

Cultural Landscape Report - Part II

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Chapter 4. Treatment Alternatives

Introduction

1 This chapter presents treatment alternatives
2 for the repair, protection and stewardship
3 of the cultural landscape of Rush Historic
4 District. These treatment alternatives were
5 developed during the Alternatives Work
6 Session in February 2018.

7
8 This chapter describes the three treatment
9 alternatives considered. These include a no
10 action alternative and two action alternatives.
11 All alternatives would preserve archeological
12 and historic features, provide management
13 strategies to better articulate the historic
14 mining setting, and improve visitor
15 experience.

16
17 The no action alternative is a basis for
18 comparison with the action alternatives.
19 The two action alternatives would address
20 protection of resources, provide additional
21 repair of historic spaces and features, and
22 improve visitor experience and access. A
23 summary of the alternatives is presented as
24 a matrix (Matrix 4-1). The agency preferred
25 alternative is action alternative 1. Detailed
26 treatment recommendations are presented in
27 Chapter 6 – Treatment.

28
29 *Action Alternative 1* would focus on
30 preserving contributing features and
31 rehabilitating the historic setting. This would
32 provide an immersive visitor experience
33 to improve understanding of the scale of
34 the historic mining operations and the
35 community that supported it. The broad
36 extent of the historic mining landscape,
37 primarily within Morning Star Community
38 landscape character area would be revealed,
39 including spaces and features of the mining
40 industry and associated community.

41
42 This alternative would stabilize extant
43 buildings. Extant ruins and foundations
44 would be preserved. Circulation features and

45 patterns, small scale features, and vegetation
46 patterns would be repaired. In Morning
47 Star Community landscape character area,
48 footprints of some non-extant buildings
49 and structures (some foundations remain)
50 would be cleared of vegetation and marked.
51 Additional vegetation clearing, thinning and
52 pruning along roads, at spoils and tailings
53 piles, and within some domestic spaces would
54 be completed to repair spatial organization.
55 Domestic spaces in House Row and at Rush
56 Smelter and Morning Star Livery Barn ruins
57 would be repaired. Mine adits, portals, and
58 entrances would be secured. Select locations
59 at portals would be cleared of vegetation and
60 interpretation would be provided.

61
62 Existing visitor facilities would remain and
63 be improved for universal accessibility. A trail
64 extension would be added on Rush Mountain
65 (Rush Mountain Trail), and improvements
66 would be made to the day use facilities and
67 parking at the confluence of Clabber Creek
68 with Buffalo River.

69
70 *Action Alternative 2* would focus on repairing
71 contributing features and rehabilitating
72 the historic setting to the greatest extent
73 possible. This alternative would reveal
74 the broadest extent of the historic mining
75 industry and associated community. As more
76 of the historic mining landscape is revealed,
77 more opportunities would be created to
78 fully immerse visitors in the historic mining
79 operations and community.

80
81 Building ruins would be cleared of vegetation,
82 stabilized, and marked. Extant ruins and
83 foundations would be preserved. Taylor-
84 Medley General Store would be rehabilitated,
85 and the front porch improved for access
86 onto the porch only. Work would include
87 rehabilitation of the exterior façade including
88 the roofing, wood siding, windows and doors.

1 Structural work would stabilize the porch
2 foundation and roof. Footprints of most non-
3 extant buildings and structures, of which
4 some foundations remain, would be cleared of
5 vegetation and marked. Additional vegetation
6 clearing, thinning and pruning along roads,
7 at spoils piles, and within domestic spaces
8 would assist in repairing spatial qualities.
9 Mine adits, portals, and entrances would be
10 secured. Many would be cleared of vegetation
11 and repaired for limited visitor interpretation.
12
13 Existing visitor facilities would remain and
14 be improved for universal accessibility. A trail
15 extension would be added on Rush Mountain
16 (Rush Mountain Trail), and improvements
17 made to the day use facilities and parking at
18 the confluence of Clabber Creek with Buffalo
19 River.

21 Treatment Approaches

22
23 Four distinct approaches to the treatment
24 of the cultural landscape were considered.
25 Brief descriptions of each treatment approach
26 considered follows.

27
28 The treatment approaches evaluated for
29 Rush Historic District include a preservation
30 approach for the no action alternative.
31 Action alternatives 1 and 2 would follow
32 a rehabilitation approach. Defining the
33 recommended treatment approach is
34 dependent on several factors including the
35 desired future condition, proposed use, and
36 significance of the property.

37
38 *Preservation* is an appropriate treatment
39 approach for a cultural landscape with a
40 continuity of use and few modifications.
41 This approach is suited for a property where
42 distinctive materials, features, and spaces are
43 intact and for which extensive modifications
44 or additions are not required. A preservation
45 approach allows contributing features to be
46 preserved, restored or repaired. The no action
47 alternative follows this approach.

48 *Rehabilitation* is an appropriate treatment
49 approach for a cultural landscape with
50 a long period of significance, which has
51 undergone few modifications and has
52 integrity in one or more characteristics
53 (location, setting, materials, workmanship,
54 feeling, and association). Rehabilitation
55 is appropriate for a property where new
56 additions are contemplated. A rehabilitation
57 approach allows for features to be preserved,
58 rehabilitated, reconstructed or restored.
59 Action alternatives 1 and 2 follow this
60 approach.

61
62 *Reconstruction* is an appropriate treatment
63 approach for a cultural landscape with a
64 vast amount of documentation that would
65 allow the form, features and detailing of
66 non-surviving features to be replicated to
67 their appearance at a specific period and in
68 an historic location. This approach would
69 rely upon new construction to replicate these
70 features.

71
72 *Restoration* is an appropriate treatment for
73 a cultural landscape with documentation
74 to accurately depict the form, features, and
75 character of a landscape as it appeared during
76 a period by removing features from other
77 periods in history and reconstructing missing
78 features from the restoration period.

80 Treatment Goals

81
82 A series of treatment goals provide guidance
83 in determining the desired future condition,
84 and proposed use and interpretation for Rush
85 Historic District. They also assist in providing
86 appropriate stewardship guidance for
87 preserving the study area's historic character
88 and contributing features.

- 89
90 • Preservation and rehabilitation actions
91 will preserve Rush Historic District's
92 cultural landscape, including its historic
93 character and buildings as these

- 1 contribute to its significance and reinforce
2 its importance.
- 3
- 4 • Cultural resources will be protected
5 through accepted preservation practices
6 including preservation, rehabilitation,
7 reconstruction, and restoration. The
8 cultural landscape will be protected by
9 stabilizing features and rehabilitating
10 patterns and restoring select missing
11 historic features.
- 12
- 13 • Known, potential, and unknown
14 archeological resources will be protected.
15 Opportunities for further research and
16 investigation will be identified, including
17 archeological investigations and other
18 documentary needs.
- 19
- 20 • Treatments for securing mine entrances
21 while allowing limited visitor interaction
22 and interpretation will be addressed.
- 23
- 24 • The tolerance for non-native plant species
25 will be identified and the character for
26 vegetation will be depicted.

28 **Common to All Alternatives**

29

30 Several treatment recommendations would
31 be considered in all alternatives including
32 the no action and action alternatives. These
33 treatment recommendations are summarized
34 in this section.

36 **Archeological Sites**

37

38 Archeological sites would be preserved, and
39 further study and additional research would
40 be conducted. This work would include
41 investigations to confirm and document the
42 extent of below-grade extant features related
43 to zinc mining and its associated community,
44 and to further document prehistoric
45 archeological sites.

46

- 47 • Archeological investigations and
48 excavations of any type within Rush
49 Historic District would occur only in
50 consultation with the park archeologist
51 and others where appropriate (MWAC,
52 SHPO or federally recognized tribes).
- 53
- 54 • Additional study and archeological
55 research, investigations, and surveys
56 would be conducted in association with
57 any recommended vegetation thinning,
58 pruning or removal or repair to any
59 contributing features, spaces or remnants.
- 60
- 61 • Pre-historic and historic archeological
62 sites would be preserved, and further
63 research and documentation would
64 be conducted. Measures to protect
65 archeological sites would be taken. These
66 could include clearing vegetation at
67 extant ruins or sites to protect below-
68 grade features if vegetation threatens the
69 integrity of the feature.

71 **ABAAS Compliance**

72

73 Universal access would be provided for
74 mobility impaired users at existing facilities.
75 This would include improvements to non-
76 contributing trails and facilities to ensure
77 universal accessibility.

- 78
- 79 • An ABAAS pedestrian route and parking
80 would be provided to access the existing
81 comfort station and shelter at Rush
82 Landing.

- 83
- 84 • An ABAAS pedestrian route and parking
85 would be provided from Morning Star
86 Trail parking west to Morning Star Livery
87 Barn ruins and Morning Star Hotel ruins.

89 **Lower Buffalo Wilderness**

90

91 Lower Buffalo Wilderness would be protected
92 by not allowing vehicular access or vegetation

- 1 thinning, pruning, or removal within
2 wilderness boundaries.
3
4 • No new pedestrian access would be added
5 within the wilderness boundary.
6
7 • No visual or physical access would be
8 allowed to Red Cloud Mine Complex (M3),
9 Lonnie Boy Mine (M5), and Silver Hollow
10 Mine (M9), location within the wilderness
11 boundary.

13 Ruins

14
15 Ruins would be preserved. Stabilization and
16 repairs would be dependent on each feature's
17 existing condition. A series of approaches to
18 ruin stabilization were identified including
19 stabilization, protection, arrested decay, and
20 buried ruins.

- 21
22 • Measures to protect features from further
23 damage could include techniques to
24 prevent damage from water or weather.
25
26 • Basic stabilization and repair would be
27 completed for ruins where elongating the
28 lifespan of the ruin is desired. These ruins
29 would not be fully repaired or restored for
30 use.
31
32 • Buried ruins and below grade features
33 and remnants would be protected.
34 Markings and other means of identifying
35 building or structure footprints at the
36 surface could be undertaken to better
37 discern the patterns of a site or place.
38 Exposing a ruin (or part of a ruin) and
39 protecting and maintaining them alone
40 or as part of another strategy could be
41 accomplished as well.
42
43 • Measures for interpretation could
44 include revealing extant foundations,
45 walls or other elements of a contributing
46 feature, and/or marking the feature's

47 footprint or space. Interpretive signage
48 or identification of a feature could be
49 included with a stabilization strategy.
50 These could include narrative and/
51 or historic photographs to assist in
52 understanding the historic condition and
53 significance.

55 Mines and Mine Complexes

56
57 Mines and mine complexes would be secured
58 to protect mining resources and provide
59 visitor safety while allowing for some
60 enhanced interpretation.

- 61
62 • All mines would be closed. No physical
63 access would be allowed.
64
65 • Mine adits, portals, and entrances would
66 continue to be secured by existing metal
67 grates. Most would be obscured with
68 vegetation. These grates would remain as
69 they also provide bat habitat.
70
71 • Select mines would be allowed to be
72 visible to Mine Level Trail users. For
73 these, vegetation would be cleared, and
74 a low barrier added, set outside the
75 angle of repose from the face of the adit
76 or opening. Interpretive and regulatory
77 signage would be included to warn
78 visitors of hazards.
79
80 • Red Cloud Mine Complex (M3), Lonnie
81 Boy Mine (M5), and Silver Hollow Mine
82 (M9) on the east side of Buffalo River
83 would be obscured, and no visual or
84 physical access would be allowed.
85
86 • Extant spoils and tailings piles would be
87 preserved.

89 Visitor Facilities and Amenities

90
91 Visitor facilities and amenities would remain.
92 These non-contributing features include

1 comfort stations, kiosks, shelter(s), waysides,
2 and benches. They are located at Morning Star
3 Trail, Rush Landing, and Rush Campground.

4 5 **Vegetation Management**

6
7 Vegetation management could be sustained
8 over time through regular thinning and
9 maintenance activities, augmented by
10 specialized methods such controlled burns.

11
12 • Areas to remain open within the study
13 area but outside the wilderness boundary
14 could be managed through mechanical
15 means and burn methods.

16
17 • Managing exotic species through
18 mechanical and physical removals would
19 be part of vegetation thinning or removal.
20 Measures would be taken to ensure seed
21 banks in dormant soils do not become an
22 issue during growing seasons.

23
24 • The Cherokee Medicine Keepers plant
25 gathering group would be allowed
26 access to the study area to document,
27 and possibly collect plants of medicinal,
28 economic, or spiritual value. They would
29 be allowed access to these vegetation
30 communities, but locations of their
31 findings would not be publicized to
32 protect plant communities.

