

MASTER PLAN  
FOR THE PRESERVATION AND USE  
OF  
SHENANDOAH NATIONAL PARK

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MISSION 66 EDITION

*Revised Copy.*

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Master Plan  
for Shenandoah National Park

MISSION 66 EDITION

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MASTER PLAN  
FOR THE PRESERVATION AND USE  
OF  
SHENANDOAH NATIONAL PARK  
MISSION 66 EDITION

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The Service thus established shall

- \* Promote and regulate the use of
- \* The Federal areas known as  
national parks, monuments and  
reservations hereinafter specified
- \* By such means and measures as conform  
to the fundamental purpose of the said  
parks, monuments and reservations

Which purpose is

- \* To conserve the scenery and the  
natural and historic objects and  
the wildlife therein, and
- \* To provide for the enjoyment of the same  
in such manner and by such means as shall
- \* Leave them unimpaired for the  
enjoyment of future generations.

From an Act to Establish a National  
Park Service. Approved August 25, 1916.

## Foreword

### THE PARK

Located in the famed Blue Ridge Mountains of Virginia is an outstanding example of natural features composed of forests, mountain peaks, meadows, streams and waterfalls. One hundred ninety-three thousand, four hundred seventy-three acres comprise the Park which is surrounded by small valley settlements and mountain people. Included in the natural features of the Park are a large variety of shrubs, a profusion of wild flowers, 40 species of mammals, 200 kinds of birds and native trout.

Winding near the crest of the mountains is the Skyline Drive which provides visitors an access to remote areas within the Park as well as panoramic views of the mountains and the valleys below.

The Skyline Drive starts at the north end of the Park, near the Town of Front Royal, at an intersection with U. S. 340. Proceeding south the Drive crosses U. S. 211 at Thornton Gap, then U. S. 33 at Swift Run Gap and terminates at Rockfish Gap.

Parallel to the Skyline Drive in the function of Visitor access to the Park is the Appalachian Trail used by hikers. This trail is approximately 2000 miles in length and goes from Maine to Georgia. It extends throughout the Park, winding near the mountain crests, with views of the hollows, mountains and valleys below.

The historical lore of the Shenandoah region includes the westward exploration journey of John Lederer in 1669, the crossing at Swift Run Gap of Governor Spotswood and his Knights of the Golden Horseshoe in 1716 and events of the War Between the States, of which General Jackson's Valley Campaign is outstanding.

Geologically, the crests of the mountains are a remnant of earth upheaval, volcanic eruption and sedimentation, which have been eroded to the present formations.

## Foreword

THE MISSIONShenandoah National Park -

its Mission is to afford its visitors opportunity for enjoyment and study of the scenic and geologic phenomena, the flora and fauna, and the reminders of the human history of the locale.

The National Park Service -

its Mission at Shenandoah National Park is to so manage, develop, present and preserve the Park that it will fulfill its Park Mission effectively and permanently.

Approved: /s/ A. Clark Stratton  
Assistant Director

6-4-62  
Date

June 1962

MASTER PLAN  
FOR THE PRESERVATION AND USE

OF

SHENANDOAH NATIONAL PARK

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VOLUME I - CHAPTER 1

Objectives and Policies

MASTER PLAN  
FOR THE PRESERVATION AND USE  
OF  
SHENANDOAH NATIONAL PARK

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Chapter 1, Objectives and Policies  
Significant Resources  
Significant Values  
Preservation and Use Policies  
Guidelines

\* \* \* \* \*

Prepared by: J. T. Clark Date April 1, 1960  
Park Landscape Architect

\* \* \* \* \*

Recommended: R. Taylor Hoskins Date 4-15-60  
Superintendent

\* \* \* \* \*

Concurred: (signed) Edward S. Zimmer Date 5-2-60  
Chief, Eastern Office, Design and Construction

Concurred: /s/ Elbert Cox Date 10-6-60  
Regional Director, Region One

\* \* \* \* \*

APPROVED: /s/ A. Clark Stratton Date 6-4-62  
Assistant Director

June 1962

MASTER PLAN  
FOR THE PRESERVATION AND USE OF  
SHENANDOAH NATIONAL PARK

VOLUME I

Chapter 1. Objectives and Policies

Resources of Shenandoah National Park  
typify a section of the Appalachian  
Mountain Range

Significant resources which have merited the Park's inclusion in the National Park System are those which are typical of the mountainous area. As the mountains have influenced the westward growth of the country so have they shaped the desirability of the site for human enjoyment and use.

Long ago the central Blue Ridge Mountain mass was formed far below the earth's surface by metamorphism of granite fluid which is now found as granitic basement rock in the core of the mountains. Erosion then wore away the earth's surface, exposing the basement rock, followed by covering outpourings of lava which hardened into what is known as the Catoctin formation. This was a vast plain of lava surrounding occasional ranges of granitic hills rising above the plain.

A gradual subsidence of the plain formed a trough or Appalachian geosyncline, and, through weathering, sediments were deposited to depths of over 30,000 feet in a period of 300 million years. Compression of the sediments then produced long parallel folds forming the present Appalachian Mountains. Since that time, erosion has worn down the mountain tops, producing the configuration of today's region.

From the mountain crests, views may be had of the physiographic provinces: Piedmont, Valley, and Ridge, and Blue Ridge itself. Eastward the mountains dwindle into the rolling peneplain of the Piedmont. Westward the Valley and Ridge Provinces are evident as Massanutten Mountain rises above the valley floor. The Blue Ridge is a continuous ridge trending southwestward with a series of high peaks and deep gaps. While some of these areas lie outside the Park boundary, they are all a practical feature of the Park and are so closely interwoven that one story cannot be told independently of the other.

Evident throughout the Blue Ridge Mountains are numerous streams. The sources are springs, high in the mountains, which send their cascading flow of water winding downward to the valleys. As the spring flow converges in natural waterways it forms increasingly larger streams which finally merge as large rivers of the valleys flowing to the sea.

Studies of Park flora are as yet incomplete. The preliminary check, listing 1,383 species, is based on specimens preserved in the Smithsonian and other public institutions.

Approximately 160 woody plants have been identified, including shrubs, vines and trees. Sixty-five of these plants are of conspicuous bloom.

Forest cover is generally second growth as the result of fire, farming, logging operations and death, by blight, of the chestnut.

Also present in the Park are marshy areas with their characteristic plant and animal associations and barren places of exposed bare rock.

Seasonal aspects of the Park flora constitute an important feature for the visitor. Spring and summer bloom, summer luxury of foliage, brilliant fall color, winter barrenness and snow are overwhelming.

Forty-two kinds of mammals inhabit the Park, and ten others, known to be in adjacent territory, may be assumed to be present. These include white-tailed deer, bear, chipmunk, ground hog, raccoon, skunk, fox, and bobcat.

One hundred and ninety-seven birds are noted in the Shenandoah lists, including the raven, several hawks, vulture, ruffed grouse, and wild turkey.

Included in preliminary lists of herpetological fauna are thirty-four reptiles and thirty amphibians.

There are an abundance of insects in the park, but little is as yet recorded on them.

Scenic views, geology, plant life, animals, birds, insects, fish and human history are all part of the Park's valuable resources.



Significant values through  
intrinsic utilization

Shenandoah National Park was established in accordance with the Act of May 22, 1926. A Commission, appointed by the Secretary of the Interior, spent eight months investigating proposed sites in the Southern Appalachian Mountain region to determine whether the region included areas suitable for National Parks.

Since the Park "should be of sufficient size to meet the needs of a recreational ground for the people not only of today but of coming generations," the Commission decided that no site covering less than 500 square miles would be considered. The following requirements were then laid down by the Commission for its guidance.

1. Mountain scenery with inspiring perspectives and delightful details.
2. Areas sufficiently extensive and adaptable so that annually millions of visitors might enjoy the benefits of outdoor life and communion with nature without the confusion of overcrowding.
3. A substantial part to contain forests, shrubs, flowers, and mountain streams with picturesque cascades and waterfalls overhung with foliage, all untouched by the hand of man.
4. Abundant springs and streams available for camps and fishing.
5. Opportunities for protecting and developing the wildlife of the area, and the whole to be a natural museum, preserving the outstanding features of the southern Appalachians as they appeared in the early pioneer days.
6. Accessibility by rail and road.

The Commission submitted a report of its investigation to the Secretary of the Interior recommending the present Park as meeting the above requirements in this region.

Adequately presented, preserved, and interpreted, Shenandoah National Park has the capacity to give its visitors a full measure of inspiration and satisfaction.

National Park Service policies  
apply to the preservation  
and use of the Park

Shenandoah National Park provides a scenic mountain experience for multitudes of visitors, the majority of whom travel via the Skyline Drive, viewing its panoramic vistas, and depart after a stay of one or two days. Apart from the Skyline Drive are a number of other opportunities for visitors to enrich their experiences, including foot and horseback trails to waterfalls, streams, mountain summits, and botanically interesting areas. Spring and summer floral displays, fall color, and winter season add to the visitors' experiences.

In order for the visitor to obtain full realization of the Park's benefits, he must be encouraged to spend more time in areas apart from the Skyline Drive. This theme will be carried out through the media of such developments as picnic areas, campgrounds, visitor centers, concession accommodations, nature trails, horse trails, and foot trails.

The trend of visitor use has been steadily increasing. Expansion, as well as development of new facilities, is necessary to meet the increased visitation, but an appropriate balance must be maintained between types of use and provision of opportunities for this use. Consequently, development plans must remain fluid, and concentration must be avoided in an area and in the Park as a whole. Only by spreading visitor usage throughout the Park can the values of the Park be retained.

Preservation and use of the Park, in accord with National Park Service policies, will be developed only through proper and continued planning and management programs. Essential to these programs will be research; contributing to preservation of the Park values, to enrichment of Park interpretation and to visitor service developments.

Interpretive Theme for the Park takes its substance and scope from the Park's significant resources. It embraces geology, flora and fauna, and human factors. Presentation of the story should attempt to amplify the atmosphere of the natural setting, interweaving such historical lore as is pertinent and applicable.

The Interpretive Method shall include both self-guiding and personal service techniques. Visitor centers will serve to orient and prepare park visitors for interpretive excursions through the region. The very heavy concentration of visitor use on and near the Skyline Drive makes roadside interpretation and self-guiding trails very important, and it is important also that visitors have the opportunity for personal contact with Service representatives through interpretive services at visitor centers and other attended stations. Conducted trips and evening talks will be available to the large numbers of campers and lodge guests.

Of prime consideration is balance between natural resources of the Park and in service to the visitor. For the one day visitor, who must remain near his car, access must be had to the scenery, Visitor Center, wayside, and picnic areas. For the overnight visitor, campgrounds, and concession accommodations must be added. With more leisure time for the visitor to utilize in recreational pursuits, a year-round usage is foreseeable. Long-range planning must consider the aspects of winter recreation and development.

A comprehensive study of management, protection, interpretation, and development needs must be completed so that such additions, deletions, or exchanges of lands, as are necessary, may be made to round out the Park and protect it from intrusions by outside factors.

The preservation and interpretation of the natural and historical features of Shenandoah require a thorough knowledge of the flora, fauna, biology, geology, and the history of human habitation in order to plan intelligently in the administration, protection, interpretation, and development of the Park. As there is much that is not known it is essential that a comprehensive research program be continued. Insofar as is possible this type of work should be conducted by specialists in the Park Service or other Governmental agencies or by contract with educational or scientific institutions. The research program shall be so directed as to develop an increasing understanding of the total environment, a basis for protection, development, and interpretive functions.

Visitor Centers, strategically located in the three sections of the Park will provide the chief visitor orientation and interpretation points. The main Visitor Center will be at Big Meadows in the central section and will be supplemented by the existing facility at Dickey Ridge in the north section and a proposed facility in the south section.

Campgrounds are recognized by the Service as a means of placing the visitor in very close relationship with the Park. This type of park use is to be encouraged as a medium for the visitor to make an intimate contact with nature. Campgrounds now exist in the central section and these can receive only minimum expansion. New campgrounds are proposed in the north and south sections and again in the central section if the demand is greater than the new facilities can accommodate.

Picnic areas now exist in the north and central sections and will be expanded. New ones will be constructed in these sections if the demand exceeds the available sites. New picnic facilities will be provided in the south section.

Lodging facilities and related concession services are presently provided and considered desirable at Big Meadows, Skyland, and Lewis Mountain in the central section. The concessioner has plans to increase these existing facilities and the possibility of another overnight development in the south section should receive careful consideration. The concessioner also provides food and automobile service facilities at Thornton Gap, Big Meadows Wayside, Elk Wallow Wayside, and Swift Run Gap. ~~The Swift Run Gap operation will be rebuilt and a new wayside constructed in the south section.~~

The sale of appropriate food stuffs and camping equipment at stores in large campgrounds several miles from outside sources of supply is recognized as a camper service to be conducted by the concessioner. One such store may be provided in each section and if provided should be located in close conjunction with the campgrounds each is to serve.

To attain effective and economical operations of services, utilities, and management for the Park there will be a consolidation of utilities, housing, and other physical developments into centralized areas wherever practical. The Service has recognized the need of housing for employees subject to transfer and seasonals and housing developments adequate to meet Park staffing requirements will be a part of the Development Program.

The main utility area is located in conjunction with the headquarters area. Effective and economical operation requires the provision of additional submaintenance areas at other locations in the Park. The exact placing of these submaintenance facilities will be determined after studies have indicated the most effective locations.

Guidelines suggested for accomplishment  
of the Park Mission.

1. Continue as rapidly as feasible with the acquisition of privately owned land within the authorized park boundary and the elimination of scenic easements, obtaining title to sufficient land to protect the areas now covered by such easements.
2. Follow a continuing policy of conducting well planned public relations programs in neighboring schools and communities.
3. Take the major interpretive theme from the Park's natural history resources of flora and fauna, and forest covered mountains as examples typical of the Southern Appalachian Mountain region. Interpretation will emphasize the biological and scenic features with geology and history as supporting themes.
4. Employ the best practicable methods of self-guiding and personal service interpretation to stimulate deeper appreciation for Park values and use of trails beyond the confines of the Skyline Drive.
5. Provide facilities for evening programs within reasonable distance of each new campground or overnight accommodation development.
6. Treat the Park as an area preserving the natural appearance of the Southern Appalachian Mountain Region. This does not preclude the development of vistas and facilities for visitor use.
7. Establish a permanent program of vista clearing at appropriate locations on principal roads and trails under the guidance of a Land Use Plan.
8. Maintain some examples of the open pastures once used for cattle grazing at Big Meadows.
9. Continue the policy of concessioner provided food and motor service at Thornton ~~and Swift Run Camps~~ without overnight facilities. Continue concession developments including lodging at Big Meadows, Skyland, and Lewis Mountain and give consideration to establishing additional facilities in the south section.



10. Establish the major visitor center in the central section at Big Meadows with a supplementary center at Dickey Ridge and one in the south section. These visitor centers are to function primarily as visitor use centers since headquarters will remain at its present location.
11. Provide housing within the Park for all personnel subject to rotation and for seasonal employees assigned to areas where rental housing is not readily available.
12. Designate some trails for joint use by horse parties and hikers while others should be reserved for hikers only.
13. The Appalachian Trail is recognized as an important thoroughfare. The Potomac Appalachian Trail Club will be permitted to maintain the standard Appalachian Trail markers and shelters along the trail's route through the Park.
14. The Service considers horseback riding as an appropriate park use and the operation of such services is recognized as a desirable recreational outlet and adjunct to park use.
15. Provide additional campground facilities in the north, central, and south sections of the Park to better distribute the visitor load and to afford more flexibility and convenience to the visitor. The exact locations to be determined after water studies indicate sufficient water supplies to handle such facilities.
16. Convert Dundo to a group-camping site for Boy Scouts and similar organized groups.
17. At large campgrounds distant from communities where supplies can be purchased, consider the need for campground stores, restricting them to the sale of those items essential to camper needs.
18. Provide a picnic area in the south section, based on water studies, and enlarge the existing picnic facilities in the north and central sections of the Park if the demand requires.
19. The main utility area will be maintained at Park Headquarters with submaintenance areas at locations as necessary for efficient and economical performance of work. Studies shall be made to determine the most effective locations for submaintenance facilities in the Park.

20. To afford adequate park protection, ready access to remote areas by vehicular transportation is desirable. The existing system of locked administrative truck roads will be maintained and modified only when careful studies and fact support expansion or change.
21. Pursue a program of research to provide a continuous flow of new knowledge in the preservation of the natural resources and in Park use.
22. The Shenandoah Natural History Association is considered an essential cooperating organization and its continued operation is encouraged.
23. To further the influence of park interpretation the Park recognizes the desirability of scheduling interpretive talks in communities adjacent to the Park and will encourage such programs.
24. Maintain the Skyline Drive motor road for visitor travel year round except when closure is required because of snow, ice or other emergency conditions. Under such conditions, closed sections will be effectively gated to prevent access.
25. Shenandoah National Park will function within the framework of this approved Master Plan and under the published delegations of authority as a Group D organization as defined in the Administrative Manual.

MASTER PLAN  
FOR THE PRESERVATION AND USE  
OF  
SHENANDOAH NATIONAL PARK

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Chapter 2, Visitor Use Brief

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- B. Dickey Ridge
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- I. Corners Deadening
- J. Big Meadows
- K. Camp Hoover
- L. Lewis Mountain
- M. South River
- N. Swift Run
- O. Loft Mountain
- P. Dundo
- Q. Moormans River
- R. Rockfish Gap

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Reviewed by:	(SGD) R. TAYLOR HOSKINS	Date:	JUL 20 1962
Reviewed by:		Date:	
	Chief, Eastern Office, Design & Construction		
APPROVED:		Date:	
	Regional Director, Southeast Region		

*Revised Copy*



VOLUME I

Chapter 2. Visitor Use Brief

Development of visitor use facilities has been in progress since formal establishment of the Park on December 26, 1935. With close proximity of large urban centers, such as Washington, D. C., Baltimore, Maryland, Philadelphia, Pennsylvania, and Richmond, Virginia, the public has an easy sojourn in the wilderness of the Park. As people become acquainted with the Park, they pass to others the richness of their experiences, which lead to increasing visitation.

Principal visitor activity is touring the Skyline Drive with brief stops at overlooks and developed areas. Following in popularity are picnicking, hiking, camping, overnight stays at concession facilities, fishing and horseback riding.

Completion of the Skyline Drive, presence of the Appalachian Trail, and initial development of visitor facilities have formed the present pattern of usage. Future improvements will not change the present pattern essentially, but will constitute the extension, completion and refinement of it.

A. The Park in General.

With use of the Park being largely seasonal, 46 per cent of the total annual visitation (1,927,844 in 1961) occurs in June, July and August. Travel is heaviest on weekends, 31 per cent of the weekly travel occurring on Sunday. Visitors travel the Park by private automobile, organized tours by bus, as school and other youth groups, and by foot.

The visitor may begin his tour at any of the four Park entrances. Some will complete their tour in a matter of hours, some will stay overnight at campground or concession developments, and some will linger for extended visits utilizing Park facilities or those available in the general vicinity.

Due to the Park's extensive length, visitors enter at each of the four entrances: North Entrance, Thornton Gap, Swift Run Gap and Rockfish Gap. Being naturally divided into three portions by trans-mountain highways, the Park has developed in two ways: As three sections and as one unit encompassing the three sections. The visitor may enter and leave at any point and still feel as though he had a complete visit. To orient the visitor under the divided scheme, he will stop at a visitor center, one of which is strategically located at each end of the Park.

With increasing leisure time, more demand is evidenced for year around use of the Park. Winter environment in the Park is uninspiring, and it is a deprivation not to have the Park open year around for visitation. With this in mind, it is intended to concentrate on year around use of the Central District and the following goals ought to be set:

1. Concession facilities at Skyland or Big Meadows might have to be winterized.
2. The Maintenance Division should be properly equipped and staffed.
3. The Ranger Division should be properly equipped and staffed.
4. The Interpretive Division must develop winter programs and be properly equipped and staffed.

Including then, the planned winter use of the Central District, there follows the eventual plan for facilities and services to the visitor, identified by underlining those proposed for the future. For convenience of description, a chronological order is used, starting at the North Entrance.

#### B. Dickey Ridge.

Entering the Park at the North Entrance, the visitor will travel approximately one mile and pass through a newly-constructed Entrance Station. The visitor will then travel approximately five miles along the Skyline Drive, stopping intermittently at roadside overlooks, to the Dickey Ridge Development, consisting of a visitor center, adjoined by a picnic area.

Directed by the sign system, the visitor views the center from an expansive lawn and drives up a curved entrance road to the building where he parks his car. The Visitor Center was originally a concession bayside and was converted to its present usage. Included in the building are a combined information room and Shenandoah Natural History Association gift room; a museum consisting of the rooms devoted to interpretive exhibits, including an orientation of the natural and historic features of the Park, with a primary exhibit thereof Mountain Farming; an auditorium for presenting live and filmed programs; and public restrooms.

At the Visitor Center, the visitor receives general information and orientation as well as the essential elements of the single floor-plan and story of the Park. To the left, a corner of the center

is a panoramic view of the Shenandoah Valley and the Massanutten Mountain beyond. To the east, is a panoramic view of the Piedmont. In addition to views from the Center, are an interpretive self-guided nature trail, the Appalachian Trail, and the Dickey Hill Trail which give complete immersion into the wooded surroundings. As the visitor leaves the parking area, he travels a reconstructed exit road to the Skyline Drive and approaches the picnic area, adjacent to the visitor center, where he can linger and enjoy a leisurely lunch in a secluded, wooded atmosphere.

About 11 miles south of Dickey Ridge, on the Skyline Drive, is Mount Marshall. A 30-car parking area and a comfort station adjoin a self-guided nature trail leading to the summit of North Marshall. From the summit is seen a 360° panoramic view of the surrounding mountain peaks, piedmont plateau and the valleys.

C. Matthews Arm.

At mile 22.2, the visitor may leave the Drive by a paved road for a short distance to the west, and enjoy a sojourn in the wilderness at the Matthews Arm Campground. Facilities available include a 130-site unit with space provided for expansion, four comfort stations, a courtyard, an amphitheater and a campground entrance station.

At the campground, the visitor may enjoy the interpretive program or hike along the self-guided nature trail. He may also hike the Inland Empire Trail and the Pioneer Hike Trail.

U. 014-03000

Continuing his southerly travel, the visitor approaches the signpost boundary at Point 24.1. Viewing the concession operated by a local over an expansive area, the visitor sat at the curving approach road and parks in the forested parking area. At the very side, the visitor may avail himself of the very facilities, including a service station, tea garden, snack center, and a gift shop.

As shown on a recent drawing, the distance from the reference points was 1000 and 10000 meters, respectively. The distance from the reference points was 1000 and 10000 meters, respectively.

1. THEORY

[illegible]

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.



A fire house provides protection for the many buildings.

I. Comers Deadening.

At Milepost 43, a road east from the Skyline Drive leads approximately one mile to the Comers Deadening Campground. Provided amid a setting of beautiful timber and streams, are 150 sites. Comfort stations and a campstore provide the necessary camping conveniences. In the evening, campers may attend a naturalist program in the amphitheater at Skyland.

A campground entrance station is manned by a seasonal ranger whose residence is at Big Meadows.

J. Big Meadows.

1. Visitor Center and Wayside. Adjoining the entrance to the Big Meadows Development, at Mile 51.2, are the buildings housing the main Visitor Center and the Wayside, respectively. Access to the joint parking areas and service station is from both the Skyline Drive and the Big Meadows entrance road.

The theme of this visitor center is "Mountains and Man," featuring the life and activities of the former occupants of the Park. Manned by a ranger-naturalist, this center ought to be the most interesting of the three.

The Wayside has a gift shop and lunchroom.

2. Campground. Continuing westward on the Big Meadows approach road the visitor will find the campground about a mile from the Drive. Its 245 campsites, 9 comfort stations, campstore, and reconstructed amphitheater will meet all the requirements of present day campers. Sites with private driveways, walk-in sites and group sites are available.

3. Picnic Area. Next to the campground is the area reserved for daytime use by picnickers. It is in a thinly wooded area and provides 51 picnic sites. A one-way perimeter road leads through the picnic ground. Picnic supplies can be bought at the campstore in the campground.

4. Concession Area. One mile west of the Skyline Drive in a wooded area with views to the valley are situated the lodge and cottages which provide overnight accommodations for 300 visitors. Smaller units southwest of the main development nestle in the trees but have good views westward to the valley. Stables provide horses for trail trips guided or unaccompanied.

Quarters for the concessioner employees, consisting of 12 units and a dormitory, are also located here.

5. General Area. Open meadows are maintained to retain the appearance of the past. In a landfill area, east of the meadows, an incinerator and a can washing building are located. The former campfire circle has been expanded to an amphitheater and is located adjacent to the picnic area.

K. Camp Hoover.

Eight miles east of Big Meadows, down the Rapidan Fire Road, lies Camp Hoover, the fishing lodge and retreat of former President Herbert Hoover. Three buildings, The President's, The Prime Minister's, and The Creel cabins, remain as a memorial to him. The Creel cabin is occupied by a caretaker.

Markers showing former building sites are found. Hikers and horses only may use the entrance road since it is gated at top and bottom. Stables, for the use of horses on an overnight trip from Big Meadows are also located here.

L. Lewis Mountain.

1. Picnic Area. At Miles 57.6, 48 picnic sites are found in an attractive wooded area. Adjoining it is a campfire circle where interpretive programs are given several times a week. A modern comfort station is also located here.

2. Concession Area. Just beyond the picnic ground are the dining room and seven cottages, one of which is used for employee housing. Some souvenirs and camping supplies may be purchased at the dining room.

3. Campground. Continuing eastward past the picnic ground and concession area, the visitor comes to the Lewis Mountain Campground in a concealed wooded area. Seventy-five sites are here provided along a one-way road system. Two comfort stations serve the campground. Protection is afforded the area by a seasonal ranger who resides at Big Meadows but who operates from an entrance station in the Lewis Mountain Campground.

M. South River Picnic Grounds.

Three miles north of Swift Run Gap, at Miles 62.7, the South River Picnic Grounds serve people from Ellicott and Charlottesville. The area is wooded and hiking trails to waterfalls and mountain peaks

are close by. Sixty sites and two comfort stations comprise the facilities offered.

N. Swift Run Gap Interchange.

Here at Milepost 65 is the second opportunity to leave the Drive as it crosses U. S. Route 33. This trans-mountain highway leads eastward to Standardsville and Charlottesville and westward to Elkton and Harrisonburg. No visitor facilities except an entrance station exist here. Vehicles entering the Drive at this interchange pass a multiple-laned entrance station from which they may take the Drive either north or south.

O. Loft Mountain.

At Miles 81.1, a group of facilities are provided both by the Park and by the concessioner. A 270° panoramic view of the Park and valleys below is obtained from this mountain site. Lodge, cottages and dining room comprise the formal facilities; a campground, picnic area, wayside and stables, the informal arrangements. Nature and hiking trails are located here, along with an amphitheater.

P. Dundo.

The only group camping area in the Park is located at Dundo, Miles 83.7. Topography and a limited water supply restrict the size of this campground. A two-way access, one-way loop and parking area make up the road system. Available for groups are 120 sites; three campfire circles serve the area. No electric power is available here, but water and sewer facilities are provided.

Q. Moormans River Visitor Center, Campground & Picnic Areas.

The South District Visitor Center is located at Miles 91.5, just 13 miles north of Rockfish Gap. Choice of this spot is ideal because of its close proximity to the southern entrance to the Park. The theme of this center is built around the relationship among the Park's plants and animals. Streams and trails nearby make the area an attractive one in which to camp or picnic. Sewage must be pumped to the west side of the Skyline Drive, and should this become impracticable, the Moormans River Development would have to be abandoned.

F. Rockfish Gap Interchange.

The southern end of Shenandoah National Park occurs at the crossing of U. S. Route 250. An interchange permits uninterrupted travel south



onto the Blue Ridge Parkway or egress east and west to Charlottesville and Waynesboro. Private enterprises in the Gap provide restaurant and motel accommodations. A new entrance station north of the Gap serves as fee collection and information center for visitors entering the Park from the south. No contact is made with the visitor as he leaves the Park, however.



