construction from the retraction of funding and the reassignment of troops due to increased Apache raids in the area. However, by the end of the year, a second officer's quarters, a

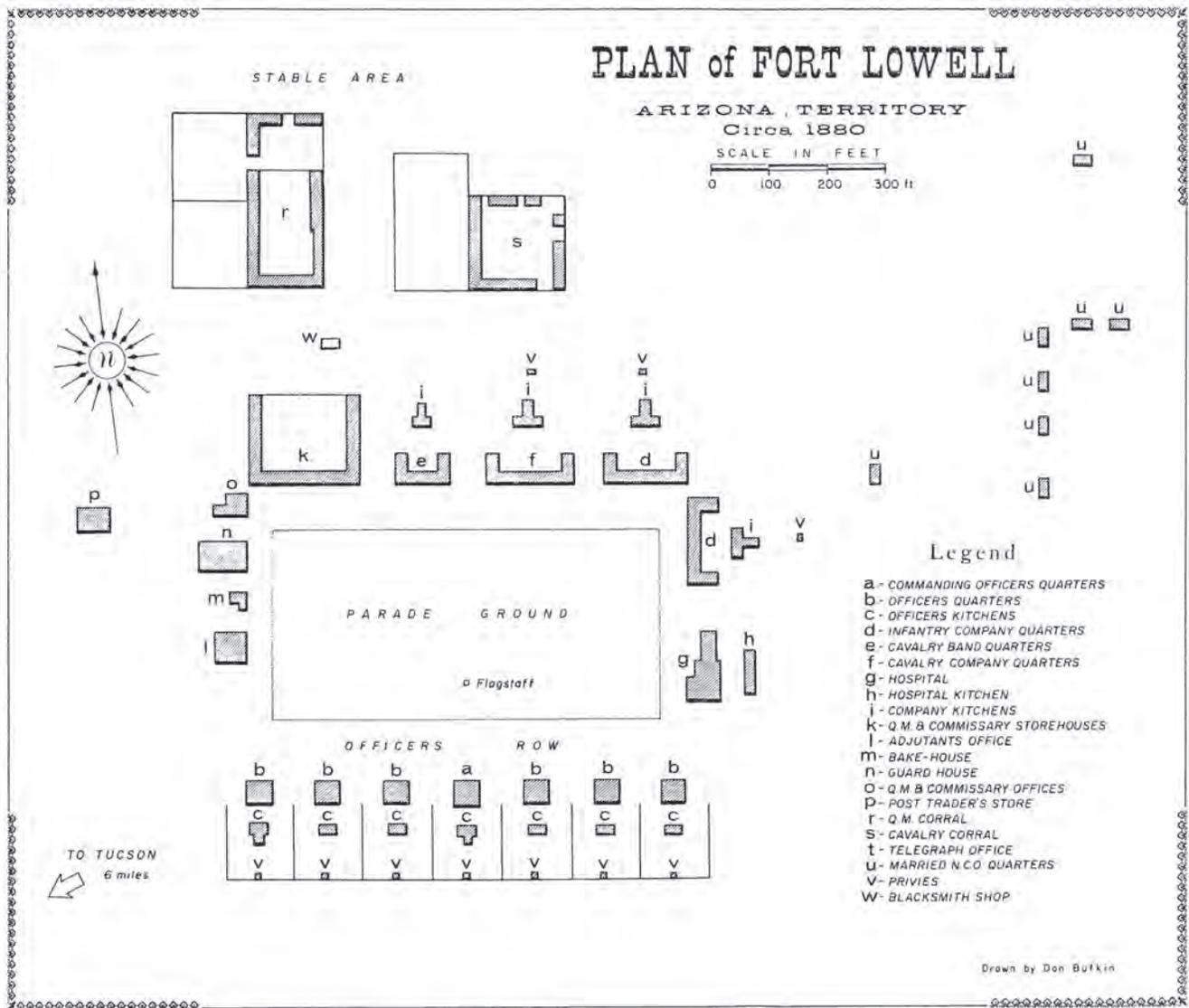


Figure 202: 1876 Plan of Fort Lowell. Redrawn by Don Bufkin

Fort Lowell Site Layout

company barracks, blacksmith shop, harness and wagon shops, granary and corral were completed. In December of 1874, Commanding Major W.B. Royall went to Prescott and successfully requested additional funds that would allow for completion of the Fort without additional delays. By the middle of 1875, the hospital, all four barracks buildings and the officer's quarters were complete. The west end of the parade ground was further enclosed by the bakery and adjutant's office.

Construction Techniques

Because the arrival of the railroad remained several years away, the availability of building materials was limited to those that occurred naturally in the area. Walls were constructed from locally produced adobe blocks. Wood rafters for the roof were sawn from pine trees located atop the Santa Catalina Mountains and hauled 30 miles to the site. Saguaro ribs were laid perpendicular to the pine logs and covered in six to eight inches of dirt to protect the interior from the rain. On the interior, muslin was attached to the beams to collect debris falling from

the roof system. The floors consisted of dirt and the walls were exposed adobe, without plaster. This construction system proved unsatisfactory to the inhabitants of the buildings who complained of leaky roofs and unsanitary conditions. The hospital was one of the first building to undergo improvements in August 1879. Repairs included the addition of wood floors, a tin roof, shade porch and plaster on the exposed adobe walls. Porches and screen doors were added to the other buildings in 1882. The wives of officers constructed picket fencing around the hospital, cemetery and parade ground. Ocotillo branches were used to screen the porches on the officer's quarters. Each officer's quarters had a backyard enclosed by an adobe wall where small gardens could be found. The walls also kept livestock and wandering animals from entering too close to the buildings.

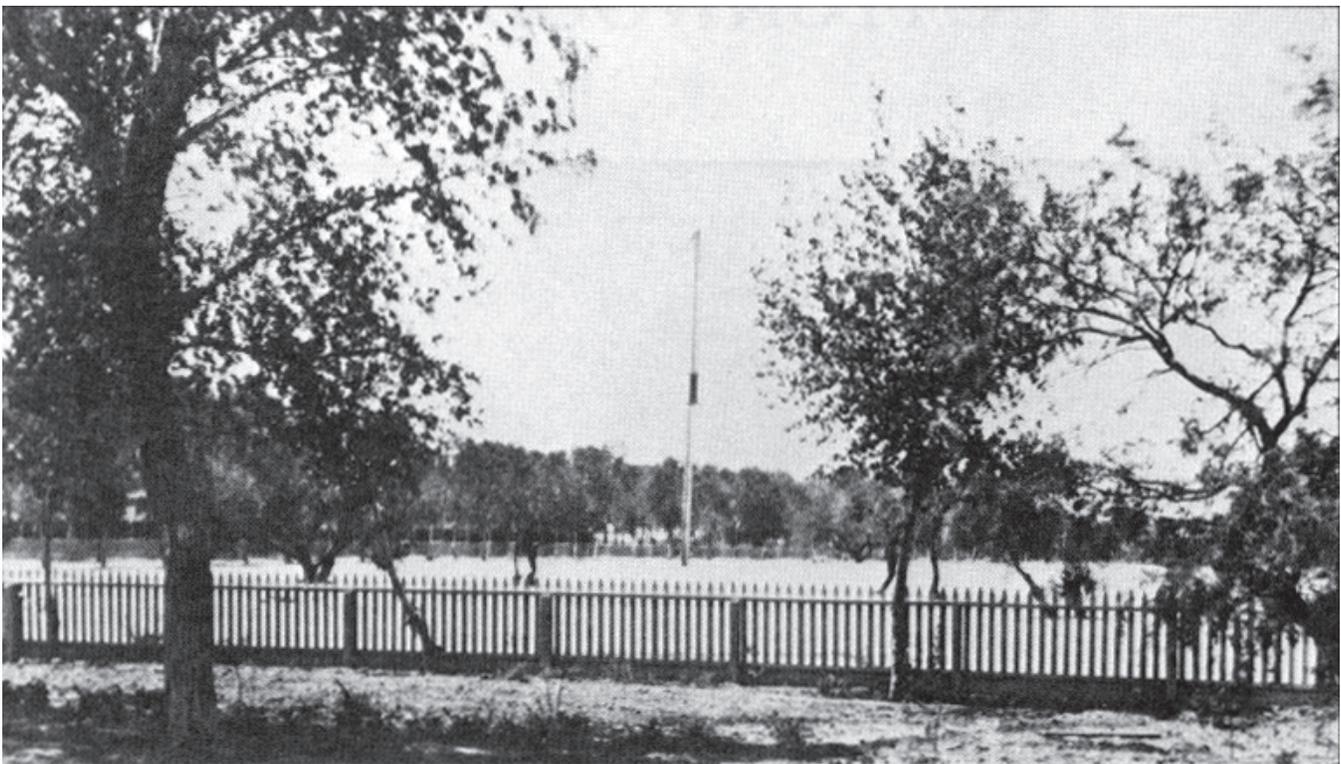


Figure 203: Parade ground and flag pole at Fort Lowell. View facing southwest.

Adkins Parcel



Figure 204: Adkins parcel from Fort Lowell Road, 2008

The Adkins Parcel consists of 5.31 acres. With the assistance of Pima County, 2004 Bond funding was used to purchase the property for the City of Tucson. Since 2006, site clean-up and the inventory and emergency stabilization of historic resources has occurred.

The parcel had been owned by the Adkins Family since 1928. The Adkins Family operated the “Adkins Rest Ranch” until around 1950. Adkins Trucking and Steel Manufacturing began operating on the site in 1934. By the 1950s, Adkins were manufacturing steel tanks almost exclusively. The Adkins continued in business on the site until the Spring of 2007.



Figure 205: Officer's Quarters #2, northwest corner with sacrificial cap, 2008

The Adkins Parcel includes resources from several periods, including the Fort Period. Portions of the three western-most original Officer's Quarters remain. There are also two buildings and a number of site structures and objects from the Adkins Period. Underlying these later occupations are the prehistorical archaeological remains of the Hohokam.



Figure 206: Adkin's Residence

- ① Officer's Quarters #1, 2 & 3
- ② Adkins Residence
- ③ Adkins Steel Fabrication Shed
- ④ Former Adobe Residence (RC Magor Residence)

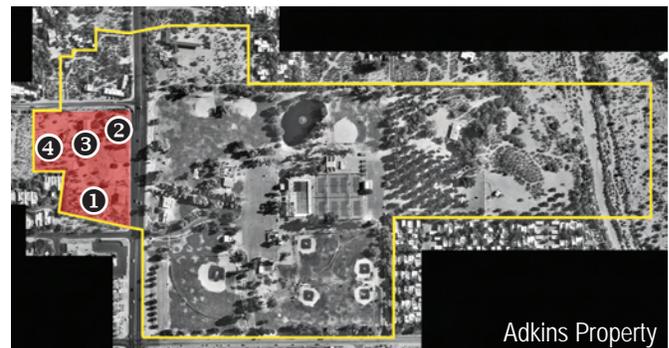


Figure 207: Adkins Property

Officer's Quarters Overview

A line of seven Officer's Quarters was constructed along the south side of the parade ground. Officer's Row was further defined by two rows of cottonwood trees that were planted to the north of the Officer's quarters. Each of the seven original Officer's Quarters, starting with #1 to the west, had its own kitchen and privy. The Commanding Officer's Quarter, located at the midpoint of Officer's Row, was the first building completed at Fort Lowell. In the late 1880s two additional buildings were constructed along Officer's Row to the east. These buildings were constructed for non-commissioned officers.

The Adkins Parcel contains the best preserved Officer's Quarters, including largely intact Officer's Quarters #3. The spatial relationship between Officer's Quarters is partially decipherable because the walls of Officer's Quarters 2 and 3 remain. Officer's Quarters #2 also has a portion of its kitchen intact. The privies are vanished and were probably removed by the early 20th century.

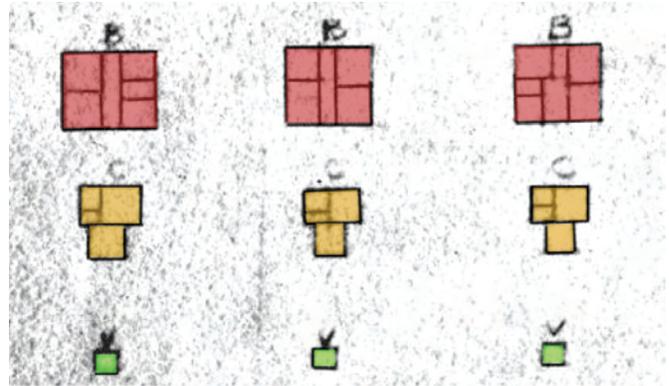


Figure 208: Officer's Quarter #1, 2, & 3, Historical plan

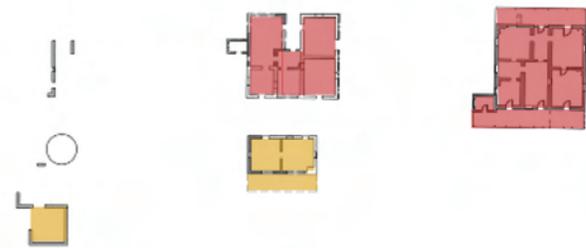


Figure 209: Officer's Quarter #1, 2, & 3, Existing site plan

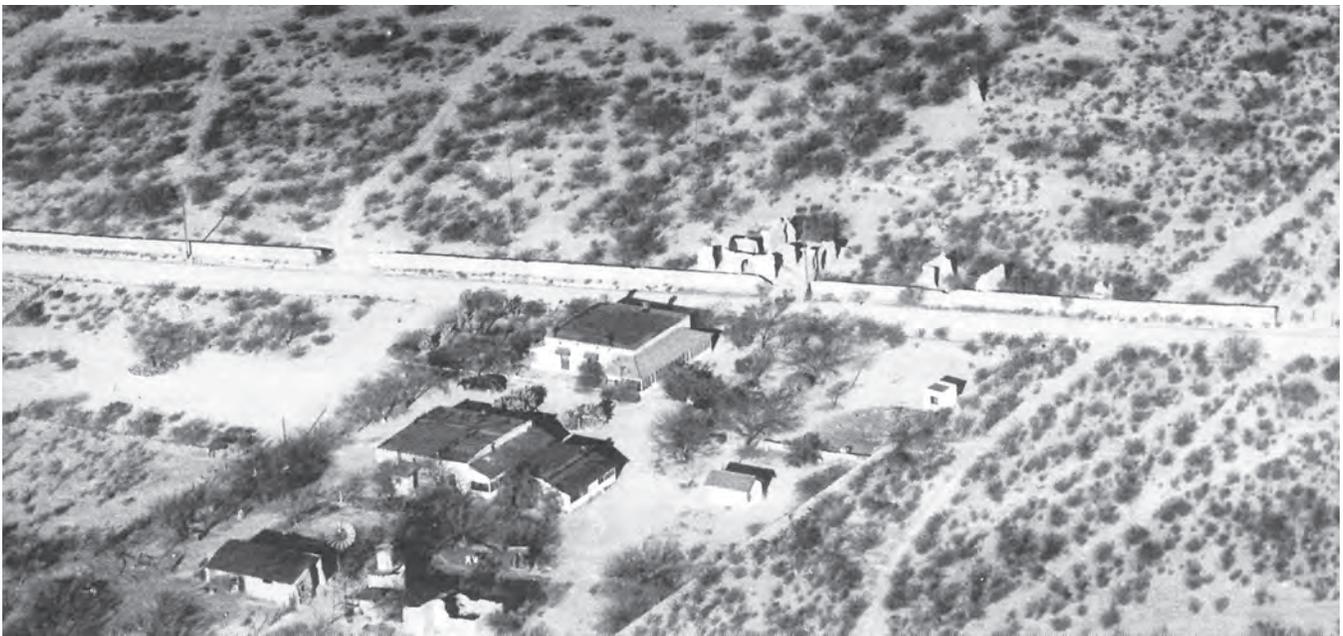


Figure 210: Officer's Quarter #1, 2, & 3, ca. 1940s. Note that Officer's Quarters #1 has been changed into an outbuilding.

Officer's Quarters # 1

Historical Overview

Officer's Quarters #1 was located at the western edge of Officer's Row. Sections of low wall are all that exists of Officer's Quarters #1. Following abandonment of the Fort, much of the wood and material was salvaged for scrap and for new buildings in downtown Tucson. Little is known about how Officer's Quarters #1 was used in the early 20th Century. In the 1940's Magee aerial, the structure appears as an outbuilding, possibly in use as a stable. A concrete tank or silo is set within the footprint of Officer's Quarters #1. The history of the silo is unknown, although it could be a remnant from the Mormon agricultural history in the area.

Condition Assessment - Crocker Ltd

These buildings currently consist of approximately 90 lineal feet of standing multiple- course walls above grade. The remaining portions of these structures are low-lying mounds of deteriorated adobe material which delineate the original footprint of the structures, but in which masonry coursing is no longer visible. The existing walls are constructed of locally manufactured adobe units that measure approximately 20 x 12 x 4 inches. In contrast to the traditional double-wythe construction technique of laying of multiple stretcher courses with a header course to tie them together, these walls were constructed entirely of header courses laid crosswise to the axis of the wall with mud mortar. Although not confirmed, it is assumed that the adobe walls were constructed directly on grade without the construction of a formal foundation.

The extant walls range from approximately 6 inches to 5 feet in height and vary in degrees of deterioration. Lack of a roof and sacrificial render has caused the exposed adobe walls to deteriorate at a constant rate since the turn of the 20th century. The roof and wood elements of both Officer's Quarters No. 1 and the associated kitchen were removed and salvaged in 1896 but at some point a portion of Officer's Quarters No. 1 was re-



Figure 211: Officer's Quarter #1, facing southwest, 2008

roofed and used as a storage facility by the Adkins Family. Based on remnants of the interior finish plaster, wall face deterioration ranges from 2–4 inches. Coving and basal erosion was observed at all extant walls and most likely contributed to the deterioration and collapse of most of the fallen walls. Although basal erosion is often caused by backsplash of rainwater or roof discharge, in this case it the cause appears to be the capillary rise of moisture from the surrounding soils: moisture brought in by capillary action was retained within the walls, causing the adobe units to lose structural integrity and deteriorate over time.

Stabilization efforts during 2007 included the installation of a sacrificial cap at the top of all standing walls. The installation of the cap appears to have caused no adverse effects; continued maintenance of the cap is advised, as it should slow the rate of deterioration of the upper portion of the walls.



Figure 212: Officer's Quarter #1, basal deterioration, 2008

Officer's Quarters # 2

Historical Overview

Officer's Quarters #2 was used as a tuberculosis sanatorium from the 1910s to the 1940s. In 1970, the Officer's Quarters and kitchen experienced a fire that destroyed its wood elements. This fire has led to the continual deterioration of adobe walls. The stabilization treatments completed in 2007 were the first administered since the fire in 1970.

The plan of Officer's Quarters #2 was similar to that of the other Officer's Quarters. The plan consisted of six rooms. At an unknown date in the 20th century, a small concrete structure, likely a bathroom, was added to the west side of the building. Photography completed during a Historic American Building Survey (HABS) of the site in 1940 reveals some of the details of the building from its sanitarium period. The 1940 aerial image confirms that a roof was built between the south wall of the Officer's Quarters and north wall of the kitchen.

Condition Assessment - Crocker Ltd

Constructed contemporaneously with Officer's Quarters No. 1, the structure is comprised of locally manufactured adobe units that measure approximately 20 x 12 x 4 inches. In contrast to the traditional double-wythe construction technique of laying of multiple stretcher courses with a header course to tie them together, these walls were constructed entirely of header courses laid crosswise to the axis of the wall with mud mortar. Although not confirmed, it is assumed that the adobe walls were constructed directly on grade without a formal foundation.

Approximately 308 lineal feet of walls remain, ranging from 2 – 12 feet in height and exhibiting various degrees of deterioration. Although severely damaged by fire, small portions of the roof structure and other wood elements used at fenestrations still exist.

Areas of existing interior and exterior plaster



Figure 213: Officer's Quarter #2 and Kitchen, looking northwest, 2007

finishes can be found throughout the building that give a clear chronology of what finishes were used and where. Interior finishes consist of a mud leveling plaster with a lime-based skim coat and white wash. Evidence of both a lime-based plaster and a cement hard plaster can be found at exterior locations. Further investigation of the building's finishes may be necessary at a later time depending on the future use or interpretation specified in the Fort Lowell Master Plan.

According to recommendations given by Burns Wald-Hopkins Architects, extensive stabilization efforts took place in the summer of 2007 to address safety concerns and prevent further wall failures. All loose debris, loose plaster, pre-cast concrete parapet cap, and collapsed roof were removed as part of the stabilization. To structurally stabilize failing walls until further decisions and planning could take place, basal walls were extensively repaired and temporary shoring/bracing installed. In addition, all walls were topped with an un-amended sacrificial mud cap.

Although remedial drainage work was performed as part of the stabilization, the build-up of deteriorated adobe and nature of the walled enclosures appears to have compromised existing attempts to accomplish adequate site drainage. Lack of proper site drainage may be partially

Officer's Quarters # 2

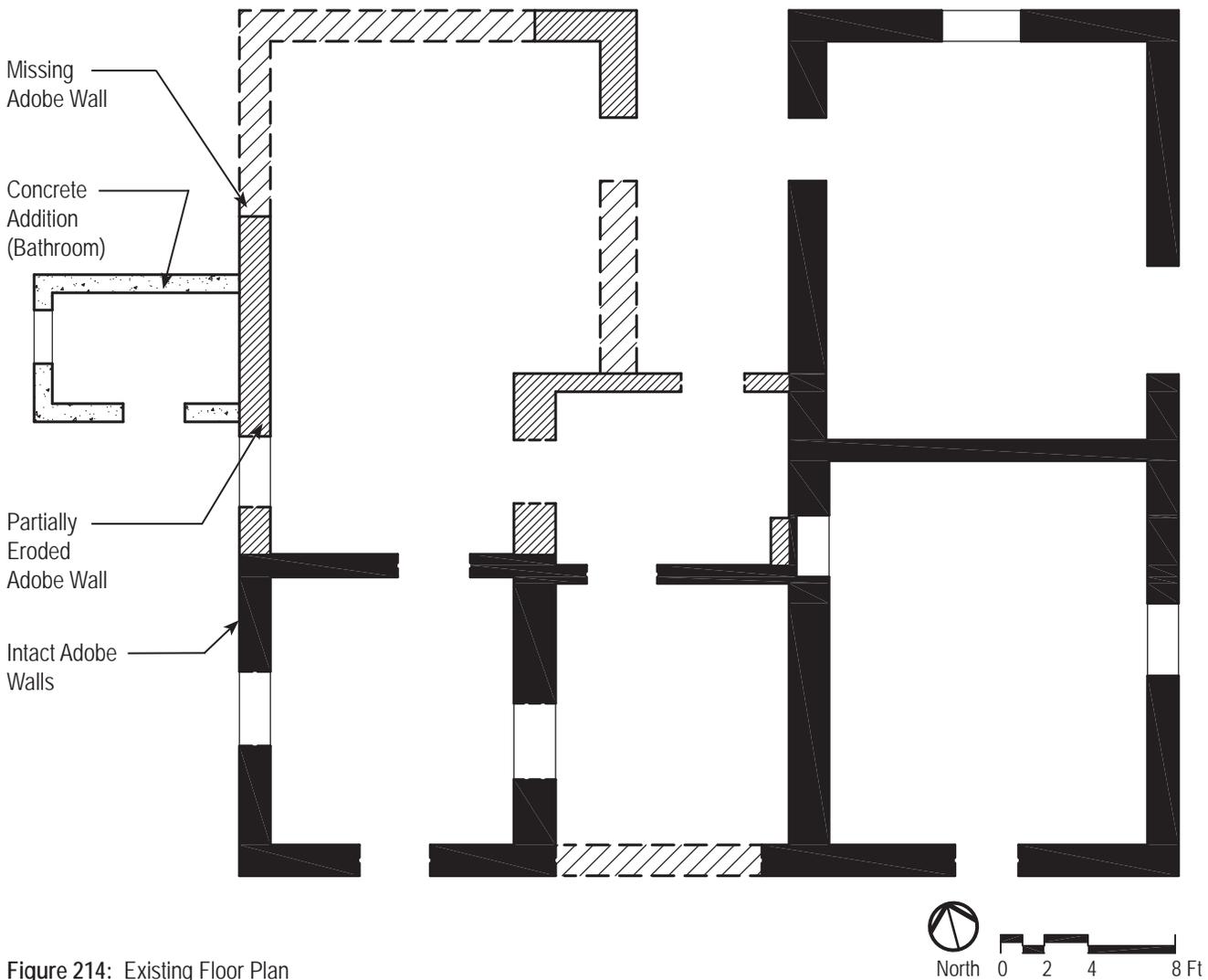


Figure 214: Existing Floor Plan

responsible for basal erosion and should be addressed in future treatment recommendations. In addition, a concrete *contrapared* most likely installed in response to ongoing basal deterioration has actually accelerated the process and should be removed.