33 34 **No Action Alternative**

35
36 The *No Action Alternative* would include
37 actions that the park would undertake as part
38 of regular operations and current planned
39 work. Under the no action alternative, the
40 park's present level of use, management,
41 interpretation, and maintenance and
42 operations would continue. Preservation
43 and maintenance of contributing features
44 would continue as would stabilization of
45 extant buildings. The park's current projects
46 and those planned for the foreseeable future
47 would be included.

48 The no action alternative would follow a
49 preservation approach. This approach would
50 include actions already identified and/or in-
51 progress to stabilize and repair contributing
52 features and essential spaces for improved
53 visitor contact and wayfinding.

54
55 This section describes actions that would be
56 undertaken for the study area in its entirety
57 including those for Morning Star Community
58 landscape character area. Actions are
59 described by landscape characteristic and
60 include cluster arrangement, topography
61 and spatial organization, circulation,
62 buildings and structures/ruins, mines and
63 mine complexes, small scale features and
64 vegetation. Natural systems and features, land
65 use, and archeological sites are described
66 under Common to All Alternatives.

67 68 **Cluster Arrangement, Topography, and** 69 **Spatial Organization**

70
71 Rush Historic District's distinct pattern of
72 development of mines and mine complexes
73 and associated communities would be
74 preserved.

75
76 • The arrangement of buildings, roads,
77 ruins, and vegetation at House Row
78 would be preserved as the residential/
79 commercial community that existed
80 historically.

81
82 • The setting of the Morning Star Mill ruins
83 would be preserved by protecting extant
84 contributing features and by clearing
85 vegetation from mill ruins and features.

86
87 • The setting of the Hicks Hotel and Hicks
88 General Store ruins would be preserved
89 by clearing vegetation from ruins and
90 features.

1 Circulation

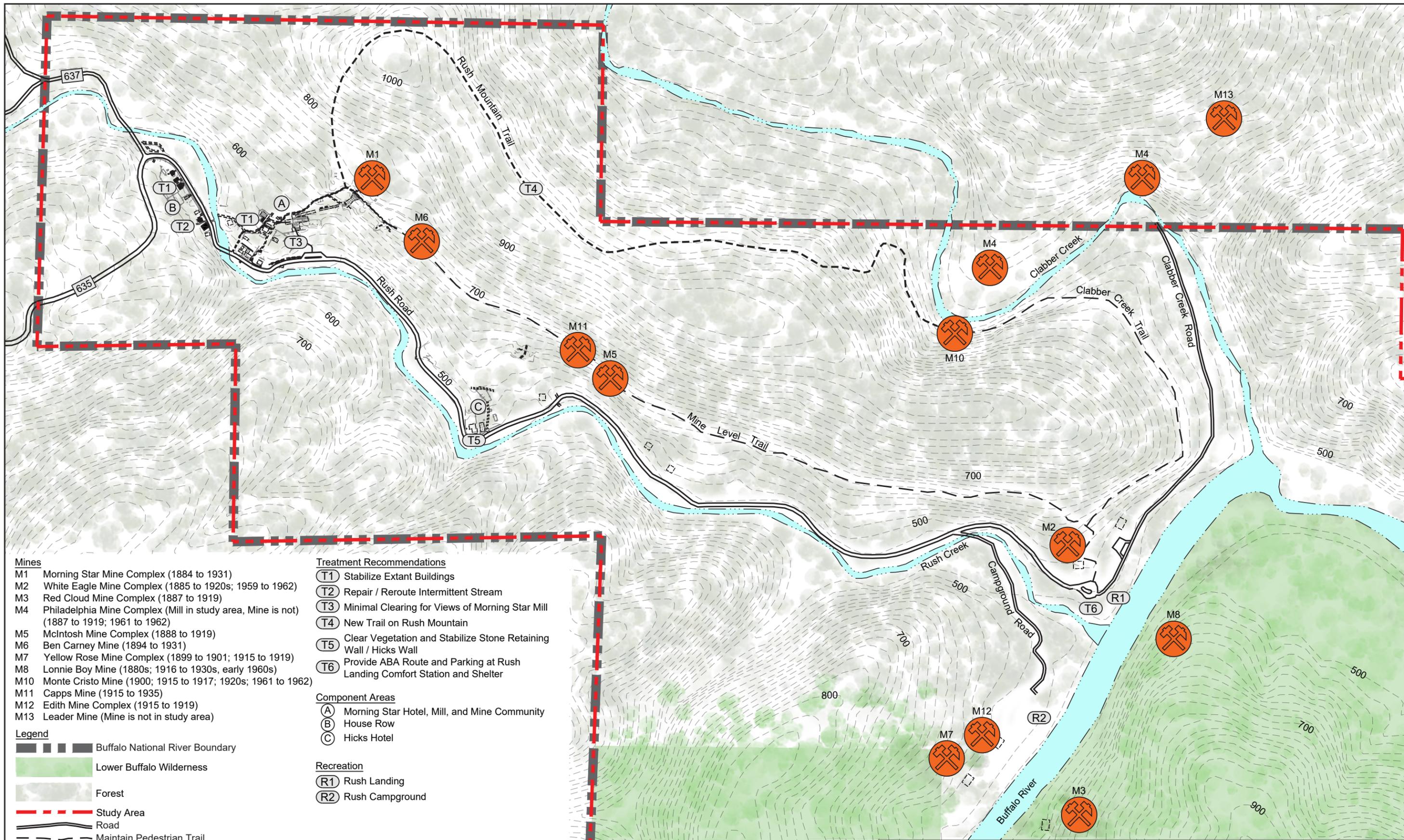
- 2
3 Rush Historic District’s contributing
4 roads and trails would be preserved and
5 would function as they do currently. Minor
6 modifications would be made to provide
7 universal accessibility to visitor facilities and
8 to improve visitor experience.
9
- 10 • Contributing roads and trails would be
11 preserved in alignment, width, scale
12 and materials. Roads would continue to
13 provide shared vehicular and pedestrian
14 access as occurs currently. Roads would
15 not be widened or extensively modified.
16 Pedestrian only trails would continue to
17 be for pedestrian use.
18
 - 19 • Mine Level Trail would be preserved
20 along its current alignment. Repairs
21 would be made as needed.
22
 - 23 • An ABAAS pedestrian route and parking
24 would be added for universal accessibility
25 to the existing comfort station and shelter
26 at Rush Landing.
27
 - 28 • The existing boat ramp and parking
29 adjacent to Buffalo River would remain
30 and continue to provide river access for
31 visitors.
32
 - 33 • A new trail, Rush Mountain Trail, would
34 be built to provide a loop route for
35 pedestrians on Rush Mountain. The trail
36 would connect Monte Cristo Mine (M10)
37 with Morning Star Mine Complex (M1).
38
 - 39 • One ABAAS parking space, set parallel
40 to Rush Road, would be provided along
41 House Row. Associated interpretive
42 information would be provided.
43
44
45
46

47 Buildings and Structures/Ruins

- 48
49 Buildings and structures/ruins include those
50 in the study area, Morning Star Hotel, Mill,
51 and Mine Community, House Row, and Hicks
52 Hotel. Extant contributing buildings would be
53 preserved and repaired, but no visitor access
54 would be provided. Structures and ruins
55 would be preserved and protected through
56 some stabilization but would not be repaired
57 for use or access.
58
- 59 • Contributing buildings within the
60 Morning Star Hotel, Mill, and Mine
61 Community—Rush Smelter and Rush
62 Blacksmith Shop—would be preserved
63 and stabilized. Buildings would be
64 structurally stabilized and exterior
65 finishes (i.e. roofing and wood siding)
66 would be repaired/replaced to provide a
67 weatherproof enclosure.
68
 - 69 • Drainage would be rerouted away from
70 Buildings and Structures/Ruins. The
71 intermittent stream would be rerouted
72 away from the buildings and structures on
73 House Row to protect extant contributing
74 features.
75
 - 76 • Building ruins, including concrete
77 foundations and walls of Hicks Hotel,
78 other building foundations, chimneys
79 and other masonry elements and other
80 remnants, would have basic stabilization
81 and repair work completed in-situ to
82 elongate the lifespan of the feature. These
83 structures would not be fully rehabilitated
84 or restored.
85
- ## 86 Small Scale Features
- 87
88 Contributing small scale features would be
89 preserved, Small scale features needed for
90 visitor wayfinding and interpretation would
91 be added in select locations.
92

1 • Extant contributing small scale features,	47 • Minimal vegetation clearing would be
2 the ore cart, remnant fencing, and stone	48 completed to define selected views
3 retaining wall, would be preserved. Minor	49 towards Morning Star Mill.
4 repairs would be completed as budgets	50
5 allow.	51
6	52
7 • Extant stone retaining walls would be	53
8 preserved and repaired. Stones would	54
9 be reset, missing stones added, mortar	55
10 repointed, and vegetation removed if it	56
11 threatens the stability of the wall.	57
12	58
13 • Extant walls and foundations at Hicks	59
14 Hotel, including Hicks Wall, would be	60
15 stabilized. Overgrown vegetation would	61
16 be removed to protect the contributing	62
17 wall and steps.	63
18	64
19 • The existing non-contributing fence	65
20 at House Row would be repaired to	66
21 discourage visitor access into the repaired	67
22 domestic spaces and the stabilized	68
23 buildings.	69
24	70
25 Vegetation	71
26	72
27 Some vegetation management would be	73
28 completed to open some historic spaces and	74
29 views now currently obscured by overgrown	75
30 vegetation. Vegetation thinning, clearing and	76
31 pruning would assist in illustrating Rush	77
32 Historic District's pattern of historic mining	78
33 use and development.	79
34	80
35 • Vegetation would be cleared and thinned	81
36 in select locations to reveal historic spaces	82
37 associated with Morning Star Hotel, Mill,	83
38 and Mine Community, House Row, and	84
39 Hicks Hotel.	85
40	86
41 • Existing open spaces would be	87
42 maintained free of extensive trees. These	88
43 spaces include the open field adjacent to	89
44 Rush Smelter and Morning Star Livery	90
45 Barn ruins. Open lawns and shade trees	91
46 would be retained at House Row.	92

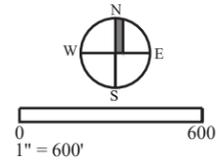
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- Mines**
- M1 Morning Star Mine Complex (1884 to 1931)
 - M2 White Eagle Mine Complex (1885 to 1920s; 1959 to 1962)
 - M3 Red Cloud Mine Complex (1887 to 1919)
 - M4 Philadelphia Mine Complex (Mill in study area, Mine is not) (1887 to 1919; 1961 to 1962)
 - M5 McIntosh Mine Complex (1888 to 1919)
 - M6 Ben Carney Mine (1894 to 1931)
 - M7 Yellow Rose Mine Complex (1899 to 1901; 1915 to 1919)
 - M8 Lonnie Boy Mine (1880s; 1916 to 1930s, early 1960s)
 - M10 Monte Cristo Mine (1900; 1915 to 1917; 1920s; 1961 to 1962)
 - M11 Capps Mine (1915 to 1935)
 - M12 Edith Mine Complex (1915 to 1919)
 - M13 Leader Mine (Mine is not in study area)
- Treatment Recommendations**
- (T1) Stabilize Extant Buildings
 - (T2) Repair / Reroute Intermittent Stream
 - (T3) Minimal Clearing for Views of Morning Star Mill
 - (T4) New Trail on Rush Mountain
 - (T5) Clear Vegetation and Stabilize Stone Retaining Wall / Hicks Wall
 - (T6) Provide ABA Route and Parking at Rush Landing Comfort Station and Shelter
- Component Areas**
- (A) Morning Star Hotel, Mill, and Mine Community
 - (B) House Row
 - (C) Hicks Hotel
- Recreation**
- (R1) Rush Landing
 - (R2) Rush Campground

- Legend**
- Buffalo National River Boundary
 - Lower Buffalo Wilderness
 - Forest
 - Study Area
 - Road
 - Maintain Pedestrian Trail
 - New Pedestrian Trail
 - Creek / River
 - Mine / Mine Complex

Sources:
 USGS 2013 - National Geographic Society,
 Arkansas GIS (<https://gis.arkansas.gov/>),
 Google Maps 2017, Historic Resource
 Documentation Morning Star Mines
 Interpretive Area, Cultural Landscapes
 Inventory 2012



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 BUFFALO NATIONAL RIVER
 ARKANSAS
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TITLE OF PROJECT
**CULTURAL LANDSCAPE REPORT
 AND ENVIRONMENTAL ASSESSMENT**
 TITLE OF DRAWING
NO ACTION ALTERNATIVE - STUDY AREA
 NAME OF PARK
RUSH HISTORIC DISTRICT
 REGION COUNTY STATE
 MIDWEST MARION ARKANSAS

Illustration 4-1.
 4-9

1 **Action Alternative 1**

2
3 *Action Alternative 1* would preserve
4 contributing features and rehabilitate Rush
5 Historic District’s mining setting. This
6 alternative would provide an immersive
7 visitor experience to improve understanding
8 of the scale of the historic mining operations
9 and the community that supported them. The
10 broad extent of the historic mining landscape,
11 primarily within Morning Star Community
12 landscape character area would be revealed,
13 including spaces and features of the mining
14 industry and associated community.