BOOK COPY

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Park Organization Brief  
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MASTER PLAN  
FOR THE PRESERVATION AND USE  
OF  
SHENANDOAH NATIONAL PARK

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Prepared by: Joe H. Beer Date April 18, 1963  
Park Landscape Architect

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Recommended: R. Taylor Hoskins Date April 18, 1963  
Superintendent

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Concurred: H. R. SMITH (ACTG) Date AUGUST 16, 1963  
Chief, Eastern Office, Design and Construction

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APPROVED: Elbert Cox Date August 30, 1963  
Regional Director, Southeast Region

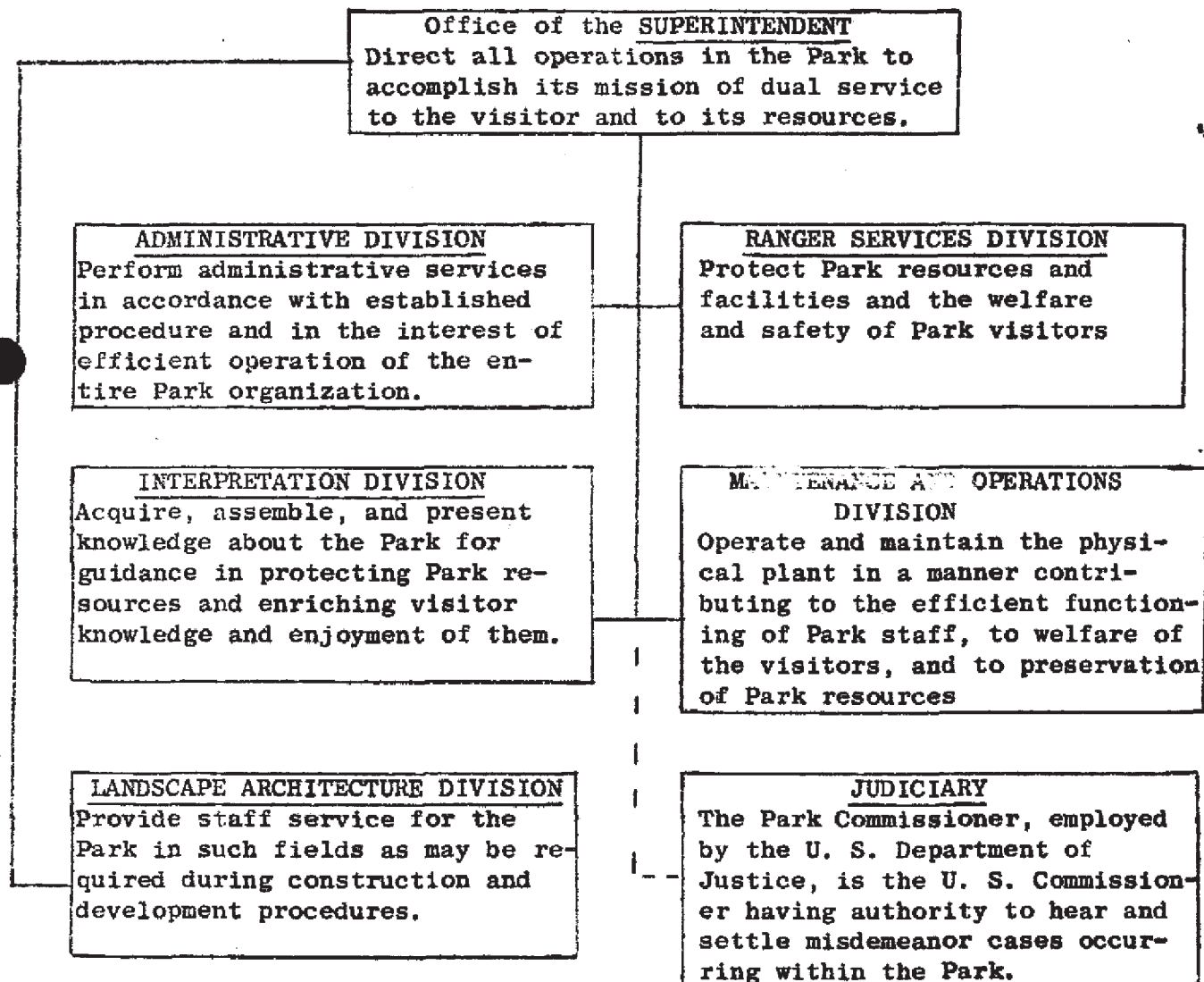
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VOLUME I

Chapter 3. Park Organization Brief

A. Park Organization General

Within the framework of this approved Master Plan, and under stated delegations of authority, Shenandoah National Park functions as a Group D organization as defined in the Administrative Manual. In carrying out its responsibilities within the limits of authority so defined, the Park staff is organized and functions as described below.



**B. Office of the Superintendent**

**Function:** Directs all operations in the Park to accomplish the Park mission in the best possible way.

**Task:** Plans, directs, supervises, coordinates, and evaluates all activities performed by the Park staff as follows:

- Training
- Personnel Management
- Fiscal Management
- Property Management
- Operation and Maintenance of Facilities
- Protection of Resources
- Public Services
- Minor Construction Work

To the degree defined, and in accordance with procedures described in the Administrative Manual, the Superintendent participates in the long-range management and development planning, with preparation of Master Plan Narrative, and in the programming and supervision of construction projects. He provides membership or a liaison with boards, commissions, and other Government agencies, of which the following are most important:

- Rotary International
- Virginia Sky-Line Company, Inc.
- Potomac Appalachian Trail Club, Inc.
- Blue Ridge Parkway Association
- Shenandoah Valley, Inc.
- Shenandoah Natural History Association
- Virginia Forest Service
- Virginia Department of Highways
- Virginia Department of State Police
- Virginia Department of Conservation and Economic Development
- Virginia Commission of Game and Inland Fisheries
- Virginia Travel Council
- Virginia State Chamber of Commerce
- American Automobile Association
- Chamber of Commerce in various communities adjacent to the Park
- Other local commissions and agencies
- U. S. Forest Service
- U. S. Fish and Wildlife Service
- Soil Conservation Service
- U. S. Public Health Service
- Federal Bureau of Investigation
- American Institute of Park Executives

Organization and Operation: The Park Superintendent is the officer responsible for all activities within the Park. Park headquarters is located five miles east of Luray, and this is the base of operation for the Superintendent and his staff.

Staff Required:

<u>Permanent</u>	<u>Total Existing</u>	<u>Total Long-Range</u>
Superintendent	1	1
Assistant Superintendent	1	1
Secretary	1	1
Total Permanent	3	3

Facilities Required:

<u>Headquarters Area</u>	<u>Existing</u>	<u>Additional Proposed</u>
Office rooms	4	1
Employee Residences #2-18 and 2-8	2	0

C. Administrative Division

Function: To perform the common administrative services, in accordance with established policies, procedures, and standards for and in the interest of the efficient operation of the entire Park organization. Ours is a Field Accounting Office.

Assigned Tasks:

Train personnel of the division in the administrative service procedures and skills.

Perform procedures relating to recruitment, classification, and separation of personnel, and maintain personnel records.

Effect procedures to secure that management is currently informed of appropriation utilization, and maintain records necessary to effect control of funds allocated to the Park.

Effect the procurement, storage and issue of supplies and materials for the Park.

Effect the acquisition and disposal and maintain records of accountability for all equipment and property, except museum collections.

Provide information and advice to the Superintendent and other divisions on fiscal and personnel matters.

Consolidate and prepare the Park's budget estimates for submission to the Regional Office.

Maintain mails and files.

Carry out Park responsibility for time, leave, and payroll procedures.

Operation and Organization:

The Administrative Officer, reporting to the Superintendent through the Assistant Superintendent, directs and coordinates the work of the Division. Staff is located in the Headquarters Building, 5 miles east of Luray, Virginia.

Seasonal fluctuations in work load is pronounced at terminations of calendar and fiscal years when fiscal, inventory and numerous other reports are required, and at start of fiscal year when operating programs, apportionments, and new accounts are established and when the final budget estimates are prepared.

Staff Required:

	<u>Total Existing</u>	<u>Total Long-Range</u>
<u>Permanent</u>		
Administrative Officer	1	1
Clerk-Stenographer	1	1
Supervisory Accountant	1	1
Personnel Assistant	1	1
Property and Procurement Agent	1	1
Accountant	-	-
Time, Leave and Payroll Clerk	1	1
Accounts Maintenance Clerk	2	2
Storekeeping Clerk	1	1
Warehouseman	-	-
Mails and Files Clerk	-	1
Typists	-	-
Total Permanent	<u>9</u>	<u>10</u>
<u>Seasonal</u>		
Clerk-Typist	1 (.3 M.Y.)	2 (2 M.Y.)

Facilities Required:

<u>Headquarters Area</u>	<u>Existing</u>	<u>Additional Proposed</u>
Office rooms	3	1
File room	Hallway	1
Forms room	1	-
Vault	1	-
Employee Residences #2-2 and 2-4	2	-

Note: As we review necessary adjustments and enlargements in staffing of other operating divisions, the need for additional positions in the Administrative Division becomes evident. Projected long-range requirements for the Park are:

	<u>Permanent</u>	<u>Seasonal</u>
Interpretation	7	30
Protection	17	99
Maintenance	33	89
Landscape Architect	3	3
Superintendent's Office	3	-
Administrative Division	16	2
Projected Total	<u>79</u>	<u>223</u>

To the Administrative staff, therefore, over and above these positions mentioned by the Area Management Study Team, has been added an Accountant, to assist the Supervisory Accountant in the expanded accounting field of operations. The widening applicability of General Accounting Office prescribed procedures, together with the future management, maintenance and construction expansion, will require someone not only versed in accounting principles, standards and methods but also who can establish cost record and controls, and prepare informative financial reports. To carry out the remaining construction program will also necessitate having the additional Accountant.

The added two Accounts Maintenance Clerks are important. Already we have felt the need, and had to, back on October 4, 1959, fill one of these positions. Basically, the present jobs split disbursements and collections, allotment ledgers and cost ledgers, vouchers and billings. With expansion, collection procedures will not increase too much, so that our third Accounts Maintenance Clerk will start in the nature of a Voucher Clerk, to handle the field wherein the great increase in workload will fall, ultimately to take the job of the Accounts Maintenance Clerk who will become Accounting Technician.



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The added Time, Leave and Payroll Clerk, GS-4, will be needed by reason of the more than doubling of the payroll. While, feasibly, we might consider a Seasonal Payroll Clerk, our more lengthy tourist season and year-round Park activities give reason to recommend this as a full-time position.

As to the two typist (really only 1-1/2 Man-years, inasmuch as the Area Management Study Team recommended 0.5 man-years), the one will eventually be an Appointment Clerk, GS-3 or GS-4, to assist the Personnel Officer, GS-9, while the second will be the only general pool typist.

Our only other increase is the position of Warehouseman, Ungraded. In the summers, we now have a seasonal Laborer to help in the Warehouse. Inasmuch as we are isolated from the larger sources of supply, we must rely on our warehouse to maintain needed stores.

The ultimate staffing requirements will be built up in gradual steps in a natural sequence.

D. Ranger Services Division

Function: To protect the Park, its natural features and physical improvements, and to safeguard, aid and inform Park visitors.

Assigned Tasks:

Train division personnel in procedures and skills. Train other personnel in fire control and other emergency skills.

Manage public use of the Park and its facilities, including traffic, camping, picnicking; and promote proper and safe use of the Park.

Plan and carry out measures for the prevention and control of damage to Park vegetation, lands, waters, and physical improvements, by fire, insects, diseases, erosion or other causes.

Operate entrance stations, provide information, and collect fees.

Perform rescue and other services for safety of Park visitors.

Plan and execute measures involving the protection of Park wildlife.

Enforce Park regulations and take initial action in case of violations.

Promote good public relations with Park neighbors and visitors.

Advise the Superintendent and his staff on matters pertaining to Park protection and visitor protection.

Organization and Operation: The Chief Park Ranger under the general supervision of the Superintendent and Assistant Superintendent, serves as staff head to advise Superintendent on administrative and protection matters. The Park is divided into three ranger districts: North District, (10 permanent and 33 seasonal proposed) North entrance to Panorama; Central District, (6 permanent and 34 seasonal proposed) Panarama to Swift Run Gap; South District, (4 permanent and 28 seasonal proposed) Swift Run Gap to Rockfish Gap. Another branch of the Ranger Division is the Blister Rust Control (3 seasonal proposed).

Seasonal activities vary, requiring corresponding changes in work assignments and additional seasonal personnel.

Heaviest visitation, May through October, requires increase in seasonal staff and adjustment in assignments of permanent staff to provide protection, information and public services; provide increased personnel at Entrance Stations; control increased traffic; and control camping, fishing and picnicking. Hunting seasons for game animals outside the Park require increased patrols for protection of Park wildlife.



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Forest, brush, and grass fire season, February 15 to May 15 and October 15 to December 15, requires pre-season training, planning and other preparations, and increased fire prevention and patrol activities for protection against fire.

Except for seasonal employees, the employee training programs, annual leave, schedules, research programs, and other activities which are flexible as to timing, are adjusted to the seasonal work load demands.

Staff Required:

<u>Permanent</u>	<u>Total Existing</u>	<u>Total Long-Range</u>
Chief Park Ranger	1	1
Assistant Chief Park Ranger	1	1
Staff Park Ranger (Forester)	-	1
District Park Ranger	3	3
Sub-Districts	-	6
Park Ranger	5	6
Clerk-Stenographer	1	1
Fire Control Aid	1	1
Total Permanent	12	20
<u>Seasonal</u>		
Park Ranger	22	82 (37 m.y.)
Fire Control Aid	9	11 (4.1 m.y.)
Fire Dispatcher	1	1 (.5 m.y.)
BRC Checker	1	1 (.5 m.y.)
Laborer	2	2 (1.0 m.y.)
Clerk-Stenographer	-	1 (.4 m.y.)
Total Seasonal	35	98 (43.5 m.y.)

Facilities Required:

<u>North District</u>	<u>Existing</u>	<u>Additional Proposed</u>
Office rooms in Headquarters	3	1
Office rooms in Visitor Center	1	1
Storage for patrol cars and fire equipment storage in Utility Area (Fire Truck)	1	3
Employee Residences #2-9, 2-26, 7-12, 7-9, 2-25	5 (2 to be oblit)	9 (3 moved from Cent. Dist.)
Seasonal Quarters #2-21, 2-22	2 (obsolete) (house trailer)	9 (multi-unit, 4 quarters to unit, 1 & 2 bedrooms)

<u>Central District</u>	<u>Existing</u>	<u>Additional Proposed</u>
Office rooms in Visitor Center	-	1
Garage for patrol and fire equip- ment storage in Utility Area	2	4
Employee Residence # 2-14	5 (2 House Tr. Oblit)	-
Seasonal Quarters #20-13	1	7 (Multi-unit, 4 quarters to unit, 1 & 2 bedrooms)
<u>South District</u>		
Office rooms in Visitor Center	-	1
Garage for patrol car and fire equipment storage in Utility Area	-	4
Seasonal Quarters	-	6
Employee Residence #7-11	1 (Oblit.)	4

Blister Rust control is a program set up on an annual maintenance basis. The recurrence of ribes requires control work by erradication each year to protect large stands of white pine in the Park. One Blister Rust checker and two laborers are assigned to this work May to September. Post checking and preparation of maps for next years work requires about one month to complete.

A seasonal clerk-stenographer is needed to type up the daily and seasonal reports connected with the Blister Rust Program. She would also be used in the Headquarters Ranger office to assist the permanent clerk-stenographer in getting out an ever increasing load of routine correspondence, reports, etc., we are faced with during the summer months.

#### E. Interpretive Division

Function: To determine, assemble, and present the facts about the Park and its resources so as to enrich visitor experience and enjoyment.

#### Assigned Tasks:

Train division personnel in interpretive procedures and skills. Inform other Park personnel and concession employees on the resources of the Park.

Plan, supervise, coordinate and perform research principally in the several disciplines of natural history and to insure that research is accomplished in the fields of History and Archeology as they relate to the Park.

Prepare and publish technical and popular publications of interpretive and informational character as well as some research results.

Direct the work of the Natural Historical Association.

Preserve scientific specimens and materials of biological, geological, historical and archeological nature; maintain the museum and study collections as well as museum records and wildlife observation records.

Maintain Park library, photographic files, audio-visual materials and equipment.

Plan and operate Park interpretive program, including operation and curatorial service of three visitor center museums, self-guiding trails, audiovisual programs, conducted trips, trailside and roadside exhibits, campfire and lodge programs. Train personnel and audio interpretive performances to insure authenticity and effectiveness of interpretation - in short to see that it is of highest possible quality and that it reaches the highest possible percentage of visitation.

Maintain relationships with educational, natural science, and historical organizations concerned with knowledge of and interest in the Park and its interpretation.

Advise Superintendent and his staff of matters pertaining to the preservation of natural and historical resources or materials.

Organization and Operation: The Chief Park Naturalist reporting to the Assistant Superintendent, directs and coordinates the activities of the Interpretive Division. He will be based at the Headquarters Area, 5 miles east of Luray on Route 211. The Assistant Park Naturalist and the permanent Clerk-Stenographer are also based at the Headquarters Area.

Other permanent interpretive staff members will include 3 District Naturalists who will be based respectively at each of the Visitor Centers.

30 seasonal positions will augment the permanent staff during the summer season when visitation is greatest.

Staff Required:

<u>Permanent</u>	<u>Total Existing</u>	<u>Total Long-Range</u>
Chief Park Naturalist	1	1
Assistant Park Naturalist	1	1
Park Naturalist	1	1
District Naturalist	-	3
Clerk-Stenographer	-	1
Clerk-Typist	1	-
Total Permanent	<u>4</u>	<u>7</u>

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<u>Seasonal</u>	<u>Total Existing</u>	<u>Total Long-Range</u>
Ranger Naturalist	3	20 (6.0 m.y.)
Park Naturalist	1	4 (1.5 m.y.)
Clerk-Typist	1	1 (0.5 m.y.)
Caretaker	-	5 (2.0 m.y.)
	<u>5</u>	<u>30 (10.0 m.y.)</u>

Note: Prepared in accordance with January 7, 1963 memo, Interp. Prog. Improvements (D18)

Facilities Required:

<u>North District</u>	<u>Existing</u>	<u>Additional Proposed</u>
Office room in Visitor Center	1	-
Work room	1	-
Storage room	1	-
Lecture room	1	-
Information room	1	-
Exhibit rooms	2	-
Office rooms in Headquarters	2	-
Laboratory in Headquarters	1	-
Dark room in Headquarters	1	-
Live storage room Headquarters	-	1
Employee Residences #2-7 & 2-5, Headquarters	2	3 (1-Front Royal; 2 Hdgtrs. for Park Nat. & Central Dist. Naturalist)
Seasonal Quarters #2-23 & 2-24	2 (Oblit)	8 (Two multi-unit, 4 quarters to unit, 1 & 2 bedrooms)

Central District

Office room in Visitor Center	1	1
Work room	-	1
Lobby	-	1
Exhibit room	-	1
Auditorium	-	1
Library	-	1
Study room	-	1
Study collection room	-	1
Seasonal Quarters #7-14	1	12 (three multi- unit, 4 quarters to unit, 1 & 2 bedrooms)



<u>South District</u>	<u>Existing</u>	<u>Additional Proposed</u>
Office room in Visitor Center	-	1
Work room	-	1
Exhibit room	-	1
Lobby	-	1
Auditorium	-	1
Employee Residence	-	1 (Waynesboro- South District Naturalist)
Seasonal Quarters	-	8 (Two multi-unit, 4 quarters to unit, 1 and 2 bedrooms)

#### F. Maintenance and Operations Division

Function: To operate and maintain the physical plant in a manner contributing to the efficient and healthful functioning of the Park staff, to the welfare of the visitors, to the betterment of Park physical conditions, and to the preservation of Park resources.

#### Assigned Tasks:

Operate utility systems, building equipment, and other facilities of the physical plant.

Maintain primary and secondary roads, trails, and walks; buildings, including administrative, residential, shop, storage; shelters and comfort stations; water, sewer and sanitation systems; sanitation service for public use; electric, telephone, and radio systems; grounds mowing, cleanup, seeding, fertilization, etc., weed and rodent control, trees and shrubs, spraying, protective fencing, etc., lighting; campgrounds; picnic grounds; signs; fences, boundary and surveys; walls; storm drainage systems.

Supervise maintenance contracts on roads, buildings, grounds, equipment, and utilities.

Perform or supervise minor construction projects.

Furnish technical data and estimates for funding requests.

Review construction drawings and recommend to the Superintendent all technical revisions.

Organization and Operation: The Park Engineer, reporting to the Assistant Superintendent, directs and coordinates the work of the maintenance division.

The staff operates from one central maintenance area and three sub-maintenance areas. The central area is located in the Headquarters complex and the other three are located at Piney River, Big Meadows and Simmons Gap.

Piney River serves the area from Front Royal to Thornton Gap; Big Meadows serves the area from Thornton Gap to Swift Run Gap; Simmons Gap serves the area from Swift Run Gap to Waynesboro.

Since the Park is operated all year, a permanent staff, supplemented by a large seasonal staff, is required. When practicable, certain types of maintenance work; such as, resurfacing roads, building repairs, radio maintenance, are done by contract.

The primary telephone system is operated on a commercial basis.

Staff Required:

	<u>Total Existing</u>	<u>Total Long-Range</u>
<u>Permanent</u>		
Supervisory Park Engineer	1	1
Assistant Park Engineer	1	1
Civil Engineer	-	1
Secretary	1	1
Clerk-Typist	-	1
Foreman IV	-	2
Foreman III	4	3
Foreman II	1	4
Foreman I	3	1
Mechanic Automotive	1	2
Automotive Mechanic Helper	1	1
Plumber	1	1
Plumber Helper	-	1
Electrician	1	1
Electrician Helper	0	1
Black Smith	1	1
Carpenter	1	2
Maintenance Men	2	3
Sign Maker	1	1
Sign Maker Helper	1	1
Janitor	1	1
Caretaker	2	4
Operator General	6	6
R. & T. Caretaker	1	3
Total Permanent	31	44

Seasonal:

Plumber Seasonals	W.A.E. (man years)	0.7	1.2
Electrician Seasonals	W.A.E. (man years)	--	0.5
General Seasonals	W.A.E. (man years)	6.2	11.2
R&T Seasonals	W.A.E. (man years)	38.4	64.1
Total		45.3 m.y.	77.0 m.y.
		(61 men)	(89 men)

Note: Obtained from Maint. Org. Chart prepared in 1962. (NP-She 2556.)

Facilities Required:

	<u>Existing</u>	<u>Additional Proposed</u>
<u>North District</u>		
Office rooms in Headquarters Bldg.	2	3
Utility Area:		
Machine Shop	-	1
Carpenter Shop	-	1
Paint and Sign shop	-	1
Equipment storage and fire house	-	1
Warehouse	1	-
Employee Residence #2-3	1	2
Office bldg. at Piney River		
(offical tool & equipment storage)	1 (oblit.)	-
Gas and oil building at Piney River	1 (oblit.)	-
One building consisting of the following:		
Office room	-	1
Gas, oil & paint storage	-	1
Equipment storage	-	1
Warehouse	-	1
Open storage	-	1
<u>Central District</u>		
Blacksmith shop #4-12	1 (oblit.)	1
Repair shop & office #4-10	1 (oblit.)	1
Carpenter shop #4-14	1 (oblit.)	1
Warehouse #4-15	1 (oblit.)	1
Equipment storage	1 (oblit.)	1
Storage shed #4-13	1 (oblit.)	1
Gas and oil house #4-16	1 (oblit.)	1
<u>South District</u>		
Building consisting of:		
Office room, gas, oil & paint, equipment storage		
warehouse and open storage	-	2
Employee Residence	-	2

G. Landscape Architecture Division

Function: To be responsible for the architectural and landscape planning of the Park as they effect its scenic and natural values and participate in the investigation, analysis, planning for and design of landscape layouts for the development of the Park.

Assigned Tasks:

Maintain the physical concept and intent expressed by the master plans and their component parts.

Prepares planting plans for roadside plantings, vistas, some concessioner's developments, and other public use areas.

Prepares land use plans for guidance of the maintenance organization in preserving the necessary public and Park operation facilities.

Prepares cost estimates and specifications for all landscape architectural phases of maintenance and rehabilitation work in accordance with established standards.

Make routine inspections of all maintenance and construction activities pertaining to landscape architectural phases.

Represents Superintendent in all cooperative work with the BPR.

Assists Superintendent in the preparation of master plan development outline.

Keeps master plans current.

Prepares certain of the master plan sheets which portray development of specialized areas.

Prepares preliminary sketches to correlate graphically the ideas of the Superintendent and others which serve as guides for preparation of the construction plans by the Design office.

Assists Superintendent in the preparation of their project construction programs in cooperation with the other technical members of the staff.

Prepares such specifications for landscape construction as may be obtained under contract procedure.

Organization and Operation: The Landscape Architect, reporting to the Assistant Superintendent, directs and coordinates the activities of the Division. The Division operates out of the Headquarters Area to all three sections.

During the summer season at which time most of the construction work is to be accomplished, an addition of a seasonal Landscape Architect is required.



Maintains good working relationships with other professional technical employees concerned with development of the areas, as well as all others who have vital interest in the projects and the master plan.

Produces landscape designs from verbal requests made by the Superintendent.

Staff Required:

<u>Permanent</u>	<u>Total Existing</u>	<u>Total Long-Range</u>
Park Landscape Architect	1	1
Landscape Architect	-	1
Secretary (In conjunction with Maintenance)	1	1
Total Permanent	2	3

Seasonal

Assistant Landscape Architect	1	3
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Facilities Required:

<u>North District</u>	<u>Existing</u>	<u>Additional Proposed</u>
Office rooms in Headquarters Bldg.	1	1
File room in Headquarters	(Portion)	-
Drafting room	-	1
Employee Residence	1 (to oblit.)	2
Seasonal Quarters	-	1 (multi-unit, 4 quarters to unit, 1 & 2 bedrooms)

South District

Seasonal Quarters	-	1 (multi-unit, 4 quarters to unit, 1 & 2 bedrooms)
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Note: With the addition of facilities being placed in the Park by means of construction and maintenance forces, the demand for land use plans, keeping PCP's and master plans up to date and the writing of various reports, an extra Landscape Architect is necessary to help in this operation. There are various other operations for which he can be used but these are some of the prominent ones. Occasional inspection will also be necessary.

At present it is felt that this position, though not filled, should be reviewed every year to determine it's commencement date as specified by a survey team in 1962.

H. Judiciary Division

Function: The Park Commissioner, employed by the U. S. Department of Justice, is the U. S. Commissioner having authority to hear and settle misdemeanor cases occurring within the Park.

X. Recapitulation

Summary of National Park Service Staff

	<u>Total Existing</u>	<u>Total Long-Range</u>
<u>Superintendent's Office</u>		
Permanent	3	3
Seasonal	-	-
<u>Administrative Division</u>		
Permanent	9	10
Seasonal	1	2 (2.0 m.y.)
<u>Ranger Services Division</u>		
Permanent	12	20
Seasonal	35	98 (43.5 m.y.)
<u>Interpretative Division</u>		
Permanent	4	7
Seasonal	5	30 (10.0 m.y.)
<u>Maintenance &amp; Operations Division</u>		
Permanent	31	44
Seasonal	61 (45.3 m.y.)	89 (77.0 m.y.)
<u>Landscape Architectural Division</u>		
Permanent	2 (secty. ptly. Maint.)	3 (secty. ptly. Maint.)
Seasonal	1	3 (1.0 m.y.)
<u>Judiciary Division</u>		
Permanent	1	1
Total Permanent	62	88
Total Seasonal	103	222
Grand Total	165	310

Summary of National Park Service Housing Requirements

<u>North District</u>	<u>Existing</u>	<u>Additional Proposed</u>
Employee Residences	13	17
Seasonal Quarters	4	18
<u>Central District</u>		
Employee Residences	5	-
Seasonal Quarters	2	19
<u>South District</u>		
Employee Residences	1	8
Seasonal Quarters	-	15
Total Residences	19	25
Total Seasonal Quarters	6	52 (13 multi-units, 4 quarters to unit, 1 & 2 bedrooms)
GRAND TOTAL	25	77

AA. Concessions General

Overnight accommodations, meals, and other similar facilities are provided at seven areas in the Park; such as, Elkwallow Wayside, Panorama, Skyland, Big Meadows Wayside, Big Meadows Lodge, Lewis Mountain, and Swift Run. Additional facilities can be found at all main approaches to the Park.

Function: Furnish only those facilities and services which are necessary for the enjoyment of the visitor.

Present Assigned Tasks:

- (a) Elkwallow Wayside - Mile 24.1  
Services Provided: Light lunch, gasoline, handicrafts, film, gifts and souvenirs, rest rooms.
- (b) Panorama (Thornton Gap) - Mile 31.5  
Services Provided: Dining room, lunch counter, gasoline, handicrafts, film, gifts, souvenirs, automotive accessories, rest rooms.
- (c) Skyland - Mile 41.8  
Services Provided: Lodging, dining room, light lunch, handicrafts, film, horseback riding, rest rooms.
- (d) Big Meadows Wayside - Mile 51.3  
Services Provided: Coffee shop, handicrafts, film, gifts, souvenirs, groceries, camping equipment, fire wood, ice, charcoal, gasoline (including camping fuels), showers, laundry for campers, rest rooms.
- (e) Big Meadows Lodge - Mile 51.3 (Entrance)  
Services Provided: Lodging, dining room, tap room, handicrafts, film, horseback riding, rest rooms.
- (f) Lewis Mountain - Mile 57.6  
Services Provided: Lodging, coffee shop, film, souvenirs, fire wood, rest rooms.
- (g) Swift Run - Mile 65.7  
Services Provided: Dining room, handicrafts, film, gifts, souvenirs, gasoline and automotive accessories, rest rooms.

Organization and Operation: The concession areas are operated by the Virginia Sky-Line Company, Inc. The concessioner operates out of Luray, Virginia, with general offices at 15 South Fifth Street, Richmond, Va.

One of the seven areas operated by the concessioner, Swift Run, is to be obliterated when Route 33 is changed and an interchange is built.

