

2.0 ALTERNATIVES, INCLUDING THE ENVIRONMENTALLY PREFERRED ALTERNATIVE

2.1 Alternatives Development

Alternatives development for the Elkmont EIS has been based on the project goals and objectives, an assessment of Park needs and public input. The alternatives presented in this EIS are intended to represent a full range of possible actions designed to address the purpose and need for the project. During the scoping phase, public involvement was facilitated by the Park. Input was also strongly encouraged from within the NPS and from the Consulting Parties, who represent long- standing stakeholders in the issues surrounding Elkmont. The primary issues brought forth during scoping centered on the preservation of buildings and restoration of natural communities. The alternatives presented in this chapter have taken these issues into consideration, as well as all other uses considered and dismissed during project scoping.

Project goals and objectives were developed based on protection of cultural and natural resources, and on providing visitor opportunities. Concurrent with development of project goals and objectives, potential uses for the District were considered. Park needs were examined to determine if the Park's proposed uses were compatible with the project goals and objectives, as well as the constraints and opportunities presented by District's terrain (such as inability to expand roadways adjacent to the Little River), its natural and cultural resources, and location within the Park. The resulting potential uses for the District, as defined by the Park, were then considered along with uses identified by the public and the Consulting Parties.

Seven detailed alternatives were developed to provide a full range of management options for the District. These alternatives include the No Action Alternative, as required by NEPA, a second alternative that follows the 1982 General Management Plan, but adds active natural resource management to remove non- native species and to promote forest restoration, and five alternatives that propose varying degrees of increased preservation of historic buildings within the District for a variety of purposes. All seven project alternatives are described in Section 2.2 of this chapter and were presented at public information meetings held on March 8, 2004 in Gatlinburg and on March 9, 2004 in Knoxville, Tennessee. In addition to input from the Park, public and Consulting Parties, several other factors were considered in development of the alternatives, as discussed below.

2.1.1 Public Involvement

Development of alternatives for Elkmont incorporated extensive public involvement opportunities. Table 2- 1 provides a chronology of the events leading to the proposed project alternatives that are the subject of this document. As part of the NEPA process, all issues identified by the public were recorded and considered by the Elkmont planning team. The detailed project alternatives resulted from development of goals, study of potential uses, and formulation and review of conceptual alternatives.



Table 2- 1: Chronology of Elkmont Public Involvement and Alternatives Development

| Date | Event | Purpose | Topics Discussed / Result |
|-------------------------|---|---|---|
| 4/23/2002 | Internal Scoping | obtain park staff input | Information gathered on how visitor experience at Elkmont could address the Park's <i>Comprehensive Resource Education Plan</i> , the significance of the District's natural resources, and the logging history prior to establishment of the vacation community. |
| 4/25/2002 | Focus Group Meeting (Focus group subsequently became "Consulting Parties") | obtain input from stakeholders | NPS invited Focus Group members to be Consulting Parties, including: <ul style="list-style-type: none"> • Advisory Council on Historic Preservation (ACHP) • National Parks Conservation Association (NPCA) • Tennessee Historical Commission (TN SHPO) • National Trust for Historic Preservation • Sierra Club • Smoky Mountains Hiking Club • Elkmont Preservation Committee • Eastern Band of the Cherokee Indians • The Chickasaw Nation The Consulting Parties stressed the need for a strong public participation process and integration of the requirements of NEPA and NHPA. |
| 5/1/2002 and 5/2/2002 | 1st Set of Public Scoping Meetings | re- introduce Elkmont project to public | An overview of the NEPA planning process was presented. The public was surveyed to obtain their input on what was important, to understand what activities at Elkmont were most enjoyed, and to obtain viewpoints on how Elkmont should be managed. The survey form was also available at Sugarlands Visitor Center and at stations within the District. 554 responses were received and used to develop draft project goals. |
| 7/18/2002 and 7/19/2002 | Park Design Charette | development of potential uses for the District | Potential administrative uses, visitor education activities, and visitor services were examined. Ideas for visitor services came from the first public scoping meetings and survey form responses. Three potential uses were immediately eliminated (a fire fighting facility and North District Ranger Station were eliminated due to District's location with respect to needs within the Park and the need for separation from public uses; hostel use was eliminated since it is inconsistent with historic uses of Elkmont. |
| 8/19/2002 and 8/22/2002 | 2nd Set of Public Scoping Meetings | input on draft goals and objectives; presentation of baseline studies | An overview presentation of baseline information was provided and then followed by facilitated group sessions on project goals, objectives and potential uses. Input from these public meetings was used to create conceptual alternatives. |
| 9/28/2002 | Public Workshop on Conceptual Alternatives | input on conceptual alternatives; record privately- held historical information and photographs | Workshop attendees rejected the four conceptual alternatives presented for discussion and were given an opportunity to modify them. Most attendees represented former cabin owners who wanted to save as many buildings as possible, minimize administrative uses, and maximize possible cabin rental and reuse of the Wonderland Hotel. Privately- held historical photos of Elkmont were recorded. |



Table 2- 1: (continued)

| Date | Event | Purpose | Topics Discussed / Result |
|-----------------------|--|--|--|
| 10/8/2002 | 2 nd Consulting Parties meeting | review of previous public meetings | Consulting Parties were briefed on the second set of public scoping meetings and the public workshop. The need to present a full range of alternatives was highlighted, including a No Action Alternative and one that emphasized visitor services. The mathematical approach to alternative development was abandoned. |
| 1/14/2003 | 3 rd Consulting Parties meeting | review of conceptual alternatives | Six foundation statements and the resulting conceptual alternatives based on public comment were reviewed. Consulting Parties made suggestions concerning the No Action Alternative and provided direction on alternative analysis to include natural and cultural resource impacts, the area of potential effect and the need to identify potential impacts to archeological resources. |
| 2/1/2003 | 3 rd Set of Public Scoping Meetings | present six conceptual alternatives for public comment | Over 180 persons attended the meeting. Their viewpoints were divided, with most supporting either the No Action or a maximum visitor services approach. Those few supporting the mid- range alternatives suggested incorporation of more protection of natural resources, cost reductions or increases in the number of buildings rehabilitated for public overnight use. |
| Winter-Spring 2003 | NPS elevates NEPA process to EIS level. | | Additional natural and cultural resource studies undertaken. NPS determines that Wonderland Hotel could not be restored and would have to be reconstructed. The Park seeks funding for new stabilization measures to prevent further building deterioration. |
| 8/20/2003 | 4 th Consulting Parties meeting | provide an update on project status | Wonderland Hotel, if utilized, would be reconstructed under <i>The Secretary of the Interior's Standards for the Treatment of Historic Properties; with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings</i> . |
| Fall 2003-Spring 2004 | | | Additional natural and cultural resource field investigations were completed. Seven detailed draft alternatives were developed. |
| 3/8/2004 and 3/9/2004 | 4 th Set of Public Scoping Meetings | first scoping meeting as part of EIS process | Results of additional baseline studies and seven detailed alternatives presented with 30- day comment period. Comments received indicated a range of preferences from removal of all historic buildings to complete restoration and rehabilitation, including reconstruction of the Wonderland Hotel for public lodging. Comments received focused on funding, potential loss of cultural resources, potential impacts to natural resources, concerns with water quality in Little River, NPS requirements for "Necessary and Appropriate" analysis, traffic congestion, and use of buildings. |
| 4/6/04 | 5 th Consulting Parties meeting | provide an update on the alternatives and discuss comments from the March public meeting | The results of the additional baseline studies and the seven draft alternatives were reviewed, as well as the comments made at the public information meeting and received from the general public as of that date. The maximum area of potential effect for cultural resource considerations was discussed. |



Parties contributing to this process included Park and NPS technical and management staff, the general public, and the Consulting Parties. A number of uses were considered as potentially appropriate for the District. Each potential use was subjected to the following examination:

- Which NPS or legislative mission/mandates/policies does it meet and which does it violate?
- How does it meet the District's goals, objectives, and mandates for visitor education? ...for natural resources?for cultural resources?
- Is the use politically neutral?
- Does the Park have the authority to implement the use? If so, what authority?
- Who are the users?
- How many users will there be?
- What is the frequency of use?
- Is there a socio- economic impact (positive or negative) to the Park's gateway communities?
- How does the use fit with the current use of the District? ...How does it conflict?
- Are there other suitable places for this use? If so, where?
- Are there partnership opportunities? If so, with whom?
- Has capital funding been identified?
- What are the potential funding sources?
- What are the operational impacts?
- Is the proposed use economically viable? Would federal or other funding be required?
- Could the use be supported by existing infrastructure or not? If not, what additional infrastructure would be needed?
- What are the traffic/transportation/people circulation impacts?
- Which buildings could be adapted for this use?
- What ADA accessibility needs would be required in the design of the use?
- Is the implementation of the use short- term or long- term?

Following a design charrette in July 2002, the proposed uses remaining under consideration included the following:

Park administrative uses:

- curatorial facility for archival storage and research purposes for the Park's artifact and historical collections, with an estimated square footage need of 13,000 square feet;
- housing for visiting scientists;
- resource management facility to consolidate personnel;
- additional headquarters' office and meeting space to relieve the crowded conditions at Sugarlands; and
- Great Smoky Mountains Association administrative offices.

Visitor Education/Recreation uses:

- Discover Life in America Museum at the Wonderland Hotel;
- museum community (such as at Cades Cove);



- Appalachian crafts and music facility;
- interpretive facility/museum at the Appalachian Clubhouse;
- self-guided walking tour;
- additional traditional recreation opportunities (hiking, fishing, wildlife watching);
- overnight adult education facility to support Great Smoky Mountains Institute at Tremont;
- university extension/educational network facility; and
- group day use facility under special use permits.

Visitor services:

- rental cabins
- retreat facility
- dining facility
- use of hotel
- store/gift shop
- campground shower facility, electrical hookups and a restroom facility for day users

After elimination of those uses that were not appropriate for the District given its geographic location within the Park, the limitations of its road network, or undertaking the use within a public area, four other uses were eliminated in subsequent reviews. The proposed use by the Great Smoky Mountains Association was eliminated because it would be inefficient for the organization to store materials within the District and subsequently to transport them to the Sugarlands Visitor Center. The proposed use for Park Headquarters' additional office and meeting space was eliminated due to the inefficiency in communication and lost time due to travel between Sugarlands and the District. The Resource Management Facility was also eliminated for these same reasons. Potential use as an Appalachian crafts and/or music facility was eliminated since there are other locations in the Park and in the surrounding region that provide crafts and music. In addition, these types of activities were not dependent on the history and development of Elkmont for their interpretation. Additionally, those uses solely dealing with campground issues were eliminated (campground shower facility, electrical hookups, and campground store) since they could be evaluated as part of the campground program independent from considerations of the rest of the District. The remaining uses were integrated into the conceptual alternatives.

Public comment on the conceptual alternatives supported many of the proposed uses, particularly those that provided additional visitor services or educational and recreational opportunities. Proposed uses that were favored included reuse of the Wonderland Hotel and Annex as a hotel with dining facilities; cabin rental; use of the Appalachian Club as a day use facility and possibly for dining by those staying at the nearby cabins; and use of three cabins along the Little River as a Visitor Center, museum and educational facility. Strong public support still exists for the direction provided in the 1982 GMP that calls for all buildings to be removed and the area returned to a natural condition.



As part of public meetings, additional new uses were suggested, including restriction to only public vehicles beyond the campground entrance; providing parking for remote shuttling near the Wonderland Hotel; and placement of a historic railroad engine used for logging at the Wonderland Hotel with a railroad exhibit. Park management subsequently determined that the Wonderland Hotel would not be a suitable location for a museum since public access to this area would be constrained by its location and lack of sufficient space for parking. The proposed logging and railroad exhibit was eliminated from further consideration since there are other places within the Park where the story of the logging industry and its impact on Park lands could be more effectively presented to a larger audience. Minimal rehabilitation of the cabins for use as rustic shelters for campers was also considered, but was dismissed due to sanitary considerations.

2.1.1.1 Mandatory Impact Topics

NPS Director's Order #12 and Handbook: Conservation Planning, Environmental Impact Analysis, and Decision (NPS 2001a) lists 13 impact topics that must be considered in an EIS. The impact topics discussed in detail in this analysis include:

- Possible conflicts between the proposal and land use plans, policies, or controls for the area concerned and the extent to which the Park will reconcile the conflict
- Natural or non-renewable resource requirements and conservation potential
- Urban quality, historic and cultural resources and the design of the built environment
- Socially or economically disadvantaged populations
- Wetlands and floodplains
- Endangered or threatened plants and animals and their habitats
- Important scientific, archeological, and other cultural resources, including historic properties listed on, or eligible for listing on the National Register of Historic Places
- Ecologically critical areas, Wild and Scenic Rivers, or other unique natural resources
- Public health and safety

Mandatory Impact Topics Dismissed from Further Analysis:

Items dismissed from further analysis because they do not apply to the proposed project alternatives or are not known to exist within the District or the larger area of potential impact include:

- Energy requirements and conservation potential
Use of natural resources as a source of energy required for project implementation as compared to energy use in the existing condition is of consideration. Mitigation



measures can be implemented to conserve energy during and after project implementation. However, scoping did not reveal energy requirements or energy conservation as a topic of concern.

- Prime and unique agricultural lands

Prime farmland has been designated by the U.S. Department of Agriculture as having the best combination of physical and chemical characteristics for the production of food, feed, forage, fiber and oilseed crops. Prime refers to the productive capacity of the land for crops as affected by soil fertility, growing season and moisture supply. Unique agricultural land is land, other than prime farmland, that is used for production of specific high value food and fiber crops. Unique agricultural areas have the special combination of soil quality, location, growing season and moisture supply needed to produce sustained high quality and/or high yields of a specific crop when treated and managed according to modern farming methods. Both of these categories require that the land is available for farming uses. Lands within the District are not available for farming and therefore, cannot meet these definitions.

- Sacred sites

Executive Order 13007, released in 1996, states that “in managing Federal lands, agencies must (1) accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and (2) avoid adversely affecting the physical integrity of such sacred sites”. Confidentiality of the site location is also required by this Executive Order. In accordance with EO 13007, the tribes were consulted and invited to provide information regarding the existence of sacred sites with the District. No such information was provided. Because there are no known sacred sites in the District, this issue is not discussed further in the Environmental Impact Statement.

- Indian Trust resources

Indian trust assets are assets that the United States holds and administers for Indian tribes. The federal Indian trust responsibility is a legally enforceable, fiduciary obligation on the part of the United States to protect tribal lands, assets, resources and treaty rights. It also represents a duty to carry out the mandates of federal law with respect to American Indian and Alaskan Native tribes. There are no Indian Trust resources within the District; therefore, this topic was eliminated from further consideration.

2.1.2 Partnerships

The NPS, through the Park, is the lead federal agency for development of this document for the District. In the future, the Park may form partnerships with local agencies and / or other groups, as appropriate, to implement the plan. However, at this time, the NPS has not established a partnership with any other agency or group.

2.1.3 Special Populations

As required by Director’s Order #42 (Appendix A), the NPS must make provisions to accommodate the needs of any special populations who visit the District. Special populations are identified as those with sight, hearing, learning, and mobility impairments, visitors who do not speak English, young children and the elderly. This



Director's Order was formulated by the Department of the Interior following passage of the Americans with Disabilities Act of 1990 (ADA). The ADA technically does not apply to the federal government; however, the Department of the Interior has adopted a variety of design standards for buildings and facilities that were developed by state and local governments to comply with ADA. Adoption of these standards by the Department of the Interior was in response to strong public interest in obtaining access to all public facilities for those with disabilities.

2.1.4 Visitor Carrying Capacity

Resources, such as water, air, vegetation, wildlife, cultural and landscape characteristics, all inherently have a limit beyond which any further impact or use causes a decline in quality or benefit they provide. Under the National Parks and Recreation Act of 1978, the NPS is required to address this issue in its general management plans through establishment of a "carrying capacity" (NPS 1997). The NPS defines visitor carrying capacity as "the level of visitor use that can be accommodated while sustaining the desired resource and visitor conditions in the Park" (NPS 2000).

Although the number of visitors is one consideration when determining carrying capacity, it is not necessarily the primary issue. The decline of a particular resource may be more strongly related to other characteristics of how a resource is used, which may vary depending on the type of use, time of day or year, location, frequency and location of encounters between visitors, and visitor conduct. Another important factor related to carrying capacity is how a visitor perceives the experience they would like to have within a particular setting. For instance, a distinction can be made between the concept of crowding and the simpler concept of amount of use. Many recreational areas are used intensively, but this does not necessarily mean that they are crowded. If a visitor must share space in a visitor center with 10 other people, the situation is not likely to be perceived as "crowded". However, if that same visitor encounters 10 people along a wilderness trail, he or she may describe the condition of the trail as "crowded". Therefore, restrictions on visitor numbers may not effectively address overuse concerns and it may be necessary to employ other management strategies.

Recreational capacity decisions are decisions about people's access to opportunities and the quality of their experiences. Carrying capacity is generally defined as the level of use beyond which impacts exceed acceptable levels specified by evaluative standards (Shelby and Heberlein 1986). In a National Park setting, carrying capacity must consider both the ecological and the social consequences of use levels. Evaluative standards are based on whether the proposed use and characteristics of that use meet the management objectives specified by a park.

As part of the impact analysis required by NEPA for the Elkmont alternatives (Chapter 4), the carrying capacities of the District resources were assessed in terms of the potential direct and indirect effects on individual resources due to implementation of each alternative. The potential cumulative effects were determined as well. Resource impacts can range from none or negligible to a significant adverse effect. Consequences of changes in visitation and type of use implemented under each alternative were estimated. These consequences are discussed in this document in terms of whether or not the



proposed alternatives would remain consistent with the management goals and objectives for all resources if an alternative was implemented.

2.2 Alternatives

The project alternatives analyzed in this document are described in detail in this section, beginning with the No Action Alternative. Potential effects to all resources identified within the District were considered during alternatives development. Measures to avoid and minimize the effects of project implementation on all resources were integrated into each of the alternatives.

As part of this planning process, this document identifies an “environmentally preferred alternative”. The environmentally preferred alternative is determined by applying criteria identified in Section 101 of NEPA to all alternatives. NEPA specifies that the alternative that will best protect, preserve, and enhance historic, cultural, and natural resources while causing the least damage to the biological and physical environment is typically considered the environmentally preferred alternative.

Site plans are also provided for each alternative and, based on the specifics of each plan, changes to Park operations and staffing are described, as well as projected project implementation costs (Appendix C). A tabular summary of the major attributes and components and a summary of the proposed infrastructure modifications required to implement each alternative are provided in Tables 2- 17 through 2- 22 at the end of this chapter.

The description of alternatives provided in this chapter uses terminology consistent with that provided in *The Secretary of the Interior’s Standards for the Treatment of Historic Properties; with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings* (*The Secretary’s Treatment Standards*; NPS 1995, Revised 2001). To facilitate a better understanding of the alternatives descriptions, the definition of each treatment as provided in *The Secretary’s Treatment Standards* is provided in a glossary as part of this document. Other terms utilized throughout this document are consistent with those specified by NEPA and a full explanation of those terms is provided in the glossary as well. Some actions are common to all alternatives, as discussed below.

2.2.1 Actions Common to All Alternatives

Buildings to be Removed under All Alternatives

Although the alternatives differ in many ways, particularly in their impacts on the buildings within the District, there are some activities that would continue to take place regardless of which alternative is selected. One action that is common to all alternatives is removal of specific buildings due to their non- contributing status and/or deteriorating condition. A total of 11 non- contributing buildings and one contributing building are proposed to be removed under all alternatives. In Daisy Town, they include the Galyon rear room, Sneed (#12), Jamerson (#14), Burdette (#16) and Bagley (#17); in Society Hill, they include Gaines (#27) and Knaffl (#36); in Millionaire’s Row, they include Parrot (#44), Murphy garage (#45A) and Young (#48); and in the Wonderland Club, they include Bowman/Brown (#58- 4D) and McMillian/Keith (#58- 6F).



Construction Procedures and Protocol

Although each alternative includes a variety of activities required for project completion, specific protocols have been developed by the Park to avoid impacts to cultural and natural resources during removal, restoration, rehabilitation, and reconstruction of buildings. These measures apply to all alternatives.

➤ **Equipment**

If machinery is utilized during removal of buildings, low ground pressure (LGP) equipment must be utilized for all work except hauling on existing roadways. LGP equipment usually has a pressure impact of less than 2 pounds per square inch and can be custom built to fit most applications. It usually has wider tracks and a longer body than traditional equipment. Some LGP equipment also has curved- end track pads to minimize damage to vegetation and the ground surface. However, LGP equipment tracks may damage components of the cultural landscape and may not be suitable for use in rocky terrain. In these situations, rubber tire vehicles with a telescoping hoist (such as a Gradall hydraulic excavator) and / or a combination of this type of equipment and tracking mats or pads should be used.

Any LPG equipment used will require approval by Park management. Any equipment used during removal operations must also meet US Department of the Interior standards related to transport of weedy plant material. At minimum, vehicles and equipment used in removal operations must be cleaned prior to arriving on site including being washed clean and free of dirt and associated weed plant material.

➤ **Roadway Repairs**

Project implementation may result in accelerated deterioration of some of the existing infrastructure. Specifically, some of the existing roadways within the District that are already in a state of disrepair could be further damaged by heavy equipment if it is used in the removal of the buildings or for other required project activities.

The roadways that could be most impacted by project implementation, regardless of the alternative selected, are adjacent to the buildings being removed or modified and include Jakes Creek Road (from the Little River Trailhead gate to the top of Society Hill), Daisy Town Loop Road (from Jakes Creek Road to Little River Road), Little River Road (beyond the Little River Trailhead gate) and Catron Branch Road (from Elkmont Road to the end of the Wonderland area cabins). Upon completion of the work associated with this alternative, it is likely that these roadways would require repairs and/or repaving.

Archeological and Cultural Resources

To protect against destruction or degradation of archeological resources, no equipment shall be operated off of existing roadways unless the following criteria are met:

- Define the disturbance area for the area of operation and sample the A horizon within this boundary for archaeological deposits. Use of heavy machinery is not appropriate if significant deposits are present within the A horizon or plow zone (generally defined as the upper 20 cm of the soil column); this would include the



traversing and setup area for demolition. Tracking mats or pads would be insufficient in such cases.

- Assess the potential for impacting buried deposits on a case- by- case basis. Use of heavy equipment for demolition may be acceptable if buried deposits are present (would have to be assessed considering depth, type of deposits, and soil type). Tracking pads or mats could help prevent impacts in some areas. Use of heavy equipment for demolition is acceptable if no significant deposits (other than possible isolated features, etc.) are present.
- Survey adjacent to the buildings prior to ground- disturbing activities
- Survey beneath the buildings if ground- disturbing activities are required (such as foundation removal, etc.)
- Features to remain in the cultural landscape (foundations, rock walls, etc.) will not be driven over or disturbed by construction equipment

Natural Resources Management

Several types of natural resource data would continue to be collected annually from the Little River to compile information on aquatic ecosystems, including water quality, and fish and benthic invertebrate species and distribution. Stream characteristics that would continue to be assessed relating to water quality include temperature, conductivity, flow, mean width, gradient and pH. Fisheries data includes population characteristics such as estimates of the young of year populations, estimates of adult populations, total population estimates, total biomass, species diversity and biomass. These data help managers determine the health of the system and may alert them to problems, such as introduction of a non- native species previously unknown in the Park.

Current Park management policy also includes treatment to eradicate non- native species. Sixteen non- native species have been identified in the District, some of which have been introduced into the District by former residents and now exist as cultural elements. Due to the invasive nature of these plants and the threats they pose to native populations, these species would be eradicated. Table 2- 2 lists the non- native species that have been observed in areas of the District, including Amur honeysuckle (*Lonicera maackii*), common mullein (*Verbascum thapsus*), Chinese yam (*Dioscorea batatas*), English ivy (*Hedera helix*), garlic mustard (*Alliaria petiolata*), Japanese barberry (*Berberis thunbergii*), kudzu (*Pueraria montana*), mimosa (*Albizia julibrissin*), multiflora rose (*Rosa multiflora*), musk thistle (*Carduus nutans*), oriental bittersweet (*Celastrus orbiculatus*), plume grass (*Miscanthus sinensis*), privet (*Ligustrum vulgare*), spiraea (*Spiraea japonica*), periwinkle (*Vinca minor*) and hemlock woolly adelgid (*Adelges tsugae*). All species listed in Table 2- 2 are plants except for the woolly adelgid, an insect that infests hemlock trees.



Table 2- 2: Non- native Species Observed in the Elkmont Historic District

| Areas of the District | Non- native Species Observed |
|------------------------------|---|
| Wonderland Club | Periwinkle, kudzu, musk thistle, Chinese yam, mimosa, garlic mustard |
| Campground | Privet, common mullein, periwinkle, Amur honeysuckle |
| Millionaire's Row | Privet, Japanese barberry, multiflora rose, periwinkle, English ivy, oriental bittersweet |
| Daisy Town | Spiraea, kudzu, Amur honeysuckle |
| Society Hill | Periwinkle, spiraea, kudzu, plume grass, Japanese barberry, Chinese yam |
| South of Society Hill | Hemlock woolly adelgid, Japanese barberry, periwinkle |

Source: Kichman Pers. comm. 2004

Control methods vary from one species to another and depend on the size and location of the plants targeted for treatment. For instance, if the target plant is in close proximity to native plant species, especially those of special concern, then mechanical methods may be utilized rather than chemical to avoid the potential for overspray onto desirable native species. Management techniques include pulling (common mullein, garlic mustard, Japanese barberry and privet), cutting (common mullein, English ivy and Japanese barberry), applying a foliar herbicide spray (Chinese yam, English ivy, Japanese barberry, multiflora rose, plume grass, privet, spiraea and periwinkle), applying herbicide to a cut stump (English ivy, Japanese barberry and privet) and treating the basal portion of the woody stem with herbicide (English ivy and privet).

Treatment methods utilized to eradicate hemlock woolly adelgid in the District include treating the hemlocks with a soap solution and/or pesticide soil injections. Soap treatments consist of applying a foliar pesticide spray that kills the insects when they feed on the trees' leaves. For effective treatment, the soap solution is best applied twice a year. Soil injection involves injecting a pesticide at the base of infected trees that is subsequently absorbed by the roots, incorporated into the plant tissues and eventually ingested by the insects. A third control method, release of beetles that prey on the hemlock woolly adelgid, is generally reserved for more sensitive, backcountry areas and is not utilized in developed sites such as the District.

All alternatives must avoid diminishing the value of resources or causing a direct loss of those resources. In compliance with natural resource management strategies for the District, all alternatives must:

- protect streams, seeps, wetlands and floodplains;
- provide water resource management methods consistent with responsibilities outlined for Outstanding National Resource Waters;
- protect federally- listed threatened and endangered species and their habitats;
- protect high montane alluvial forest and its ability to regenerate;
- avoid loss of habitat for the synchronous firefly population;
- ensure that visitor use levels are maintained within the level natural resources have the ability to sustain; and



- minimize areas of disturbance and maximize the use of previously disturbed areas.