Figure 215: Structural Cracking, Officer's Quarter #2, 2008

Officer's Quarters # 2 - Kitchen



Figure 216: HABS Documentation, northeast view, 1940



Figure 217: Officer's Quarter #2, Kitchen, 2007

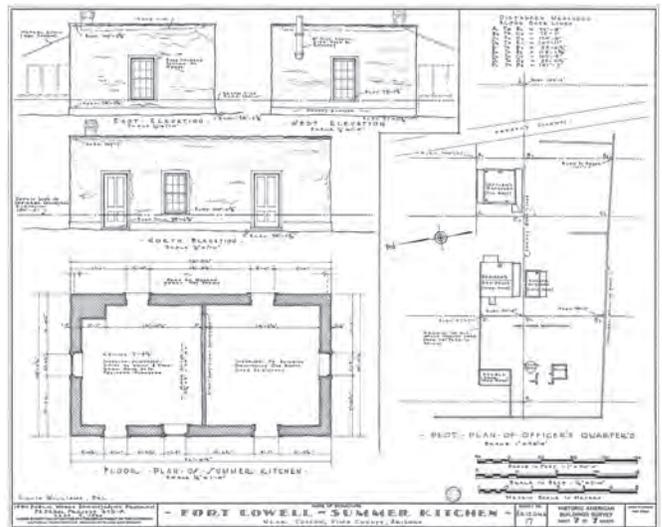


Figure 218: HABS Documentation of Kitchen #2, 1940

Partially Eroded
Adobe Wall

Intact Adobe Walls

Missing Adobe
Walls

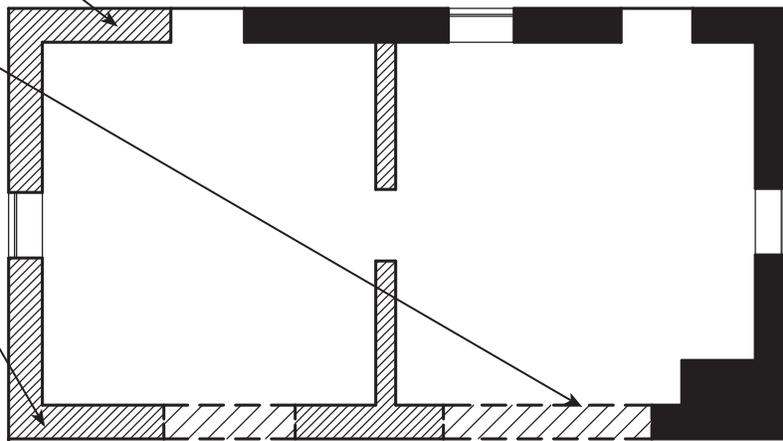
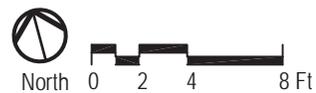


Figure 219: Existing Floor Plan



Officer's Quarters # 3



Figure 220: Officer's Quarter #3, November, 2007



Figure 221: HABS Documentation of Officer's Quarter #3, facing west, 1940



Figure 222: Bracing of ceiling and roof framing, Officer's Quarter #3, 2007

Historical Overview

With the acquisition of Officer's Quarter #3 there is an opportunity to understand and interpret some of the early construction techniques utilized by the original builders at Fort Lowell. Officer's Quarter #3 has undergone significant changes and many of its features, including wood windows and doors probably date to the early decades of the 20th Century when the building was used as a tuberculosis sanatorium. Other features from the Fort-era are concealed behind layers added during later repairs. A portion of the original roof system, including saguaro ribs, appears below later roof layers.

HABS drawing and photographs of Officer's Quarter #3 were completed in 1940. There appears to be few changes to the building since the HABS documentation was completed. Determining the extent of historic fabric remaining from the Fort-Era is difficult. While much of the walls and portions of the roof and floor may date to the Fort Period, it is likely that other features, including window and doors were replaced during the early decades of the 20th Century. The interpretive potential of Officer's Quarters #3 to convey Territorial-era building techniques and form is great. However, it will be important to distinguish and acknowledge the changes that have occurred to this building over time. None of the resources on-site represent the primitive housing conditions experienced by the residents of Fort Lowell before major repairs were completed to the buildings beginning in 1879. A reconstruction or restoration of one of the buildings would be necessary to represent the building with dirt floors and roofs and unplastered walls.

Condition Assessment - Crocker Ltd

Officer's Quarters No. 3 is similar to and was most likely constructed in sequence with or simultaneous to Officer's Quarters No. 1 and 2. Construction techniques and materials of all three buildings are similar: the adobe units used in the

Officer's Quarters # 3

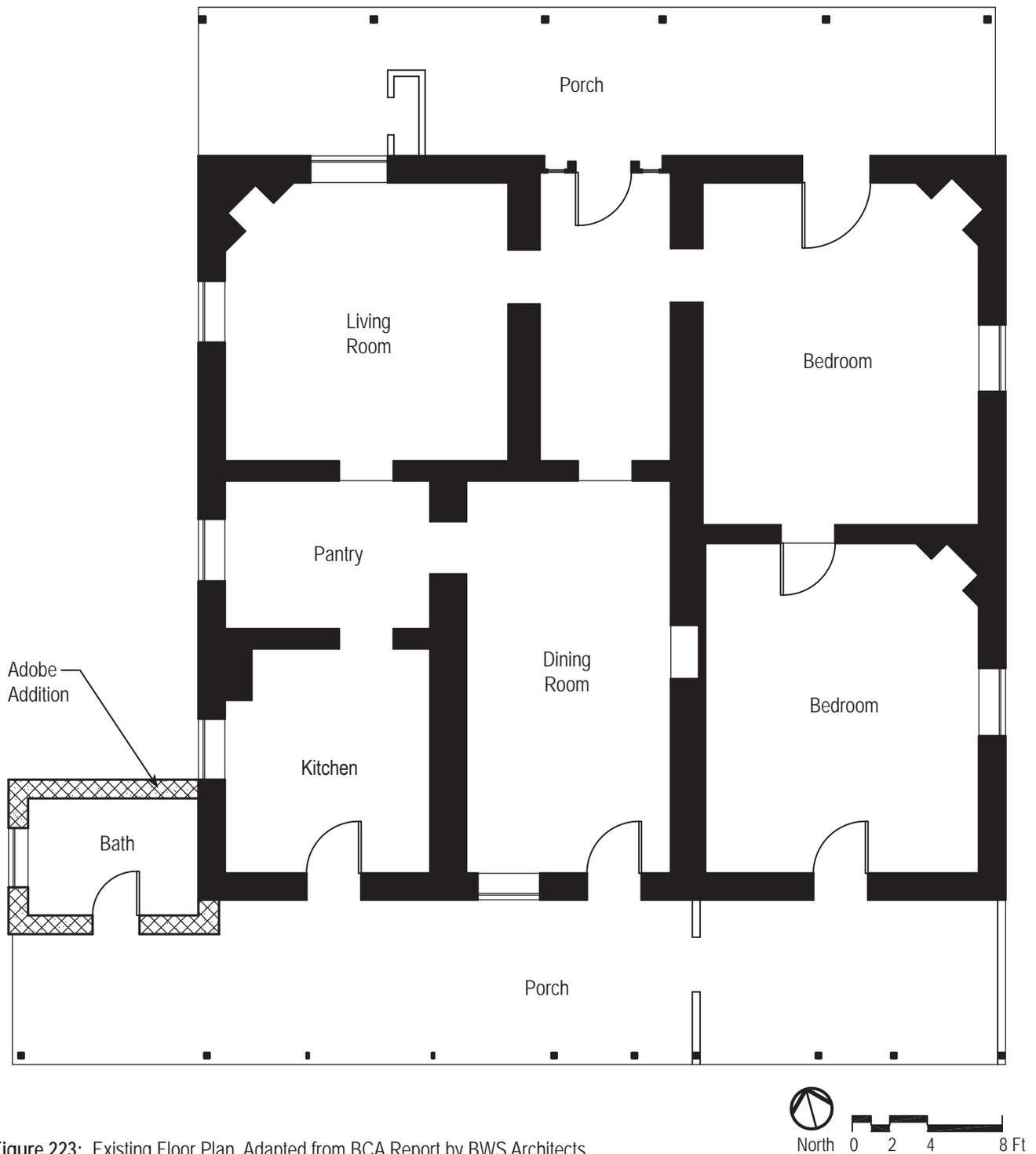


Figure 223: Existing Floor Plan. Adapted from BCA Report by BWS Architects

Officer's Quarters # 3

construction were manufactured on site, measure approximately 20 x 12 x 4 inches, and were laid directly on grade crosswise to the axis of the wall with mud mortar as header courses.

Unlike Officer's Quarters No. 1 and 2, this structure retains a functioning roof system; interior and exterior finishes; attached porches; and existing mechanical, electrical, and plumbing systems. However, owing to moisture infiltration and inappropriate interventions such as the concrete *contrapared*, several structural issues were observed as follows:

Structural settlement: Both the northeast corner and, to a lesser extent, the north elevation of the building exhibit evidence of structural settlement. In the northeast corner, settlement is evidenced by severe cracking and separation of adobe units; evidence of settlement in the north elevation is noted predominately around door and window openings. In both cases, this settlement is most likely due to poor drainage and subsequent underlying soil consolidation. Although temporarily shored, the northeast corner location will most likely require structural underpinning and complete reconstruction. In addition, several areas of structural cracking were observed at interior wall locations. This settlement may be caused by consolidation of underlying soils or differential movement at butt joints between interior and exterior walls.

Basal Erosion: Installation of the concrete *contrapared* and poor perimeter drainage has caused substantial basal erosion, predominately at the east and west elevations. These elevations not protected by attached porches are also the elevations that contain the canales for roof discharge.

Adobe deterioration: Moisture infiltration from roof and parapet locations has caused considerable deterioration of the adobe and wood members



Figure 224: Contrapared, east side, Officer's Quarter #3



Figure 225: Bracing at window lintel at west wall, 2007.



Figure 226: Bracing of southwest corner parapet, Officer's Quarter #3, 2007

Officer's Quarters # 3

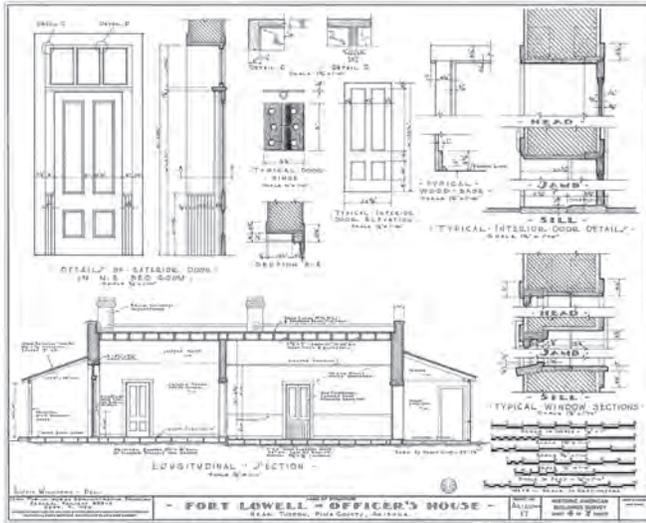


Figure 227: HABS documentation, 1940

associated with windows at the east and west elevations. Temporary shoring and bracing of these openings has prevented total failure but extensive adobe repair and lintel replacement will be required. In addition, failing exterior plasters and open sky-facing joints at the parapet cap have allowed moisture into the adobe walls. Depending on actual conditions of the adobe parapets, repair or reconstruction of walls may be necessary.

Existing exterior finishes are predominately lime plaster with large areas of cement hard plaster patches. The exterior plaster has delaminated from the adobe substrate in many areas and is severely cracked due to moisture infiltration and structural movement. These finishes must be removed to properly assess and address the structural issues mentioned above.



Figure 228: HABS documentation, west elevation, 1940

Adkins-Era Buildings



Figure 229: Adkins Residence water tower and windmill structure facing southwest, August 2008. Condition of windmill structure is poor with significant rusting of support steel.



Figure 230: Adkins Parcel in 2005



Figure 231: 1940s aerial photo of Adkins Buildings from the Magee Collection held at the Arizona Historic Society. RC Magor residence is located at lower left portion of image. Adkins Residence, prior to circa 1950 addition, is visible in the center of the photograph. Officer's Quarters #1 visible at lower right. The reconstructed commissary buildings are located in the upper left portion of the image.

Following the closure of Fort Lowell in 1891, the property was occupied by a number of individuals and families who made use of the abandoned Fort-Period buildings. In June of 1908, the Dixie and Dolly Cate purchased the present-day Adkins Parcel. Dixie passed away of pulmonary tuberculosis in December 1908. Some time later, Dolly Cate opened “Mrs. Cate’s Tuberculosis Sanatorium” in the former Officer’s Quarters.

In 1926, the Adkins Family moved to Tucson from Illinois to bring their daughter, Dicey, to a local tuberculosis sanatorium. While living at Cate’s Rest Ranch, Dicey died from tuberculosis. Harvey and Fronia Adkins purchased the Cate’s property in February 1928. The Adkins operated the “Adkins Rest Home” on the property through the 1930s and 40s. The family also operated other businesses on the site including the Adkins Trucking and Steel Manufacturing business, began in 1934. In the 1940s and 50s, the company was building steel buildings and tanks. From the 1950s until 2006, Adkins Steel Manufacturing concentrated on the fabrication of steel water tanks. During their presence on the site, the Adkins constructed their residence, the fabrication shed, a water tower and windmill and several outbuildings and a variety of cast-in-place concrete elements. The Adkins-Era building and structures may be eligible for the National Register of Historic Places.

Adkins Residence

Overview

The Adkins Residence is a small vernacular bungalow constructed around 1934 by Marion Adkins. It was the main residence for the Adkins Family from the 1934 to 2006 when the property was transferred to the City of Tucson. The building consists of a 793 square-foot adobe core consisting of a kitchen, living room, dining room, two bedrooms and a bathroom. Around 1950, a two room, 293 square-foot concrete block addition, was added to the south elevation to accommodate the Adkins' growing family. The main structure features a low-slope, cross-gabled roof covered in red clay tile. The addition consists of a shed roof covered with the same tile.

The building is in fair condition; however, several deficiencies will need to be corrected before the structure can be reused. Critical repairs include installation of a new roof system and framing, repair of basal coving at west adobe wall, improved site drainage to prevent additional settlement, repair of lintels and surrounding adobe at east elevation windows, repair floor framing where it is sagging and new electrical service and correction of electrical code deficiencies. For detailed information on the existing condition of this structure, see the [Adkins Residence: Building Condition Assessment Report](#), prepared by Burns Wald-Hopkins Architects in February 2008.

Condition Assessment - Crocker Ltd

The structure is in relatively good condition due to its continuous occupation until 2006. The exterior walls consist of a single-wythe construction of unstabilized adobe manufactured on-site. The interior and exterior finishes of the adobe walls consist of a lime-rich mud leveling plaster with multiple coats of paint. Although no longer breathable, the lime-rich mud plaster used for these finishes has held up relatively well over the years. However, drainage issues, roofing deficiencies, and possible plumbing leaks have led to several observed structural issues:



Figure 232: Adkins Residence looking southeast, August 2008

- **Basal Wall Deterioration:** Both the interior and exterior of the west elevation exhibits severe basal deterioration caused by moisture infiltration. Plumbing leaks and roofing deficiencies have contributed to the deterioration of large portions of the wall base, leaving large voids. This problem has been exacerbated by the installation of a concrete *contrapared* and impermeable finishes. The current moisture content of the adobe at these locations is very high.

- **Structural Settlement/Cracking:** Evidence of structural settlement was observed at the following locations:

1. Settlement observed at the northwest corner, most likely due to poor exterior drainage. The installation of an exterior drainage system and/or structural underpinning may be necessary at this location to mitigate further settlement.
2. Structural settlement and water damage observed at the northwest corner of the front entry, most likely caused by moisture infiltration of the adobe wall and/or settlement of the footing. The combination of roofing deficiencies and a malfunctioning gutter has allowed a large amount of moisture into the wall at this location. The downspout drains at the foundation and may also be responsible for settlement. Although the adobe wall is kept well above grade by the concrete footing, the adobe at this corner has very high

Adkins Residence

moisture content.

3. Differential movement has caused cracking at the junction between the original adobe structure and the CMU addition to the south elevation, most likely due to the abutment of different construction materials.

4. Large structural cracks in the interior lath and plaster walls can most likely be attributed to a rotted and failing floor framing system.

- **Moisture Damage:** Due to the east elevation's lack of eaves or gutters, moisture infiltration has caused severe deterioration of both window lintels. Although the surrounding adobe units in this area are not immediately observable, they likely have suffered deterioration as well. The adobe exterior wall of the east elevation appears to be in good condition. The cement and rubble foundation has kept the adobe wall approximately 12-15 inches above grade and well away from moisture.



Figure 233: Adkins Residence west adobe wall, August 2008



Figure 234: Adkins Residence east wall wood fascia, August 2008



Figure 235: Adkins Residence looking northeast, August 2008

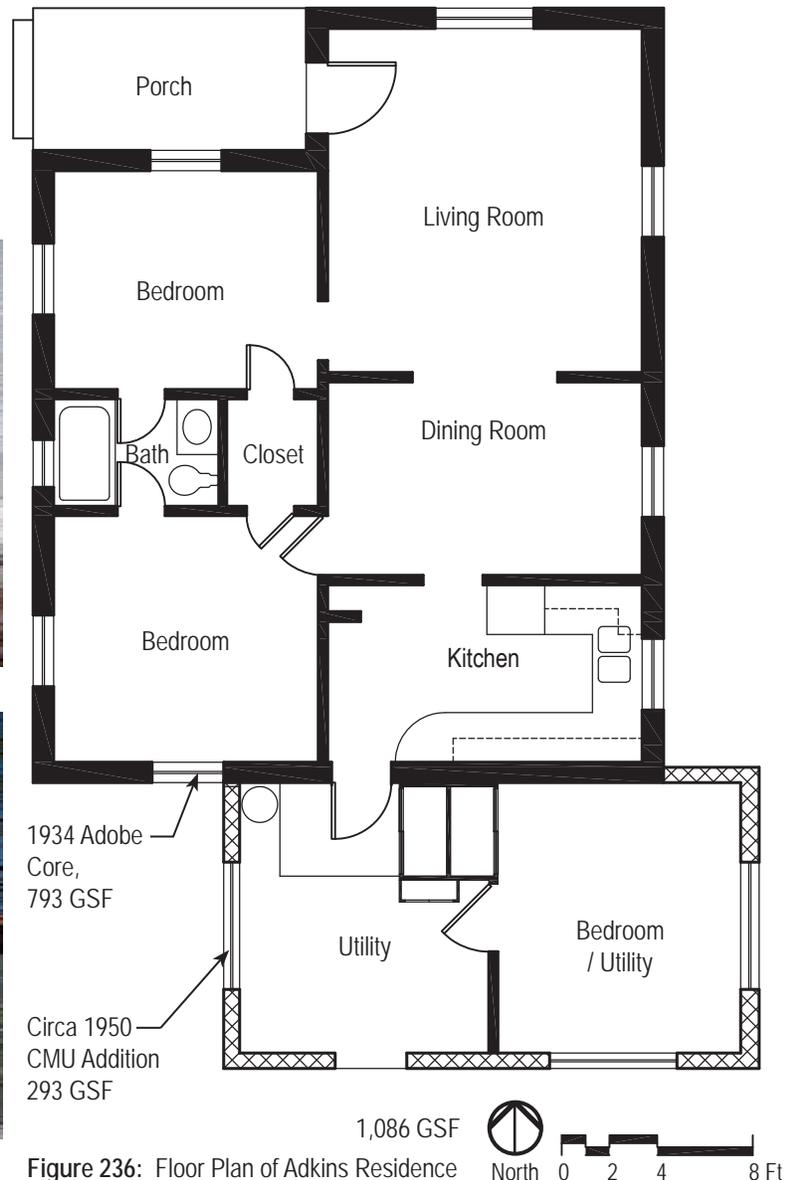


Figure 236: Floor Plan of Adkins Residence

Adkins Steel Fabrication Shed

Historical Overview

The Adkins Steel Fabrication Shed, constructed about 1950 at the north end of the Adkins Parcel, is an innovative, site-built, rectangular structure measuring 36 feet x 60 feet. The structure reaches a height of 20 feet above finished grade at the north and south gable ends. The structure consists of a steel frame and roof structure. Perlite-modified concrete wall panels, site-cast horizontally on building paper, are held between vertical steel columns. An internal system of columns, laterally braced to the outside structural system, appears to have been used to support jib cranes used in the manufacturing of steel water tanks. Sliding door panels, framed in steel and clad with corrugated metal, are located at the north and south gable roof ends and along the central portion of the east and west elevations. Minor appendages to the structure include a corrugated storage space to the south and a concrete panel bathroom at the southeast corner.

The fabrication shed was visited by TLCP Structural in August 2008 and will require significant structural retrofits, prior to use, to address structural and code violations. The cost to perform structural upgrades is at least \$300,000.



Figure 238: View looking northwest, August 2008



Figure 239: Interior view looking southeast, August 2008



Figure 237: View from Fort Lowell Road looking southeast towards Adkins residence (left) and Adkins Steel Fabrication Shed, August 2008.



Figure 240: Steel column at north concrete stem wall, August 2008

Adkins Steel Fabrication Shed

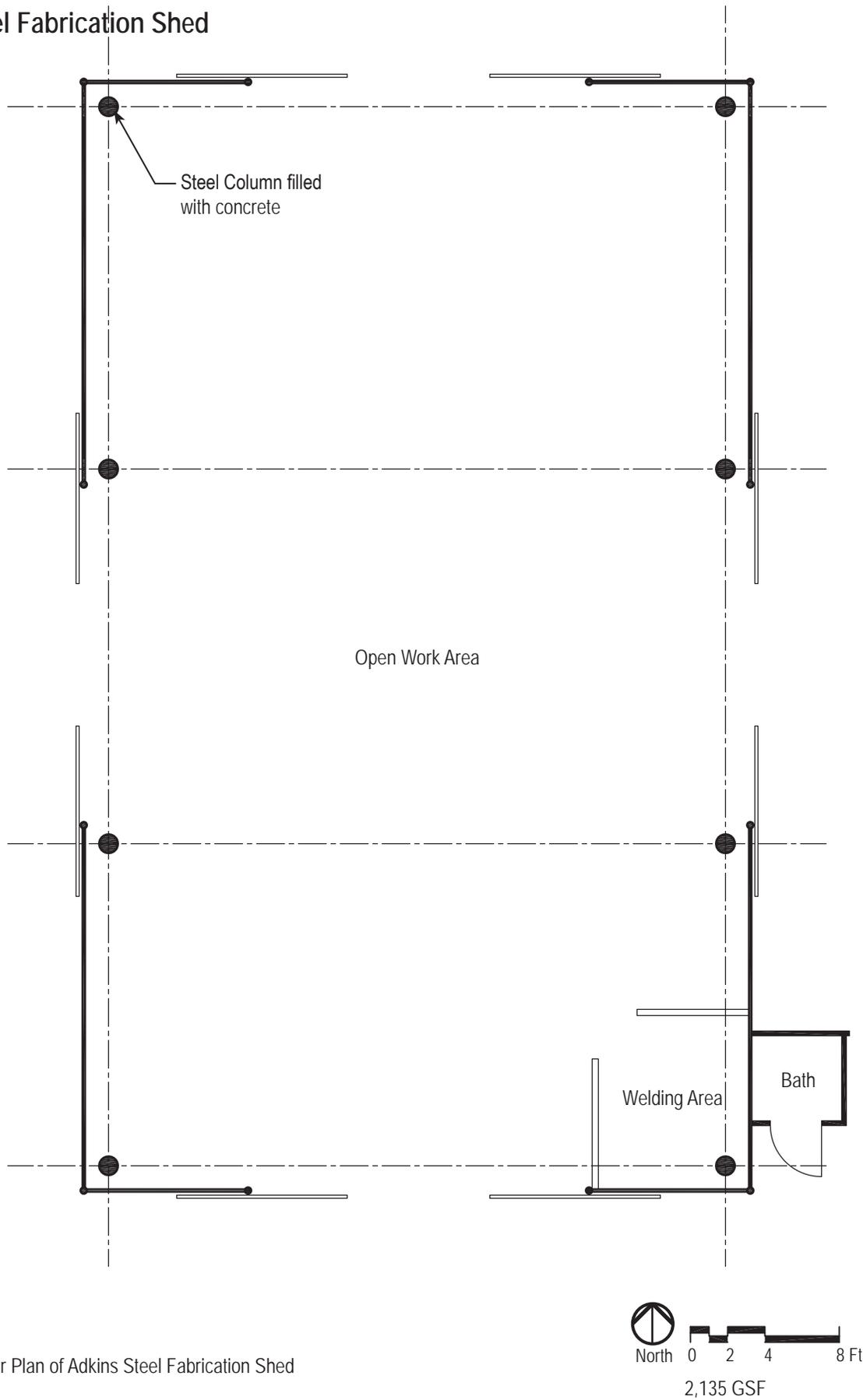


Figure 241: Floor Plan of Adkins Steel Fabrication Shed

Former Adobe Residence (RC Magor Residence)

Historical Overview

This severely dilapidated adobe residence appears on a 1940s aerial photograph by A.E. (Gene) Magee. An exact date of construction is unknown. It appears that this residence was built by or for the Magor Family. At some point, the parcel was acquired by the Adkins Family. The structure was compromised by a fire and vandalism in the 1970s and has been deteriorating since this time. It currently consists of collapsed adobe walls and roofs. Due to its perilous condition, the structure was not accessed for this report. In its current condition it will need to be stabilized to prevent total collapse. If demolition is the preferred option, documentation of the house should be completed. Salvage of any significant architectural and historical resources should be completed before demolition. Additionally, the structure's materials, including adobe walls, could be salvaged and reused in other structures on-site. Due to its poor condition, the building is not eligible for the National Register of Historic Places.