Facilities Needed:

	<u>Existing</u>	<u>"1972" Additional Proposed</u>
<u>North Section</u>		
1. Elkwallow Wayside		
(a) Light lunch, gasoline, handicrafts, film, gifts and souvenirs	1	-
(b) Employee cottage	1	-
2. Matthew Arm Campground		
wood and camping supplies	-	1
<u>Central Section</u>		
1. Panarama		
(a) Gas station for Skyline Drive	2	-
(b) Main Building	1	-
(1) Sales of gifts & souvenirs	1	-
(2) Snack bar & early breakfast	1	-
(3) Dining room	1	-
(4) Storage space for concessioner activities	7	-
(5) Kitchen	1	-
(6) Living rooms for employees	4	-
(7) Utility area	1	-
(8) Information office	1	-
2. Skyland Development		
(a) Dining Room	1	-
(1) Handicraft Shop	1	-
(2) Rest rooms	2	-
(3) Employees rooms	4	-
(4) Multiple Purpose Conference room	1 (to be en- larged)	1
(b) Registration Building	1	-
(1) Lounge	1	-
(2) Office	1	-



Central Section (Contd)	<u>Existing</u>	<u>"1972"</u> <u>Additional</u> <u>Proposed</u>
(c) Recreation & Conference Hall	1	1
(1) Reading Room	1	-
(2) Tap Room	1	-
(d) Employee Dormitories	3	4
(e) Multiple Cottages - Guests	12 (103 rooms)	6
Small Cottages-Guests	5 ( 10 rooms)	4
Small Cottages-Guests	10 (24 rooms) (Govt. owned)	
Small Cottages-Employees	8 (28 rooms) (7 Govt. Owned)	(16 to be oblit.)
(f) Vending Machine & Ice Bldg.	1	-
(g) Children's play area	1	-
(h) Stables	1	-
3. Comers Deadening Campground		
(a) Supply wood and camping equipment	-	1
4. Big Meadows Wayside		
(a) Main Building	1	-
(1) Souvenir and gift shop	1	-
(2) Campers Store (see (d) below	1	-
(3) Lunch counter	1	-
(4) Rest rooms	2	-
(5) Employees room	1	-
(b) Gasoline Station	1	-
(1) Ice House	1	-
(c) Building "A" (to be moved)	1	-
Building "B" (to be obliterated)		
(d) Campers Store	- (at Camp Gr.	1
5. Big Meadows Lodge		
(a) Main Building	1	-
(1) Dining Room	1	-
(2) Lobby	1	-
(3) Lounge	1	-
(4) Tap Room	1	-
(5) Banquet Room	1	-
(6) Handicraft Shop	1	-
(7) Guest rooms	21	-

	<u>Existing</u>	<u>"1972" Additional Proposed</u>
(b) Employees rooms	11	1 (4 rooms)
(c) Multiple Cottages-Guests	5 (60 rooms)	5 (20 rooms)
(d) Small Cottages-Guests	5 (11 rooms)	-
(e) Employees cottages	5 (10 rooms)	-
	(2 Govt owned)	
(f) Employees Dormitories	3 (13 rooms)	-
(g) Employees Recreation Room	1	-
(h) Stables	1	1 (additional)
(i) Linen Storage	1	-
(j) Concession Utility Building	-	1
 5A. Big Meadows Campgrounds		
(a) Shower & Laundry Bldg.	1 (Govt owned)	-
(b) Wood storage Building	1	-
 6. Lewis Mt. Development		
(a) Main Lodge		
(1) Dining Room	1	-
(2) Rest rooms	2	-
(b) Employee quarters	1	-
(c) Rest Cottages	5 (10 rooms)	2 (2 rooms)
(d) Employees Cottages	2 (4 rooms)	-
 7. Swift Run		
(a) Main Building	1	-
(1) Dining Room	1	-
(2) Handicraft Shop	1	-
(3) Employees rooms (Govt owned)	7 (to be oblit.)	-
(b) Gasoline Station	1 (to be oblit.)	-
(c) Rest rooms	2 (to be oblit.)	-
(d) Storage	1 (to be oblit.)	-

South Section

1. Loft Mountain Development		
(a) Lodge	-	1
(b) Multiple cottages	-	4
(c) Small cottages	-	7
(d) Employee cottages	-	4
(e) Linen storage	-	1
(f) Stables	-	1
(g) Wayside station	-	-
(h) Gasoline station	-	1
(i) Utility building	-	1

	<u>Existing</u>	<u>"1972" Additional Proposed</u>
2. South District V. C. Development		
(a) Supply wood and camping equipment	-	1
3. Comers Deadening Campground		
(a) Supply wood and camping equipment	-	1
4. Big Meadows Wayside		
(a) Wayside station	1	-
(b) Gasoline Station	1	-
5. Big Meadows Lodge		
(a) Lodge	1 (41 rooms)	-
(b) Multiple cottages	4 (44 rooms)	1 (14 rooms)
(c) Small cottages	7 (15 rooms)	-
(d) Employee cottages	5 (9 rooms)	2 (8 rooms)
(e) Linen storage	1	-
(f) Stables	1	1 (addition)
6. Lewis Mountain Development		
(a) Lodge	1	-
(1) Wood & supplies	1	-
(2) Dining room	1	-
(b) Cottages	7 (2 rooms)	2 (2 rooms)
7. Swift Run Gap		
(a) Main building (light lunch, handicrafts, film, gifts, souvenirs, rest rooms)	1	-
(b) Gasoline station	1	-
(c) Storage	1	-
(d) Employee cottage	1	-
<u>South Section</u>		
1. Loft Mountain Development		
(a) Lodge	-	1
(b) Multiple cottages	-	4
(c) Small cottages	-	7
(d) Employee cottages	-	9
(e) Linen storage	-	1
(f) Stables	-	1
(g) Wayside station	-	1
(h) Gasoline station	-	1

	<u>Existing</u>	<u>"1972" Additional Proposed</u>
2. Moormans River Development		
(a) Supply wood and camping equipment	-	1
<u>Staff Required:</u>		
<u>North Section</u>	<u>Existing</u>	<u>Total Long-range</u>
<u>Elkwallow Wayside</u>		
Manager	1	1
Regular employees	4	5
Seasonal	5	6
<u>Matthews Arm Campground</u>		
Seasonal	-	2
<u>Central Section</u>		
<u>Panorama</u>		
Manager	1	1
Assistant Manager	1	1
Helpers	12	12
Seasonal	10	10
<u>Skyland</u>		
Manager	1	1
Assistant Manager	1	1
Helpers	8	8
Seasonal	55	65
<u>Comers Deadening</u>		
Seasonal	-	2
<u>Big Meadows Wayside</u>		
Manager	1	1
Helpers	1	1
Seasonal	14	15
<u>Big Meadows Lodge</u>		
Manager	1	1
Assistant Manager	1	1
Helpers	4	4
Seasonal	45	50
<u>Lewis Mountain</u>		
Manager	1	1
Helpers	2	2
Seasonal	3	3

	<u>Existing</u>	<u>Total Long-Range</u>
<u>Swift Run Gap</u>		
Manager	1	1
Helpers	2	2
Seasonal	15	15
 <u>South Section</u>		
 <u>Loft Mountain</u>		
Manager	-	1
Assistant Manager	-	1
Helpers	-	4
Seasonal	-	45
 <u>Moornans River Development</u>		
Seasonal	-	2

BB. Potomac Appalachian Trail Club

Function: This concessioner maintains 5 locked trail shelters for hikers throughout the Park. Reservation can be made for their use through the Club. Another function is to keep their portion of trail called the "Blue Blaze" clear.

CC. Trailways Sightseeing Tours

Function: This concession provides transportation through the Park by way of Washington, D. C., Front Royal, Va., and Big Meadows. They run from May 21 to October 30 with continuous operation on Saturdays, Sundays and holidays.

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Office of the Superintendent

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NOV 20 1961

MASTER PLAN  
FOR THE PRESERVATION AND USE  
OF  
SHENANDOAH NATIONAL PARK

\* \* \* \* \*

Chapter 4. - Park Operations Outlines  
Section B. Office of the Superintendent

\* \* \* \* \*

Prepared by: Joe H. Beer  
Joe H. Beer, Park Landscape Architect

Date 11/16/61

\* \* \* \* \*

Approved: R. Taylor Hoskins  
R. Taylor Hoskins, Superintendent

Date 11/16/61

Chief	
Admin.	
Program	
Spec. Adm.	
Ext.	
Rec.	
Comm.	
Files	
Training	
Public Aff.	
Other	

*Shelton*



VOLUME I

Chapter 4. Park Operations Outlines

B. Office of the Superintendent

General Statement. The Park Superintendent is the responsible official in the Park. He is responsible for maintaining, interpreting, and applying the policies, procedures, standards and rules and regulations of the National Park Service, and has general supervision over all planning development, and operations in the Park. The Superintendent discharges his responsibility in accordance with the authority redelegated to him by the Regional Director, as set forth in the Delegations of Authority, National Park Service Administrative Manual, Organization Volume, Part 6.

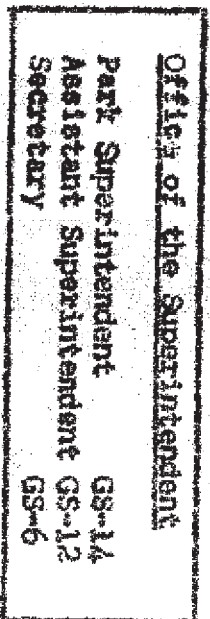
The parks are the basic line element of the Service organization and Shenandoah National Park comes under basic organization Pattern "D."

MASTER PLAN HANDBOOK

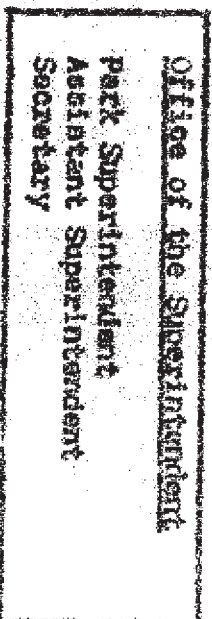
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Page 3

Shenandoah National Park

Present Staffing



Proposed Staffing



A. Administration and Management: To carry out administration and management responsibility the Superintendent's Office supervises the various Divisions directly handling the work so that the entire operation of the Park is carried out in an efficient manner with funds and personnel allowed. The problem of staff coordination of the various technical fields involved in carrying out the day to day operations as part of the proper administration and management is the duty of the Superintendent and the Assistant Superintendent. He relieves the Superintendent of the responsibility for coordinating the various fields.

Some of the major factors involved in the administration and management of Shenandoah National Park are as follows:

1. Public Use - Shenandoah is put to many varieties of uses in connection with the natural, historic, scientific and inspirational values of the area. These include educational, cultural, inspirational, and recreational uses.

a. Educational and Cultural. The Park has many values which interest the Park visitor from an educational standpoint. These values include the geology, plant life, animal life, ecologic relationships of wildlife and habitat, archeology, and human history. Located within a few hours' drive of a large number of colleges and universities, and important learned institutions and Federal scientific agencies of Washington, the Park is a focal point of scientific interest in the Central Appalachians. Many top ranking scientists visit the Park in connection with studies to learn more about the scientific, historic and other values in the Park. In addition to these professional groups just mentioned, an educational or interpretive program is carried on for the millions of visitors who are interested in the scenic, historic, and scientific values in the Park. This program includes caravans, nature hikes, lectures, exhibits, publications and public information.

Special attention is also given to many organized civic, conservation, outdoor and other interested groups. In order to further the interpretive work, a considerable number of roadside interpretive signs have been placed. One of the most impressing features in Shenandoah is the completion of the series of roadside interpretive signs and exhibits. The rangers and naturalists are too few in number to contact many of the one and three-quarter million visitors. Therefore, interpretive signs and self-guiding nature trails are part of the answer to further the educational program in the Park. This is one of the big problems of the Superintendent; the Ways and Means of expediting this very important program.

The early culture of the people who lived in the Blue Ridge on lands now comprising Shenandoah National Park has been an interesting subject. It has been studied and written about and evidences of this early culture still remain in the Park.



b. Inspirational. Shenandoah National Park, which includes such fine scenic qualities, naturally inspires many of the millions of visitors who come to the Park year after year. They receive inspiration from viewing the great expanse of wooded mountains and valleys and hiking the trails and viewing the streams and waterfalls and the many varieties of trees, shrubs, and flowers. They gain inspiration, too, from seeing at times the many varieties of wildlife in the Park.

c. Recreation. One of the principle uses of Shenandoah National Park is its recreational use. Because of the building of the Skyline Drive, the opportunity has been given to more than a third of the nation's population to easily reach and see inspiring portions of Southern Appalachian scenery.

Shenandoah National Park, however, offers far more outdoor recreation than that afforded by and limited to the Skyline Drive. Within Shenandoah's 330 square miles of rugged terrain are 323 miles of foot trails leading through the forests to the many peaks and hollows, to the cool ravines and streams and waterfalls. In addition to the trails are campgrounds, isolated trail shelters, and picnic grounds. Thus there are opportunities in the Park for hiking, camping, picnicking and horseback riding, and these activities are actively engaged in by thousands of the Park visitors. Horseback riding and hiking are increasing in popularity. Camping and picnicking have also been so popular that the two campgrounds and seven picnic areas are not enough to take care of camping and picnicking needs.

One of the serious problems which the Superintendent now has before him is how to cope with the demand for more camping and picnicking space. Many times during the season, and especially on weekends, these facilities are overtaxed. The visitors are picnicking and camping at many spots away from the regular developed areas. This causes an unsanitary and unsightly condition. Further, the visitors complain because we do not have more developed space. Plans are being prepared for the extension of camping and picnicking areas.

The above is given to illustrate another of the big problems confronting the Superintendent of Shenandoah National Park.

2. Visitation - Over one and three-quarter million people visit Shenandoah National Park each year. These visitors come to the Park from every state in the Union and from foreign countries. The length of time visitors stay in the Park varies with the type of visitor. Those stopping at the lodges in the Park stay overnight on an average of  $1\frac{1}{2}$  to 2 days and to the Park an average of three days. Others stay from a week to a month. Those using the campgrounds stay from one night to 14 days.

The significance of yearly travel is that Shenandoah National Park does not depend upon the State of Virginia and the nearby communities for its large visitation. Instead, its popularity reaches all over the nation and to foreign countries. Its increasing popularity and visitation, naturally increases the difficulties and responsibility of the Superintendent in handling so many visitors. Whether the visitation is for short or long periods, the total yearly influx to the Park is now overtaxing the overnight accommodations at the lodges, and also at the public campgrounds and picnic areas.

In estimating the projected visitation the figure of 3,583,000 will be entering the Park in 10 years or at a yearly increase of approximately 5.7%. The doubling of the Park visitation alone will tax the Office of the Superintendent.

3. Seasonal Demands - Shenandoah National Park is open all year and the Skyline Drive, the main highway through it, along the top of the Blue Ridge Mountains, is open at all times of the year, except for comparatively short periods when ice and snow is on the Drive.

Our travel figures show that 48% of the visitors come to the Park in summer, 29% come in autumn, 5% in winter and 18% come in the spring. Autumn coloration in October acts as a magnet to draw large numbers of visitors, especially on weekends. Therefore, the visitation in October approaches that of the peak months of July and August.

The fact that the Park is known as an all year round Park, and visitors do come at all times of the year, throws an extra burden and responsibility upon the Superintendent more than if the Park were closed in the "off-season" months. Many people drive toward the Park with the expectation of driving along the Skyline Drive in the Park. The difficulties of keeping the Drive free of snow and ice so that expectant visitors will get into the Park as planned, is one of the real problems and responsibilities of the Superintendent's Office.

Park visitors use the picnic and campgrounds throughout the year even though the regular water and toilet facilities are not in operation during winter months. This also involves difficulties and responsibilities upon the Superintendent to provide temporary facilities, especially for sanitation. Otherwise, the picnic and campgrounds would become in a very unsanitary condition.

Shenandoah National Park has a much longer heavy seasonal use than many parks which open their various concession operated facilities for only about three months. At Shenandoah the concessioner opens the lodges and eating facilities early in April and most of them do not close until about November 1. One of these units remains open the year round. This naturally adds to the Superintendent's responsibilities during that longer period of time.



4. Problems of Overuse - The development of facilities to accommodate the Park visitors has lagged far behind the tremendous growth in visitor use. For example, the picnic areas and campgrounds now in use were designed and constructed in the mid-thirties when the Park visitation was less than one half what it is today. This situation, coupled with the fact that camping and picnicking have become more and more popular with the public in recent years, has thrown a considerable load on the far too inadequate facilities and utilities. The problem of proper administration and operation have thereby been made considerably more complicated. On peak days, the super-saturation of such facilities may be as much as two to three hundred percent of planned maximum capacity, not counting the hundreds and thousands of disappointed potential users.

Such hard overuse as that described above imposes a great strain on the limited water, sewage and other utility systems and facilities and requires much more in the way of maintenance, operation, and services to be rendered to the public. The grounds become worn and eroded, the roadsides and natural areas are abused with litter and trash which must be collected, and the Park values are in constant danger of desecration. There is a delicate balance in such circumstances of providing for maximum utilization of the Park by the public while still maintaining desirable conditions and safeguarding Park values. This is a difficult and important problem in Shenandoah National Park.

B. Protection: The Superintendent's Office has an overall responsibility for the entire protection work. The Ranger Division of the Park carries out the details of this work, under the Chief Ranger. Approximately 20% of their time is involved in this activity.

C. Fiscal and Personnel: The Superintendent's Office has the overall responsibility for the procurement, fiscal and personnel operations of the Park.

Procurement. The Office also serves as Authorized Certifying Officer and is familiar with contractual procedure and the many regulations for the expenditure of Government funds.

Fiscal. The Superintendent's Office has the overall responsibility for presenting annual budget estimates and to see that proper controls and records are maintained for the expenditure of funds. The breakdown of the 1962 budget is as follows:

Management and Protection	\$246,086
Maintenance and Rehabilitation	236,327
Construction and Land Acquisition	247,447
Forestry and Fire Control	25,000
Forest Pest Control	<u>2,500</u>
	\$809,360



The Office must have a broad knowledge of fiscal regulations and exercise a great deal of judgment in directing the expenditure of funds.

The Office of the Superintendent is responsible for all collection of revenues due the Government for entrance fees, franchise payments from the Park Concessioner and miscellaneous receipts. The total of the fees amounted to \$170,000 during 1961 fiscal year.

The Superintendent's Office is also accountable for all Government property in the Park, amounting to \$12, 126,374. This includes 207 Government buildings valued at \$560,493, utilities \$521,500, and equipment and stores valued at \$307,521, lands \$1,787,865 and roads and trails \$8,948,985.

Approximately 10% of the time of the Superintendent's Office is used on this work. It is expected that these expenditures will double in the next 10 years.

Personnel. The proper staffing of the Park is an important function for which the Office is responsible. He makes recommendations as to the need for sufficient personnel and also selects or makes recommendations in the entire Park organization. This requires a broad knowledge of the requirements of each position and the ability to weigh the qualifications of each applicant. He has overall supervision of 50 permanent, and approximately 75 seasonal personnel. He coordinates the functions of the Protection Division, Interpretive Division, Maintenance Division, Landscape Architectural Division and Administrative Division.

D. Development and Maintenance of the Park: The Office of the Superintendent is responsible for the organizing and administering an effective organization in the Park for the proper planning, development, and maintenance of all physical facilities and improvements needed to adequately serve the visiting public and for the general operation and protection of the Park.

The Office of the Superintendent is responsible for the orderly immediate and long-range planning of the development of the Park, on a sound basis which will allow the visitor to enjoy the Park to the fullest extent possible, but at the same time consistent with policies and objectives of the National Park Service, and the mandate of the Congress of the United States to preserve the Park as nearly as possible in its primitive condition for the enjoyment of present and future generations.

Nearly 20% of the overall time of the Superintendent's Office is spent on the development and maintenance of the Park.

The existing development of the Park does not begin to be adequate to take care of the heavy annual visitation of over a million and three-quarters visitors. The following facilities are proposed for the additional development of the Park and will require considerable original planning for their design and eventual construction when funds are available:

- (a) Entrance stations at the main entrances to the Park
- (b) Parking areas, access roads and parking areas and trails to provide for visitor use at several outstanding natural, scenic and historic features in the Park
- (c) The many campgrounds in all sections
- (d) The seasonal and permanent residence areas in all sections
- (e) The grade separations and related development at Swift Run Gap
- (f) The further development of the Headquarters residential and maintenance areas
- (g) Further development at the Big Meadows developed area
- (h) Further development at the Skyland developed area
- (i) Large scale development of the proposed Loft Mountain developed area in the South District with lodge, cabins, restaurant, gasoline station and picnic area
- (j) Complete redevelopment of the Dundo developed area to be a campground in the South District
- (k) The development of the Pond Ridge area to serve the South District as a visitor center, campgrounds and picnic area (weather permitting)
- (l) The construction of necessary maintenance areas, sub maintenance areas and complete utilities for all of the proposed work

From the above it can be seen that the development of the Park is far from stabilized and that a vast amount of additional work is needed to provide for satisfactory visitor use of the Park. The details of much of the original planning for the above listed development is carried out by the Park Landscape Architect under the general supervision of the Superintendent's Office.



Maintenance. In order that the visitor may enjoy the Park to the fullest extent, it is absolutely necessary that the physical facilities in the Park be properly maintained. The lack of such maintenance will draw as much criticism as any other neglect in the Park. The Superintendent's Office sees to it that all of these facilities such as roads, trails, water and sanitation, communication and electrical systems, trailside shelter, for the public's use are maintained in as good a condition as the funds will allow.

E. Interpretation (Naturalist) Activities: The Superintendent Office is responsible for planning and developing a program of services and facilities designed to present to the Park visitors the various fields of interpretation of Shenandoah National Park. These include natural history, history, archeology, scientific, recreation, education and information concerning the area. This program is directed toward a broader public appreciation of the natural, historic, scientific and inspirational values of the Park.

The carrying out of such a varied program of interpreting the various Park values to the visiting public is a major responsibility of the Superintendent's Office. The whole program must be carefully planned and carried out so that the Park visitor will gain a deeper meaning of all of the natural values that are to be found in the Park. The details of this interpretive program are carried out by the Park Naturalist and his staff under the general supervision of the Superintendent's Office.

F. Concession Operations: At the present time there are six major developed public accommodation centers in the Park. These centers are located at intervals of five to twenty miles and consist of the following: Elkswallow, Panorama, Skyland, Big Meadows, Lewis Mountain and Swift Run, three of which can accommodate a total of 620 overnight visitors. The entire operation includes 55 concession owned buildings, the present net possessory value of which is more than \$688,435. These six areas are operated by the concessioner, the Virginia Sky-Line Company. During the year 1961, the concessioner housed 60,000 people and served 242,000 regular meals. Their total gross business for the calendar year 1961 was over \$1,253,000.

It is the responsibility of the Superintendent's Office to supervise all activities of the Park Concessioner and to see that the terms of his contract with the Department of the Interior are carried out. In this connection, all rates for lodging, meals, and all other services and commodities under this contract must be checked and first recommended by the Superintendent's Office. All of these relations with the Concessioner must be handled in a fair manner and requires considerable judgment and experience of such operations by the Superintendent.

The concessioner is carrying on a construction program for additional accommodations at Skyland but this program does not meet the demand. Also the responsibility of the Superintendent's Office are the concession operations of the Potomac Appalachian Trail Club and the Virginia Stage Lines. These are minor concessions.

The first operates the closed cabins along the Appalachian Trail which are used throughout the entire year. This requires the Drive to remain open keeping the areas clean and in good repair.

The second operates a schedules tour between Washington, D. C. and Big Meadows. This operation has schedules tours from May through October.

These and other similar problems at the other developed areas are some of the concerns of the Park Superintendent to which he must devote a considerable portion of his time and personal attention.

It is estimated that nearly 20% of the time of the Superintendent's Office is devoted to this work.

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E. O. D. C.	
OCT 23 1961	
Chief	
Admin.	
Program	
Land	10/10/61
Eng.	
Arch.	
H. A.	
Action Taken:	

MASTER PLAN  
FOR THE PRESERVATION AND USE  
OF  
SHENANDOAH NATIONAL PARK

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Chapter 4. - Park Operations Outlines  
Section C. Administrative Division Operations

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Prepared by: A. P. Koster Date 9/10/61  
Administrative Officer

\*\*\*\*\*

Approved: B. Taylor Date 10/13/61  
Superintendent

*Superseded*

VOLUME I

Chapter 4. Park Operations Outlines

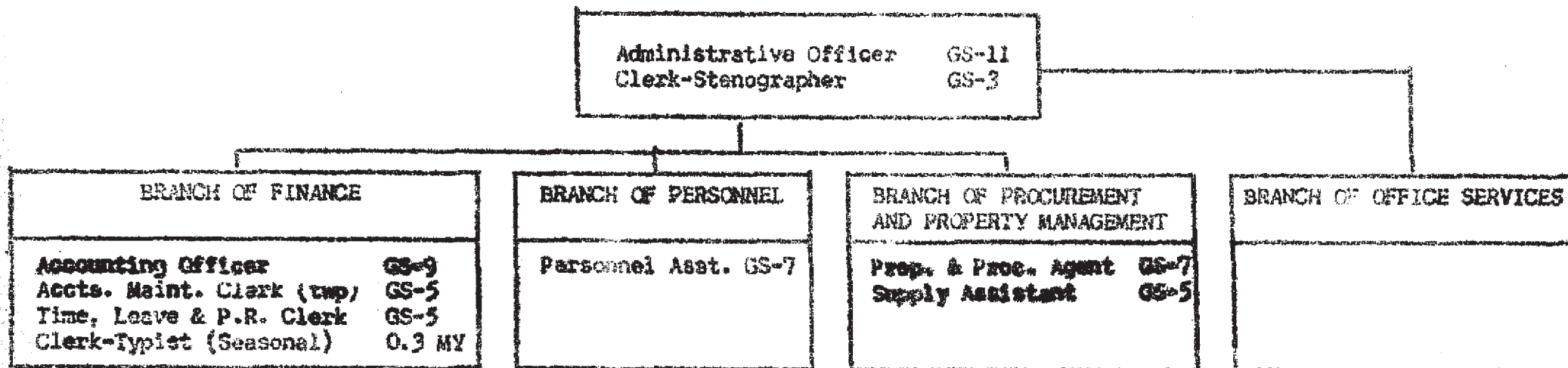
C. Administrative Division Operations

General Statement. This division is responsible for the business activities relating to formulation and execution of the budget, fiscal and property accounting, procurement and property management, personnel management, records management and general office services.

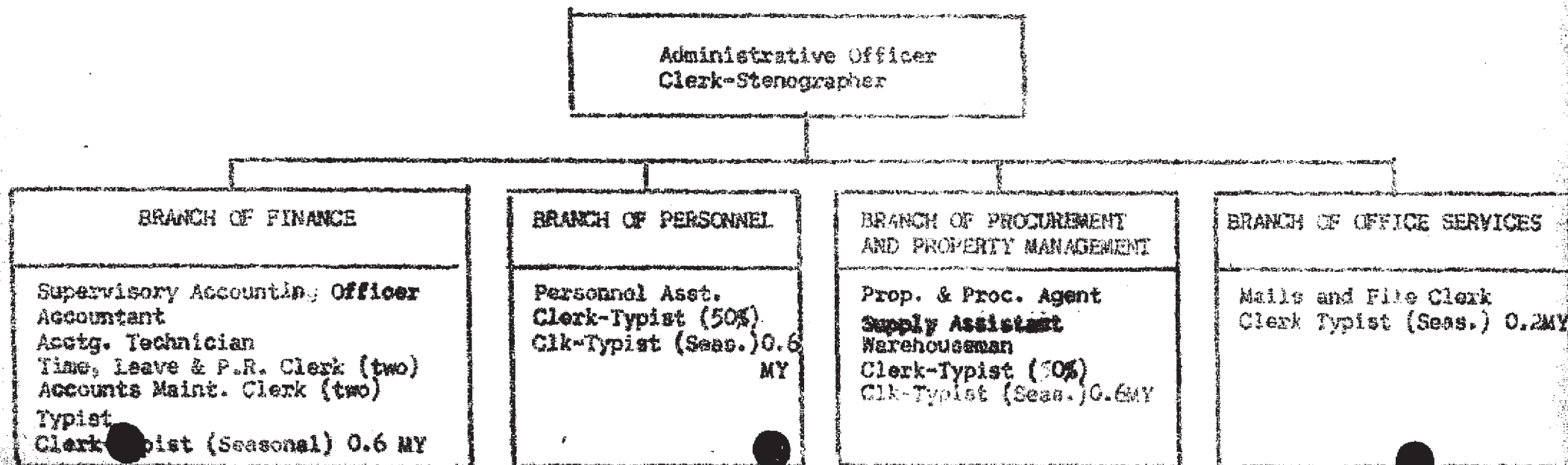
To carry out the functions of the Administrative Division requires a present staff of 9 permanent employees and 1 seasonal employee. Long range plans will increase the number of permanent people to 16 and the seasonal personnel to 3 or 4 employees.



Present Staffing



Proposed Staffing



1. The Branch of Finance, a unit in the Division of Administration, is responsible for the overall execution and coordination of the Park's financial management functions.

As an instrument of executive management, financial control gives purpose and direction through: (1) budget estimates, with related operating and work programs for controlling execution of the budget, including initial and subsequent coordination and comparisons with actual costs all during the fiscal year; (2) requiring proper justifications and findings of fact for purposes of obtaining allotments of funds to specific units and for approved purposes; (3) internal accounting controls for all funds, property, other assets, and liabilities, including the preparation of financial statements and reports, which give assurance that funds are properly and effectively utilized for the authorized work.

As a complete accounting entity, this branch must interpret and apply the Service's and General Accounting Office's Accounting Manuals, as well as other manuals containing procedures involving financial controls. Complete trial balances and accurate records must be kept, of: allotments; disbursements; collections; payrolls and related costs; general ledger controls of assets, liabilities, expense and income accounts, and other special accounts. This branch must be alert to current activity as related to quarterly apportionments, clearing account expenses as compared to estimated income, depreciation reserves as related to replacement schedules, water use revenues as compared to expenses, quarters rentals as compared to maintenance expenses and pilot or individual specialized analysis as related to the whole operation.

An important feature to be mentioned is the visitor fee collection system, controlled through entrance stations. Automobile, motorcycles and house trailer entrance permits are \$1.00 for the yearly permit and 50¢ for the one-day permit. For commercial passenger-carrying vehicles, the annual permit is \$3.50 per passenger seat, the quarterly permit is \$1.00 per seat, the one-day permit is \$10.00 for more than 11-passenger vehicle and \$2.00 for the 11-passenger vehicle or less. Total fees collected during fiscal year 1961 amounted to \$144,668.30.

In general fund revenue deposits, for business concession contracts, a total of \$23,799.37 was collected during fiscal year 1961.

It is interesting to observe that of fiscal year 1961 Management, Interpretative and Protection expenses amounting to \$237,000, over 2/3ds of this cost was recovered through admission and business concession fee, which totaled \$168,487. And if we should consider also, that federal withholding income taxes amounted to \$46,132 in that period, we arrive at the interesting conclusion that we deposited around \$214,599 in the Treasury, or 90% of the Management, Interpretative and Protection costs of \$237,000.



To carry out the functions of the branch of Finance presently requires 5 permanent and 1 seasonal employee, but long range plans call for 9 permanent and 1 seasonal employee.

Authorized Certifying Officers of this branch are the Accountant and the Administrative Officer.

2. The Branch of Personnel serves line management and supervisors in performing personnel responsibilities related to the two major activities, Administrative Services and the Program Activities, which latter are directly concerned with carrying out the basic objectives of the Service, such as Ranger Activities, Interpretation, Maintenance and Operation of Physical Facilities, Programs and Plans, etc.

Involved are such processes as recruitment, selection, placement, utilization of employee skills, supervision, compensation, training and developing employees, and maintaining satisfactory working relationship and conditions. Annual wage board surveys are performed for purposes of establishing prevailing wage rates. The Service Record Cards, Official Personnel Folders, and other important personnel records are maintained.