Other Impact Avoidance Measures for Natural Resources

- Because of the increase of non- native plant species as a result of disturbance related activities, Park personnel will perform non- native plant survey and eradication around buildings slated for removal *prior to* removal activities.
- Tree removal to create access to a structure shall be avoided during summer (April 15 to October 15). If tree removal is required for safety reasons or to implement the building removal strategy, no trees larger than 6 inches diameter at breast height (dbh) shall be removed without surveys of the exfoliating bark for bat species and canopy for nesting raptors.
- Snags greater than 3 inches dbh should be retained regardless of species. Exceptions for snag removal are those trees that may be potentially hazardous. Live tree and snag removal should be allowed in those instances where the tree poses a safety hazard in recreation, trails, or administrative use and roadway rights- of- way; these trees should be surveyed for use by bats or raptors before removal.
- Tree limb and canopy damage shall be avoided or minimized to the extent practicable. To prevent or minimize limb damage, the swing of the hoist and bucket will be adjusted to avoid mid- canopy and upper- canopy branches and limbs.
- Avoid threatened, endangered and special concern species. A perimeter surrounding butternut trees will be fenced off at 1.5 times the maximum canopy drip line radius or beyond, if possible, to avoid impact to the tree trunk and limbs or potential soil compaction at the base. A perimeter surrounding Fraser's sedge will be fenced off at a radius of 10 meters from the plant population.
- Include a setback distance for work zones adjacent to waterways, wetlands and floodplains. Setback for work adjacent to the Little River, its tributaries, 100- year floodplain and delineated wetlands should follow buffer establishment guidelines, providing for a minimum 50- foot buffer (increased by 2 feet for every 1 percent change in slope). No equipment shall be operated within this buffer, waterways, 100- year floodplains or wetlands. In addition, no materials shall be stored in these areas or vehicular traffic allowed, except on existing roadways.
- Avoid impacts to bat populations utilizing the buildings or trees. Eleven species of bats are found in the Park, including the little brown bat, northern long- eared bat, Indiana bat, eastern small- footed bat, big brown bat, evening bat, Rafinesque's big-eared bat, silver- haired bat, eastern pipistrelle, eastern red bat, and hoary bat. Although no threatened, endangered or special concern bat species are known to occur in Elkmont Historic District, bats have been observed within the buildings and potential habitat exists throughout the area.

The maternity season for several of these bat species begins in mid- April and young are flying by mid to late August. Roosting season is from April to September. Species



known to roost in buildings include the little brown bat, northern long-eared bat, Indiana bat, eastern small-footed bat, big brown bat, evening bat, and Rafinesque's big-eared bat. Big brown bats can hibernate in buildings; other species of bats hibernate in caves or migrate to other locations. The silver-haired bat sometimes utilizes buildings during migration. Hibernation for bats within the Park is from October or November to the end of March.

Structure removal will only be permitted to occur between September 1 and April 1 of the calendar year. If at the time of removal the most recent bat survey is greater than two years old, a new bat survey will be required prior to removal activities. This study should be conducted in mid summer and carefully coordinated in order to avoid potential delays due to the September 1 to April 1 window for construction activities.

- Avoid disturbance of nesting bald eagles. The nearest known location of nesting bald eagles is in the Fontana Lake area along the southern Park border. However, if a nest is located within any construction area, work within 800 meters of the nest should not commence until after August 31, with completion by December 31. Restricting work to this time period will avoid disruption during the breeding period for bald eagles.

The Secretary's Treatment Standards

All of the project alternatives propose some level of modifications to the historic buildings within Elkmont Historic District. Listing of the District on the National Register of Historic Places in 1994 mandates that actions specified in the proposed alternatives comply with *The Secretary's Treatment Standards* (NPS 1995, Revised 2001). The Secretary of the Interior holds the responsibility for acting in an advisory role in protection and preservation of all cultural resources listed in or eligible for listing in the National Register of Historic Places, and *The Secretary's Treatment Standards* are the Secretary's advice on how to protect a wide range of historic properties. By separate regulation, the Secretary has required the application of the standards and guidelines in certain programs administered through the NPS, including all proposed development grant-in-aid projects assisted through the National Historic Preservation Fund.

The treatment standards are designed to be applied to all historic resource types included on the National Register of Historic Places such as buildings, sites, districts, and objects. The treatment guidelines apply to specific resource types (the type found in the Elkmont Historic District is buildings) and provide specific guidance on modification of building interiors and exteriors, including acceptable methods of working with types of building materials, such as wood or masonry.

The Elkmont Historic District project alternatives propose treatments such as restoration, rehabilitation and reconstruction of the historic buildings, and preservation of cultural landscape features. These proposed treatments have been developed in consideration of this guidance for historic buildings, as well as the cultural landscape of the District (see Appendix B) and its archeological resources.



Reconstruction

One treatment proposed by several of the project alternatives involves reconstruction of the Wonderland Hotel because it has failed structurally. The Department of the Interior defines reconstruction as the act or process of depicting, by means of new construction, the form, features, and detailing of a non- surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location. The NPS has specific policies regarding reconstruction. Director's Order 28 (NPS 1998c) states that reconstruction is a last- resort measure for addressing a management objective and is only allowed with specific written approval of the Director after a policy review at the Washington level. In addition to approval by the Director, NPS Management Policies (NPS 2000) indicate that the NPS will not reconstruct a missing structure unless:

- 1) There is no other alternative that would accomplish the Park's interpretive mission;
- 2) sufficient data exists to enable its accurate reconstruction, based on the duplication of historic features substantiated by documentary or physical evidence, rather than on conjectural designs or features from other landscapes; significant archeological resources will be preserved in situ or their research values will be realized through data recovery;
- 3) reconstruction will occur in the original location; and
- 4) the disturbance or loss of significant archeological resources is minimized and mitigated by data recovery.

Reconstruction of the Wonderland Hotel would be conducted in accordance with *The Secretary's Treatment Standards* (NPS 1995, Revised 2001) and would comply with the standards for reconstruction (NPS 2004f) as follows:

1. Reconstruction will be used to depict vanished or non- surviving portions of a property when documentary and physical evidence is available to permit accurate reconstruction with minimal conjecture, and such reconstruction is essential to the public understanding of the property.
2. Reconstruction of a landscape, building, structure, or object in its historic location will be preceded by a thorough archeological investigation to identify and evaluate those features and artifacts that are essential to an accurate reconstruction. If such resources must be disturbed, mitigation measures will be undertaken.
3. Reconstruction will include measures to preserve any remaining historic materials, features and spatial relationships.
4. Reconstruction will be based on the accurate duplication of historic features and elements substantiated by documentary or physical evidence rather than on conjectural designs or the availability of different features from other historic properties. A reconstructed property will re- create the appearance of the surviving historic property in materials, design, color and texture.



5. A reconstruction will be clearly identified as a contemporary re-creation.
6. Designs that were never executed historically will not be constructed.

According to *The Secretary's Treatment Standards*, the goal of reconstruction is to make the building appear as it did at a particular and most significant time in its history. Remaining cultural landscape features should be retained to provide a sense of the historic setting. The use of traditional materials and finishes is always preferred for visible features. For non-visible features, such as interior structural or mechanical systems, it is expected that these will be contemporary upgrades, but that they will be obscured from view as much as possible. For interior spaces, *The Secretary's Treatment Standards* specify identifying, retaining and preserving a floor plan or interior spaces that are important in defining the overall historic character of the building. This includes the size, configuration, proportion, and relationship of rooms and corridors; the relationship of features to spaces; and the spaces themselves.

The Secretary's Treatment Standards allow, but do not recommend, altering a floor plan or interior spaces that are important in defining the overall historic character of the building so that, as a result, the character is diminished. Any reconstruction proposed for the Wonderland Hotel under the proposed project alternatives would have to consider the *The Secretary's Treatment Standards* and the spirit of the recommendations provided therein. Non-intrusive modifications to accommodate temperature and humidity controls, and other storage requirements of a curatorial facility may be required. The types of modifications necessary could include alteration of some of the interior layout of individual rooms.

Interpretation

All of the project alternatives propose installation of wayside exhibits. Two of these exhibits are included in all of the alternatives. One would be placed in the Elkmont Campground and would provide a description of the history of the Town of Elkmont. A second exhibit would be placed in Millionaire's Row and would include a description of the District's synchronous firefly population. Various other exhibits are proposed for Alternatives B through F2, and are described in the narrative for each alternative that follows in this chapter.

Elkmont Campground

Alterations to the campground and its associated buildings and facilities are not under consideration as part of any alternative in this analysis because the purpose of this analysis is to reevaluate the current management plan for the Elkmont Historic District buildings as specified in the 1982 GMP. There will be no change in campground management as outlined in the 1982 GMP. In addition, no changes to modern Park buildings, such as those associated with the campground and Quarters 434 and 600, are proposed under any alternative. These buildings are not related to the Appalachian or Wonderland Clubs, were constructed after the District's designated period of significance, and would remain under all alternatives.



Infrastructure Modifications

Various modifications to infrastructure, including water, wastewater treatment, roadways and parking are proposed under Alternatives B, C, D1, D2, E1, E2, F1 and F2. The methodology for determining water and wastewater quantities and roadway and parking needs is provided in detail as part of the discussion for Alternative B. This methodology was applied to the remainder of the alternatives (C through F2). Therefore, the discussion provided under Alternative B regarding infrastructure modifications is applicable to Alternatives C through F2.

Pavement

The sites selected for parking areas were based on locations that would not intrude onto the 100- year floodplain of the Little River or its tributaries, areas which had experienced previous ground disturbance and/or contained little vegetation, and locations conducive to vehicular and pedestrian circulation. Parking areas were also placed in locations that allow space for a vegetated buffer between the parking area and the surface water. A variety of surface treatments for parking areas were considered including gravel, bituminous asphalt, conventional concrete, and pervious concrete. Selection of pavement material was based on its ability to contain the “first flush” of storm water runoff for pollutant capture, thereby minimizing the amount of storm water runoff that would reach surface waters.

Of the potential paving treatments, only pervious concrete meets the criteria of containing the first flush of storm water. Pervious concrete possesses many of the best qualities of the other surfaces, is an ADA compliant surface with exceptional strength and durability, and perhaps most importantly, its surface is pervious. Therefore, it provides superior infiltration capabilities and significantly reduces surface runoff. Pervious pavement allows water and oxygen to enter below the soil surface. It can reduce or eliminate the need for retention or detention ponds in areas surrounded by a vegetative buffer. Recent studies have shown that pervious pavement produces the best removal of pollutant loads, with greater than 80% removal of most contaminants in areas paved with pervious pavement surrounded by vegetative buffers (Rushton 2002). Minor maintenance is needed to ensure that pervious pavement retains its infiltration capacity and its pores do not become clogged with fine sediments tracked in on vehicle tires. Therefore, periodic (once per 1- 2 years, or as conditions require) pressure washing or vacuuming of pervious pavement would be necessary.

Wastewater

The Elkmont wastewater treatment plant contains a conventional extended aeration activated sludge biological process with tertiary filtration. This is a time tested treatment process that typically performs very well under a variety of wastewater flow conditions. The extended aeration process has built- in buffering capacity allowing influent flows to be erratic during the course of a day. This allows the treatment plant to receive flows that vary both above and below the 35,000 gallon per day (gpd) design flow for the plant. This treatment flexibility is needed to accommodate the variable diurnal flow characteristics that result from the campground and would also result from potential new wastewater sources generated by some of the proposed alternatives.



The hydraulic design capacity of the wastewater treatment plant, which is currently 35,000 gpd, is based on average daily flows with the capability to adequately treat much higher daily flows for short periods of time. Since the wastewater treatment plant must react to the variable flows that are received day to day, the terms of the discharge permit allow the plant flow to vary considerably while maintaining adequate biological treatment to meet the Little River discharge parameters.

Monthly Operating Reports for the Elkmont wastewater treatment plant revealed that the average daily flow through the plant for the years 1998 through 2003 was 9,976 gpd, while the average daily flow for the years 1998 through 2000 was 7,660 gallons per day. For the years 2001 through 2003, the average daily flow was recorded at 12,291 gallons per day. Although the reason for these average day flow variations are not able to be determined, as a conservative measure, calculations have utilized the average flow for the more recent three (3) year period as average base flow conditions.

During this same period, the plant flow exceeded 30,000 gpd on several occasions as a result of operational issues, such as the recirculation of decanted backwash water and flush valve problems in the campground restrooms. However, on the average, the peak day flows for wastewater are approximately 30,000 gpd.

Wastewater Projections

When preparing the wastewater projections for each alternative, the peak flow conditions were considered more prominently due to the unpredictable daily visitation patterns of day use visitors and the expected daily wastewater flows from the facilities in Alternatives E1 through F2. This approach also provides even more treatment buffering capacity in the treatment plant to best protect the Little River under any unexpected wastewater flow conditions.

The projected wastewater flow to be added in Alternatives B and C from the restroom facilities at the Appalachian Clubhouse is 1,300 gpd. This is a minor additional flow that can be adequately treated without any plant improvements or increase in the discharge pollutants.

In Alternatives D1, D2 and E1, additional wastewater flows projected would be 2,268 gallons per day, 3,635 gallons per day and 5,888 gallons per day, respectively. These additional daily wastewater flows are not anticipated to stress the hydraulic capacity of the treatment plant, although they would increase the erratic diurnal flow pattern with much of the daily flow entering the plant during peak flow times. This issue would be addressed by construction of a flow equalization basin at the head of the plant that would receive the daily flow and release it into the plant at a constant flow. This is the only improvement to the wastewater treatment plant needed to support Alternatives D1, D2 and E1.

The projected additional wastewater flows in Alternatives E2 and F2 range from 14,375 gpd to 23,467 gpd, respectively. Due to the expected additional daily flows as based on the projected lodging occupancy rates, a 5,000 gpd increase in the design capacity of the treatment plant would be required in Alternatives E2 and F1, while F2 would require a 15,000 gpd increase. Treatment of this additional effluent cannot be accommodated by



the existing wastewater treatment system. Because increases in hydraulic discharge are not permitted to occur under the terms of the existing permit or the Tennessee Antidegradation Statement, additional treatment would have to be provided at another location that would not result in direct discharge of treated effluent into the Little River.

Thermal Effects of Wastewater Discharge

The wastewater treatment plant discharges its treated effluent into the Little River at river mile 49.6. The discharge has been entering the Little River at this location for more than 30 years. The quality and quantity of the discharge is well documented during this period in the Monthly Operation Reports and the Discharge Monitoring Reports that are prepared by the plant operator for the NPS and submitted to the Tennessee Department of Environment and Conservation in accordance with the National Pollutant Discharge Elimination System (NPDES) Permit. Since a record of the temperature of the effluent wastewater and of the Little River at the point of discharge is not required in the discharge permit or for the operation of the treatment plant, there is no historic temperature data at this location.

According to NPS records, the wastewater temperature in the wastewater treatment plant as it enters the discharge pipe varies seasonally from an average of approximately 63°F during the spring and fall months to an average of approximately 72 °F during the summer months. Based on water temperature data collected during the past 40 years from two (2) USGS gauging stations located upstream and downstream of the wastewater discharge point, the average river water temperature is 57° F during the spring months, 67°F during the summer months and 51°F during the fall months. The average temperature differential of the wastewater in the treatment plant and the water in the river varies from 5°F to 12°F.

The wastewater leaves the treatment plant through an 8- inch diameter underground pipe that has a moderate slope for approximately 40 feet, and then it levels out over the last approximate 70 feet to the discharge point in the river. The discharge pipe outlet is submerged under the river water surface in a swiftly flowing channel that appears to be the deepest part of the river channel at that location. The 70 foot flat section of discharge pipe leading to the river remains surcharged with river water at all times.

The discharge flow from the wastewater treatment plant to the river is intermittent rather than continuous. The plant is designed such that the settling clarifier flow is pumped intermittently into the disinfection basin and then flows by gravity to the river as previously described. Therefore, wastewater is discharged to the Little River only when the discharge pump is operating. Since the discharge pumping capacity rate is 40 gallons per minute, this is the rate of discharge during the pumping cycles with no discharge going to the river when the pump is not operating. For example, when the daily flow through the plant is 10,000 gallons, the discharge enters the river intermittently for a total of only 250 minutes (4.2 hours) during the 24 -hour day. At a flow rate of up to 50,000 gallons per day, the discharge would be occurring at the same rate of 40 gallons per minute as it currently does for a total of 20.8 hours.

Due to the existing configurations and operating characteristics of the treatment plant, some cooling of the wastewater occurs in the discharge pipe between the plant and the



actual discharge into the Little River. This cooling occurs in the section of discharge pipe that lies at a flat grade below the water level in the river. This section of pipe is surcharged with cooler river water when the discharge is not occurring, which lowers the temperature of the wastewater as it intermittently flows through the pipe. At 40 gallons per minute flow rate, the velocity in the pipe is approximately 0.25 feet per second allowing a residence time of the wastewater in the pipe of approximately 4.6 minutes.

Field measurements were taken of wastewater temperature as it flows out of the treatment plant immediately before it exits the pipe at the submerged discharge point in the river. The temperature of the wastewater in the pipe leaving the plant was 63.3°F. The temperature of the wastewater in the pipe 2 feet before entering the river was 61.5°F and 61°F at the end of the pipe that discharges into the river. These measurements were taken after the discharge pump had been operating for about 45 minutes so that the interior surface of the discharge pipe had already warmed to a more stable temperature. The wastewater residence time in the discharge pipe was recorded at 4 minutes and 50 seconds, which confirms the rate of discharge at approximately 40 gallons per minute. Water temperature in the river at the same submergence elevation as the discharge pipe was also measured both upstream and downstream from the discharge pipe. The river temperature approximately 3 feet upstream was 58.8°F. Downstream temperatures were taken at distances 1, 2 and 3 feet from the discharge pipe and found to be 59.7°F, 58.9°F and 58.8°F, respectively. Under these conditions, the warmer temperature of the wastewater was dissipated entirely within 3 feet of the discharge point. With the constant discharge rate and the relative stability of the heat transfer rate, it is reasonable to conclude that under the range of seasonal temperatures of both the wastewater and the river water, the thermal effects of the wastewater discharge would not measurably vary from the existing conditions regardless of the daily discharge from the plant.

Wastewater Treatment Options

The conceptual approach to addressing the treated wastewater discharge in the Little River for all of the alternatives was to comply with the Outstanding National Resource Waters (ONRW) designation (Tier 3) through the Tennessee Antidegradation Statement contained in Chapter 1200- 4- 3 General Water Quality Criteria of the Rules of the Tennessee Water Quality Board. Although there would be no additional amount of pollutants discharged to the Little River and no degradation of the current water quality associated with wastewater discharge under any of the alternatives, the Tennessee Antidegradation Statement also implies that no additional increase in hydraulic capacity of wastewater treatment systems currently discharging to the Little River would be allowed. Therefore, alternatives that require an expansion of the existing plant (Alternatives E2, F1 and F2) could not be accommodated within the District unless a treatment strategy would be implemented that did not result in direct discharge to the Little River. Alternatives B through F2 all propose various levels of upgrades to the wastewater treatment system to accommodate the need created as facilities and proposed lodging are added. Strategies considered for providing wastewater collection and treatment services associated with all of the alternatives included (1) individual septic collection with subsurface infiltration, drip irrigation, or pressure mound disposal; (2) constructing holding basins for pump and haul to a local wastewater treatment facility;



and (3) connection to existing wastewater system. All three methods are described below.

Individual septic collection with subsurface infiltration, drip irrigation, or pressure mound disposal.

This strategy involves three (3) alternative methods for wastewater disposal in conjunction with a septic tank system. The first method examined would include conventional septic tanks and subsurface infiltration drain field technology to serve individual buildings. The second method would require a larger septic tank serving multiple buildings and a low- pressure pump and piping system that distributes the wastewater into the soil through perforated small diameter drip irrigation piping. The third method would require an elevated sand/soil mound that allows sewage disposal in areas where subsurface soil quality would not qualify for subsurface infiltration or drip irrigation. A mound system would remove the effluent from a septic tank and pump it from a dosing tank and the wastewater would then be sprayed into a gravel bed within an elevated mound of sand/soil. Unlike other on- site sewage disposal systems, primary and final treatment of the effluent in this method takes place within the sand/soil of the mound and not within the surrounding soil.

The use of conventional septic systems and/or low- pressure drip irrigation systems would not be desirable due to the generally poor quality of the soils throughout the District for these purposes. The use of individual on site disposal systems could also result in a significant amount of ground disturbance and tree/vegetation removal with each installation. In addition, regeneration of vegetation in these drain field areas would be detrimental to the long- term effectiveness of the systems. As a result, the area would have to be maintained to prevent reestablishment of vegetation.

A drip irrigation/disposal system could be constructed, as necessary, to treat and dispose of the additional wastewater generated by the selected alternative over and above the design capacity of the existing wastewater treatment plant. However, as described above, given the soil characteristic within the District, locating a reliable long-term location for such a system is not likely. As a result, if a drip irrigation/ disposal system were installed to accommodate the wastewater treatment needs of an alternative, a suitable site for this system would have to be identified outside of the District. Wastewater exceeding the current capacity of the existing wastewater treatment plant would then be pumped to the drip irrigation site for treatment. Pressure mounds are not generally preferred methods of wastewater disposal for public facilities because they involve open- air treatment processes that are visible to the general public and are therefore, much less aesthetically appealing and more vulnerable to vandalism.

Construct holding basins, then pump and haul wastewater to a local treatment facility

One option for wastewater management would be to construct a gravity collection system in which wastewater is collected and retained in holding basins. A tank truck would periodically pump the sewage into a storage tank and transport it off site to a wastewater treatment facility for treatment and disposal. This strategy is typically employed when site conditions disallow on- site treatment and disposal. Because the



wastewater would typically turn septic, the storage vault would require odor control measures such as chemical treatment or aeration and would have to be located in an area easily accessible by the septic hauler. The Tennessee Department of Environment and Conservation has indicated that they would only permit pump and haul installations as a last resort and usually for a temporary period until other on site wastewater treatment options can be implemented.

Connection to existing wastewater system

The connection to and extension of the existing wastewater collection system would be accomplished in different ways depending on the site circumstances. A gravity collection system would be constructed as is practical by the topography at each site location. This option would generally provide the lowest long- term operation and maintenance cost and would result in a much lower impact to the environment as compared to individual septic systems. The use of individual grinder pump stations with small diameter force mains, which would be located at each structure receiving wastewater service, would be constructed in areas where the topography is not suitable to achieve gravity flow. The wastewater would be pumped from these stations into a central gravity collection line or a larger pressure force main, depending on the particular circumstances of the service area. A third strategy would include the use of a larger, centrally- located wastewater pump station that collects wastewater via gravity collection lines to a central point where it is pumped via a pressure force main to a point where it can again flow by gravity. The use of pumping equipment generally increases the operation and maintenance costs of the associated system. However, the installation of the associated pressure force main piping can generally be accomplished with much less ground disturbance than gravity collection lines and at a significantly reduced capital cost because of the relatively small size of the force main as compared to gravity piping. The use of individual grinder systems would prove cost effective when serving a relatively low number of buildings that are more removed from the collection system and where gravity sewer lines are not possible due to topography constraints.

Based on the estimated wastewater flows generated by alternatives B through E₁, it may be possible to modify or expand the capacity of the existing wastewater treatment plant. Due to fluctuations in the volume of daily flows currently observed at the plant, relatively minor additions to the overall peak wastewater flows would be addressed through the construction of a flow equalization basin. This measure would help the plant operate more efficiently by storing peak wastewater inflows until the peak has subsided.

Recommended Wastewater Plan

For alternatives that do not exceed permitted discharge levels, the recommended strategy for providing wastewater service is to connect to the existing wastewater collection system within the District and to modify the existing wastewater treatment plant, where necessary, to accommodate the projected wastewater flows. This strategy would provide the most cost effective solution in managing wastewater treatment and disposal needs without additional pollutant loadings to the Little River.

The connection to and extension of the existing wastewater collection system would be accomplished in a number of different ways including a gravity collection system, the use of individual grinder pump stations, and/or a larger, centrally- located wastewater

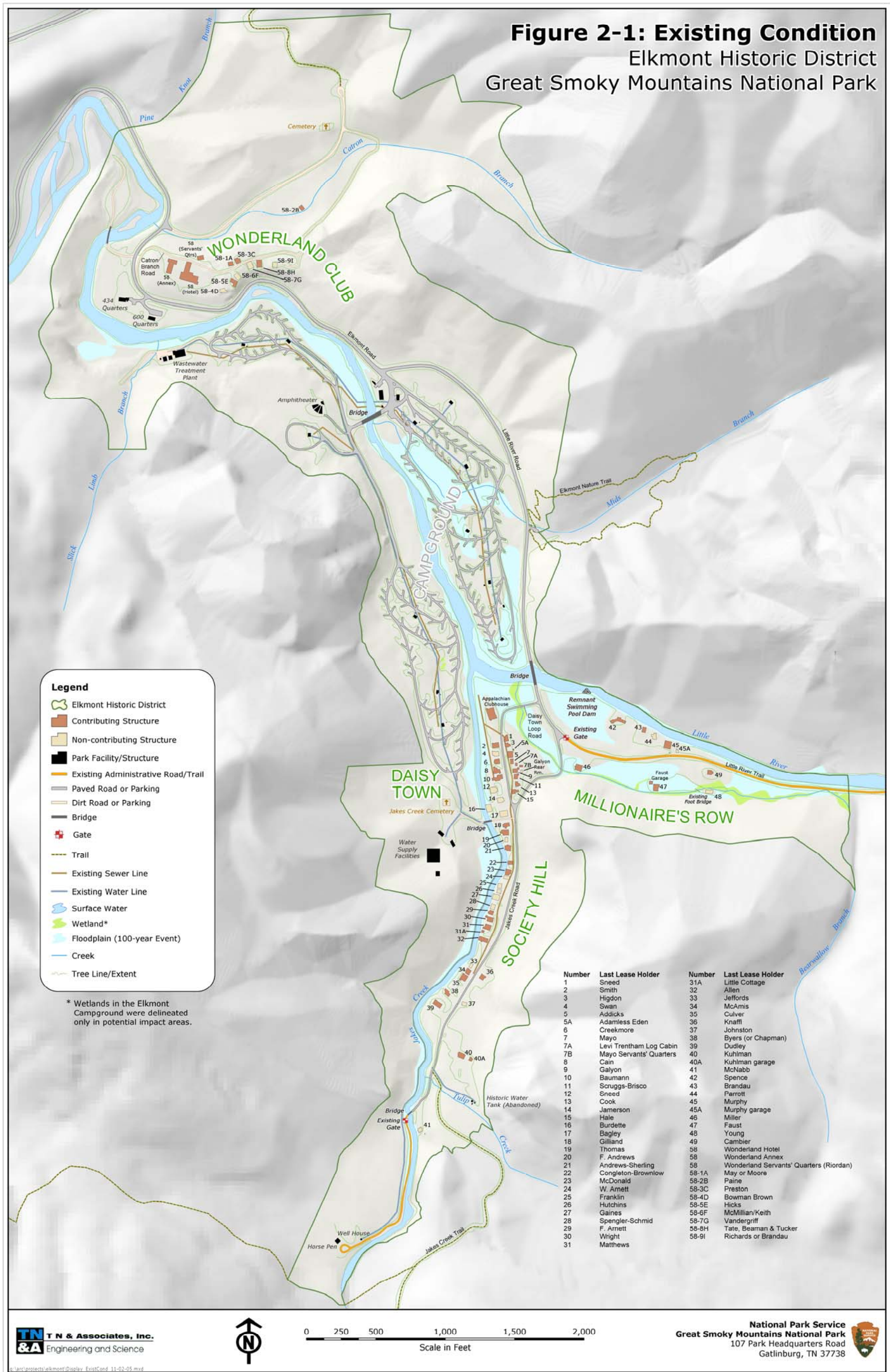


pump station, depending on the particular circumstances of the service area. The use of pumping equipment generally increases the operation and maintenance costs of the associated system over gravity systems. However, the installation of the associated pressure force main piping can generally be accomplished with much less excavation than gravity collection lines and at a significantly reduced capital cost because of the relatively small size of the force main compared to gravity piping. The use of individual grinder systems may prove cost effective when serving a relatively low number of buildings that are farther away from the collection system. This strategy also makes use of the existing wastewater collection system and its available capacity. As discussed previously, because larger wastewater flows would be generated following implementation of Alternatives E2, F1 and F2, it would necessary to expand the capacity of the existing wastewater treatment plant. However, because environmental regulations prohibit expansion of the hydraulic capacity of the existing plant, the additional wastewater treatment would have to occur at an alternate location, either through addition of a drip irrigation system located in a suitable area outside of the District or by piping the wastewater to the nearest treatment plant in Gatlinburg. If either of these methods were utilized, a separate investigation of the potential resource impacts associated with construction these systems would be required prior to implementation.