15
16 This alternative would stabilize extant
17 buildings. Circulation features and patterns,
18 small scale features, and vegetation patterns
19 would be repaired. Extant ruins and
20 foundations would be preserved. In Morning
21 Star Community landscape character area,
22 footprints of some non-extant buildings
23 and structures (some foundations remain)
24 would be cleared of vegetation and marked.
25 Vegetation clearing, thinning, and pruning
26 would be completed along roads, at some
27 spoils and tailings piles, and within some
28 domestic spaces to assist in repairing spatial
29 organization. Domestic spaces include those
30 in House Row and at Morning Star Hotel, Mill,
31 and Mine Community, Mine adits, portals, and
32 entrances would be secured. Select locations
33 at portals would be cleared of vegetation and
34 repaired for limited visitor interpretation.

35
36 Existing visitor facilities would remain and
37 be improved for universal accessibility. A trail
38 extension would be added on Rush Mountain
39 (Rush Mountain Trail), and improvements
40 made to day use facilities and parking at the
41 confluence of Clabber Creek with Buffalo
42 River.

43
44 Action alternative 1 would follow a
45 rehabilitation approach. Repair and
46 improvement projects identified by the

47 no action alternative would be included.
48 Additional actions would be undertaken
49 to more fully rehabilitate the historic
50 mining setting, particularly in Morning Star
51 Community landscape character area.

52
53 This section describes actions that would be
54 undertaken for the study area first, followed
55 by actions that would relate to Morning Star
56 Community landscape character area. Actions
57 are described by landscape characteristic and
58 include cluster arrangement and topography,
59 circulation, mines and mines complexes, small
60 scale features, vegetation, and buildings and
61 structures. Archeological sites, and ABAAS
62 compliance are described under common to
63 all alternatives.

64
65 **Study Area**

66
67 Cluster Arrangement, Topography, and Spatial
68 Organization

69
70 Rush Historic District’s distinct pattern of
71 development of mines and mine complexes
72 and associated communities would be
73 preserved. Measures would be taken to more
74 fully reveal, and mark selected spaces.

75
76 • The historic development pattern of Rush
77 Historic District would be preserved by
78 protecting extant contributing features
79 and by removing vegetation from
80 historically open spaces.

81
82 • Spaces associated with Morning Star
83 Community landscape character area
84 would be repaired through vegetation
85 thinning or removal to better articulate
86 the mass and scale of each historic space,
87 and to reestablish historic views or
88 relationships.

89
90 • Mines and mine complexes on the east
91 side of Buffalo River would be protected.
92 Features associated Red Cloud Mine

1 Complex (M3), Lonnie Boy Mine (M5),
2 and Silver Hollow Mine (M9) would be
3 obscured. No visual or physical access
4 would be allowed.

6 Circulation

7
8 Rush Historic District's contributing roads
9 and trails would be preserved and would
10 function as they do currently. Modifications
11 would be made to improve visitor access and
12 experience at Rush Landing, Clabber Creek
13 Road and Trail, New White Eagle Mill and
14 Yellow Rose Mine Complex (M7) and Edith
15 Mine Complex (M12). Improvements would
16 include universal accessibility to existing
17 visitor facilities, and to selected areas where
18 views of mill ruins would be visible.

19
20 • Contributing roads and trails would be
21 preserved in alignment, width, scale
22 and material. Roads would continue to
23 provide shared vehicular and pedestrian
24 access as occurs currently. Roads would
25 not be widened or extensively modified.
26 Pedestrian only trails would continue to
27 be for pedestrian use.

28
29 • Mine Level Trail would be preserved
30 along its current alignment. Repairs
31 would be made as needed.

32
33 • An ABAAS pedestrian route and parking
34 would be added for universal accessibility
35 to the existing comfort station and shelter
36 at Rush Landing.

37
38 • A new pedestrian trail to Yellow Rose
39 Mine Complex (M7) and Edith Mine
40 Complex (M12) would be built to provide
41 an ABAAS compliant route.

42
43 • The existing boat ramp and parking at
44 Buffalo River would remain and continue
45 to provide river access for visitors.

46

47 • A new trail would be built as Rush
48 Mountain Trail to provide a loop route for
49 pedestrians on Rush Mountain. The new
50 trail would connect Monte Cristo Mine
51 (M10) with Morning Star Mine (M1).

52

53 • Parking and access would be improved
54 at New White Eagle Mill for additional
55 day use. A new trail would be added to
56 connect improved visitor parking to Mine
57 Level Trail.

58

59 • Clabber Creek Road would be improved
60 for day use, which occurs informally now.
61 Parking and a vehicular turn-around
62 with a gate would be added near the
63 confluence of Clabber Creek and Buffalo
64 River, along with picnicking and day use.
65 Clabber Creek Road north of the gate
66 would be modified to become Clabber
67 Creek Road Trail, a pedestrian only
68 trail from the improved parking to the
69 connection with Clabber Creek Trail.

70

71 Mines and Mine Complexes

72

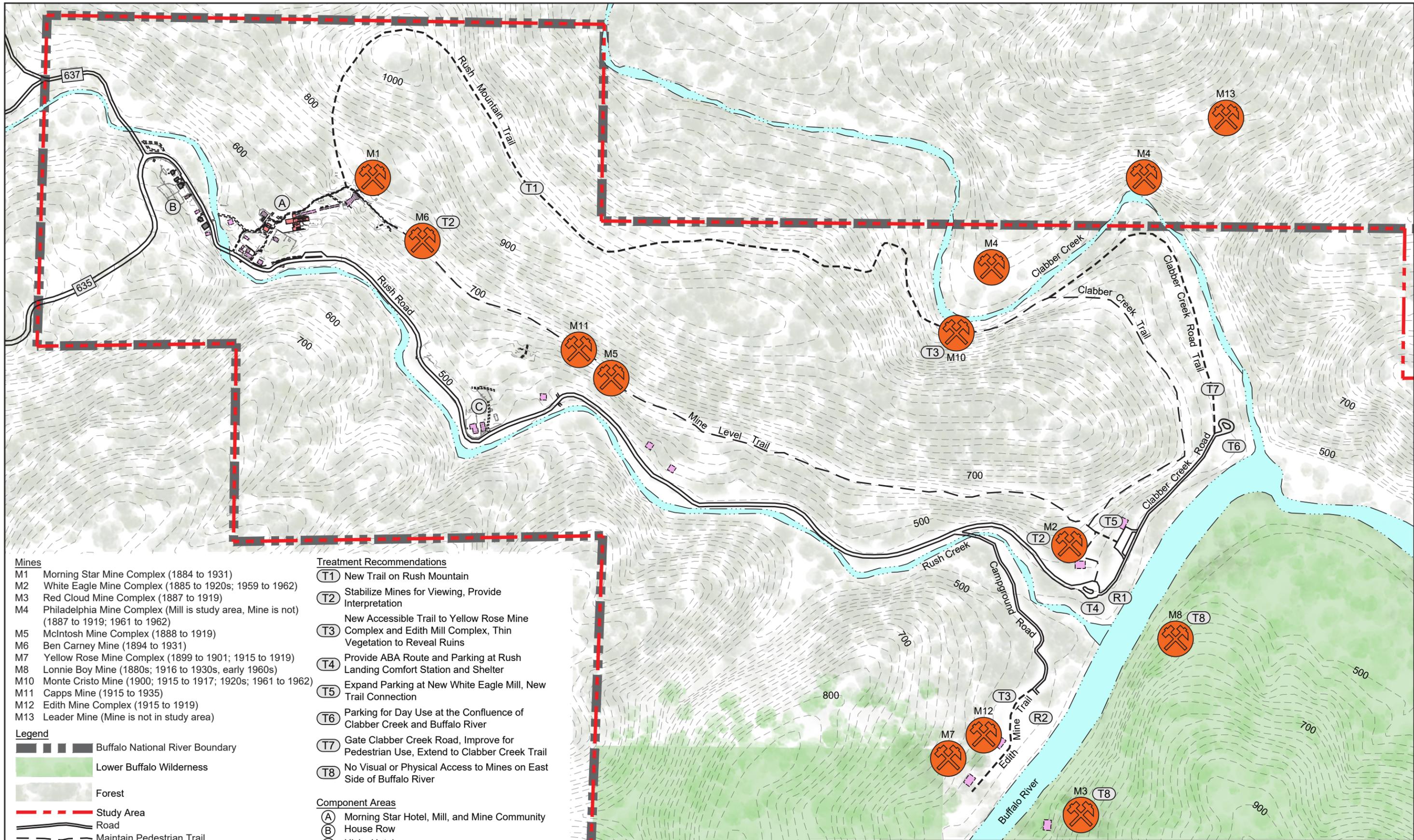
73 Actions related to mines and mine complexes
74 are described under common to all
75 alternatives. These actions would include
76 ensuring all are closed with no physical
77 access; adits, portals, and entrances with
78 metal grates would remain and select mines
79 would be allowed to be visible as determined
80 by the park. Measure to protect mining
81 resources including spoils and tailings piles,
82 and measures to protect visitors would be
83 included. Mines and mine complexes on the
84 east side of Buffalo River in the Lower Buffalo
85 Wilderness would be obscured, and no visual
86 or physical access would be allowed.

87

88 • Select mines would be allowed to be
89 visible to Mine Level Trail users. This
90 would include Morning Star Mine open
91 cut. For these, vegetation would be
92 thinned or cleared.

1 • At an adit, portal, or entrance, a low	47	Edith Mine Complex (M12) to reveal
2 barrier would be added, set outside the	48	contributing features, i.e., concrete
3 angle of repose from the face of the adit	49	pier foundations, spaces, views, and
4 or opening. Interpretive and regulatory	50	relationships between mining, access and
5 signage would be included to warn	51	residential living. These mine complexes
6 visitors of hazards.	52	are located near the Lower Buffalo
7	53	Wilderness boundary, any vegetation
8 • At the Morning Star Mine open cut, an	54	clearing would be mindful of the
9 interpretive wayside would be added	55	boundary.
10 to view the full extent of the mining	56	
11 operation.	57 •	No vegetation clearing across the river in
12	58	the Lower Buffalo Wilderness.
13 <u>Small Scale Features</u>	59	
14	60	
15 Contributing small scale features would be	61	
16 preserved, small scale features needed for	62	
17 visitor wayfinding and interpretation would	63	
18 be added in select locations.	64	
19	65	
20 • Extant contributing small scale features,	66	
21 the ore cart, remnant fencing, and stone	67	
22 retaining wall, would be preserved and	68	
23 repaired.	69	
24	70	
25 <u>Vegetation</u>	71	
26	72	
27 Vegetation management would be completed	73	
28 to open and reveal selected historic spaces	74	
29 and views now currently obscured by	75	
30 overgrown vegetation. Vegetation thinning,	76	
31 clearing and pruning would be completed to	77	
32 enhance visitor understanding of the historic	78	
33 mining landscape. This would also assist	79	
34 in repair and preservation of contributing	80	
35 spaces and features.	81	
36	82	
37 • Vegetation would be pruned or thinned	83	
38 with some removal in selected locations	84	
39 to enhance visitor understanding of the	85	
40 historic patterns of the mining landscape,	86	
41 particularly the once open spaces of some	87	
42 mines and mine complexes and associated	88	
43 community development.	89	
44	90	
45 • Vegetation would be thinned in the areas	91	
46 of Yellow Rose Mine Complex (M7) and	92	

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- Mines**
- M1 Morning Star Mine Complex (1884 to 1931)
 - M2 White Eagle Mine Complex (1885 to 1920s; 1959 to 1962)
 - M3 Red Cloud Mine Complex (1887 to 1919)
 - M4 Philadelphia Mine Complex (Mill is study area, Mine is not) (1887 to 1919; 1961 to 1962)
 - M5 McIntosh Mine Complex (1888 to 1919)
 - M6 Ben Carney Mine (1894 to 1931)
 - M7 Yellow Rose Mine Complex (1899 to 1901; 1915 to 1919)
 - M8 Lonnie Boy Mine (1880s; 1916 to 1930s, early 1960s)
 - M10 Monte Cristo Mine (1900; 1915 to 1917; 1920s; 1961 to 1962)
 - M11 Capps Mine (1915 to 1935)
 - M12 Edith Mine Complex (1915 to 1919)
 - M13 Leader Mine (Mine is not in study area)