A fundamental knowledge of classification and qualifications standards is necessary. A thorough knowledge of the framework within which personnel actions must be processed is essential; this includes the salient features of rules, regulations, manuals and procedures established by the Civil Service Commission, the Department of the Interior, the Bureau of Employees' Compensation, the Treasury Department, the National Park Service and Executive Orders.

Summer peak employment is about 125 people, of which 46 are competitive career, 6 career conditional, 20 in limited competitive position, and 51 in excepted positions. Of this group 67 have permanent status and 58 are seasonal employees. The expectations are that by 1972, we will total employment of around 300, of which one third will have permanent status.

The functions of this branch are now carried out by one permanent employee, plus some typing assistance from other branches and a seasonal clerk-typist. Long range planning will require an additional permanent clerk-typist to work year around in this branch 50% of the time (the other 50% for Property and Procurement), and will also necessitate greater aid from the seasonal clerk-typist.

3. The Branch of Procurement and Property Management is a unit under the Division of Administration. It is responsible for such functions as purchasing and contracting, acquisition and disposal of surplus property, establishment of inventory levels, taking annual inventories, proper storage, inspection and repair of equipment, equipment utilization, preparing equipment replacement schedules, preparing annual motor vehicle report, and a supporting warehouse operation. The imprest fund cashier and alternate cashier who are the Storekeeping Clerk and Property and Procurement Agent respectively, also operate the petty cash fund.



Procurement operations are governed by the authority delegated to the Park from the Regional Director and in conformity with Departmental and Service Manuals, General Services Administration Regulations, GSA Stores Stock Catalog, Federal Supply Service Contract Schedules, General Accounting Office Policy and Procedures Manual, Comptroller General's Decisions, and Treasury Department Manual of Procedures for Cashiers. In fiscal year 1961, procurement purchasing totaled \$235,000. Through the warehouse \$54,114 of material was received and \$51,061 of items were issued. The Purchasing Agent may execute and approve contracts not in excess of \$5,000 for supplies, equipment and services. The Administrative Officer's authority is \$10,000. The Assistant Superintendent's limit is \$25,000, including construction contracting, while the Superintendent has a ceiling of \$200,000.

Property management responsibilities apply to real property in Shenandoah National Park as follows: land, \$1,776,000; buildings, \$558,000; other structures and facilities, \$9,242,000. Non-expendable equipment as of June 30, 1961, was valued at \$273,686 and warehouse inventory was \$26,476. Property management stresses the Service's objective to acquire and retain only items well suited to our needs and which may be economically used and held. This Park endeavors to secure maximum equipment utilization, within bounds of the inventory listing of 94 items of automotive and heavy equipment approved by the Regional Director.

To carry out the function of this branch presently requires 2 permanent employees, and assistance from a seasonal clerk-typist, but long range planning will require the addition of one more permanent Warehouseman and a permanent clerk-typist to work year around 50% of the time (the other 50% in Personnel) and greater aid from a seasonal clerk-typist.

4. The Branch of Office Services, a unit in the Division of Administration, is primarily responsible for the effective and successful filing, in accordance with the prescribed National Park Service Filing System, as well as indexing disposal and preservation of records.

Upon this branch falls the responsibility for maintaining the supply of essential forms, stationery, and other items of office materials. Mimeographing, verifaxing and running "ditto" copies are performed, and continuous routing of correspondence between offices is carried out. The mail is also handled daily.

At present, this unit shoulders all the typing for the Administrative, Engineering and Landscape Architect Divisions. Under long range planning, the Engineer and Landscape Architect will have their own clerk-stenographers and thus permit the present clerk-stenographer to devote full time to the Administrative work.

This branch, operating now with one employee, will require the addition of a mails and file clerk.

MASTER PLAN  
FOR THE PRESERVATION AND USE  
OF  
SHENANDOAH NATIONAL PARK

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Chapter 4. - Park Operations Outlines  
Section D. Ranger Activities Operations

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Prepared by: Joseph Kulesza  
Joseph Kulesza, Chief Park Ranger

Date 9/14/61

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Approved: B. Taylor Hoskins  
B. Taylor Hoskins, Superintendent

Date 9/14/61



VOLUME I

Chapter 4. Park Operations Outlines

D. Ranger Activities Operations

General Statement. The purpose of this division is to provide protection for Park visitors, employees, and Park resources and facilities.

Because of the character of the Park, 80 miles long and from 2 to 13 miles wide, enclosing more than 330 square miles of the Blue Ridge Mountains range, a primary responsibility and function of the division relates directly or indirectly to the protection of the forest, vegetation, fish and wildlife, several score government and public use buildings along with providing for the safety and welfare of nearly two million visitors annually.

To carry out the assigned functions, the Park is divided into three geographic districts with a district ranger in charge of each district with a minimum of two permanent rangers assigned to each district. As part of this Master Plan, the Ranger Activities drawing is kept up to date defining these districts. The increase in visitation overflowing into rapidly expanding Park uses will necessitate further dividing these districts into sub-districts with a minimum of one Park Ranger assigned to each sub-district. A Ranger Manual and Fire Control Handbook, as well as Administrative Manuals and Law Enforcement Manuals, are available for this division and will be kept current to provide the latest methods of accomplishing the assignments herein. A fire control plan is maintained and currently revised that defines responsibilities and outlines action programs in forest fire control. Fish and Wildlife Management Programs will be reviewed and revised as conditions dictate. Presently a sports fishery program under the Hazzard Plan is an active responsibility of this division. Black bear, increasing in population, will require an early management program.

1. Entrance Stations. Four entrance stations are operated in this Park from April thru October. Fee collections for vehicles entering the Park have been made since 1939 as authorized by Acts of Congress. Seasonal rangers to operate these stations normally are recruited from schools and generally are only available for work from June to Labor Day. For the months of April, May, September and October these stations are operated by rangers having other protection assignments.



Permanent and seasonal rangers will be responsible for this operation under the district ranger's supervision. Schedules are prepared showing ranger assignments for management of these entrance stations which includes the depositing in nearby Federal Reserve Banks of daily cash collections during heavy travel season. Approximately \$170,000.00 is collected annually at these entrance stations.

Approximately 17 man years are required for this function covering a 24 hour daily operation at each station.

2. Traffic Control and Assistance to Motorists. Nearly two million persons visit the Park annually. Traveling over the 105 miles of the Skyline Drive the traffic problem becomes acute because of grades, lack of adequate parking areas, deer jams, motor trouble, picture taking, especially during peak travel periods. Travel in winter is aggravated by ice and snow. All of these conditions result in about 68 accidents each year along the Skyline Drive. At least three rangers are assigned to patrol the Drive on weekdays and double that number on weekends and holidays and during periods of heavy travel to give information, prevent violations, help motorists with car trouble, investigate accidents, prevent deer jams, and periodically service traffic counters at four strategic points along the Skyline Drive. Daily patrols are also maintained during the winter by the responsible district rangers to prevent accidents, report road conditions to maintenance crews, investigate accidents, and give information to visitors. Schedules are maintained showing rangers assigned to these patrols. The rangers report to the maintenance division for correction of hazardous conditions such as snow, ice or slides. If the road is too dangerous to travel, the rangers close the road to traffic and call for crews to put it in safe condition. Periodic patrols are made as frequently as necessary on 125 miles of secondary roads and truck trails, and 323 miles of foot trails to see that conditions are safe, to give information and prevent infractions of regulations. Over 10,000 back country trail, fishing, boundary and similar signs must be serviced and maintained. Approximately 7 man years are required to manage and supervise this function at the present time which is by no means adequate.

The methods and manpower requirements for this function are expected to change in time with increases in visitation and patrols and assignment extended into the night hours. Presently and for the most part night patrols are covered by rangers contributing their time. It is estimated that an additional 5 to 7 man years will be required for this extended coverage.

3. Supervising and Management of Camping and Picnicking. Camping affords the visitor the best opportunity to enjoy the wilderness character of the Park. Its popularity is evidenced by the use of the three campgrounds and six picnic grounds in the Park by over one and three quarter million visitors totaling about 104 thousand camper days in 1960. Picnickers totaled approximately 300,000 during 1960. During busy periods campground use may exceed capacity by 100 to 125 percent. Rangers are responsible for management and supervision of all campgrounds and picnic areas, including enforcing regulations, keeping order, protecting features and facilities, recording use, giving information, and protecting visitors. Seasonal and permanent rangers are assigned to each developed area from April 15 to November 1 to perform these duties. Temporary campgrounds, back country campgrounds, and trail side shelters are periodically inspected to insure that these areas are properly used, kept clean, and records kept of their use. Park Rangers will be responsible for this duty under the district ranger's supervision. Schedules are prepared showing ranger assignments for management of all areas.

Approximately 3 man years are required for this function.

The current management plan is not adequate for the proper operation of the three existing campgrounds, six picnic areas and one primitive campground. Two additional major campgrounds and the expansion of one existing major campground are scheduled in high priority for accomplishment, to be followed by two additional campgrounds and two picnic areas. The additional major campgrounds will increase management requirements by 5 man years on the basis of the National Park Service Campground Policy requiring campgrounds to be manned 16 hours per day, seven days per week.

4. Forest Fire Control and Forest Protection. The protection division is responsible for all activities relating to the protection of more than 175 thousand acres of vegetated land. This function requires more than 7 man years of the ranger staff and 4 man years for seasonal fire control aids to plan and carry out measures for prevention and control of forest fires, training of employees and local crews, by presenting fire prevention programs in schools adjoining the Park, by maintaining working relationship with the U. S. Forest Service, State Forest Service, local industrial units and nearby military units. Eleven fire control aids supplement ranger patrols during spring and fall fire seasons of 5 months duration.



Man-caused fire risk is high. About 80 percent of the fires that burn over 40 acres inside the Park each year are of man-caused origin. Many of these originate outside and burn into the Park and several are controlled before they enter the Park. Prevention work is of extreme importance requiring upward to 6 man months of rangers' time each year.

In addition, about 3 man months of the rangers' time is devoted to the organization and training of local cooperative crews totaling 403 men. The Fire Atlas, Fire Control Plan, and other special schedules are maintained for details of this function.

The control and maintenance of the White Pine blister rust program is a responsibility of the rangers in cooperation with the Forest Service. Maintenance control treatment of 14,270 acres requires  $4\frac{1}{2}$  man months of ranger and 5 man months seasonal laborers' time each year. Other tree disease and insect infestations are dealt with in cooperation with the Southeastern Forest Experiment Station.

5. Fish and Wildlife Protection and Management. The protection of wildlife and fisheries resources includes enforcement of regulations, patrol of 400 miles of boundary, 106 miles of streams, cooperation with U. S. Fish and Wildlife Service and State Game Department in Surveys, and presentation of cases before Commissioners. District Rangers will prepare schedules with responsible rangers to insure necessary patrols into all areas of the Park. In the absence of a biologist, the Chief Park Ranger assigns wildlife to a ranger. Bear management, particularly in campgrounds, is a recurring problem requiring close control and regulation by Park Rangers. Deer, which are abundant in the Park, create problems along the 105 miles of the Skyline Drive. Night poaching by car lights over the length of the Drive is a problem facing the rangers throughout the night during the fall and winter months. The elongated shape of the Park heavily populated by local residents on the fringes multiply the poaching activities but only on a limited scale. Packs of dogs, both hound and cur from areas surrounding the Park, run at large in the Park and require control measures by the rangers. Approximately 20 to 25 accidents from cars striking deer occur annually.

Approximately 3 man years are devoted to this function.

Fish and Wildlife Protection and Management programs are less than adequate for routine and continuing needs presently. Wildlife research and observations forecast an eruption of the bear and deer populations, reaching excessive levels about 1965. Control measures will probably have to be taken, starting about 1966 and continuing for about five years. This will require a 1 man year increase for each of these five years.

6. Building Fire Control. An annual inspection is made by rangers in the spring of all 182 buildings within the Park with a follow-up in the fall, to detect and eliminate any hazards or deficiencies. Fire training is given to 102 employees, both Park Service and Concession, once a year in fire prevention and control techniques. A building fire plan is kept current for all areas with buildings to show action to be taken in case of fire. Two structural fire control pumper trucks are maintained for fire protection of Park buildings at the Headquarters area, Big Meadows and Skyland areas, and to assist the nearby town of Luray and other adjoining communities under a cooperative agreement.

Approximately 1 man year of the staff is required to manage this function.

The development of the Loft Mountain area with a large concession operation with overnight lodging will require one additional structural fire control pumper.

7. Other Functions. Administrative direction, and planning of the work of the division.

A ranger is assigned to Park Headquarters throughout the year to assist the ranger division in giving information, receive messages, and assist the chief ranger and his staff in reports, records and related administrative matters.

Training of division personnel in protection procedures and skills, including law enforcement, accident prevention, safety, fire control, public relations, organizations and management, consumes about 1 1/2 man years.

Other miscellaneous duties for which the rangers are responsible include monthly sanitation inspections of concessions, periodic

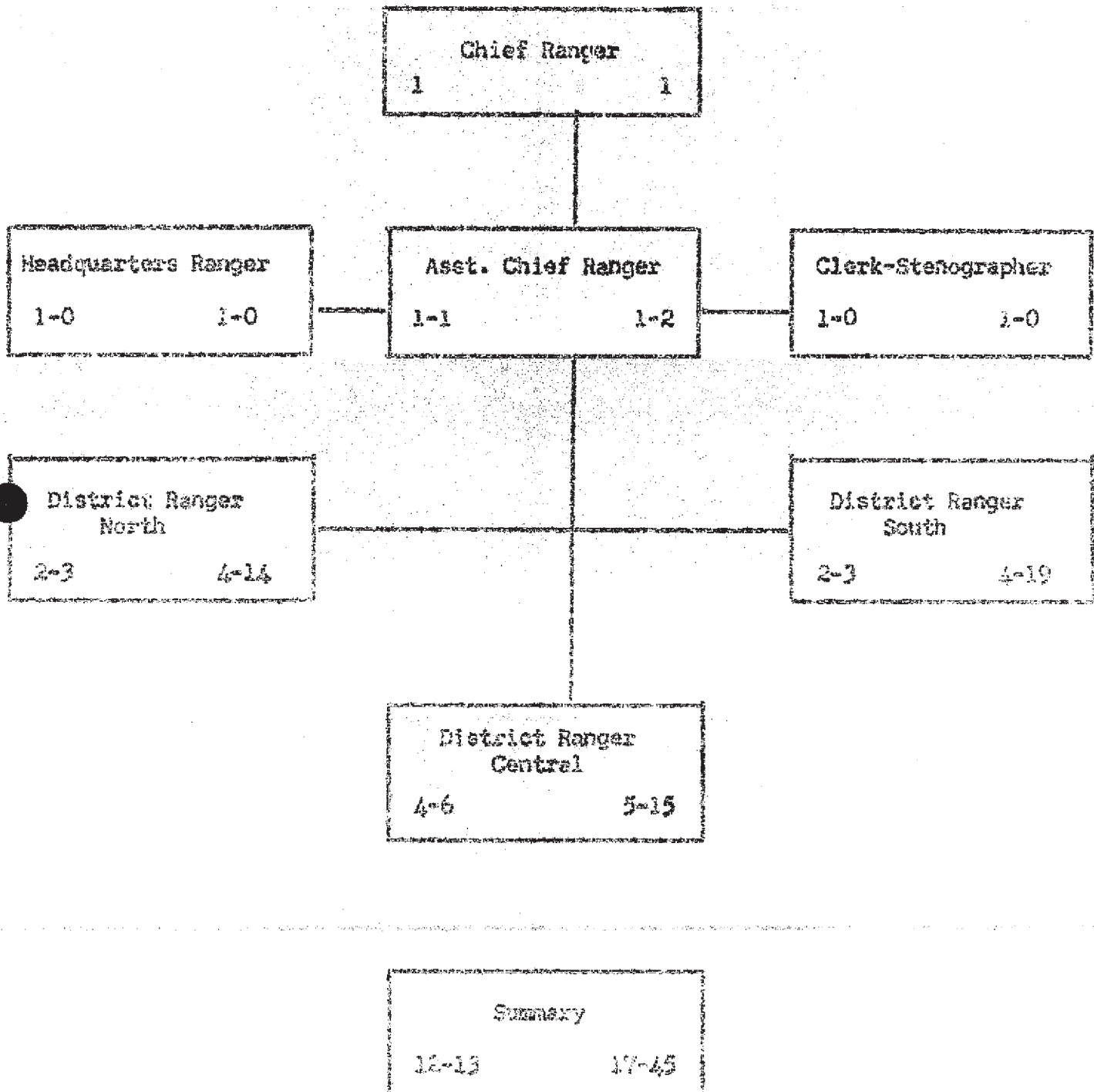
checking of permittees who operate saddle horses, checking signs and requesting repairs or replacements of sign, performing rescues, searching for lost persons, compiling travel information gathered at entrance stations, traffic counters, and public use areas, personnel reports and budget estimates.

The Chief Ranger will be responsible for keeping the Superintendent properly advised about protection activities. This will be accomplished by the required reports, by personal reports to the Superintendent by the Chief Ranger and other members as required.

The general requirements of administrative, overhead, and miscellaneous functions will increase in proportion to staff increases, and perhaps one man year increase in staff can be justified on this basis. However, the completion of the Backwoods Information Station will require two additional man years of service.

It is anticipated that upon the completion of Interstate Highways near the north and south entrances to the Park, which are now proposed, travel will increase and this increase will affect the ranger division operations and protection of facilities in the Park. No change is proposed in the district division of the Park and perhaps only an increase of  $1\frac{1}{2}$  man years in ranger personnel will be needed to handle the increased workload.







Volume I, Chapter 4  
Interpretive Activities Operations

MASTER PLAN  
FOR THE PRESERVATION AND USE  
OF  
SHENANDOAH NATIONAL PARK

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Chapter 4. - Park Operations Outlines  
Section E. Interpretive Activities Operations

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Prepared by: E. Ray Schaffner Date Oct. 31/1961  
E. Ray Schaffner, Supervisory Park  
Naturalist

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Approved: R. Taylor Hoskins Date 11-2-61  
R. Taylor Hoskins, Superintendent

E. R. Schaffner	
NOV 6 1961	
Chief	
Admin.	
Program	
Eng.	
Arch.	
H. A.	
Action Taken:	

## VOLUME I

Chapter 4. Park Operations OutlinesE. Interpretive Activities Operations

General Statement. The purpose of this Division is to conduct an effective interpretive program that will increase enjoyment of the Park through better understanding of its natural features and human history. In order to win and retain public support for the conservation principles upon which the National Park ideal is based, the interpretive story must be continually stressed through the use of a variety of media. By gaining advocates for Park conservation practices, the job of protecting Park resources becomes less difficult. These principles are aptly stated in the Act of August 25, 1916, establishing the National Park Service.

The Park includes an area of slightly more than 330 square miles stretching along the crest and slopes of a 75 mile segment of the Blue Ridge Mountains. The narrow character of the Park allows expansive views to the east over the Piedmont and to the west across the valley and ridge provinces. Therefore, the interpretive story of necessity includes elements of the scenic, scientific and historic significance of all three of these physiographic provinces seen by visitors to the Park.

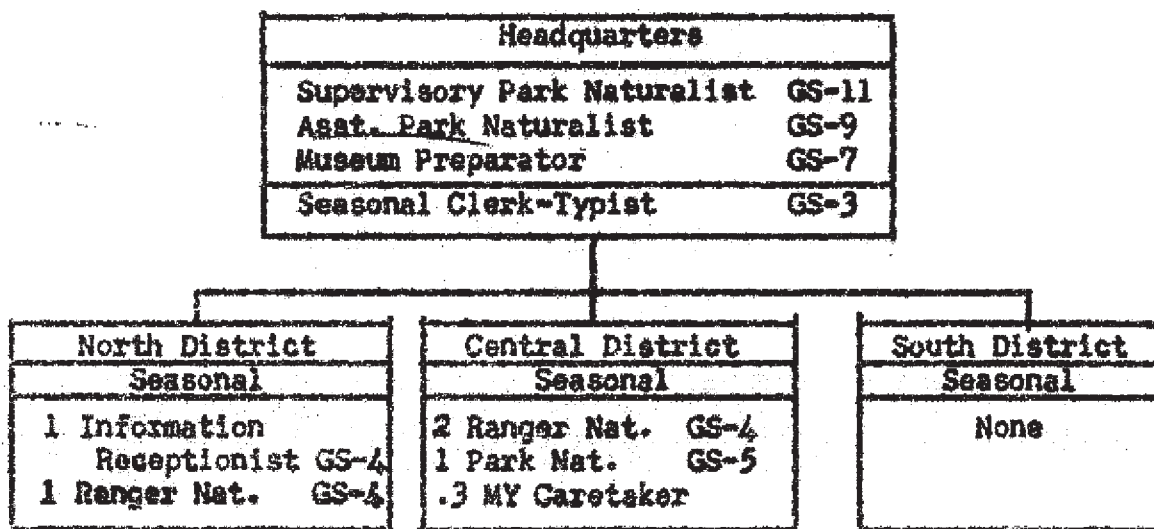
To accurately interpret the complex geology, flora, fauna, ecology, and history requires constant research and study by the Park Naturalists. This knowledge must then be translated into interpretive exhibits, illustrated programs, self-guiding nature trails, visitor centers, study collections, interpretive signs, newspaper and magazine articles, natural history publications, wayside exhibits, conducted trips and other interpretive activities for Park visitors.

Because of the elongated character of the Park and of the complex pattern of visitor use caused by the major trans-mountain highways intersecting the Park's Skyline Drive, the area is divided into three geographic districts of about equal size. In order to better serve the greatest number of visitors each of the three districts must be treated as a separate unit, with each unit contributing to the complete interpretive story.

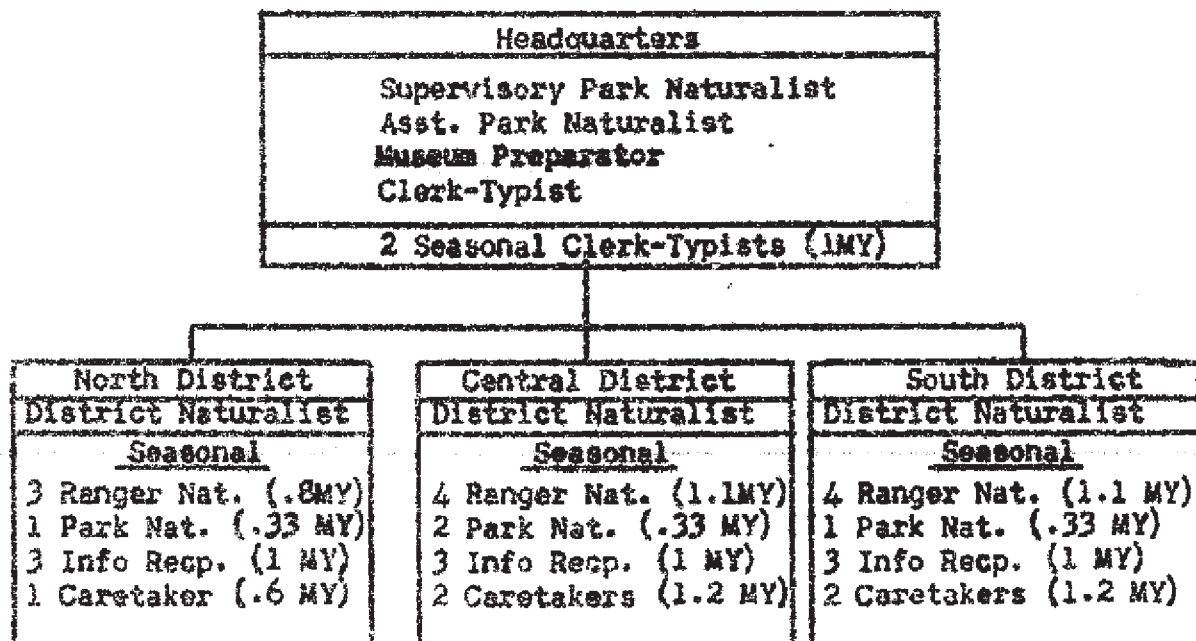
Guidelines for the development and operation of an effective long range interpretive program in Shenandoah are to be found in Shenandoah's Museum Prospectus (approved March 26, 1956), Interpretation section of the Master Plan Development Outline (approved June 20, 1958) and the current MISSION 66 Prospectus for Shenandoah.



Existing Staffing



Proposed Staffing



1. Visitor Center Operations and Orientation of Visitors: To date the Park's only visitor center has required about half of the seasonal man power and one quarter of the permanent staff's time. With additional Information-Receptionists, it will be possible to extend the hours of operation to orient a greater percentage of visitors soon after entering the Park. To accomplish this will require two additional visitor centers, one in the Central District and one in the South District of the Park. To develop exhibits and programs for these proposed centers will require most of the time of the permanent staff for the next few years. Basic research, gathering and preparing of exhibit materials, securing photographs and preparing scripts for the audio-visual programs will consume a great deal of time of the three permanent Naturalists.

2. Naturalist Conducted Visitor Activities: The summer schedule of hikes and campfire programs offered to visitors in the Central District has become extremely popular. Attendance at these activities has increased greatly over the past five years causing over crowded conditions on trail trips and at campfire programs. Additional Seasonal Naturalist personnel is needed to meet the standards, called for in the Director's Campground Policy statement, of conducting campfire programs from five to seven nights a week at each major campground facility. With present personnel it is possible to conduct only seven programs a week divided among the three major installations (Skyland, Big Meadows and Lewis Mountain) in the Central District. Lodge talks are offered once a week for Park visitors staying at the two largest concession operated lodges in spring and fall. The demand for this type of interpretive program is constant and cannot be met with the present interpretive staff.

With major campgrounds called for at Matthews Arm in the North District, Comex's Deadening near Skyland, and two or three campgrounds proposed in the South District plus expansion of present campgrounds, it will be extremely difficult to meet the Director's standards regarding campfire programs with personnel increases requested under MISSION 66.

3. Development of Self-Guiding Trails: At present two self-guiding trails are in operation in the Central District. These were developed as a supplement for the popular conducted trips. The demand for guided trips greatly exceeds the number of trips that can be offered by available personnel. In order to keep up with popular demand, thirteen additional self-guiding trails are planned. This type of interpretive device requires constant checking, servicing and maintenance by Naturalist personnel. It will be necessary to use a great deal of Seasonal Naturalists' time in keeping these self-guiding devices in proper operating order during the summer months.



The District Naturalists will be responsible for maintaining these devices the year around.

4. Research Program: The Interpretive Division is responsible for planning and directing research projects in many fields of natural history and history of the area. Scientists and students are encouraged to use the Park as an outdoor laboratory. The translation of scientific findings into interpretive literature, programs and exhibits easily understood by the majority of Park visitors is the most important product of an active research program. With the anticipated increase in permanent personnel, it is expected that the Park Naturalists will be able to take a more active part in the Park's research program and will find time to supervise or encourage research by others.

5. Photographic Program: Photography is used by the Interpretive Division as one of the principle media of interpretation of the Park. All of the Naturalists use both black and white, and color photography as well as motion picture and still photography in a variety of sizes to illustrate articles, guide books, and audio-visual programs. Part of the proposed increase in clerical help will be used in maintaining existing photographic files and in keeping these files current and active. This personnel should also be trained in darkroom techniques in order to produce prints of pictures to fill requests of authors and publishers of articles about Shenandoah. With proper clerical assistance, more pictures can be used in technical and scientific reports on the area as well as to enhance routine reports.

6. Other Functions: Administrative direction organization planning, and execution of the program and work of the Division of Interpretation is under the Supervisory Park Naturalist. He is under the general administrative supervision of the Assistant Superintendent, and through him is responsible to the Superintendent for an active and dynamic interpretive program for the area.

An effective interpretive program contributes to preservation of the Park by arousing appreciation of Park values and understanding of proper use by Park visitors and employees alike.

The Supervisory Park Naturalist is responsible for directing the affairs of the Shenandoah Natural History Association through the office of Executive Secretary of this organization. This organization does a great deal to gain and contribute active support for the Park's interpretive program. Direction of the affairs of this growing association requires the expenditure of a great deal of time and ingenuity. With added outlets at the two proposed visitor centers, the Association will be able to serve Park visitors even better with natural history publications, and other materials to increase enjoyment of the Park.



Additional functions of the Division includes participation in planning museum facilities and exhibits. Supervision of the maintenance, acquisition, cataloging, preservation and display of specimens for visitor centers, exhibits, and study collections.

Training of Park personnel is in cooperation with other Divisions. The Park Naturalists help to plan and conduct indoctrination and in-service training programs for Park employees.

In fiscal matters, the Division Head must furnish data for budget estimates and justification of funds for interpretation. He must direct the expenditure of funds allotted for his Division.

E.O.D.C.	
OCT 25 1961	
Chief	
Adm.	
Program	
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Arch.	
H.A.	
Information only	

MASTER PLAN  
FOR THE PRESERVATION AND USE  
OF  
SHEW/ADOAH NATIONAL PARK

Chapter 4. - Park Operations Outlines  
Section F. Maintenance and Rehabilitation Operations

Prepared by: *James M. Stewart*  
James M. Stewart, Park Engineer  
Date 10-20-61

Approved: *Robert H. [Signature]*  
Robert H. [Signature], Superintendent  
Date 10-23-61

VOLUME I

Chapter 4. Park Operations Outlines

F. Maintenance and Rehabilitation Operations

General Statement. The purpose of this division is to maintain the developed areas, roads, trails, utilities, camping and picnicking facilities, open trailside shelters, grounds, all type and size of signs, Park boundary line, vehicles, equipment, buildings, provide and operate sanitation services and facilities, garbage and trash collection and disposal, eliminate safety hazards to the Park visitors, to perform construction work in varying degree of amplitude, and participate in planning and development studies.

To carry out this function the Park is divided into four geographic sections, North, Central, South and one at Headquarters. A foreman is in charge of each of the three sections and at present the Supervisory Park Engineer is in charge of the Headquarters work group. It is intended to establish a foreman's position for this function also, as the work involves the supervision of skilled employees, such as plumbers, electricians, mechanics, carpenters, blacksmiths, sign makers, maintenancemen, junior grade foremen and laborers.

The three sectional foremen have under their supervision the equipment operators, caretakers, junior grade foremen and laborers.