To facilitate an understanding of the scope of the proposed changes under each alternative, the existing condition of the District is depicted on the following page (Figure 2- 1). References to buildings and last leaseholder names on this map and elsewhere in the document are consistent with those listed in the District's 1994 National Register of Historic Places nomination. Through the public involvement process, the Park has been made aware that some discrepancies exist in the last leaseholder name for several buildings as shown in the nomination. However, this document uses names consistent with the National Register listing to avoid confusion regarding which buildings are discussed in this document. All last leaseholder names, as described in the National Register of Historic Places nomination, are listed on Figure 2- 1. The figures that depict alternatives (Figures 2- 2 through 2- 8) only list the last leaseholder names for those buildings proposed to be retained under each alternative.



Figure 2-1: Existing Condition
Elkmont Historic District
Great Smoky Mountains National Park



2.2.2 No Action Alternative (1982 General Management Plan)

2.2.2.1 Concept

NEPA requires a “No Action” Alternative to describe what would happen if current management direction were to continue into the future in terms of resource management and visitor experience. The No Action alternative implies that no change in activity is undertaken and that existing management practices would be sustained. Taking no action at Elkmont is tiered to, and incorporates the direction of the 1982 General Management Plan, which calls for removal of all of the historic buildings within the District and allows for natural regeneration of plant communities.

The proposed work would consist of either mechanical removal of the historic buildings or removal by hand. Most remnants of building foundations and stonework could remain as a link to the past occupation of the District. The General Management Plan directs that building sites would be returned to a natural state. No changes to Modern Park buildings, such as those associated with the campground and Quarters 434 and 600, are under consideration for any alternative in this analysis. These buildings are not related to the Appalachian or Wonderland Clubs and were constructed after the District’s designated period of significance and would remain. Table 2- 3 provides a summary of the proposed treatment for all buildings under the No Action Alternative. The alternative is depicted on Figure 2- 2.

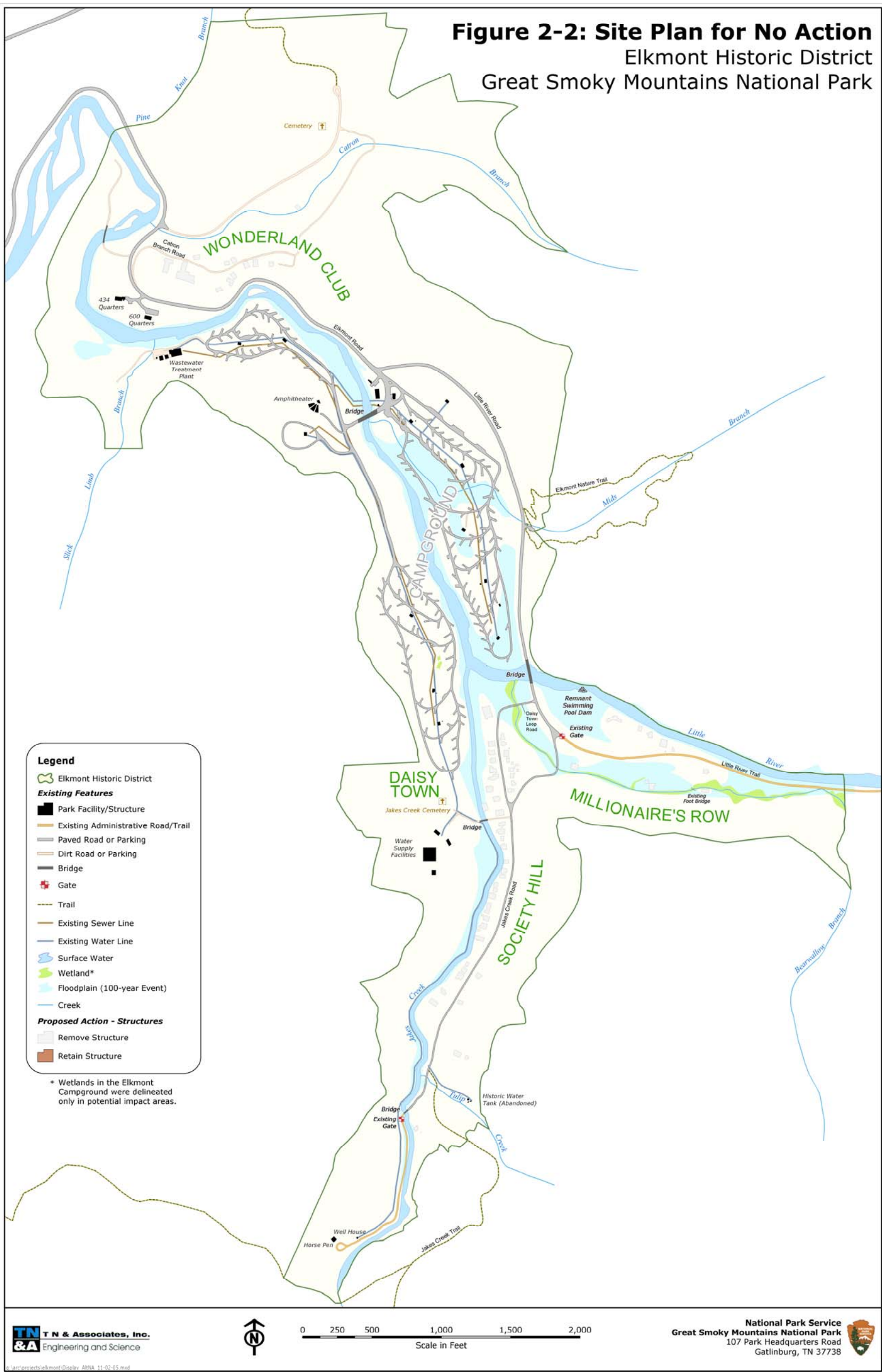
Table 2- 3: Buildings Summary for the No Action Alternative

| Area/Buildings | Status | Uses |
|-----------------------------|------------|---|
| Wonderland Club Area | | |
| Wonderland Hotel | Remove | Natural regeneration of plant communities |
| Annex | Remove | Natural regeneration of plant communities |
| Cabins | Remove all | Natural regeneration of plant communities |
| Millionaire’s Row | Remove all | Natural regeneration of plant communities |
| Daisy Town | | |
| Appalachian Clubhouse | Remove | Natural regeneration of plant communities |
| Cabins | Remove all | Natural regeneration of plant communities |
| Society Hill | Remove all | Natural regeneration of plant communities |

2.2.2.2 Land Protection

Land protection plans are developed by the NPS to ensure that protection of Park resources is provided for in the management objectives for an area. The No Action Alternative would provide land protection measures by being consistent with the Park’s mission in preservation of natural resources and some cultural resources. Natural resources would be protected by returning building sites to a natural state upon removal of buildings and structures. Although the historic buildings and structures would be removed, some cultural landscape features and archeological resources would remain as a link to the past human occupation of the District.

Figure 2-2: Site Plan for No Action
Elkmont Historic District
Great Smoky Mountains National Park



2.2.2.3 Cultural Resource Management

The General Management Plan states “Significant cultural resources will be preserved and studied. Buildings, sites, and objects representative of the Appalachian folk culture will continue to be interpreted” (NPS 1982). However, Elkmont was not identified as having significant cultural resources at the time the 1982 Plan was adopted and it was not listed on the National Register of Historic Places as a District until 1994, 12 years subsequent to the development of the Plan. The General Management Plan further states, “Less significant historic features that do not qualify for the National Register will be allowed to undergo natural deterioration, and the sites will be reclaimed by natural processes” (NPS 1982). Consistent with this policy, the management direction for Elkmont, as specified in the 1982 Plan, calls for removal of the buildings and returning the building sites to a natural state. The 1982 Plan does not provide direction regarding remaining cultural landscape features.

The No Action Alternative meets the overall management objectives for cultural resources by protecting some cultural resources, cultural landscape features, and archeological resources. While all of the buildings would be removed, efforts would be made to retain some culturally significant features, such as remnants of building foundations, stonework and other visible cultural deposits, that would remain as a link to the past occupation of the District. Building sites would be returned to a natural state following removal of the buildings. This approach would be compatible with the management objectives established for the District (Section 1.4) in ensuring that cultural resources and settings are maintained in a manner compatible with natural resource management objectives. With the removal of the buildings, a decrease in Ranger patrols, Park operations and staffing are anticipated due to the elimination of the need for resources to stabilize historic buildings and to provide visitor protection services related to building hazards.

2.2.2.4 Natural Resource Management

The General Management Plan indicates that “Special management will generally be given to endangered or threatened species and to species or systems having particular scientific or aesthetic value and/or fragility. This will be accomplished by diverting or eliminating human activities or non- native species that may threaten these features or by allowing or compensating for natural occurrences on which some communities and species depend” (NPS 1982).

At Elkmont, as in the rest of the Park, natural resource management direction is to identify or locate species or specific features of the Park that may have special value or vulnerability that the Park deems in need of special management. The No Action Alternative proposes to continue these monitoring activities throughout the District. Current Park management policy also includes treatment to eradicate non- native species. Under the No Action Alternative, non- native species management would continue at its current level. The No Action Alternative would generate no additional discharge or run- off into the Little River or its tributaries; maintain or propose no additional activities within floodplains; and limit visitor use activities that could potentially tax site carrying capacity. Consistent with guidance provided in the 1982

Plan, the No Action Alternative would allow for natural regeneration of forest in areas where buildings are removed.

2.2.2.5 Interpretation and Visitor Use

According to the General Management Plan, the basic objective of the interpretive effort is to demonstrate to visitors the value of the Park as a sanctuary from some of the effects of the modern technological world and to show how the special qualities of such a sanctuary relate to and benefit people. Opportunities to view the Park by vehicle, hiking, picnicking, camping and fishing all occur within the District. These opportunities would continue to be available to all visitors if the No Action Alternative was implemented.

The No Action Alternative would allow regeneration of ecosystems and recovery from past logging and human occupation; providing visitors with opportunities to learn about the natural resources that comprise Elkmont; and maintain existing levels of traditional recreation, such as hiking and camping.

2.2.2.6 Facilities Development with Detailed Site Plans for the No Action Alternative

Under the No Action Alternative, all of the historic buildings would be removed. Removal would be accomplished either by mechanical means or by hand removal. Foundations and other features that could serve as a link to the past human occupation of Elkmont could remain if they do not present a safety hazard to visitors. Former building sites would be revegetated in accordance with guidance provided in the 1982 Plan. Reestablishment of vegetation would provide soil stabilization and act as a deterrent to erosion and subsequent sedimentation into surrounding water bodies, floodplains, wetlands and other sensitive natural areas.

Infrastructure Needs

No infrastructure improvements would be necessary to accommodate the needs of this alternative. Per the General Management Plan, roadways damaged during project implementation will be repaired and other roadways maintained as needed. Once required repairs are made, no additional operation and maintenance expenditures will be necessary for these roadways over and above those funds presently budgeted for the operation and maintenance of existing roadways within the District. Primary features of this alternative are summarized below in Table 2- 4.

2.2.2.7 Estimated Development Costs

The estimated range of costs for site development and implementation of the No Action Alternative is provided in Appendix C of this document. An itemized list of costs and post- construction operation and maintenance costs are provided. Total costs of the No Action Alternative are based on estimating the funds necessary to perform the following items:

- Building removal
- Infrastructure maintenance
 - Existing roadway repairs
- Vegetation management



Table 2- 4: Summary of Implementation Features for the No Action Alternative

| | |
|---|---|
| Use of Historic Buildings | None; all historic buildings are proposed to be removed |
| Specific Measures for Buildings Retained | None; all historic buildings are proposed to be removed |
| Natural Resources Management | Continued implementation of current management activities including hemlock pest management, non- native vegetation management, water quality monitoring, and fish population assessment |
| Visitor Use | Visitation is not expected to change significantly. Camping, fishing, hiking and other compatible recreation would continue. |
| Interpretive Features | No changes to existing interpretive features are proposed |
| Access / Circulation | No changes to existing access or circulation are proposed |
| Parking | No parking improvements or changes are proposed |
| Utilities | No changes to existing utilities are proposed |
| Landscape Treatment | Retain foundations, rock walls and other cultural features where they do not pose a safety hazard to visitors |
| Park Operations and Staffing | Decrease in Ranger patrols, Park operations and staffing are anticipated with implementation of this alternative by eliminating the need for resources currently being utilized to stabilize the historic buildings and provide visitor protection related to building hazards. Retain the current level of general maintenance to existing infrastructure. |



2.2.3 Alternative A

2.2.3.1 Concept

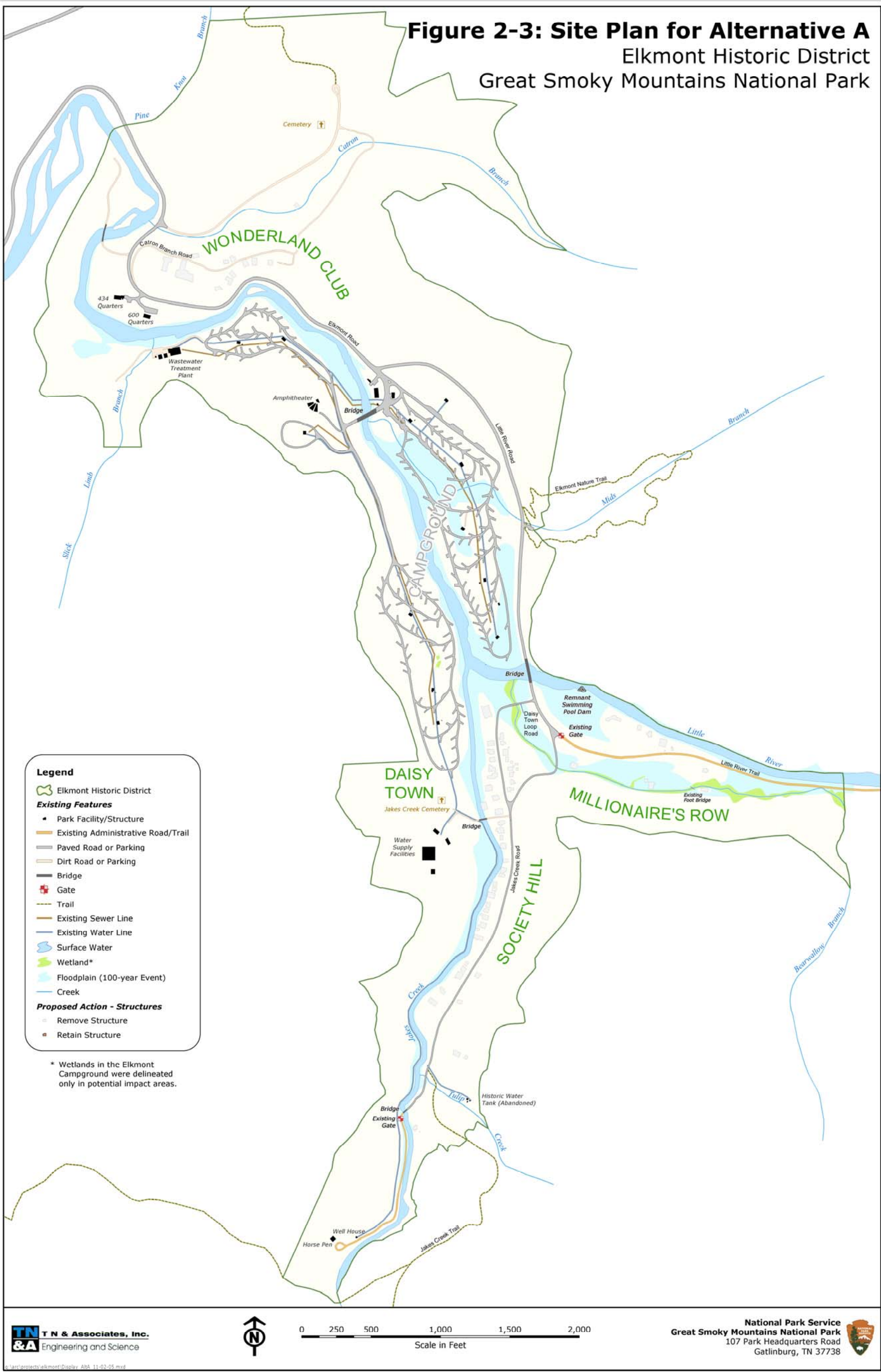
The District contains unique plant communities and natural features due to its location within and adjacent to the Little River floodplain. The river and its associated plant communities provide habitat for a variety of flora and fauna, contributing to the Park's overall biodiversity. To facilitate natural resource restoration, Alternative A calls for removal of all buildings as outlined in the 1982 General Management Plan. The proposed work would consist of either mechanical removal or removal by hand. Efforts would be made to facilitate complete removal of building foundations and stonework above ground level. Alternative A also includes some interpretive features to further educate visitors on the natural and cultural history of the District. They include a wayside exhibit at the Elkmont Campground, describing the history of the Town of Elkmont, and a wayside exhibit in the Millionaire's Row area with information on the District's synchronous firefly population. This alternative provides for active restoration and management to facilitate the reestablishment of native plant communities. As in the No Action Alternative, long-term management of invasive and/or non- native plant species would continue. However, Alternative A also proposes a more intensive effort to inventory and eradicate non- native species. Table 2- 5 provides a summary of the proposed treatment for all buildings under Alternative A. The alternative is depicted on Figure 2- 3 on the following page.

Table 2- 5: Buildings Summary for Alternative A

| Area/Buildings | Status | Uses |
|--------------------------|------------|---|
| Wonderland Club | | |
| Wonderland Hotel | Remove | Active restoration and management of native plant communities |
| Annex | Remove | Active restoration and management of native plant communities |
| Cabins | Remove all | Active restoration and management of native plant communities |
| Millionaire's Row | Remove all | Active restoration and management of native plant communities |
| Daisy Town | | |
| Appalachian Clubhouse | Remove | Active restoration and management of native plant communities |
| Cabins | Remove all | Active restoration and management of native plant communities |
| Society Hill | Remove all | Active restoration and management of native plant communities |



Figure 2-3: Site Plan for Alternative A
Elkmont Historic District
Great Smoky Mountains National Park



2.2.3.2 Land Protection

Alternative A would provide land protection measures by being consistent with the Park's mission in preservation of natural resources and some cultural resources. Natural resources would be protected by actively restoring native plant communities at all former building sites. Although the historic buildings would be removed, some cultural landscape features, such as stone bridges and other features that would require ground disturbance in order to be removed would remain as a link to the past human occupation of the District.

2.2.3.3 Cultural Resource Management

This alternative focuses on natural resource restoration and would protect some of the cultural resources in the District by minimizing disturbance of archeological sites. Minor grading to provide a gradual transition into the elevation of the abutting topography may be required at former building sites. In those areas where ground disturbance would be required to remove foundations and other stonework, these building remnants would be left in place. Retaining these types of features and other cultural landscape components provides for cultural resource management consistent with the Park's mission. Measures to avoid potential impacts to shallow archeological deposits are described in the environmental consequences chapter of this document (Chapter 4), while Appendix E provides recommendations for specific buildings or groups of buildings.

2.2.3.4 Natural Resource Management

Alternative A proposes active restoration of native plant species in all areas disturbed during project implementation. Active restoration includes seeding and planting with native species collected in the District, followed by vegetation management. Active restoration of native plant communities would accomplish a variety of tasks including increasing species diversity, improving and increasing wildlife habitat, and providing soil stabilization measures. Management would be performed annually to prevent infiltration of non- native species and to promote the establishment of native plant communities. The need and focus of this non- native species management plan would be reassessed as conditions necessitate.

Soil disturbance, loss of tree canopy and planting of non- native species are all features of the District that would be addressed by Alternative A. Past use of the Elkmont area for farming, logging, and construction of buildings and roadways resulted in considerable disturbance of plant communities within the District over the past century. Subsequent activities such as planting of ornamental species, rerouting of Bearwallow Branch, driving or parking automobiles off of paved roadways and deposition of refuse and other materials caused additional disturbance. The "globally imperiled" montane alluvial forest plant community, which, in the past existed within the floodplain, experienced disturbance from logging and construction of the District buildings. Where appropriate conditions exist, reestablishment of plant communities in place prior to intensive human disturbance of the area would be promoted, including restoration of montane alluvial forest.

To create an environment conducive to the establishment of native plant communities in disturbed areas throughout the District, non- native species that compete with native species would be identified and eradicated. A District- wide inventory of non- native species has been completed in the past and has identified several non- native species that the NPS currently treats (see Table 2- 2 under Section 2.2). Alternative A proposes to dedicate additional funding to support management planning and staff to implement a comprehensive non- native species eradication plan throughout the District. This plan would focus on the species listed in Table 2- 2 and would be implemented on an annual basis. The goals of this management plan would be to create conditions suitable for native plant communities to thrive by reducing competition from non- native plant species; actively treat hemlock communities to protect against woolly adelgid infestation; revegetate disturbed areas with plant materials relocated from within the District to eliminate sites for potential non- native species infiltration; provide for long- term soil stabilization and erosion deterrence; and increase suitable habitat for wildlife species known to exist within the District.

In summary, this alternative focuses on protection of natural resources and ecosystems in the District. Alternative A would not generate any additional discharge from the sewage treatment plant or surface water run- off from impermeable surfaces into the Little River or its tributaries. No additional activities are proposed within the 100- year floodplain. Active restoration and long- term management of montane alluvial forest areas is proposed for sites where buildings are removed. Visitor use activities would continue at existing levels and pedestrian circulation would utilize existing roadways, also aiding in minimizing impacts to natural systems.

2.2.3.5 Interpretation and Visitor Use

According to the General Management Plan, the basic objective of interpretive efforts is to demonstrate to visitors the value of the Park as a sanctuary from some of the effects of the modern technological world and to show how the special qualities of such a sanctuary relate to and benefit people. Opportunities for hiking, picnicking, camping, fishing and viewing the Park by vehicle all exist within the District. These opportunities would continue to be available to all visitors if Alternative A was implemented.

Interpretive features would be included under Alternative A. Wayside exhibits would describe the history of the Town of Elkmont and the natural history of synchronous fireflies. The interpretive brochure currently available at the Elkmont Nature Trail would be revised to include historical information about Elkmont and would emphasize the integration of cultural and natural resource themes.

2.2.3.6 Facilities Development with Detailed Site Plans for Alternative A

Under Alternative A, all of the buildings and structures within the District associated with the Appalachian and Wonderland Clubs would be removed. Removal would be accomplished either by mechanical means or by hand removal. Foundations and buried features would not be excavated. However, they would be removed if removal can be accomplished without causing additional ground disturbance. If ground disturbance other than minimal grading would be necessary to blend former building sites into existing topography, these features would be left in place. Former building sites would

be restored with native plant seed collected in advance by the Park from within the District. Restoration of native plant communities would provide soil stabilization and act as a deterrent to erosion and subsequent sedimentation into surrounding water bodies, floodplains, wetlands and other sensitive natural areas. In addition, the footings of a small footbridge over Bearwallow Branch would be repaired and the bridge surface restored as a safety measure for hikers.

Infrastructure Needs

No infrastructure improvements will be necessary to accommodate the needs of Alternative A. However, implementation of Alternative A may result in accelerated deterioration of some of the existing roadways within the District. Roadways that may require repair following project implementation are described in Section 2.2.1. Road repair work will not occur until building removal has been completed. Once necessary repairs are made, no additional operation and maintenance expenditures will be needed for these roadways over and above those funds presently budgeted for existing roadways within the District. Primary features of this alternative are summarized in Table 2- 6 below.

2.2.3.7 Estimated Development Costs

The estimated range of costs for site development and implementation of Alternative A is provided in Appendix C of this document. An itemized list of costs and post-construction operation and maintenance costs are also provided. Total costs of Alternative A are based on estimating the funds necessary to perform the following items:

- Building removal
- Infrastructure improvements
 - Existing roadway repairs
- Vegetation management / non- native species removal/ restoration
- Resource education components
- Mitigation measures to be implemented as part of the alternative



Alternatives, Including the Environmentally Preferred Alternative
Alternative A

Table 2- 6: Summary of Implementation Features for Alternative A

| | |
|--|--|
| Use of Historic Buildings | None; all historic buildings are proposed to be removed |
| Measures for Buildings Retained | None; all historic buildings are proposed to be removed |
| Natural Resources Management | Non- native species eradication and management of native plant communities would occur annually throughout the District. Continued implementation of current management activities would occur including non- native species management, hemlock management, water quality monitoring, and fish population assessment. |
| Visitor Use | Visitation is not expected to increase. Use would continue to consist of hiking on existing trails, camping, fishing and other compatible recreational activities. |
| Interpretive Features | One wayside exhibit at campground describing history of the Town of Elkmont; one wayside exhibit on synchronous fireflies; Elkmont Nature Trail brochure would be revised to include a description of the District's cultural and natural resources. |
| Access / Circulation | No changes to existing access or circulation are proposed |
| Parking | No parking improvements or changes are proposed |
| Utilities | No changes to existing utilities are proposed |
| Landscape Treatment | Remove above ground features including foundations and rock walls; retain other cultural features where they do not pose a safety hazard |
| Park Operations and Staffing | Stabilization of the historic buildings would be eliminated; non- native species management specialist required half- time during growing season months to perform non- native species removal and native seed and plant installation; retain the current level of general maintenance to the existing infrastructure. |



2.2.4 Alternative B

2.2.4.1 Concept

Alternative B proposes to retain some of the historic buildings in the District and would provide for restoration of native plant communities in locations where buildings are removed. The buildings proposed for restoration and preservation were selected in order to provide a contiguous representative collection of historic buildings and the associated cultural landscape in one area of the District during the period of significance.

Alternative B proposes that exhibits would be provided on the history of Elkmont and on synchronous fireflies. The Elkmont Nature Trail brochure would be updated as well. In addition, Alternative B includes a variety of interpretive features throughout the District focused on the natural and cultural resources of the Elkmont Historic District (see Table 2- 18).