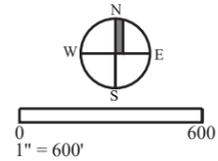
- Legend**
- Buffalo National River Boundary
 - Lower Buffalo Wilderness
 - Forest
 - Study Area
 - Road
 - Maintain Pedestrian Trail
 - New Pedestrian Trail
 - Creek / River
 - Mine / Mine Complex

- Treatment Recommendations**
- (T1) New Trail on Rush Mountain
 - (T2) Stabilize Mines for Viewing, Provide Interpretation
 - (T3) New Accessible Trail to Yellow Rose Mine Complex and Edith Mill Complex, Thin Vegetation to Reveal Ruins
 - (T4) Provide ABA Route and Parking at Rush Landing Comfort Station and Shelter
 - (T5) Expand Parking at New White Eagle Mill, New Trail Connection
 - (T6) Parking for Day Use at the Confluence of Clabber Creek and Buffalo River
 - (T7) Gate Clabber Creek Road, Improve for Pedestrian Use, Extend to Clabber Creek Trail
 - (T8) No Visual or Physical Access to Mines on East Side of Buffalo River

- Component Areas**
- (A) Morning Star Hotel, Mill, and Mine Community
 - (B) House Row
 - (C) Hicks Hotel

- Recreation**
- (R1) Rush Landing
 - (R2) Rush Campground

Sources:
 USGS 2013 - National Geographic Society, Arkansas GIS (<https://gis.arkansas.gov/>), Google Maps 2017, Historic Resource Documentation Morning Star Mines Interpretive Area, Cultural Landscapes Inventory 2012



SEPTEMBER 2018
 UNITED STATES
 DEPARTMENT OF THE INTERIOR
 BUFFALO NATIONAL RIVER
 ARKANSAS
 173/141248

TITLE OF PROJECT
 CULTURAL LANDSCAPE REPORT
 AND ENVIRONMENTAL ASSESSMENT
 TITLE OF DRAWING
 ACTION ALTERNATIVE 1 - STUDY AREA
 NAME OF PARK
 RUSH HISTORIC DISTRICT
 REGION COUNTY STATE
 MIDWEST MARION ARKANSAS
 Illustration 4-2.
 4-15

1 **Morning Star Community Landscape**

2 **Character Area**

3
4 This landscape character area was historically
5 the most intensely developed portion of
6 Rush Historic District. It is comprised of the
7 component areas of Morning Star Hotel, Mill,
8 and Mine Community, House Row, and Hicks
9 Hotel. Collectively, they include the study
10 area's most prominent features related to
11 zinc mining and its associated community
12 development. Morning Star Community
13 landscape character area is also the most
14 easily accessible to visitors.

15
16 This action alternative would provide
17 measures to reveal the broad extent of mining
18 related uses and activities within Morning
19 Star Community landscape character area.
20 Measures would include preservation and
21 repair of contributing features and spaces,
22 and techniques to mark and define these.

23
24 Prominent features of the Morning Star Hotel,
25 Mill, and Mine Community—the ruins of the
26 Morning Star Mill, Morning Star Mine Office,
27 and Chase and Mulholland Store—would be
28 preserved and marked. Rush Blacksmith Shop
29 and Rush Smelter, the only extant buildings in
30 this area, would be preserved and stabilized.
31 All other ruins, foundations, or lesser traces
32 would be preserved.

33
34 Circulation

35
36 Morning Star Community landscape character
37 area's circulation pattern and features would
38 be preserved. Repairs would be made to
39 reestablish historic alignments, materials and
40 character.

- 41
42 • The Morning Star Trail would be relocated
43 to avoid contributing features, ruins,
44 and spaces (Morning Star Mill ruins and
45 Morning Star Mill Retaining Wall). The
46 portion of the Morning Star Trail along

47 Rush Road will be improved to provide
48 better pedestrian access between parking
49 and the Rush Smelter and Morning Star
50 Livery Barn ruins.

- 51
52 • One ABAAS parking space, set parallel
53 to Rush Road, would be provided along
54 House Row. Associated interpretive
55 information would be provided.
56
57 • Vegetation would be removed from
58 contributing roads, and roads repaired to
59 original width and material to function
60 as pedestrian trails. These are currently
61 overgrown with trees and understory.
62 Roads would be soft-surfaced and
63 maintained for pedestrian use only.
64
65 • A wayside or overlook for pedestrians
66 would be provided at the top of the
67 Morning Star Mine Complex spoils.

68
69 Morning Star Hotel, Mill, and Mine
70 Community

71
72 This component area includes the most
73 prominent buildings, features and ruins of
74 Rush Historic District. Morning Star Mill,
75 Morning Star Mine Office, and Morning Star
76 Hotel remain as foundations, ruins and traces.
77 Rush Blacksmith Shop and Rush Smelter are
78 the only extant buildings.

79
80 Spatial Organization

- 81 • The setting of the Morning Star Mill would
82 be repaired and interpreted. Vegetation
83 would be cleared from mill and tramway
84 ruins and some historic building spaces
85 would be identified. Measures could
86 include defining the building footprint
87 by revealing extant foundations or ruins
88 or by marking the footprint with new
89 compatible materials.
90
91 • The setting of the Morning Star Hotel
92 would be repaired and interpreted.



Figure 4-1. For action alternative 1, spaces associated with Morning Star Hotel, Mill, and Mine Community would be repaired through vegetation thinning or removal to better articulate the mass and scale of each historic space, and to reestablish historic views or relationships. (Mundus Bishop 2018)

1 Vegetation would be cleared from
 2 building ruins and the historic building
 3 spaces identified. The foundations of the
 4 non-extant buildings would be marked by
 5 revealing extant foundations or by using
 6 new compatible materials. Vegetation
 7 would be removed from portions of the
 8 pasture around the Morning Star Livery
 9 Barn ruins and the barn foundation would
 10 be marked.

- 12 • A new interpretive wayside would be
 13 added at the Morning Star Trail parking to
 14 view Morning Star Mill ruins and spaces
 15 from below. Mill ruins and tailings pile
 16 would be preserved.

18 Buildings and Structures/Ruins

- 19 • Rush Smelter and Rush Blacksmith Shop
 20 would be preserved. Both buildings would
 21 be structurally stabilized and exterior
 22 finishes would be repaired/replaced to
 23 provide a weatherproof enclosure. Work
 24 on the exterior facades would include
 25 roofing, exterior wall finishes, windows
 26 and doors.

- 28 • Vegetation would be removed at Morning
 29 Star Office ruins and Chase & Mulholland
 30 Store ruins. The historic space would be
 31 repaired through vegetation removal and
 32 repair of contributing features including
 33 the scale pit.

35 Mines and Mine Complexes

36 Actions related to mines and mine complexes
 37 are described under common to all
 38 alternatives. These actions would include
 39 ensuring all are closed with no physical
 40 access; adits, portals, and entrances with
 41 metal grates would remain and select mines
 42 would be allowed to be visible as determined
 43 by the park. Measures to protect mining
 44 resources including spoils and tailings piles,
 45 and measures to protect visitors would be
 46 included. Mines and mine complexes on the

47 east side of Buffalo River would be obscured,
 48 and no visual or physical access would be
 49 allowed.

- 51 • Select mines would be allowed to be
 52 visible to Mine Level Trail users. This
 53 would include providing views into the
 54 Morning Star Mine open cut.

- 56 • At an adit, portal, or entrance, vegetation
 57 would be thinned or cleared and a low
 58 barrier would be added, set outside the
 59 angle of repose from the face of the adit
 60 or opening. Interpretive and regulatory
 61 signage would be included to warn
 62 visitors of hazards.

- 64 • At the Morning Star Mine open cut,
 65 vegetation would be thinned or cleared
 66 and an interpretive wayside/viewing
 67 platform would be added for visitors
 68 to view the full extent of the mining
 69 operation.

71 Small Scale Features

- 72 • Contributing small scale features would
 73 be preserved and repaired. Repair for
 74 contributing stone walls could include
 75 mortar repair, resetting stones or
 76 removing vegetation if it threatens the
 77 wall's stability.

- 79 • Non-contributing small scale features, i.e.,
 80 regulatory or interpretive signs, benches,
 81 kiosk, would remain.

83 Vegetation

- 84 • The open field adjacent to Rush Smelter
 85 and Morning Star Livery Barn ruins would
 86 be repaired. Vegetation would be removed
 87 to identify a portion of field as it appeared
 88 historically.

- 90 • Vegetation would be removed from the
 91 Morning Star Mill ruins.

1 • Vegetation would be pruned, thinned
2 and possibly removed between Morning
3 Star Trail and Morning Star Mill ruins
4 to reestablish the historic spatial
5 relationship and for a better view of the
6 mill from the trail.

7
8 • Vegetation would be pruned, thinned
9 and possibly removed at the site of a new
10 overlook for pedestrians at the top of
11 Morning Star Mine spoils pile. This would
12 provide a view of the valley below and
13 reestablish historic spatial relationships.

14 15 House Row

16
17 House Row represents a community that
18 supported mining operations within Rush
19 Historic District. Its five extant buildings,
20 multiple building and structure ruins, and
21 domestic spaces provide the best and most
22 easily accessed historic mining community
23 within the study area.

24 25 Spatial Organization

26 • The arrangement of buildings, structures,
27 roads and vegetation within House Row
28 would be preserved.

29
30 • Buildings would be repaired, structures
31 stabilized, and vegetation managed within
32 domestic spaces to reestablish the spatial
33 arrangement and relationships that
34 existed historically.

35 36 Circulation

37 • One ABAAS parking space, set parallel
38 to Rush Road, would be provided along
39 House Row. Associated interpretive
40 information would be provided.

41 42 Buildings and Structures/Ruins

43 • The five extant buildings within House
44 Row would be preserved and stabilized.
45 Buildings would be structurally stabilized
46 and roofing and exterior finishes would

47 be repaired/replaced to provide a
48 weatherproof enclosure. Exterior facade
49 work would include rehabilitation of the
50 windows and doors. No physical access
51 will be allowed into the interior of any of
52 the structures.

53
54 • Building ruins would have basic
55 stabilization and repair work completed
56 in-situ to elongate the lifespan of the
57 feature. These structures would not be
58 fully rehabilitated or restored.

59
60 • The existing intermittent stream would
61 be rerouted away from buildings and
62 structures on House Row. All other
63 drainage patterns would be routed away
64 from contributing features.

65 66 Small Scale Features

67 • Contributing small scale features would
68 be preserved and repaired. These features
69 include a shed, root cellar, chicken house,
70 goose house, multiple privy ruins, trash
71 piles, and a mailbox shelter.

72
73 • Non-contributing small scale features, i.e.,
74 regulatory or interpretive signs, benches,
75 kiosk, would remain.