The entire group also acts as a "front line" fire fighting unit and are immediately called upon, as needed, during regular duty hours, to move in on a fire to initiate suppression activity.



# MASTER PLAN HANDBOOK

## Present Staffing

Division of Maintenance and Operation of Physical Facilities	
Supervisory Civil Engineer (General)	GS-12
Assistant Park Engineer	GS-9
Clerk-Typist	GS-2
(To work jointly with Maintenance and Landscape Architect Division)	

Foreman I (Garage)
Mechanic, Automotive
Automotive Mechanic Helper

Foreman I (Plumber)
Plumber
Seasonals 0.7 man years

Foreman I (Electrician)
Electrician

Carpenter
Maintenanceman
Sign Maker
Foreman I (Laborer)
Laborer
Seasonals 6.2 man years

Foreman IIX (Roads and Trails)

North District
Foreman I (Roads and Trails)
Operator, General
Operator, General
Seasonals 7.3 man years

Blacksmith

Central District
Foreman I (Roads and Trails)
Operator, General
Operator, General
Seasonals 7.3 man years

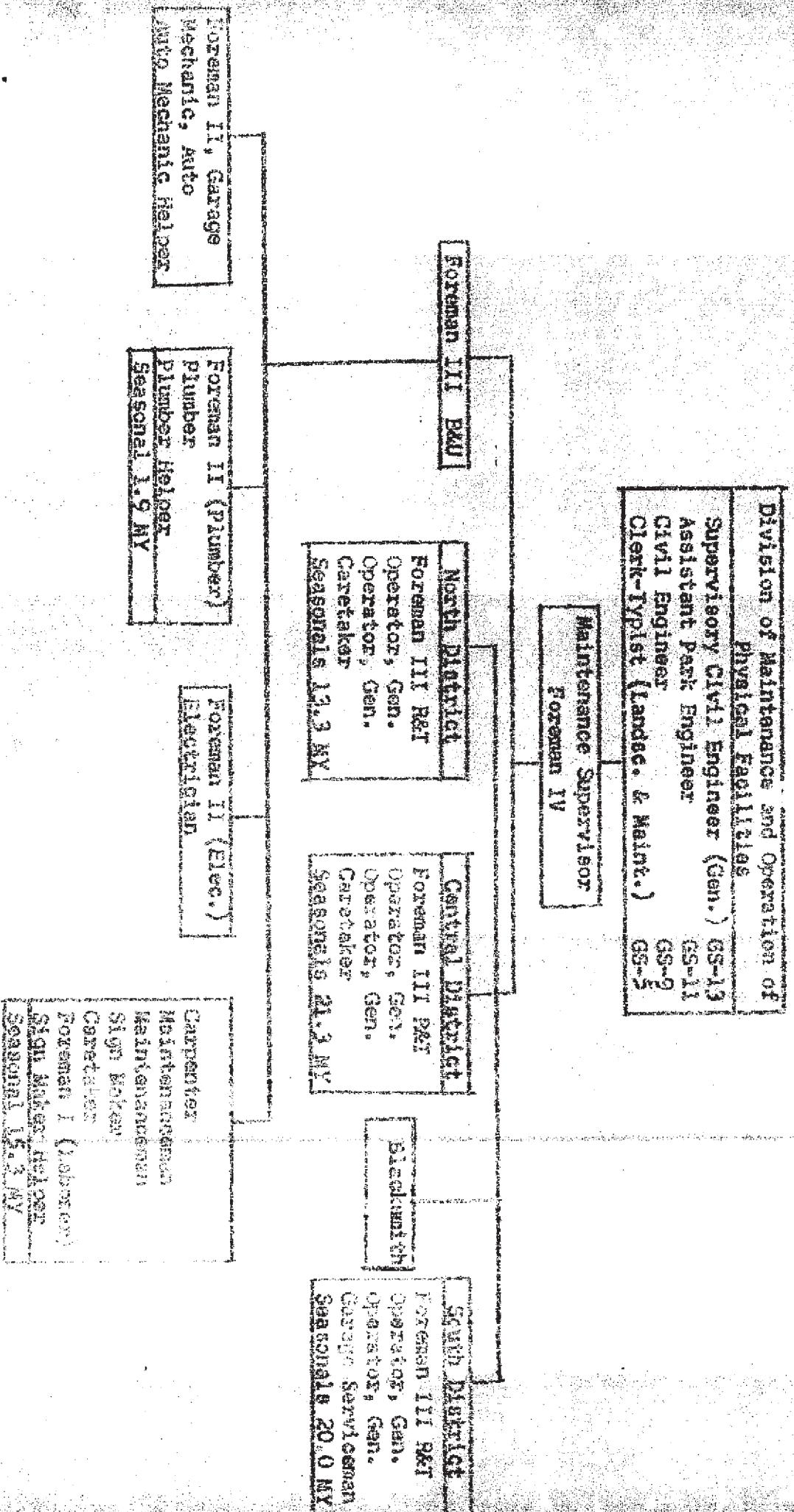
East District
Foreman I (Roads and Trails)
Operator, General
Operator, General
Seasonals 7.3 man years

Position vacant; reallocation is proposed from RMT to DMU.

# MASTER PLAN HANDBOOK

## Proposed Staffing

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Park Operations Outline  
Page 4





1. General Maintenance

a. Roads and Trails. One of the functions of the Maintenance and Rehabilitation Division is the maintenance of 145.64 miles of primary roads which range in standard from high type bituminous concrete surface to graded type construction. These roads carry the visitation load of the Park which amounts to well over a million visitors a year. The roads are kept open, except for a few days when travel conditions are extremely hazardous, the whole year.

The division also maintains 142.11 miles of secondary road of a type similar to the primary class. These roads are used to a large extent by Park employees, residential, and utility area traffics. The graded roads are used, in a large part, as means of access and circulation for protection, fire fighting and patrol work and access to utility areas.

Also included in the maintenance workload are 247.14 miles of trails which range in standard from high type surface bituminous concrete and concrete walks, to gravel paths or hiking trails and bridle paths, including the famed Appalachian Trail which traverses the entire length of the Park.

The roads and paved walks serving the concessioner developed areas, the picnic and campgrounds, amphitheaters, and residential and administrative areas must, in their very nature, receive special attention so as to safely serve the Park visitors and employees.

With the proposed addition of approximately 21.76 miles of primary road, 3.72 miles of secondary roads and 22.33 miles of trail, more maintenance workload will be required to provide service for these areas. It is anticipated that approximately 13.5 man years will be required for this service.

b. Buildings, Utilities and Grounds. The Maintenance and Rehabilitation Division has a vast responsibility in the maintenance of 210 buildings having a square footage of 162,297. These units vary in size and design from a large stone masonry frame type administration structure and frame residences to simple structures such as dry pit toilets and trailside shelters.

There are 45 water systems which vary from large complex plants serving concessioner and National Park Service developed areas having 100,000 gallon storage capacity, pumping stations on several miles of pipe lines of varying size, to simple gravity flow systems and developed springs which serve roadside drinking fountains and trailside shelters.

Also included in the maintenance responsibility are 18 sewage disposal systems varying in size and design from large plants comprised of treatment plants, such as a battery of Imhoff tanks totaling some 50,000 gallon storage capacity and several miles of transit lines of varying size, to simple and less complex systems such as individual housing treatment septic tanks and cesspools.

The sanitation and disposal system presents a unique problem in the collection of over 60,700 cans a year and the disposal, by sanitary land fill, of over 109,100 cans per annum. This disposal includes all garbage and refuse of National Park Service responsibility and the concessioner.

There are 21 individual heavily-used camping areas, comprising some 376 sites and 7 picnic areas with 247 sites, to maintain. This work involves the maintenance of the tables, fireplaces, trash and garbage cans, drinking fountains, grounds cleanup and reseeding, fertilizing, mulching and mowing.

The responsibility also includes the maintenance and frequent replanting of replacement of some 15,000 individual shrubs and trees, the special mowing and treatment of over 135 acres of selected grounds area.

There are approximately 2,000 individual signs to be maintained, replaced, or refurbished. These units vary in size and design from large stone masonry mounted structures to small wooden units, each requiring a considerable degree of work each year to maintain to a standard presentable to the visiting public.

These existing facilities represent approximately 2/3 of what is proposed for the whole Park. There are anticipated 72 new Park buildings to be located throughout the Park and 60 concessioner buildings to be built in a half dozen areas through the Park. Along with this are proposed approximately 5 amphitheaters and 3 campfire circles. This phase of operation will require a much more concentrated effort on the part of the maintenance forces under Buildings and Utilities with approximately 12.3 man years required for this work.

#### 4. Maintenance and Rehabilitation Responsibility - Concessioner

The Park concessioner, under the operation of the Virginia Sky-Line Company has a large operating force which is comprised of approximately 70 buildings. These units are dependant upon the National Park Service facilities such as water, sewer, and electrical systems, grounds, signs, walks, roads, and parking areas.

The cooperative maintenance responsibility of the Maintenance and Rehabilitation Division, under the supervision of the Park Engineer, his staff and work force, with the concessioner development adds greatly to the workload.



Any construction development by the concessioner indirectly affects the workload as the Park Engineer frequently is called upon to work closely with the technical personnel representing the Design and Construction Office during the course of the construction activity and often requires the Park Engineer's time for making preliminary surveys and studies, estimates, work orders, and project completion reports.

The Superintendent frequently calls upon the Park Engineer for technical advice in the study of proposed development, by the concessioner, for the requirement of roads, trails, utilities, sanitation facilities, signs and other affiliated development needs.

Other workload demands by the concessioner for Maintenance and Rehabilitation forces involve snow removal, special treatment of bridle paths due to the erosive character of their use, additions to buildings requiring additional walks, parking areas, access roads, grounds development and waste disposal.

### 3. Other Functions

a. Cooperational Operation. The Park Engineer, in his representation of the Maintenance and Rehabilitation Division, works closely with the other division heads in the planning and operation of the Park and in contact with representatives of the various utilities companies, State Highways and Bureau of Public Roads representatives evaluating their requests and problems and recommending solutions to the Superintendent.

b. Training and Safety. Other duties involve the participation in planning, training and safety programs. Maximum efforts are made continually conduct, in the normal course of their operation, the service training of the employees.

c. Organizational Expansion Studies. The Park Engineer incorporates in his normal activity the planning and expansion of his organization to cope with future expansion in personnel, equipment, buildings, utilities, roads, walks, and other development requirements.

Due to the increased yearly visitation, Park use, and concessioner expansion and development, the need for increased planning and studies for future development is becoming an increasing factor in the overall operations.

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Landscape Architect Activities Operations  
Page 1

MASTER PLAN  
FOR THE PRESERVATION AND USE  
OF  
SHENANDOAH NATIONAL PARK

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Chapter 4. - Park Operations Outlines  
Section G. Landscape Architect Activities Operations

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Prepared by: Joe H. Bear  
Joe H. Bear, Park Landscape Architect

Date 10/27/61

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Approved: R. Taylor Hoskins  
R. Taylor Hoskins, Superintendent

Date 11/6/61

*Let*

E. O. D. C.	
NOV 14 1961	
2.1	Chair
2.2	Admin.
2.3	Planning
2.4	Design
2.5	Construction
2.6	Operation
2.7	Maintenance
2.8	Research
2.9	Education
2.10	Public Relations
2.11	Records
2.12	Finance
2.13	Personnel
2.14	Legal
2.15	Medical
2.16	Food Service
2.17	Recreation
2.18	Transportation
2.19	Utilities
2.20	Other
Action Taken:	

*11/14*

*H. L. ...*  
*Bill ...*



VOLUME I

Chapter 4. Park Operations Outlines

G. Landscape Architectural Operations

General Statement. The purpose of the Landscape Architectural Division is all inclusive in all matters that affect conservation of the Park's scenic and natural values.

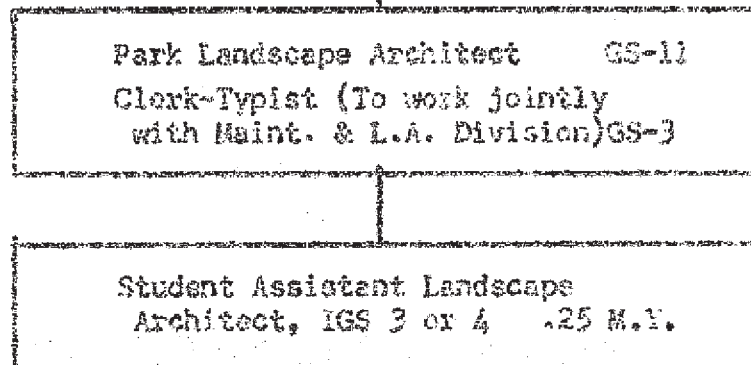
The Landscape Architect studies ways and means of accomplishing landscape architectural objectives related to all physical activity in the area, either in relation to use, construction, maintenance, or operational activities, including those of the concessioners. This Division contributes to the conservation of Park values through participation in all survey, planning, and construction activities performed in the area. They recommend against the realization of projects when they are not compatible with the highest public usage and conservation of the area. More than any other Division, this Division strives to reconcile the two divergent directives contained in the organic act establishing the Service, namely to conserve the scenery and the natural and historic objects and to provide for the enjoyment of same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

To carry out the functions of the Landscape Architectural Division, the Park, with its lengthy drive and developed areas, requires landscape design, planting plans, cost estimates, specifications and investigations on maintenance and rehabilitation problems along with master planning and project plans, accompanied by construction supervisor.

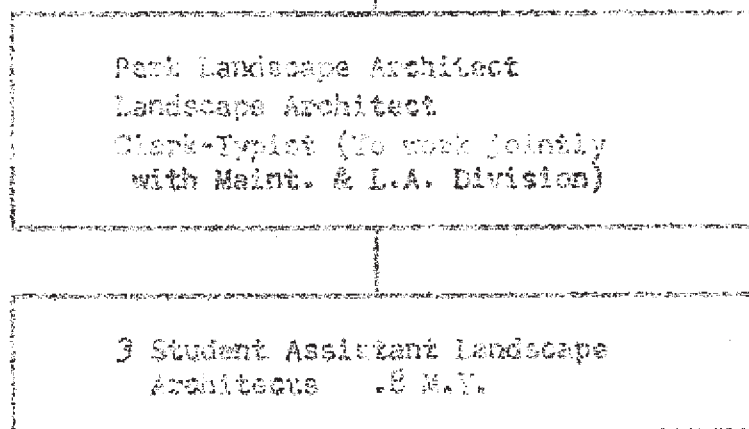
The development of facilities in this Park of more than one hundred seventy-five thousand acres requires considerable planning and work. To accomplish this, an Assistant Landscape Architect will be required to prepare some of the work which is generally done by the Park Landscape Architect.

This Division is now partially under EODC in Philadelphia, but it is expected to be fully under the Park in the future.

Existing Staffing



Proposed Staffing



(?)

I. Maintenance and Rehabilitation

a. Landscape Design and Protection. The Landscape Architect has the responsibility of maintaining the physical concept and intent expressed by the master plans and their component parts; also prepares and keeps current required maintenance and rehabilitation programs over the Park to retain the natural picture.

b. Planting Plans. This Division prepares planting plans for roadside plantings, vistas, some concessioners' developments, and other public use areas. They also prepare land use plans for guidance of the maintenance organization in preserving the necessary public and Park operation facilities. This includes maintenance planning for open vistas, needed offscape points for observation of wildlife features, planting for concealment of construction scars, abatement of erosion, or other disturbances of the natural, scientific, and scenic values and maintenance of the aesthetic planting in the concentrated use sections of the Park.

c. Cost Estimates and Specifications. They prepare cost estimates and specifications for all landscape architectural phases of maintenance and rehabilitation work in accordance with established standards. The Division also assists the Superintendent in establishing and operating a system of preventive maintenance landscape phases.

d. Inspection. Routine inspections are also made of all maintenance activities pertaining to landscape architectural phases.

Among some of the jobs which are done under this category are the following:

Preparation of an overall landscape maintenance and rehabilitation program for the entire Park, including mowing, selective clearing, control pruning of plant materials, removal and control of undesirable and poisonous plant materials, rotation of public use areas to prevent excessive wear, rehabilitation of public use facilities to prevent expensive repairs, removal of dangerous trees and materials in public use areas and the maintenance of vistas in the Park.

Preparation of land use plans for construction sections 1-2A, 1-2B, 1-2C, 1-1AB, 1-1BC, 1-3A, 1-3B, 1-3C, 1-3D, including developed areas in the Park as a guide to maintenance operations.

Preparation of an erosion control program where needed on all sections of the Skyline Drive and in all developed areas.

Preparation of a vista clearing program where needed on all sections of the Skyline Drive and in all developed areas.



Preparation of planting plans for concessioner projects at existing developed areas such as the multiple unit buildings at Skyland; concessioner projects at proposed developed areas when constructed; parking areas, walks, buildings, etc., in developed areas where needed for control of public circulation, appearance, to screen out undesirable views, to control erosion, to enframe views, etc.; roadside planting on Skyline Drive where needed for appearance, safety, to control erosion, or to heal construction scars.

Preparation of cost estimates and specifications for all of the above projects where needed. Also for the landscape phases of the annual maintenance programs.

They also make routine inspections of all landscape phases of maintenance activities in the Park.

With the workload such as it is, a great deal of this work could be done along with an Assistant Landscape Architect.

## II. Construction Supervision

The Park Landscape Architect supervises construction of all landscape architectural activities and assists Park Engineers in other construction supervision to the extent that the end result will be in conformance with good landscape practices. He also acts as Superintendent's representative in cooperative work with Bureau of Public Roads, and exercises general supervision over all vista clearing and roadside planting.

It is estimated that three-eighths of the Landscape Architect's time is required at the present time for these functions:

- (1) Bituminous paving, Skyline Drive. All sections and related erosion control work.
- (2) Construction and reconstruction of guardwalls on the Skyline Drive.
- (3) Grade separation and related developments at Swift Run Gap.
- (4) Roads, parking areas, and buildings for the Park Headquarters area, which is now partially developed.
- (5) Pinnacles area where seasonal quarters are to be developed.
- (6) Skyland development which is planning a larger pillow count with an amphitheater, etc.
- (7) Big Meadows developed area (partially developed), with regrading, draining, and surfacing of some roads, trails, and parking areas. Grading, draining and site improvement where needed, to complete development. Construction of remaining buildings and public use facilities, which should be an increase of one hundred pillow count.



- (8) Comer's Deadening Campground area with approximately two hundred and fifty campsites.
- (9) The developed area at Loft Mountain with its concession facilities along with a campground, picnic area, wayside and relating structures.
- (10) Other developed areas on south section of Skyline Drive: Grading, draining, and surfacing of roads, trails and parking areas; grading, draining and site improvement of area; construction of buildings and public use facilities, such as visitor center, campground and picnic area.
- (11) White Oak Canyon access road and parking area.
- (12) Construction or reconstruction of maintenance areas now proposed at Swift Run, Headquarters and Big Meadows with submaintenance areas at Loft Mountain and Piney River.
- (13) Construction of ranger stations in the gaps, but off the mountain along the highways.
- (14) Construction and erection of signs throughout the Park.
- (15) Construction of entrance stations at Front Royal, Swift Run and Rockfish.
- (16) Construction of access roads and trails for ranger stations and other Park features.
- (17) Construction of trails to Park features, including nature trails, Appalachian Trail and horse trails.
- (18) Erosion control and site improvement where needed in Park.
- (19) Vista clearing where needed in Park.

With these mounting facilities coming up, more time will be required to work on these problems. A great deal of the seasonal help spends and will spend their time in compiling some of the basic data.

a. Master Planning. The Division also assists the Superintendent in the preparation of master plan development outline which is the basic guide in the conservation and development of this Park. It keeps the master plan current to show all work completed as well as to show current revisions needed to meet changing conditions and prepares certain of the master plan sheets which portray development of specialized areas.

Some excellent examples of what master planning or advance planning may be done are the preparation of master plan development outline for general development of Park and for each individual developed area; to keep master plans current to show all work completed and show needed revisions; prepare master plan drawings for individual developed areas in accordance with the approved general development master plans; to prepare the Park sign system plan; and the preparation of project construction programs for landscape phases of Park development.

An estimate of three-eighths of the Landscape Architect's time is required to accomplish this work at the present.

b. Project Plans. This Division also prepares preliminary sketches to correlate graphically the ideas of the Superintendent and others which serve as guides for preparation of the construction plans by the Design Office.

c. Cost Estimates and Specifications. Assists the Superintendent in the preparation of their project construction programs in cooperation with the other technical members of the staff. Prepares such specifications for landscape construction as may be obtained under contract procedure.

### III. Other Functions

Many of the assignments which are given to the Student Landscape Architect at present are a duplicate of that done by the Park Landscape Architect, but his job could range from drafting and filing to inspection of construction contracts. Some of his many functions will be to work on land use maps and current drawings.

The Clerk-Typist will do the normal work of a typist, but will work both for the Maintenance Division and Landscape Architectural Division. The typist helps in filing, recording and preparation of reports along with normal typing.

It is anticipated that with the workload of the Landscape Architect, as shown above, the seasonal help will increase with the badly needed land use maps and master plans brought up to date. This, along with the normal construction and working procedures, will be his contribution to the Park operation.

A few of the routine procedures which are done by the Landscape Architect, but not mentioned in the above, are the keeping up to date of all buildings numbers and building card file, work as Chairman of the Sign Committee in the Park, to be responsible for the FCP's, to write and compile such reports as this.



MASTER PLAN HANDBOOK

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Page 1

MASTER PLAN  
FOR THE PRESERVATION AND USE  
OF  
SHENANDOAH NATIONAL PARK

\*\*\*\*\*

Chapter 4. - Park Operations Outlines  
Section I. Other Activities Operations

\*\*\*\*\*

Prepared by:

Joe H. Beer

Joe H. Beer, Park Landscape Architect

Date 5-23-62

\*\*\*\*\*

Approved:

R. Taylor Hoskins

R. Taylor Hoskins, Superintendent

Date 5-23-62

VOLUME I

Chapter 4. Park Operations Outlines

I. Other Activities Operations

General Statement. The existence of these committees and organizations are multi-purpose. A great many of the members and chairmen are selected by the Park Superintendent for making decisions, which may be minor in nature, and recommendations to the Superintendent and staff, which in the long run should help in making the right decision for the Park.

The following is a list of committees and groups in the Park and their membership. These committee memberships rotate but are generally in the division specified and most concerned.

Management Improvement Committee - Park Engineer, Chairman; Maintenance man and Park Ranger

Safety and Health - Supply Assistant, Chairman; Assistant Park Engineer, Maintenance man, District Ranger, Personnel Assistant

Board of Survey - Administrative Officer, Chairman; Maintenance man, Personnel Assistant, Supervisory Park Naturalist

Sign Committee - Park Landscape Architect, Chairman; Chief Ranger, Assistant Park Naturalist, Sign Maker

Campground Committee - Assistant Superintendent, Chairman; Chief Ranger, Park Engineer, District Ranger

Selection Committee for Promotions - Assistant Superintendent, Chairman; Personnel Assistant, Ad Hoc Member

Training Advisory Committee - Administrative Officer, Chairman; Chief Ranger, Assistant Park Engineer, Park Landscape Architect, Supervisory Park Naturalist



Quarters Evaluation Board - Administrative Officer, Chairman; Park Landscape Architect, Assistant Superintendent, Assistant Park Engineer

Wage Board Committee - Assistant Personnel Officer, Chairman; Assistant Superintendent, Park Engineer, Sign Maker

Authorized Certifying Officers - Assistant Superintendent, Accounting Officer, Administrative Officer

Imprest Fund Cashiers - Supply Assistant, Property and Procurement Agent

Training Officer - Assistant Chief Ranger

Cashier for Change-Making Purposes - Accounts Maintenance Clerk

Tort Claims Officer - Chief Ranger

Civil Defense Coordinator - Chief Ranger

Examiner for Motor Vehicle Driver's Tests - District Ranger

Correspondent of National Park Courier - District Ranger

Editor of Shenandoah Vista - District Ranger

Steward of the Best Locks and Keys - Assistant Chief Ranger

Surveys

Boundary	Engineers
Water Resources	Engineers
Lands	Rangers

Management Improvement

Management improvement is one of the major duties of all supervisory personnel in the Park. In an effort to improve the over-all management of the Park, the Superintendent has designated a Management Improvement Committee to formulate and suggest improvements to the supervisory personnel. This Committee consists of a chairman and two members, who are constantly searching for means of improving Park management. They have also endeavored to carry out all recommendations made by the most recent Area Management Survey Team. The Committee cooperates with all other standing Park committees.

Safety and Health

The personnel of Shenandoah National Park have recognized for some time the need for an active Safety Committee and have developed a program outlined as follows:

Active Committees

1. Park Safety & Health Committee
2. District Committees (3)
3. Headquarters Area Committee

Duties of District Committees

1. Meet once a month and submit to the Park Safety Committee matters of Safety for their consideration.
2. Conduct Safety Meetings within their Districts. Assist in training sessions and safety inspections.
3. Investigate and review district accidents.

Duties of Park Safety & Health Committee

1. Review and recommend appropriate actions on all safety matters reported by the several safety committees to the Superintendent and staff.
2. Review all accident reports of employees, visitors, contractors, and concession employees for analyses and post corrective action.
3. Assist in programming safety training schools.
4. Provide visual aids monthly in the form of movies, pamphlets, posters, and special bulletins.
5. Sponsor safety contests and drives throughout the Park.
6. Conduct special investigations and reports for the Superintendent.
7. Use specialists and implementation provided by other cooperating agencies.
8. See that proper safety equipment is provided and employed.

The Park Safety Committee realizes that in order to have a more effective program, it must be more fully developed and inclusive. In addition to designated staff responsibilities and assignments covering certain Safety and Health reports and activities, and to assist in analyses and post corrective measures, the Park Committee will, in so far as their regular duties permit, make periodic checks on such matters as follows:

1. Building Inspection Reports.
2. Water, Sewer, and Sanitation Reports and Activities.
3. Concession Activities on Safety Records or Reports.
4. Distribute monthly, through the Park News, a bulletin on Safety matters and initiate or assist with special bulletins and implementation.
5. Recommend that Staff officials and supervisory personnel discuss, at least once weekly, with their assignees, a topic on Safety relative to their particular duties and assignments.
6. Initiate frequent inspections of First Aid equipment and facilities.
7. Set up an emergency first aid station for immediate use on large fires or other emergencies.
8. Set up an automotive accident frequency occurrence map showing location of each accident.
9. Encourage District Safety Committees and others to report "On the Spot" safety measures taken that are not reported elsewhere.
10. Encourage the reporting of near accidents and probable causes for review and analysis.
11. Encourage Staff officials to become better acquainted with their role in the promotion of the safety program.
12. To participate in training sessions, seminars, and to take specialized training courses.
13. At least annually to conduct a general safety meeting for all employees within the area.

14. Once a year, through accident fire and accident hazard inspection, more as an adjunct or addition to the regular inspections, as suggested on Page 7, Chapter 4, Part 5, Volume I, of the Administrative Manual. The report of these inspections should be completed by July 15, in triplicate, one for the Park and two for the Regional Office. The report should indicate the corrective actions taken, or to be taken.

Enforcement

Flagrant or continuous violations of safety precautions and procedures are to be called to the attention of the Superintendent for whatever action he deems necessary.

Other

Regular functional duties of safety committee members are not specifically documented herein.

Each District or Area committee is composed of three members. The outlying district committees include one member from the protection force acting as chairman and two members from the maintenance crew. The Headquarters committee is composed of three members, one from the fiscal division acting as chairman and two members from the maintenance force including an electrician and a mechanic.

The Park Committee consists of eight members with representation from the following branches of our agency and cooperating agencies serving within the area:

Administrative - Fiscal  
Bureau of Public Roads  
Concessioner  
Engineering  
Personnel  
Protection

The Assistant Superintendent sits in on all Park Safety Committee meetings in an advisory capacity. At least one member of the district committees is invited to attend the regular monthly meeting of the Park committee. Any other park personnel or cooperating agency personnel may attend regular meetings as they desire.

Special meetings of the Park Committee or the several district committees may be called at any time to deal with outstanding cases or conditions.



It is anticipated that in the near future, a full time or at least a part time Safety Officer will be available for Park use.

**SAFETY COMMITTEE**

**CHAIRMAN**

Duties

ARRANGE FOR MEETING PLACE

NOTIFY MEMBERS OF MEETING

ARRANGE PROGRAM

MAKE TIME SCHEDULE FOR MEETING

ARRANGE FOR SEATING ALL MEMBERS

REVIEW PREVIOUS MINUTES &  
MATERIALS FOR MEETING

**SECRETARY**

Duties

PREPARE MINUTES FOR MEETING

DISTRIBUTE MINUTES

REPORT STATUS OF RECOMMENDATIONS

SECRETARY MAY ASSUME CHAIRMAN'S DUTIES

**MEMBERS**

Duties

REPORT UNSAFE CONDITIONS

ATTEND ALL SAFETY MEETINGS

REPORT ALL ACCIDENTS OR NEAR  
ACCIDENTS

INVESTIGATE ALL SERIOUS ACCIDENTS

Duties

CONTRIBUTE IDEAS & SUGGESTIONS  
FOR IMPROVEMENT OF SAFETY

WORK SAFELY

INFLUENCE OTHERS TO WORK SAFELY

MAKE INSPECTIONS

SPONSOR CONTESTS, SAFETY DRIVES, ETC.

Board of Survey

To determine that property is surplus or not serviceable, the Superintendent convenes a Board of Survey to examine the property and report its findings. The Board consists of three employees who are not responsible or accountable for the property to be surveyed. It is the Board's duty to examine broken, worn out, or otherwise unusable or unsafe property and make recommendations as to its disposition. When property has been lost or stolen, the Board considers all the pertinent circumstances and may require affidavits in certain instances.

In relieving employees of responsibility for items which have been lost or stolen, the Board considers whether the employees exercised due diligence in caring for the property. If the Board determines that negligence was responsible for, or contributed to, the loss or theft, it may recommend that payroll deduction in the amount of the book value of the property be made from the employee's salary.

In cases of major thefts, the Board recommends an immediate report to local law enforcing authorities and, if the case warrants, submission to the Division of Investigation through the Washington Office.