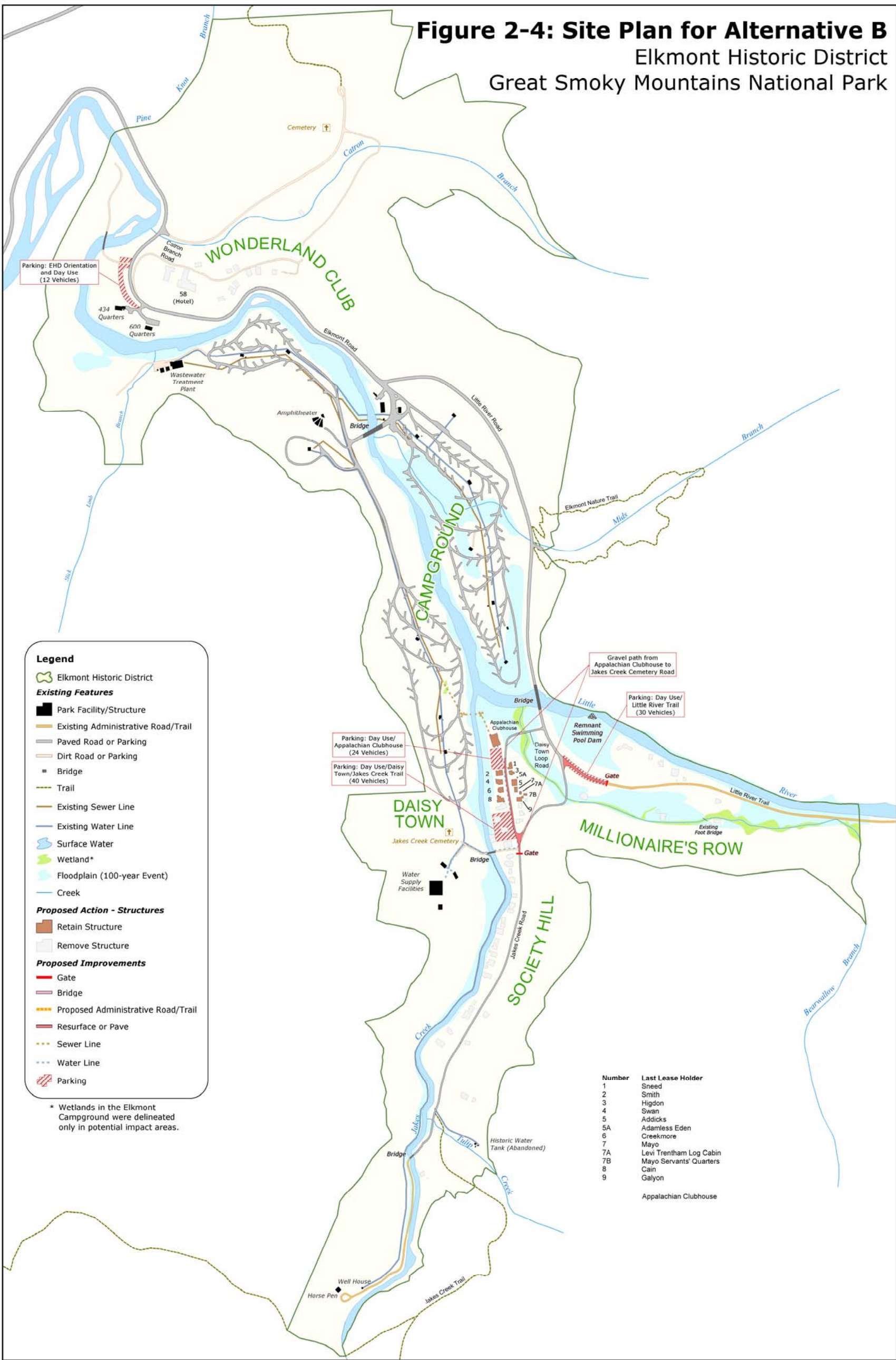
The Visitor Education focus would be interpretation of the changing landscape, the development of Elkmont, and the travel and tourism that eventually led to establishment of the Park. Table 2- 7 provides a summary of the proposed treatment for all buildings under Alternative B. The alternative is depicted on Figure 2- 4.

Table 2- 7: Buildings Summary for Alternative B

| Area/Buildings | Status | Uses |
|------------------------|--|--|
| Wonderland Club | | |
| Wonderland Hotel | Remove | Restoration of native plant communities; wayside exhibits and exhibits at orientation kiosk |
| Annex | Remove | Restoration of native plant communities |
| Cabins | Remove all | Restoration of native plant communities |
| Millionaire's Row | Remove all | Restoration of native plant communities; wayside exhibit |
| Daisy Town | | |
| Appalachian Clubhouse | Restore exterior, rehabilitate interior | Public Rental and day use; walking tour with interior self- guiding museum exhibits and wayside exhibits |
| Cabins | Restore 11 of the contributing cabins and return one non-contributing building to its historical configuration and preserve interiors, remove all others | Walking tour with wayside exhibits; Restoration of native plant communities where buildings are removed |
| Society Hill | Remove all | Restoration of native plant communities |



Figure 2-4: Site Plan for Alternative B
Elkmont Historic District
Great Smoky Mountains National Park



2.2.4.2 Land Protection

Alternative B would provide land protection measures by being consistent with the Park's mission to preserve cultural and natural resources. Although some of the historic buildings would be removed, Alternative B also proposes to retain a grouping of buildings for cultural resource interpretation purposes. These features would remain as a link to the past human occupation of the Appalachian and Wonderlands Clubs, while natural resources would be protected by restoring native plant species at all of the former building sites except where a parking lot is installed.

2.2.4.3 Cultural Resource Management

As noted above, Alternative B provides for cultural resource management consistent with the Park's mission by retaining and restoring a grouping of historic buildings. These buildings were selected as a representation of a contiguous cultural landscape in the Daisy Town part of the District. Where buildings are removed, stone walls and foundations would be left in place for interpretive purposes.

The gravel walking path extending from the Appalachian Clubhouse to Jakes Creek Cemetery would be restored. This path was originally developed as a boardwalk, but was later replaced with compacted gravel during the period of significance. Currently, although the historic location of this pathway remains visible, it is not actively maintained. Gravel will be placed over the existing path, extending from the Appalachian Clubhouse south to the road to Jakes Creek cemetery. This path would provide for separation of pedestrian and vehicular traffic.

Alternative B would protect and perpetuate cultural resources through preservation and restoration of a representative collection of buildings and the associated cultural landscape in one area of the District. Stonework and foundations would be retained at some sites where buildings are removed. Measures to avoid potential impacts to shallow archeological deposits would be used and are described in Section 2.1.1 of this document. Appendix E provides measures and recommendations for impact avoidance at specific buildings, or groups of buildings and other areas where modifications are proposed.

2.2.4.4 Natural Resource Management

Past use of the Elkmont area for private and commercial logging operations significantly disturbed plant communities within the District. Subsequent construction within the District and activities such as planting ornamental species, rerouting Bearwallow Branch, driving and parking off paved roadways, and deposition of refuse and other materials, caused additional disturbance.

Alternative B proposes restoration of native plant communities in all areas disturbed during project implementation with plants propagated from native seed sources and salvaged plants collected within the District. Plant materials could be transplanted from locations within the District to accomplish a variety of activities, including revegetation where buildings are proposed to be removed and creation of a visual barrier between the parking area and Quarters 434 and 600. Active restoration of native plant communities would accomplish a variety of tasks including increasing species diversity, improving and



increasing wildlife habitat, and providing soil stabilization measures. Although some buildings would be retained under this alternative, the majority would be removed, allowing for reestablishment of plant communities where buildings and other structures are removed. Current natural resource management practices concentrating on removal of non- native species, treatment of hemlock woolly adelgid infestations, and other monitoring activities would continue at their current level.

Alternative B would protect and perpetuate natural resources and ecosystems. This alternative would not generate any additional discharge from the sewage treatment plant or runoff into the Little River or its tributaries as a result of land use or visitor activities. No additional activities within the 100- year floodplain are proposed. Visitor use activities would continue at existing levels and would aid in minimizing impacts to natural systems. Defined and delineated parking for day use visitors and for trailheads would prevent and minimize uncontrolled site impacts by providing adequate space for vehicles in designated parking areas.

2.2.4.5 Interpretation and Visitor Use

According to the General Management Plan, the basic objective of the interpretive effort is to demonstrate to visitors the value of the Park as a sanctuary from some of the effects of the modern technological world and how the special qualities of such a sanctuary relate to and benefit people.

Under this alternative, interpretive features, such as wayside exhibits or other resource education components, would be included to facilitate an understanding of the history of the District from cultural and natural resource viewpoints (see Table 2- 18). Opportunities for interpretation of plant communities, specifically in terms of natural succession and forest recovery, would be provided. Alternative B would provide visitors with opportunities to learn about Elkmont's human occupation through interpretive exhibits, retention of cultural landscape features, and restoration and rehabilitation of the Appalachian Clubhouse along with a grouping of cabins retained in Daisy Town. The interior of the Clubhouse would be rehabilitated to allow for day use activities. In addition, interior exhibits would be installed in the Clubhouse, which would serve as a self- guiding museum. Wayside exhibits would also be installed adjacent to the Clubhouse.

2.2.4.6 Facilities Development with Detailed Site Plans for Alternative B

Under Alternative B, twelve cabins/buildings would be restored on the exterior and preserved on the interior. The Appalachian Clubhouse would be restored on the exterior and rehabilitated on the interior to serve as a public day use rental facility and self- guiding museum. All of the remaining historic buildings would be removed either by mechanical means or by hand removal. Foundations and buried features would not be excavated. Following removal, former building sites would be restored with native plant species from seed and other plant materials collected from within the District. Restoration of native plant communities would provide soil stabilization and act as a deterrent to erosion and subsequent sedimentation into surrounding water bodies, floodplains, wetlands and other sensitive natural areas. Details of this alternative are provided below and summarized in Tables 2- 8 and 2- 17 to 2- 23.



Specific project implementation requirements for Alternative B include:

Water

Currently, the average number of day use visitors to the District is approximately 500. Peak visitation is experienced during the months of July and October and ranges from 900 to 1000 visitors per day. Visitors utilize Little River Road as access for day use within the District, to trails leading out of the District, and to the 220-site Elkmont Campground. Under Alternative B, visitation is not expected to increase significantly; however, day users and other visitors will have access to new facilities. Specifically, additional water will be required to accommodate day use facilities and the public restroom that will be provided at the Appalachian Clubhouse.

Peak daily water supply needs are based on the volume of wastewater generated by the plumbing fixtures associated with proposed improvements (Table 2- 20). However, in order to accurately estimate the total volume of potable water that must be produced to generate the volume of wastewater anticipated, the amount of water that is typically lost (or unaccounted for) within the water distribution system must also be included in the projected demand. Based on information collected previously by the NPS comparing the volume of potable water processed and the wastewater discharged at the wastewater treatment facility, the water system at Elkmont typically provides 25 percent more water than the amount that reaches the wastewater plant. In many water systems, the balance of this water may generally be lost to leakage in the system, drinking and cooking, lawn and landscape irrigation, watering animals, and other uses that bypass the wastewater system. This difference is used in combination with wastewater projections to forecast water demand for the project alternatives. Estimates of the water supply and wastewater system needs anticipated under this alternative have been developed assuming the use of low flow plumbing fixtures and are provided below:

| | |
|---|-----------------------------|
| Average visits per day to the Appalachian Clubhouse restrooms | 500 |
| Wastewater generated per visit | 2.6 gallons |
| Wastewater generated | 1,300 gallons per day (gpd) |
| 25 percent lost in system | 325 gpd |
| Total water supply needs | 1,625 gpd |

Based on wastewater projections for this alternative, water demand is therefore increased by approximately 25 percent to arrive at a volume of 1,625 gallons of potable water required per day.

In order to meet state building codes, the day use facility in this alternative would be equipped with a fire suppression (sprinkler) system meeting the National Fire Protection Act (NFPA) 13R standard. The water supply system provided for this alternative must also be capable of meeting that requirement. The water demands for fire suppression equipment vary from building to building. According to NFPA 13R, fire suppression systems should be designed to confine a fire to a single compartment (room) of a single building. Therefore, the capacity and design of this system varies based on the size of

each room in each building. One sprinkler head must be provided for every 144 square feet of a compartment or part thereof. This system must discharge at least 18 gallons per minute to an individual sprinkler head or 13 gallons per minute per sprinkler head simultaneously to all of the sprinklers within the compartment. For large compartments (greater than 576 square feet) the maximum number of sprinkler heads considered in a design shall be four (4). This system must be capable of providing this flow for a minimum of 30 minutes. Under Alternative B, two sprinkler heads would be provided in the food preparation area of the Appalachian Clubhouse. The total capacity required by the fire suppression system is 780 gallons over a 30- minute period (2 sprinkler heads x 13 gallons per minute x 30 minutes).

Improvements to the water supply system proposed for Alternative B are based on the projected needs described above. These improvements include installation of a water line from the existing water supply line feeding the Elkmont Campground to the Appalachian Clubhouse to meet day use and restroom facility water needs and to provide enough capacity to fulfill the requirements for the fire suppression system over the food preparation area. The location and specifications of the recommended water supply improvements are listed in Table 2- 21 at the end of this chapter.

Wastewater

Sewer service will also be required to accommodate the proposed restroom facilities and day use in the Appalachian Clubhouse. Wastewater service for these improvements is described above and is calculated at 1,300 gallons per day. The required improvements are listed in Table 2- 22.

Roads

The average day use visitation to the District is estimated at 500 visitors per day under Alternative B. With an average of 2.8 visitors per car, approximately 179 cars per day would visit the District. The majority of these visits would be short- term, and the visits would generally be spaced uniformly throughout the day. For an eight- hour day, projected traffic counts are expected to be approximately 22 cars per hour. To provide access to the restored cabins and exhibits proposed under this alternative, roadway repairs and resurfacing of Daisy Town Loop Road would be required. Increased vehicular traffic in Daisy Town could also result in conflicts between pedestrian and vehicular traffic, creating a need to better control traffic patterns.

The proposed restoration of a group of buildings at Daisy Town and installation of exhibits to be placed throughout the District is not expected to cause an increase in visitation; however, the internal circulation of visitors is expected to increase as visitors access new exhibits and other features. Roadway and walkway improvements must be implemented to facilitate safe viewing of the exhibits. Existing traffic and current lack of adequate parking necessitates that improvements be made to the existing roadway system in the Millionaire's Row/Little River Trailhead area, particularly to accommodate visitor parking from Daisy Town that may overflow into the Little River parking area. These proposed improvements would facilitate improved vehicular movement in the area, expand the capacity of the roadway in proximity to the Little River Trailhead, and provide improved access to the proposed exhibits and walking tour.

Other roadway improvements are needed in the Wonderland Club where the proposed orientation kiosk and related exhibits are to be installed. In several areas of the District where existing roadways cross small waterways flowing through storm drain culverts, erosion of the roadway and culvert embankments has occurred. To preserve the integrity of the roadways at these locations and to prevent further erosion, it would be necessary to stabilize the stream banks. These culverts include Tulip Creek at Jakes Creek Road, Bearwallow Branch at Jakes Creek Road and Daisy Town Loop Road, Mids Branch at Little River Road, and Catron Branch at Elkmont Road. In addition, the existing stone steps in front of the Wonderland Hotel are irregular in shape and spacing, making them hazardous to use. For the safety of visitors, the steps may be closed to the public with a restrictive barrier that is capable of preventing pedestrians from utilizing the stairs. Proposed roadway improvements for Alternative B are based on the needs described above to facilitate safe vehicular and pedestrian access to exhibits and trailheads within the District. Proposed roadway improvements are listed in Table 2- 23.

Parking and Access

Although average daily visitation is not expected to increase under this alternative, the number of internal trips within the District to visit exhibits and other features would require additional parking accommodations. These parking accommodations would also help to facilitate improved pedestrian access/movement to the destinations proposed by this alternative. Alternative B proposes three (3) primary destinations within the District: the Wonderland Club orientation kiosk; Millionaire's Row/Elkmont Nature Trail and the Daisy Town cabins and exhibits; and the day use exhibits and self-guiding museum at the Appalachian Clubhouse.

The parking required for casual day visitors is in addition to the estimated number of visitors who use the hiking trails leading away from the District. As previously stated, projected traffic counts for casual day visitors are estimated at approximately 22 cars per hour. Current estimates place approximately 30 vehicles per hour at both the Little River and Jakes Creek trailheads (NPS 2002a). An additional parking lot would be necessary at the Appalachian Clubhouse to accommodate day use vehicles. The existing parking area adjacent to the Clubhouse can accommodate up to 24 vehicles, which would be dedicated to day use functions under special use permit. Although day use of the Appalachian Clubhouse most likely will not occur every day, the proposed parking for the entire District must be sufficient to accommodate the maximum projected number of vehicles that will be in the District at any given time.

Therefore, in addition to paving the Appalachian Clubhouse parking area, the need for 82 parking spaces (30 at each trailhead plus 22 day use visitors) will be fulfilled by construction of the District Orientation Parking Area across the road from the former Wonderland Hotel (12 spaces); construction of Daisy Town/Jakes Creek Trailhead Parking in a location where non-contributing buildings are proposed to be removed (40 spaces); and construction of "pull in" parking at the Little River Trailhead at Millionaire's Row (30 spaces). Parking will be more concentrated in designated parking areas than the existing situation, in which parking is dispersed throughout the District.

The parking lots will be paved with pervious pavement to reduce the quantity of runoff from the paved area while eliminating the potential for rutting and soil erosion.

To provide access for parking at the Little River Trailhead, a gate would be relocated from its current location on Little River Road to the east end of the Little River Trailhead parking area. A walking path from the parking area at the Little River Trailhead to the exhibits would also be constructed. A gate on Jakes Creek Road would be relocated from its existing location near the bridge over Jakes Creek to just south of Jakes Creek Cemetery Road. The new parking area in Daisy Town would not only serve hikers utilizing Jakes Creek Trail, but also visitors that would like to walk through Daisy Town to see the restored buildings, the new exhibits, and the cemetery.

Other requirements for Alternative B include:

- The entrance to the orientation kiosk and parking area is located near a curve in the roadway, which limits site distance. As a safety measure, signs would be installed on Elkmont Road to alert drivers to the upcoming entrance to the parking area. The intersection and the parking area would be illuminated at night.
- Provide a visual screen utilizing plant materials relocated from other areas in the District for all proposed parking areas to minimize the visual intrusion of the parking areas into the cultural landscape.
- Repair the footings of a small footbridge over Bearwallow Branch and restore the surface as a safety measure for pedestrians.

Implementation of Alternative B may also result in damage to the existing roadways from heavy machinery traffic during project implementation. The roadways that may require repairs are described in Section 2.2.1. Primary features of this alternative are summarized in Table 2- 8 on the following page.

2.2.4.7 Estimated Development Costs

The estimated range of costs for site development and implementation of Alternative B is provided in Appendix C of this document. An itemized list of costs and post-construction operation and maintenance costs are also provided. Total costs of Alternative B are based on estimating the funds necessary to perform the following items:

- Building removal, restoration, rehabilitation and preservation
- Infrastructure improvements
 - Parking lots (improvements and new lots)
 - Road system improvements
 - Water supply system improvements
 - Wastewater system improvements
- Vegetation management
- Resource education components
- Mitigation measures to be implemented as part of the alternative
- Resource and visitor protection patrols

Table 2- 8: Summary of Implementation Features for Alternative B

| | |
|--|---|
| Use of Historic Buildings | 12 cabins / buildings and the Appalachian Club retained; remainder removed |
| Measures for Buildings Retained | Restore exterior in accordance with <i>The Secretary of Interior's Standards</i> ; preserve interior of cabins; restore exterior of Appalachian Clubhouse and rehabilitate interior to allow for public rental and day use |
| Natural Resources Management | Continued implementation of current management activities including hemlock pest management, water quality monitoring, fish population assessment; and revegetation of former building sites |
| Visitor Use | Visitation is not expected to change significantly. Use of existing hiking trails, camping, fishing and other compatible recreational activities would continue. Interpretation of the retained Daisy Town cabin community, day use, and self- guiding museum in the Appalachian Clubhouse would provide for an experience currently not available at the District. |
| Interpretive Features | Orientation kiosk and brochure across from former hotel site on Elkmont Road; revision of the Elkmont Nature Trail brochure to include natural resource information; 8 wayside exhibits; interior exhibits in the Appalachian Clubhouse for use as a self- guiding museum |
| Access / Circulation | <ul style="list-style-type: none"> • Relocate gate on Little River Road to east end of Little River trailhead parking area • Relocate existing gate or install new gate at the beginning of Jakes Creek Road • Place gravel over existing path in Daisy Town from Appalachian Clubhouse to road to Jakes Creek cemetery • Little River trailhead paving- 350 lf • Daisy Town loop paving- 1,111 lf • Orientation parking area road - 400 lf • Walking path from Orientation parking area |
| Parking | 4 parking areas proposed |
| Utilities | Add public restroom facility available from outside and inside for day users of the Appalachian Clubhouse and add sprinkler system for fire suppression. Also includes: Water Line: 1,300 lf to Appalachian Clubhouse Wastewater System: 640 lf gravity sewer line from Appalachian Clubhouse |
| Landscape Treatment | Retain foundations, rock walls and other cultural features where they do not pose a safety hazard to visitors |
| Park Operations and Staffing | Implementation of this alternative would eliminate the need for those resources currently being utilized to stabilize historic buildings removed under this alternative; however, operation and maintenance costs would be required to maintain the infrastructure and the buildings retained and to process special use permits. |



2.2.5 Alternative C

The Environmentally Preferred and Agency Preferred Alternative

2.2.5.1 Concept

This alternative would allow for cultural resource preservation through exterior restoration of most of the buildings in Daisy Town and the Chapman Cabin in Society Hill. As in Alternative A, exhibits would be provided about the history of the Town of Elkmont and natural history of synchronous fireflies. The Elkmont Nature Trail brochure would be updated to include a description of the montane alluvial forest and other important natural resources of the District. In addition to exhibits provided in Alternative A, Alternative C proposes to include a variety of other interpretive features in the Wonderland Club, in Daisy Town and at the Appalachian Clubhouse (Table 2- 18).

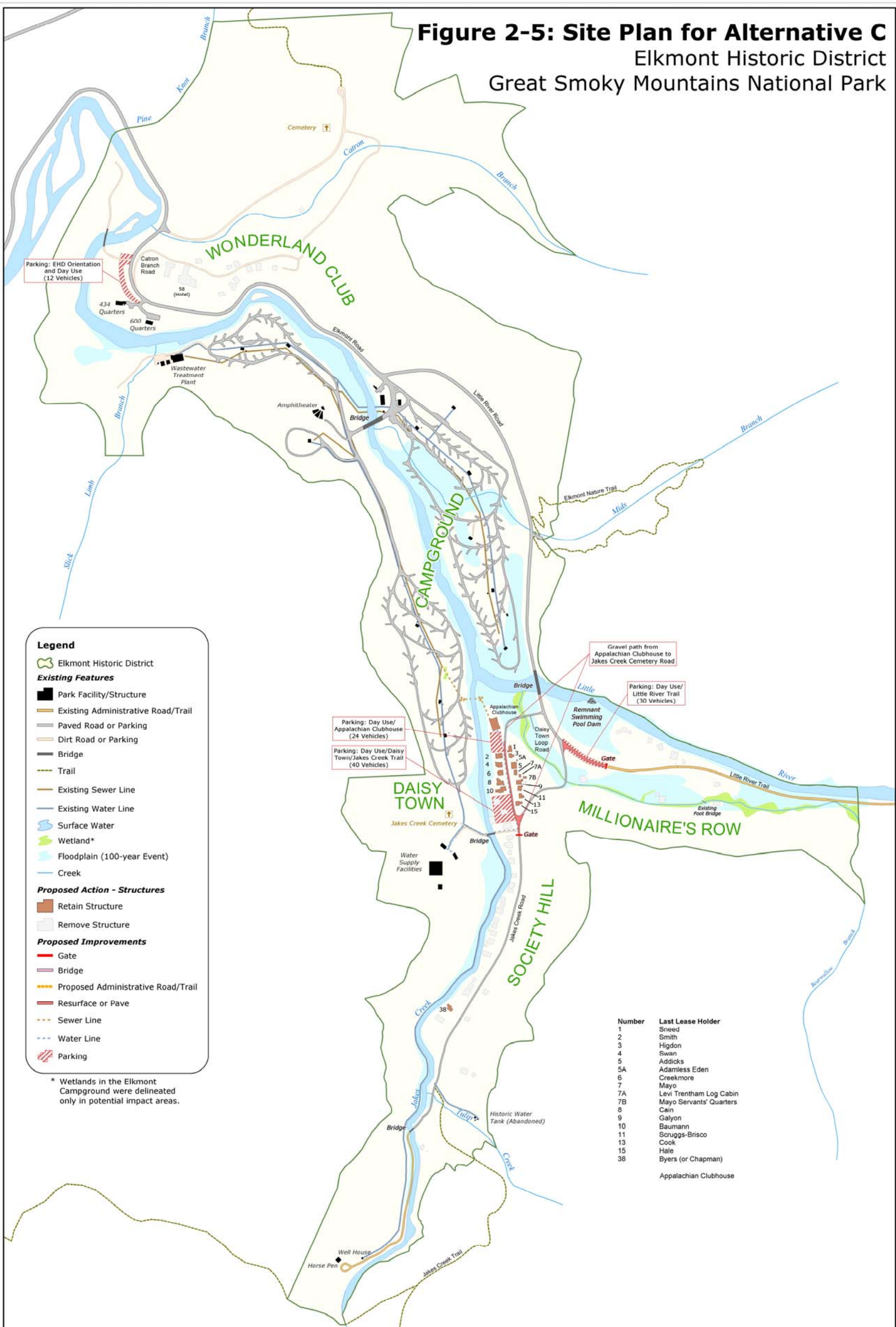
The Visitor Education focus would be interpretation of the changing landscape, the development of Elkmont, and the travel and tourism that eventually led to establishment of the Park. Restored buildings would provide the sense of community and spatial relationships in sections of the District. Natural regeneration of the forested areas would take place in the remaining areas of the District, including the floodplain along the Little River where the montane alluvial forest habitat exists. Table 2- 9 provides a summary of the proposed treatment for all buildings under Alternative C. The alternative is depicted on Figure 2- 5 on the following page.

Table 2- 9: Buildings Summary for Alternative C

| Area/Buildings | | Status | Uses |
|------------------------|--|--------|--|
| Wonderland Club | | | |
| Wonderland Hotel | Remove | | Wayside exhibit at former hotel site; kiosk on west side of Elkmont Road with self- guiding brochure |
| Annex | Remove | | Restoration of native plant communities |
| Cabins | Remove all | | Restoration of native plant communities |
| Millionaire's Row | Remove all | | Restoration of native plant communities; wayside exhibit |
| Daisy Town | | | |
| Appalachian Clubhouse | Restore exterior, rehabilitate interior for day use | | Public Rental and day use; walking tour with interior self- guiding museum exhibits and wayside exhibits |
| Cabins | Restore exteriors of all 15 contributing cabins and return one non-contributing building to its historical configuration; preserve interiors | | Walking tour with wayside exhibits; Restoration of native plant communities where buildings are removed |
| Society Hill | Restore exterior of Chapman cabin, remove all others | | Exhibit and walking tour Restoration of native plant communities |



Figure 2-5: Site Plan for Alternative C
Elkmont Historic District
Great Smoky Mountains National Park



Alternative C provides for retention of buildings in Daisy Town, as well as the Chapman cabin on Society Hill, both of which would be used for cultural resource interpretation. The interpretive cluster at the Appalachian Club would include the Clubhouse building plus 16 cabins that are in close proximity and form a distinct cultural landscape. Forest restoration and regeneration would occur where cabins are removed. Protection of natural resources would be provided at additional locations due to a decrease in the size of developed areas.

Alternative C is the Environmentally Preferred Alternative because it retains buildings, structures and component landscapes in clusters and associations sufficient to provide a sense of character in a core area of the District while allowing for natural regeneration of native plant communities in remaining areas where buildings would be removed. In addition, this alternative would provide multiple opportunities for natural and cultural resource interpretation throughout all areas of the District as well.

2.2.5.2 Land Protection

Alternative C would provide land protection measures by being consistent with the Park's mission to preserve cultural and natural resources. Although some of the historic buildings would be removed, Alternative C also proposes to retain a grouping of buildings and components of the cultural landscape for interpretation purposes. These features would remain as a link to the past human occupation of the District, while natural resources would be protected by allowing for natural revegetation of all of the former building sites except where a parking lot is installed.

2.2.5.3 Cultural Resource Management

Alternative C provides for cultural resource management by preserving the core of the resort community at the Appalachian Club (Daisy Town) and the majority of Elkmont's cultural landscape features. It also provides a variety of opportunities for interpretation of Elkmont's cultural resources. Where buildings are removed, stone walls and foundations would be left in place. This alternative would also incorporate interpretive wayside exhibits that focus on natural history and the range of Elkmont's human history, including the logging history of the area and the construction of the railroad that led to the establishment of the Town of Elkmont.