Figure 243: View of former adobe residence looking west, August, 2008.



Figure 242: View of Adkins Parcel looking northwest towards former RC Magor Residence (left) and Adkins Steel Fabrication Shed, Nov. 2007.



Figure 244: View of former adobe residence looking southwest, Nov. 2007.

Quarter Master and Commissary Storehouses



Figure 245: Fort Lowell Road approaching Craycroft Road. Commissary on left, July 2008.



Figure 246: Interior of Commissary Apartments courtyard facing east, July 2008



Figure 247: Stone foundation from Fort- Era root cellar at western edge of Commissary, July 2008

Historical Overview

The Quarter Master and Commissary Storehouses were located at the northwest corner of the parade ground. To the southwest of this large structure was the Quarter Master and Commissary Offices whose footprint currently sits under Fort Lowell Road. The site is currently occupied by the Commissary Apartments, a 1930s “adaptive-reconstruction” of a badly decayed Fort-era Commissary building by the Bolsius family. During the decades following abandonment of Fort Lowell, the Quarter Master and Commissary Storehouses was used by a number of Mexican families, including the Martinez and Ochoa families.

When the Bolsius’ arrived in the neighborhood in the 1930s, they encountered a severely eroded adobe shell. Peter and Charles Bolsius arrived in the United States from Holland. Pete and his American wife Nan, along with his artist brother Charles, eventually settled in Tucson. Prior to moving to Tucson, the Bolsius’ spent an influential year in Northern New Mexico. Inspired by their time in northern New Mexico, the Bolsius’ layered the ruins of the Settler’s Store and Commissary Storehouse with their Pueblo-inspired designs consisting of richly detailed wood beams and undulating parapet walls. Charles Bolsius remained in the neighborhood until the 1970s, constructing a home that contains his signature design motif to the north of Commissary Storehouses. Water and gas easements for the former Charles Bolsius

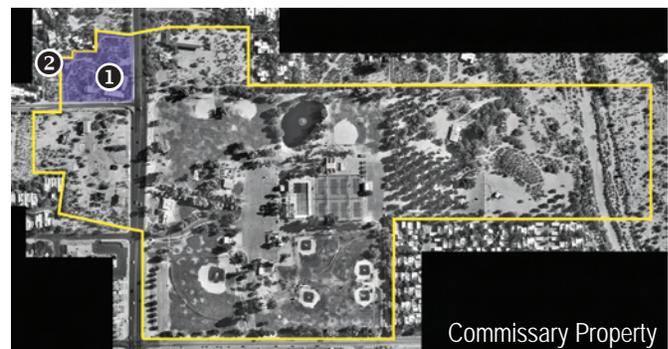


Figure 248: Commissary Property

Commissary Apartments

residence pass under the city-owned Commissary Apartments. The leach field for this property also falls on the city owned parcel. Charles' small corrugated metal-clad workshop is located on city-owned property. This structure is currently used by the Old Fort Lowell Neighborhood Association for storage. The current owners of the Charles Bolsius residence have submitted a proposal that outlines purchase of a portion of the city-owned land to create dedicated access and utility easements, protection of their leach field and consolidation of Mr Bolsius' workshop.

The Commissary Apartments were acquired by the City of Tucson in 2002 from the Margolis Family, who provided stewardship of the property for 20 years. There are currently five rental units managed by a leasing agent under contract with City.

Condition Assessment - Crocker Ltd

Due to the benefits of routine maintenance and continuous occupation, the buildings appear to be in relatively good condition. The cement hard plaster used for the majority of the exterior finishes is in poor condition, with numerous cracks observed at the parapets. Although most of the cracking appears to be associated with failing exterior plasters, a large vertical crack at the northwest corner of the middle unit suggests that there may be structural settlement or deterioration of adobe substrate. The exterior walls appear to be structurally stable overall, but minimal destructive investigation may be necessary to accomplish a comprehensive assessment of the adobe. Incompatible repairs completed in recent years on the east building should be corrected.

Concrete *contraparedes* have been installed at the perimeter of most of the buildings. Because there is no obvious evidence of basal deterioration, these features may have been installed as a preventative measure. The condition of the adobe behind the *contrapared* should be investigated to verify whether these interventions have been detrimental to the adobe substrate.

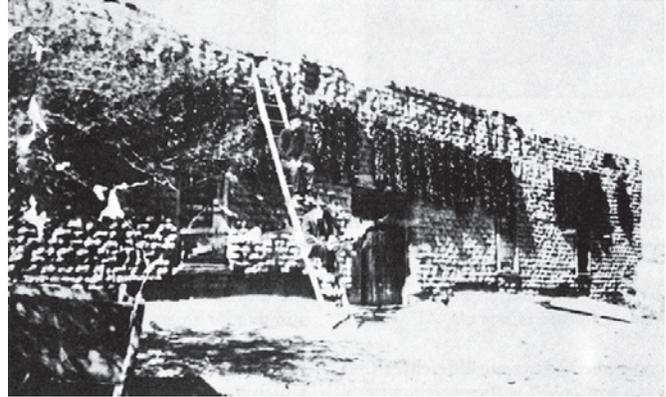


Figure 249: South side of the Commissary, ca. 1910

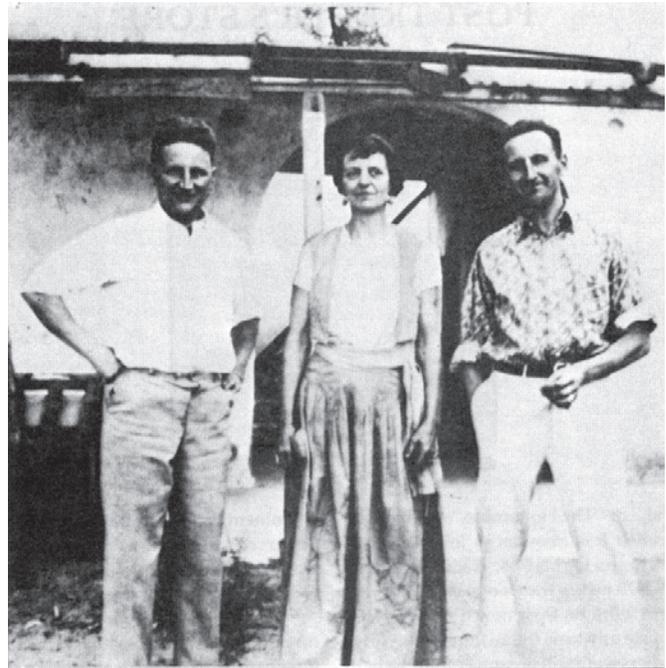


Figure 250: Pete, Nan and Charles Bolsius, 1934



Figure 251: Charles Bolsius workshop, August 2008

Donaldson / Hardy Property



Figure 252: Overlay analysis of Cavalry Corral Area showing existing features. Excerpted from Desert Archaeology, Adkins Steel Assessment, 2008. Corrals are indicated by an "s". Donaldson House is shown southwest of the corrals

The Cavalry Corral was located north of the Cavalry Company Quarters at Fort Lowell. The corrals were square in plan with structures primarily along the west and south edges. The east and north edges were fenced. See the accompanying illustration for more detail.

Portions of the original Fort-era Cavalry Corrals were obtained by the City through the purchase of the Hardy / Donaldson property in 1984. The remaining adobe walls were covered by a protective steel shelter in 1998. The construction of a contra-pared has compounded the rate of deterioration at the base of the remaining wall.

The Donaldson House was constructed adjacent to the corrals in the 1940s. A small cottage was built into the footprint of the corrals.

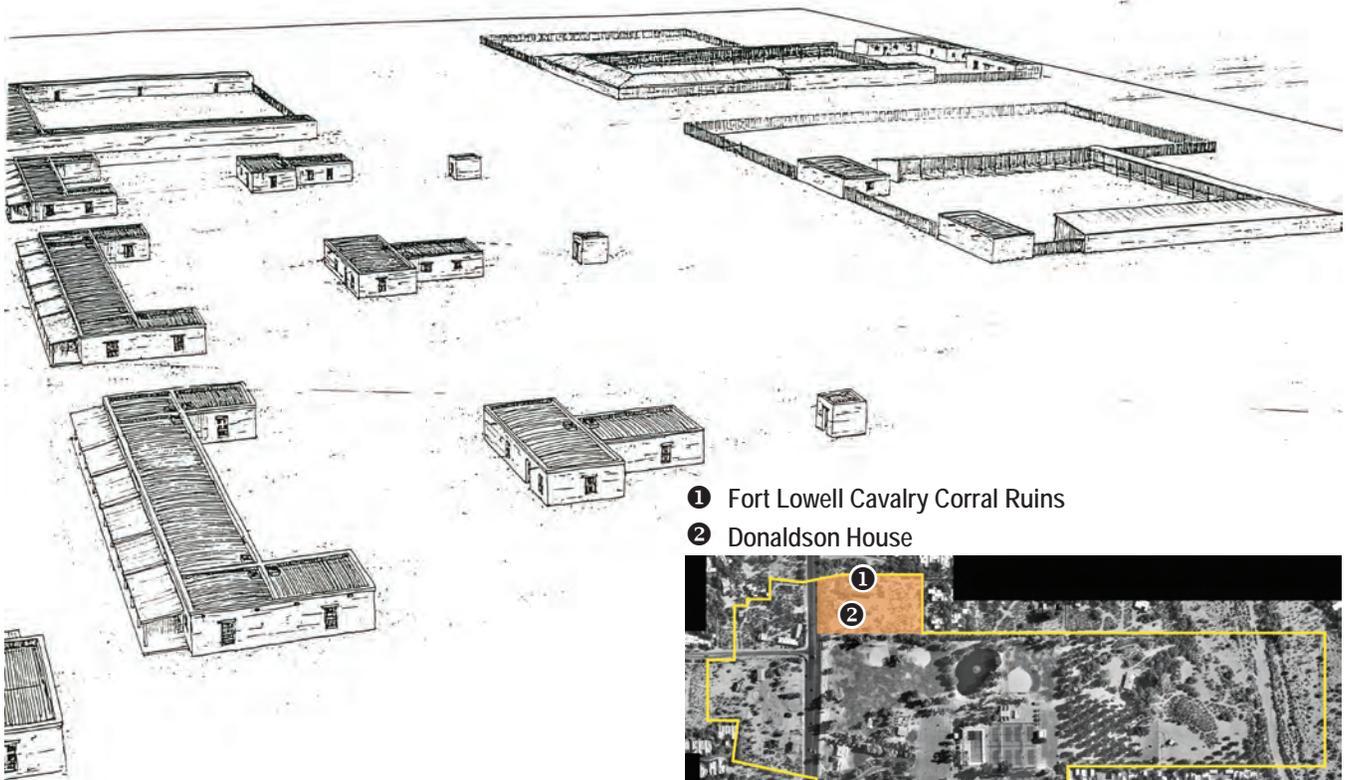


Figure 253: Artist's sketch of buildings at Fort Lowell, including Infantry Company quarters, in foreground, and Cavalry and Quarter-master Corrals.

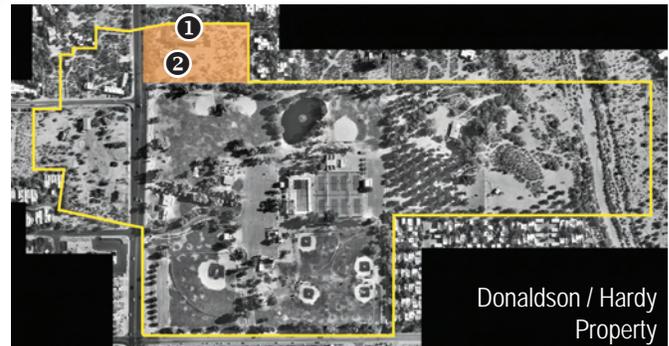


Figure 254: Donaldson / Hardy Property

Fort Lowell Cavalry Corral Ruins

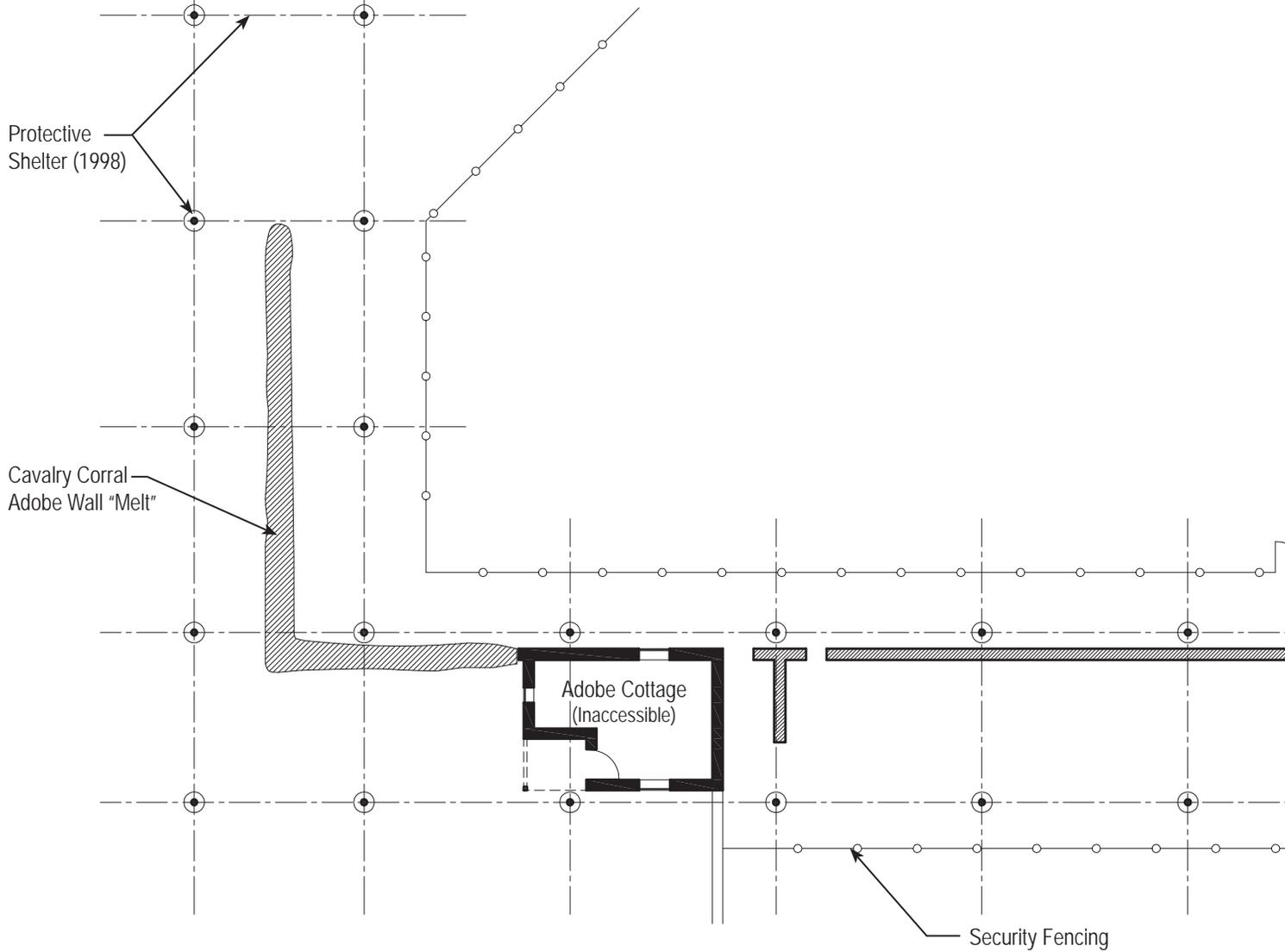


Figure 255: Donaldson House Adobe Cottage, August 2008



Figure 256: Cavalry Corral Wall, looking north, August 2008

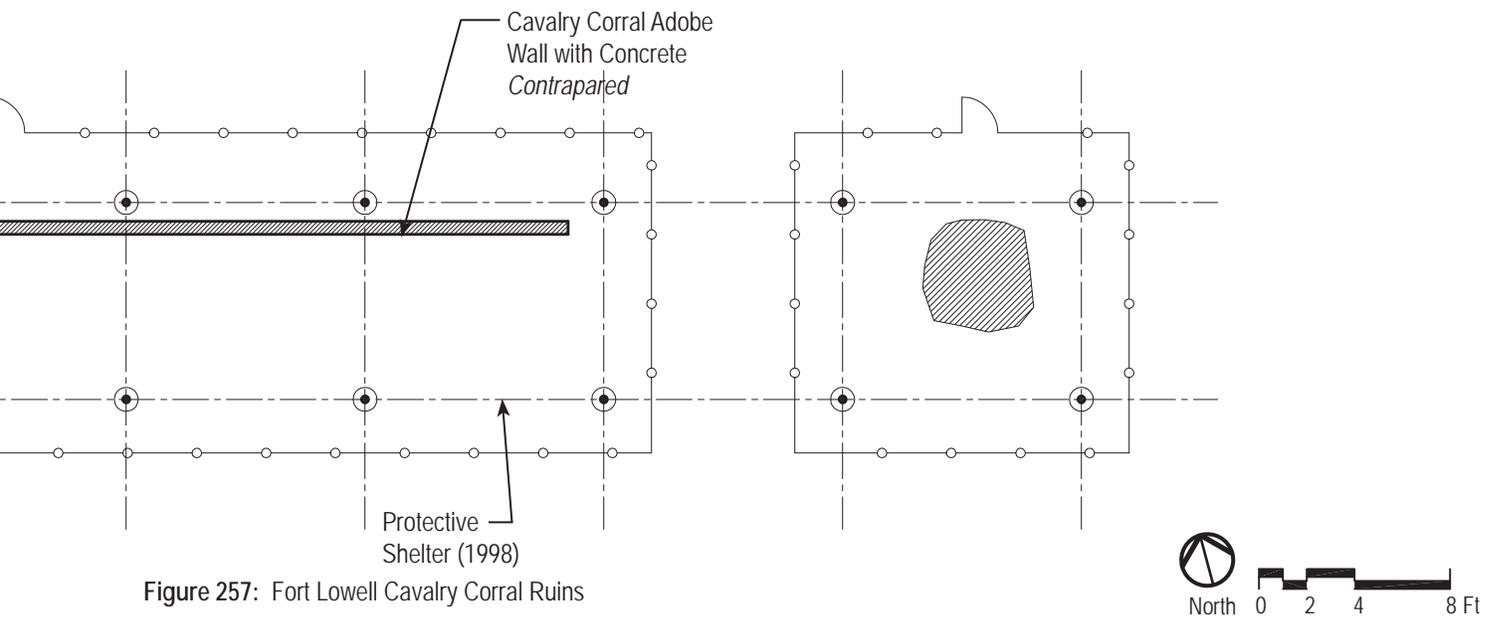


Figure 257: Fort Lowell Cavalry Corral Ruins



Figure 258: Cavalry Corral Wall and *contrapared*, looking west, August 2008



Figure 259: Protective shelter, looking northwest, August 2008

Donaldson House

The Donaldson House is believed to have been constructed starting in the 1940s. Associated with this residence is a small guest or worker cottage built into the walls of the Cavalry Corrals. It is possible that walls from the Corrals were also incorporated into the main residence. A history of the house, prepared by Ann Branham in 1996, indicates that John Donaldson believed there were Fort-era walls in his house. According to this same report, the house was occupied by both Marion Adkins and local architect Emerson Sholler before being owned by the Donaldsons from 1947 to 1980.



Figure 261: Donaldson House, south-facing entry, August 2008

The Donaldsons, a local ranching family, added a concrete block addition (shown in color on the plan) to the original “L-shaped” adobe core. The residence featured open porches on south, west and east sides. John and Susan Hardy owned the property from 1980-1985. The building has been in City ownership since 1985. It has been leased for a health science museum (Human Adventure Center) and Arizona Historical Society for education center. The Donaldson House has been vacant since the mid 1990s. New wall and roof bracing was recently undertaken, and a new roof added.



Figure 262: Donaldson House, roof ponding in July 2008 before emergency stabilization



Figure 260: Donaldson House Floor Plan

Fort Lowell Park

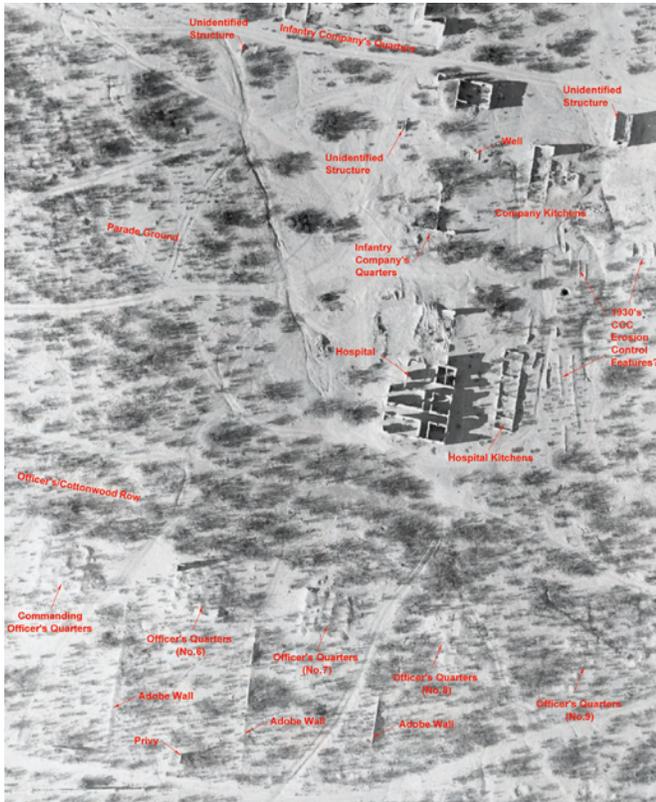


Figure 263: Fort Lowell Ruins, ca. 1940s

Significant portions of Fort Lowell were originally located on the parcel that has been designated as Fort Lowell Park since 1963. The Hospital, Infantry Company’s Quarters, four Officer’s Quarters and Cottonwood Row, as well as many ancillary structures were originally located on this parcel. Visible remains from the Fort-era are limited to the hospital ruins and small portions of the Band Quarters and Company Kitchens.

Preservation of the remaining Fort-Era ruins is provided by a combination of fencing and, in the case of the hospital, a protective shelter. The hospital has received additional stabilization, while other ruins have only been fenced. Existing adobe walls should be further stabilized by repairing basal coving and topping with sacrificial mud caps.

There has been limited archaeological investigations of vanished structures from the Fort Lowell Period. Additionally, a small portion of the Hardy site, a large pre-Classic Hohokam site was excavated in the late 1970s. This excavation and the prehistoric history of the area is interpreted west of the maintenance building.

Other existing resources include a reconstructed Officer’s Quarters and a ca. 1940s horse stable, adaptively re-used for the park’s maintenance facility. Recreation facilities, including the pool building and tennis pro-shop have not been fully documented.



Figure 264: Fort Lowell Park, former Parade Ground looking southeast, 2008

- ① Fort Lowell Hospital Ruins
- ② Fort Lowell Cavalry Band Quarters Ruins
- ③ Fort Lowell Infantry Kitchen Ruins
- ④ Fort Lowell Cavalry Infantry Quarters Ruins
- ⑤ Fort Lowell Park Maintenance Building
- ⑥ Fort Lowell Museum

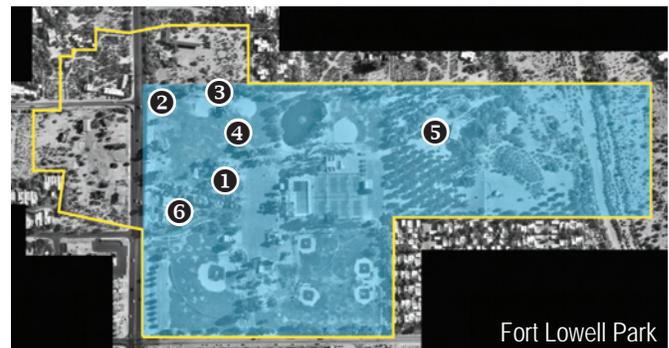


Figure 265: Fort Lowell Park

Fort Lowell Hospital Ruins

Historical Overview

The Fort Lowell Hospital and Hospital Kitchen were located at the southeast corner of the parade ground. Currently, only a portion of the hospital walls remain under a protective roof covering constructed by the Boy Scouts in the 1950s. There are no visible remains of the Hospital Kitchen.

Portions of the adobe walls protected by the roof structure remain more intact than those directly exposed to the rain. The protective covering is in fair condition. There are nail holes in the corrugated metal roofing and the columns lack a complete lateral bracing system.

Condition Assessment - Crocker Ltd

The steel-frame, tin-roofed shelter was constructed over the eastern portion of the Hospital structure in an attempt to protect what was left of the deteriorating walls. Only a portion of the building was sheltered with the steel structure, possibly due to financial reasons. Although highly deteriorated, large sections of extant walls delineate the Hospital footprint and floor plan. Existing adobe walls range from 3 – 12 feet in height and were constructed of locally manufactured adobe units that measure approximately 14 x 9 x 4 inches. In contrast to the traditional double-wythe construction technique of laying multiple stretcher courses with a header course to tie them together, these walls were constructed entirely of header courses laid crosswise to the axis of the wall with mud mortar. Although not confirmed, it is assumed that the adobe walls were constructed directly on grade without a formal foundation.