Property may be recommended by the Board to be destroyed, abandoned, or donated to public bodies only if (1) the property has no commercial value, or (2) the estimated cost of its continued care and handling would exceed the estimated proceeds from the sale, or (3) immediate destruction is desirable in the best public consideration for health, safety, or security.

The Park's policy concerning disposal of property is that further utilization within the Government by transfer to another Federal agency as excess is to be preferred to its disposal as surplus. Civil Defense and HEW needs have priority over sale to the general public.

Sign Committee

The Sign Committee, which was designated by the Park Superintendent, consists of the Park Landscape Architect, who is the Chairman of the Committee, the Chief Ranger, the Park Naturalist, and the Sign Maker.

The Committee's prime responsibilities are:

1. The review and approval of the location and text of all new signs to be installed throughout the Park. To accomplish this task the following criteria are generally what the members of the Committee consider in reviewing the signs: Adequacy, text, design, damage, visibility, and legibility.

2. Another function of the committee is an annual inspection and review of all Park signs and wayside exhibits to keep them alive and up-to-date.

3. Included within the realm of responsibility of the committee is the design by the Park Landscape Architect and recommendation by the Sign Committee to the Superintendent of all developed area sign system plans.

Those signs which are most frequently reviewed by the Sign Committee are: Traffic control signs, standard signs, and routed wooden signs.

The new Signs and Wayside Exhibit Handbook, and the Uniform Traffic Control Devices Manual are used as a guide for carrying out the committee's functions and substantiating its decisions.

#### Campground Committee

The Campground Committee is composed of a ranger, an operation and maintenance engineer, administrative and other personnel concerned. This committee is charged with making a study - and to make recommendations to the Superintendent - on all phases of the camping problem.

#### Selection Committee for Promotions

This committee, appointed by the Superintendent, consists of a Chairman (who is the Assistant Superintendent); and two members, the Personnel Assistant and an Ad Hoc Member; who will be the assistant chief of the division having the vacancy. This committee functions when there are more than five candidates on the promotion list for a vacancy to be filled under local consideration of the Service-wide Merit Promotion Plan. Its purpose is to screen the candidates and refer only the best qualified five to the head of the division having the vacancy.

#### Training Advisory Committee

The Training Advisory Committee must bear in mind the responsibilities of line officials to perform certain personnel functions that are inherent duties of supervisors. Among these are - Preparing accurate descriptions of employees' duties; seeing that each employee knows the contents of such description and how to perform his job; preparing performance standards; training for current and future work; orienting and checking progress of the employees'

development; promoting good safety practices; securing proper utilization of employees' skills; and seeing that employees are not kept unnecessarily in dead-end jobs if they show capabilities for assignment changes.

The Training Advisory Committee is to advise the Superintendent on training policies, needs, plans, priorities and progress. The committee recommends the nomination or appointment of individuals for special training which is conducted away from the Park or office.

The committee also recommends and helps develop training programs. It reviews planned training programs as to adequacy for the calendar year, to be sure, for example, that a fire training school, the annual three-day orientation session, and a definite plan of instruction is formulated for student trainees, along with specialized training both at area and outside meetings. It reminds Division Heads of the new handbooks as issued and endeavors to "spot-light" new situations and new needs as they arise.

#### Quarters Evaluation Board

The Quarters Evaluation Board, of three members and a chairman, is appointed by the Superintendent to recommend rental rates and service charges to be made against employees for services provided by the Government.

The board must review the Handbook of Regulations for Quarters, Sub-sistence, and Services as issued by the National Park Service, the Manual of Allowances issued by the Secretary's Office, and the basic rent principles and policies set forth in Bureau of the Budget Circular No. A-45, and carry out its functions accordingly, properly documenting and substantiating its final determinations.

#### Wage Board Committee

It is the policy of the Department of the Interior to compensate all employees occupying positions in recognized trades, crafts and manual labor occupations in accordance with current, local prevailing rates. The Wage Board Committee makes annual and special surveys in compliance with "orders" issued by the Regional Office. The Committee recommends special surveys, determines the employers to be surveyed; gathers, tabulates, and evaluates data; and suggests rates to be submitted to the Regional Wage Committee for further study.

Committee is appointed by the Park Superintendent and consists of a Chairman, who is the Personnel Assistant, and three members - the Assistant Superintendent, the Supervisory Park Engineer, and a wage board employee.



Authorized Certifying Officer

This officer's duties were officially approved on an Amendment 31 USC 8, dated December 29, 1941. He is to be held responsible for the existence and correctness of the facts recited in the certificate or otherwise stated on the voucher or its supporting papers; for the legality of the proposed payment under the appropriation or fund involved; and for the correctness of the computations therein. He is also required to be bonded to the United States, with good and sufficient surety approved by the Secretary of the Treasury, in such amount as may be determined by the head of the department, agency, or establishment concerned, pursuant to standards prescribed by the Secretary of the Treasury, and under such conditions as may be prescribed by the Secretary of the Treasury. Furthermore, he is held accountable for and required to make good to the United States, the amount of any illegal, improper, or incorrect payment resulting from any false, inaccurate, or misleading certificate made by him, as well as for any payment prohibited by law or which did not represent a legal obligation under the appropriation or fund involved.

Imprest Fund Cashier

This officer is responsible for imprest funds for use in cash purchases of \$50.00 or less. He is the custodian of the fund and personally responsible to the Treasury and is bonded.

Cashier for Change-Making Purposes

When the Park Entrance Stations are opened, this officer distributes \$25.00 to each entrance station for change-making purposes, and the money is returned at the end of each season. He is also bonded and accountable to the Treasury.

Training Officer

The training of employees in Shenandoah National Park is the responsibility of all those in supervisory positions. A Training Officer has been designated by the Superintendent to assist the supervisors with training plans and programs. He also coordinates training activities between the divisions. The functions of the Training Officer are performed on a collateral duty basis by the Assistant Chief Park Ranger.

In the fall, the Training Officer meets with the Advisory Training Committee to determine employee training needs and to make plans for the Park-wide In-Service Training Program held in January or February of the coming year. He meets with the committee again in the spring to prepare an agenda for the Seasonal Ranger and Naturalist Conference. It is his responsibility to make all arrangements, including the requesting of guest instructors and obtaining suitable visual aids for these formal training programs.

The Training Officer also works with the Park Concessioner in formulating a training program for their employees. He prepares subject material for this purpose and provides instructors to the extent requested by the concessioner.

Other functions performed by the Training Officer, include evaluation of training given, preparation of training reports and keeping supervisors informed of the most effective and up-to-date training methods.

#### Tort Claims Officer

The Tort Claims Officer is appointed by the Superintendent and there are no members serving. He is responsible for seeing that appropriate information and evidence are collected to protect the Government's interest, and for conducting such further investigation as may be required for this purpose. This also applies whenever there is any doubt whether an accident may result in a tort or some other type of claim.

#### Civil Defense Coordinator

The Civil Defense Coordinator is also appointed by the Superintendent and there are no members serving. He is responsible to the Superintendent for the supervision, planning, training, and direction of the Park Civil Defense Organization.

#### Examiner for Motor Vehicle Driver's Tests

Authorization: Public Law 765.83 Congress, Section J, directed the Civil Service Commission to issue regulations to given executive agencies in authorizing civilian personnel to operate Government-owned motor vehicles for official purposes. The Commission initiated the program by establishing a new Section, Part 36 - Motor Vehicles Operator Regulations, Title 5, Administrative Personnel Regulations. The program was instituted by all departments, establishments and units of the Executive Branch of the Federal Government by March 15, 1963.

**Purpose:** The purpose of the regulation is to govern executive agencies in authorizing civilian personnel to operate Government-owned motor vehicles for official purposes.

**Responsibility:** The Chief Clerk and heads of bureaus are responsible for installing and administering the program, for issuing instruction, for keeping records, and for reporting on the status of program progress. The functions of the Civil Service Examiner is to observe, rate and report on the candidate's driving performance.

**Test Coverage:** The road test provides a systematic method of observing and measuring the candidate's proficiency in operating a motor vehicle properly and safely under usual conditions of traffic and terrain. It is to be used specifically in connection with examining for appointment to civil service positions requiring operation of motor vehicles, and is a practical test to determine whether eligibles certified on the basis of past records are sufficiently safe and skillful drivers to be appointed. Identification cards (SF-46) may be renewed or reissued only after it has been determined that the employee continues to demonstrate competence in driving the motor vehicle or vehicles to which he is assigned.

#### The National Park Courier

The inception of National Park Courier occurred at the Superintendents' Conference held at Great Smokey Mountain National Park in 1935. The theme of this conference was Public Service.

The Director suggested the desire and need for a news media to serve National Park Service alumni and other long time friends of the Service - some of which presently serve in influential places and positions.

The paper is served by a Board of Directors of the Employees and Alumni Association of the National Park Service.

Superintendent Earl Semingsen of Wind Cave National Park, was the paper's first editor. At that time, it was edited under title of "Steve Mather's Family Newspaper."

In 1959, Mr. Herb Evison, Chief of Information (Retired), became editor and at the same time the name of the paper was changed to its present title - "The National Park Courier," retaining Steve Mather's Family Newspaper as a subtitle.

News correspondents of the Courier are appointed by the Park Superintendent.

Editor - Shenandoah Vista

Shenandoah Vista is the method or bulletin used to informally communicate with Park employees. Many of the larger organizations, both private and Governmental, use some similar device to provide a positive documentation of matters that should be brought to the attention of all employees.

Through the media of Shenandoah Vista, Shenandoah National Park strives to periodically deal with such matters as performance evaluation, promotion policy, employee legislation, etc. Keeping employees alert to and abreast of the safety program and incentive awards program are other functions. It also serves as a news sheet and covers personal activities of employees.

Steward of the Best Locks and Keys

The Best locks and keys, now in use, are part of a long range program to provide for the master keying of all locked facilities. At the present, the system is made up of seven padlock series. All of these locks can be opened with a Grand Master Key and each lock can receive an interchangeable core. A Master Key opens four padlocks and will open two additional locks in the expanded system. These six locks are divided in half for the purpose of opening by two sub-master keys. The remaining three locks in the system are individually keyed.

The Steward of the Best Locks and Keys issues all new keys and arranges for the annual renewal of Park Gate Key Permits. He is responsible for the reserve key supply and all records pertaining to the Best Locks and Keys. He also represents the Superintendent in any contacts with the Best Lock Company.

Boundary Survey

The process of surveying boundaries in this Park has been slow. The actual survey of the complete Park has not been completed. Many of the existing markings on Park Boundary have been lost or removed due to the method used in the surveys. At present, no surveys of boundary are taking place. In the future, concrete markers will be used. No PCP has been set up for this purpose. The completed survey of the Park Boundary will be conducted by a Civil Engineer and will encompass approximately 466 miles at a cost of approximately \$133,000. A study is now in progress to shorten the Park Boundary, as much as possible.



Water Resources Study

This work has generally fallen under the jurisdiction of the Park Engineer where most of the work is involved. Arrangements have been made through the State of Virginia for studying the entire Park for water sources at present locations and at future developments.

Sixteen areas have been designated for study with four of these having been completed through one-half of Fiscal Year 1962.

These areas include:

- |                                  |                                   |
|----------------------------------|-----------------------------------|
| 1. Skyland                       | 9. Lewis Mountain (Concession)    |
| 2. Corners Deadening             | 10. Headquarters                  |
| 3. Pinnacles                     | 11. Dickey Ridge                  |
| 4. Loft Mountain                 | 12. Mt. Marshall                  |
| 5. Moormans River                | 13. Water Fountains (Park-wide)   |
| 6. Matthews Arm                  | 14. Shelters (Park-wide)          |
| 7. Swift Run Submaintenance Area |                                   |
| 8. Dundo                         | 15. Rockfish Gap Entrance Station |
|                                  | 16. Princeton Cottage Area        |

When these water rights surveys are completed, it is the intent that all areas involved will be self-supporting and shall have, if needed, an extra source of water from which to draw.

It is noted that with each of these investigations, an equal amount of reports are prepared for approval.

Lands Survey

The process of exchanging, acquiring and purchasing lands through legislation for the Park's benefit is now underway in Shenandoah National Park. As defined in the Handbook, Section 1, Chapter 2, Pages 1 - 7 of Land Programs.

The exchange and purchase of Park lands for protection and physical reasons is quite necessary in this Park.

In achieving this goal, it has been anticipated that no less than 7274.8 acres of land are needed for exchange with individual owners, 19,061.5 acres will require purchase and 93.15 acres may be donated.

It is hoped that these land exchanges may be in progress by FY 1963.

United States  
Attorney General  
Washington, D.C.

Case 100-10000  
Page 1

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Volume III, General Park Information  
Section 1, Park Origin

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### Park Origin and Land Status

Brief Description of the Area: The Shenandoah National Park lies along the crest of the Blue Ridge Mountains in Northern Virginia, extending from Front Royal to Waynesboro, a distance of approximately 90 miles. In brief, the mountain region consists of a main longitudinal ridge which rises abruptly from the Valley floor to a height of 2,400 to 3,500 feet above sea level, and extends approximately north and south. From the main slope, lateral ridges, separated by stream hollows, branch off to the Piedmont Region on the east and to the Shenandoah Valley on the west. Prior to the construction of the Skyline Drive the area was largely inaccessible except by occasional steep, narrow, dirt roads which, in many cases, were no more than wheel tracks. These roads gave access to the small, crude mountain cabins whose inhabitants led an isolated existence, farming, hunting, and trapping.

Origin of the Shenandoah National Park Movement: The first official mention of a possible national park within the Appalachian Mountains is included in the Annual Report of the National Park Service of 1923. Director Mather wrote as follows: "There should be a typical section of the Appalachian Range established as a national park with its native flora and fauna conserved and made accessible for public use, and its development undertaken with Federal funds."

In 1924, a commission was appointed by the Secretary of the Interior to investigate the possible existence of an area in the Southern Appalachian suitable for the establishment of such a park. During the fall and winter of 1924, the commission examined that portion of the Blue Ridge Mountains which the Shenandoah National Park now embraces, and decided unanimously that this area was ideal in every way for such a purpose; that it possessed all the requirements--excellent scenery, mountain peaks, good vegetation, wildness, and that it could be reached within a day's automobile drive by 40,000,000 persons.

In February 1925, an act was passed by Congress authorizing the establishment of a national park in the Blue Ridge Mountains of Northern Virginia. In May 1926, a supplementary act was passed, providing:

1. That the lands should be secured by the United States only by public or private donation;
2. That the tract should include approximately 521,000 acres;
3. That no general development of the park should be undertaken until at least 386,000 acres had been acquired.

Because of the excessive cost of some of the land, the required minimum area for development was reduced by Congress, first to 327,000 acres, and finally in 1932 to 100,000 acres.



Acquisition of the Land: In 1926, the General Assembly of Virginia enacted a law creating a State Commission on Conservation and Development, and authorized the Commission, among other duties, to examine and acquire land in the Blue Ridge Mountains for the establishment of a national park. In 1928, this act was supplemented by an appropriation of \$1,000,000 to be used by the Commission in purchasing land where it could not be obtained through private donation. Subsequently the Legislature enacted a law providing for condemnation of land for the public park purposes.

In 1928, Mr. Cammerer, Associate Director of National Parks, accompanied by engineers representing the State, made a trip around the proposed boundary of the park. In the course of this reconnaissance, Mr. Cammerer designated on a topographic map of the area the approximate line which the boundary should follow. This line, enclosing about 327,000 acres, and including valuable land in the coves and hollows at the foot of the ridge, was surveyed and marked in 1929. It was designated as the "Cammerer Line".

When Congress, in 1932, approved the bill reducing the park area to 160,000 acres, a second boundary line, inside the Cammerer Line, was projected on a tract map and named the "Kelsey Line". These two boundary lines are also known as the maximum and minimum lines.

During this period the process of acquisition was going on. It necessitated the location and mapping of nearly 4,000 separate tracts of land, examination of hundreds of county land records, instrument surveys along important roads, compass and tape surveys of property lines, appraisals of land values-- all by a group of special investigators and trained technicians whose work extended into 1932.

In order to acquire desirable tracts of land, it was necessary, in some cases for the State of Virginia to resort to condemnation proceedings. Court litigation arose over the right of the State to condemn private property for donation to the Federal Government. A test case was brought before the United States Supreme Court in November, 1935, and a decision was rendered in favor of the State.

On December 26, 1935, Secretary of the Interior Harold L. Ickes accepted deeds from the State of Virginia, conveying 176,429.60 acres of land for the establishment of the Shenandoah National Park.

On July 3, 1936 President Franklin D. Roosevelt, Secretary of Interior Ickes and Governor Perry of Virginia dedicated the park at Big Meadows.



The Shenandoah region (Shenandoah being an Indian name which is reputed to mean "Daughter of the Stars") is rich in history, some of which pre-dates the founding of the United States.

The first record of explorations tells of the westward journey of John Lederer in 1669. In 1716, Governor Spotswood and his Knights of the Golden Horseshoe, seeking an answer to the mystery of the great western lands, penetrated the Blue Ridge and crossed through the Park, probably at Swift Run Gap.

Park visitors interested in earth history may find much to command their attention. One accepted theory is that the crest of the Blue Ridge Mountains is a remnant of a once vast plain which extended from the mountain ridges toward the shoreline of the sea. Carving of mountains out of this plain is one of the later chapters of earth history of the area.

Ninety-five percent of the Park supports a forest cover which is predominantly oak. In addition, there are hickories, black locust, black gum, American chestnut, maples, American basswood and walnuts. Along streams may be found birches, yellow-poplar, American sycamore and elms. There are also a number of evergreens. The deciduous trees provide spectacular autumn color which, coupled with spring flowering of the red-bud, dog-wood, azalea, sweet crabapple, and hawthorn, later followed by the mountain-laurel, attract many visitors.

About 40 different kinds of mammals are known to inhabit Shenandoah National Park. Frequently seen are gray squirrels, chipmunks, groundhogs, cottontail rabbits, woodchucks and skunks. White tail deer are increasing and often seen, and signs of black bear are in evidence.

About 200 kinds of birds have been observed and one is certain to see ravens, crows, vultures and hawks.

Here lies the nation's first western frontier. The Blue Ridge was a barrier across the path of westward migration while the Great Valley was a boulevard along which passed the parade of Americans that included John Sevier, Davy Crockett (active further south in valley), and Daniel Boone. The Blue Ridge grandstand overlooks the lands that were home to Presidents Thomas Jefferson, James Madison and Woodrow Wilson. Below is the arena where Stonewall Jackson conducted his Valley Campaign.

Here dwelled for over twenty generations a population that was left stranded in the hollows by swift economic and social changes, while depletion of natural resources lowered their standards.

The significance of the Blue Ridge is ecological and the far reaching geographical influences on the American people tell one side of the story. Open meadows, brushy fields, pine stands and second growth oak forests are evidence of the ravage of vegetative cover and extirpation of wildlife by fire, logging, grazing and hunting. The return of native plants and animals is another dramatic and inspiring chapter of the Shenandoah story.

Mountain scenery, varied and enhanced by seasonal climaxes of flowering and autumn color will continue to draw increasing numbers of visitors to the Blue Ridge. The inspirational quality of their experiences may be increased through interpretation of the influences of the mountains on the course of history and the changes man inflicted upon the mountains.

How The Park Was Established: After the acceptance by the Secretary of the Interior of the deeded lands from the State of Virginia, Shenandoah National Park was established in accordance with the Act of May 22, 1926. Subsequent acquisitions increased the Park area to its present 193,846.16 acres.

The Southern Appalachian National Park Committee was appointed by Secretary of the Interior Hubert Work to investigate the Southern Appalachian Mountain region with a view to determining whether it included areas suitable for national parks.

The members of this committee were Hon. Henry W. Temple, Col. Glenn C. Smith, Major W. A. Welch, Marlan P. Kelsey and William C. Gregg. They met for the first time on March 26, 1924.

The Committee spent eight months investigating proposed sites in Georgia, North Carolina, Tennessee, West Virginia, Alabama, Kentucky and Virginia. Since the Park "should be of sufficient size to meet the needs of a recreational ground for the people not only of today but of coming generations," the Committee decided that no site covering less than 500 square miles would be considered. The requirements which the Committee laid down for its guidance in seeking a suitable area were as follows:

1. Mountain scenery with inspiring perspectives and delightful details.
2. Areas sufficiently extensive and adaptable so that annually millions of visitors might enjoy the benefits of outdoor life and communion with nature without the confusion of overcrowding.
3. A substantial part to contain forests, shrubs, and flowers, and mountain streams with picturesque cascades and waterfalls overhung with foliage, all untouched by the hand of man.
4. Abundant springs and streams available for camps and fishing.
5. Opportunities for protecting and developing the wild life of the area, and the whole to be a natural museum, preserving outstanding features of the southern Appalachians as they appeared in the early pioneer days.
6. Accessibility by rail and road.

Following a meeting on December 12, 1924, the Committee submitted a report to the Secretary of the Interior, which contained the following recommendation:

"The Blue Ridge of Virginia, one of the sections which had your Committee's careful study, while secondary to the Great Smokies in altitude and some other features, constitutes in our judgment the outstanding and logical place for the creation of the first national park in the southern Appalachians. We hope it will be made into a national park and that its success will encourage the Congress to create a second park in the Great Smoky Mountains, which lie some 300 miles distant southwest."

Surveying and land acquisition were carried out by the Virginia Conservation and Development Commission.

Development of the Park was begun in 1931 when on July 18 the first shovel-ful of dirt was turned at Skyland to inaugurate construction of the Skyline Drive. The section of Drive between Thornton Gap and Swift Run Gap was opened to the public in September 1934.







Vicinity Data: The following tabulation lists the Park areas in this vicinity.

<u>Name</u>	<u>Type</u>	<u>Distance</u> <u>Joins</u>
Blue Ridge Parkway	Scenic Drive	
Manassas National Battlefield Park	Battlefield	65 miles
Appomattox Court House National Historical Monument	Monument	145 miles
Fredericksburg & Spotsylvania County Battlefields Memorial National Military Park and Fredericksburg National Cemetery	Military & cemetery	67 miles
Colonial National Historical Park	Historic site	180 miles
George Washington Birthplace National Monument	Washington's Birthplace	105 miles
Petersburg National Military Park	Military	151 miles
Poplar Grove National Cemetery	Cemetery	151 miles
Richmond National Battlefield Park	Battlefield	125 miles
National Capital Parks	Capital City	85 miles

Accessibility: The Norfolk and Western Railroad parallels the Park on the west valley, passing through Front Royal, Luray, Stanley, Elkton, Grottoes and Waynesboro. Transportation from these points into the Park is by bus and taxi. No passenger service is available at this time on the N & W RR.

Main highways that serve the Park are U. S. Highways 340, 211, 33 and 250, providing direct entrances into the Park. The Park is easily accessible by car via these principal entrances. The city of Washington is only 85 miles distant, Richmond about 125 miles and the Park is only one day's drive of approximately 60 million people.

The Virginia Trailways has a contract for daily bus service from Washington through the Park via the Skyline Drive from June 1 to October 31. Taxi service is available from all the adjacent local towns to points within the Park. Major airlines are no closer than 85 miles, Washington, D. C.

Climatic Condition: The precipitation and temperature ten-year averages (1952 - 1961) at Big Meadows Station are as follows:

	<u>Max.</u>	<u>Min.</u>	<u>Mean</u>	<u>Snow</u>	<u>Rain</u>
Jan.	38.6°	17.5°	28.0°	8.6"	5.0"
Feb.	40.1	22.3	31.2	10.6	5.5
Mar.	43.1	25.4	34.3	12.5	4.17
Apr.	52.0	38.6	48.7	3.0	4.91
May	55.7	46.2	56.2		4.81
June	72.3	54.0	63.1		3.9
July	76.7	57.6	67.2		3.83
Aug.	74.5	56.7	65.7		7.11
Sept.	69.0	51.5	60.3		4.92
Oct.	58.9	40.9	49.9		5.55
Nov.	48.1	31.1	39.7	2.7	3.08
Dec.	39.1	21.4	30.3	6.1	5.11

The average precipitation and temperatures for the ten year period (1952-1961) at Headquarters Station are as follows:

	Max.	Min.	Mean	Snow	Rain
Jan.	46.4°	22.8°	34.5°	8.9"	2.53"
Feb.	51.2	26.4	38.3	9.0	3.73
Mar.	56.4	29.7	43.1	6.2	3.54
Apr.	69.6	40.5	55.3	1.4	3.62
May	76.0	48.2	63.1		3.49
June	85.0	56.1	70.6		3.25
July	88.7	60.2	74.7		3.23
Aug.	87.1	59.5	73.3		5.70
Sept.	81.8	53.4	67.6		5.39
Oct.	70.6	42.5	56.5		4.00
Nov.	58.9	33.0	46.0	2.1	2.08
Dec.	48.0	21.7	36.5	3.2	2.38

Topographic Features: The Park comprises about 194,000 acres of the Blue Ridge Range from Front Royal to Waynesboro, Virginia, an airline distance of 75 miles. The Blue Ridge Mountains run generally in a northeast-southwesterly direction, rising abruptly from the Shenandoah Valley floor, forming an abrupt western escarpment; the rise from the Piedmont or east side is more gradual. Major drainages are Jeremys Run, Big Run, Madison Run, and Paines Run on the west; Finsy River, Thornton River, Hughes River, Rapidan River, Conway River, South River and Moormans River on the east. The highest point on the Park is Hawksbill Mountain which is 4049 feet. The lowest point is Front Royal, which is 578 feet.

The following acreages have been added to the Park since its conception: 201.23 Snod property in 1962, North District; 37.44 acres in Page County, 1961; 160.30 acres; 101.00 acres; 81.00 acres; 90.00 acres and 23.00 acres. The following acreage was exchanged in the Park in 1961 with England; 37.61 with a loss to the Park of a total acreage of 38.63.

There are non-federal lands within Shenandoah National Park: 1. A colored county school of 1.99 acres in the North District; 2. 3.76 acres in Page County for a Souvenir Shop belonging to Lewis Atkins near Park Headquarters; 3. 18,651.60 acres in the South District which is Scenic Easement from the section of the Drive turned over from the Blue Ridge Parkway to Shenandoah National Park.

See Master Plans NP-SHE 2451 C; PWT-BR 1A 2050A; NP-SHE 2106A.

The following are acreages of the Shenandoah National Park as to the counties in which it is located:

County	Acreage
Albemarle	14,433.76
Augusta	11,430.76
Greene	14,617.00
Madison	31,645.33
Page	57,332.12
Shenandoah	31,875.65
Rockingham	57,373.02
Warren	13,311.51
Total	193,646.15

The land-use areas surrounding Shenandoah National Park generally consist of grazing, orchards, farming and summer homes. The Blue Ridge Parkway bounds the Shenandoah National Park on the South. There is very little industry and commerce adjacent to the Park.

There are a total of 3,775,682 persons within the State of Virginia that can reach Shenandoah National Park for day-use plus other large areas outside of Virginia. Those counties within Virginia which are not within day-use are Bland, Buchanan, Dickerson, Grayson, Russell, Scott, Smythe, Tazewell, Washington and Wythe. The total population of these counties is 288,318.

The day-use cities of approximately 50,000 or over are as follows:

Arlington	163,401
Baltimore	492,428
Hampton	89,258
Lynchburg	54,790
Newport News	113,662
Norfolk	304,889
Petersburg	36,750
Portsmouth	114,773
Richmond	219,958
Roanoke	97,110
Washington, D.C.	763,955



Volume 1 Chapter 5  
Design Analysis  
Moormans River Developed Area  
Shenandoah NP

*Indent 5 each para.*  
General Considerations - Moormans River Developed Area is located in the south section of Shenandoah NP approximately 14 miles north of the south entrance at Rockfish Gap. At present no visitor center or campground-picnic development exists in the south section. The nearest picnic area is South River and the closest campground the inadequate facilities at Lewis Mountain, 29 & 34 miles respectively to the north in the central section.

Topographically, the Moormans River site is well suited for this combined campground-~~in~~ picnic use and is so situated that the different uses can be effectively separated yet be close enough for easy control. It is a sufficiently extensive area, well forested with fair sized timber. There appears to be an abundant source of water and short access from the Skyline Drive.

Additionally, a site is available for the development of south section Visitor Center facility adjacent to the Skyline Drive and in close conjunction with the other use areas. This combining of facilities into an interrelated yet independent grouping will make possible easier maintenance and control. It will also effect a considerable saving in providing utilities for this one development ~~rather~~ rather than providing separate systems for three different locations.

Circulation - The entrance to the developed area will be at grade off the Skyline Drive approximately 1200 feet south of the



17453

Riprap Hollow Overlook. The access road, 7/10 mile long, will serve all three uses, terminating at the campground loop. Short spur roads <sup>Join</sup> ~~from~~ the visitor center complex and the picnic area loop ~~with~~ with the entrance road.

Both the visitor center and picnic area spurs will be two-way roads terminating in one way loops. The visitor center will have a concentrated parking situation around the interior and exterior of the loop adjacent to the building, while the picnic area will be served by dispersed small parking areas around the loop.

A one-way perimeter road with crossover loops will facilitate an unconfused traffic flow within the campground. Two two-way crossovers will permit the ~~expercx~~ camper to double back without retracing the full loop. This development is situated in close proximity to several excellent hiking and nature trails leading into the less frequented areas of the park.

Visitor Use Facilities: The south section visitor center will be located adjacent to the Skyline Drive on the Knob above the Riprap Hollow Overlook. This visitor center will be the counterpart of the one in the north section at Dickey Ridge and facilities will be similar. The primary exhibit theme here is Mountains & Man with an emphasis on ecology. Here it will serve the campers, & picnickers as well as the through travelers.

<sup>& ONE COMFORT STATION</sup>  
A picnic area with 75 sites is contemplated for initial development, however there is sufficient room for expansion should this

number prove inadequate to suit the use needs. <sup>CONSTRUCTION OF THIS PICNIC</sup> ~~One comfort station~~  
~~SITE WILL OPVATE THE NEED FOR POINT RIDGE & THIS COMPIEN~~  
~~is planned to serve the area.~~  
~~SECA HAS BEEN REMOVED SHOWN FOR OBLITERATION.~~

The ultimate proposal for camping is 200 sites and that number should be constructed initially. Loop pull-outs for house trailers will be located along the outside of the perimeter road for ease of access while interior campsites will be the spur type. The 4 comfort stations will be of standard design. It is desirable that one comfort station serve not more than 50 campsites and walking distance to there be less than 400 feet.