Alternative C proposes preservation of the Daisy Town portion of the Appalachian Club. Daisy Town is the oldest vacation area of Elkmont and began the club- town boom there. The proximity of the Daisy Town cabins to the clubhouse building and the presence of landscape elements such as stone walls and walkways provide the best opportunity to demonstrate to visitors how this resort community evolved and functioned. The front porches, and the close setback of most cabins to the road and walkway in Daisy Town, create a visual order that strongly suggests the community structure in this portion of Elkmont. The density of buildings and continuous streetscape characteristics, such as border walls and pathways, are complete in Daisy Town in contrast to other areas of Elkmont where the streetscape and building lines are broken, incomplete or entirely absent. Daisy Town also preserves a representative cross section of the various construction techniques and building materials present in the Elkmont Historic District,

including the only “set- off” cabins in the Park. Set- off cabins were a type of prefabricated housing employing modules that could be loaded on a flatcar. The modules were off- loaded at Elkmont and assembled into houses.

Because Daisy Town evokes a strong sense of community, this area of Elkmont offers the best opportunity for visitors to understand the former vacation community and the broad cultural pattern of second- home vacation cabins in the Southern Appalachians during the early 20th century. This alternative also includes the Chapman cabin in Society Hill, a building associated with Colonel David Chapman who was influential in the establishment of Great Smoky Mountains National Park.

Alternative C would retain the historic swimming hole at Little River as well as most of the landscape elements, such as walls and other small- scale features throughout the Elkmont community. The gravel walking path extending from the Appalachian Clubhouse to Jakes Creek Cemetery would be restored. This path was originally developed as a boardwalk, but was later replaced with compacted gravel during the period of significance. Although the historic location of this pathway remains visible, it is not actively maintained. This path would continue to provide separation of pedestrian and vehicular traffic.

Alternative C would protect and preserve Elkmont’s cultural resources through the retention and interpretation of a representative collection of buildings and the associated cultural landscape in a core area of the District. The preservation of the Chapman Cabin (#38) would provide opportunities to convey the history of an important figure in Elkmont’s past. This alternative would retain the maximum number of Elkmont’s cultural landscape features, such as stonework and foundations where buildings are removed. Combined with interpretive media, especially waysides, Alternative C will allow visitors to gain an understanding of the scope of the Elkmont vacation community and how it functioned in its heyday. Measures to avoid potential impacts to shallow archeological deposits would be used and are described in Section 2.1.1 of this document. Appendix E provides recommendations for specific buildings, or groups of buildings, and other areas where modifications are proposed.

2.2.5.4 Natural Resource Management

Although some buildings would be retained under this alternative, the majority would be removed, allowing for reestablishment of plant communities where buildings and other structures are removed. Alternative C proposes restoration of all areas disturbed during project implementation and would include planting native plant communities with vegetation propagated from native seed sources and salvaged plants collected from within the District. Other plant materials could be transplanted from locations within the District to accomplish a variety of activities including restoration of the former building sites and creation of visual buffers between the parking area and Quarters 434 and 600. Active restoration of native plant communities would accomplish a variety of tasks including increasing species diversity, improving and increasing wildlife habitat, and would provide soil stabilization measures. Current natural resource management practices concentrating on removal of non- native species, treatment of hemlock woolly

adelgid infestations, and other monitoring activities would continue at their current level.

Alternative C would not generate additional discharge from the sewage treatment plant or runoff into the Little River or its tributaries as a result of land use or visitor activities. No additional activities within the 100-year floodplain are proposed. A low level of visitor use is proposed that would aid in minimizing impacts to natural systems. Defined and delineated parking for day use visitors and for trailheads would prevent and minimize uncontrolled site impacts by providing adequate space for vehicles in designated parking areas.

2.2.5.5 Interpretation and Visitor Use

Alternative C proposes to include interpretive features, such as buildings, cultural landscape components, exhibits and other resource education components. This alternative would also include displays and brochures that focus on cultural history, natural history, architecture, the logging history of the area, construction of the railroad, and eventual establishment of the Town of Elkmont. A wayside exhibit providing an historical perspective on Colonel Chapman's role in establishing Great Smoky Mountains National Park would also be developed.

Alternative C would restore a representative collection of buildings in one area of the District to provide a sense of its character and community. Retaining some landscape features such as stonework and foundations would provide opportunities for interpretation of sites where buildings are removed. Alternative C would provide visitors with opportunities to learn about Elkmont's human occupation through interpretive exhibits and restoration of buildings and the associated cultural landscape in Daisy Town. The Appalachian Clubhouse would be used as a self-guiding museum and for public rental and day use. The Chapman cabin would be restored on the exterior and preserved on the interior to aid in telling the story of the Park's establishment. In areas where buildings are removed, educational opportunities related to the natural regeneration of native plant communities would be provided.

2.2.5.6 Facilities Development with Detailed Site Plans for Alternative C

Under Alternative C, a total of 18 buildings and the associated landscape, consisting of 16 cabins/buildings in Daisy Town, the Chapman cabin and the Appalachian Clubhouse, would be restored on the exterior. The cabins in Daisy Town and the Chapman cabin would be preserved on the interior. The Appalachian Clubhouse would be rehabilitated on the interior and exhibits would be installed. The Clubhouse would serve as a self-guiding museum and would also be available for reserved day use through special use permit. All of the remaining historic buildings would be removed. Removal would be accomplished either by mechanical means or by hand removal. Foundations and buried features would not be excavated. Following removal, former building sites would be restored with native plant species from the District. Restoration would provide soil stabilization and act as a deterrent to erosion and subsequent sedimentation into surrounding water bodies, floodplains, wetlands and other sensitive natural areas. Details of this alternative are summarized below.

Specific project implementation requirements for Alternative C include:

Alternative C includes all the infrastructure requirements for roadways, water supply, wastewater treatment, and parking and access described previously for Alternative B. As is described in Alternative B, the existing stairway to the Wonderland Hotel is in a state of disrepair and does not meet the standards of current building codes. As a safety measure, a barrier would be installed to prevent pedestrian access to the steps. An alternate pathway up the hill would be constructed to gain access to the exhibits at the former hotel site. Alternative C also includes additional wayside exhibits at the Wonderland Hotel site and at the Chapman cabin in Society Hill. Repair of a portion of Jakes Creek Road to provide a stable walking surface would also be required.

Other requirements for Alternative C include:

- The entrance to the orientation kiosk and parking area is located near a curve in the roadway with limited sight distance. As a safety measure, signs would be installed on Elkmont Road to alert drivers to the parking area entrance.
- Provide a visual screen utilizing plant materials relocated from other areas in the District for all proposed parking areas to minimize the visual intrusion of the parking areas into the cultural landscape.
- Repair footings of a small footbridge over Bearwallow Branch and restore the surface as a safety measure for pedestrians

Implementation of Alternative C may also result in damage to the existing roadways from heavy machinery and truck traffic during project implementation. Roadways which would require repair following project implementation are discussed in Section 2.1.1 of this document. Increased internal vehicular traffic would result in the need for an incremental increase in the operations and maintenance budget for the roadways affected by this alternative. These roadways include Elkmont Road, Little River Road, Jakes Creek Road and Daisy Town Loop Road and their associated parking areas. Primary features of this alternative are summarized in Table 2- 10.

2.2.5.7 Estimated Development Costs

The estimated range of costs for site development and implementation of Alternative C is provided in Appendix C of this document, including an itemized list of project implementation costs and post- construction operation and maintenance costs. Total costs of Alternative C are based on estimating the funds necessary to perform the following items:

- Building removal, rehabilitation, restoration and preservation
- Infrastructure improvements
 - Parking lots (improvements and new lots)
 - Road system improvements
 - Water system improvements
 - Wastewater system improvements
- Vegetation management
- Resource education components
- Mitigation measures to be implemented as part of the alternative
- Resource /visitor protection patrols

Table 2- 10: Summary of Implementation Features for Alternative C

| | |
|--|---|
| Use of Historic Buildings | 16 buildings in Daisy Town, the Chapman cabin in Society Hill and the Appalachian Club retained; Wonderland Hotel and remainder of historic buildings proposed to be removed |
| Measures for Buildings Retained | All work would be conducted in accordance with <i>The Secretary's Treatment Standards</i> ; restore exteriors and preserve interiors of cabins; restore exterior of Appalachian Clubhouse and rehabilitate interior to provide for public rental and day use |
| Natural Resources Management | Continued implementation of current management activities including hemlock pest management, water quality monitoring, fish population assessment; and revegetation of areas where buildings have been removed |
| Visitor Use | Visitation is not expected to increase significantly. Use of existing hiking trails, camping, fishing and other compatible recreational activities would continue along with a walking tour to view exhibits and restored buildings. Day use of the Appalachian Club would be permitted. |
| Interpretive Features | Up to 10 interpretive exhibits would be installed throughout the District focusing on natural and cultural resources, history of Elkmont, and history of Park establishment and the role of Colonel Chapman in its establishment. Elkmont Nature Trail brochure would be revised to discuss important natural resources; kiosk would be placed in the orientation area with introduction and history of District; interior exhibits would be installed in Appalachian Clubhouse to serve as self- guiding museum |
| Access / Circulation | <ul style="list-style-type: none"> • Relocate gate on Little River Road to east end of Little River trailhead parking area • Relocate existing gate or install new gate at the beginning of Jakes Creek Road • Resurface gravel walking path in Daisy Town from Appalachian Clubhouse to road to Jakes Creek cemetery • Little River trailhead paving- 350 lf • Daisy Town loop paving- 1,111 lf • Orientation parking area road - 400 lf • Walking path from Orientation parking lot leading along Elkmont Road to base of Wonderland steps - 550 lf • Path on west side of Wonderland steps to the top of the steps- 400 lf |
| Parking | 4 parking areas proposed |
| Utilities | Add public restroom facility and sprinkler system to the day use area of the Appalachian Club. Also includes: Water Line: 1,300 lf to Appalachian Clubhouse Wastewater System: 640 lf gravity sewer line from Appalachian Clubhouse |
| Landscape Treatment | Retain foundations, rock walls and other cultural features where they do not pose a safety hazard to visitors |
| Park Operations and Staffing | Implementation of this alternative would eliminate the need for those resources currently being used to stabilize historic buildings removed under this alternative; however, operation and maintenance costs would be required to maintain the infrastructure and the buildings retained and to process special use permits. General maintenance to existing infrastructure would continue. |



2.2.6 Alternative D

2.2.6.1 Concept

Alternative D addresses Park administrative needs by providing curatorial storage and supplying temporary housing for visiting scientists in one area of the District. This alternative also expands educational and day use opportunities. Under Alternative D, sixteen (16) cabins/buildings in Daisy Town, the Chapman cabin (#38) in Society Hill, the Spence cabin (#42) in Millionaire's Row, six cabins in the Wonderland Club and the Appalachian Clubhouse would be restored. Where buildings are removed, stone walls and foundations would be left in place for interpretive purposes.

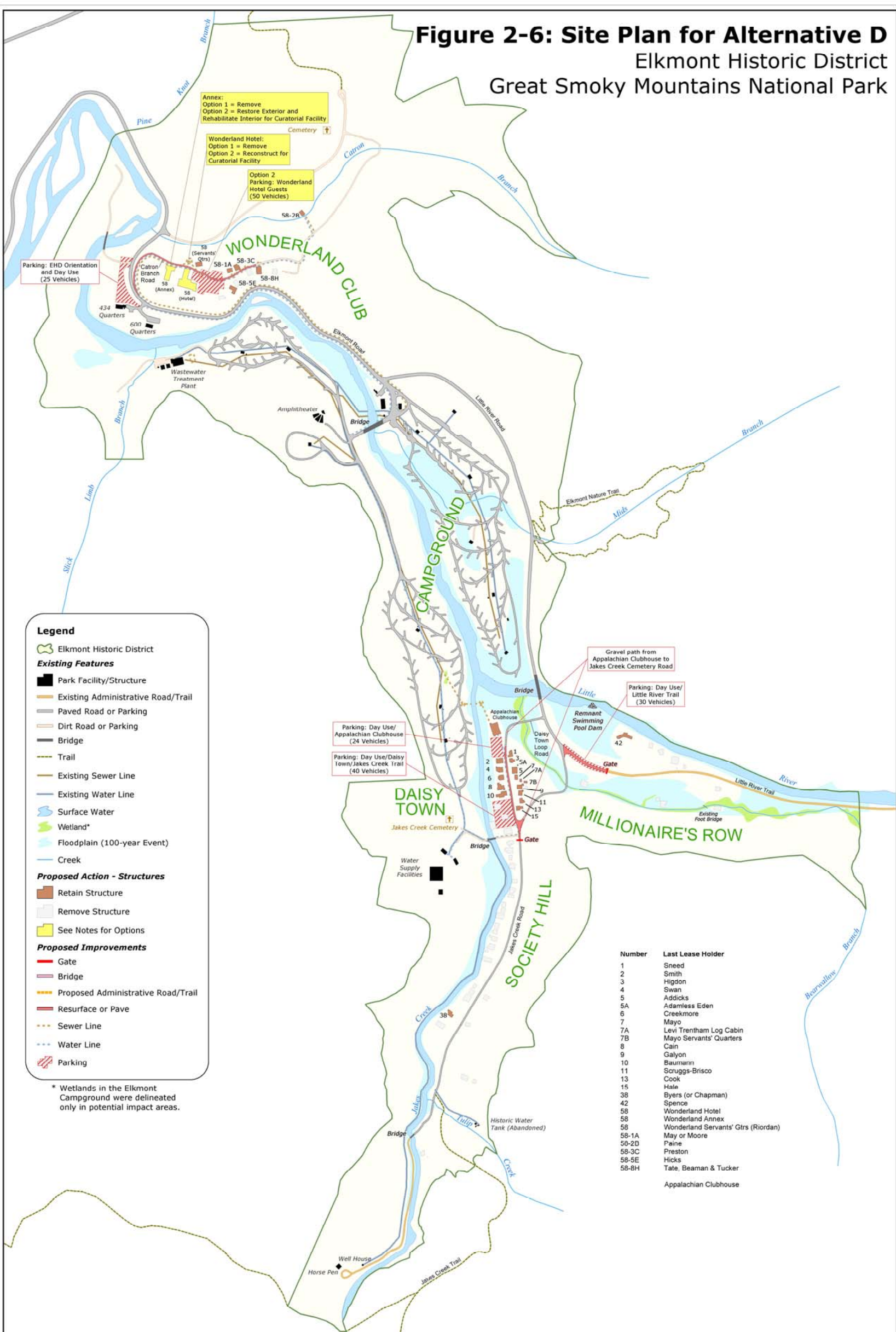
Two options for the Wonderland Hotel and Annex are proposed for this alternative. The first option (D1) includes removal of both buildings. The second option (D2) calls for reconstruction of the hotel and rehabilitation of the Annex for the Park to use as curatorial storage. All of the remaining historic buildings would be removed and forest restoration would occur at the former building sites. Resource education opportunities focused on cultural and natural history would be provided at the Appalachian Clubhouse by the NPS for the visiting public. Table 2- 11 provides a summary of the proposed treatment for all buildings under Alternative D. The alternative is depicted on Figure 2- 6 on the following page.

Table 2- 11: Buildings Summary for Alternative D

| Area/Buildings | Status | Uses |
|------------------------|---|---|
| Wonderland Club | | |
| Wonderland Hotel | D1: Remove D2: Reconstruct to 1928 footprint | D1: Wayside exhibits; restoration of native plant communities D2: Curatorial storage; wayside exhibits |
| Annex | D1: Remove if Wonderland Hotel is removed; D2: Restore exterior and rehabilitate interior if Wonderland Hotel is reconstructed | D1: Restoration of native plant communities D2: Curatorial storage if Wonderland Hotel is reconstructed |
| Cabins | Restore 6 contributing cabins | Visiting scientist housing |
| Millionaire's Row | Restore Spence cabin; remove all others | Wayside exhibits Restoration of native plant communities |
| Daisy Town | | |
| Appalachian Clubhouse | Restore exterior, rehabilitate interior for day use | Public rental and day use; walking tour with interior self- guiding museum exhibits and wayside exhibits; NPS staff- led programs |
| Cabins | Restore all (15) contributing cabins and return one non-contributing building to its historical configuration | Wayside exhibits and walking tour |
| Society Hill | Restore exterior of Chapman cabin, remove all others | Wayside exhibit and walking tour Restoration of native plant communities |



Figure 2-6: Site Plan for Alternative D
Elkmont Historic District
Great Smoky Mountains National Park



Alternative D includes exhibits that feature the history of the Town of Elkmont, the natural history of synchronous fireflies and revision of the current brochure at the Elkmont Nature Trail. Under Option 1 (D1), a wayside exhibit would be erected at the former site of the hotel. The focus of the exhibit would be on the history of the hotel and the tourism and travel that led to establishment of the National Park and the conflicts that arose in the Elkmont community over the decision on whether to establish the area as a national park or national forest.

Reconstruction of the Wonderland Hotel and restoration and rehabilitation of the Annex for curatorial purposes is proposed as part of Option 2 (D2). Currently, much of the Park's archival material is stored off-site in facilities that do not meet standards for museum collections and artifact storage, and the Park has identified the need for curatorial space. Under D2, two exhibit panels would be placed on the porch of the reconstructed hotel with information regarding the historic view of the hotel, a description of the scenic vista, social life at Elkmont, and the eventual establishment of the Park. A seating area would be provided and some cultural landscape features (such as the fountain and stairs) would be retained. A pathway up the hill to the former hotel site would be constructed to provide access to the exhibits.

An orientation area, containing a kiosk with an overview of the history and resources of the District and an adjacent parking area would be constructed across Elkmont Road, west of the Wonderland Hotel site. Reserved day use of the Appalachian Clubhouse under special use permit would be included in Alternative D as is installation of interior exhibits, to provide a self-guiding museum. A wayside exhibit would also be installed at the Spence (#42) cabin, describing Colonel Townsend's role in the development of Elkmont. Another wayside exhibit would be provided at the Chapman (#38) cabin describing Chapman's role in establishing the Park.

Under Alternative D, restored buildings would provide the sense of community and spatial relationships in most areas of the District. Restoration of native plant communities would be performed by the Park in disturbed areas. Natural restoration of forested areas would take place in the remaining areas of the District except where parking lots are installed.

2.2.6.2 Land Protection

Alternative D would provide land protection measures consistent with the Park's mission to preserve cultural and natural resources. Although most of the historic buildings in Society Hill and Millionaire's Row would be removed, Alternative D proposes to retain a grouping of buildings for resource interpretation purposes in Daisy Town and an additional grouping for visiting scientist housing in the Wonderland Club. The proposed use of the reconstructed Wonderland Hotel and rehabilitated Annex under D2 is consistent with NPS policies geared towards protection and reuse of the historic buildings to meet needs identified by the Park. A curatorial facility in the District would allow the Park to make cultural collections available to the public and researchers, which is consistent with the resource education themes proposed under this alternative as well. Other cultural landscape features would remain as a link to the past

human occupation of the District. Natural resources would be protected over a large portion of the District by restoring native plant communities at the former building sites.

2.2.6.3 Cultural Resource Management

Alternative D provides for cultural resource management consistent with the Park's mission by proposing exterior restoration of buildings in all areas of the District. In Daisy Town, sixteen cabins and the Appalachian Clubhouse would be restored to their historical exterior appearance. The Appalachian Clubhouse would also be rehabilitated on the interior to allow for public rental and day use, and interior exhibits would provide the opportunity for visitors to use the Clubhouse as a self-guiding museum. A variety of structured interpretive programs are also included in D1 and D2.

An existing walking path, in the location of the boardwalk that was present in Daisy Town into the 1920s would be resurfaced with gravel and would aid in separating pedestrian traffic from vehicular traffic. The path would extend from the Appalachian Clubhouse south to Jakes Creek Cemetery Road. The Chapman cabin (#38) would be restored on the exterior, preserved on the interior, and would serve as an interpretive exhibit. In Millionaire's Row, the interior of the Spence cabin (#42) would be preserved, the exterior would be restored and the cabin would be the focus of another wayside exhibit. A path would be provided to the Spence cabin to allow for a pedestrian walking tour of the area. In the Wonderland area, six cabins would be restored on the exterior and rehabilitated on the interior for use as lodging for visiting scientists. Under D1, the Wonderland Hotel and Annex would be removed, while under D2, the Wonderland Hotel would be reconstructed and the Annex restored on the exterior and rehabilitated on the interior for curatorial storage. All work would be done in accordance with *The Secretary's Standards* (NPS 1995; Revised 2001).

Alternative D would protect and perpetuate cultural resources by preserving buildings and representative cultural landscapes throughout the District. This alternative also provides opportunities to convey the history of several important figures in Elkmont's past. Some cultural landscape features such as stonework and foundations would be retained at the sites where buildings are removed. Measures to avoid potential impacts to shallow archeological deposits would be used and are described in the Section 2.1.1 of this document. Appendix E provides recommendations for specific buildings, or groups of buildings, and other areas where modifications are proposed.

2.2.6.4 Natural Resource Management

Alternative D proposes restoration of native plant communities with plants propagated from native seed sources and salvaged plants collected from within the District. Plant materials could be transplanted from locations within the District to accomplish a variety of activities including restoration of plant communities at the former building sites, creation of visual buffers to screen parking areas, and soil stabilization.

The most intensive use of buildings in this alternative would occur in the Wonderland Club, where six cabins are proposed to be restored and rehabilitated as temporary housing for visiting scientists. Overnight use would be restricted to visiting scientists. Additional sewerage loads resulting from overnight use and increased visitation would

have to meet water quality standards. No additional activities are proposed within the 100- year floodplain.

D2 also includes an option to reconstruct the Wonderland Hotel and rehabilitate the Annex for curatorial purposes. Disturbance of plant communities would occur in order to accommodate these uses. Current natural resource management practices for controlling non- native species, treating hemlock woolly adelgid infestations and other monitoring activities would continue at their current level.

2.2.6.5 Interpretation and Visitor Use

The Visitor Education focus would be interpretation of the changing landscape, construction of the railroad and establishment of the Town of Elkmont, the logging history of the area, and the travel and tourism that eventually led to establishment of the Park. Visitors would have an opportunity to participate in structured interpretive programs at the Appalachian Clubhouse offered by Park staff from May through October. In addition to the interpretive features included in Alternative A, a wayside exhibit providing a historical perspective on Colonel Chapman's role in establishing the Park is proposed under this alternative. The brochure currently available for interpretation at the Elkmont Nature Trail would be revised to include historical information about Elkmont and would emphasize the integration of cultural and natural resource themes. An additional exhibit would be constructed at the Spence cabin (#42) that would include a historical perspective of Colonel Townsend's role in the development of Elkmont. Exhibits would be installed in a variety of locations in Daisy Town and adjacent to the Appalachian Clubhouse. Interior exhibits would be provided in the Clubhouse, which would serve as a self- guiding museum and day use facility. In conjunction with these interpretive features, Alternative D would include enhanced opportunities for seasonal natural and cultural resource education programs that would be offered to the public by Park staff.

Alternative D would provide visitors with opportunities to learn about Elkmont's human occupation while maintaining and restoring plant communities where buildings are removed. This alternative would maintain existing levels of traditional recreation, such as hiking, fishing and camping. Alternative D would also restore and rehabilitate a variety of buildings to provide a sense of character of each of the District's built environments. Some cultural landscape features such as stonework and foundations would be retained to allow for interpretation at sites where buildings are removed.

2.2.6.6 Facilities Development with Detailed Site Plans for Alternative D

Under Alternative D, sixteen (16) cabins/buildings in Daisy Town, the Chapman cabin in Society Hill, the Spence cabin in Millionaire's Row, six cabins in the Wonderland Club and the Appalachian Clubhouse would be restored on the exterior, preserved on the interior and would have interpretive exhibits. The interior of the Appalachian Clubhouse would be rehabilitated to allow for public rental and day use with the display of interpretive exhibits. The interiors of the six cabins in the Wonderland Club would also be rehabilitated to allow for their use as temporary housing for visiting scientists.

Two options for the Wonderland Hotel and Annex are under consideration in this alternative. Option 1 (D1) includes removal of both buildings and revegetation of the area disturbed during removal. Option 2 (D2) proposes to remove the existing Wonderland Hotel and reconstruct it in a manner representative of its historic configuration. The hotel is proposed to be used for both public and Park administrative needs in conjunction with the restored and rehabilitated Annex. Both the hotel and the Annex would be used primarily for curatorial purposes, although public exhibit spaces would be provided. All of the remaining historic buildings would be removed. Removal would be accomplished either by mechanical means or by hand removal. Foundations and buried features would not be excavated. Following removal, former building sites would be revegetated with plants propagated from native seed sources and salvaged plants collected within the District. Details of this alternative are provided below and summarized in Tables 2- 12 and 2- 17 through 2- 23.

Specific project implementation requirements for Alternative D include:

D1 includes all proposed infrastructure improvements described for Alternative B. In addition, D1 addresses a Park need for housing visiting scientists by providing temporary housing in six (6) Wonderland Club cabins. This housing proposal would also require water and sewer service to the designated cabins, as well as improved access and parking. D2 also addresses a Park need by providing curatorial storage. The reconstruction of the Wonderland Hotel and restoration and rehabilitation of the Annex under D2 would provide the Park with needed curatorial facilities and additional exhibits in the lobby of the hotel. To accommodate these improvements, water and sewer service to the Wonderland Hotel and Annex, as well as improved access and parking would be needed under D2. Proposed improvements for both alternatives are described below. Primary features of this alternative are summarized in Table 2- 12.

Water

Water demands of D1 were determined using the methods described in Alternative B. In addition to water needs described in Alternative B, water will be needed to service the cabins retained for lodging visiting scientists. Therefore, the total additional domestic water demand generated by D1 is the water demand for Alternative B plus the additional water demand for the cabins. It would also be necessary to provide a fire suppression system (as described in Alternative B) for each of the cabins for which overnight housing is proposed. The water supply system provided for D1 must be capable of meeting all of the needs described above. Water supply system lines would have to be added to service the day use facilities in the Appalachian Clubhouse and the Wonderland Hotel, Annex and cabins.

The increased pedestrian and vehicular traffic projected for this alternative, in conjunction with public restroom facilities proposed within the Wonderland Hotel, would generate additional water (and wastewater) demands. Therefore, in addition to the improvements described for D1, D2 requires increasing the size of the water distribution line to the Wonderland Hotel. The need for water for fire suppression in D2 would not change (as compared to D1) since a dry fire suppression is proposed for the hotel and Annex curatorial facility.

Wastewater

Based on the number of buildings to be retained and the estimated number of visiting scientists using the cabins for overnight stays, the additional wastewater generated by D1 is estimated as follows:

| | |
|--------------------------|---------|
| Number of cabins | 6 |
| Total number of bedrooms | 18 |
| Total number of guests | 18 |
| Wastewater per guest | 50 gpd |
| Wastewater generated | 900 gpd |

The wastewater flow generated by the use of the Appalachian Clubhouse (1,300 gpd, as described previously) and the cabins proposed to be retained in the Wonderland area (900 gpd) would require modifications to the wastewater treatment system to accommodate the total discharge of 2,200 gpd under D1. Wastewater flows generated during peak usage periods in combination with the peak wastewater flows generated by the existing campground would exceed the design capacity of the existing wastewater treatment plant. Proposed improvements to the wastewater system for D1 include wastewater treatment plant upgrades, addition of a pump station to serve the six visiting scientist cabins, and additional sewer lines. Sewer work would occur following building removal, but prior to completion of any necessary roadway or access trail improvements.