Depending on location or amount of protection provided by the shelter, the adobe walls have deteriorated at different rates. With several walls being only partially covered by the shelter, the rate of deterioration can easily be measured. Since the installation of the shelter sometime in the 1950s, approximately 1.5 - 2 feet of adobe wall has deteriorated in the past 50 years. The



Figure 266: Sheltered Hospital Ruins, facing north, July 2008

rate of deterioration of the wall faces can also be quantified by comparison of the covered and uncovered locations.

Although more acute at unsheltered locations, basal erosion and moisture retention can be observed throughout the structure. Moisture appears to be an issue at sheltered portions of the structure as well. A combination of wind-driven rains and leaks at the shelter roof has allowed the surrounding soils to become saturated. Lack of foundations has allowed capillary rise and subsequent basal erosion even in sheltered locations.

In the larger, more intact portions of the building, basal erosion and general deterioration of the adobe units have caused severe structural cracking. In some locations -- particularly at fenestrations, where there is a lack of bulk masonry for stability -- diagonal cracking and actual separation has occurred. Emergency shoring has been placed at one doorway in an attempt to prevent actual failure of the adjacent wall. Although the wood structural elements at these openings appear to be in good condition, the associated masonry needs to be stabilized or reconstructed to prevent future wall failure.

Large areas of interior plaster can be observed

Fort Lowell Hospital Ruins

at covered portions of the structure. As with the Officer's Quarters, a mud plaster leveling coat was then skim coated or whitewashed with a lime-based plaster. Small fragments of a different lime-based plaster not observed on any wall surfaces were observed on the ground around the building. This particular lime plaster may have been used as an exterior plaster or an interior plaster that was applied in only select rooms.

Similar to the other adobe ruins associated with Fort Lowell, the remains of the Hospital have suffered continuous deterioration resulting from moisture and wind damage. Because it has been sheltered, the Hospital contains the largest amount of intact adobe walls and, along with Officer's Quarters No. 3, has the highest potential for future interpretation.

In several areas, the extent of the basal deterioration may lead to failure of the wall sometime in the near future. These current conditions may need to be addressed before the completion of the Master Plan to prevent wall failure and ultimately the loss of historic material. It is recommended that basal adobe repair be performed at problematic areas sometime in the near future. In addition to basal repair/stabilization, it is recommended that a gutter system be installed at the shed roof of the Hospital Ruins shelter. The most severe basal coving is found at walls located just outside the dripline of the shed roof.



Figure 267: Fort Lowell Hospital Ruins, looking northwest, HABS -1937.



Figure 268: Hospital Ruins, facing northeast, July 2008



Figure 269: Hospital Ruins, basal deterioration, July 2008



Figure 270: Hospital Ruins further basal deterioration, July 2008

Fort Lowell Cavalry Band Quarters Ruins

Historical Overview

Accommodations for soldiers were located in four barracks buildings located to the north and east of the parade ground. At the northeast corner, two Infantry Company Quarters were placed at 90 degree angles. Company kitchens and privies were built for each housing unit. Further to the west, near the north-central edge of the parade ground was the Cavalry Company Quarters, also with its own kitchen and prove. The Cavalry Band Quarters was located to the west of the Cavalry Company Quarters. All four housing quarters were ‘U-Shaped’ buildings consisting of a long, slender building and two short wings constructed perpendicular to the main building.

Currently, only traces of the housing quarters and kitchens remains. These traces, barricaded behind chain link fence, currently receive no additional preservation interventions. In their current condition, these traces are largely non-evident, and thereby irrelevant, to most park visitors. Since very little historic material exists in these locations, it will not be possible for visitors to adequately understand their spatial forms and relationships without additional interpretive techniques or reconstructions.

Condition Assessment - Crocker Ltd

Approximately 8 lineal feet of multiple-course wall remains of the Cavalry Band Quarters building. Extant adobe walls range from 1 – 2.5 feet in height; the remaining portions of the structure consist of low-lying mounds of deteriorated adobe that delineate the original footprint of these structures but in which the masonry coursing is no longer visible. The existing walls are constructed of locally manufactured adobe units that, as with other Fort Lowell buildings, were most likely constructed directly on or slightly below original finish grade. A granite cobble rock alignment runs parallel to the north adobe wall mound that may have been associated with the structure or added at a later date as part of the interpretation.



Figure 271: Cavalry Band Members in front of their living quarters.



Figure 272: Cavalry Band Quarters Ruins facing west, 2008



Figure 273: Cavalry Band Quarters Ruins facing towards Craycroft Road, 2008

Fort Lowell Infantry Kitchen Ruins



Figure 274: Kitchen ruins at the northern edge of the park. July 2008



Figure 275: Detail of kitchen ruins. July 2008



Figure 276: Northern edge of Fort Lowell park showing kitchen ruins beyond, August 2008

Historical Overview

The remains of the Infantry Kitchen are located at the northeast corner of the former parade grounds. The area is fenced and currently receives no preservation maintenance. There are a few sections of walls remaining. However, a full spatial understanding of the original footprint is not possible. Native vegetation has recolonized the fenced area.

Condition Assessment - Crocker Ltd's

Approximately 15 lineal feet of multiple-course walls remain of the Infantry Kitchen building. The extant adobe walls range from 1 – 6 feet in height; the remaining portions of the structure consist of low-lying mounds of deteriorated adobe material that delineate the original footprint of these structures but in which the masonry coursing is no longer visible. The existing walls are constructed of locally manufactured adobe units that, as with other Fort Lowell buildings, were most likely constructed directly on or slightly below original finish grade.

The remaining walls have been protected from vandalism and disturbance by a chain-link fence but were not sheltered like the Hospital Ruins or Calvary Corrals. The adobe walls have suffered the constant rate of erosion to the top, face and base. Basal deterioration through capillary rise likely contributed to the failure of most of the walls, and the corner section of standing wall is currently particularly precarious due to basal erosion. All standing wall should be stabilized to prevent further collapse.

Fort Lowell Cavalry Infantry Quarters Ruins

Historical Overview

Only faint traces remain of the Cavalry Infantry Quarters, located at the northeast corner of the former parade grounds. The area is fenced and currently receives no preservation maintenance. Native vegetation has recolonized the fenced area.

Condition Assessment - Crocker Ltd

Located adjacent to a soccer field, the ruins of the south-facing Infantry Quarters consist of a low mound of deteriorated adobe that represents a partial footprint of the original building. At some point a low chain-link fence was installed to protect what may have been standing courses of adobe masonry, although no masonry coursing is visible at this time. The Infantry Quarters have minimal interpretation value but do represent the original location and partial footprint of the building. Fencing of the area has also protected any subsurface archaeological deposits that would be associated with the Infantry Quarters.



Figure 278: Cavalry Infantry Quarters Ruins facing west. 2008



Figure 279: Cavalry Infantry Quarters Ruins (fenced) facing southwest, 2008

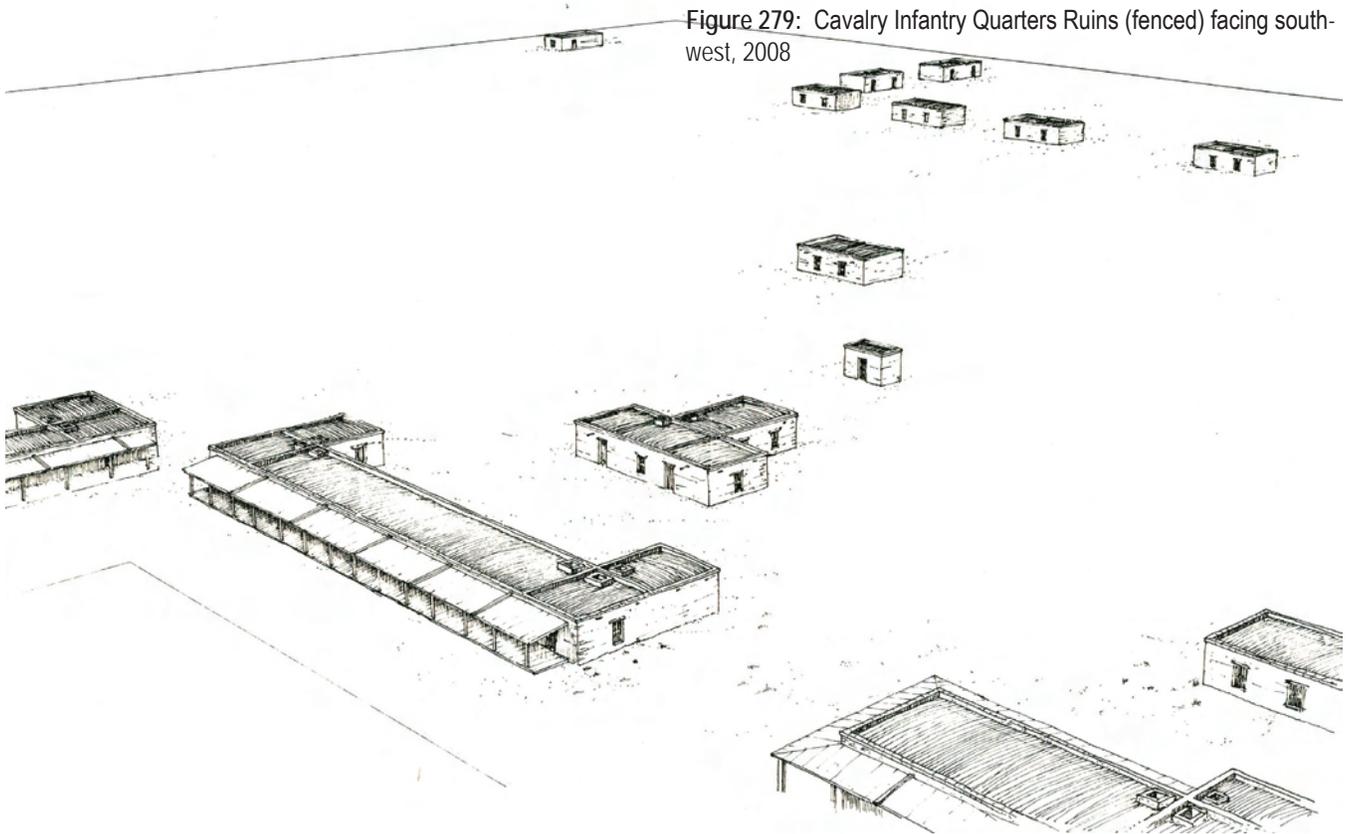


Figure 277: Artist's sketch showing Cavalry Infantry Quarters, in foreground, facing northeast.

Fort Lowell Park Maintenance Building



Figure 280: Maintenance Building, facing south, 2008

The maintenance building at Fort Lowell Park occupies a former stable. The stable appears on a 1958 aerial of the park and was likely constructed after the mid-1940s because of the use of concrete masonry units (CMU), first produced locally in 1947. A fenced equipment storage area is located north of the building. The building contains a break room and bathroom. The building has adaptive reuse possibilities and is located in an under-used and poorly planned area of the park. The building is in good condition. The break room was recently renovated and is air conditioned. There is potential to relocate the maintenance building to a less prominent area of the park.

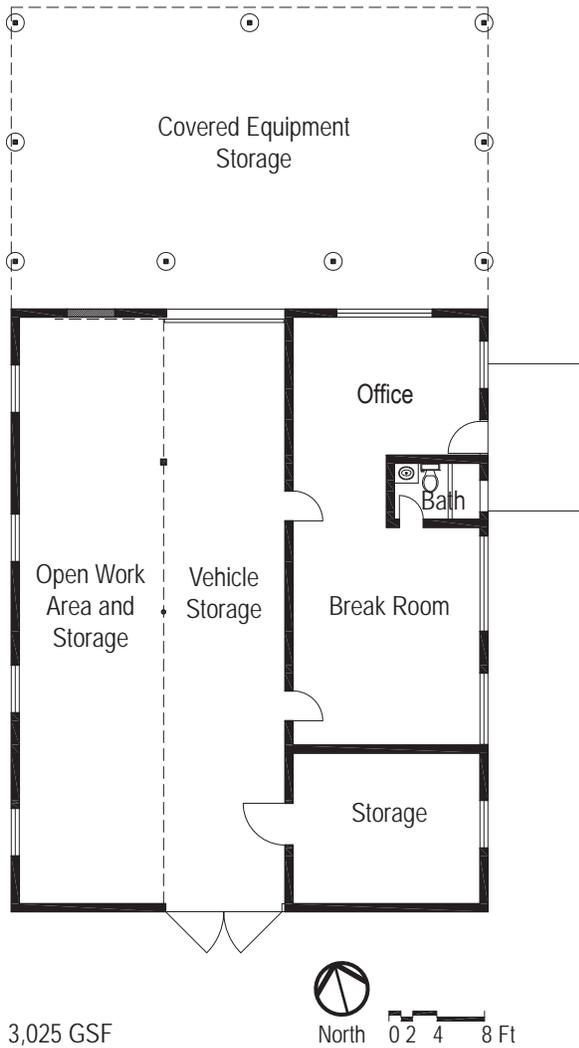


Figure 281: Floor Plan Fort Lowell Park Maintenance Building



Figure 282: Maintenance Building Interior, facing north, 2008

Fort Lowell Museum

Historical Overview

The Fort Lowell Museum includes a reconstructed Officer's Quarters and Officer's Kitchen. The reconstruction was completed in 1963 about the same time the site was turned into a County Park. The architect was William Goldblatt. The reconstruction cost \$30,000 and was funded by contributions from the Junior League, Pima County Board, Pima County Sheriff's Posse and Civil War Centennial Committee.

Reconstruction was based on Johnson archaeology (1960), old reports, maps, & field measurements of extant structures. The alignment of reconstructed buildings is inaccurate. Buildings are located approximately 25' northeast of their historic alignment. Reconstructed "Cottonwood Lane" follows this misalignment. Placing these reconstructions inaccurately presents a difficult decision to be decided upon in the master planning process. If the interpretation of missing Fort-era buildings is pursued, the designers will have to consider how the misalignment of the museum and cottonwood lane impacts the overall plan.

Buildings are concrete masonry units (CMU) with an adobe veneer. Structural condition is good. Adobe veneer needs to be regularly maintained because buildings are unplastered.

Condition Assessment - Crocker Ltd'

The block buildings are veneered with a single wythe of unstabilized adobe units. The adobe veneer has suffered deterioration in several areas, mostly caused by roof drainage issues but also by general weathering due to lack of plaster. Malfunctioning downspouts and *canales* draining at the foundation have caused basal erosion and general damage to the veneer. Repair is evident in many locations, either through application of a mud patch or complete replacement of damaged blocks with what appears to be stabilized adobe units. The several large cracks in the exterior of the structure do not appear to be structural; rather, they



Figure 283: Fort Lowell Museum, facing west, 2008



Figure 284: Fort Lowell Museum, facing southeast, 2008

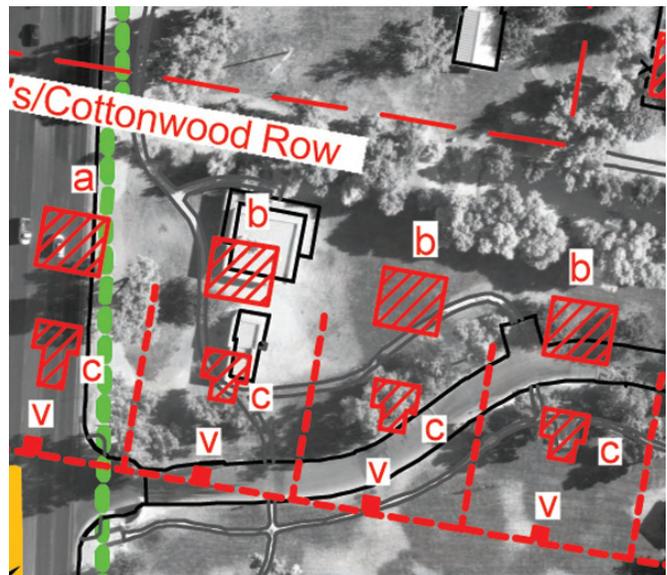


Figure 285: Overlay of existing park features and original layout of Fort Lowell. Note offset of reconstructed Officer's Quarters and Kitchen to the north and east. Excerpted from Desert Archaeology, Adkins Steel Assessment, 2008.

Fort Lowell Museum

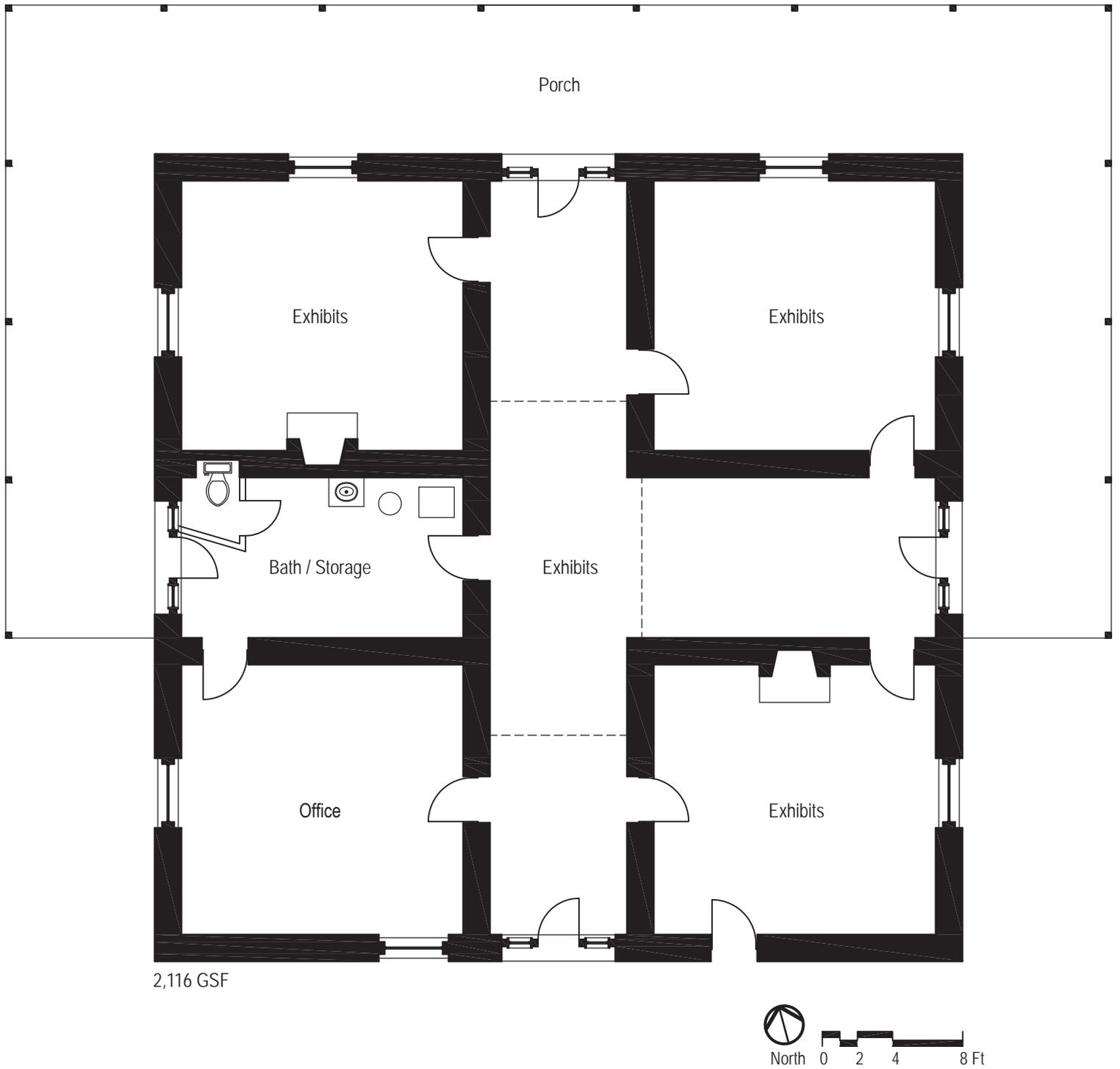


Figure 286: Floor Plan Fort Lowell Museum

Fort Lowell Museum

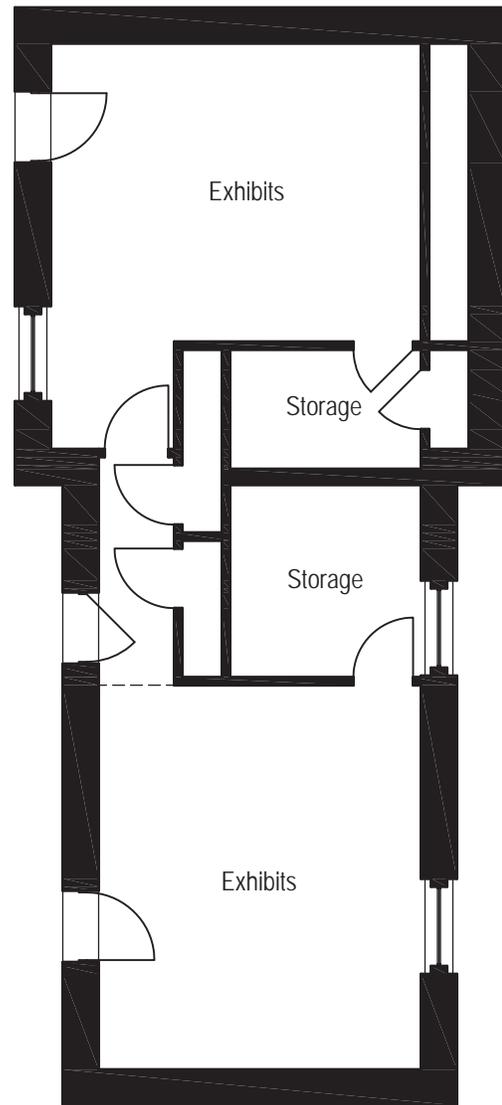
appear to result from a failure (or lack) of the tie connection system between the block structure and adobe veneer.



Figure 287: Fort Lowell Museum - Kitchen Reconstruction, facing northeast, 2008



Figure 288: Fort Lowell Museum - Kitchen Reconstruction, failing adobe and plaster, east elevation, 2008



839 GSF North 0 2 4 8 Ft

Figure 289: Floor Plan Fort Lowell Museum Kitchen Reconstruction



Interpretive Resources and Audience

Contributed by Bruce Hilpert

Previous Page:

Figure 290: (Top) Multiple interpretations at the Fort Lowell Hospital ruins

Figure 291: (Left) Fort Lowell Museum

Figure 292: (Right) Cottonwood Row relocated

Introduction

Fort Lowell Park is a unique and exciting interpretive resource that can provide the public with a greater understanding of the prehistory, history and natural environment of the City of Tucson (CoT) and its surrounding region. The park's collection of archaeological remains, adobe ruins, historic buildings and adjacent riparian areas are representative of the forces and different peoples that shaped modern Tucson.

This combination of historic, cultural and natural resources is found at no other park in Tucson. By itself, the historic Fort Lowell military post could serve as the basis for a major state historic park or a National Park Service monument; in combination with the prehistoric Hohokam village, the adjacent historic district and rich riparian area it can serve as the crown jewel of the CoT's park system. In the words of a teacher who uses the park as an educational resource, "It is recent; it is local; and it is real."

In addition, Fort Lowell Park combines these resources with recreational facilities that attract thousands of park users on a weekly basis. Currently, most of these users have little awareness of the historical, cultural and natural resources of the park or their relation to our city's past.

The interpretive goal of the master planning will be to enhance public understanding of all the stories and layers of history present at Fort Lowell Park by:

- Improving the visibility of the historic resources at Fort Lowell Park allowing more visitors to experience the historical and cultural aspects of the park.
- Clarifying spatial order of various historic periods on the site.
- Improving visitor orientation with wayfinding, interpretive trails, signage, and landscaping.
- Connecting to other sites across the region that have similar historical themes.



Figure 293: Interpretive Signs at the Hohokam Exhibit

- Working in active partnership with ancestral Native American communities and other cultural traditions to develop an appropriate understanding and interpretation of historical events.

In designing a future park that will fulfill this goal, it is important to design facilities that will not only attract a new audience with an interest in the cultures, history, and natural environment of Tucson, but also stimulate these interests in existing recreational users. Additionally, CoT Parks and Recreation should strive to build partnerships with community groups that will build a larger audience and sustain the continued preservation, operation, interpretation and use of these resources.



Figure 294: Bugler Statue on Craycroft Road

Issues in Interpretation: *Administration, Resources and Audience*

The range of interpretive resources at Fort Lowell Historic Park presents unique strengths and opportunities for public interpretation. Yet, those same resources are accompanied by distinct weaknesses that will present challenges to the design of park facilities and interpretation techniques.

It is essential that designer/planners recognize the issues, challenges and opportunities presented at Fort Lowell Historic Park in order to develop creative and appropriate solutions. Likewise, it is essential that agencies recognize administrative challenges, establish appropriate jurisdictions and policies, and provide necessary funding to develop the park facilities, implement interpretive programs, and sustain future operations.

Administration

- *Jurisdiction* – Currently, CoT Parks and Recreation administers the parks grounds including maintenance of historic ruins and prehistoric cultural remains. Arizona Historical Society operates the Fort Lowell Museum facility and interacts cooperatively with Park staff to preserve historic ruins and provide limited interpretation. As the Park expands its historic resources, requirements for preservation, maintenance and interpretation will increase with resulting requirements for additional staff and operations funding. It is essential that these agencies arrive at an administrative plan for the facility that clearly defines areas of responsibility and operation.
- *Expertise* – CoT Parks and Recreation has done an excellent job of responding to the many challenges presented by the historic properties at Fort Lowell. Members of the Fort Lowell Historic District Advisory Board and Arizona Historical Society staff speak very highly of the positive attitude of park administrators toward learning about and responding to the challenges of historic preservation. However,

for park staff whose primary expertise is in recreational management, expanded responsibilities in technical issues such as educational programming; exhibit design and maintenance; adobe preservation; and property management present significant challenges. It is essential that these activities be allocated to the most appropriate agency, including the possibility of establishing an office of historic properties.