A concession camp store and wood storage facility is proposed within the campground area to serve the campers.

An amphitheater will be located at the campground.

Management Facilities: A combination camp tender's checking station and quarters will be built to provide maximum control over the campground.

Utilities: An adequate water supply can be obtained from the headwaters of Pond Branch and Big Branch. Because this area lies in the Charlottesville watershed, the sewage system will require a pumping station to take the waste to the west side of Skyline Drive for processing and dispersal. Power would be acquired from commercial sources to the east.

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Public Use Data  
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MASTER PLAN  
FOR PRESERVATION AND USE  
OF  
SHENANDOAH NATIONAL PARK

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Volume III, General Park Information  
Section C. Public Use Data

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Prepared by J. A. Bean Date 6-10-63  
Name

\*\*\*\*\*

ACCEPTED BY: B. Taylor Hopkins Date 6-12-63  
Superintendent

April 1963

Public Use Data: Shenandoah National Park is suffering from human erosion in its existing developed areas. The picnic and campground facilities are inadequate to accommodate the present numbers. Overuse compacts the soil to such an extent that grass will not grow. Water and sewer systems are taxed beyond their capacities; roads and parking areas are frequently filled to overflowing.

This Park has an excellent motor road (The Skyline Drive), which runs its entire length near the crest of the Blue Ridge Mountains. Trails to numerous scenic features lead away from this road to waterfalls, streams, mountains, and other points of interest. Presently a high percentage of the visitors go only where they can drive - this limits them to the Skyline Drive.

Those who know the Park feel it has much more to offer than the Drive alone, and there has resulted a policy that encourages the visitor to get off the Drive and enjoy the Park. In so doing we do not wish to take away from the unique scenic value of the Skyline Drive, but wish merely to call to the visitor's attention the fact there is more here than he may have realized in the past.

Currently "Public Contact Work" is carried on by the Park Rangers on duty at the Entrance Stations, and during periods of heavy travel they are unable to devote as much time to questions and answers as they might like. Interpretive personnel operates a Visitor Center at Dickey Ridge, located near Front Royal, and in addition conducts nature walks and talks in developed areas. In spite of these efforts to serve the visitor, it is still impossible for many who want information or assistance to locate it. The Dickey Ridge Visitor Center, which is existing for the North District, started its operation during the 1957 season. This offers some relief to the situation.

As a direct result of World War II and the Korean Conflict, manpower was taken from the parks, other funds for maintenance were cut to the bone, and facilities suffered from neglect. Signs of this are still evident today when one looks at vistas from overlooks which have grown up to such a degree it is nearly impossible to see the valley below. Stone guardwall in need of repair is in evidence. Some picnic and campsites have drinking fountains, tables, or fireplaces in need of repair or replacement. These are now being corrected as funds become available.

Maintenance for the entire Park stems from four points which are not located for maximum efficiency of operation. New equipment storage areas and maintenance assembly points are to be developed which will provide better service through the Park.



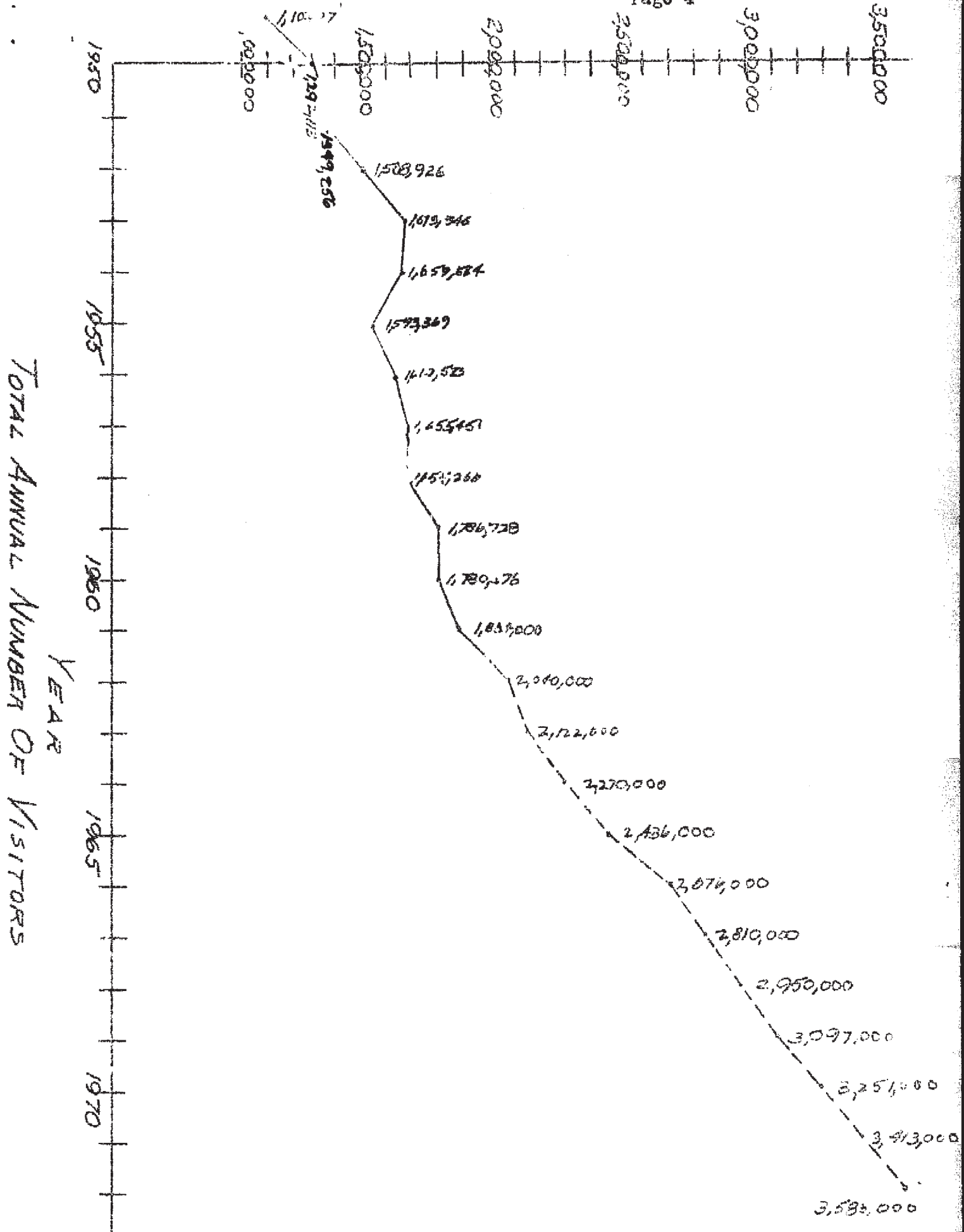
Shenandoah National Park has enjoyed a lengthening season with each succeeding year. Travel figures show an increase during the winter months, and the removal of ice and snow from the Skyline Drive is becoming an increasingly important operation. To facilitate this work, and in addition improve all maintenance throughout the Park, three new sub-maintenance areas are proposed. They will include an equipment storage area, store room, office, and compound where personnel will assemble each day for work. One each is proposed for the Piney River Development, Swift Run vicinity, and Loft Mountain. There will be an equipment storage shed located at Headquarters where personnel can assemble for work. The main maintenance area at Park Headquarters will be expanded and continue to support the smaller areas in the major maintenance operations.

As the Interpretive and Protection forces expand to meet the needs of 2,250,000 visitors expected annually by 1968, additional employee residences will be needed to house Rangers and Naturalists. Housing will also be needed to replace structures which now exist but are obsolete and inadequate for year around occupancy. Plans are to locate Ranger Residences near main Park entrances at Front Royal, Headquarters, Swift Run Gap and Rockfish. There will also be a house at each one of the above locations for permanent maintenance personnel. There will be multiple unit type housing at a number of points to care for seasonal personnel.

New parking areas and "leg stretcher" type trails will be located along the Skyline Drive as a means of expanding the interpretive operation. Many new signs to tell the "Park Story" are planned with some now under construction.

# VISITORS

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TOTAL ANNUAL NUMBER OF VISITORS

YEAR

TAB E # 1

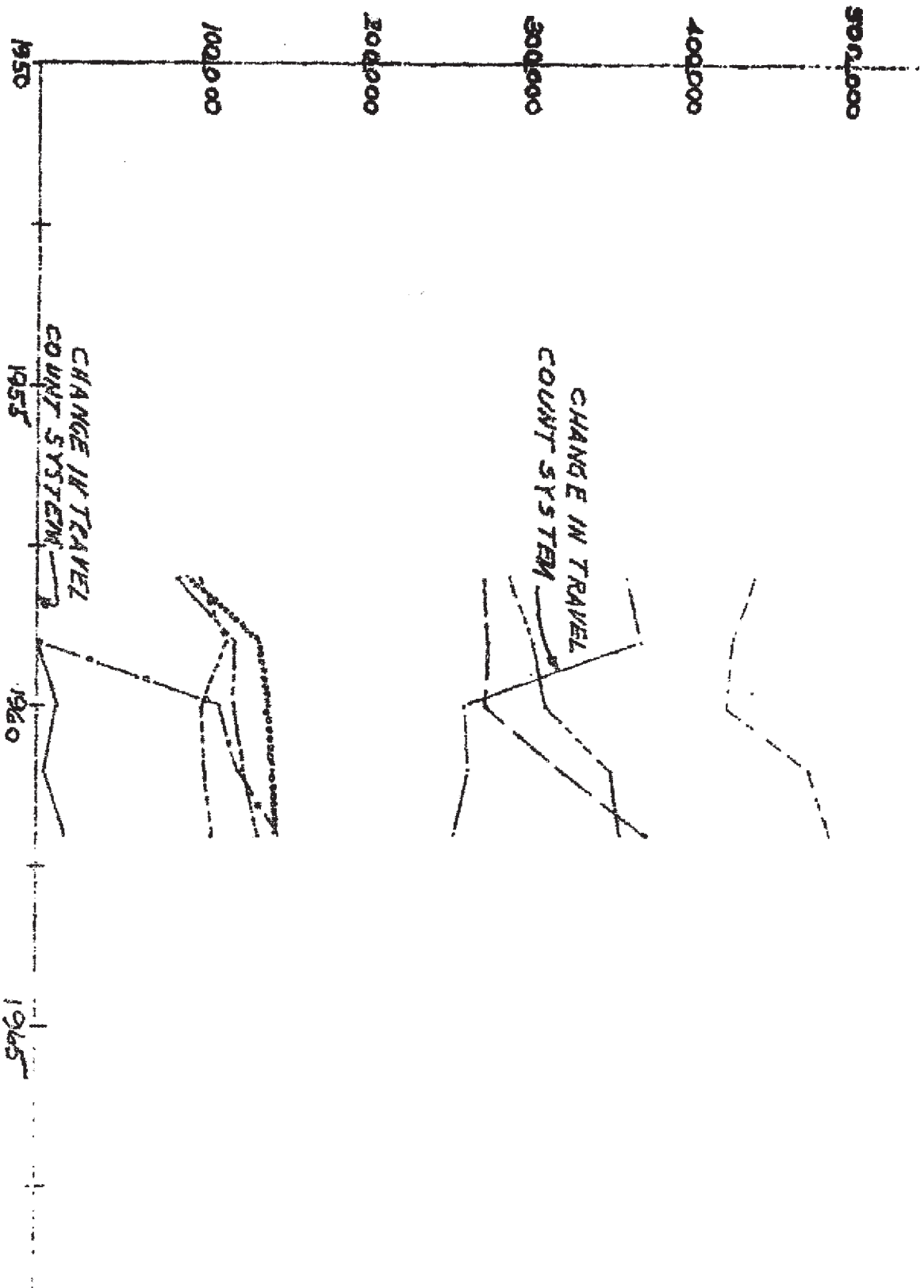


TABLE #2

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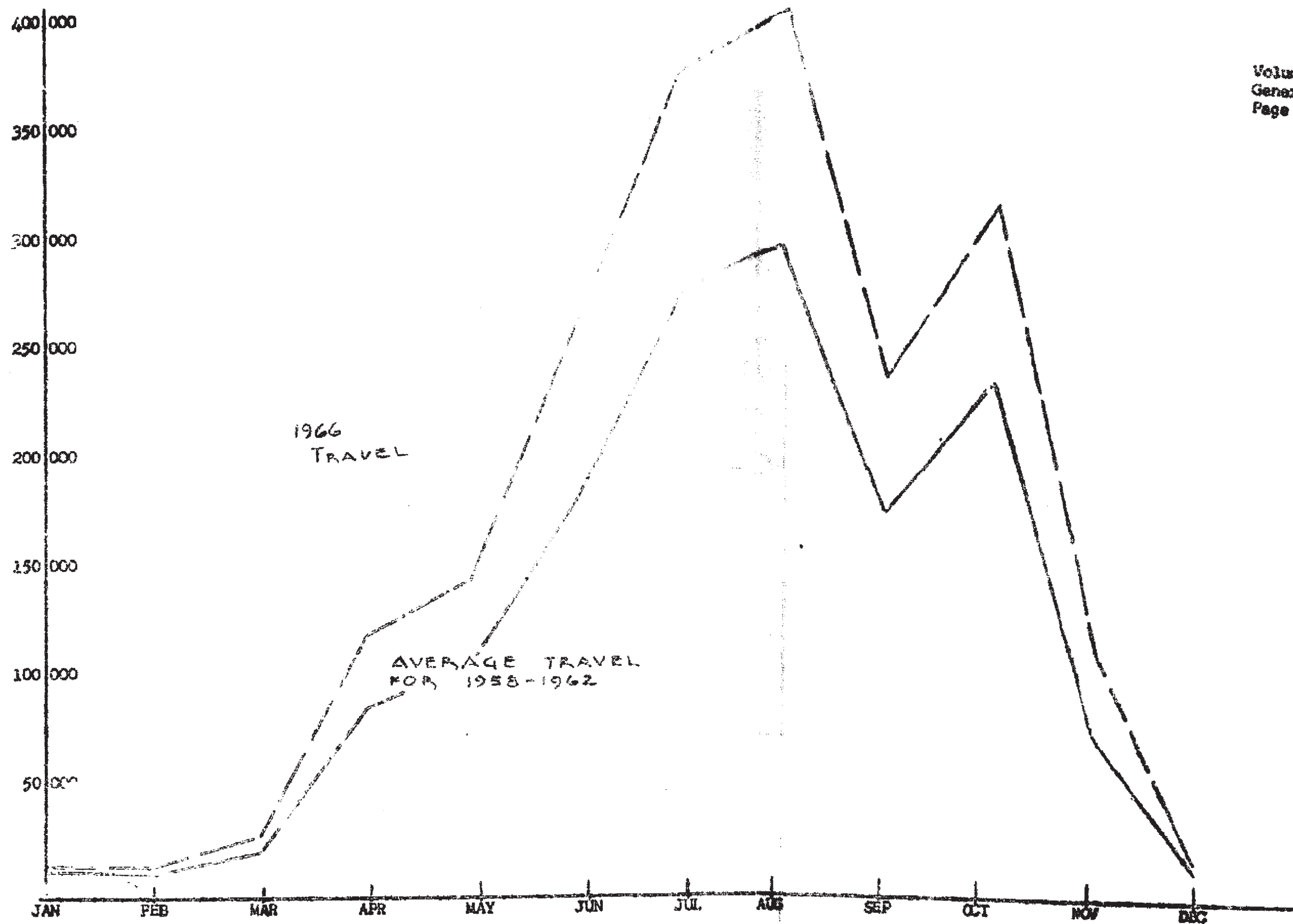
Year	Front Royal	North Panorama	Panorama Restaurant	South Panorama	North Swift Run	South Swift Run	Rockfish	Swift Run Camp	Secondary Roads	Total
1968	446768	91641	0	871634	100097	87332	292947	0	365767	1791143
1969	430696	138986	0	296621	117890	121993	307817	0	374026	1786726
1960	423337	142197	112315	284049	100614	120879	315367	10819	264576	1761143
1961	479066	146402	122308	326469	102347	126367	356681	3617	267891	1928344
1962	491699	147196	149278	378639	108277	137082	561640	14196	259832	2049438

9327796

5 year average

1,065,559

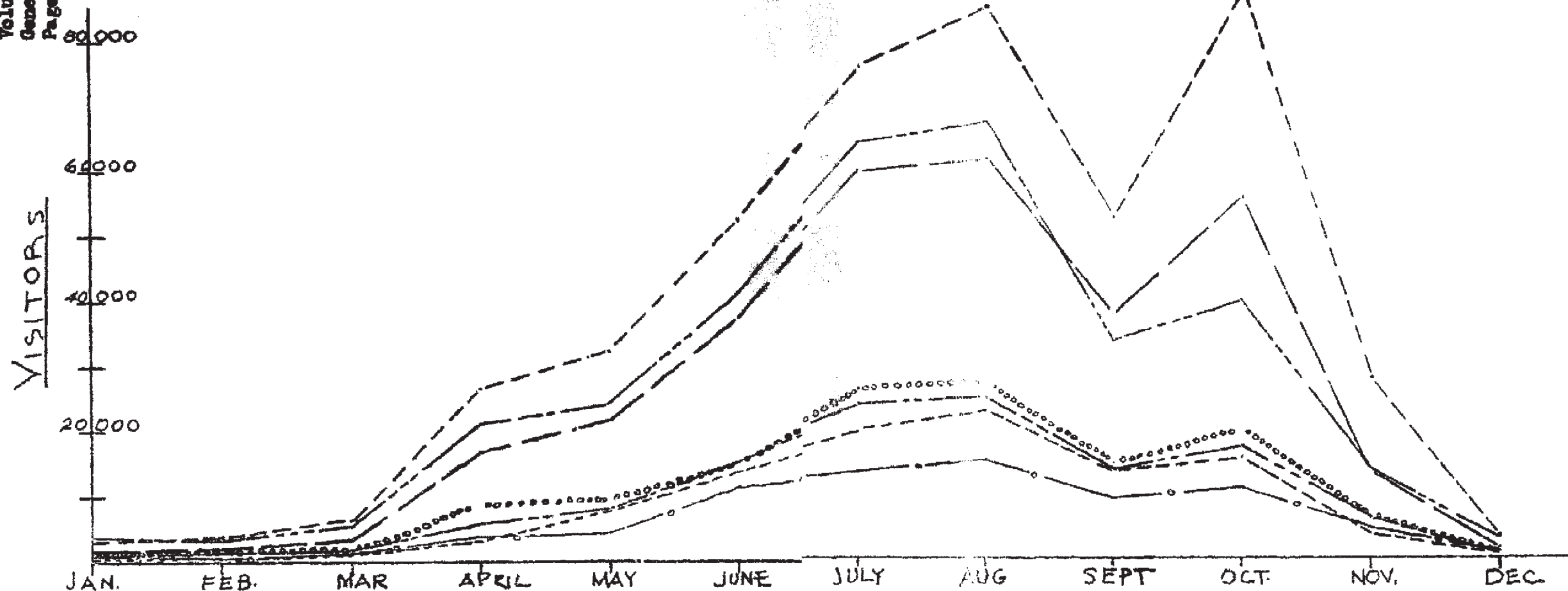




PARK VISITORS BY MONTHS

TABLE #3

	Five year average by months and by stations 1958 - 1962									plus 35% 1966 projection
	Front Royal	North Panorama	Panorama Restaurant	South Panorama	North Swift Run	South Swift Run	Rockfish	Swift Run Cone.	Park Total	
Jan.	5161	1180	819	1520	516	991	3414	0	11601	15661
Feb.	2985	1265	649	1613	550	1499	3361	0	11922	16095
March	6104	1897	1672	3181	1165	1739	5248	0	21006	28368
April	26360	8607	3828	16658	6693	5993	20914	258	89311	120570
May	32017	9547	4164	21806	7988	8059	24167	521	108269	146163
June	53210	14955	11276	37166	13622	15164	40746	1436	187676	253228
July	75556	25967	13385	59457	19602	23478	63947	1042	282434	381286
Aug.	84593	26632	14931	61006	22538	24460	66843	1093	302096	407829
Sept.	52374	14925	9095	37552	13342	13991	33694	585	175546	236987
Oct.	87331	19954	10964	56795	15413	17247	39508	765	248977	333419
Nov.	27940	6935	4958	13484	4004	5175	13741	225	76462	103224
Dec.	3648	1261	1098	2004	551	955	3344	245	13106	17693



PARK VISITORS BY MONTHS  
TABLE # 4

FRONT ROYAL  
NORTH PANORAMA  
PAN. REST.  
SOUTH PAN.  
NORTH SWIFT RUN  
SOUTH SWIFT RUN  
LOCKEIGH  
SWIFT RUN CONC.  
SECONDARY LBS.

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[illegible]



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	Front Royal	North Pan.	Pan. Rest.	South Pan.	North Swift Run	South Swift Run	Rockfish	Swift Run Con.	Total
1961									
Jan.	2616	1581	1447	816	231	662	2046	0	6948
Feb.	2760	1207	496	920	222	932	1307	0	7535
March	9424	3527	3669	4256	1481	2595	8266	0	33446
April	23632	9640	8300	15202	6301	6046	21469	606	91164
May	31680	11634	9600	20324	7076	8325	24430	633	113301
June	51928	16166	17469	40608	13266	16292	44359	1630	208618
July	86666	26297	18147	65062	20398	26995	72808	0	316066
Aug.	89796	30003	22870	56866	21711	25580	79340	0	636036
Sept.	51577	12846	14266	39466	14222	25113	38792	0	186373
Oct.	90226	16373	15662	49896	11416	17224	39672	0	240463
Nov.	36374	10379	9364	21113	6584	5485	21329	649	110668
Dec.	3586	1498	1436	2322	360	1140	2984	0	13326
Total	479065	145402	122606	326469	102327	125367	356581	3617	1661463
							Secondary Roads		267621
							Total		1929084

1960	Front Royal	North Pan.	Pan. Rest.	South Pan.	North Swift Run	South Swift Run	Rook's Lash	Swift Run Con.	Total
Jan.	3463	1825	0	1522	624	1688	5284	0	14403
Feb.	1303	1161	0	1388	393	796	2387	0	7495
March	1228	585	0	85	0	380	0	0	2268
April	31139	11555	0	18596	6853	6804	24102	0	96829
May	30631	11036	0	20762	7476	7927	23775	793	102800
June	47599	18217	18000	35899	13723	15536	39421	1554	189949
July	74014	23636	25344	55824	20424	25016	58458	2502	285412
Aug.	82041	27508	25000	51466	22651	24560	63208	2456	298691
Sept.	45666	16421	14998	32499	11864	14043	35389	1404	172284
Oct.	82983	21356	18000	53434	12636	17001	41626	1700	248736
Nov.	25538	7394	8896	13164	3328	6246	18252	400	83208
Dec.	3852	1306	2077	1410	542	1202	3470	0	13856
Total	429337	142197	112315	284049	100514	120979	315567	10909	1515567
							Secondary Roads Total		264576 1761143

1959	Front Royal	North Pan.	South Pan.	North Swift Run	South Swift Run	Rookfish	Total		
Jan.	4072	1274	1155	515	774	5777	11587		
Feb.	6283	2272	2876	1282	2498	5087	19298		
March	11511	2820	4783	2620	2239	8564	32537		
April	22560	6785	12569	8035	4792	19864	74585		
May	51303	7604	19767	18083	7160	22583	98480		
June	54690	12403	35544	14772	14771	39273	171463		
July	69453	28070	53628	17637	22912	52956	242656		
Aug.	74278	30426	62386	22083	24965	59889	274137		
Sept.	53629	19445	38671	14721	16076	34384	177208		
Oct.	72993	20548	46112	19126	17986	35878	214832		
Nov.	28508	8429	13690	6127	8231	20516	83601		
Dec.	3625	930	2440	730	569	4666	12980		
Total	430595	138986	296621	117690	121993	307817	2412707		
							374026		
						Secondary Roads	1788725		

1958	Front Royal	North Pan.	South Pan.	North Swift Run	South Swift Run	Hookfish	Total		
Jan.	5033	742	2020	900	920	3564	11179		
Feb.	1103	281	696	384	817	1001	3732		
March	3451	632	1541	782	1339	3550	11275		
April	26404	6178	14196	5965	6684	14667	73094		
May	35229	7362	17043	6986	7070	22608	94298		
June	57054	11934	36877	12433	12794	39452	176544		
July	75369	16006	62389	17207	16359	54190	229519		
Aug.	78568	16500	49419	19672	17140	66124	237423		
Sept.	58296	11990	33936	13992	9820	38132	160266		
Oct.	94322	15548	51480	17749	12773	43829	235701		
Nov.	17448	3341	10182	3299	2412	11686	48368		
Dec.	4511	1328	1745	778	904	4144	13410		
Total	445768	91841	271524	100097	87532	292947	1289509		
					Secondary Roads	Total	365757		
							1781143		



Table 5, Camping Statistics: It is the consensus in this Park that camping is definitely on the increase and from our records will stay on the increase until sometime after 1966. Statistics have been maintained on this subject by the Ranger Division for a number of years. In the past several years the Park campers have totaled 97,547 in 1961 and 146,440 in 1962, an increase of 50.1%. Also included are 16,460 campers at Park Shelters in 1962. The increase was due mainly to the addition of the Big Meadows Walk-in Campground, which added 185 sites to the overall camping. The other sites are at Big Meadows Trailer Camp, Big Meadows overflow (also Group Camping approved March 1963), Dundo and Lewis Mountain. Several picnic areas are also used for overflow camping with campers permitted to stay one night and leave the next morning. (This is kept to a minimum, but should be completely eliminated.)

With the addition of 5 more campgrounds to the Park the supply should be much closer to the demand, but the demand will still be greater. At this time it is believed that no further camping areas should be included in the Park if the quantity of sites already requested are provided. These sites will be distributed throughout the entire Park.

At present the limitation of stay imposed on campers at the campgrounds is a 14-day period. It is believed that further limitations could be imposed by the Park at a later time if the trend keeps going the way it is at present.

Trailers in campgrounds are allowed in all cases except for house trailers at the new Walk-in Campground at Big Meadows which is for tent campers and small tent trailers. No particular group camping areas are in use at present. The two areas designated for group camping are Dundo and Big Meadows overflow area.

Possibly five percent (5%) of the total camping done in the Park is in the back country which includes camping at 5 PATC closed shelters and 20 Park Service open shelters and other sites within the Park. Most of the camping at shelters is done in the Central District, approximately 50%.

Table 6, Special Groups: Group use of this Park is quite extensive. It is estimated that in excess of seventy-five (75) groups per year use the Park for one reason or another. The groups probably average fifty per group with a minimum of 12 and a maximum of 300 to a group. The Park has had on occasion as many as 700 - 800 persons in a group.

The largest groups are the school groups visiting the Park in May and June during school. The second largest but most frequent group would be the Scouts, both boy and girl, camping during the entire summer season and often on week-ends in the Spring and Fall. Another group would be those attending reunions. These, however, do not stay overnight. There are other categories, some of which stay overnight but use concession facilities for conferences, etc.

The trend in this instance is slightly on the increase and has been so for a number of years.

Table 7, Duration of Stay: No accurate number has been determined for this case but it is estimated that:

1 hour or less	5%
1 to 4 hours	25%
4 to 8 hours	60% (anticipated)
Overnight	12% (known)
2 days	6%
3 to 6 days	4%
Longer	2%

During the winter months, the stay would be shorter in duration, more than likely passing through. Very few camp overnight in the winter, however, there are some and there are those who do not come into the Park via the Drive that also camp in the Park proper.

With the trend for additional winter-use facilities, the added campground facilities and the demand for use of the Drive during the winter months, it is the consensus that the duration of stay in Shenandoah National Park will be very much on the increase.

Table 8, Concessioner Accommodations: There are no housekeeping units in Shenandoah National Park and none are anticipated. Occasionally requests for housekeeping cabins are made but not enough to warrant changes. There are, however, a number of small wood frame cabins along with concrete block multiple units. Most people using these facilities request the multiple units over any other units. The cabin units are at the three existing concession areas - Big Meadows, Skyland and Lewis Mountain, while the wood and concrete block multiple units are at Big Meadows and Skyland.

Nearly all units have extensive vistas since they have been placed in a position to utilize them.

June 15 until after Labor Day and week-ends in October are considered full-use periods. This does not mean that they are at full capacity every night but they may be so depending on the weather conditions on the Drive or the temperature in the valley which is usually 10 to 15 degrees warmer than in the Park.

Table 9, Nature Trails: At present there are only 4 nature hikes in the Park. This quantity is to be increased as circumstances warrant. These hikes are both guided and self-guiding. Some have been known to have as many as 167 in a hike. The average is approximately 35. No hike is warranted unless from 5 to 6 persons are in attendance. A total of 18 hikes of various sorts are contemplated for Shenandoah. Some will be self-guiding and others will be guided.