Under D2, average daily visitation is projected to be approximately 526 visits per day. In addition, with the increased number of destinations within the District, the anticipated duration of individual stays is expected to increase. As a result of increased lengths of stay and additional public restroom facilities being provided within the reconstructed Wonderland Hotel, wastewater treatment demands would be greater than those previously described for other alternatives. To accommodate the increased wastewater discharge under D2, sewer lines leading from the Wonderland Hotel restrooms must be constructed in addition to the wastewater treatment plant and sewer line upgrades described in D1.

Roads

Proposed roadway improvements necessary to implement D1 and D2 are similar to those described in Alternative B. However, Alternative D must also provide vehicular access to and from the cabins designated for use by visiting scientists. The roadway improvements must accommodate very few vehicle trips, but be capable of providing access in all weather conditions and allow for 2- way traffic. Therefore, in addition to the infrastructure modifications specified under Alternative B, Alternative D also includes widening and paving of portions of roadways leading to the cabins.

Parking and Access

Parking must be provided at each of the cabins to enable the visiting scientists to load and unload equipment. The number of parking spaces made available to the scientists would be as few as one per cabin. In addition, the existing Jakes Creek Road is proposed to be used as a trail leading to exhibits at the Chapman cabin. To accommodate these

features, in addition to parking construction under Alternative B, D₁ would require minor repairs and repair of the existing roadway to accommodate the need for a stable walking surface. In addition, under D₂, a path will be constructed from the base of the Wonderland Hotel steps in the vicinity of the historic walkway on the west side of the steps to the top of the steps.

All parking improvements proposed in D₂ include those described for D₁ with the exception of the need for additional parking to serve the Wonderland Hotel. Day visitors, researchers and NPS curatorial staff will require an additional 61 parking spaces in the proximity of the Wonderland Hotel. An approximate 3,000 square yard pervious concrete parking area located adjacent to the Wonderland Hotel on the east side is proposed to meet this additional parking need. In addition, the orientation parking area would be expanded to 25 spaces to accommodate the need for additional parking as visitation increases.

Other requirements for both options of Alternative D include:

- Provide a visual screen utilizing plant materials relocated from other areas in the District for all proposed parking areas to minimize the visual intrusion of the parking areas into the cultural landscape.
- Repair the footings of a small footbridge over Bearwallow Branch and restore the surface as a safety measure for pedestrians

2.2.6.6 Estimated Development Costs

The estimated range of costs for site development and implementation of D₁ and D₂ are provided in Appendix C of this document. Appendix C includes an itemized list of costs and post- construction operation and maintenance costs as well. Total costs of D₁ and D₂ are based on estimating the funds necessary to perform the following items:

- Building removal, rehabilitation, restoration, preservation and reconstruction
- Infrastructure improvements
 - Parking lots (improvements and new lots)
 - Road system improvements
 - Water system improvements
 - Wastewater system improvements
- Furniture and fixtures
- Vegetation management
- Resource education components
- Mitigation measures to be implemented as part of the alternative
- Resource /visitor protection patrols



Table 2- 12: Summary of Implementation Features for Alternative D

| | |
|--|---|
| Use of Historic Buildings | 16 cabins / buildings in Daisy Town, the Chapman cabin in Society Hill, the Spence cabin in Millionaire's Row, six cabins in the Wonderland Club and the Appalachian Clubhouse retained; Wonderland Hotel and Annex will be removed under D1. Under D2, the Hotel would be reconstructed and the Annex restored and rehabilitated for curatorial purposes. All other buildings would be removed |
| Measures for Buildings Retained | Restore exteriors according to 1920s – 1930s appearance and preserve interiors of Daisy Town, Spence and Chapman cabins; restore exterior of Appalachian Clubhouse and rehabilitate interior to provide for public rental and day use; restore exterior and rehabilitate the interior of 6 cabins in Wonderland Club for scientist housing. Restore exterior of Annex and rehabilitate interior, and reconstruct and maintain Wonderland Hotel (D2). All work would be done in accordance with <i>The Secretary's Treatment Standards</i> . |
| Natural Resources Management | Continued implementation of current management activities including hemlock management, water quality monitoring, fish population assessment, and general maintenance to existing infrastructure; and revegetation of areas where buildings have been removed |
| Visitor Use | Visitation is expected to increase. Use would consist of continued use of existing hiking trails, camping, fishing and other compatible recreational activities, but would also require upgrades to infrastructure to accommodate additional water use, wastewater treatment, electrical service and upgrade of roadways to allow for distribution of supplies and services |
| Interpretive Features | Up to 11 locations throughout the District where exhibits are to be installed focusing on natural and cultural resources, history of Elkmont, history of Park establishment, and historical perspective of Chapman and Townsend |
| Access / Circulation | <ul style="list-style-type: none"> • Relocate road gate on Little River Road to east end of Little River trailhead parking area • Relocate gate or install new gate at beginning of Jakes Creek Road • Resurface gravel path in Daisy Town from Appalachian Clubhouse to road to Jakes Creek cemetery • Little River trailhead paving - 350 lf • Daisy Town loop paving- 1,111 lf • Orientation parking access road - 400 lf • Gravel walking path from Little River Trailhead to Spence (#42) cabin - 550 lf • Walking path from Orientation parking lot leading along Elkmont Road to base of Wonderland steps - 550 lf • Road from Elkmont Road to rear of Hotel – 750 lf • Repave one lane asphalt road off of Catron Branch Road from hotel parking to Beaman (58- 8H) cabin – 350 lf • Place gravel on road segment from roadway to Paine (#58- 2B) cabin – 300 lf • Construct a path from base of Wonderland steps in vicinity of historic walkway on west side of steps to the top of the steps - 400 lf (D2) |



Table 2- 12: Summary of Implementation Features for Alternative D (continued)

| | |
|-------------------------------------|---|
| Parking | 4 parking areas proposed; if Wonderland Hotel is reconstructed (D2), include additional parking area behind hotel |
| Utilities | <p>Add restroom facility and sprinkler system to the day use area of the Appalachian Club.</p> <p>Also includes:</p> <p>Water Supply:</p> <ul style="list-style-type: none"> • 1,300 lf water line to Appalachian Clubhouse • If Wonderland Hotel is removed (D1), include 7,500 lf of 6" water line to service Wonderland cabins • If Wonderland Hotel is reconstructed (D2), include 7,500 lf of 8" water line to service hotel, Annex and Wonderland cabins; add dry sprinkler system to hotel and Annex • Water service lines from individual buildings to main water lines <p>Wastewater System:</p> <ul style="list-style-type: none"> • 640 lf gravity sewer line from Appalachian Clubhouse • 600 lf gravity sewer line serving Wonderland cabins • 4" gravity sewer line from individual cabins to sewer main • 600 lf 2" low pressure sewer force main serving Paine cabin • 3,200 lf 3" sewer force main from rear of Wonderland Hotel to existing sewer line in campground • 225 cubic foot flow equalization basin at the wastewater treatment plant |
| Landscape Treatment | Retain foundations, rock walls and other cultural features where they do not pose a safety hazard to visitors |
| Park Operations and Staffing | Implementation of this alternative would eliminate the need for those resources currently being used to stabilize historic buildings not retained under this alternative and any costs associated with the rental or lease of offsite curatorial facilities; however, operation and maintenance costs would be required to maintain the infrastructure serving the buildings retained and to process special use permits. In addition, maintenance of the visiting scientist housing and curatorial facilities, staff time and resources for educational programs and staff for the curatorial facilities proposed under D2 would be required. |



2.2.7 Alternative E

2.2.7.1 Concept

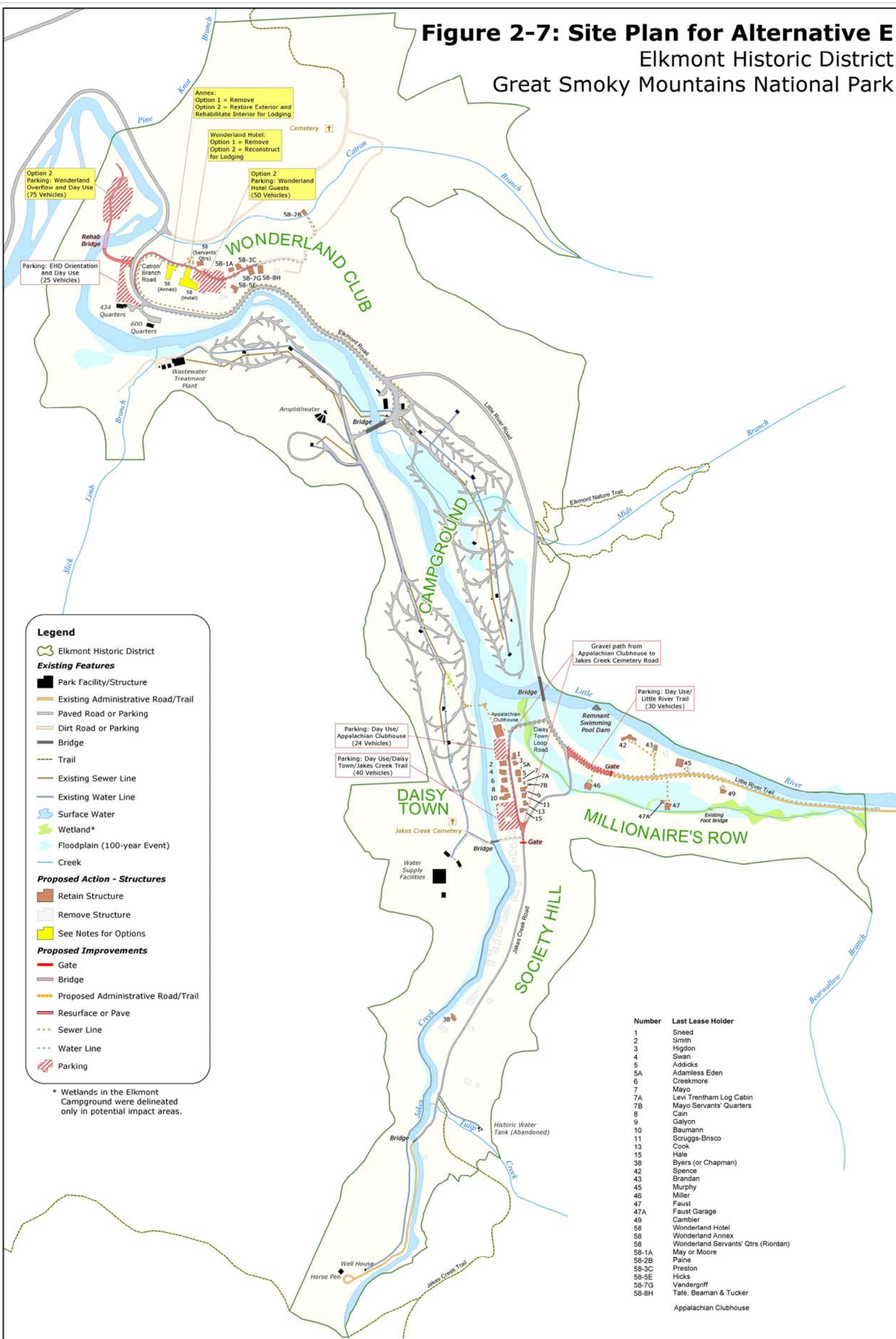
Alternative E emphasizes use of some buildings for public lodging and visiting scientist housing, and retention of others for interpretive purposes. In- depth educational programs for the general public would be provided. Emphasis is on restoration of the cultural character of multiple components of the District. This alternative would result in greater intensity of reuse by providing overnight accommodations for larger numbers of people, including limited dining facilities, but would also maintain a commitment to visitor education. An option to participate in structured educational programs would be made available to lodging guests. Public overnight use would be limited to the Wonderland Club, while housing for visiting scientists would be restricted to Millionaire's Row. Option 2 of Alternative E (E2) also proposes reconstruction of the Wonderland Hotel and rehabilitation of the Annex for public lodging. Public lodging operations and the educational programs would be operated by a concessioner, but the visiting scientist housing would be operated by the Park. The concessioner educational programs included in this alternative are in addition to those provided free to the public seasonally by the Park at the campground. Some restoration of native plant communities would still occur in areas where buildings are removed. Table 2- 13 provides a summary of the proposed treatment for all buildings under Alternative E. The alternative is depicted on Figure 2- 7.

Table 2- 13: Buildings Summary for Alternative E

| Area/Buildings | | Status | Uses |
|-----------------------|--|--|------|
| Wonderland Club | | | |
| Wonderland Hotel | E1: Remove E2: Reconstruct to 1928 footprint | E1: Restoration of native plant communities/wayside exhibit E2: Overnight lodging; meeting rooms; dining hall; exhibits in lobby and on porch; resource education | |
| Annex | E1: Remove if Wonderland Hotel is removed E2: Restore exterior and rehabilitate interior if Wonderland Hotel is reconstructed | E1: Restoration of native plant communities E2: Overnight lodging | |
| Cabins | Rehabilitate 6 contributing and 1 non- contributing cabins | Overnight lodging for groups and families | |
| Millionaire's Row | Rehabilitate 6 contributing cabins and 1 garage; remove 2 non- contributing cabins | Visiting scientist housing; storage; walking tour; wayside exhibits; restoration of native plant communities | |
| Daisy Town | | | |
| Appalachian Clubhouse | Restore exterior, rehabilitate interior | Public rental and day use; walking tour with interior self- guiding museum exhibits and wayside exhibits; structured education programs | |
| Cabins | Restore exterior of all 15 contributing cabins and 1 non- contributing cabin to historic configuration | Walking tour with wayside exhibits | |
| Society Hill | Restore Chapman cabin; remove others | Wayside exhibits; restoration of native plant communities | |



Figure 2-7: Site Plan for Alternative E
Elkmont Historic District
Great Smoky Mountains National Park



2.2.7.2 Land Protection

Alternative E would provide some land protection measures by preserving a variety of cultural resources and some natural resources. Although most of the historic buildings in Society Hill would be removed, Alternative E also proposes to retain the majority of the remaining buildings in the District for lodging purposes and for cultural resource interpretation.

Restoration and rehabilitation of many of the other buildings within the District is consistent with NPS policies geared towards protection of cultural resources. Reconstruction of the Wonderland Hotel (E2) would address an option requested by the public for overnight stays in the hotel; however, reconstruction is subject to NPS policy review. The buildings would be retained along with all significant cultural landscape features, providing a community setting with historical interpretation components. Natural resources would be protected over a portion of the District as well, by allowing for restoration of native plant communities in most of the Society Hill area, and portions of Millionaire's Row and the Wonderland Club where buildings are removed.

2.2.7.3 Cultural Resource Management

Alternative E provides for cultural resource management consistent with the Park's mission by proposing exterior restoration of some of the buildings in all areas of the District. In Daisy Town, sixteen cabins and the Appalachian Clubhouse would be restored to their historical exterior appearance. The Appalachian Clubhouse would also be rehabilitated on the interior to allow for day use and would be equipped with exhibits to serve as a self-guiding museum. The Chapman cabin (#38) in Society Hill would be restored on the exterior. In Millionaire's Row, the exterior of the Spence cabin (#42) would be restored as well. However, Alternative E also proposes to restore the interior of the Spence cabin and to use it for visiting scientist housing along with five other cabins in Millionaire's Row. Seven cabins in the Wonderland Club would be restored and rehabilitated on the interior to accommodate public overnight lodging. One garage in the Millionaire's Row area would be restored on the exterior and rehabilitated on the interior to be used for administrative purposes.

All of the buildings retained within Daisy Town, with the exception of the five non-contributing cabins proposed for removal, would be preserved. An existing walking path, in the location of the boardwalk that was present in Daisy Town into the 1920s would be resurfaced with gravel and would aid in separating pedestrian traffic from vehicular traffic. The path would extend from the Appalachian Clubhouse south to Jakes Creek Cemetery Road.

E2 allows for the Wonderland Hotel to be reconstructed to its 1928 historic configuration and to be used for public lodging. Reconstruction of the Wonderland Hotel would be performed in compliance with *The Secretary's Treatment Standards* (NPS 1995; Revised 2001).

Alternative E would protect and perpetuate cultural resources by preserving buildings and associated landscapes throughout the District. This alternative could potentially



reuse all contributing buildings in the Wonderland Club and Millionaire's Row areas. Where safety considerations allow, retention of cultural landscape features such as stonework and foundations where buildings are removed would provide opportunities for viewing former building sites. Measures to avoid potential impacts to shallow archeological deposits would be used and are described in the Section 2.1.1 of this document. Appendix E provides recommendations for specific buildings, or groups of buildings, and other areas where modifications are proposed.

2.2.7.4 Natural Resource Management

Alternative E proposes restoration of disturbed areas with plants propagated from native seed sources and salvaged plants collected within the District. Seed would be harvested within the District by NPS staff. Plant materials could be transplanted from locations within the District during project implementation to accomplish a variety of activities including restoration of the former building sites, creation of visual buffers to screen parking lots and roadways, and soil stabilization. More buildings would be retained under Alternative E than the alternatives previously described, and the proposed use of these buildings is intensified with additional infrastructure needs to accommodate housing and lodging. Strategies relevant to management of the District that were identified by the NPS would have to be considered for all alternatives, but are of special consideration for proposed alternatives that intensify or increase the demand on resources.

All alternatives must avoid diminishing the value of resources or causing a direct loss of those resources. Alternative E proposes a variety of measures to address these management concerns and to protect and perpetuate natural resources and ecosystems at the District. Overnight use by the public will be limited to the Wonderland Club area, whereas overnight use by visiting scientists will be restricted to the Millionaire's Row cabins. Central trailhead parking will be provided to limit vehicular intrusion into the site. Most of the plant communities within the Society Hill area would remain and restoration with native species would occur where plant communities are disturbed. Current natural resource management practices concentrating on removal of non- native species, treatment of hemlock woolly adelgid infestations, and other monitoring activities would continue at their current level.

2.2.7.5 Interpretation and Visitor Use

The reconstructed hotel (E2 only) and other public lodging facilities within the District would be operated by a concessioner. The concessioner would be responsible for providing in- depth, resource- based educational opportunities for overnight guests. The Appalachian Clubhouse would be rehabilitated on the interior for public rental and day use. Alternative E proposes to include interpretive features, such as wayside exhibits or other resource education components. It would include displays that focus on cultural history, natural history, the logging history of the area and the construction of the railroad that led to the establishment of the Town of Elkmont, as well as a wayside exhibit providing a historical perspective on Colonel Chapman's role in the Park establishment. A wayside exhibit would also be placed adjacent to the synchronous firefly habitat to educate the public on the natural history of this species. The brochure currently available for interpretation of the Elkmont Nature Trail would be revised to

include historical information about Elkmont and would emphasize the integration of cultural and natural resource themes. A wayside exhibit would be installed at the Spence (#42) cabin describing Colonel Townsend's role in the development of the town of Elkmont. Interior exhibits would also be installed at the Spence cabin that would include a historical perspective of the importance of this building and a history of the establishment and operation of the Little River Lumber Company. Another wayside exhibit would be installed at the Murphy (#45) cabin, describing the establishment and operation of the Little River Railroad. In conjunction with these interpretive features, Alternative E would include enhanced opportunities for seasonal natural and cultural resource education programs. While some NPS sponsored programs would still occur within the District, under Alternative E additional programs would be offered by the concessioner to individuals utilizing lodging accommodations. These programs would be included in the cost of the lodging fee and would be provided as an optional activity for lodging visitors.

Alternative E would create opportunities for emotional and intellectual connections to the natural and cultural resources of the District by providing visitors with opportunities to learn about Elkmont's human occupation while maintaining and allowing regeneration of ecosystems where buildings are removed. This alternative would maintain existing levels of traditional recreation, such as hiking, fishing and camping; and add the option of overnight guests participating in structured educational programs. Alternative E would restore a representative collection of buildings in the District to provide a sense of its character and community. Retaining some landscape features such as stonework and foundations would provide opportunities for interpretation of sites where buildings are removed.

2.2.7.6 Facilities Development with Detailed Site Plans for Alternative E

Under Alternative E, 16 cabins/buildings in Daisy Town and the Appalachian Clubhouse; the Chapman (#38) cabin in Society Hill; six cabins, and one garage in Millionaire's Row; and seven cabins in the Wonderland Club would be restored on the exterior. The cabins in Daisy Town would be preserved on the interior. The Chapman cabin would be preserved on the interior and restored on the exterior to allow for use as an exhibit. The interior of six cabins in Millionaire's Row and the Appalachian Clubhouse would be rehabilitated. Housing for visiting scientists would be provided at six cabins in Millionaire's Row and public rental as a day use facility would be provided at the Appalachian Clubhouse. The interior of the seven cabins in the Wonderland Club would be rehabilitated for use as public lodging facilities.

Two options for the Wonderland Hotel and Annex are under consideration in this alternative. Option one includes removal of both buildings and restoration of the plant communities and surrounding area disturbed during removal (E1). Option 2 proposes to remove the existing Wonderland Hotel and reconstruct it in a manner representative of its historic configuration in conjunction with restoration of the exterior and rehabilitation of the interior of the Annex (E2). Both the hotel and the Annex would be used for public lodging. All of the remaining historic buildings not noted above would be removed. Removal would be accomplished either by mechanical means or by hand removal. Foundations and buried features would not be excavated. Following removal,

former building sites would be restored with plants propagated from native seed sources and salvaged plants collected within the District. Restoration of plant communities would provide soil stabilization and act as a deterrent to erosion and subsequent sedimentation into surrounding water bodies, floodplains, wetlands and other sensitive natural areas. Details of this alternative are provided below and summarized in Table 2-14.

Specific project implementation requirements for E1 and E2 include:

E1 includes all the infrastructure needs included for Alternative B. However, E1 emphasizes reuse of the some buildings for interpretive purposes, lodging for the general public and housing for visiting scientists. In addition to the improvements proposed in E1, E2 proposes to reconstruct the Wonderland Hotel and rehabilitate the Annex for overnight guest lodging. Additional interpretive exhibits would also be installed in the lobby and on the porch of the hotel. A 100- seat restaurant open only to overnight lodging guests and visiting scientists in Elkmont would be provided within the Hotel. As described previously, this alternative also proposes to provide opportunities for educational programs as part of the lodging fee. To accommodate these improvements, water and sewer service to the Wonderland Hotel and Annex would be necessary, as well as improved access and parking for the general public at the Wonderland Hotel. The following infrastructure improvements must be made to facilitate implementation of these alternatives:

Water

Day use at the Appalachian Clubhouse would remain the same for Alternative E as described under Alternative B. Other requirements for E1 and E2 include water supply to visiting scientist housing in Millionaire's Row. This line would supply water to visitors and would connect to a fire suppression system installed in each cabin to be used for lodging. State building codes require that buildings used for overnight lodging be provided with a fire suppression (sprinkler) system meeting the NFPA 13R standard. Therefore, the water supply system for this alternative must be capable of meeting this requirement. To accommodate these needs, a water line must be installed from the Jakes Creek Cemetery water storage tanks to supply water to the Wonderland Hotel, the Appalachian Club, and the cabins proposed for lodging in Millionaire's Row.

The lodging and dining opportunities proposed by E2 at the Wonderland Hotel and Annex would generate additional water supply and fire suppression (and wastewater) demands. As part of Alternative E, a new water supply well and distribution lines from that well must be added to provide additional water to service the needs described. While the capacity of the existing well can accommodate the necessary increase in volume, this demand, combined with the current peak season demand of 22,240 gallons per day, is close to the maximum capacity of the present system (35,000 gpd). For additional water supply and for redundancy in the event of a problem with the present system, it would be necessary to include an additional water supply well and water supply line in the Millionaire's Row area to connect to the water system and distribute water to the cabins. This line would be extended (and the diameter of the distribution line increased from 6 inches to 8 inches) to accommodate lodging at the Wonderland

Hotel and Annex proposed under E2. All proposed water supply improvements are listed in Table 2- 21 at the end of this chapter.

Wastewater

Under Alternative E, average day use visitation is projected to be approximately 526 visits per day. In addition, with the increased number of destinations within the District, the anticipated duration of individual stays is expected to increase. As a result of increased lengths of stay and additional public restroom facilities being provided within the reconstructed Wonderland Hotel, wastewater demands would be greater than those previously described for other alternatives. To accommodate the increased wastewater discharge under E2, sewer lines leading from the Wonderland Hotel restrooms must be constructed in addition to the wastewater treatment plant and sewer line upgrades.

Based on the number of buildings to be retained and the estimated number of visiting scientists using the cabins for overnight stays, the additional wastewater generated by Alternative E was estimated as follows:

| | <u>E1</u> | <u>E2</u> |
|---|-----------|-------------------|
| Water needs of visiting scientists | 1,375 gpd | 1,375 gpd |
| Water needs for public lodging (cabins) | 4,275 gpd | 4,275 gpd |
| Water needs at Appalachian Clubhouse | 1,710 gpd | 1,710 gpd |
| <u>Water for Wonderland Hotel and Annex</u> | | <u>10,610 gpd</u> |
| Total water required | 7,360 gpd | 17,970 gpd |
| Wastewater generated | 5,888 gpd | 14,376 gpd |

In addition to the wastewater system improvements described for Alternative B, E1 also requires wastewater treatment plant improvements. The wastewater flow generated by the use of the Appalachian Clubhouse (1,300 gpd, as described previously) and the cabins proposed to be retained in the Wonderland area would require modifications to the wastewater treatment system to accommodate the total discharge of 5,888 gpd under E1. Wastewater flows generated during peak usage periods in combination with the peak wastewater flows generated by the existing campground would exceed the design capacity of the existing wastewater treatment plant. Proposed improvements to the wastewater system for E1 include installation of sewer service lines to all areas proposed for lodging, food service or public day use under this alternative. These modifications would also include construction of a 225 cubic foot flow equalization basin; installation of sewage grinder pump stations and one sewage pump station to serve seven cabins east of the Wonderland Hotel; and installation of sewer lines servicing all cabins proposed for scientist or public lodging.

The wastewater system for E2 must account for estimated wastewater generated by the cabins proposed for lodging, the visiting scientist housing at the Millionaire's Row cabins, day use of the Appalachian Clubhouse, restroom facilities at the Appalachian Clubhouse, the restaurant and lodging at the Wonderland Hotel and Annex, and a public restroom at the Wonderland Hotel. Based on the increased wastewater flows associated with E2, the design capacity of the existing wastewater treatment facility, and the additional improvements required, it would be necessary to provide additional capacity



to accommodate peak daily flows entering the wastewater treatment facility from these improvements, combined with existing flows for the campground. To accommodate these wastewater needs, in addition to the requirements of Alternative B, a 225- cubic foot flow equalization basin would be constructed. To treat the wastewater flow exceeding the capacity of the existing treatment plant (currently estimated at 5,000 gallons per day), one of two methods could be utilized. The first method requires construction of a drip irrigation system at a suitable location outside of the District. The second method would require installation of a sewer line to carry excess wastewater to the Gatlinburg treatment plant. All wastewater system components to be installed under this alternative are listed in Table 2- 22 at the end of this chapter.

Roads

In addition to the roadway improvements described under Alternative B, roadway modifications necessary to implement Alternative E include minor widening and paving of roadways to the cabins in the Wonderland Club and those in Millionaire's Row. E2 also requires additional work to provide access to parking areas. As part of this alternative, it would be necessary to upgrade or replace the existing one- lane bridge over the Little River (across the road from the Wonderland Hotel and north of the modern 434 and 600 quarters) with a new thirty- two (32) foot wide, two- lane bridge, approximately 125 feet long. The bridge would be wide enough to include a walking trail. This work would be followed by widening and paving the existing one- lane road to the new two- lane bridge and to a new parking area north of the bridge. Additional investigations into the condition of the existing bridge must be undertaken to determine all design and construction requirements for rehabilitation or replacement of this structure.