- *Admission fees* – With the considerable capital investment that will be required to develop and maintain interpretation of the resources of the Park, it will be tempting to charge admission fees to the historic facilities. Based on the recent experience at the Fort Lowell Museum, it is clear that admission fees can have a significant adverse impact on visitation, especially on the casual recreational user of the park.

Interpretive Resources

- *Wide Range of Interpretive Resources* – Fort Lowell includes an array of cultural resources that span almost the entire chronology of Tucson history from prehistoric pit houses to homes built in the 1930s. Many of these resources are unique to the park and will allow it to interpret aspects of Tucson history's that can not be interpreted at other facilities such as Rio Nuevo. The greatest strengths in these resources are the Hohokam occupation of A.D. 500-1150; the 19th-century military history of Tucson and southern Arizona; semi-rural lifestyles of Tucson's multicultural community in the early 20th century; the development of Tucson's historic preservation movement of the 1970s.
- *Gaps in Interpretive Resources* – Gaps in historic resources present significant challenges to telling a comprehensive and coherent story of the Fort Lowell area. Of

Issues in Interpretation

greatest significance are resources related to local American Indian peoples – the Tohono O’odham and Western Apaches. At this point, no archaeological resources related to the proto-historic and historic O’odham people have been located at the park. Perhaps more important is the absence of physical resources related to the Apache peoples who are critical to the story of the fort, but were largely absent from the site itself.

- *Location and Access* – Historic and cultural resources including prehistoric remains, historic buildings, historic ruins, restored and renovated historic buildings, canals, and cultural landscape features are situated throughout Fort Lowell Historic Park and the surrounding historic neighborhood. The location of some resources on private land may significantly restrict public access. Within the boundaries of the Fort Lowell Historic District, even property owners who value sharing the history of the neighborhood may be disinclined to sacrifice their quiet and privacy as visitation increases. The natural riparian areas adjacent to the eastern boundary of the park enrich interpretive opportunities for ecological education and exploration of different human adaptations to and uses of the desert environment.
- *Craycroft Road* – The negative impact of Craycroft Road on the park, its historic resources and their interpretation can not be minimized. The five-lane, high-speed artery cuts through the geographic heart of the historic fort and separates the main body of the park from the most visible historic resources and the Fort Lowell Historic District. The street presents major problems for visitor safety, destruction of the historic ambience, noise and visual pollution, and restriction of pedestrian access to historic resources.

- *Human Capital* - For decades, Fort Lowell Park and the Fort Lowell Historic District has attracted a collection of staff and residents whose passion for the local history has become a historic resource in itself. Museum curator Dave Faust has engaged in research on the fort for 32 years; for decades, Historic District residents have compiled extensive archives and oral histories on the buildings and their residents. Unfortunately, this resource is “graying” and a younger generation with similar interests is not in place.

Interpretive Approach and Technique

- *Interpretive Focus* – The wide range of resources representing the broad cultural and natural history of Fort Lowell presents a particular challenge that was revealed in interviews with stakeholders: What is the most important story to tell? Some believe strongly that the history of the US Army at Fort Lowell is paramount, while others stress the multi-cultural community that arose from the fort’s figurative and literal ruins. Some identified the natural environment and its impact on human occupation as the most significant and compelling story.
- *Interpretive themes* – The broad range of resources allow for interpretation of a wide array of themes that can make the historical development of Fort Lowell relevant to the modern visitor. In many cases, these themes can also be tied to national trends and developments. Relevant interpretive themes include:
 - Multi-cultural heritage of the Fort Lowell neighborhood
 - Multi-cultural pre-history and history of southern Arizona
 - Military history of Fort Lowell, Tucson and southern Arizona
 - National trends in U.S. history including Westward Expansion, Manifest Destiny and

Issues in Interpretation

- Cultural Imperialism
 - Agricultural traditions in southern Arizona
 - The Natural Landscape and a Changing Environment
 - Human Adaptation to the Desert Environment through Time
 - “Green” architecture and xeriscaping
 - Recreation in American Life
 - Historic preservation concerns and Local Preservation efforts
 - Historical Adobe architectural techniques
 - Archaeological techniques
- *Cultural Sensitivity* – Public interpretations of the U.S. Army’s campaigns to subdue, re-locate and eliminate Apaches and other American Indian peoples in the 19th-century American West has changed dramatically since the Fort Lowell Museum was built in 1963. No longer a story of “us versus them,” historians and the public now commonly regard the chauvinistic, imperialistic and genocidal attitudes of the period as a black mark on our history. They recognize that the people, events and attitudes of the time must be viewed from multiple cultural perspectives and discussed with multiple voices. The story of the “Apache Wars” is an extremely complex topic that must be told with great sensitivity. The same recognition applies to the broader multicultural history of the Fort Lowell area and the many different peoples who lived there.
- *A generation without history* – When Fort Lowell Park was founded in 1963, the history of the western U.S. of the late 19th century was a cultural obsession that filled the popular culture of television, movies, magazines, novels and advertisements. Today, historic images of American Indians, U.S. cavalry soldiers, American frontier settlers and vaqueros are virtually unknown to anyone under 30 years old. Today, there is little time in elementary school classrooms for history lessons. The interpretation at Fort Lowell Historic Park must be designed for a younger audience that is largely unfamiliar with the details and context of its history.
- *Crossover visitation by recreational users* – The vast majority of current park visitors are recreational users who do not visit the museum or the ruins of the fort buildings. In order to build a larger and more sustainable audience, designers should employ special measures to attract these users to the historic, cultural and environmental interpretive areas.

Audience

- *Multi-component audience* – As an educational institution, every museum faces a similar challenge in developing effective interpretation that will meet the needs of an audience that is diverse in its age, interests, level of knowledge and cultural background. Most museums, however, have one advantage: their visitors expressed an interest in their subject matter by making a conscious decision to travel to and enter the museum. Located in a public

Existing Audience and Users

Today, Fort Lowell Park serves a broad audience including: 1) nearby residents, 2) athletic teams from throughout Tucson, and 3) visitors to its historic site and museum who come from around the city, the state and the nation. Established in 1963 on the far northeastern outskirts of the Tucson metropolitan area, the city has grown to surround the park. Today, it is located in north-central Tucson in an area that includes suburban residential neighborhoods; low-density, semi-rural housing; the Fort Lowell Historic District; and adjacent natural areas along the Pantano wash.

Within the context of interpretive planning, it is important to recognize that the museum audience falls into two major categories: 1) recreational users and 2) museum/historic site visitors, with minimal crossover between the two.

Recreational Users

Currently, *park users fall into five categories* that often have distinctly different interests in the park and its facilities:

- Local residents who use the park facilities for walks, jogging, dog-walking, and other informal activities
- Recreational users from throughout Tucson who come to use the pool, picnic ramadas and other facilities
- Sports teams from throughout the city of Tucson that participate in organized athletic leagues
- Museum Visitors who come specifically to visit the Arizona Historical Society's Fort Lowell Museum and view the historic ruins
- Annual Event Attendees who come for corporate picnics, the Fort Lowell Shootout, La Reunión de El Fuerte neighborhood historic walking tour, and other annual events and activities

Given the informal nature of many park activities, it is difficult to establish firm numbers of visitation and usage. Use of the park varies greatly

depending on the day of the week, the season of the year, and the particular sports season. CoT Parks and Recreation is able to compile individual attendance figures for few aspects of park attendance, but can provide some figures on number of events.

Specific 2007 attendance figures for the park and museum include:

- Swimming Pool – 33,004 paid admissions
- Annual Events – 15 large annual events per year, mostly corporate picnics with 200-1000 people each
- Fort Lowell Soccer Shootout – 15,000 – 20,000 players and family members
- Ramada Reservations – 301 family picnics
- Ramada Special Events – 84 events with 200+ attendees each
- Sports Teams and Leagues – No figures are available for usage for soccer, baseball, softball, football, and tennis, but this represents the greatest usage of the park throughout the year

While it is impossible to assign firm estimates, park attendance undoubtedly totals well over 200,000 users per year, mostly through use of athletic facilities, especially by organized sports leagues.

Museum and Historic Site Visitors

Currently, visitation at the Fort Lowell Museum, historic fort ruins and prehistoric cultural resources are a minimal portion of annual attendance.

Excluding a relatively small portion of recreational users who may view the ruins of the Fort Lowell building, intentional visitors to the historic aspect of the park include only:

- Fort Lowell Museum – 1,496 total admissions for FY 2007-08 (567 paid admissions, 929 free admissions)
- La Reunión de El Fuerte – approximately 800 attendees at the Fort Lowell Historic District and Fort Lowell Park tour

Existing Audience and Users

Based on informal assessments by the Museum curator, approximately 90% of museum visitors “know nothing” about Fort Lowell and its history and 10% “know everything,” indicating their prior interest in the military history of the southwestern US. He estimates that about 40% of visitors are tourists from outside Tucson and approximately 5% visit as part of a tourist group. School groups represent about 10% of total visitation. Approximately 20% attend during La Reunión de El Fuerte, a free-admission day.

Museum attendance figures represent a distinct downward trend in visitation over the past two decades. Prior to 2004, the Fort Lowell Museum offered free admission and enjoyed an annual visitation that regularly exceeded 10,000 visitors per year and peaked at 13,000-15,000 per year in the 1990s. Free admission encouraged casual walk-in visits by recreational users of adjacent park facilities. Museum admissions were as high as 2500 people for the two-day “Pioneer Days” event.

In the 1970s and 1980s, Fort Lowell Park hosted numerous special events focusing on historical themes and activities. The annual “Pioneer Days,” sponsored by the Tucson Festival Society, featured living history programs, historical demonstrations, lectures, and re-enactments by historical military groups such as the U.S. Army Fifth Cavalry and Civil War era groups. The event regularly attracted several thousand visitors over two days until its decline and ultimate demise in the late 1980s.

In the past, a regularly-scheduled Fort Lowell Antique Fair attracted visitors with historical interests and also stimulated visitation to the museum and ruins by recreational users. Today, the only cultural or historical event is La Reunión de El Fuerte, which is centered on the Fort Lowell Historic District but also offers tours of the parks historical resources.

Potential Audience and Users

Successful interpretation of the historic, cultural and natural resources at Fort Lowell Park will depend not only on creative and effective design, but also on the ability to attract and sustain new audiences. New park facilities will spark an initial spike in attendance, but over time agencies involved in the administration of park facilities must make continual efforts to attract and build a new, sustainable audience.

Potential target audience segments for an expanded Fort Lowell Historic Park include:

- Park sports and recreational users
 - Schools and Youth groups
 - Local museum visitors and cultural tourists
 - Local special interest groups
- *Park sports and recreational users* – Perhaps the most important group of potential visitors to the historic, cultural and natural resources at FLHP is at the park already – the tens of thousands of recreational users. Interviews with the Fort Lowell Museum curator, City Parks and Recreation staff, and park users indicate that a very small percentage of sports teams or picnickers actually tour the museum or give the historic ruins more than a passing glance. If even 10% of recreational users could be attracted to the historic park, visitation numbers would soar.

While exciting programs such as living history demonstrations can attract these visitors, park design will play an equally important role. Effective signage; sensitive, non-intrusive integration of historic and recreational elements and facilities; themed architecture; and introductory interpretive facilities located in the recreational areas of the park can all help turn park users into historic park visitors.

- *Schools and Youth Groups* - In assessment

Interviews, numerous park stakeholders emphasized young visitors as critically important to the future success of the new Fort Lowell Historic Park. Interpretive facilities and programs at the park must appeal to a young audience for two reasons: 1) young visitors will bring their parents and other family members; 2) the young visitors of today will become the park supporters of the future.

Over the past three decades, history has been a declining topic in our school curriculum and popular culture. The park can build a stronger youthful audience by:

- Developing fun and relevant on-site interpretation
 - Working to build partnerships with local youth groups such as the Boy Scouts of America, Girl Scouts, after-school programs, and schools
 - Developing interpretation that meets the curriculum needs of local teachers
- *Local museum visitors and cultural tourists* – With a metropolitan area of 1,000,000 people, Tucson is home to numerous museums focusing on history, anthropology, archaeology, wildlife, botany and the natural environment of the Southwest, among other topics. The Rio Nuevo cultural complex with its array of new museum facilities – Arizona Historical Society, Arizona State Museum, University of Arizona Science Center, Tucson Children’s Museum, Spanish-era reconstructions – will stimulate even greater interest in and visitation to local museums, including Fort Lowell Historic Park

On a broader level, Fort Lowell Historic Park can expand its presence as a part of the network of frontier U.S. Army camps and posts that extended from west Texas to Arizona during the late 1800s. Many of these facilities are now state historic parks and National Park Service sites, including Fort Verde, Fort Apache, Fort Yuma, and Fort Bowie,

Potential Audience and Users

Arizona; Fort Union, New Mexico; and Fort Concho and Fort Davis, Texas.

It is critically important for the new Fort Lowell Historic Park to tap into these audiences and create a place for itself as a part of Tucson's identity as a cultural tourism destination – the gateway to Southwestern history.

- *Local Special Interest Groups* – With its broad range of historical, cultural and natural resources and associated topics - from prehistoric Hohokam Indians to early 20th-century Mormon farmers - Fort Lowell Historic Park can appeal to many local residents with specific affinities, interests and affiliations. In attracting and building an audience among local groups (e.g., Arizona Archaeological and Historical Society, the Corral of the Westerners, Tucson Audubon Society, Tucson Watercolor Guild), it is important that the new park not only offer appealing programs and interpretation, but also involve these groups in long-term partnerships that will build a continuing audience and base of support.

Potential Partnerships

As a public resource dedicated to serving the public, it is appropriate and effective for Fort Lowell Historic Park to forge partnerships with community organizations. If properly devised to provide mutual benefits that meet the respective goals of the partners, these relationships can not only sustain the park, but create positive results far beyond those of groups that simply use the park.

In the past, Fort Lowell has enjoyed partnerships with several community organizations that have built large audiences for signature events that have attracted thousands of users to the park.

- *Arizona Historical Society* – Provides staff and operating funds for the Fort Lowell Museum. Curator David Faust has served at the museum for 32 years, developing programs, exhibits, historical information, preservation resources and community support that have served the park and its visitors.
- *Old Fort Lowell Neighborhood Association* – For 27 years, has produced the annual La Reunión de El Fuerte / Old Fort Lowell Celebration, self-guided historic sites walking tours to educate the public about the history of the historic neighborhood and the adjacent park. The group has also worked cooperatively with CoT Parks and Recreation staff to improve the historic ambience, resources and interpretation of the Fort Lowell Historic District.
- *Tucson Festival Society* – Produced the annual “Fort Lowell Pioneer Days” celebration – a two-day event that attracted 3000-5000 visitors to the park. Several other organizations participated in the event to provide educational programming about historical topics.
- *Fort Lowell Soccer Club, Inc.* – For 19 years, the non-profit soccer league has produced the Fort Lowell Shootout, an international soccer tournament that attracts tens of thousands of players and fans each January.

In the development of the new Fort Lowell

Historic Park, the partnership between the City of Tucson and the Arizona Historical Society will be of utmost importance. As the master planning proceeds, it is essential that these two agencies 1) formally define their relationship; 2) develop a cooperative jurisdictional and operational plan; 3) agree on the extent of development of historical resources and facilities; and 4) decide who will provide what share of resources to support the park facilities, staff and programming.

As the City of Tucson develops the Park’s expanded historical, cultural and natural resources, the potential for successful partnerships increases. If the city provides appropriate facilities that meet the needs of community organizations, it can garner considerable support that will:

- Provide staff support to initiate, develop and produce educational programs and special events
- Provide volunteer staff for ongoing interpretive programming such as guided tours, living history programs, nature classes, etc.
- Increase park visitation and usership by organizing on-site events, classes, meetings and workshops
- Provide support for maintenance and operations through volunteer service efforts

Fort Lowell Park’s wide range of resources – from prehistoric archaeological remains to modern sports facilities – can attract a broad variety of community partnership organizations and support services, including:

- *Local and regional museums and historic parks* – may participate in cooperate promotional and marketing campaigns (e.g., Rio Nuevo museums, regional historic military forts)
- *Historical and archaeological organizations* – may assist in public interpretation, research, preservation, and education programs (e.g. Arizona Site Stewards, Arizona Archaeological and Historical Society, Corral of the Westerners, Tucson Presidio Trust)

Potential Partnerships

- *Environmental and nature organizations* – may assist in public education programs, wildlife inventory, habitat reconstruction (e.g. Tucson Audubon Society, Tucson Cactus & Succulent Society) historical, cultural and natural resources.
- *Outdoor recreation organizations* – may assist in trail development and maintenance, habitat reconstruction (e.g. Urban Trails Coalition, Pima Trails Association)
- *Public service organizations* – may assist in park maintenance, operations and special events (e.g. Tucson Clean & Beautiful)
- *Art and performance organizations* – may present musical performances, art shows and other events (e.g. Southern Arizona Watercolor Guild, Symphonic Winds)
- *Youth groups* – may assist in service projects and educational programming (e.g. Boy Scouts of America, Arizona’s Finest Keystone Club)
- *Sports leagues and clubs* – may assist in field maintenance and event production (e.g. Fort Lowell Soccer Club)

Each successful partnership at Fort Lowell Park will require that both partners receive benefits. The park can not simply seek support for its operations, but must offer value in return. It is imperative that the planning and design of park facilities include an assessment of prospective partners to ensure that the new park facilities will meet their needs. For example, Tucson Audubon Society presents over 100 classes and workshops each year. Appropriate classroom facilities in close proximity to the Park’s riparian area could establish Fort Lowell Park as a “home base” for the Society, thus attracting considerable support in return from the organization and its members.

By identifying potential community partners, assessing their needs, and incorporating these needs into the design of park facilities, it will be possible to greatly enhance the community support and usership of the park and ultimately, build a more successful interpretation of the Park’s

Interpretive Techniques

Fort Lowell Historic Park, with its diverse historical resources, allows educators to employ a much wider range of interpretive techniques than the typical museum or restored historic house. The adobe ruins of the fort, the architectural features of the extant buildings, and the prehistoric remains scattered across the landscape offer exciting opportunities to engage the visitor.

Ultimately, the final choice of interpretive techniques should be determined largely by four factors: 1) the needs of the audience, 2) the available budget for capital investment and staff, 3) spatial concerns including relationships between resources, location of available spaces and size of available spaces, and 4) the creativity of the interpreters and designers. Final interpretive design should be based on rigorous audience analysis to select the most effective techniques to meet the needs of different audience segments.

Much of the decision-making on interpretive techniques will be determined in later design phases. However, the master planning process will include broad decisions about interpretive facilities and techniques that will shape future designs and decisions. In this process, planners should consider a range of interpretive techniques including:

Interpretive visitors center with

- Static exhibits
- Interactive exhibits
- Multi-media presentations
- Lectures and interpretive talks

Interpretive trails through architectural and natural resources

- Interpretive signage
- Self-guided interpretive pamphlets and guides
- Self-guided tours with hand-held, individualized audio and video presentations
- Multi-media kiosks
- Guided group tours
- Demonstration gardens and architecture
- Demonstration of archaeological techniques

through reconstructed excavations

Architectural restoration, renovation and reconstruction

- Authentic restoration of period buildings
- Reconstruction of historic buildings for adaptive use
- Period rooms representing historical interiors
- Interpretation of architectural features in historic buildings and ruins
- Living history interpreters

Special educational events

- Living history presentations
- Walking tours of historic architectural resources
- Lectures and multi-media presentations
- “Mock digs” led by archaeologists
- Historic musical performances

Interpretive elements designed to attract recreational park users

- Exhibit kiosks located within sports and recreational areas
- Historic design elements in park facility architecture
- “Demonstration” elements in architecture and landscaping (e.g. “green architecture,” xeriscaping)
- Strolling “living history” demonstrators

Conclusion

Fort Lowell Historic Park holds potential to become an exciting educational resource that greatly expands the parks current function as a recreational facility. To accomplish this goal, the City of Tucson and project planners must

- Resolve questions of administrative jurisdiction and levels of support for interpretive facilities and operations
- Recognize and develop design solutions to challenges presented by the location of and access to the park's parks historic and natural resources
- Develop an interpretive focus and themes that interpret complex cultural and historical issues with sensitivity and relevance
- Design park facilities that will integrate and attract recreational users into the park's historic and cultural interpretive areas
- Provide park facilities that can accommodate a wide array of interpretive activities and special events
- Assess potential audience and partnership needs and provide appropriate park facilities



Baseline Market Evaluation for Fort Lowell Park and Review of Comparable Historic Forts

Contributed by ConsultEcon

Previous Page:

Figure 295: (Top) Fort Lowell Soccer Shootout

Figure 296: (Left) Fort Lowell Museum

Figure 297: (Right) Fort Lowell Pool

Market Context

This memorandum provides an overview of preliminary research into the potential of expanded heritage education offerings at Fort Lowell Park in Tucson, AZ. First, the park and its location are evaluated from a market perspective. Second, existing recreational features and heritage museum utilization are reviewed. Third, available resident and tourist market information is presented. Finally, the experience five historic forts in Arizona and two in Texas are presented to inform the evaluation the future potential for the development of new heritage elements at Fort Lowell Park.

Site Evaluation

Essential aspects of the market potential of a heritage park attraction are its location, accessibility, visibility, adjacent uses, and site size and quality. Following is a summary of these factors as they relate to Fort Lowell Park.

Regional Context

Fort Lowell Park is located in the City of Tucson, a town in the Tucson Metropolitan Area in southern Arizona. Tucson is the second largest city in Arizona, with an estimated population exceeding 500,000. According to the Pima Association of Governments, the Tucson Metropolitan Area (Pima County) population exceeds 1 million people.

Accessibility and Visibility

The site is accessible by vehicle from North Craycroft Road and East Glenn Street. Downtown Tucson is approximately 8 miles from the downtown, which would indicate that the site would be easily accessible by vehicle to residents from the Tucson area, as well as visitors from outside the region who may be less familiar with the area with appropriate signage. The site straddles North Craycroft Road and is therefore highly visible to passing traffic. According to traffic data from the Pima Association of Governments, average daily traffic (ADT) along North Craycroft Road adjacent to the park was 30,000 in 2006.



Figure 298: Map of Tucson Metropolitan Area

Figure 280 is a map of the Tucson area. The Tucson area is served by Interstate 10 and Interstate 19 which are major highways running east-west and north-south.

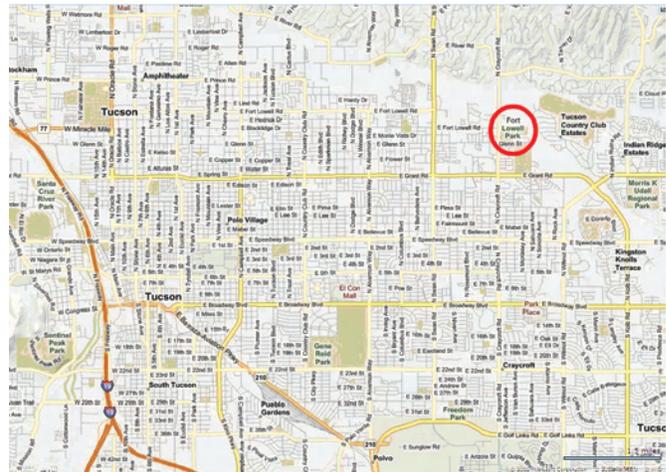


Figure 299: Map of Location of Fort Lowell Park

Figure 281 provides a street map of Tucson and shows the location of the Fort Lowell Park highlighted with a red circle. The Fort Lowell Park site is situated along North Craycroft Road, a major north-south thoroughfare in northeast Tucson.

Market Context

Adjacent Uses

Fort Lowell Park is located in an established, historic residential neighborhood, Old Fort Lowell. As such, most of the adjacent uses are residential and there are few adjacent supportive visitor uses (i.e. hotel, restaurant, retail, arts/cultural uses, etc.). Pantano Wash, a major, undevelopable wash lies to the east of the park.

Existing Park Conditions

Fort Lowell is both a recreational park and a historic site with a small heritage museum. The park is managed by the Parks and Recreation Department of the City of Tucson. Recreational components include soccer and football fields, baseball and softball diamonds, a tennis center, a year-round swimming pool, a number of picnic ramadas, a small pond, and walking and jogging trails. The park is home to a number of athletic leagues, as well as a large and longstanding soccer tournament, the Fort Lowell Shootout, that draws an estimated 15,000 people from around the world.

The park is part of the Parks and Recreation Department's east side administrative district and employs two groundskeepers onsite, one full-time and one part-time.