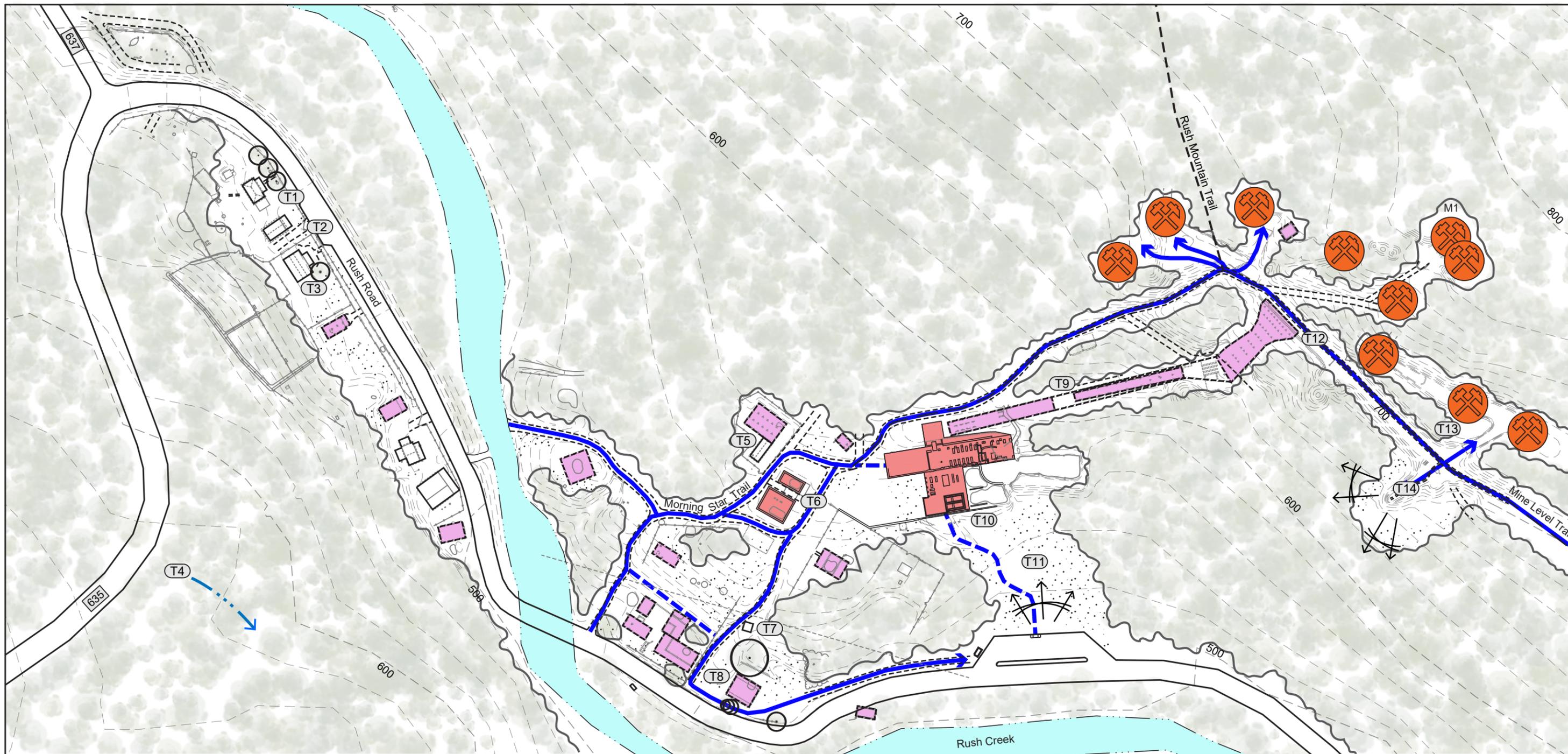
76
77 • A new compatible fence or low barrier
78 would replace the current non-
79 contributing fence to discourage visitor
80 access into the repaired domestic spaces
81 and the stabilized buildings.

82 83 Vegetation

84 • House Row's characteristic open lawns
85 with shade trees would be preserved.
86 Vegetation would be removed where
87 it obscures building and structure
88 foundations and ruins. Extant ornamental
89 plants would be preserved and
90 maintained.

- 1 • The domestic setting of House Row
2 would be repaired through vegetation
3 management. Historic patterns of open
4 domestic spaces where residents planted
5 gardens and pastures and keep animals
6 would be repaired. Vegetation would be
7 removed behind buildings and structures,
8 up to the toe of the existing slope, to
9 reveal these historic spaces. Vegetation
10 would be removed from building and
11 structure foundations.
12
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Treatment Recommendations

- (T1) Preserve Lawn and Shade Trees
- (T2) Accessible Parking
- (T3) Stabilize / Rehabilitate Structures at House Row
- (T4) Stabilize / Reroute Intermittent Stream
- (T5) Stabilize Blacksmith Shop
- (T6) Reveal Morning Star Mine Office and Chase and Mulholland Store Ruins and Rehabilitate Scale Pit
- (T7) Stabilize Smelter
- (T8) Thin Vegetation to Re-Establish Pasture / Domestic / Yard Space
- (T9) Mark Tramway
- (T10) Stabilize / Repair Stone Walls
- (T11) Preserve Tailings Pile for View of Mill
- (T12) Preserve Route of Mine Level Trail
- (T13) Thin Vegetation and Provide Viewing Platform to View Morning Star Mine Open Cut
- (T14) Thin Vegetation at Spoils Pile for Overlook

Legend

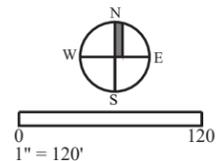
- Road
- Pedestrian Trail
- Pedestrian Trail to Remove
- Creek / River
- Mine / Mine Complex
- Extant Building to Stabilize
- Building Ruins to Preserve/ Stabilize/Repair
- Building Ruins to Mark
- Road Trace to Preserve
- Remnant Feature
- Edge of Forest

Mines

M1 Morning Star Mine Complex (1884 to 1931)

Sources:

USGS 2013 - National Geographic Society, Arkansas GIS (<https://gis.arkansas.gov/>), Google Maps 2017, Historic Resource Documentation Morning Star Mines Interpretive Area, Cultural Landscapes Inventory 2012



SEPTEMBER 2018
UNITED STATES DEPARTMENT OF THE INTERIOR BUFFALO NATIONAL RIVER ARKANSAS
173/141248

TITLE OF PROJECT CULTURAL LANDSCAPE REPORT AND ENVIRONMENTAL ASSESSMENT			Illustration 4-3.
TITLE OF DRAWING ACTION ALTERNATIVE 1 - MORNING STAR HOTEL, MILL, AND MINE COMMUNITY, AND HOUSE ROW			
NAME OF PARK RUSH HISTORIC DISTRICT			
REGION MIDWEST	COUNTY MARION	STATE ARKANSAS	4-23

1 Hicks Hotel

2

3 The site of Hicks Hotel and Hicks General
4 Store would be preserved and repaired. The
5 site includes building ruins, extant small scale
6 features, and ornamental vegetation.

7

8 Spatial Organization

9 • The setting of Hicks Hotel and Hicks
10 General Store ruins would be preserved
11 and repaired by removing by vegetation
12 from building ruins.

13

14 • Ornamental vegetation associated
15 with Hicks Hotel would be preserved
16 and augmented with new plantings to
17 maintain the historic character. Vegetation
18 not associated with the garden would be
19 removed.

20

21 Buildings and Structures/Ruins

22 • Building ruins would have basic
23 stabilization and repair work completed
24 in-situ to elongate the lifespan of the
25 extant ruin. These features would not be
26 fully rehabilitated or restored.

27

28 Small Scale Features

29 • Contributing features including the Stone
30 Flower Bed, and Hicks Wall would be
31 preserved and repaired.

32

33 Vegetation

34 • Vegetation would be removed to reveal
35 historic buildings spaces and contributing
36 features including ruins, foundations, and
37 the historic garden.

38

39

40

41

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43

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46



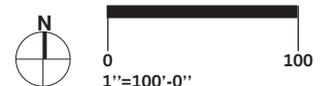
Treatment Recommendations

- (T1) Vegetation Management
- (T2) Stabilize/Repair Hicks Wall
- (T3) Repair Historic Garden Setting of Hicks Hotel
- (T4) Stabilize Brick Walkway

Legend

- Road
- Creek / River
- Building Ruins to Preserve/
Stabilize/Repair
- Forest Edge

Figure 4-2. For action alternative 1, the site of Hicks Hotel and Hicks General Store would be preserved and repaired. The site includes building ruins, extant small scale features, and ornamental vegetation. (Mundus Bishop 2018)



(Mundus Bishop 2017, USGS 2013 - National Geographic Society, Arkansas GIS (<https://gis.arkansas.gov/>), Google Maps 2017, Historic Resource Documentation Morning Star Mines Interpretive Area, Cultural Landscapes Inventory 2012)



Figure 4-3. Vegetation will be removed to reveal the historic garden setting at Hicks Hotel. (Kastning 1999, <http://uark.maps.arcgis.com/apps/MapJournal/index.html?appid=c513b4f4e17b475092eac332ee5c9d59>)

1 **Action Alternative 2**

2
3 *Action Alternative 2* would repair contributing
4 features and the historic setting to the
5 greatest extent possible. This alternative
6 would reveal the broadest extent of the
7 historic mining industry and associated
8 community encompassing the entire study
9 area. As more of the historic mining landscape
10 is revealed, more opportunities would be
11 created to fully immerse visitors in the
12 entirety of historic mining operations and the
13 community.

14
15 Building ruins would be cleared of vegetation,
16 stabilized and marked. Taylor-Medley General
17 Store would be repaired, and the front porch
18 improved for visitor access onto the porch
19 only. Footprints of most non-extant buildings
20 and structures, of which some foundations
21 remain, would be cleared of vegetation
22 and marked. Extant ruins and foundations
23 would be preserved and repaired. Additional
24 vegetation would be removed, thinned or
25 pruned along roads, at spoils and tailings
26 piles, and within domestic spaces. Mine adits,
27 portals, and entrances would be secured with
28 many cleared of vegetation for limited visitor
29 interpretation.

30
31 Existing visitor facilities would remain and
32 be improved for universal accessibility. A trail
33 extension would be added on Rush Mountain
34 (Rush Mountain Trail), and improvements
35 made to the day use facilities and parking at
36 the confluence of Clabber Creek with Buffalo
37 River.

38
39 Action alternative 2 would follow a
40 rehabilitation approach. It would include
41 repair and improvement projects identified
42 by the no action alternative and would
43 provide additional actions to rehabilitate
44 the historic mining setting to the greatest
45 extent possible. Modifications to existing
46 conditions would be the most extensive in
47 this alternative.

48 This section describes actions that would be
49 undertaken for the study area first, followed
50 by actions that would relate to Morning Star
51 Community landscape character area. Actions
52 are described by landscape characteristic and
53 include cluster arrangement and topography,
54 circulation, buildings and structures/ruins,
55 mines and mine complexes, small scale
56 features and vegetation. Natural systems and
57 features, land use, and archeological sites are
58 described under common to all alternatives.

59

60 **Study Area**

61

62 Cluster Arrangement, Topography, and Spatial
63 Organization

64

65 Rush Historic District's distinct pattern of
66 development of mines and mine complexes
67 and associated communities would be
68 preserved. Measures would be taken to fully
69 reveal and mark historic features and spaces.

70

71 • The historic development pattern of Rush
72 Historic District would be preserved by
73 protecting extant contributing features
74 and by removing vegetation from
75 historically open spaces.

76

77 • Spaces associated with mines and mine
78 complexes would be repaired through
79 vegetation thinning or removal to better
80 articulate the mass and scale of each
81 historic space, and to reestablish historic
82 views or relationships.

83

84 Circulation

85

86 Rush Historic District's contributing roads
87 and trails would be preserved and would
88 function as they do currently. Modifications
89 would be made to improve visitor access and
90 experience at Rush Landing, Clabber Creek
91 Road and Trail, New White Eagle Mill, and
92 Yellow Rose Mine Complex (M7) and Edith
93 Mine Complex (M12). Improvements would

- 1 include universal accessibility to existing
 2 visitor facilities, and to selected areas where
 3 views of mill ruins would be visible.
 4
- 5 • Contributing roads and trails would be
 6 preserved in alignment, width, scale
 7 and material. Roads would continue to
 8 provide shared vehicular and pedestrian
 9 access as occurs currently. Roads would
 10 not be widened or extensively modified.
 11 Pedestrian trails would continue to be for
 12 pedestrian use only.
 13
 - 14 • Mine Level Trail would be preserved
 15 along its current alignment. Repairs
 16 would be made as needed. The trail at
 17 selected mine portals would be improved
 18 and interpretive and regulatory signage
 19 added.
 20
 - 21 • An ABAAS pedestrian route and parking
 22 would be added for universal accessibility
 23 to the existing comfort station and shelter
 24 at Rush Landing.
 25
 - 26 • A new pedestrian trail to Yellow Rose
 27 Mine Complex (M7) and Edith Mine
 28 Complex (M12) would provide a route
 29 with very little elevation change to be as
 30 accessible as possible. Due to frequent
 31 flood events a fully ABAAS compliant
 32 route may not be possible..
 33
 - 34 • The existing boat ramp and parking at
 35 Buffalo River would remain and continue
 36 to provide river access for visitors.
 37
 - 38 • A new trail would be built as Rush
 39 Mountain Trail to provide a loop route for
 40 pedestrians on Rush Mountain. The new
 41 trail would connect Monte Cristo Mine
 42 (M10) with Morning Star Mine (M1).
 43
 - 44 • Parking and access would be improved
 45 at New White Eagle Mill for additional
 46 day use. A new trail would be added to
 47 connect visitor parking to Mine Level
 48 Trail.
 49
 - 50 • Clabber Creek Road would be improved
 51 for day use, which occurs informally now.
 52 Parking with a vehicular turn-around /
 53 gate would be added near the Clabber
 54 Creek and Buffalo River confluence, along
 55 with picnicking and day use. Clabber
 56 Creek Road north of the gate would be
 57 a pedestrian only trail from here to the
 58 connection with Clabber Creek Trail.
 59 Improvements would be limited due to
 60 frequent flooding.
 61
 - 62 • An accessible trail would be added for
 63 pedestrian use from the campground
 64 to Edith Mill ruins and Yellow Rose Mill
 65 ruins. A small footbridge would be added
 66 to cross an intermittent creek. This route
 67 would provide an equitable experience
 68 for all visitors to view the mill ruins and
 69 historic mining landscape. This route
 70 would more easily access the mill ruins,
 71 then other mills.
 72
- 73 Mines and Mine Complexes
 74
- 75 Actions related to mines and mine complexes
 76 are described under common to all
 77 alternatives. These actions would include
 78 ensuring all mine entrances are closed
 79 with no physical access; adits, portals, and
 80 entrances with metal grates would remain
 81 and select mine would be allowed to be
 82 visible as determined by the park. Measures
 83 to protect mining resources including spoils
 84 and tailings piles, and measures to protect
 85 visitors would be included. Mines and mine
 86 complexes on the east side of Buffalo River
 87 would be obscured, and no visual or physical
 88 access would be allowed.
 89
- 90 • Select mines would be allowed to be
 91 visible to Mine Level Trail users, including
 92 Morning Star Mine open cut.