Parking and Access

Alternative E includes parking at the District Orientation Area (25 spaces), at the Little River Trailhead (30 spaces), at the Appalachian Clubhouse (24 spaces), and at the Daisy Town / Jakes Creek Trailhead (40 spaces). Parking must be provided at each of the cabins proposed for visiting scientist lodging in Millionaire's Row to enable the visiting scientists to load and unload equipment. The number of parking spaces made available to the scientists would be as few as one per cabin.

E2 also must address the need for additional parking adjacent to the Wonderland Hotel. Based on parking needs projected for this alternative, a total of 128 spaces are required at the Wonderland Hotel, requiring construction of two additional parking lots. One would be located adjacent to the east side of the Wonderland Hotel and the other would be across the Little River bridge at the area where air quality monitoring equipment is now located. Pathways would be provided from the lots to the hotel.

Access modifications for Alternative E would also include minor repairs and repaving a portion of Daisy Town Loop Road and Jakes Creek Road to provide a stable walking surface for access to the Chapman cabin and proposed wayside exhibits at that location.

Other requirements for both options of Alternative E include:

Provide a visual screen utilizing plant materials relocated from other areas in the District for all proposed parking areas to minimize the visual intrusion of the parking areas into the cultural landscape.

- Repair the footings of a small footbridge over Bearwallow Branch and restore the surface as a safety measure for pedestrians
- One lane asphalt on Catron Branch Road from hotel parking to Beaman (58- 8H) cabin
- Place gravel on road segment from Catron Branch Road to Paine (58- 2B) cabin

Primary features of this alternative are summarized in Table 2- 14.

2.2.7.7 Estimated Development Costs

The estimated range of costs for site development and implementation of E1 and E2 are provided in Appendix C of this document, including an itemized list of costs and post-construction operation and maintenance costs. Total costs of E1 and E2 are based on estimating the funds necessary to perform the following items:

- Building removal, rehabilitation, restoration, preservation and reconstruction
- Infrastructure improvements
 - Parking lots (improvements and new lots)
 - Road system improvements
 - Water system improvements
 - Wastewater system improvements
- Furniture, fixtures and equipment (associated with buildings for lodging)
- Vegetation management
- Resource education components
- Mitigation measures to be implemented as part of the alternative
- Resource /visitor protection patrols



Table 2- 14: Summary of Implementation Features for Alternative E

| | |
|--|---|
| Use of Historic Buildings | 16 cabins / buildings in Daisy Town, the Chapman cabin in Society Hill, six cabins in Millionaire's Row, seven cabins in the Wonderland Club and the Appalachian Clubhouse would be retained; Wonderland Hotel and Annex would be removed under E1. Under E2, the Hotel would be reconstructed and the Annex rehabilitated for lodging purposes. All other buildings would be removed. |
| Measures for Buildings Retained | Restore exterior to 1920s - 1930s appearance and preserve interior of Daisy Town and Chapman cabins; restore exterior of Appalachian Clubhouse and rehabilitate interior to allow for public rental and day use; restore exterior and rehabilitate interior of cabins retained in Millionaire's Row and in the Wonderland Club for lodging purposes; under E2, restore exterior of Annex and rehabilitate interior for lodging and reconstruct Wonderland Hotel to be used for lodging. |
| Natural Resources Management | Continued implementation of current management activities including hemlock management, water quality monitoring, fish population assessment, and general maintenance to existing infrastructure; and revegetation of areas where buildings have been removed |
| Visitor Use | Visitation is expected to increase under this alternative. Use of existing hiking trails, camping, fishing and other compatible recreational activities would continue, but would require upgrades to infrastructure to accommodate additional water use, wastewater treatment, electrical service and use of the transportation system. |
| Interpretive Features | Up to 14 locations throughout the District with interpretive features including an information kiosk, brochure, wayside exhibits and interior exhibits would be provided, focusing on natural and cultural resources, history of Elkmont, history of Park establishment, and historical perspective of Chapman and Townsend. |
| Access / Circulation | <ul style="list-style-type: none"> • Relocate road gate on Little River Road to the east end of Little River trailhead parking area • Relocate existing gate or install new gate at beginning of Jakes Creek Road • Resurface gravel path in Daisy Town from Appalachian Clubhouse to road to Jakes Creek cemetery • Little River trailhead paving- 350 lf • Daisy Town loop paving - 1,111 lf • Orientation parking area access road - 400 lf • Gravel walking path from Little River Trailhead to Spence (#42) cabin - 550 lf • Walking path from Orientation parking lot leading along Elkmont Road to base of Wonderland steps - 550 lf • Road from Elkmont Road to rear of Hotel - 750 lf • One lane asphalt on Catron Branch Road from hotel parking to Beaman (#58- 8H) cabin - 350 lf • Place gravel on road segment from Catron Branch Road to Paine (#58- 2B)cabin - 300 lf • One lane asphalt at Millionaire's Row to gate for access to Cambier (#49) cabin (1167 lf) • Path from base of Wonderland steps in vicinity of historic walkway on west side of steps to the top of the steps - 400 lf <p>If Wonderland Hotel is reconstructed, include:</p> <ul style="list-style-type: none"> • Upgrade existing bridge over Little River to two lanes to connect with Wonderland overflow parking area across the River • Walking path from Wonderland overflow parking - 800 lf |



Table 2- 14: Summary of Implementation Features for Alternative E (continued)

| | |
|-------------------------------------|--|
| Parking | <p>4 parking areas proposed plus parking at cabins proposed for lodging</p> <p>If Wonderland Hotel is reconstructed (E2), two additional parking areas include:</p> <ul style="list-style-type: none"> • Parking area behind hotel • Remote parking across the Little River from the Wonderland Hotel would be accessed by a new two- lane bridge |
| Utilities | <p>Add restroom facilities and sprinkler system to the day use area of the Appalachian Club.</p> <p>Also includes:</p> <p>Water Supply:</p> <ul style="list-style-type: none"> • 1,300 lf 4" water line to Appalachian Clubhouse • 1,750 lf 4" water line from Appalachian Clubhouse to Millionaire's Row • Water service lines from individual buildings to main water lines • New water supply well and 1,150 lf 4" water pipe to connect to system • If Wonderland Hotel is removed, include 7,500 lf 6" water line to service Wonderland cabins • If Wonderland Hotel is reconstructed, include 7,500 lf of 8" water line to service hotel and Wonderland cabins; add sprinkler system to hotel and Annex <p>Wastewater System:</p> <ul style="list-style-type: none"> • 640 lf 8" gravity sewer line from Appalachian Clubhouse • 600 lf 8" gravity sewer line serving Wonderland cabins • 4" gravity sewer line from individual Wonderland cabins to sewer main • 600 lf 2" low pressure sewer force main serving Paine cabin • 3,200 lf 3" sewer force main from rear of Wonderland Hotel to existing sewer line in campground • 225 cubic foot flow equalization basin at the wastewater treatment plant • 2,400 lf 3" low pressure force main from Appalachian Clubhouse to Millionaire's Row cabins • Sewage grinder pump stations and one sewage pump to service 6 Wonderland cabins <p>If Wonderland Hotel is reconstructed:</p> <p>5,000 gpd wastewater treatment system expansion with a drip irrigation system located outside of the District</p> <p>6" gravity sewer lines for Wonderland Hotel and Annex</p> |
| Landscape Treatment | <p>Retain foundations, rock walls and other cultural features where they do not pose a safety hazard to visitors</p> |
| Park Operations and Staffing | <p>Implementation of this alternative would eliminate the need for those resources currently being utilized to stabilize historic buildings not retained; however, some operation and maintenance costs would be required to maintain the infrastructure serving the buildings retained and to process special use permits for the clubhouse. Staff time and resources would be required for educational programs conducted by NPS at the Appalachian Clubhouse, as well as management of the concessioner contract under E2. Maintenance of cabins used for scientist housing would be the responsibility of NPS and buildings used for public lodging would be the responsibility of the concessioner.</p> |



2.2.8 Alternative F

2.2.8.1 Concept

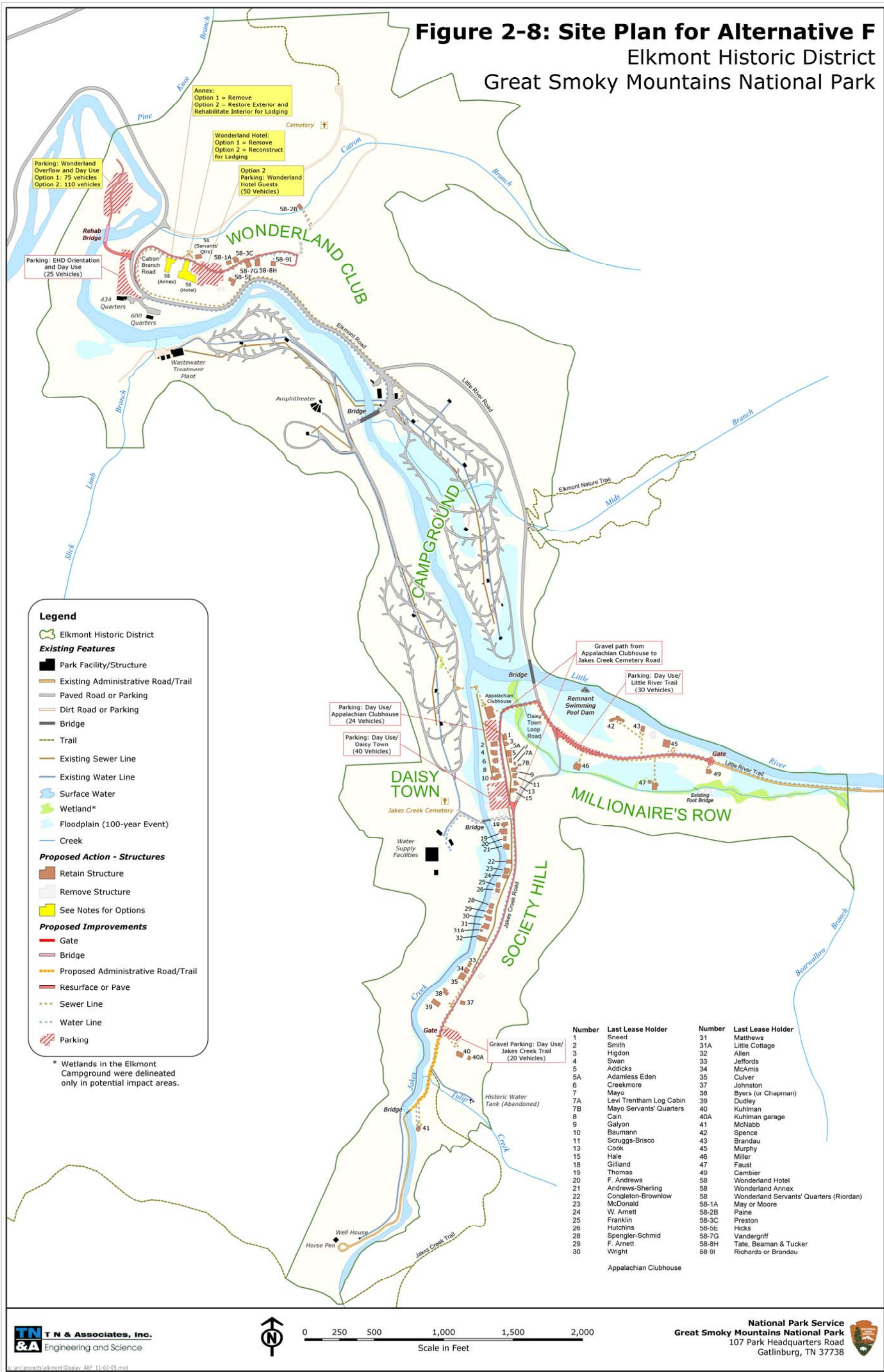
Alternative F proposes the greatest intensity of reuse of historic buildings, primarily in the form of overnight accommodations and dining facilities for the general public. The emphasis is on restoration of the cultural and social character of the District by retaining most of its historic buildings. Education and interpretation would be provided at the orientation kiosk, on the Wonderland Hotel porch and in the hotel lobby (F2), in Daisy Town, at the Appalachian Clubhouse, at the Spence cabin in Millionaire's Row, and at the Chapman cabin in Society Hill. An option to participate in structured educational programs would be made available to overnight guests and the general public for a fee in addition to Park programs already provided seasonally at the campground for no charge. Protection of natural resources would be dependent upon operational procedures and visitor regulations required of the concession operator. Table 2- 15 provides a summary of the proposed treatment for all buildings under Alternative F. The alternative is depicted in Figure 2- 8 on the following page.

Table 2- 15: Buildings Summary for Alternative F

| Area/Buildings | | Status | Uses |
|-----------------------|--|---|------|
| Wonderland Club | | | |
| Wonderland Hotel | F1: Remove F2: Reconstruct to 1928 footprint | F1: Restoration of native plant communities; wayside exhibits F2: Overnight lodging; meeting rooms; dining hall; exhibits in lobby, at top of stairs and on porch; resource education- based programming | |
| Annex | F1: Remove if Wonderland Hotel is removed F2: Restore exterior and rehabilitate interior if Wonderland Hotel is reconstructed | F1: Restoration of native plant communities F2: Overnight public lodging | |
| Cabins | Restore and rehabilitate all 6 contributing cabins and 2 non- contributing cabins | Overnight rental; storage | |
| Millionaire's Row | Restore and rehabilitate 6 contributing cabins and one garage; remove two non-contributing cabins | Overnight rental; storage Restoration of native plant communities; wayside and interior exhibits | |
| Daisy Town | | | |
| Appalachian Clubhouse | Restore exterior and rehabilitate the interior | As part of the concession operation, day use; walking tour with interior self- guiding museum exhibits and wayside exhibits | |
| Cabins | Restore the exterior of all contributing cabins and return one non- contributing cabin to historic configuration | Walking tour with wayside exhibits | |
| Society Hill | Restore and rehabilitate 15 contributing buildings and 8 non- contributing buildings | Wayside exhibit; overnight rentals | |



Figure 2-8: Site Plan for Alternative F
Elkmont Historic District
Great Smoky Mountains National Park



2.2.8.2 Land Protection

Alternative F would provide some land protection measures by being consistent with the Park's mission to preserve a variety of resources. Alternative F proposes to retain most of the historic buildings in the District. While the majority of the buildings would be used for lodging purposes, some would be used for visitor education and interpretation. The buildings would be retained along with all significant cultural landscape features, providing a community setting with historical interpretation components. Natural resources would be protected in some areas of the District by restoring native plant communities where buildings are removed, except where parking lots are constructed.

2.2.8.3 Cultural Resource Management

Alternative F provides for cultural resource management consistent with the Park's mission by proposing exterior restoration of the majority of the historic buildings in all areas of the District. This alternative would also incorporate all of the interpretive exhibits and materials described in Alternative A, along with additional exhibits focused on cultural history, natural history, architecture, the logging history of the area, construction of the railroad, and eventual establishment of the Town of Elkmont.

In Daisy Town, sixteen cabins and the Appalachian Clubhouse would be restored to their historical exterior appearance. The Appalachian Clubhouse would also be rehabilitated on the interior to allow for day use and equipped with exhibits to serve as a self-guiding museum. In Daisy Town, the historic walking path, would be restored with gravel and used to separate pedestrian and vehicular traffic. The path would extend from the Appalachian Clubhouse south to the road to Jakes Creek Cemetery Road. In Society Hill, twenty-two cabins would be restored on the exterior and rehabilitated on the interior to allow for public lodging. The Chapman cabin (#38) in Society Hill would be retained as the focus for an interpretive exhibit highlighting the contribution of Colonel Chapman to the formation of the Park. One garage would be restored on the exterior and rehabilitated on the interior. A woodshed adjacent to the Kuhlman cabin (#40) would also be retained. F1 proposes to restore exterior and rehabilitate the interior of six cabins in Millionaire's Row and eight cabins in the Wonderland Club for use as overnight lodging for the public.

No visiting scientist housing is provided in Alternative F. Instead, rehabilitated cabins would be operated by the concessioner and rented to the public for overnight lodging in the Wonderland area and in Millionaire's Row. All restoration and rehabilitation would take place in accordance with *The Secretary's Treatment Standards*.

One option under this alternative (F2) calls for the Wonderland Hotel to be reconstructed to its historic configuration and to be used for public lodging. Reconstruction of the Wonderland Hotel would have to be performed in compliance with *The Secretary's Treatment Standards*. The reconstructed hotel and other lodging facilities within the District would be operated by a concessioner, who would also be responsible for providing resource-based educational opportunities. However, the NPS would continue to provide seasonal staff-led education programs for the general public at no charge.

Alternative F retains buildings and component landscapes in clusters and associations sufficient to provide a sense of the character of the District. Alternative F would retain most contributing buildings for overnight use or as exhibits. Measures to avoid potential impacts to shallow archeological deposits would be used and are described in the Section 2.1.1 of this document. Appendix E provides recommendations for specific buildings, or groups of buildings, and other areas where modifications are proposed. Alternative F would also provide opportunities to convey the history of several important figures in Elkmont's history.

2.2.8.4 Natural Resource Management

Most of the existing buildings would be retained under Alternative F, and the proposed use of these buildings is intensified because of the infrastructure needed to accommodate lodging, day use, interpretive exhibits, and access to other areas such as existing trailheads. Due to the proposed increase in intensity of use and potential increase in demand on resources, natural resource management strategies designed to avoid impacts to the Little River, floodplains, wetlands, plant communities and wildlife habitat are of even greater importance than alternatives that propose a lower level of use.

As a result, under Alternative F, sewage treatment options have been proposed and intend to provide protection to aquatic resources in compliance with current water quality standards mandated through law, codes, and policies. Alternative F proposes restoration with plants propagated from native seed and with salvaged plants collected in the District. Plant materials could be transplanted from locations within the District to accomplish a variety of activities including revegetation of the former building sites, creation of visual buffers and soil stabilization. Current natural resource management practices concentrating on removal of non- native species, treatment of hemlock woolly adelgid infestations, and other monitoring activities would continue at their current level. This alternative would manage potential visitor impacts through operational procedures and regulations required of the concession operator.

2.2.8.5 Interpretation and Visitor Use

This alternative proposes to include interpretive features, such as wayside exhibits and other resource education components. Alternative F would also include displays that focus on cultural history, natural history, architecture, the logging history of the area and the construction of the railroad that led to the establishment of Elkmont, as well as a wayside exhibit providing a historical perspective on Colonel Chapman's role in establishment of the Park. A wayside exhibit would also be placed adjacent to the synchronous firefly habitat to educate the public on the natural history of this species. The brochure currently available for interpretation of the Elkmont Nature Trail would be revised to include historical information about Elkmont and would emphasize the integration of cultural and natural resource themes. Exhibits would be installed inside the Spence (#42) cabin that would include a historical perspective of this building as well as a history of the establishment and operation of the Little River Lumber Company. While some NPS sponsored programs would still occur within the District at no charge, in Alternative F, additional programs would be offered by the concessioner to individuals staying overnight in lodging accommodations. These programs would be



fee- based and would be provided as an optional activity for visitors. These activities may include in- depth cultural and natural resource education opportunities.

Alternative F would provide the opportunity for the general public to stay overnight inside the Park. It would maintain existing levels of traditional recreation such as hiking, fishing and camping, and provide visitors with additional opportunities to learn about the natural resources that comprise Elkmont, either as a day use visitor or through programs offered for overnight guests. Alternative F proposes to restore and rehabilitate the majority of the buildings, providing a sense of the historical character of the District, and would provide visitors with opportunities to learn about Elkmont's human occupation. For overnight guests, this alternative also includes the option of participation in structured educational programs.

2.2.8.6 Facilities Development with Detailed Site Plans for Alternative F

Under Alternative F, 17 cabins/buildings in Daisy Town, Society Hill and the Appalachian Clubhouse would be restored on the exterior and used for interpretive purposes. The cabins in Daisy Town would be preserved on the interior and the exteriors restored to allow for interpretation. The interior of the Appalachian Clubhouse would be rehabilitated to allow for day use and interior exhibits would provide a self- guiding museum. Cabins that have deteriorated beyond repair would not be retained. The 36 remaining cabins on Society Hill, Millionaire's Row and the Wonderland Club would be restored on the exterior and rehabilitated on the interior for lodging use.

Two options for the Wonderland Hotel and Annex are under consideration in this alternative. Option 1 (F1) includes removal of both buildings and revegetation of the area disturbed during removal. Option 2 (F2) proposes to remove the existing Wonderland Hotel and reconstruct it in a manner representative of its historic configuration in conjunction with restoration of the exterior and rehabilitation of the interior of the Annex. Both buildings would be utilized for public lodging and dining purposes. Foundations and buried features would not be excavated. Following building removal, former building sites would be restored with native species collected from within the District. Restoration would provide soil stabilization and act as a deterrent to erosion and subsequent sedimentation into surrounding water bodies, floodplains, wetlands and other sensitive natural areas.

Specific project implementation requirements for Alternative F include:

In addition to the improvements proposed in Alternative B, F1 proposes to restore and rehabilitate many of the cabins to provide lodging for Park visitors. To accommodate this alternative, there would be a need to provide water and sewer service to these cabins, as well as improved access and parking for the guests staying in those cabins.

In addition to the improvements proposed in F1, F2 proposes to reconstruct the Wonderland Hotel and Annex for overnight guest rental and provide a 100- seat restaurant open to the general public. As described previously, the reconstruction of the Wonderland Hotel and Annex will provide opportunities for educational programs and

for additional exhibits at the hotel. To accommodate these improvements, there would be a need to provide water and sewer service to the Wonderland Hotel and Annex, as well as improved access and parking. Improvements required for Alternative F are as follows:

Water

In F₁, eight (8) cabins in Wonderland Hotel, six (6) cabins in Millionaire's Row and twenty- three (23) cabins in Society Hill would be rehabilitated for overnight lodging rental, creating added water (and wastewater) demands. Also, many of the cabins in the Society Hill area are at elevations that are higher than the elevation of the existing water storage tanks and cannot be served by gravity from those tanks. State building codes require that buildings used for overnight lodging be provided with a fire suppression (sprinkler) system meeting the NFPA 13R standard. Therefore, the water supply system provided for this alternative must be capable of meeting that requirement. To accommodate water supply needs for Alternative F₁, additional water distribution lines to service the Society Hill cabins, a new booster pump station to aid in forcing water through the lines up Society Hill, rehabilitation of the existing Jakes Creek water tank and addition of a new water supply well and connections to it would be required.

For F₂, water system requirements include those specified in Alternative B with the addition of water distribution lines to serve the reconstructed hotel, the Annex, and Wonderland Club cabins; installation of a new booster pump station to distribute water uphill to cabins on Society Hill; rehabilitation of the Jakes Creek water tank; water distribution lines to cabins; and installation of a new water supply well on Millionaire's Row. F₂ also requires installation of a fire suppression system meeting the NFPA 13R standard and the water supply system must be capable of meeting that requirement.

Wastewater

Based on the increased wastewater flows associated with F₁ and the design capacity of the existing wastewater treatment facility, it would be necessary to provide additional wastewater treatment capacity to accommodate peak daily flows. Requirements to implement F₁, over and above those improvements specified for Alternative B, include installation of additional sewer lines and force mains to service cabins specified for lodging use; wastewater treatment plant improvements including construction of a 225 cubic foot flow equalization basin; construction of a drip irrigation system at a suitable location outside of the District to accommodate a 5,000 gpd increase; and installation of sewage grinders and one sewage pump station to serve six (6) cabins east of the Wonderland Hotel. All wastewater system components to be installed under this alternative are listed in Table 2- 22 at the end of this chapter.

The projected wastewater generated under F₂ is increased over that generated by F₁ because of lodging and food services offered at the Wonderland Hotel and Annex and lodging at the restored cabins on Society Hill. Based on the projected increase in wastewater flows, the design capacity of the existing wastewater treatment facility, and the additional improvements required, as previously described under F₁, it would be necessary to provide additional capacity to accommodate peak daily flows entering the wastewater treatment facility. Therefore, in addition to the wastewater modifications

described in F1, F2 requires the following: further expansion of the drip irrigation system at a suitable location outside of the District or construction of a wastewater line extending to the Gatlinburg treatment plant to accommodate an additional 10,000 gpd increase; extension of sewer service lines to the Wonderland Hotel and the Annex.

Roads

Access must be provided to the areas in which cabins are proposed for lodging use. In each of these areas, an all- weather, two- way road must be provided for access. All roadway improvements proposed in F1 have been previously described in Alternative B, with the exception of the following: widening and paving a portion of the existing one-lane road beginning at Elkmont Road near the turnoff to Quarters 434 and 600, and ending at the rear of the Wonderland Hotel; paving a portion of the existing Catron Branch Road from the Wonderland Hotel Parking Lot to the Beaman (58- 8H) cabin, and from the Beaman cabin extending to the Richards (58- 9I) cabin; and placing gravel on the access road from Catron Branch Road to the Paine (58- 2B) cabin.

F2 also requires additional work to provide access to parking areas. As part of F2, it would be necessary to upgrade or replace the existing one- lane bridge over the Little River (across the road from the Wonderland Hotel and north of the modern 434 and 600 quarters) with a new thirty- two (32) foot wide, two- lane bridge, approximately 125 feet long. The bridge would be wide enough to include a walking trail. This work would be followed by widening and paving the existing one- lane road to the new two- lane bridge and to a new parking area north of the bridge. Additional investigations into the condition of the existing bridge must be undertaken to determine all design and construction requirements for rehabilitation or replacement of this structure.

Parking and Access

In comparison to Alternative B, F1 requires additional parking to serve the cabins in the Wonderland Club, Millionaire's Row and Society Hill areas. Given the projected increase in traffic in the Daisy Town and Society Hill areas, a minimum of 30 more parking spaces would be required in this portion of the District. One parking space should be provided for each cabin where overnight lodging is provided. These parking spaces would be provided as close as practical to the cabins they are serving. An additional gravel parking lot would be provided for the Jakes Creek Trailhead in front of the Kuhlman cabin (#40) and would separate users of the Jakes Creek trail from those visiting for other purposes. To allow access to the proposed lodging cabins on Millionaire's Row, while preventing and minimizing uncontrolled site impacts, the road gate on Little River Road would be relocated to the upper end of Millionaire's Row at the Cambier (#49) cabin. An existing gate on Jakes Creek road located south of the bridge crossing Jakes Creek would be relocated to just south of the proposed gravel parking area on Jakes Creek Road.

F2 also must address the need for additional parking adjacent to the Wonderland Hotel. Based on projected parking needs for the Wonderland Club, a total of 163 spaces are required at the Wonderland Hotel for F2, requiring construction of one additional parking lot and increasing the size of another. The new lot would be located adjacent to the east side of the Wonderland Hotel and the overflow lot across the Little River bridge

at the area where air quality monitoring equipment is now located would be expanded to accommodate 110 vehicles. Pathways would be provided from the lots to the hotel.

Other requirements for Alternative F include:

- Provide a visual screen utilizing plant materials relocated from other areas in the District for all proposed parking areas to minimize the visual intrusion of the parking areas into the cultural landscape.
- Repair the footings of a small footbridge over Bearwallow Branch and restore the surface as a safety measure for pedestrians

Primary features of this alternative are summarized in Table 2- 16 on the following page.