Fort Lowell Museum

The Fort Lowell Museum is operated by the Arizona Historical Society, which employs one full-time and two part-time staff for it (though not all are located onsite). The City maintains the grounds and museum buildings and pays for utilities and repairs, while the Society maintains exhibits and pays for the alarm system, telephone and janitorial service. The admission fee is \$3.00 for adults, \$2.00 for seniors and students, and free for children under 12 years old and Arizona Historical Society members. Attendance between July 2007 and June 2008, the museum's fiscal year, was 1,497, of which 38 percent were paid admission. Free attendance was largely due to La Reunión de El Fuerte, an annual event co-sponsored by the Old Fort Lowell Neighborhood Association that drew 750 people. The museum

Activity	Facilities	Peak Season	Days/Times	Annual Reservations	Organization(s)	Participant Description
Soccer	5 fields	August-April	Mon-Fri 4-7pm Sat 8-7pm	805 bookings ranging from 3 hour blocks to all day	Ft. Lowell Soccer Club, part of Pima County Junior Soccer League	36 teams with 467 youth (under 18) from Tucson
Football	10 fields	August - December	Mon-Fri 5-8pm Sat 8am-8pm	293 bookings in three hour blocks	TYFSF – Falcons	7 teams with 159 youth (12 and under) from Tucson
Baseball	6 fields	March- November	Mon-Fri 4-7pm Sat. 9am-7pm Sun 9am-12pm	904 bookings ranging from 3 hours blocks to all day	Frontier Little League	18 teams with 216 youth (under 16) from Tucson
Softball	2 fields	March - November	Mon-Fri 4-10pm	83 bookings 6 hours blocks	Tanque Verde Baja	17 teams with 211 youth (14 and under) from Tucson
Tennis	8 courts	Spring and Fall (open year round)		250 bookings from outside organizations	St. Gregory School USTA teams	120 people/week for group clinics 115 people/week in organized league 40 people/week on open court
Aquatics	1 pool	Open year round	Mon-Fri 10:30am-7pm Sat-Sun noon-7pm	33,704 attendance		
Picnic	6 ramadas	Available year round	Usually weekends	301 bookings		Groups usually under 20 people
Special Events	6 ramadas	Available year round	Usually weekends	8 bookings	Tucson Medical Center Other local companies and organizations	A ramada booking with between 100 and 400 people is considered a special event - usually local companies

Table 1: Recreational Activities and User Characteristics in Fort Lowell Park

Data in Table 1 list the recreational activities and user information for formal activities coordinated by the Parks and Recreation Department. Informal park uses by walkers, joggers and other park visitors is not captured shown.

Market Context

Data in **Table 2** present an estimate of park recreational utilization. There are an estimated 135,000 recreational uses in the park annually, with a high degree of repeat usage due to the athletic teams. The additional utilization from due to Fort Lowell Shoot Out would bring the total annual recreational usage at 150,000 people annually, not including informal park usage.

	Bookings	Average Users per Booking ^{1/}	Total Annual Users
Soccer	805	44	35,420
Football	293	44	12,892
Baseball	904	36	32,544
Softball	83	36	2,988
Picnic	301	10	3,010
Special Events	8	100	800
Tennis ^{2/}			13,750
Aquatics ^{3/}			33,704
Total Recreational Users ^{4/}			135,108

1/ Average number of users is estimated. Estimate for organized team sports based on number of players plus one person per player (coaches, spectators, umpires, substitutes, etc.). Estimates for picnics and special events based on conversations with park staff.

2/ Total annual users based on 275 users per week in group clinics, organized leagues and open court times. Estimated 50 weeks per year to account for holidays, etc.

3/ Total annual users is number of paid pool admissions.

4/ Does not include walkers, joggers, and other passive recreational users.

Table 2: Estimated Recreational Program Users in 2007, Based on City of Tucson Parks and Recreation Department Bookings

also offers free admission on the first Tuesday of every month. During the fiscal year, there were an estimated 10 school groups.

depend on the size and quality of the attraction, its accessibility and location, the presence of other nearby attractions, regional transportation networks, and marketing and promotional efforts.

Resident Market Overview

While Fort Lowell Park has the potential to draw on tourist markets, resident markets will be a primary source of visitation. The geographic reach and available resident markets for a project

The resident markets for an attraction such as Fort Lowell Park are defined as the area whose residents would visit the attraction as a day-trip. Persons in this Resident Market Area often have

Market Context

repeat visitation patterns, or become members of the institution. Visiting the Fort Lowell Park would be a primary purpose or important part of a day-trip. Resident markets are analyzed within a “gravity model” context; the closer residents live to the attraction, the more likely they are to visit it. Depending on the individual market’s circumstances, resident markets can extend 50 miles, or be as narrow as 10 miles. On its periphery, the resident markets change over to the visitor (or tourist) market.

Definition of Resident Market Area

The Resident Market Area for Fort Lowell Park is defined as the area within a 45-minute drive of the intersection of North Craycroft Road and East Glenn Road. This definition of the Resident Market Area is based on the potential market area for the Fort Lowell Museum and additional heritage elements that may be incorporated in the park. Fort Lowell Park is classified as a Metro Park by the Department of Parks and Recreation and has a service area of up to 3 miles from the park. However, the athletic organizations draw children and young adults from throughout Tucson. Therefore, this definition would be inclusive of both potential recreational users and heritage visitors.

Within this overall Resident Market Area, Primary, Secondary and Tertiary Resident Market segments are defined as follows:

- Primary Resident Market: 0-15 minute drive time from the intersection of North Craycroft Road and East Glenn Road.
- Secondary Resident Market: 15-30 minute drive time from the intersection of North Craycroft Road and East Glenn Road.
- Tertiary Resident Market: 30-45 minute drive time from the intersection of North Craycroft Road and East Glenn Road.

Population

The Primary Resident Market Area population was

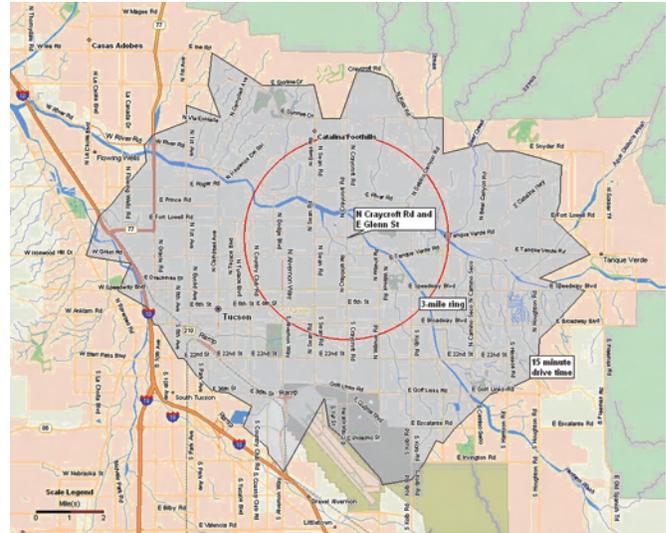


Figure 300: Map of Primary Resident Market for Fort Lowell Park

Figure 300 is a map of the Primary Resident Market that includes a 3-mile ring for comparison to the recreational service area.

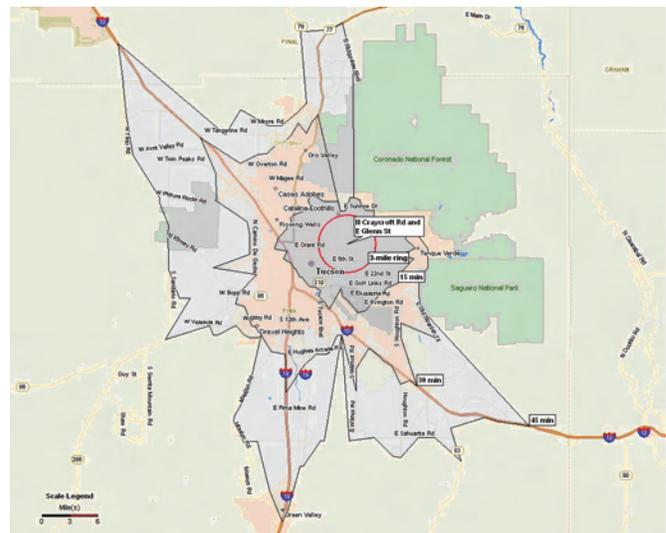


Figure 301: Map of Resident Market Area for Fort Lowell Park

Figure 301 is a map of the entire Resident Market Area

Market Context

	2000 Census Population	2006 Estimated Population	2011 Projected Population	% Change 2006 to 2011
Primary Resident Market	446,130	468,123	501,587	7.1%
Secondary Resident Market	335,451	400,809	447,918	11.8%
Tertiary Resident Market	79,718	107,306	131,308	22.4%
Total Resident Market Area	861,299	976,238	1,080,813	10.7%
<i>State of Arizona</i>	<i>5,130,632</i>	<i>6,135,872</i>	<i>7,123,261</i>	<i>16.1%</i>

Table 3: Resident Market Estimated 2006 and Projected 2011 Population for Fort Lowell Park

Data in Table 3 show the estimated 2006 population in the Primary, Secondary and Tertiary Resident Markets and projections for the population in those markets in 2011.

468,100 in 2006, and is projected to be 501,600 in 2011, an increase of 7.1 percent. The Secondary Resident Market Area population was 400,800 in 2006, projected to increase to 447,900, an increase of 11.8 percent by 2011. The Tertiary Resident Market Area population was 107,300 in 2006, projected to increase to 131,300, an increase of 22.4 percent by 2011. The overall Resident Market Area population is therefore projected to increase by 10.7 percent, from 976,200 to 1,080,800 over the period from 2006 to 2011.

Age Profile

As an attraction primarily focused on cultural history and heritage, Fort Lowell Park will likely have broad appeal to multiple age segments including school-age children, families with children, and older adults. Data in Table 4 show

the population by age group in the Resident Market Area in 2006.

Important audiences for attractions such as the proposed Fort Lowell Park are adults in their mid 20's through 40's with children and adults in their 50's, 60's and 70's who have more time and disposable income for recreational activities of this type. These adults often visit sites such as this with children. School groups are another market segment. In 2006, there were estimated 96,000 children ages 5 to 12 years old in the Total Resident Market Area, which is almost 10 percent of the total population and is considered a target population for school group visitation. In general, the overall Resident Market Area has a larger proportion of population over the age of 50 than the State of Arizona as a whole. This market

	Age Group				
	0-19	20-34	35-49	50-64	65+
Primary Resident Market	24.7%	23.7%	19.6%	17.5%	14.5%
Secondary Resident Market	29.5%	19.8%	21.3%	17.3%	12.1%
Tertiary Resident Market	19.6%	15.6%	17.5%	18.5%	28.8%
Total Resident Market Area	26.1%	21.2%	20.1%	17.5%	15.1%
<i>State of Arizona</i>	<i>28.6%</i>	<i>21.1%</i>	<i>20.5%</i>	<i>16.3%</i>	<i>13.6%</i>

Table 4: Estimated 2006 Age Distribution in Resident Market Area for Fort Lowell Park

Market Context

	2006 Estimated Households	2006 Average Household Size	2006 Estimated Family Households	Percentage Family Households
Primary Resident Market	200,097	2.32	111,121	55.5%
Secondary Resident Market	140,912	2.83	103,697	73.6%
Tertiary Resident Market	41,072	2.53	29,747	72.4%
Total Resident Market Area	382,081	2.53	244,565	64.0%
<i>State of Arizona</i>	<i>2,278,949</i>	<i>2.64</i>	<i>1,541,206</i>	<i>67.6%</i>

Table 5: Estimated Number of Households, Average Household Size, and Family Households in the Resident Market Area, 2006

segment is also supportive of the development of the proposed project, as people in these older age groups are often retirees (and grandparents), with disposable time and income, an important component of the audience for this type of attraction.

Households and Family Households

Larger household sizes and the presence of family households would indicate households with children, who would be a target market segment for educational programs and school group tours. Data in Table 5 show the number of households, the average household size and the number of family households in the Resident Market Area in 2006.

The Primary Resident Market has smaller households and a lower percentage of family households than the Total Resident Market Area and the State of Arizona as a whole. However, household sizes are larger in the Secondary Resident Market and the proportion of family households is higher in the Secondary and Tertiary Resident Markets than the Total Resident Market Area and the State.

Household Income

Higher incomes are associated with visitation to cultural and educational attractions such as Fort Lowell Park, both in terms of ability to visit (disposable income, available transportation, and leisure time) and the desire to visit, as higher incomes frequently reflect higher educational

	Household Income Group				
	Less than \$25,000	\$25,000 to \$49,999	\$50,000 to \$74,999	\$75,000 to \$99,999	\$100,000 +
Primary Resident Market	28.6%	29.4%	17.5%	10.1%	14.4%
Secondary Resident Market	21.0%	26.6%	21.8%	14.0%	16.5%
Tertiary Resident Market	21.9%	28.4%	21.9%	12.1%	15.6%
Total Resident Market Area	25.1%	28.3%	19.6%	11.7%	15.3%
<i>State of Arizona</i>	<i>21.7%</i>	<i>26.9%</i>	<i>19.9%</i>	<i>13.0%</i>	<i>18.6%</i>

Table 6: Households by Income Group in the Resident Market Area, 2006 for Fort Lowell Park

Market Context

attainment. Data in Table 6 profile household income groups for the Resident Market Area.

In general, the Total Resident Market Area households have more moderate incomes than households across Arizona, which may be reflective of an older population profile and generally of the economy of the area. However, household incomes in the Secondary Resident Market where there are a large number of family households and younger residents are more in line with the statewide household income profile. Care should be taken in planning ticket price ranges to be affordable to all economic levels in the Resident Market Areas.

Overview of Tourist Market in Tucson Metropolitan Area

Tourists will be an important market segment for the Fort Lowell Park, especially if heritage elements are offered. Arizona is a popular travel destination, with an estimated 33.7 million overnight trips to or within the state in 2006. Domestic overnight leisure visitors comprise 72 percent of these trips. An estimated 17.6 percent of Arizona domestic overnight leisure trips were taken in the Tucson and Southern area of Arizona (approximately 4.3 million trips). Overnight leisure travel in Arizona is strongest in the winter months, especially in Southern Arizona. Approximately 36 percent of overnight leisure visitors traveled to the Tucson and Southern area in January, February and March, while October, November and December accounted for another 26 percent of these visitors. The average length of stay in Tucson and Southern is 3.5 days.

Travel to the Tucson Metropolitan Area is growing. According to the Metropolitan Tucson Convention and Visitors Bureau, Tucson drew an estimated 3.99 million domestic overnight visitors in 2006. Of these visitors, 77.5 percent are leisure travelers, a slightly greater percentage than domestic overnight leisure travelers to Arizona (76.3%)

and to the U.S. (75%). Fifty-five percent of domestic overnight visitors are visiting friends and relatives, a much larger percentage than domestic overnight leisure travelers to Arizona (40%) and to the U.S. (36%). The connection of this being a popular destination for local residents implies that it could become a place to bring visiting friends and relatives. This large segment of visitors visiting friends and relatives indicates that building awareness of Fort Lowell Park among residents may generate additional visitation from the visitor market. Moreover, visitors to Tucson visit historic places/ museums at rates higher than the State of Arizona or U.S. as a whole, indicating a market predisposed to historical and cultural topics.

The impact of day-trip tourism (not counted in the above estimates) should also be considered. With Mexico 80 miles away, and Phoenix 100 miles away, there is significant day-trip visitation potential to the Tucson area. The State of Sonora, Mexico has an estimated population of 2.8 million and the Phoenix Metropolitan Area has an estimated 5.2 million residents.

Fort Lowell Park is located approximately 8 miles from downtown Tucson. As most visitors to Tucson have access to an automobile, it is close enough to warrant inclusion in a day-trip or a half day-trip by a visitor to Tucson. In fact, many tourist attractions are located outside of the city, so Fort Lowell Park would be easier to access than many alternative destinations. For example, the Tubac Presidio State Historic Park is located almost 50 miles from Tucson. Expanded heritage elements at Fort Lowell Park would compliment historic attractions located in Tucson and Southern Arizona, creating more critical mass in the region as a destination for historic sites.

Local Tucson Area Attractions for Fort Lowell Park

Tucson offers many popular attractions, major shopping malls, a growing accommodations base,

Market Context

Attraction and Location	2007 Attendance	Admission & Family Membership Price	Description
Saguaro National Park Tucson, AZ	658,477	\$10.00/private car - 7 Days \$5.00/individual - 7 Days \$25.00 - Annual pass	Features Saguaro cacti, scenic drives through Upper Sonoran Desert, 150 miles of hiking and walking trails, and two visitor centers featuring bookstores with a large selection of books on the Sonoran Desert.
Arizona-Sonora Desert Museum Tucson, AZ	462,317	\$9.50 Adult (\$13.00 Sept - May) \$2.25 Child (6-12) (\$4.25 Sept- May) Family membership \$50.00	Located on Pima County land, this museum of the Sonoran Desert includes natural history exhibits, a zoo, and botanical garden, featuring reptiles and invertebrates, mountain woodlands, desert grasslands, mammals, cave dwellers and habitats, an aviary and cactus garden. Includes meeting facilities, gift shop and food service.
Reid Park Zoo Tucson, AZ	457,468 (2006)	\$6.00 Adult \$4.00 Senior (62+) \$2.00 Child (2-14) Family membership \$48.00	This city-owned and operated 17-acre zoo features over 200 different species of birds, fish, amphibians, mammals & reptiles. AZA accredited.
Old Tucson Studios Tucson, AZ	200,000 (2006)	\$16.95 Adult (12 & over) \$10.95 Child (4-11) Annual pass \$48.95	Built in 1939 as a replica of Tucson for movie <i>Arizona</i> . Also was location for filming many Hollywood westerns. Now it is a family theme park, movie, and television location and hosts live entertainment.
Attraction and Location	2007 Attendance	Admission & Family Membership Price	Description
Pima Air & Space Museum Tucson, AZ and Titan Missile Museum Green Valley, AZ	195,499	Pima Air Museum: \$11.75 Adult (\$13.50 Nov.-May); \$9.75 Senior (\$10.75 Nov.-May), \$8.00 Child (7-12) (\$9.00 Nov.-May) Titan Missile: \$9.50 Adult \$8.50 Senior \$6.00 Child Family membership \$60.00	The Pima Air & Space Museum is the largest privately funded aerospace museum in the world. More than four dozen interpretive exhibits are housed in nearly a 100,000 square feet of galleries covering all aspects of aviation history, technology, and science. There are 250 aircrafts covering 80 acres. The Titan Missile Museum opened in May 1986, and in April of 1994, the missile site was designated a National Historic Landmark. In November of 2003, the museum opened the Count Ferdinand von Galen Education and Research Center. The Center houses an expanded exhibits gallery, a classroom for educational programming, and a state-of-the art archival area devoted to the historical documents and artifacts of the Titan II program.

Table 7: Selected Tucson and Tucson-Area Attractions Ranked by Attendance

Market Context

Tucson Museum of Art & Historic Block Tucson, AZ	192,795 (estimated)	\$8.00 Adults \$6.00 Senior (60+) \$3.00 Student (13+) Free 12 & under Family membership \$50.00	The museum features Pre-Columbian, Spanish Colonial, Post Colonial and Latin American Folk Art featured in five separate historic houses that form the historic block.
Kartchner Caverns State Park Benson, AZ	172,372	\$5.00 per car (2 adults, \$2.00 each additional adult) \$22.00 per night camping fee Cave Tours Rotunda/Throne Room:* \$18.95 adult \$9.95 7-13 years (free under 7) Cave Tours Big Room: \$22.95 adult \$12.95 7-13 years (free under 7) *discounted Aug.-Sept. tours and internet purchases	Includes Discovery Center (museum with interpretive displays, theater, gift shop & food vendors), guided cave tours, 62 camping sites and hiking and walking trails.
Tohono Chul Park Tucson, AZ	167,536 (2006)	\$7.00 Adult \$5.00 Senior (62+) \$3.00 Student w/ID \$2.00 Child 5-12 Family membership \$50.00	Nature trails featuring native plants; gardens; art exhibits in a renovated historic home; research library; café and gift shop.
Attraction and Location	2007 Attendance	Admission & Family Membership Price	Description
Catalina State Park Tucson, AZ	152,587	\$6.00 per vehicle (1-4 adults) (\$3.00 May-Sept) \$2.00 individual/bicycle \$10-\$15/night camping	Scenic desert park offering camping, hiking, picnicking, bicycling, horseback riding, plant, wildlife, and an archaeological site. The Park contains 5,493 acres at elevations near 3,000 feet.
International Wildlife Museum Tucson, AZ	100,000 (estimated)	\$7.00 Adult \$5.50 Senior (62+) & Student (w/ID) \$2.50 Child (4-12) Family membership \$45.00	A natural history museum including displays of donated wildlife from around the world including birds of paradise, woolly mammoth tusks, and animals hunted by Theodore Roosevelt on his African expeditions. Also includes a 98-seat theater that plays nature films. Gift shop & restaurant on-site.
Tucson Botanical Gardens Tucson, AZ	100,000 (estimated)	\$7.00 Adult \$3.00 Child (4-12) Family membership \$40.00	A five-acre collection of 16 specialty gardens including a historical garden, an herb garden, a butterfly garden, a cactus and succulent garden, and others. The collection consists of over 4,200 individual plants. There is also a café and a gift shop.

Table 7 (continued): Selected Tucson and Tucson-Area Attractions Ranked by Attendance

Market Context

Boyce Thompson Arboretum Superior, AZ	85,000 (estimated)	\$7.50 Adult \$3.00 Child Family membership \$60.00	The Arboretum brings together plants from the Earth's many and varied deserts and dry lands and displays them alongside unspoiled examples of the native Sonoran Desert vegetation.
Casa Grande Ruins National Monument Coolidge, AZ	76,854	\$5.00 per person, good for 7 days. Children 15 and under admitted free.	Casa Grande, or "Big House," is one of the largest prehistoric structures ever built in North America. Casa Grande Ruins, the nation's first archeological preserve, protects the Casa Grande & other archeological sites within its boundaries.
Tucson Children's Museum Tucson, AZ	74,000	\$7.00 Adult \$5.00 Senior & Child 2-18 Family membership \$75.00	Exhibits feature a dinosaur world, ocean discovery center, the human body, music & culture, a firehouse, electricity, and a mock television studio.
Fort Huachuca Museum Fort Huachuca, AZ	70,000	No charge	The Fort Huachuca Historical Museum the colorful history of the Southwest and the prominent part played by the U.S. Army.
Kitt Peak National Observatory Tucson, AZ	60,000 (estimated)	\$4.00 Adult \$2.00 Child 6-12 Family membership \$55.00	Visitors to the Observatory during the day have the opportunity to tour the facility. There is a nighttime observing program available.
Attraction and Location	2007 Attendance	Admission & Family Membership Price	Description
Chiricahua National Monument Willcox, AZ	58,434	\$5.00 per person, 16 and under admitted free. Good for 7 days.	Unusual rock spires and formations, as well as the Faraway Ranch, a pioneer homestead and later a working cattle and guest ranch. The house is furnished with historic artifacts tracing the development of technology during the first half of the twentieth century.
Tumacácori National Historical Park Tumacácori, AZ	44,020	\$3.00 per person, 16 and under admitted free. Good for 7 days. \$10.00 - Annual pass	Tumacácori Mission is one of the oldest missions in Arizona dating to 1691. The present church was built in the early 1800's and abandoned in 1848. It is the best preserved (restored) of the three missions and consists of garden, church, and museum with artifacts. The grounds include ruins of the cemetery, <i>convento</i> , granary, courtyard, lime kiln, and irrigation ditch. The ticket office, book store, and administration and maintenance offices are located at the Tumacácori site.
Tubac Presidio State Historic Park Tubac, AZ	13,428	\$3.00 adult (14+) \$1.00 child 7-13) Free child under 7	Tubac is the oldest state park in Arizona and has national significance as the beginning of the Anza Trail. The park contains a museum, archeology display, gift shop, and a number of historic buildings, including a schoolhouse, Otero Hall, Rojas House, and Sanchez House.

Table 7 (continued): Selected Tucson and Tucson-Area Attractions Ranked by Attendance

Market Context

and cultural offerings that include museums, festivals and events. In addition to leisure travel, Tucson is also an active business locale that draws a number of business travelers. The Tucson Convention Center is a focal point for many business travelers, who may visit Fort Lowell Park in their spare time.

In addition to the recreational destinations, the Tucson area has a diverse offering of local attractions that includes cultural museums, educational attractions, national parks, and major historic sites such as the Arizona-Sonora Desert Museum, Saguaro National Park, Pima Air and Space Museum, Tohono Chul Park, Flandrau Science Center and Planetarium, and Reid Park Zoo, among others. The nature of these attractions, their attendance, and pricing levels inform the assessment of attendance potential at Fort Lowell Park. In general, there are many popular outdoor recreational destinations, and many mid-sized and smaller attractions. Data in Table 7 show selected Tucson and regional attractions and provide a summary of attendance, ticket prices, and descriptions.

Market Context Summary

The population growth trend in the Resident Market Area will increase the size of the markets available for the proposed Fort Lowell Park. The overall Resident Market Area population is projected to increase by 10.7 percent, from 976,200 to 1,080,800 over the period from 2006 to 2011. The demographic characteristics of the Resident Market Area include a slightly older population and more moderate income levels than the State as a whole. Overall, the data are good indicators for visitation to the Fort Lowell Park; however, care should be taken in planning ticket price ranges to be affordable to all economic levels in the Resident Market Area.

Tourists may be an important market segment for the additional heritage programming at Fort Lowell Park. According to the Metropolitan

Tucson Convention and Visitors Bureau, Tucson draws an estimated 3.9 million domestic overnight visitors annually. Of these visitors, about 72 percent are leisure travelers and 55 percent are visiting friends and family. Fort Lowell Park is located approximately 8 miles from downtown Tucson. As most visitors to Tucson have access to an automobile, it is close enough to warrant inclusion in a day-trip or a half day-trip by a visitor to Tucson.