- 1 • At an adit, portal, or entrance, vegetation
2 would be thinned or cleared and a low
3 barrier would be added, set outside the
4 angle of repose from the face of the adit
5 or opening. Interpretive and regulatory
6 signage would be included to warn
7 visitors of hazards.

8

9 Small Scale Features

10

11 Contributing small scale features would be
12 preserved, small scale features needed for
13 visitor wayfinding and interpretation would
14 be added in select locations.

15

- 16 • Extant contributing small scale features,
17 the ore cart, remnant fencing, and stone
18 retaining wall, would be preserved.

19

20 Vegetation

21

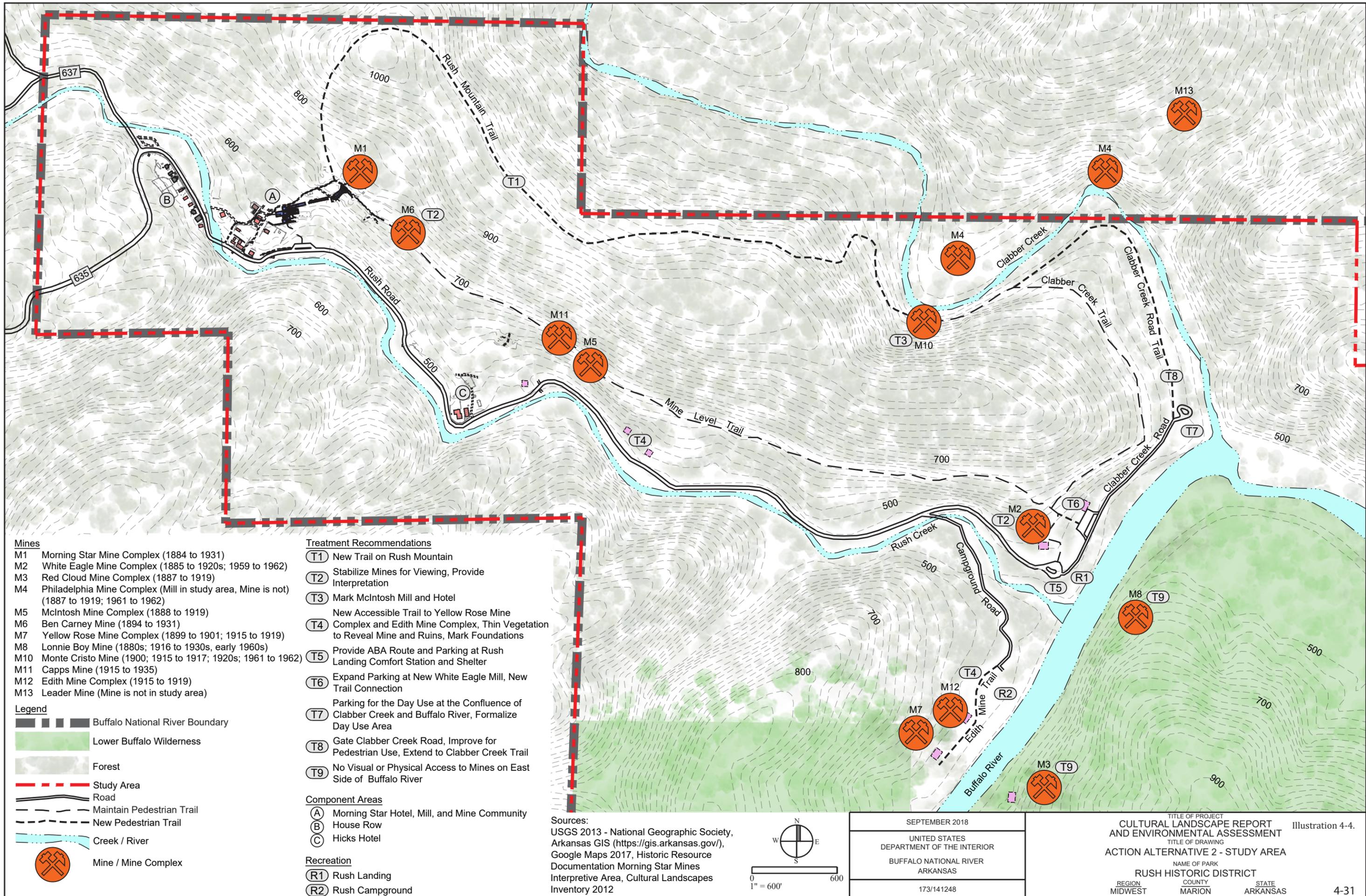
22 Vegetation management would be completed
23 to open and reveal historic spaces and views
24 now currently obscured by overgrown
25 vegetation. Vegetation thinning, clearing and
26 pruning would be completed to enhance
27 visitor understanding of the entirety of the
28 historic mining landscape. This would assist
29 in repair and preservation of contributing
30 spaces and features.

31

- 32 • Vegetation would be pruned or thinned
33 with some removal in historically open
34 spaces to enhance visitor understanding
35 of the mining landscape's historic
36 patterns. The once open spaces of mines
37 and mine complexes would be repaired
38 through vegetation management as would
39 the historic spaces of the associated
40 community.

41

- 42 • Vegetation would be thinned to reveal
43 contributing features, i.e., foundations,
44 ruins and spaces, and views and
45 relationships between mining, access, and
46 residential living.

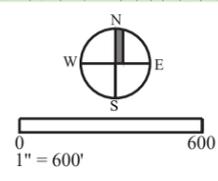


- Mines**
- M1 Morning Star Mine Complex (1884 to 1931)
 - M2 White Eagle Mine Complex (1885 to 1920s; 1959 to 1962)
 - M3 Red Cloud Mine Complex (1887 to 1919)
 - M4 Philadelphia Mine Complex (Mill in study area, Mine is not) (1887 to 1919; 1961 to 1962)
 - M5 McIntosh Mine Complex (1888 to 1919)
 - M6 Ben Carney Mine (1894 to 1931)
 - M7 Yellow Rose Mine Complex (1899 to 1901; 1915 to 1919)
 - M8 Lonnie Boy Mine (1880s; 1916 to 1930s, early 1960s)
 - M10 Monte Cristo Mine (1900; 1915 to 1917; 1920s; 1961 to 1962)
 - M11 Capps Mine (1915 to 1935)
 - M12 Edith Mine Complex (1915 to 1919)
 - M13 Leader Mine (Mine is not in study area)

- Legend**
- Buffalo National River Boundary
 - Lower Buffalo Wilderness
 - Forest
 - Study Area
 - Road
 - Maintain Pedestrian Trail
 - New Pedestrian Trail
 - Creek / River
 - Mine / Mine Complex

- Treatment Recommendations**
- T1 New Trail on Rush Mountain
 - T2 Stabilize Mines for Viewing, Provide Interpretation
 - T3 Mark McIntosh Mill and Hotel
 - T4 New Accessible Trail to Yellow Rose Mine Complex and Edith Mine Complex, Thin Vegetation to Reveal Mine and Ruins, Mark Foundations
 - T5 Provide ABA Route and Parking at Rush Landing Comfort Station and Shelter
 - T6 Expand Parking at New White Eagle Mill, New Trail Connection
 - T7 Parking for the Day Use at the Confluence of Clabber Creek and Buffalo River, Formalize Day Use Area
 - T8 Gate Clabber Creek Road, Improve for Pedestrian Use, Extend to Clabber Creek Trail
 - T9 No Visual or Physical Access to Mines on East Side of Buffalo River
- Component Areas**
- A Morning Star Hotel, Mill, and Mine Community
 - B House Row
 - C Hicks Hotel
- Recreation**
- R1 Rush Landing
 - R2 Rush Campground

Sources:
 USGS 2013 - National Geographic Society, Arkansas GIS (<https://gis.arkansas.gov/>), Google Maps 2017, Historic Resource Documentation Morning Star Mines Interpretive Area, Cultural Landscapes Inventory 2012



SEPTEMBER 2018
 UNITED STATES
 DEPARTMENT OF THE INTERIOR
 BUFFALO NATIONAL RIVER
 ARKANSAS
 173/141248

TITLE OF PROJECT
 CULTURAL LANDSCAPE REPORT
 AND ENVIRONMENTAL ASSESSMENT
 TITLE OF DRAWING
 ACTION ALTERNATIVE 2 - STUDY AREA
 NAME OF PARK
 RUSH HISTORIC DISTRICT
 REGION COUNTY STATE
 MIDWEST MARION ARKANSAS
 Illustration 4-4.
 4-31

1 **Morning Star Community Landscape**

2 **Character Area**

3
4 This action alternative would provide
5 measures to reveal the full extent of mining
6 related uses and activities within Morning
7 Star Community landscape character area.
8 Measures would include preservation and
9 repair of contributing features and spaces,
10 and techniques to mark and define these.

11
12 Prominent features of the Morning Star Hotel,
13 Mill, and Mine Community—the ruins of the
14 Post Office, Barn, Morning Star Hotel, Lyons
15 House, Morning Star Livery Barn, Courthouse
16 Site, Doctor's/Maxey House, Morning Star
17 Mill Pumphouse Ruins, Warehouse, Chase and
18 Mulholland Store, Morning Star Mine Office
19 Ruins, Oil Storage House, Smith House Ruins
20 Morning Star Mill and Tramway—would be
21 preserved and marked. Rush Blacksmith Shop
22 and Rush Smelter, the only extant buildings,
23 would be preserved and stabilized.

24
25 Circulation

26
27 Morning Star Community landscape character
28 area's circulation pattern and features would
29 be preserved. Repairs would be made to
30 reestablish historic alignments, materials and
31 character.

- 32
- 33 • The Morning Star Trail would be relocated
34 to avoid contributing features, ruins,
35 and spaces (Morning Star Mill ruins and
36 Morning Star Mill Retaining Wall). The
37 portion of the Morning Star Trail along
38 Rush Road will be improved to provide
39 better pedestrian access between parking
40 and the Rush Smelter and Morning Star
41 Livery Barn ruins.
 - 42
 - 43 • Vegetation would be removed from
44 contributing roads, and roads repaired to
45 original width and material to function
46 as pedestrian trails. These are currently

47 overgrown with trees and understory.
48 Roads would be soft-surfaced and
49 maintained for pedestrian use only.

50
51 • A wayside or overlook for pedestrians
52 would be provided at the top of the spoils
53 pile at the Morning Star Mine Complex
54 (M1).

55
56 • Parking would be added at Hicks Hotel.
57

58 Morning Star Hotel, Mill, and Mine
59 Community

60
61 This component area includes the most
62 prominent buildings, features, and ruins of
63 Rush Historic District. The Post Office, Barn,
64 Morning Star Hotel, Lyons House, Morning
65 Star Livery Barn, Courthouse Site, Doctor's/
66 Maxey House, Morning Star Mill Pumphouse
67 Ruins, Warehouse, Chase and Mulholland
68 Store, Morning Star Mine Office Ruins, Oil
69 Storage House, Smith House Ruins Morning
70 Star Mill and Tramway would be preserved
71 in-situ as foundations, ruins and traces. Rush
72 Blacksmith Shop and Rush Smelter are the
73 only extant buildings.

74
75 Spatial Organization

- 76 • The setting of the Morning Star Mill would
77 be repaired and interpreted. Vegetation
78 would be cleared from mill and tramway
79 ruins and historic building spaces
80 would be identified. Measures could
81 include defining the building footprint
82 by revealing extant foundations or ruins
83 or by marking the footprint with new
84 compatible materials. A 3-dimensional
85 frame could be built of simple, compatible
86 materials to mark the mass, scale and
87 frame of the non-extant mill building and
88 tramway.
- 89
- 90 • The setting of the Morning Star Hotel
91 would be repaired and interpreted.
92 Vegetation would be cleared from



Figure 4-4. For action alternative 2, the setting of the Morning Star Hotel would be repaired and interpreted. Vegetation would be cleared from building ruins and the historic building space identified. The foundations of the non-extant building would be marked by revealing extant foundations or by using new compatible materials. (Mundus Bishop 2018)

1 building ruins and the historic building
2 spaces identified. The foundations of
3 non-extant buildings would be marked by
4 revealing extant foundations or by using
5 new compatible materials.