2.2.8.7 Estimated Development Costs

The estimated range of costs for site development and implementation of F₁ and F₂ are provided in Appendix C of this document and includes an itemized list of costs and post- construction O&M costs. Total costs of F₁ and F₂ are based on estimating the funds necessary to perform the following items:

- Building removal, rehabilitation, restoration, preservation and reconstruction
- Infrastructure improvements
 - Parking lots (improvements and new lots)
 - Road system improvements
 - Water system improvements
 - Wastewater system improvements
- Furniture, fixtures and equipment (associated with buildings for lodging)
- Vegetation management
- Resource education components
- Mitigation measures to be implemented as part of the alternative
- Resource and visitor protection patrols



Table 2- 16: Summary of Implementation Features for Alternative F

| | |
|--|--|
| Use of Historic Buildings | 16 cabins / buildings in Daisy Town, the Chapman cabin and 25 other buildings in Society Hill, eight buildings in Millionaire's Row, nine buildings in the Wonderland Club and the Appalachian Clubhouse retained; Wonderland Hotel and Annex would be removed under F1. Under F2, the hotel would be reconstructed and the Annex rehabilitated for lodging purposes. All other buildings would be removed |
| Measures for Buildings Retained | Restore exterior to period of significance appearance and preserve interior of Daisy Town cabins; restore exterior of Appalachian Clubhouse and rehabilitate interior to allow for day and self- guiding museum use; restore exterior and rehabilitate interior of cabins retained in Society Hill, Millionaire's Row and the Wonderland Club for lodging purposes. Under F2, restore Annex exterior and rehabilitate interior for lodging; reconstruct hotel for lodging and dining. |
| Natural Resources Management | Continued implementation of management activities including hemlock management, water quality and fish population assessment, and revegetation of areas where buildings are removed |
| Visitor Use | An increase in visitation is expected to occur under this alternative. Use of existing hiking trails and other compatible recreational activities such as camping and fishing would continue, but would also require multiple upgrades to infrastructure to accommodate additional water use, wastewater treatment, electrical service and upgrade of roadways to allow for distribution of supplies and services. |
| Interpretive Features | Up to 14 locations throughout the District with interpretive features including wayside exhibits, an orientation kiosk, brochure, and interior exhibits would be provided, focusing on natural and cultural resources, history of Elkmont, history of Park establishment, and historical perspective of Chapman and Townsend |
| Access / Circulation | <ul style="list-style-type: none"> • Relocate road gate on Little River Road to the east end of Millionaire's Row at the Cambier (#49) cabin • Relocate existing gate or install new gate at beginning of Jakes Creek Road • Resurface path in Daisy Town from Appalachian Clubhouse to road to Jakes Creek cemetery • Little River trailhead paving- 350 lf • Daisy Town loop paving – 1,111 lf • Orientation parking area access road - 400 lf • Gravel walking path loop from Little River Trailhead to Spence (#42) cabin - 550 lf • Walking path from Orientation parking lot leading along Elkmont Road to base of Wonderland steps - 550 lf • Road from Elkmont Road to rear of Hotel – 750 lf • One lane asphalt on Catron Branch Road from hotel parking to Beaman (#58- 8H) cabin – 350 lf • Repair one lane gravel Catron Branch Road from Beaman (#58- 8H) to Richards (#58- 9I) cabin – 250 lf • Place gravel on road segment from Catron Branch Road to Paine (#58- 2B)cabin – 300 lf • One lane asphalt at Millionaire's Row to Cambier (#49) cabin - 1167 lf • Path from base of Wonderland steps in vicinity of historic walkway on west side of steps to the top of the steps - 400 lf • Asphalt repair / overlay down Daisy Town Loop Road between Jakes Creek Cemetery Road and Appalachian Clubhouse- 1,111 lf <p>If Wonderland Hotel is reconstructed, include:</p> <ul style="list-style-type: none"> • Upgrade existing bridge over Little River to two lanes to connect with Wonderland overflow parking area • Walking path from Wonderland overflow parking – 800 lf |



Table 2- 16: Summary of Implementation Features for Alternative F (continued)

| | |
|-------------------------------------|---|
| Parking | <p>6 parking areas proposed; If Wonderland Hotel is reconstructed (F2), include additional parking areas:</p> <ul style="list-style-type: none"> • Parking area behind hotel; • Increase Wonderland overflow parking area from 75 spaces to 110 spaces |
| Utilities | <p>Add restroom facilities and sprinkler system to the day use area of the Appalachian Club. Also includes:</p> <p>Water Supply:</p> <ul style="list-style-type: none"> • 1,300 lf 4" water line to Appalachian Clubhouse • 1,750 lf 4" water line from Appalachian Clubhouse to Millionaire's Row • 3,400 lf 4" water line from Jakes Creek cemetery water tanks to Jakes Creek storage tank • Jakes Creek water storage tank rehabilitation with upgraded access road • Water service lines from individual buildings to main water lines • New water supply well and 1,150 lf 4" water pipe to connect to system • Sprinkler system for all buildings used for overnight lodging <p>If Wonderland Hotel is removed, include: 7,500 lf 6" water line to service Wonderland cabins; if reconstructed: 7,500 lf of 8" water line to service hotel and Wonderland cabins; add sprinkler system to hotel and Annex</p> <p>Wastewater System:</p> <ul style="list-style-type: none"> • 640 lf 8" gravity sewer line from Appalachian Clubhouse • 600 lf 8" gravity sewer line serving Wonderland cabins • 4" gravity sewer line from individual cabins to sewer main • 600 lf 2" low pressure sewer force main serving Paine (#58- 2B) cabin • 3,200 lf 3" sewer force main from rear of Wonderland Hotel to existing sewer line in campground • 225 cubic foot flow equalization basin at the wastewater treatment plant • 2,400 lf 3" low pressure force main from Appalachian Clubhouse to Millionaire's Row cabins • 1,200 lf 8" gravity sewer line serving Society Hill cabins • 4" gravity sewer service lines from individual cabins on Society Hill to sewer main • 1,200 lf 3" low pressure sewer force main along Jakes Creek Road from Chapman (#38) cabin serving Kuhlman (#40) and McNabb (#41) cabins on Society Hill <p>If Wonderland Hotel is removed: 5,000 gpd drip irrigation system; if reconstructed: 15,000 gpd drip irrigation system or pipe to Gatlinburg</p> <p>6" gravity sewer service for Wonderland Hotel and Annex</p> |
| Landscape Treatment | Retain foundations, rock walls and other cultural features where they do not pose a safety hazard to visitors |
| Park Operations and Staffing | <p>For historic buildings not retained under this alternative, need for resources currently used for stabilization is eliminated; however, operation and maintenance costs would be required to maintain infrastructure serving the buildings retained. Staff time and resources would be required for management of the concessions contract. Concessioner would be responsible for maintenance of buildings used for public lodging.</p> |



Alternatives, Including the Environmentally Preferred Alternative
Alternatives Summary Tables

Table 2- 17: Proposed Disposition of Buildings by Alternative

| REQUIRED COMPONENT | Alternative | | | | | | | | | |
|--------------------------------|---|---|--|--|---|---|---|---|---|--|
| | No Action | A | B | C | D1 | D2 | E1 | E2 | F1 | F2 |
| Buildings Retained | | | | | | | | | | |
| Daisy Town | None | None | 12 cabins Appalachian Clubhouse | 16 cabins Appalachian Clubhouse | 16 cabins Appalachian Clubhouse | 16 cabins Appalachian Clubhouse | 16 cabins Appalachian Clubhouse | 16 cabins Appalachian Clubhouse | 16 cabins Appalachian Clubhouse | 16 cabins Appalachian Clubhouse |
| Society Hill | None | None | None | 1 cabin | 1 cabin | 1 cabin | 1 cabin | 1 cabin | 23 cabins 1 garage 1 wood shed 1 privy | 23 cabins 1 garage 1 woodshed 1 privy |
| Millionaire's Row | None | None | None | None | 1 cabin | 1 cabin | 6 cabins 1 garage | 6 cabins 1 garage | 6 cabins 1 garage 1 gazebo | 6 cabins 1 garage 1 gazebo |
| Wonderland Club | None | None | None | None | 6 cabins | 6 cabins Hotel Annex | 7 cabins | 7 cabins Hotel Annex | 8 cabins 1 wood shed | 8 cabins 1 wood shed Hotel Annex |
| Buildings Removed | | | | | | | | | | |
| Daisy Town | All buildings removed: Appalachian Clubhouse 20 cabins 1 rear room | All buildings removed: Appalachian Clubhouse 20 cabins 1 rear room | 8 cabins 1 rear room | 4 cabins 1 rear room | 4 cabins 1 rear room | 4 cabins 1 rear room | 4 cabins 1 rear room | 4 cabins 1 rear room | 4 cabins 1 rear room | 4 cabins 1 rear room |
| Society Hill | 25 cabins 1 garage 1 wood shed 1 privy | 25 cabins 1 garage 1 wood shed 1 privy | 25 cabins 1 garage 1 wood shed 1 privy | 24 cabins 1 garage 1 wood shed 1 privy | 24 cabins 1 garage 1 wood shed 1 privy | 24 cabins 1 garage 1 wood shed 1 privy | 24 cabins 1 garage 1 wood shed 1 privy | 24 cabins 1 garage 1 wood shed 1 privy | 2 cabins | 2 cabins |
| Millionaire's Row | 8 cabins 2 garages 1 gazebo | 8 cabins 2 garages 1 gazebo | 8 cabins 2 garages 1 gazebo | 8 cabins 2 garages 1 gazebo | 7 cabins 2 garages 1 gazebo | 7 cabins 2 garages 1 gazebo | 2 cabins 1 garage 1 gazebo | 2 cabins 1 garage 1 gazebo | 2 cabins 1 garage | 2 cabins 1 garage |
| Wonderland Club | 10 cabins 1 wood shed Wonderland Hotel and Annex | 10 cabins 1 wood shed Wonderland Hotel and Annex | 10 cabins 1 wood shed Wonderland Hotel and Annex | 10 cabins 1 wood shed Wonderland Hotel and Annex | 4 cabins 1 wood shed Wonderland Hotel and Annex | 4cabins 1 wood shed | 3 cabins 1 wood shed Wonderland Hotel and Annex | 3 cabins 1 wood shed | 2 cabins Wonderland Hotel and Annex | 2 cabins |
| Wonderland Hotel | | | | | | | | | | |
| Wonderland Hotel Removed | X | X | X | X | X | X | X | X | X | X |
| Wonderland Hotel Reconstructed | | | | | | X | | X | | X |
| Appalachian Club Day Use | | | X | X | X | X | X | X | X | X |



Table 2- 18: Resource Education Components by Alternative

| RESOURCE EDUCATION COMPONENT | ALTERNATIVE | | | | | | | | | |
|--|-------------|---|---|---|----|----|----|----|----|----|
| | No Action | A | B | C | D1 | D2 | E1 | E2 | F1 | F2 |
| Orientation Area and Parking | | | | | | | | | | |
| 3- panel Orientation Kiosk across from hotel site containing area and park map. | | | x | x | x | x | x | x | x | x |
| Self- guiding brochure provided at orientation kiosk referenced to thematic stops at buildings and other cultural and natural resources throughout the District | | | x | x | x | x | x | x | x | x |
| Wonderland Hotel | | | | | | | | | | |
| (1) Wayside exhibit describing with 2 panels describing: <ul style="list-style-type: none"> The hotel and its role in travel and tourism to the District The conflict between residents of the Elkmont community over whether to establish a National Park or National Forest | | | x | x | x | | x | | x | |
| (1) Wayside exhibit with 2 panels on reconstructed porch describing: <ul style="list-style-type: none"> The historic view of the hotel and a description of the scenic vista Social life at Elkmont and the eventual establishment of the Park | | | | | | x | | x | | x |
| Interior exhibits in lobby describing: <ul style="list-style-type: none"> The historic view of the hotel and a description of the scenic vista Social life at Elkmont and the eventual establishment of the Park | | | | | | | | x | | x |
| Elkmont Campground | | | | | | | | | | |
| (1) Wayside exhibit near existing vending machines with a historical description of the Town of Elkmont | | x | x | x | x | x | x | x | x | x |
| Elkmont Nature Trail | | | | | | | | | | |
| Revise Trail Brochure to include important natural and cultural history of the District. Including: <ul style="list-style-type: none"> A description of the creation of the Park History of Elkmont, including logging, significant natural features and cultural remnants | | x | | | | | | | | |
| Revise Trail Brochure to include important natural history of the District including: <ul style="list-style-type: none"> Description and significance of the montane alluvial forest Description of important natural resource features along the trail | | | x | x | x | x | x | x | x | x |



Table 2- 18: Resource Education Components by Alternative (continued)

| RESOURCE EDUCATION COMPONENT | No Action | A | B | C | D1 | D2 | E1 | E2 | F1 | F2 |
|---|-----------|---|---|---|----|----|----|----|----|----|
| Millionaire's Row | | | | | | | | | | |
| (1) Wayside exhibit at Spence (#42) describing Colonel Townsend's role in development of Elkmont | | | | | x | x | x | x | x | x |
| (1) Wayside exhibit at Murphy (#45) cabin describing establishment and operation of the Little River Railroad | | | | | | | x | x | x | x |
| Interior exhibits at Spence cabin describing: <ul style="list-style-type: none"> Importance of the structure relative to Elkmont's history Establishment and operation of the Little River Lumber Company | | | | | | | x | x | x | x |
| (1) Wayside exhibit describing the natural history of the species of synchronous firefly in the District | | x | x | x | x | x | x | x | x | x |
| Society Hill | | | | | | | | | | |
| (1) Wayside exhibit at the Chapman (#38) cabin describing Chapman's role in establishing the Park | | | | x | x | x | x | x | x | x |
| Daisy Town | | | | | | | | | | |
| (1) Wayside exhibit at the Mayo (#7) cabin describing District architectural features | | | x | | | | | | | |
| (1) Wayside exhibit near the Daisy Town mailboxes describing the story of Park establishment | | | x | | | | | | | |
| (1) Wayside exhibit providing an orientation to Daisy Town and a description of the District as a summer resort community | | | | x | x | x | x | x | x | x |
| (1) Wayside exhibit looking up the Daisy Town streetscape from the Appalachian Clubhouse providing a historical perspective on community life at Elkmont | | | x | x | x | x | x | x | x | x |
| (1) Wayside exhibit near the Appalachian Clubhouse with building history | | | x | x | x | x | x | x | x | x |
| (1) Wayside exhibit west of the Appalachian Club describing the history of the train station and railroad at Elkmont | | | x | x | x | x | x | x | x | x |
| Interior exhibits in Appalachian Clubhouse serving as a self- guiding museum and exhibits would add to the story provided by other interpretive exhibits | | | x | x | x | x | x | x | x | x |
| Interpretive programs provided by NPS focusing on natural and cultural history themes of the area. | | | | | x | x | | | | |



Alternatives, Including the Environmentally Preferred Alternative
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Table 2- 19: Alternative Summary by Attribute

| REQUIRED COMPONENT | ALTERNATIVE | | | | | | | | | |
|---|-------------|---|----|----|----|----|----|----|----|----|
| | No Action | A | B | C | D1 | D2 | E1 | E2 | F1 | F2 |
| # Cabins Retained Only for Interpretive Uses | 0 | 0 | 12 | 17 | 18 | 18 | 17 | 17 | 17 | 17 |
| # Cabins Retained for Visiting Scientist Housing | 0 | 0 | 0 | 0 | 6 | 6 | 6 | 6 | 0 | 0 |
| # Cabins Retained for Public Lodging Purposes | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 36 | 36 |
| # Interpretive Exhibits | 0 | 2 | 10 | 10 | 10 | 11 | 10 | 12 | 10 | 12 |
| Upgraded Electrical Service Required | | | X | X | X | X | X | X | X | X |
| Sprinkler Systems (Wet) | | | X | X | X | X | X | X | X | X |
| Sprinkler System (Dry) | | | | | | X | | | | |
| Parking and Access* | | | | | | | | | | |
| Orientation Area (12 spaces; 720 SY) | | | X | X | | | | | | |
| Orientation Area (25 spaces; 1500 SY) | | | | | X | X | X | X | X | X |
| Little River Trailhead (30 spaces; 1800 SY) | | | X | X | X | X | X | X | X | X |
| Appalachian Clubhouse (24 spaces; 1440 SY) | | | X | X | X | X | X | X | X | X |
| Daisy Town / Jakes Creek Trailhead (40 spaces; 2400 SY) | | | X | X | X | X | X | X | | |
| Behind Wonderland Hotel (50 spaces; 3000 SY) | | | | | | X | | X | | X |
| Wonderland Overflow (75 spaces; 4500 SY) (110 spaces in F2; 6600 SY) | | | | | | | | X | X | X |
| Daisy Town (40 spaces; 2400 SY) | | | | | | | | | X | X |
| Gravel Parking for Jakes Creek Trailhead in front of Kuhlman Cabin (#40) (20 spaces; 1200 SY) | | | | | | | | | X | X |

*SY = square yard



Table 2- 20: Estimated Water Required and Wastewater Generated for All Alternatives

| | ALTERNATIVE | | | | | | | | | |
|---|-------------|-----|-------|-------|-------|-------|-------|--------|--------|--------|
| | No Action | A | B | C | D1 | D2 | E1 | E2 | F1 | F2 |
| Daily Average Visitation Projected (number of day use visitors, excluding public lodging and visiting scientists) | 500 | 500 | 500 | 500 | 526 | 526 | 526 | 526 | 536 | 536 |
| # Visiting Scientists Housing in Cabins | 0 | 0 | 0 | 0 | 18 | 18 | 22 | 22 | 0 | 0 |
| # Public Lodging in Cabins | 0 | 0 | 0 | 0 | 0 | 0 | 57 | 57 | 226 | 226 |
| Water Required for Visiting Scientists (gpd) | 0 | 0 | 0 | 0 | 1,125 | 1,125 | 1,375 | 1,375 | 0 | 0 |
| Water Required for Cabin Public Lodging (gpd) | 0 | 0 | 0 | 0 | 0 | 0 | 4,275 | 4,275 | 16,950 | 16,950 |
| Water for Day Use at Appalachian Clubhouse (gpd) | 0 | 0 | 1,625 | 1,625 | 1,710 | 1,710 | 1,710 | 1,710 | 1,742 | 1,742 |
| # Lodgers in Hotel and Annex | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 52 | 0 | 52 |
| Water for Wonderland Hotel and Annex (gpd)** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,900 | 0 | 3,900 |
| Water for Restaurant at Wonderland Hotel (gpd)** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,000 | 0 | 5,000 |
| Water for Public Restroom at Wonderland Hotel (gpd) | 0 | 0 | 0 | 0 | 0 | 1,710 | 0 | 1,710 | 0 | 1,742 |
| Total Water Required (gpd)** | 0 | 0 | 1,625 | 1,625 | 2,835 | 4,544 | 7,360 | 17,970 | 18,692 | 29,334 |
| Total Wastewater Generated (gpd)* | 0 | 0 | 1,300 | 1,300 | 2,268 | 3,635 | 5,888 | 14,376 | 14,954 | 23,467 |

gpd=gallons per day

* assumes water required is 1.25 x the amount of wastewater generated. Wastewater generated by visiting scientists = 50 gpd; public lodging visitors = 60 gpd; each visitor to the restaurant = 40 gpd; **E2 and F2 both assume maximum capacity at restaurant for calculation of water requirements



Table 2- 21: Proposed Water Supply System Improvements by Alternative

| Description of Proposed Improvement | No Action | ALTERNATIVE | | | | | | | | |
|---|--------------|-------------|---|---|----|----|----|----|----|----|
| | | A | B | C | D1 | D2 | E1 | E2 | F1 | F2 |
| 7,500 LF 8" water line to Wonderland Club from existing Jakes Creek Cemetery water storage tanks, through Campground, across Little River bridge and along Elkmont Road to rear of Wonderland Hotel | | | | | | X | | X | | X |
| 7,500 LF 6" water line to Wonderland Club from existing Jakes Creek Cemetery water storage tanks, through Campground, across Little River bridge and along Elkmont Road to rear of Wonderland Hotel | | | | | X | | X | | X | |
| 1,750 LF 4" water line from the Appalachian Clubhouse, along Daisy Town Loop Road and Little River Road to Millionaire's Row cabins (to remain) | | | | | | | X | X | X | X |
| 1,300 LF 4" water line from existing Jakes Creek Cemetery water storage tanks, across Jakes Creek bridge and down Daisy Town Loop Road to Appalachian Clubhouse | | | X | X | X | X | X | X | X | X |
| Water service lines from individual buildings to water main | | | | | X | X | X | X | X | X |
| 3,400 LF 4" water line from Jakes Creek Cemetery water storage tanks, across Jakes Creek bridge and along Jakes Creek Road to Jakes Creek storage tank | | | | | | | | | X | X |
| New water supply well and 1,150 LF 4" piping located above Cambier (#49) cabin on Millionaire's Row with a water line connecting to water system near the cabin | | | | | | | X | X | X | X |
| New booster pump station and well to supply water to Society Hill cabins | | | | | | | | | X | X |
| Jakes Creek water storage tank rehabilitation with upgraded access road | | | | | | | | | X | X |

LF = lineal feet

Table 2- 22: Proposed Wastewater System Improvements by Alternative

| Description of Proposed Wastewater System Improvement | ALTERNATIVE | | | | | | | | | |
|--|-------------|---|---|---|----|----|----|----|----|----|
| | No Action | A | B | C | D1 | D2 | E1 | E2 | F1 | F2 |
| 640 LF 8" gravity sewer line from Appalachian Clubhouse to existing manhole in Elkmont Campground (40 LF sewer line under Jakes Creek) | | | X | X | X | X | X | X | X | X |
| 600 LF 8" gravity sewer line along Catron Branch Road Serving Wonderland Club cabins | | | | | X | X | X | X | X | X |
| 1,200 LF 8" gravity sewer line along Jakes Creek Road and Daisy Town Loop Road to Appalachian Clubhouse serving Society Hill cabins | | | | | | | | | X | X |
| 4" gravity sewer service lines from individual cabins to sewer main for Wonderland Club cabins | | | | | X | X | X | X | X | X |
| 6" gravity sewer service lines for Wonderland Hotel and Annex | | | | | | X | | X | | X |
| 4" gravity sewer service lines from individual cabins to sewer main for Society Hill cabins | | | | | | | | | X | X |
| 600 LF 2" low pressure sewer force main along Catron Branch Road serving Paine cabin in Wonderland Club | | | | | X | X | X | X | X | X |
| 2,400 LF 3" low pressure sewer force main from Appalachian Clubhouse along Daisy Town Loop Road and Little River Road serving Millionaire's Row cabins | | | | | | | X | X | X | X |
| 3,200 LF 3" low pressure sewer force main from rear of Wonderland Area along Elkmont Road, across Little River bridge to existing sewer line in Elkmont Campground | | | | | X | X | X | X | X | X |
| 1,200 LF 3" low pressure sewer force main along Jakes Creek Road from Chapman (#38) cabin serving Kuhlman (#40) and McNabb (cabins on Society Hill | | | | | | | | | X | X |
| 225 square foot flow; 6000 gallon capacity flow equalization basin at the wastewater treatment plant (outside east side of existing fence) | | | | | X | X | X | X | X | X |
| Sewage pump station from Wonderland Club | | | | | X | X | X | X | X | X |
| Grinder pumps behind cabins used for lodging | | | | | X | X | X | X | X | X |
| 5,000 gpd wastewater treatment expansion through drip irrigation system in a suitable location outside of the District or piping to Gatlinburg | | | | | | | | X | X | |
| 15,000 gpd wastewater treatment expansion through drip irrigation system in a suitable location outside of the District or piping to Gatlinburg | | | | | | | | | | X |

gpd = gallons per day
LF = lineal feet

Alternatives, Including the Environmentally Preferred Alternative
Alternatives Summary Tables

Table 2- 23: Proposed Roadway Improvements by Alternative

| Description of Proposed Roadway Improvement | ALTERNATIVE | | | | | | | | | |
|--|-------------|---|---|---|----|----|----|----|----|----|
| | No Action | A | B | C | D1 | D2 | E1 | E2 | F1 | F2 |
| 350 LF second lane construction along Little River Road at Little River Trailhead parking area in Millionaire's Row | | | X | X | X | X | X | X | X | X |
| 1,111 LF asphalt repair / overlay down Daisy Town Loop Road between Jakes Creek Cemetery Road and Appalachian Clubhouse | | | X | X | X | X | X | X | X | X |
| 1,167 LF one lane road at Millionaire's Row to Cambier cabin | | | | | | | | | | |
| 750 LF two lane asphalt road from Elkmont Road to rear of Wonderland Hotel | | | | | X | X | X | X | X | X |
| 350 LF one lane asphalt on Catron Branch Rd. from Wonderland parking lot to Beaman cabin | | | | | X | X | X | X | X | X |
| 300 LF gravel overlay from existing roadway to Paine cabin | | | | | X | X | X | X | X | X |
| 500 LF One lane asphalt on Catron Branch Road from Beaman cabin to Richards cabin | | | | | | | | | X | X |
| 400 LF One lane road through Orientation parking area across Elkmont Road | | | X | X | X | X | X | X | X | X |
| New two- lane bridge over Little River to Wonderland overflow parking area | | | | | | | | X | | X |
| 550 LF loop gravel walking path from Little River Trailhead to Spence cabin and returning to Little River trail in Millionaire's Row | | | | | X | X | X | X | X | X |
| 550 LF walking path from Orientation parking lot along northern edge of Elkmont Road to base of Hotel steps | | | X | X | X | X | X | | X | |
| 800 LF walking path from Orientation and Wonderland overflow parking lots along northern edge of Elkmont Road to base of hotel steps | | | | | | | | X | | X |
| 400 LF walking path from base of Wonderland steps in vicinity of historic walkway on the west side of the steps to top of Wonderland steps | | | X | X | | X | | X | | X |
| Relocate road gate on Little River Road to upper end of Millionaire's Row (at Cambier cabin) | | | | | | | | | X | X |
| Relocate road gate on Little River Road to east end of Little River Trailhead parking area | | | X | X | X | X | X | X | | |
| Relocate gate or install new gate on Jakes Creek Road to just south of Jakes Creek Cemetery Road | | | X | X | X | X | X | X | | |
| Relocate gate on Jakes Creek road to just south of proposed gravel parking area | | | | | | | | | X | X |
| | | | | | | | | | | |
| Bank stabilization at existing culverts | | | X | X | X | X | X | X | X | X |

LF = lineal foot



2.3 Preferred Alternatives

The Council on Environmental Quality regulations for implementing the National Environmental Policy Act (NEPA) require that the Record of Decision specify an “environmentally preferred” alternative and an “agency preferred” alternative (40 CFR 1505.2(b)).

According to the regulations, the environmentally preferred alternative is the alternative that would result in the least damage to the biological and physical environment, but that best protects, preserves, and enhances historic, cultural and natural resources. The environmentally preferred alternative is determined by applying criteria in the requirements identified in Section 101 of NEPA to each alternative under consideration. These requirements include:

- 1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- 2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
- 3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
- 4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice;
- 5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
- 6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The environmentally preferred alternative can be the same as the agency preferred alternative, but may differ in some respects, depending on the results of the analysis presented in the Environmental Impact Statement. The agency preferred alternative is the alternative that the NPS believes best fulfills the purpose and need of the proposed action. As a result, the environmentally preferred and agency preferred alternatives do not necessarily need to be the same alternative because the NPS must consider other issues in choosing its preferred alternative, such as the agency’s mission and responsibilities in managing resources, and other economic, environmental, technical and social factors.

Alternative C represents both the environmentally preferred and agency preferred alternative for the Elkmont Historic District. This alternative emphasizes the preservation and protection of important historic, cultural and natural aspects of our national heritage while maintaining an environment that supports diversity and variety of individual choice. The proposed visitor facilities and services would have the least possible impact on resources while ensuring that visits to the site would take place in safe, healthful, productive and aesthetically and culturally pleasing surroundings. At the same time, Alternative C would achieve a balance between human population and resource considerations.