Tucson offers many popular attractions, major shopping malls, a growing accommodations base, and cultural offerings that include museums, festivals and events. In addition to leisure travel, Tucson is also an active business locale that draws a number of business travelers. In addition to popular recreational destinations, Tucson has a diverse offering of local attractions that includes cultural museums, educational attractions, national parks, and major historic sites such as the Arizona-Sonora Desert Museum, Saguaro National Park, Pima Air and Space Museum, Tohono Chul Park and Reid Park Zoo, among others. Attendance at these top attractions ranges from 69,000 at the Children's Museum to over 700,000 at the Saguaro National Park. These major attractions generally have annual attendance in the 100,000 to 400,000 range, although there are also a number of smaller museums and attractions. Adult ticket prices at the top attractions range from \$14.95 at Old Tucson Studios to \$2.00 at Kitt Peak National Observatory. Most attractions fall in the \$5.00 to \$10.00 range.

Review of Historic Forts in the Southwest

The following section provides an overview of the concepts, visitor experience and operations of historic forts located in Arizona, as well as two historic forts located in Texas. These historic forts include:

- Fort Apache Historic Park in Whiteriver, AZ
- Fort Bowie National Historic Site in Bowie, AZ
- Fort Concho National Historic Landmark in San Angelo, TX
- Fort Davis National Historic Site in Fort Davis, TX
- Fort Huachuca Museum in Sierra Vista, AZ
- Fort Verde State Historic Park in Camp Verde, AZ
- Yuma Quartermaster Depot State Historic Park in Yuma, AZ

The experience of existing historic forts can inform the development of new and expanded heritage elements and programming at Fort Lowell Park. The historic forts profiled below are considered comparable because of their location in the American Southwest, with a particular focus on those located in Arizona, and because they are from the same historic period. Case studies of relevant facilities that can be considered comparable to Fort Lowell Park help to inform planning parameters for the project such as attendance potential, operating budgets, staff composition, and provide a general sense of varying types of programs and operating models. It should be noted that there are no “perfect” comparable projects to Fort Lowell Park, as each site will have its own unique circumstances.

Data in the following tables provide information on facilities, ticket prices, attendance, visitor characteristics, operating budgets, educational programming, events and partnerships.

Following is a discussion of the lessons learned and potential implications for the development of new heritage components at Fort Lowell Park.

This Page is Blank

Fort Apache Historic Park

Facility Name and Location	Fort Apache Historic Park, Whiteriver, AZ
Date Opened to Public	1969
Description of Facility and Collections	<p>The United State military established Fort Apache in 1870 in cooperation with the White Mountain Apache tribe, whose members served as scouts during the military's skirmishes with other bands of Apache. The White Mountain Apache Indian Reservation was established soon thereafter and still exists today. The military abandoned the fort in 1920.</p> <p>The 288-acre Fort Apache Historic Park encompasses twenty seven buildings dating from the 1870's through the 1930's, prehistoric ruins, prehistoric and historic petroglyphs, a military cemetery, the Apache Culture Center, and a recreated Apache Village. The park offers guided and self-guided tours of the core historic park buildings, with interpretive signs located throughout. Opened in 1969, The Apache Cultural Center is a contemporary museum devoted to history of Apache Mountain Tribe.</p> <p>One 1,200-square-foot historic building, a log cabin, is open to the public with interpretive exhibits. Other buildings are either undergoing rehabilitation or are used for administrative offices, private residences and the Theodore Roosevelt Boarding School, a school for Native American children established by the Bureau of Indian Affairs in the 1920's but currently under Tribal control.</p>
Admission	<p>Adult \$5.00 Children, seniors \$3.00 Children under 7 free Guided tours are \$10.00 per person. There is no charge for tribal members.</p>
Hours of Operation	<p>7:00 am to sunset, daily Closed Thanksgiving and December 25.</p>
Local Market Size	12,429 in Fort Apache Indian Reservation in 2000.
Attendance	15,203
Visitor Characteristics	Tribal members comprise about 40% of admission, mostly to the Apache Cultural Center. Several events bring 400 or 500 people to site. 60% are tourists passing through the area.
Membership price/number	NA
Governance and Operations	Non-profit, tribal; White Mountain Apache Tribe. The White Mountain Apache Tribe operates the Cultural Center and the Fort Apache Heritage Foundation, Inc. operates the historic park. The two entities share an executive director.
Sources of Funding/Budgets	<p>Budget for Cultural Center is \$280,000, 65% is staff costs. One third of the budget is recouped from admissions revenue and gift shop sales.</p> <p>The Foundation has a \$150,000 administrative budget. Annual support comes from the Boeing Company, among other private entities. The Foundation regularly seeks grants from state and federal agencies.</p>
Number of Employees	<p>Cultural Center: 6 full-time staff Foundation: 4 full-time staff (3 are facilities, 1 administrative)</p>

Table 8: Fort Apache Historic Park

Fort Apache Historic Park

Gift Shop	Yes.
Educational Programming	Limited. 11 schools on reservation visit and some schools from surrounding community. 5 th grade and below.
Keys to Visitation and Operation	Full support of tribe. Ability to tap into private and government grants for rehabilitation. Currently at the end of a master planning process.

Table 8 (continued): Fort Apache Historic Park



Figure 302: Picture of Fort Apache Historic Park

Fort Bowie National Historic Site

Facility Name and Location	Fort Bowie National Historic Site, Bowie, AZ
Date Opened to Public	1972
Description of Facility and Collections	<p>The United State military established Fort Bowie in 1862 to protect settlers and the mail route from raids by the Chiricahua Apaches. The fort ceased operations in 1894.</p> <p>Located off of Interstate 10 in southeastern Arizona, this 999-acre historic site features ruins of the first and second Fort Bowie, as well as ruins of a post station and cemetery, picnic areas, hiking trails and a visitor center with interpretive exhibits and ranger station. The fort ruins and visitor center are only accessible on foot, via a 1.5 mile long trail.</p> <p>The visitor center was built in 1990/1991 and is approximately 900 square feet. It was built in the style of the historic fort buildings and has a porch on all four sides. A small gift shop is run by Western National Parks Association. Exhibits focus on Apaches, prehistoric period, and military.</p> <p>Restrooms, an informational kiosk, and ramada are located at trail head.</p> <p>Fort Bowie is located near other federally managed sites, including Chirichua National Monument and the Coronado National Forest.</p>
Admission	Free
Hours of Operation	8:00 a.m. to 4:30 p.m., daily Closed Thanksgiving and December 25.
Local Market Size	127,866 in Cochise County, AZ in 2007. 3,828 in Willcox, AZ in 2006.
Attendance	Approximately 10,000 visitors in 2007. February, March and April are peak months for visitation.
Visitor Characteristics	A lot of visitors in the winter come from “snow birds,” seasonal residents in Southern Arizona. Summer sees a lot of international visitors. A lot of repeat visitors are locals that come year-round. About 600-700 soldiers annually come from Fort Huachuaca.
Membership	NA
Governance and Operations	Federal; National Park Service
Sources of Funding/Budgets	NA
Number of Employees	3 permanent full-time; 1 seasonal employee twice per year
Gift Shop	Yes. Run by the Western National Parks Association.
Educational Programming	Schools come in regularly for Junior Ranger program for kids 4-13 years old. Activities booklet with projects.
Keys to Visitation and Operation	Scenic location and historical interest.

Table 9: Fort Bowie National Historic Site

Fort Bowie National Historic Site

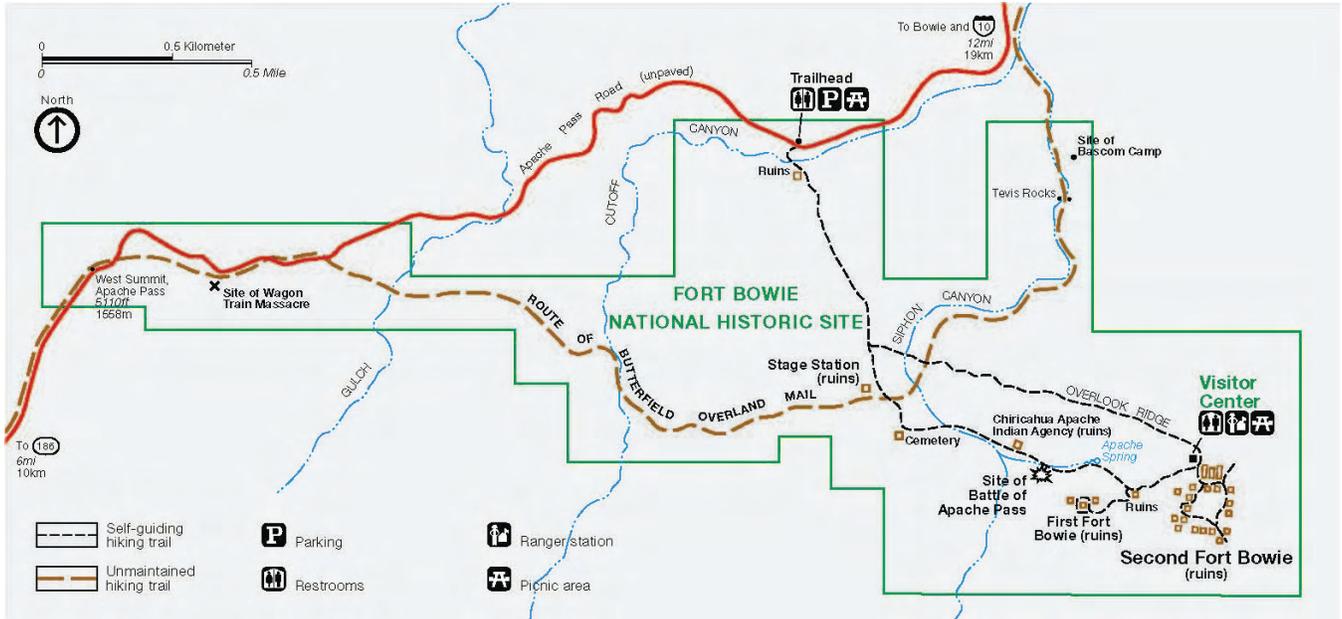


Figure 303: Fort Bowie Park Map



Figure 304: Picture of Fort Bowie

Fort Concho National Historic Landmark

Facility Name and Location	Fort Concho National Historic Landmark, San Angelo, TX
Date Opened to Public	1928
Facility and Programs	<p>Fort Concho National Historic Landmark is comprised of 40 acres and 23 original and restored structures. These buildings include 4 of the original 6 barracks, 8 of 9 original officers' quarters, and a restored chapel. The post bakery is part of the Landmark, but is located off-site and so is under-utilized. The site has retained its core 10+ acre parade field. One third of the building space is devoted to exhibits, one third is meeting rooms and public space, and one third are offices and administration.</p> <p>The site is within the City of San Angelo, TX. Preservation efforts began in the early 1920's and since then, several city streets through the site have been removed. One street remains through the site.</p> <p>The site offers guided and self-guided tours, lectures, education programs, temporary and permanent exhibitions, and festivals, including historical demonstrations, living history, and concerts. The Landmark publishes a quarterly newsletter. An annual 3-day Christmas festival draws a significant number of people and is a significant source of earned revenues. Another primary source of earned revenue is facility and overnight rentals. In addition, the site manages a non-historic 100,000-square-foot office building that provides lease revenue. Users include 13 different state agencies.</p>
Admission	<p>Adults \$3.00</p> <p>Seniors & military \$2.00</p> <p>Students \$1.50</p> <p>Children (under 6) free</p>
Hours of Operation	<p>8:00 a.m. to 4:30 p.m., daily</p> <p>Closed Thanksgiving and December 25.</p>
Local Market Size	108,085 in San Angelo Metropolitan Area in 2007.
Attendance	Annual attendance is estimated at 85,000, which includes admissions, programs, rentals, events, and festivals. Paid admissions accounts for approximately 20,000-30,000 attendees. The Christmas Festival draws between 15,000 and 17,000 attendees. Since the site is far from major population centers, gas price increases have hurt attendance, especially from school groups.
Visitor Characteristics	<p>Paid admissions are reportedly 95% tourists. The Christmas festival and other events draw primarily from local city and county residents. There are 3 or 4 major events and about a dozen small events annually.</p> <p>The site has about 25-30 historic building rentals per year.</p>
Membership	<p>Individual \$35</p> <p>Family \$75</p>
Governance and Operations	Municipal; City of San Angelo, TX.
Sources of Funding/Budgets	Fort Concho has a diverse set of earned revenue sources as well as a direct contribution from the City of San Angelo's general fund. See Table 11 for complete schedule of revenues and expenditures.

Table 10: Fort Concho National Historic Landmark

Fort Concho National Historic Landmark

Number of Employees	12 full-time and 2 part-time historic site staff 2 full-time staff for office building management
Gift Shop	Yes. Gift shop earned \$21,372 in FY2006.
Educational Programming	There has been a decline in the number of school groups in recent years due to price of diesel and increasing emphasis on state test. Fort Concho receives about 1,500-2,000 children during Christmas event and approximately 2,000-3,000 during the school year.
Keys to Visitation and Operation	Fort Concho enjoys full support of the City of San Angelo, which has provided funds for operation of Fort Concho since the 1950's. Festivals and events are an important source of visitation and earned revenue—the Christmas Festival grosses over \$100,000 and nets the fort between \$40,000 and \$50,000 annually. Lease revenue from the office building is another important source of earned revenue. According to fort management, partnerships are critical, especially the volunteer corps of 1,000 during Christmas Festival. Partnerships with soldiers from local air force base, inmates on work permits, boy and eagle scouts, and Rotary and Lions clubs.

Table 10 (continued): Fort Concho National Historic Landmark



Figure 305: Picture of Fort Concho

Fort Concho National Historic Landmark

	Actual FY06	Current Budget FY07	Proposed Budget FY08
Revenues			
Admissions	\$8,100	\$15,000	\$12,000
Merchandise Sales	21,372	25,750	26,500
Sponsored Events	116,220	124,660	125,000
Donations	3,501	3,500	3,500
Rental Income ^{1/}	152,563	162,000	220,000
Memberships	26,505	35,000	37,000
State Office Transfer	64,950	0	0
General Fund Transfer	336,474	336,474	326,474
Miscellaneous	15,968	14,920	7,250
Total Revenues	\$745,653	\$717,304	\$757,724
Expenditures			
Personal Services	\$496,673	\$509,923	\$516,682
Supplies and Maintenance	114,628	67,165	81,649
Utilities	76,703	59,500	80,000
Special Events	73,859	66,750	79,393
Capital Outlay	0	0	0
Total Expenditures	\$761,863	\$703,338	\$757,724
Excess of Revenues over/(under) Expenditures	(\$16,210)	\$13,966	\$0

Table 11: Fort Concho Schedule of Revenues and Expenditures 1/ Primarily lease income from office building.

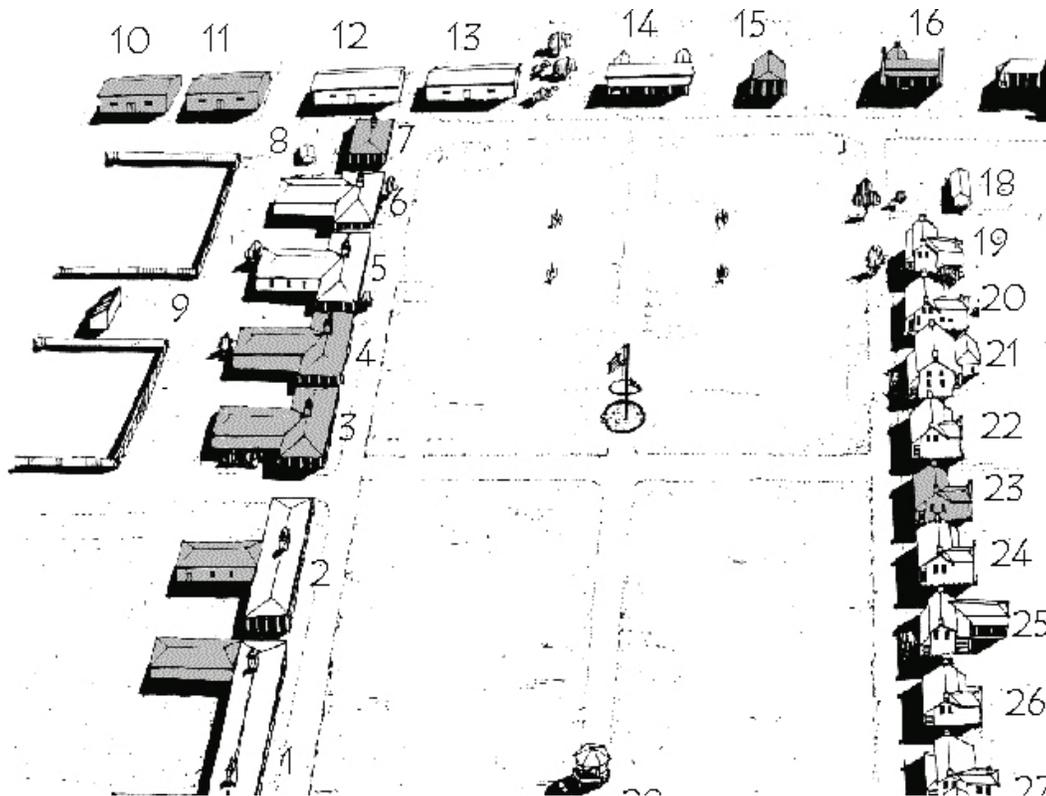


Figure 306: Map of Fort Concho

Fort Davis National Historic Site

Facility Name and Location	Fort Davis National Historic Site, Bowie, AZ
Date Opened to Public	1961
Description	<p>Fort Davis National Historic Site encompasses 474 acres and includes 24 historic structures with roofs and 100 other structures in its core historic district. Five building interiors have been restored to 1880's period using authentic materials. These restored structures are open on a limited basis when an interpreter is available, generally during peak periods in the summer months and during spring break (mid-March). During summer and spring break, living history is presented every day.</p> <p>Located in a historic barracks, the visitor center is between 1,800-2,000 square feet and includes exhibits, a 40-seat theater, and a bookstore and gift shop operated by the Western National Parks Association.</p> <p>Special events include evening tours, junior ranger day, and Fort Davis Frontier Day, which attracts 8,000 visitors.</p>
Admission	<p>Adult (16 and older) \$3.00 Child (under 16) free Fee is for 7 day park pass.</p>
Hours of Operation	<p>8:00 a.m. to 5:00 p.m., Daily Closed Thanksgiving Day, Christmas Day, New Year's Day , and Martin Luther King Jr..</p>
Local Market Size	1,050 in Fort Davis in 2000.
Attendance	51,435 in 2007. Peak months are March April, May and July. Ranges from 56,000 to 60,000. Count based on people walking into visitor center.
Visitor Characteristics	Visitors are mostly tourists. Residents come once or twice. No recreational amenities. Small segment that goes hiking and walking, a lure for locals.
Membership	NA
Governance and Operations	Federal; National Park Service
Sources of Funding/Budgets	<p>The overall park budget is \$1.1 million, of which 90% is personnel costs Fees generate approximately \$40,000 annually. The gift shop earns \$10,000 in sales and the revenue is split with the Western Parks Association. No facility rental or special event revenue.</p>
Number of Employees	<p>13 full-time; 6 seasonal during summer Volunteers – about 20 active out of 100 total.</p>
Gift Shop	Yes. Run by Western Parks Association.
Educational Programming	The Fort's educational curriculum tied into state testing criteria. Most schools in area come about once per year. Schools from further way might also visit Big Bend National Park. The Fort offers four different programs, based on age groups.
Keys to Visitation and Operation	<p>Friends of Fort Davis National Historic Site tries to raise public awareness and raises money and writes grants to help restore buildings.</p> <p>Need to decide what they want to be: history or recreation. Very difficult to do both because it changes the character of experience. Recreation can diminish historic integrity. Visitors to historic resources do not like non-historic resources to be present. "View-sheds and sound-scapes" should protect integrity of historic resource.</p>

Table 12: Fort Davis National Historic Site

Fort Davis National Historic Site



Figure 307: Picture of Fort Davis



Figure 308: Fort Davis National Historic Site

Fort Huachuca Museum

Facility Name and Location	Fort Huachuca, Sierra Vista, AZ
Date Opened to Public	1960
Description of Facility and Collections	The United State military established Fort Huachuca in 1877 to protect settlers from raids by the Chiricahua Apaches. The fort was the home to the Buffalo Soldiers, the famous black Calvary corps. The fort continues to operate as a military base, but operates an historical museum, as well as the U.S. Army Intelligence Museum. According to the National Park Service, “This historic district contains many notable buildings, among them the Pershing House, and adobe structure built in 1884, traditionally the Post Commander's quarters; the "Old Post" Barracks, built c. 1882-1883; Leonard Wood Hall, a large two-storied building used as the hospital; and the Fort Huachuca Historical Museum, an adobe and stone building originally used as the post chapel.” (source: http://www.nps.gov/history/nr/travel/amsw/sw3.htm)
Admission	Free (donations accepted)
Hours of Operation	Monday through Friday: 9 am - 4 pm Saturday and Sunday: 1 pm - 4 pm
Local Market Size	42,706 in Sierra Vista in 2007.
Attendance	70,000
Membership price/number	Individual \$10 Annual \$15
Governance and Operations	Federal; United States Army
Sources of Funding/Budgets	NA
Number of Employees	6 full-time, 20 volunteers.
Gift Shop	Yes
Keys to Visitation and Operation	Located on military base with large transient population, interested in subject matter.

Table 13: Fort Huachuca Museum



Figure 309: Postcard of Fort Huachuca

Fort Verde State Historic Park

Facility Name and Location	Fort Verde State Historic Park, Camp Verde, AZ
Date Opened to Public	1970
Description	<p>The United State military established Fort Verde in 1875 during the Indian Wars and it was abandoned in 1890. The fort is located between Flagstaff and Phoenix, off of Interstate 17.</p> <p>All historic buildings are used for public exhibits. The 11.5-acre fort features 3 house museums with period furnishings, exhibits on military and Indian Wars, regular living history programs and special events, as well as picnic facilities. There are four original adobe buildings onsite that have been restored to their original state, including three of five officers' quarters and one administrative building. In addition, the fort has an archive room that is heated and cooled appropriately.</p> <p>Park admission includes a self-guided tour. The Town of Camp Verde has parks and recreation facility adjacent to the fort, which enables large-scale re-enactments. There are two large events and about 5 informal events annually.</p>
Admission	<p>Adult (14 and up) \$2.00 Children (Under 14) free Adult Group \$1.60 Fees for programs/events</p>
Hours of Operation	Open 8:00 a.m. - 5:00 p.m., daily. Closed on Christmas Day.
Local Market Size	10,610 in Camp Verde in 2006.
Attendance	30,000. Attendance was reportedly higher in 1980's before the construction of the Interstate 17 bypass.
Visitor Characteristics	Visitors to the park are largely tourists and Arizona residents bringing visiting friends and relatives. Visitors to the park are mostly adults, estimated at 85-90% of total, including retired folks in RVs. More families with children are coming because the fort started doing kids day twice per year, which is part of a strategy to introduce more hands-on activities. In addition, the Boy Scouts have introduced a history patch that can be obtained through a visit to the park.
Memberships	NA
Governance and Operations	State; Arizona State Parks.
Sources of Funding/Budgets	\$27,000 operating budget (not including staff costs)
Number of Employees	<p>4 full-time, 2 part time. Re-enactors are volunteers. Regular volunteers about 3-5. 80-120 re-enactors.</p>
Gift Shop	Yes, also visitor center.
Educational Programming	School groups from Valley and Flagstaff. Living history presentations range from 30 minutes to 60 minutes. Estimated 50-75 school groups annually.

Table 14: Fort Verde State Historic Park

Fort Verde State Historic Park

Keys to Visitation and Operation	<p>Small operation, but requires more marketing, including advertise more through email and other technology.</p> <p>Short staffing does not work because programs suffer. Full staffing can do more outreach.</p> <p>Need to keep authenticity in living history programs and outreach.</p> <p>Partnerships are important. Fort Verde collaborates with National Park Service, US Forest Service, Town of Camp Verde, Camp Verde Cavalry (volunteer interpreters), local historic society, museums in Verde Valley, other state parks, the American Legion. Need to hook into passion with people that served to take pride in their history.</p>
---	--

Table 14 (continued): Fort Verde State Historic Park



Figure 310: Picture of Fort Verde

Yuma Quartermaster Depot State Historic Park

Facility Name and Location	Yuma Quartermaster Depot State Historic Park, Yuma, AZ
Date Opened to Public	1986
Description	<p>In the late 19th century, the Yuma Quartermaster Depot stored and distributed supplies to U.S. Army forts throughout the American Southwest. The location along the Colorado River served as a transfer station from water transport to mule drawn wagons. The construction of the railroad made the depot obsolete and Fort Lowell assumed the depot's functions in the 1880's.</p> <p>The 18-acre Yuma Quartermaster Depot State Historic Park features the military history, as well as the history of the Bureau of Reclamation on the site. Five of original eight buildings and park grounds include exhibits, guided tours, outreach programs, and picnic areas. One building is water reservoir that serves as exhibit itself. Warehouse building is large open space. Restored officer's quarters (1876) with detached kitchen and pantry.</p> <p>A visitor center has changing exhibits and a 30-minute video that covers the history of the Yuma area from the 16th century through the early 20th century is shown by request. Visitor center is about 2,000 square feet, in historic house from later period (non-military), with 900 square feet of visitor information and orientation with exhibits on park and surroundings and 400 square foot theater and 400-500 square feet of retail and small office and restrooms.</p>
Admission	Adult (14 and up) \$3.00 Children (Under 14) free
Hours of Operation	Open 8:00 a.m. - 5:00 p.m., daily. Closed on Christmas Day.
Local Market Size	190,557 in Yuma MSA in 2007.
Attendance	20,000-25,000 annual paid attendance
Visitor Characteristics	Most visitors are outside Arizona, winter visitors during December through April. Summer is more pass-through visitors from Interstate 8. A lot of California visitors. Mostly adults.
Governance and Operations	State; Arizona State Parks.
Sources of Funding/Budgets	The annual budget totals about \$195,000, of which 72% are staff costs. Based on an agreement with Arizona State Parks, a majority of revenues (\$160,000) are drawn from the City of Yuma's hospitality tax. State Parks contributes \$15,000. The gift shop grosses \$25,000, which is not included in the Park budget because the gift shop function is centralized in the State Parks.
Number of Employees	4 full-time, 2 seasonal employee, Volunteers: spinners and weavers association – on weekends and special events during winter – about 15 or 20 in guild, 8 or 10 volunteer at park 2 maintenance volunteers, about 40 hours per month
Gift Shop	Yes. Focus on books of area. Every paid visitor spends a little over \$1.00.
Educational Programming	Estimated 100-150 school groups annually. Park offers several programs from kindergarten to college. Most students are 4 th or 5 th grade level.