6
7 • Vegetation would be removed from the
8 pasture around Morning Star Livery Barn
9 ruins. The barn foundation would be
10 marked.

11
12 • A new interpretive wayside would be
13 added at the Morning Star Trail parking to
14 view Morning Star Mill ruins and spaces
15 from below. Mill ruins and tailings pile
16 would be preserved.

17
18 • All historically open areas including non-
19 extant buildings and structures, pastures
20 or mines and mine complexes would be
21 cleared of most vegetation.

22

23 Buildings and Structures/Ruins

24 • Rush Smelter and Rush Blacksmith Shop
25 would be preserved. Preservation of the
26 masonry smelter would address the plant
27 growth on the structure and areas of
28 deteriorated mortar and damaged stone.
29 Work on Rush Blacksmith Shop would
30 structurally stabilize the building and
31 repair the roofing and exterior finishes to
32 create a waterproof enclosure. Windows
33 and doors at Rush Blacksmith Shop would
34 also be rehabilitated.

35
36 • Vegetation would be removed at Morning
37 Star Office ruins and Chase & Mulholland
38 Store ruins. The historic building spaces
39 of each would be repaired through this
40 vegetation removal and through repair of
41 contributing features including the pit.

42
43 • The building foundations of McIntosh Mill
44 and Hotel and all non-extant buildings
45 would be stabilized and marked.

46

47 Mines and Mine Complexes

48 • Select mines would be allowed to be
49 visible to Mine Level Trail users. This
50 would include providing views into the
51 Morning Star Mine open cut.

52

53 • At an adit, portal, or entrance, vegetation
54 would be thinned or cleared and a low
55 barrier would be added, set outside the
56 angle of repose from the face of the adit
57 or opening. Interpretive and regulatory
58 signage would be included to warn
59 visitors of hazards.

60

61 • At the Morning Star Mine open cut,
62 vegetation would be thinned or cleared
63 and an interpretive wayside/viewing
64 platform would be added for visitors
65 to view the full extent of the mining
66 operation.

67

68 Small Scale Features

69 • Contributing small scale features would
70 be preserved and repaired. Repair for
71 contributing stone walls could include
72 mortar repair, resetting stones or
73 removing vegetation if it threatens the
74 wall's stability.

75

76 • Non-contributing small scale features, i.e.,
77 regulatory or interpretive signs, benches,
78 kiosk, would remain.

79

80 Vegetation

81 • The open field adjacent to Rush Smelter
82 and Morning Star Livery Barn ruins would
83 be repaired. Vegetation would be removed
84 to fully identify the scale and size of the
85 field as it appeared historically.

86

87 • Vegetation would be removed from the
88 Morning Star Mill ruins and the tramway,
89 and from the ruins in the Morning Star
90 Hotel, Mill, and Mine Community to reveal
91 the full extent of extant features and to
92 mark historic foundations.

- 1 • Vegetation would be removed at Morning
2 Star Office ruins and Chase & Mulholland
3 Store ruins to re-establish it as a building
4 space. The scale pit would be repaired.
5
6 • Vegetation would be pruned, thinned
7 and possibly removed between Morning
8 Star Trail and Morning Star Mill ruins
9 to reestablish the historic spatial
10 relationship and for a better view of the
11 mill from the trail.
12
13 • Vegetation would be pruned, thinned
14 and possibly removed at the site of a new
15 overlook for pedestrians at the top of
16 Morning Star Mine spoils pile. This would
17 provide a view of the valley below and
18 reestablish historic spatial relationships.
19

20 House Row

21
22 House Row represents the most intact
23 buildings, structures and spaces of the
24 communities that once supported mining
25 operations within Rush Historic District. Its
26 five extant buildings, multiple building and
27 structure ruins, and domestic spaces provide
28 the best and most easily accessed historic
29 mining community within the study area.
30

31 Spatial Organization

- 32 • The arrangement of buildings, structures,
33 roads and vegetation within House Row
34 would be preserved and repaired to
35 greatest extent possible.
36
37 • Buildings would be repaired, structures
38 stabilized, and vegetation removed and
39 managed within domestic spaces to
40 reestablish the full extent of the spatial
41 arrangement and relationships that
42 existed historically.
43

44 Circulation

- 45 • One ABAAS parking space, would be
46 provided along House Row. Associated

47 interpretive information would be
48 provided.

- 49
50 • A universally accessible pedestrian trail
51 would be added to access the front porch
52 of the Taylor-Medley General Store from
53 the new accessible parking space. Stable
54 surface treatment and a ramp to access
55 the porch would be added.
56

57 Buildings and Structures/Ruins

- 58 • The five extant buildings within House
59 Row would be preserved and stabilized.
60 Buildings would be structurally stabilized
61 and the roofing and exterior finishes
62 would be repaired/replaced to provide a
63 weatherproof enclosure. Exterior facade
64 work would include rehabilitation of the
65 windows and doors.
66

- 67 • Taylor-Medley General Store would be
68 repaired to allow visitor access onto the
69 front porch. The porch foundation and
70 roof would be structural stabilized and
71 exterior façade repairs would allow for
72 views into the building interior through
73 the rehabilitated windows and doors.
74 A universally accessible route would be
75 provided to access the front porch from
76 the front yard.
77

- 78 • Structures would have basic stabilization
79 and repair work completed in-situ to
80 elongate the lifespan of the feature. These
81 structures would not be fully rehabilitated
82 or restored.
83

- 84 • The existing intermittent stream would
85 be rerouted away from buildings and
86 structures on House Row. All other
87 drainage patterns would be routed away
88 from contributing features.
89

90 Small Scale Features

- 91 • Contributing small scale features would
92 be preserved and repaired. These features

1 include a shed, root cellar, chicken house,
2 goose house, multiple privy ruins, trash
3 piles, and a mailbox shelter.

4

5 • Non-contributing small scale features, i.e.,
6 regulatory or interpretive signs, benches,
7 kiosk, would remain.

8

9 • A new compatible fence or low barrier
10 would replace the current non-
11 contributing fence to discourage visitor
12 access into the repaired domestic spaces
13 and the stabilized buildings.

14

15 Vegetation

16 • House Row's characteristic open lawns
17 with shade trees would be preserved.

18

19 • Vegetation would be removed where
20 it obscures building and structure
21 foundations and ruins.

22

23 • Extant ornamental plants would be
24 preserved and maintained. Additional
25 research and documentation would be
26 undertaken to confirm extant ornamental
27 plantings, including documenting
28 locations and species.

29

30 • The domestic setting of House Row
31 would be repaired through vegetation
32 management. Historic patterns of open
33 domestic spaces where residents planted
34 gardens and pastures and kept animals
35 would be repaired. Vegetation would be
36 removed behind buildings and structures
37 to reveal the full extent of these historic
38 spaces. Vegetation would be removed
39 from building and structure foundations.

40

41

42

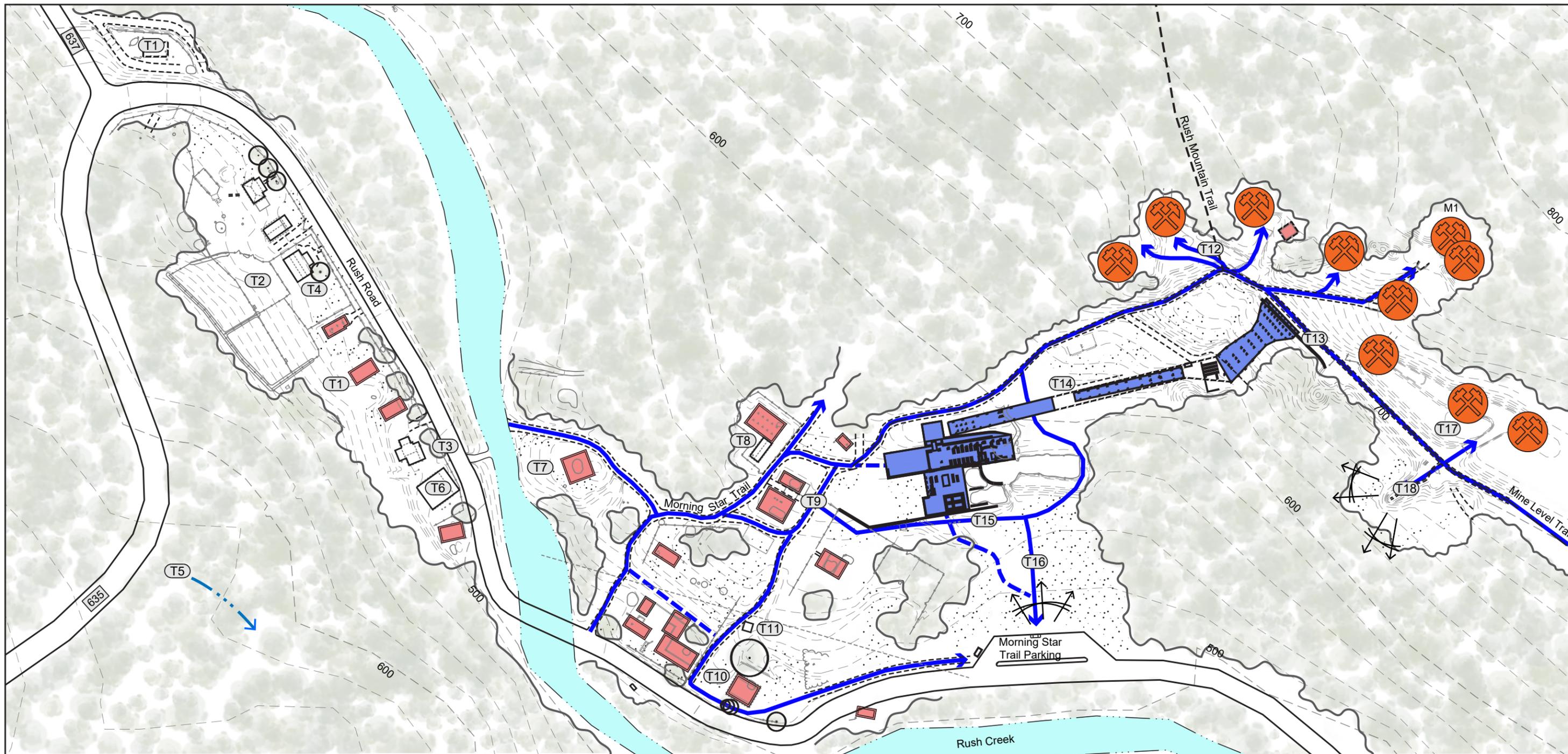
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Treatment Recommendations

- (T1) Mark all Non-Extant Buildings
- (T2) Rehabilitate Yards / Livestock Space to Slope
- (T3) Accessible Parking / Overlook
- (T4) Stabilize / Rehabilitate Structures at House Row
- (T5) Repair / Reroute Intermittent Stream
- (T6) Rehabilitate Taylor Medley Store
- (T7) Re-Establish Clearings in all Historically Open Areas
- (T8) Stabilize Blacksmith Shop
- (T9) Reveal Morning Star Mine Office and Chase and Mulholland Store Ruins and Rehabilitate Scale Pit
- (T10) Re-Establish Pasture to Full Extent
- (T11) Stabilize Smelter
- (T12) Formalize / Rehabilitate Trails at All Mine Portals
- (T13) Preserve Route of Mine Level Trail
- (T14) Mark Mill and Tramway

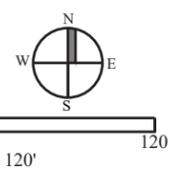
- (T15) Stabilize / Repair Stone Walls
- (T16) Preserve Tailings Pile for View of Mill
- (T17) Thin Vegetation and Provide Viewing Platform to View Morning Star Mine Open Cut
- (T18) Thin Vegetation at Spoils Pile for Overlook

Legend

- Road
- Pedestrian Trail
- Pedestrian Trail to Remove
- Creek / River
- Mine / Mine Complex
- Extant Building to Stabilize
- Building Ruins to Mark
- Building Ruins to Mark with 3D Frame
- Road Trace to Preserve
- Remnant Feature
- Edge of Forest

Mines

- M1 Morning Star Mine Complex (1884 to 1931)



Sources:
 USGS 2013 - National Geographic Society, Arkansas GIS (<https://gis.arkansas.gov/>), Google Maps 2017, Historic Resource Documentation Morning Star Mines Interpretive Area, Cultural Landscapes Inventory 2012

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TITLE OF PROJECT
**CULTURAL LANDSCAPE REPORT
 AND ENVIRONMENTAL ASSESSMENT**
 TITLE OF DRAWING
 ACTION ALTERNATIVE 2 - MORNING STAR HOTEL, MILL, AND MINE COMMUNITY, AND HOUSE ROW
 NAME OF PARK
RUSH HISTORIC DISTRICT
 REGION COUNTY STATE
 MIDWEST MARION ARKANSAS
 Illustration 4-5.
 4-39

1 Hicks Hotel

2

3 The site of Hicks Hotel and Hicks General
4 Store would be preserved and repaired. The
5 site includes building ruins, extant small scale
6 features, and ornamental vegetation.