Table 15: Yuma Quartermaster Depot State Historic Park

Table 15: Yuma Quartermaster Depot State Historic Park

Source: Facility profiled, The Official Museum Directory 2008, and ConsultEcon, Inc.

Yuma Quartermaster Depot State Historic Park

Keys to Visitation and Operation	<p>Ten years ago, renovation, more landscaping and sidewalks – used to be called Yuma Crossing and interpreted a wide range of history, but now changed the name and narrowed interpretation. Focus on 500 years of interpretation was troublesome because of its length, complexity and lack of historic resources from the various periods. Works well to keep it specific.</p> <p>Partnerships are important for interpretation of historic periods. Partners include: Yuma Crossing Heritage Area, City of Yuma, Bureau of Reclamation, U.S. Fish and Wildlife Service, CA and AZ State Parks.</p>
---	--

Table 15 (continued): Yuma Quartermaster Depot State Historic Park



Figure 311: Picture of Yuma Quartermaster Depot State Historic Park

Summary Review of Historic Forts

Lessons learned and potential implications for the development of new heritage components at Fort Lowell Park:

- *Location* – Most historic forts are located in remote locations and some, such as Fort Concho and the Yuma Quartermaster Depot State Historic Park, are located in small metropolitan areas. Due to their location, the local resident market population is small for many of these historic forts. Fort Lowell Park is unique because it is located in the central city in a large metropolitan area. This may be advantageous because the Park can draw on a large local population base, but potentially disadvantageous because of increased competition from other visitor attractions in the Tucson area for a visitor's time.

- *Facilities and Programs* – There is a wide range of historic structures at the profiled historic forts, from building ruins to building interiors and exteriors restored to historic periods. In some cases, the historic fort includes a visitor center with orientation information, historical exhibits, small gift shop, small theater, and restrooms. In general, the profiled historic forts tend to have more structures and more programs than the existing Fort Lowell Museum. The purchase of the Adkins parcel and its historic resources expands the opportunity for heritage programming and historic interpretation at Fort Lowell Park. Importantly, all of the profiled historic forts are single purpose sites devoted to heritage interpretation whereas Fort Lowell Park has a unique and large recreational component.

- *Visitor Experience* – Most historic forts focus on recreating the military history of the settlement period though in some instances, other historical periods and interpretive themes are covered if related to the site's history. Exhibits encompass a range of artifacts and displays. Most tours are self-guided though public access to buildings can be restricted if interpreters are not present onsite. Currently, Fort Lowell Museum is comprised of historic exhibits. Additional components of the

visitor experience might include self-guided and guided tours, with additional interpretive signage. Historic forts are able to achieve historical integrity and authenticity through preservation of “historic view-sheds and sound-scapes,” which is made possible, in large part, by their location in remote areas. Visitors are transported into the past because they are far removed from cities. With its location in a dense urban area and on a roadway with a large volume of traffic, Fort Lowell Park does not have the same view-sheds and sound-scapes that are an important part of the visitor experience at other historic forts.

- *Admission Pricing* – Ticket prices range from free to \$5.00, but most of the profiled historic forts charge \$2.00 or \$3.00 for admission. Guided tours and festivals can include an additional or different admission charge.

- *Attendance and Visitor Characteristics* – Attendance at historic forts ranges from about 10,000 to 85,000. Those with higher attendance tend to have regular events and festivals and a robust level of educational programming. Most visitors to historic forts are adults and are tourists from outside the local area.

- *Management and Governance* – The historic forts profiled have a range of governance structures, including national, state and city governments, tribal nations and non-profit organizations. In the case of the sites under the auspices of the National Park Service, the gift shops are managed by the Western National Parks Association, a non-profit that supports research, develops publications and funds programs. Fort Apache Historic Park has tribal and non-profit management entities with a shared executive director to provide consistent oversight. The City of San Angelo owns and operates Fort Concho while the City of Yuma provides a significant amount of operating support for the Yuma Quartermaster Depot that is managed by Arizona State Parks.

- *Operating Budget and Staffing* – The operating budget at the profiled historic forts ranges widely

from about \$200,000 to over \$1 million. Staff costs account for anywhere from 65 percent to 90 percent of the total budget. Staff levels range from 3 to 12 permanent full-time staff. Most of the profiled historic forts supplement full-time staff with part-time or seasonal staff during peak periods and volunteers. Earned revenues can cover anywhere from less than one percent of operations, which is typical of national and state parks, to 33 percent at Fort Apache and over 50 percent at Fort Concho, which is unique because it derives a significant amount of earned revenue from an office lease rent and events.

- *Facility Rentals and Special Events* – Facility rentals were not especially widespread, which may be a function of the size of the local markets available to the profiled historic forts. Fort Concho had the highest level of facility rentals and events, which contribute significantly to its annual visitation as well as providing earned revenue to support operations. Most historic forts have at least one signature event annually that stimulates visitation from local residents. Living history demonstrations and re-enactments can figure prominently in these special events though there may be other types of attractions.

- *Partnerships* – For most historic forts profiled, partnerships are important contributors of regular and special event volunteers, collections and interpretation, and financial support for operations and capital projects. Partnerships with local organizations can foster volunteerism critical to onsite programming and events as well as build awareness locally and support for special projects or initiatives. Partnerships with local, instate and out-of-state historic forts and heritage attractions create opportunities for collaborative marketing to heritage travelers and for collections sharing and linked interpretation. Partnerships with governments often involve financial support for the historic fort. Operated by the Arizona Historical Society, the Fort Lowell Museum already enjoys a number of important partnerships, such as the City of Tucson for in-kind operating support, the

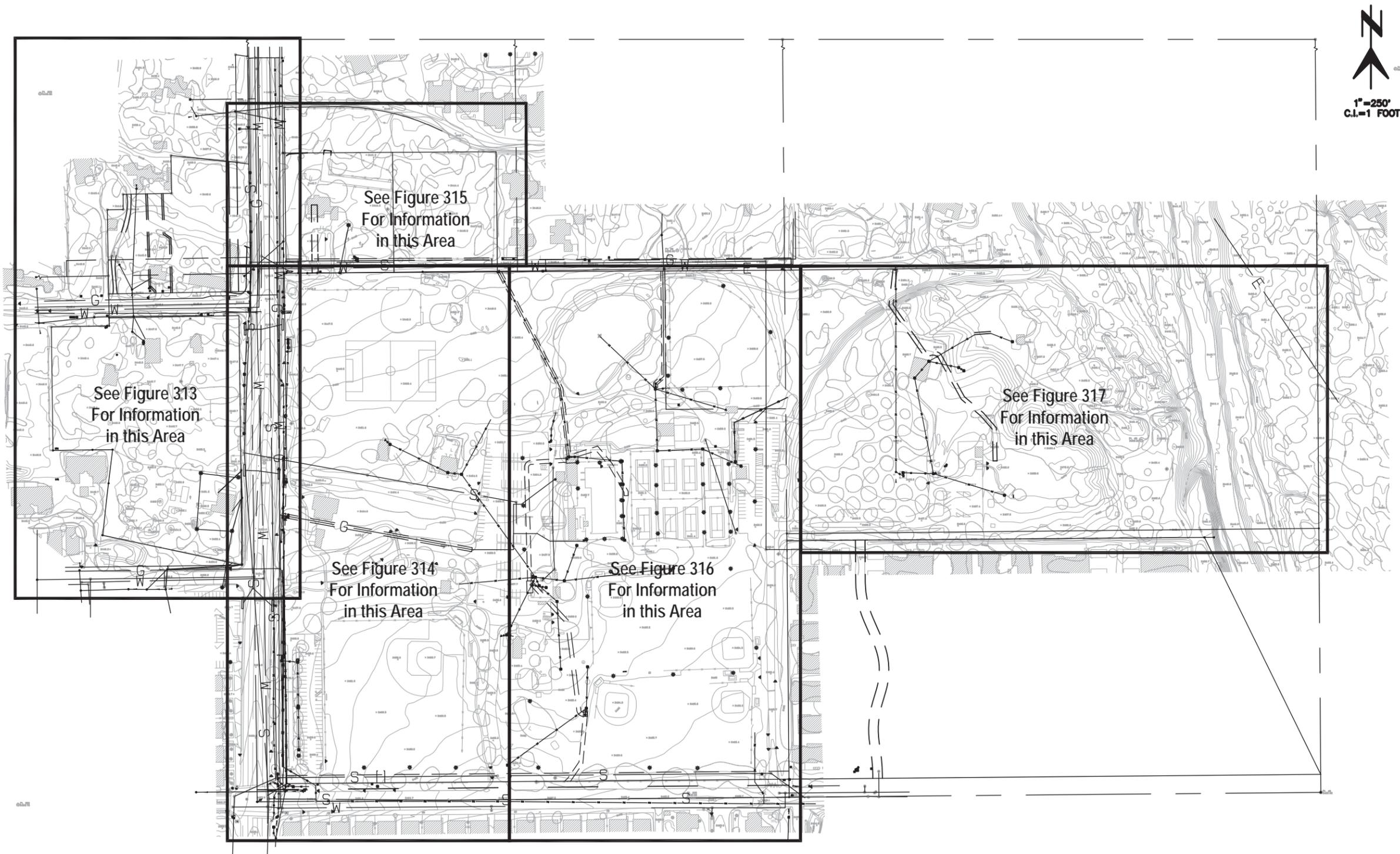
Old Fort Lowell Neighborhood Association for coordination of La Reunión de El Fuerte, and private funders for exhibit funding. The future challenge will be to engage other groups, such as re-enactors, arts and crafts associations, Boy and Girl Scouts, and volunteer service organizations, such as the Lions Club and American Legion, as well as local heritage attractions and tourism agencies.

This Page is Blank

Appendix A

Boundary Survey

This Page is Blank




 1" = 250'
 C.I. = 1 FOOT

ALTA Survey Provided by S & S Surveys, Inc. Boundary and Topographic Survey of Fort Lowell Park, November 7, 2008. Job No. 08-09-02.

Figure 312: Overview of 2008 Boundary Survey

Note: Survey Details Shown on the Sheets that Follow



Note: North is to the Left on this Sheet



Figure 313: 2008 Boundary Survey (Adkins Parcel and Commissary Apartments)



Note: North is to the Left on this Sheet

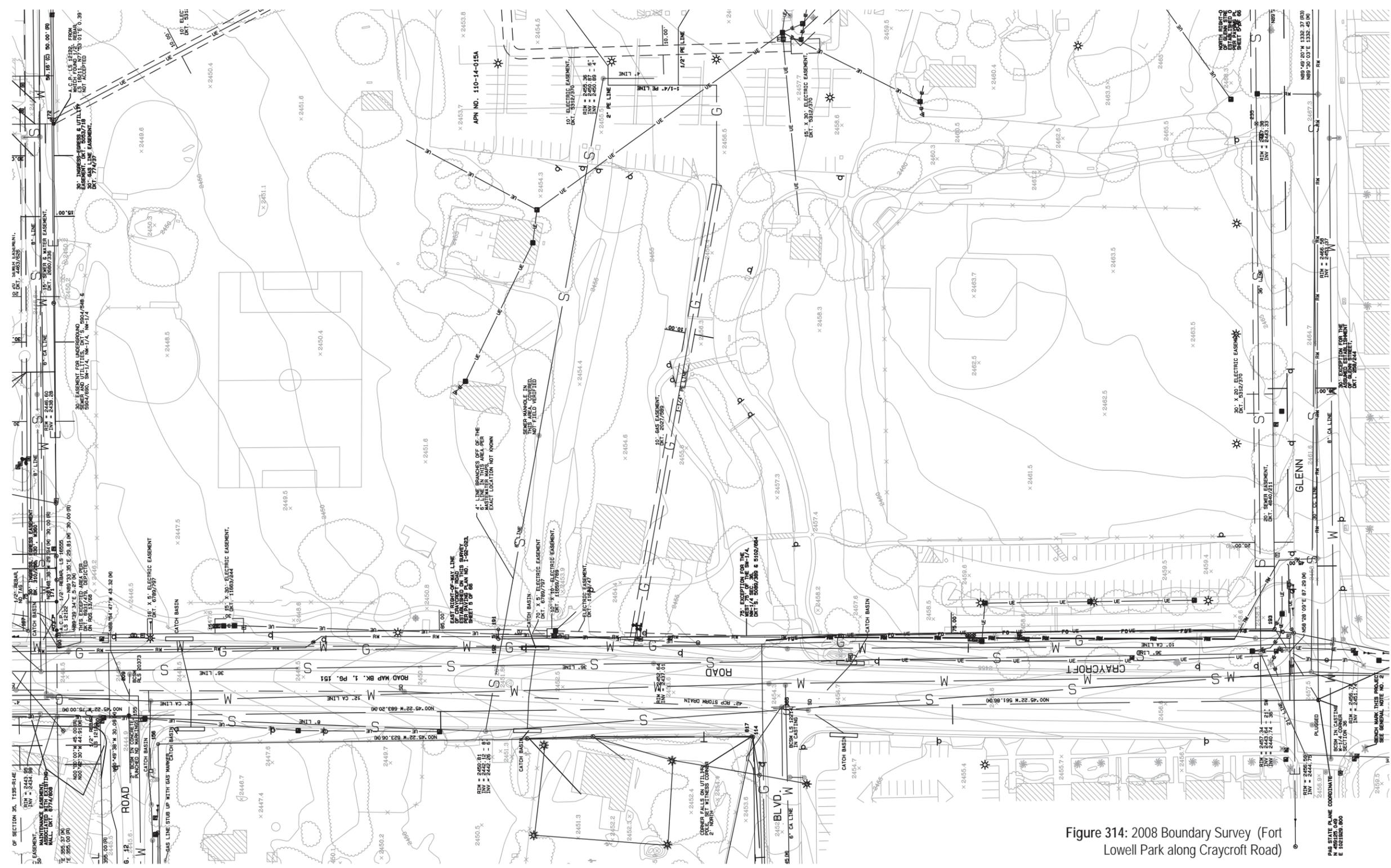


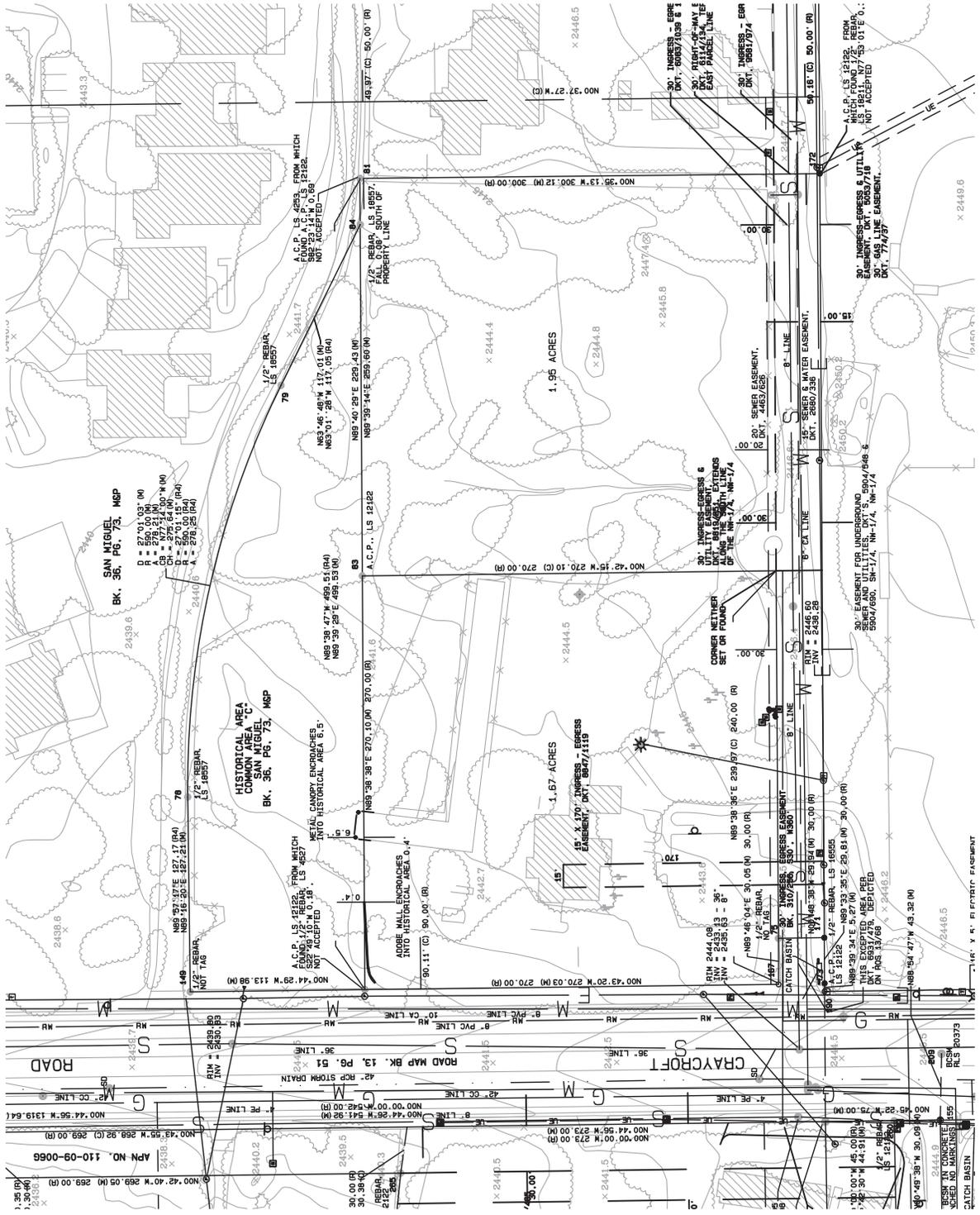
Figure 314: 2008 Boundary Survey (Fort Lowell Park along Craycroft Road)

Figure 315: 2008 Boundary Survey
(Donaldson / Hardy Property)



1" = 100'
C.I. = 1 FOOT

Note: North is to the Left on this Sheet



This Page is Blank



Note: North is to the Left on this Sheet



Figure 316: 2008 Boundary Survey (Fort Lowell Park Recreational Area)

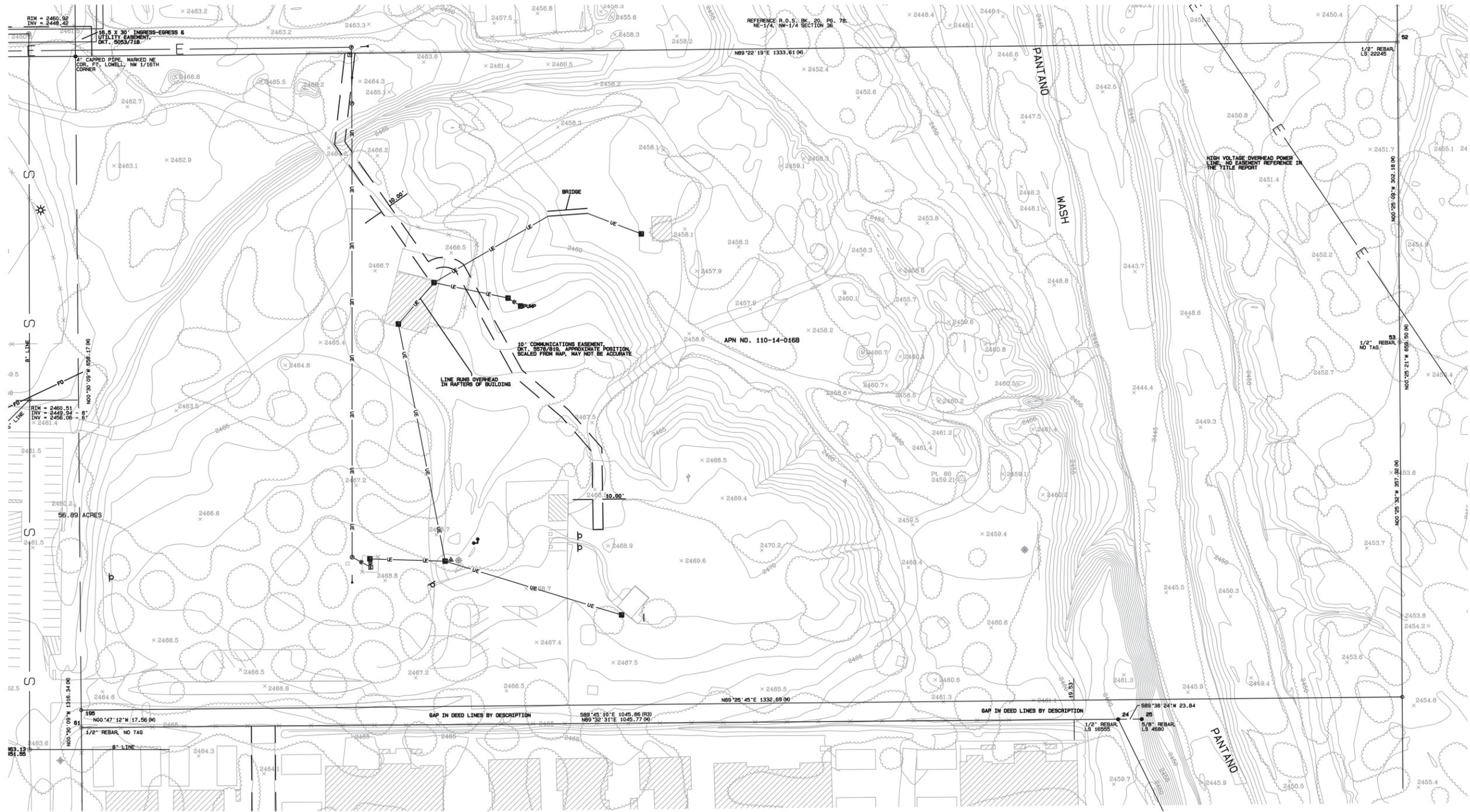


Figure 317: 2008 Boundary Survey (Area West of the Pantano Wash)

Appendix B

Potential Partnership Groups, Organizations and Institutions

This Page is Blank

Potential Partnership Groups, Organizations and Institutions

History and Archaeology

- Antique Automobile Club of America - Tucson Region
- Arizona Archaeological and Historical Society
- Arizona Site Stewards
- Center for Desert Archaeology
- Corral of the Westerners
- Model T Club of Southern Arizona
- Old Fort Lowell Neighborhood Association
- Old Pueblo Archaeology
- Tucson Presidio Trust

Local and Regional Museums and Educational Institutions

- Arizona Historical Society
- Arizona State Museum
- Tucson Children's Museum
- Archaeology Field School, UofA Department of Anthropology
- University of Arizona Dept. of Architecture
- Pima Community College archaeology program

Historic U. S. Army Forts

- Fort Yuma, Arizona
- Fort Bowie, Arizona
- Fort Verde, Arizona
- Fort Union, New Mexico
- Fort Concho, Texas
- Fort Davis, Texas

Youth Organizations

- Catalina Council, Boy Scouts of America,
- Sahuaro Girl Scout Council
- Arizona's Finest Keystone Club - DMAFB Youth Group
- KIDCO, Tucson Parks and Recreation
- Youth Sports Leagues

Neighborhood Schools

- St. Gregory's High School
- Whitmore Elementary School
- St. Cyril Elementary School
- Townsend Middle School

- Fort Lowell Elementary School
- Catalina High School

Service Organizations

- Tucson Clean & Beautiful
- Volunteer Center of Tucson

Outdoor Recreation

- Pima Trails Coalition
- Southern Arizona Hiking Club

Nature and Conservation Organizations

- Dark Skies
- Desert Harvesters
- Native Plant Society
- Nature Conservancy
- Sonoran Arthropod Society
- Southeast Arizona Butterfly Association
- Tucson Audubon Society
- Tucson Botanical Garden
- Tucson Cactus & Succulent Society
- Tucson Herpetological Society

Art & Music

- Fort Huachuca Band
- Rillito River Project
- Southern Arizona Watercolor Guild
- Symphonic Winds