7

8 Spatial Organization

- 9 • The setting of Hicks Hotel and Hicks
10 General Store ruins would be preserved
11 and repaired by removing by vegetation
12 from building ruins.
- 13
- 14 • Ornamental vegetation associated
15 with Hicks Hotel would be preserved
16 and augmented with new plantings to
17 maintain the historic character. Vegetation
18 not associated with the garden would be
19 removed

20

21 Buildings and Structures/Ruins

- 22 • Building ruins would have basic
23 stabilization and repair work completed
24 in-situ to elongate the lifespan of the
25 extant ruin. These features would not be
26 fully rehabilitated or restored.
- 27
- 28 • The foundation of Hicks Hotel would be
29 marked.

30

31 Small Scale Features

- 32 • Contributing features including the Stone
33 Flower Bed, and Hicks Wall would be
34 preserved and repaired.

35

36 Vegetation

- 37 • Vegetation would be removed to reveal
38 historic buildings spaces and contributing
39 features including ruins, foundations, and
40 the historic garden.

41

42

43

44

45

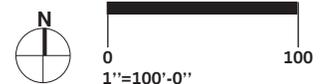
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- Treatment Recommendations**
- (T1) Vegetation Management
 - (T2) Stabilize/Repair Hicks Wall
 - (T3) Repair Historic Garden setting of Hicks Hotel
 - (T4) Stabilize Brick Walkway
 - (T5) Mark Foundation of Hicks Hotel
 - (T6) Provide Parking

- Legend**
- Road
 - Creek / River
 - Building Ruins to Preserve/
Stabilize/Repair
 - Building Ruins to Mark
 - Forest Edge

Figure 4-5. For action alternative 2, the site of Hicks Hotel and Hicks General Store would be preserved and repaired. Vegetation would be removed to a larger extent to reveal historic buildings spaces and contributing features. (Mundus Bishop 2018)



(Mundus Bishop 2017, USGS 2013 - National Geographic Society, Arkansas GIS (<https://gis.arkansas.gov/>), Google Maps 2017, Historic Resource Documentation Morning Star Mines Interpretive Area, Cultural Landscapes Inventory 2012)

Mitigation Measures

1 The NPS places strong emphasis on
 2 protecting resources against potentially
 3 adverse impacts. Mitigation is used to avoid,
 4 prevent, or minimize adverse impacts during
 5 implementation of projects. The following
 6 mitigation measures would be implemented
 7 as part of whichever treatment alternative
 8 is selected. The NPS may need to obtain
 9 federal and state environmental permits
 10 and, as part of that process, additional
 11 mitigation measures could be required by
 12 other agencies. The NPS would implement an
 13 appropriate level of monitoring throughout
 14 project activities to ensure that protective
 15 measures are being properly implemented
 16 and are achieving their intended results.

17

18 General Measures

19

20 • The work area limits would be clearly
 21 defined, fenced, flagged, and delineated to
 22 keep ground disturbance to a minimum.
 23 No disturbance would occur beyond these
 24 limits other than protection measures for
 25 erosion/sediment control.

26

27 • All contractor employees and
 28 subcontractors would attend an
 29 orientation session(s) regarding park
 30 regulations focused on minimizing
 31 impacts on resources, human health and
 32 safety, and appropriate housekeeping.

33

34 • All tools, equipment, barricades, signs,
 35 surplus materials, and rubbish would
 36 be removed from the project area upon
 37 project completion. Construction debris
 38 would be hauled from the park to an
 39 appropriate disposal location.

40

41 • Staging, materials, and equipment would
 42 be in developed areas such as existing
 43 parking lots to the extent possible.

44

45 Water Resources

46

47 • If minor earthwork is necessary, standard
 48 erosion-control measures such as silt
 49 fencing would be used to minimize
 50 erosion and the introduction of sediments
 51 to aquatic habitat during and after
 52 construction.

53

54 • All vehicle and equipment fueling would
 55 occur more than 100 feet from any
 56 surface water in a location where a fuel
 57 spill would not be able to enter the water.

58

59 • A spill prevention and response plan that
 60 regulates the use of hazardous and toxic
 61 materials, such as fuels and lubricants
 62 for construction equipment, would be
 63 prepared.

64

65 • Disturbed areas would be reseeded as
 66 quickly as possible following the work.

67

68 Wildlife and Species of Concern

69 (Conservation Measures)

70

71 • Construction personnel would be
 72 instructed on appropriate behavior in the
 73 presence of wildlife and on proper storage
 74 and handling of food, garbage, and other
 75 attractants.

76

77 • Pre-project surveys would be performed
 78 to identify sensitive plant species,
 79 vegetation communities, and wildlife
 80 habitat. Treatment alternatives would be
 81 revised, if necessary, to avoid more than
 82 minimal impacts on wildlife and to avoid
 83 adverse effects on species of concern.
 84 Project plans would identify areas to
 85 avoid.

86

87 • Areas would be designated for stockpiling
 88 slash material.

- 1 • To reduce noise disturbance and
2 limit impacts on breeding avian and
3 mammalian species, all tree and shrub
4 thinning and removal would be conducted
5 from October 1 to March 1, where
6 feasible.
- 7
- 8 • If tree and shrub thinning and removal
9 must occur between March 1 and October
10 1, field surveys for migratory bird nests
11 and cavities and bat roosts and nurseries
12 would be conducted prior to vegetation-
13 disturbing activities. Where active nests
14 or nurseries are present, vegetation
15 removal would not occur until after
16 the young have fledged, and ground-
17 disturbing activities would not occur
18 within 100 feet until the young have
19 fledged.

21 **Native Vegetation and Non-native** 22 **Ornamental and Invasive, Exotic Species**

- 23
- 24 • Non-invasive ornamental tree and
25 shrub species would be used in cultural
26 landscape treatments.
- 27
- 28 • Disturbance to vegetation would
29 be avoided as much as possible and
30 contained to as small a footprint as
31 possible.
- 32
- 33 • Temporary barriers may be provided
34 to protect existing trees, plants, and
35 root zones not proposed for removal or
36 thinning. Trees or other plants would not
37 be removed, injured, or destroyed without
38 prior approval.
- 39
- 40 • All equipment entering the park would
41 be cleaned and pressure washed to
42 remove foreign soil, vegetation, and other
43 materials that may contain nonnative
44 seeds or vegetation.
- 45
- 46

- 47 • All disturbed areas would be revegetated
48 with native species. Revegetation
49 plantings, if necessary, would use native
50 species from genetic stocks originating in
51 the park, if possible. Revegetation efforts
52 would focus on recreating the natural
53 spacing, abundance, and diversity of
54 native plant species. All disturbed areas
55 would be restored as nearly as possible to
56 preconstruction conditions shortly after
57 construction activities are completed.
- 58
- 59 • To minimize introduction of exotic plant
60 species, no hay bales would be used
61 for mulch. Hay often contains seed of
62 undesirable or harmful invasive exotic
63 plant species. Therefore, on a case-by-
64 case basis, the following materials may be
65 used for any erosion control that may be
66 necessary: rice straw, straws determined
67 by the NPS to be weed-free (e.g., barley
68 straw or winter wheat straw), cereal grain
69 straw that has been fumigated to kill
70 weed seed, and wood excelsior bales.
- 71
- 72 • Non-native and invasive exotic plant
73 infestations in restored areas would be
74 treated on a yearly basis for a minimum of
75 three years following project completion.
- 76

77 **Cultural Landscapes, Historic Structures,** 78 **and Archaeological Resources**

- 79
- 80 • Unless they are part of the project, known
81 historic sites and isolated occurrences
82 would be avoided during construction.
- 83
- 84 • NPS cultural resources staff would
85 be available during implementation
86 to advise or take appropriate actions
87 should any archeological resources
88 be uncovered during implementation.
89 Should any archeological resources be
90 uncovered during implementation, as
91 appropriate, work would be halted in the
92 area and a NPS archeologist, SHPO, and

1 appropriate Native American tribes would
2 be contacted for further consultation in
3 accordance with 36 CFR 800.13, Post
4 Review Discoveries. In the unlikely event
5 that human remains are discovered
6 during construction, provisions outlined
7 in the Native American Graves Protection
8 and Repatriation Act (1990) would be
9 followed.

- 10
- 11 • The park would ensure that all personnel
12 who work on the project are informed
13 of the penalties for illegally collecting
14 artifacts or intentionally damaging
15 archeological sites or historic properties.
16 Personnel would also be instructed on
17 procedures to follow in case previously
18 unknown archeological resources
19 are uncovered during construction.
20 Equipment traffic would be minimized
21 in the site. Equipment and materials
22 staging areas would also avoid known
23 archeological resources.

24

25 **Public Health and Safety**

26

- 27 • Signs, press releases, or other
28 communication methods would be used
29 to inform visitors about construction and
30 any building or area closures or detours
31 during construction.
- 32
- 33 • Appropriate barriers and barricades
34 would be used to clearly delineate work
35 areas and provide for safe visitor travel
36 near construction areas.
- 37
- 38 • Emergency response protocols would
39 be developed for implementation during
40 construction. Construction activities
41 would be conducted in accordance with
42 established safety protocols.

1 **Summary of Environmental Consequences**

2

3 A summary of potential environmental effects for the alternatives is presented in Table 4-1.

Table 4-1. Potential Effects of Alternatives			
Impact Topic	No Action	Action Alternative 1	Action Alternative 2
Cultural Landscapes, Historic Structures, and Archaeological Resources	Overall, the no action alternative would have no effect on cultural landscapes, historic structures, or archaeological resources.	Activities proposed under action alternative 1 would result in modest beneficial effects on cultural landscapes, small beneficial effects on historic structures, and no effect on archaeological resources. There would be no cumulative effects.	Activities proposed under action alternative 2 would result in modest beneficial effects on cultural landscapes, small beneficial effects on historic structures, and no effect on archaeological resources. There would be no cumulative effects.
Vegetation	The no action alternative, when combined with the cumulative effects of invasive and noxious species management and fire management, would have barely discernible, localized adverse effects and somewhat noticeable beneficial effects on vegetation in the study area.	Action alternative 1 would include permanently modifying about 10.84 acres of vegetation. When combined with the cumulative effects of invasive and noxious species management and fire management, action alternative 1 would have small, localized adverse effects and somewhat noticeable beneficial effects on vegetation in the study area.	Because action alternative 2 would include permanently modifying about 16.55 acres of vegetation, its effects would be modest and adverse. Cumulative effects would be modest and adverse and small and beneficial.
Water Resources	Overall, the no action alternative would have no discernible effect on water resource	Overall, action alternative 1 would have no discernible effect on water resources.	Overall, action alternative 2 would have no discernible effect on water resources.
Special Status Species	Overall, the no action alternative would have no effect on special status species.	By implementing mitigation measures/conservation measures as part of action alternative 1, action alternative 1 would have no effect on special status species of invertebrates, plants, or birds. The alternative may affect, but would not be likely to adversely affect special status species of bats. There would be no incremental contribution to cumulative effects from past, present, or reasonably foreseeable actions.	By implementing mitigation measures/conservation measures as part of action alternative 2, action alternative 2 would have no effect on special status species of invertebrates, plants, or birds. The alternative may affect, but would not be likely to adversely affect special status species of bats. There would be no incremental contribution to cumulative effects from past, present, or reasonably foreseeable actions.

1 **NPS Preferred Alternative**

2
3 Following an alternatives workshop, the NPS
4 selected Action Alternative 2 as the preferred
5 alternative after considering how well each
6 alternative met the project objectives and
7 consideration of the potential environmental
8 consequences. The preferred alternative
9 presents NPS's preferred management action
10 and defines the rationale for the action
11 in terms of natural and cultural resource
12 protection and management; visitor use,
13 operations, and cost; and other applicable
14 factors. While Action Alternative would meet
15 the project goals to a certain degree, the
16 preferred alternative has the best overall
17 combination of features to meet the project
18 objectives.

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