# COMPARATIVE VISITOR USE FIGURES

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June, 1962

June 1962

June 1961

	No.	Attend.	Avg.	Canc.	No.	Attend.	Avg.	Canc.
Hikes	49	1324	28	4	41	874	20	5
Bus Tours	--	--	--	--	1	138	--	--
Lodge Talks	6	283	47	--	7	450	64	1
Campfire Talks	16	3282	217	1	9	1984	220	1
Museum Talks	1	150	--	--	--	--	--	--
Stony Man Nat. Tr.	--	1869	--	--	--	1518	--	--
Big Meadows Nat. Tr.	--	1002	--	--	--	1956	--	--
Dickey Ridge Vis. Cent.	--	12666	--	--	--	10021	--	--
Interpretive Signs	--	391917	--	--	--	394019	--	--
Off-site Talks	--	--	--	--	1	9	--	--
Other Talks	2	178	--	--	--	--	--	--
Total		412648				410969		
Monthly Travel Figure		222353				225154		

July 1962

July 1961

	No.	Attend.	Avg.	Canc.	No.	Attend.	Avg.	Canc.
Hikes	88	2331	27	10	86	2187	26	12
Bus Tours	1	36	--	--	--	--	--	--
Lodge Talks	2	133	66	--	5	875	175	--
Campfire Talks	27	6556	242	2	26	6688	218	--
Museum Talks	1	40	--	--	1	41	--	--
Stony Man Nat. Tr.	--	1786	--	--	--	1236	--	--
Big Meadows Nat. Tr.	--	2313	--	--	--	1467	--	--
Dickey Ridge Vis. Cent.	--	29240	--	--	--	23708	--	--
Interpretive Signs	--	660260	--	--	--	644480	--	--
Off-site Talks	1	35	--	--	--	--	--	--
Other Talks	--	--	--	--	--	27	--	--
Total		603476				578714		
Monthly Travel Figure		350169				340300		

August 1962

August 1961

	No.	Attend.	Avg.	Canc.	No.	Attend.	Avg.	Canc.
Hikes	98	3770	38	4	69	2691	38	8
Bus Tours	--	--	--	--	--	--	--	--
Lodge Talks	1	74	--	--	3	454	151	--
Campfire Talks	29	7761	267	1	27	7050	261	1
Museum Talks	1	98	--	--	--	--	--	--
Stony Man Nat. Tr.	--	2286	--	--	--	1599	--	--
Big Meadows Nat. Tr.	--	3051	--	--	--	1926	--	--
Dickey Ridge Vis. Cent.	--	26592	--	--	--	26609	--	--
Interpretive Signs	--	628562	--	--	--	687210	--	--
Off-site Talks	--	--	--	--	--	4312	--	--
Other Talks.	--	--	--	--	--	--	--	--
Total		682194				631851		
Month Travel Figure		385621				360227		

September 1962 (1, 2 & 3)

September 1961 (1, 2 & 3)

	No.	Attend.	Avg.	Canc.	No.	Attend.	Avg.	Canc.
Hikes	9	352	36	1	12	341	28	1
Campfires	2	717	358	1	4	889	224	--

Table 10, Visitation: The Park is open to visitors all year. However, the majority of lodging and restaurant facilities are closed during the winter and early spring months, except for Panorama.

There were 1,349,356 visitors to the Park in 1951, which exceeded all previous travel records in the history of the Park. The month of heaviest visitation was August, with 260,019 visitors. The months of lightest travel are normally December, January and February.

The most significant change in the amount of use is the constant increase in travel each year. For instance, the 1951 travel year was a 4.4% increase over 1950, while the 1950 travel year was a 17.2% increase over 1949. Total travel for 1951 was 1,349,256 visitors, which exceeded all previous travel records. There has been a definite increase by the visiting public in the use of trails, trailside shelters, campgrounds and picnic areas.

Regulations affecting the Park that are not applicable to the National Park Service as a whole principally pertain to fishing. Special regulations, Part 20, issued March 25, 1952, concern season, size limit, and limit of catch. These regulations were amendments to Sec. 20.35 of special regulations for Shenandoah National Park.

Section 140 (b) (Permits), authorizing the sale of trip permits through the Park does not apply to any other National Park.



U.P. Book Copy.

MASTER PLAN  
Writing the Master Plan Narrative

HANDBOOK  
Chapter 2

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Natural History  
Page I

MASTER PLAN  
FOR PRESERVATION AND USE  
OF  
SHENANDOAH NATIONAL PARK

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Volume III, General Park Information  
Section D. Natural History

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Prepared by Joe H. B. [unclear] Date 8/27/63  
Name

\*\*\*\*\*

ACCEPTED BY: James P. [unclear] Date 10/7/63  
Acting Superintendent

Natural History and Historical Background: The history of the earth's crust in the Blue Ridge and the Valley and Ridge provinces is complex and many of its phases are controversial. A simplified version of the story which will have meaning for lay visitors may be presented through museum exhibits using graphic materials and models. The story should include the very ancient mountain mass of Appalachia and inland seas that long ago covered that part of the earth's surface that is now the Shenandoah Valley. During this long period of flooding, thousands of feet of rock were worn from the mountain mass and deposited as sediments, from marine and fresh waters. It was from this material that today's sedimentary limestones and sandstones of the valley floor and Massanutten Mountain were formed.

Later uplift of the entire region and the action of lateral forces on the earth's crust caused the folding and buckling that produced mountains much higher than the present Appalachian System.

Erosion is the antithesis of the mountain building forces and its operation through the ages has been responsible for the configuration of the region today.

Rocks and Minerals: The core of the Blue Ridge Mountains is coarse-grained igneous rock which cooled far below the, then existing, surfaces. The age of this oldest rock in the Park has been placed by the zircon method at about one billion three hundred million years. Subsequent to its solidification this rock was exposed at the surface by erosion. The most striking exposure of this granitic basement rock is Old Rag Mountain. Road construction has also caused exposures, as of the granodiorite at Marys Rock Tunnel, where there is found also gneiss metamorphosed from the ancient granites. After erosion had uncovered and probably worn away a considerable thickness of the basement rock, there was a period of volcanism during which there were successive outpourings of lava. A scarcity of pyroclastic materials indicates that there was little violently eruptive volcanism. The successive flows filled the valleys and eventually overtopped the highest peaks. Basement rock and overlying flows, sometimes separated by layers of sediments, are exposed in road cuts. Good evidence of lava flows is presented in basalt dikes, the best one now known is in the north portal of the Marys Rock Tunnel. The fine-grained basalt of the dikes is conspicuously different from the coarser grained country rock into which it is intruded. The dikes demonstrate the way in which the lava outflows passed through fissures in the older rock. Another conspicuous feature which resulted from the lava flows is columnar jointing caused by polygonal cracking as the lava cooled. Particularly good examples of columnar jointing are found in the Little Devils Stairs, Crescent Rock, Franklin Cliffs and a small outcrop beside the Whiteoak Canyon Trail in the Lincolnton. These lavas have been largely metamorphosed into the Catactin schists, (greenstone), which are conspicuous on Stony Man and Hawksbill Mountains and in Whiteoak and Cedar Run Canyons.

The rocks of the Blue Ridge are almost monotonous in their sameness, but there are asbestos deposits, quartz veins, phenocrysts and minerals that are conspicuous enough to attract the notice of students and keen observers. On Stony Man Mountain and in Dark Hollow there are the remains of old mine



workings that disappointed their promoters. Here the visitor may pick up bits of native copper, but not of sufficient assay value to be ore. The belief that the Blue Ridge held mineral wealth apparently died hard, but the only mining operations that have paid off were those in the sedimentary deposits near the foot of the western slopes. There, prior to the Civil War, iron ore was smelted in coldblast furnaces and the pigs flat-boated down the Shenandoah River to Harpers Ferry. A manganese mine still operates occasionally just outside the Park; its workings are visible from Crimora Lake Overlook.

Physiographic Provinces. Three of Virginia's provinces are conspicuously evident from the Skyline Drive. These are the Piedmont, the Valley and Ridge, and the Blue Ridge itself. To the east small outlying mountains dwindle into the rolling peneplain surface of the Piedmont. To the west the Valley and Ridge Province is evident as Massanutten Mountain rises abruptly for two thousand feet above the peneplained valley floor which is itself two hundred feet higher than the Piedmont. The Blue Ridge is obviously a continuous ridge trending southwestward with a series of high peaks and deep gaps. The steep western escarpment may be contrasted with the more gradual eastern slopes from several points in the north and central districts.

Shenandoah Valley. While the Shenandoah Valley lies entirely outside the Park boundary, it is for all practical purposes a Park feature. Aside from being a major scenic feature as viewed from the Park, the Blue Ridge and the Great Valley are so closely interwoven that the story of one cannot be told independently of the other. A great many of the visitors to Shenandoah National Park either have been or will go into the Valley. There they may notice the white limestone outcrops and most of them will see or at least be aware of the extensive caverns. The formation of caverns through the dissolution of limestone is a part of the story which is closely associated with the marine deposits introduced in the story of Appalachia. An apparent contradiction exists in the white limestone outcrops in Valley fields. These rocks stand above the soil because of their great solubility rather than their hardness. Soil does not build up and cover these rocks because it dissolves completely and leaches away.

Rivers and Streams. Visitors to Shenandoah National Park may have three kinds of experiences with water courses. The first, especially for those who enter from Front Royal, will be with the Shenandoah River. From several overlooks, notably Signal Knob, Goosey Run and Hogback, the river and its widely meandering course is conspicuous. The story of why the river meanders is tied very closely with the formation of the Valley.

The second kind of stream experience is a more intimate one which will be had by fewer people because it involves leaving the automobile and walking. For those who do follow a streamside trail, the alternation between cascades and quiet pools with the climax of water plunging over a waterfall will be in contrast to the larger but more sluggish Shenandoah. The mountain stream demonstrates, as does no other single feature, the dynamics of the geologic story; for here the stream course cuts deep into the rock core of the mountain and the continuing process of erosion goes on before ones eyes. It is along



the streamside trails too that some of the greatest rewards from a variety of plant and animal life may be realized.

The third kind of stream experience is based on interpretation of evidence. When the Blue Ridge is viewed from the east or west, it is seen to be a chain of high peaks with low gaps or passes between them. The uneven ridge line is the result of differential erosion caused by varying resistivity of material and structural differences such as fault lines. From the Skyline Drive the visitor may look across the Valley to New Market Gap which cuts deep along a transverse fault in the Massanutten sedimentary rock. In interpreting these features regional drainage patterns will be touched upon; the erosive power of moving water and the concept of stream piracy will be involved.

Waterfalls are one of the principal attractions in Shenandoah. While they set no record for height nor volume of flow, they are scaled to the mountains and much of their charm is probably due to the cove forests through which they flow. With rock cliffs for sounding boards and foliage to absorb reverberations, the acoustics at the waterfalls are unusually good and no doubt sound plays an important part in the tranquilizing influence that many people experience at the falls.

One very important value of waterfalls is that they attract visitors away from the motor road. There are a number of beautiful waterfalls in the Park; Dark Hollow Fall is the most accessible one being only .7 mile from the parking area. Overall, Little Devil Stair, Whiteside, South River - all are good, but require too much exertion to be enjoyed by many visitors.

Sarapah Run, Big Run and the Charlottesville Reservoir are stream features that will be interpreted from their overlooks.

Ground Water. That portion of the precipitation which is stored as ground water and given up gradually to springs and perennial streams is vital to the plant cover and associated animal life of the Park. Interpretation of this feature includes the water cycle involving clouds, fog, rain, snow and sunshine. This story may be presented through museum exhibits in the visitor centers as well as in interpretive markers on overlooks where there are spring supplied drinking fountains and along trails where there are streams and spring seeps.

Big Run Watershed is eleven square miles in area, the largest in the Park. It is easily definable and part of the stream and ground water story is told in an interpretive marker on its overlook.

Talus Slopes and Boulder Trains. This feature is particularly conspicuous in the south district. What appear to be bare spots on the mountain sides from a distance, at closer range become masses of broken rock from cobble size to as large as an automobile. How this series was formed is not fully understood and the present rate of disintegration and creep is a subject for further study. Large trees growing between the boulders and thick coverings of moss and lichens indicate a long period of stability, but fresh fracture surfaces suggest a continuing process. There is a good view of a boulder train from Horsehead Overlook. The Appalachian Trail crosses a talus slope on Hawksbill Mountain. Dr. John T. Hack, U.S.G.S., made a study of this which he completed



in the Spring of 1960. He will publish a paper on the subject.

Weathering - Soil Formation. Talus slopes discussed above are probably the most striking example of weathering. Other examples are the bald dome of Old Rag and the profile of Stony Man Mountain. Exfoliation, "pot holes" and lichen encrustation are all evidences of the breaking down of rock by plants and elements. Weathering is the first step in the formation of soil and along many of the trails the admixture of the mineral products of weathering with organic matter in the development of soil is illustrated. At Bacon Hollow Overlook the major steps in the entire process of development from bare rock to organic soil are demonstrated on one large boulder. The build up of humus and the differences in soils and vegetative cover will be part of the story on the Big Meadows Nature Trail.

The Park Flora. The studies of the flora of Shenandoah National Park are far from complete. The authenticated preliminary check lists include two hundred and sixty-nine fungi, two hundred and twenty-four bryophytes, and eight hundred and ninety vascular plants. These lists, totalling 1383 species, are based on specimens preserved in the Smithsonian and other public institutions. The lists will no doubt be considerably longer when more intensive study and collecting have been carried out in the area.

Approximately one hundred and sixty woody plants are known to grow in the Park; these include shrubs and vines and about one hundred trees. About sixty-five of the woody plants are conspicuous in bloom either because of large, showy, individual flowers or profusion of bloom. This abundance of conspicuously flowering woody plants provides one of the most widely known visitor attractions in the mountains. The exhibits of azalea and mountain laurel are famous.

There are at least one hundred and twenty species of exotic plants growing in the area, and many of these have become well established in the Park Flora. While it is National Park Service policy to exclude exotic species from Park areas, in Shenandoah the eradication of exotic plants would be impractical. Due to the second-growth character of the Blue Ridge Mountains there is no pretense here of preserving a primeval condition, and to practice extensive artificial controls aimed at individual species would defeat the purpose of allowing natural regeneration of the climax vegetation. It is probable that in the course of natural succession many of the introduced species that are flourishing now will be crowded out or greatly reduced by competition with native plants. The exotics are really a part of the Shenandoah story and should be interpreted as such with significant changes in their status noted in terms of both scientific and popular interest. Some of the exotics provide lovely flower displays; the dyers wood on the shoulders of the Skyline Drive is a striking example. In some local situations control of exotics is needed in order to preserve vistas or other vegetative aspects. An example of this is the very prolific and fast-growing ailanthus which is abundant in the North District.

The Climax Forest. Dr. E. Lucy Braun places the Shenandoah National Park within the Northern Blue Ridge section of the Oak-Chestnut Forest region. Even though the chestnut is no longer a dominant nor even important part of



the forest complex, the name of Oak - Chestnut for the region is retained because it is impossible to predict yet just what species will finally replace the chestnut in the climax forest. In many sites the replacement of chestnut by oaks seems to be taking place; in some, yellow-poplar has increased; in others, more mesic and shade-tolerant species appear to be favored. On some drier slopes hickories are codominant with oaks in replacing the chestnuts. According to Dr. Braun, "Future changes in canopy composition may result in changes in the humous layer .... and later, in the character of the undergrowth. Only after several generations of forest could an equilibrium be reached, and the dominants of the new climax be determined." Dr. Braun believes that the stable forest on the ridges and drier slopes of the Blue Ridge contained only about eight kinds of trees in the canopy. Of these chestnut comprised about thirty-five percent; chestnut, northern red oak, chestnut oak and white oak together made up about eighty-eight percent of the forest composition. In the more mesophytic communities in coves only about ten percent of the composition was chestnut, and the same three oaks about thirty-one percent, sixteen percent of the trees here were red maple and fourteen percent hemlock. In the moister coves seventeen tree species were usually found in the canopy with no one of them dominant.

While there is no climax forest in the Park now, a description of conditions the settlers found is part of the Shenandoah story. A calculated prediction of what the future Park forest will be like helps to point up the dynamics of ecological processes - a fundamental concept in interpretation.

During the more arctic conditions of the Pleistocene the upper slopes of the Blue Ridge were probably covered with dense stands of spruce and fir. Today the spruce is reduced to a few scattered stands where it is mixed with oak, and seedlings are few. The fir (*Abies Balsamea* var. *phanerolepis*) is different from the balsam fir of the north and from the Frazer fir of the Smokies, it is represented by a few trees on Crescent Rock and on Hawksbill Mountain, with very little reproduction. This tree may disappear from the Park flora in a few decades.

The Forest Canopy. There is no timberline in the Blue Ridge, therefore the highest peaks in the Park are forested. Trees growing on the peaks and ridges and even on the higher slopes are subjected to severe damage from ice and wind storms so that the older ones present tortured shapes that are especially picturesque against a winter sky.

Most of the forest that the visitor sees from his car is second growth oak. Approximately 70% of the total Park acreage is covered with three forest types, the dominant trees of which are respectively chestnut oak, red oak and scarlet oak. Associated with them are hickories, black locust, birch, black gum, red maple, mountain pine, white oak, basswood, white pine and butternut. This is the composition of the overstory on the ridges and drier slopes, most of the trees are small and in even-aged stands. The understory is composed largely of mountain laurel, chestnut sprouts, sassafras, serviceberry, witch hazel, aspen, striped maple and mountain maple.

Occasional hemlocks are scattered through the oak forest but only on cool, north facing slopes are they dominant. The best examples of hemlock forest are at Hemlock Springs and the Limberlost.



Along the stream courses in the cooler coves no one species is dominant and the mixture includes black birch, basswood, red oak, yellow-poplar, white oak, butternut, black gum, white pine, red, striped and sugar maples, sycamore, yellow birch, slippery and American elms, umbrella magnolia and pawaw.

Other forest types that are found on small areas such as old fields in the later stages of succession include nearly pure stands of black locust, scrub pine or white pine.

In Shenandoah it is possible to pass within a very short distance from the valleys and lower coves where there are Carolinian Life Zone species (such as redbud, magnolias, and persimmon), to the higher slopes where red spruce and balsam fir represent the true Canadian forest type.

The Chestnut. Probably at least fifteen percent of the entire climax Forest of the Blue Ridge was American chestnut, and this estimate may be very low. The chestnut was a long-lived and fast growing tree; it was commercially important as well as the source of food for several kinds of wild animals.

In 1904, it was discovered that the chestnut blight disease was seriously damaging the chestnut trees in New York City. The disease spread rapidly and by 1929, the chestnuts in the Northern Blue Ridge were 100 percent infected and over half of them dead. This disease has been the most violent single influence in changing the composition of the forests in this region.

Today there are still a few standing blight-killed trees. These are a conspicuous Park feature that should be interpreted in the field so long as they last. However, they constitute a temporary exhibit and probably in less than ten years, all of them will have fallen or will be obscured by other tree growth that is rapidly replacing the so called "ghost forests". With the loss of the last of the old "ghost" trees it will be even more desirable to tell the chestnut blight story in the housed exhibits. The only living reminder of the once dominant chestnut is the ubiquitous chestnut sprout. It is impossible to say how long the vitality of the old root systems will last, but at the present time there are a great many sprouts produced around the old stumps; and in many cases where it is difficult to find a trace of the original tree, there are clumps of sprouts which grow vigorously as tall as twelve to fifteen feet and two to four inches through. Sooner or later these sprouts show the bark discoloration and lesions which characterize the fungus attack. These sprout clusters lend themselves well to trailside interpretation both by personally conducted trips and self-guiding devices, and they are expected to continue to be a Park feature indefinitely.

The White Pine Blister Rust for which control measures are continuing, has also influenced the composition of the Blue Ridge forests. Other tree disease that should be included in the interpretation of the forest cover are, Birch Nectria Canker, Cedar-Apple Rust and Oak Wilt.



Forest Fire. There is no doubt that so long as there have been forests in the Blue Ridge, forest fire has played a part in the natural scheme of things. In the climax oak-chestnut forest, fires started from lightning and perhaps as a result of Indian activities, but it was after the human population began to increase that fire became a strong influence in determining the vegetative cover in the mountains. As the Blue Ridge and surrounding country was settled intentional and careless burning increased the frequency of forest fires. The slash that was left from logging operations and the brushy ground cover that grew in the clearings produced hotter fires than those that had burned in the relatively thin understory beneath the climax forest canopy. Repeated fires on the clearings killed off seedlings and retarded the natural succession of plants back to forest cover.

For two hundred years fires were set in the mountains to "improve" pastures and berry crops, and fires that started accidentally were allowed to burn themselves out. On Old Rag Mountain, the results of forest fires are still evident and there are places where the results of protection from fire during the relatively brief period of Park Service administration can be dramatically pointed out.

Logging Operations. The reasons for cutting the trees of the Blue Ridge climax forest were many, but the methods and the results of exploitation were much the same.

The mountaineer squatter who snaked a few logs off the mountain under sufferance of the absentee landowner would have made slow work of stripping off the magnificent stands of oaks. Even the huge old wild cherry and black walnut trees, that today would be worth their weight in money for fine cabinet woods, would have taken a long time to get out with hand tools and horses. When the steam-powered sawmills came in the transition from virgin timber to second growth forest was greatly accelerated.

Lumber was not the only forest product that required the destruction of the trees. The tanyards that sprang up in the Valley and at the mouths of many of the hollows provided a market for the bark of the chestnut oak and many large trees were skinned and left whole in the woods. Charcoal, firwood and bolts for shaves accounted for many holes.

Meadows. The value of the mountain meadows in the production of beef was apparently recognized soon after the settlers moved into the mountains. There are no known records of how the Big Meadows came to be cleared, but all of the evidence indicates that these and the other extensive open areas near the mountain tops are man-cleared. No doubt some of the clearings were made following logging, but where logging was not profitable the shade of the forest canopy was sometimes removed by the inexpensive process called "deadening." This was accomplished by girdling the trees and leaving them stand.

These large meadows present a problem in Park administration. Undeniably they constitute a very striking scenic feature, - one that many people feel



is a significant part of the Park story and should be preserved. These areas have been kept open for decades by pasturing cattle on them; to maintain them by any other means will be a very expensive operation. Another, and from a natural history standpoint, the primary significance of these areas lies in the ecological succession of plant and animal species inhabiting them as they progress toward their climax vegetation.

It might be argued that to practice anything other than a "strictly hands off and let nature take its course" policy would be adverse to the principals under which the Park was established. On further consideration this may not be entirely true. If the entire Big Meadows area were treated by either alternative - i.e. (1) to allow it to grow up without any control of vegetation, or (2) to attempt to hold the vegetation at its present or some other selected stage by artificial means - some desirable natural features would be sacrificed. To follow exclusively the first method would result in the loss of a certain scenic variety that adds immensely to the traveler's delight in the Park; it would also lose to the Park certain plant species and associations which could not exist if the entire area were to revert to brush and forest cover. If for no other reason, a large and representative example of the Big Meadows should be preserved as a part of the important story of human use of the mountain lands.

The second alternative is even less justifiable than the first. One of the primary values that sets Shenandoah apart from all other Parks, and even all other areas in the World, is the opportunity to observe, study and interpret dynamic ecological processes on an extensive land surface that has been altered by human use and is now under administration and protection that can assure the continuation of those processes without further intrusion of artificial influences. Provision should be made for a large and definite portion of the Big Meadows area to grow up naturally without artificial treatment of any kind and arrangements made to study and record the changes that occur in plant and animal life during the successive stages.

The solution for the management of the Big Meadows is to set aside part of it to be held inviolate of any artificial treatment, use or human influence - the remainder to be maintained as an open area by mowing, so timed as to interfere as little as possible with the seasonal aspects of wildflower displays.

While Big Meadows is the most extensive and best known of the open areas in the Park, there are many other clearings that resulted from man's occupation. Old pastures, croplands, home sites and orchards have been abandoned and are now in various stages of brush and tree growth. These areas give variety to the visitor's Park experience both from the Drive and overlooks and along many of the foot trails.

Marshy Places. Marshes with their characteristic plant and animal associations abound in natural history interest; they are unique in having plants and animals that are found in no other places in the Park. Not many such areas are known in the Park. There is one in the Lumberlost and the most extensive and best known is the Big Meadows Swamp. In the latter, there is



standing water through most of the year, but before mid-summer, it is usually reduced to a nearly dry stream course and surrounding grassy bog. One of the most conspicuous features is the nearly pure stand of gray birch with its associates, crataegus, white pine, pitch pine, and hazelnut. Marsh marigold, cardinal flower and American burnet are some of the wild-flowers restricted to this type of habitat. In the spring open water provides breeding places for many toads, frogs, and salamanders.

Interpretation of the Big Meadows Swamp is included in the Big Meadows self-guiding nature trail. Marshy places are especially good for interpretation on conducted trail trips because of the wealth of plant and animal materials that may be found in them. Whenever possible interpretive walks are routed to include them.

The Barron Places. It is the rule for all land surfaces in the Park to be vegetated, and entirely bare areas are rare. Cut banks and other temporary man caused disturbances become covered soon after stable slopes are established. Mountain slopes of bare rock (of which Old Rag Mountain is the best example), talus slopes, boulder trains and vertical rock cliffs are areas on which no soil has accumulated and even these surfaces are almost entirely covered with crustose and foliose lichens. Occasional patches of polypody, wine-leaved cinquefoil and wild liveforever only emphasize the nakedness of the rock.

Seasonal Aspects. For ten and sometimes eleven months of the year, there are flowers blooming in the Park. Beginning with red maple and hepatica at the lower elevations as early as February, there is a continuous series of flowers ending with witch hazel in December. The seasonal aspects of the Park flora constitute an important feature for both the one time visitor and those who return often. In March and April, the relatively few flowers assume a disproportionate significance due to the novelty and the lack of obscuring foliage. In May both the number of species and individual plants in bloom increase rapidly, and it is then that the snow trillium, which is conspicuous because of its showy flower and large number of plants, reaches its peak. The azaleas bloom through May and are followed immediately by the mountain laurel which continues in good flower through June; these are probably the best of the flowering shrubs. The flower show increases in numbers of kinds and individuals to a peak in July, but the summer flowers are somewhat obscured by fully developed foliage. By midsummer the fields and roadsides begin to show the flowers that will be conspicuous through October. It is in late summer and fall that the shoulders of the Skyline Drive present their best flower show.

Flowers are only one part of the story of the seasons in the Park. Since the area is almost entirely covered with deciduous forest, the swelling of buds and development of leaves are most notable spring phenomena. As growth begins at the lower elevations, the "advance of spring" is marked by a distinct color difference between the fresh green of new leaves and the bare trees at higher levels. The advance up the mountain slopes is more rapid on the south facing slopes and generally faster along ridge lines than in coves. With the maturing of foliage the mountains take on the nearly uniform



green cover, broken occasionally by the deeper green of the conifers, that is characteristic of summer. As foliage develops, the forest closes in along the Skyline Drive and trails so that vistas become more important.

Forest composition and differences in elevation combine to make the autumn color in the Park especially fine. At higher elevations, color begins to develop by mid-September and very soon shows spots of Virginia creeper, black gum, and the maples along the Drive. Sumac, dogwood, hickories, ash, yellow-poplar, birch and other woody plants assure a continuous color display, but because of the dominance of oaks throughout most of the Park, there is a color climax that is reached when the oaks turn, usually all within about a week's time. The timing of the development of fall color varies along the length of the Drive and there is a noticeable reversal, from the advance of new foliage in spring from lower to higher elevations; fall color develops first at the higher levels and moves down the slopes so that there is still color in the valleys in November. The fall color display is an important Park feature and a very strong attraction for many visitors.

With the coming of winter, the entire aspect of the mountains changes. As the foliage is blown away from the trees visibility increases and vistas open where only forest shows in summer. The color of the mountains changes from green to browns and grays relieved by the deep green of the conifers. On some overcast or hazy days, the whole effect is rather somber; but on many winter days the light is good and atmosphere clear. Then distant ridges stand sharp against the skyline and shadows of occasional cumulus clouds move across the slopes and valleys, highlighting the scene.

The most spectacular of Shenandoah's scenery is viewed by very few people because it is accompanied by cold weather and often hazardous driving conditions. Snow, ice storms and frozen fog produce scenic effects that are awesome in their beauty. With the trend toward more year round use of the Park, it is probable that many more visitors will enjoy the winter season.

Fauna. The present status of the vegetative cover in the area provides a diversity of habitat that is very nearly optimum for the greatest variety of animals and numbers of individuals. Many acres of clearings that are now passing through herb and shrub stages provide browse for deer as well as food, shelter and nest sites for many other animals - some of which will be reduced in numbers as more of the Park reverts to forest. Black bear, bobcat, wild turkey and ruffed grouse are forest animals. Mast produced by mature oaks and hickories is important directly or indirectly as food for them, but they thrive where open fields and road sides provide a variety of foods and shelter.

Extirpated Animals. While the diversified habitat conditions that exist in the area today are better for wildlife than the solid stands of mature forest that the settlers found, other factors have brought about the elimination of several animals that were formerly present. Prior to the time of settlement and intensive land use, the Blue Ridge was a part of an extensive wildlife range where bison, elk, wolves, mountain lions, beavers and fishers lived interdependently. All of these animals were lost from the local fauna

as a direct result of man's activities. Some were killed for the meat, hides and furs which man used; the large predators were killed or driven off because they were not compatible with stock raising. Deer, bears and wild turkeys suffered both from heavy hunting pressure and from loss of range as more and more land was devoted to crops and pasture, and repeated forest fires followed logging operations.

Contemporary Animals. Forty-two kinds of mammals occur in the Park and ten others, known to be in adjacent territory, may be assumed to be present. With the improvement of habitat following the removal of residents and protection of the area, some mammals that were nearly or completely lacking began to come back. White-tailed deer were restocked in the western part of the state beginning about 1926, and it is possible that some of the present population in the Park originated from this source, however, the deer in the South District are no doubt descendants of thirteen deer from the Mount Vernon Estate that were released in the Big Run watershed in 1934. The white-tailed deer has now become common throughout the Park and is seen by many visitors.

An attempt was made to reintroduce beavers in the Park, but of the four animals released, two were killed and the other two disappeared. This failure may have been just as well since experience showed that neighboring orchards were too tempting to the beavers and beavers are not good for apple trees.

Two bears, Bill and Betsy, were released in the Park in 1931. Bill, half tame, was run down and killed by frightened neighbors. Betsy's fate is unknown. The Park remained apparently bearless until two were reported in 1937, and it is estimated that the population is now about thirty-five. This stock probably originated from the wilder part of the state to the west of the Blue Ridge. The bears of Shenandoah are completely wild and very shy. As a consequence, they are seldom seen by visitors, but they frequently damage overlook and trail signs by clawing and biting them. This damage is very common in the South District and is becoming more so in the central part of the Park. Barbed wire around the signs has decreased but not completely stopped the damage.

The mammals that are most frequently seen and enjoyed by visitors are not necessarily the larger ones. Chipmunks are common and conspicuous around the campgrounds and picnic areas. Groundhogs are common along the shoulders of the Drive, but probably many visitors pass close to them without seeing them at all. At night in addition to deer, raccoons and skunks are common along the Drive and foxes and bobcats are frequently seen.

Most of the other small mammals are of greater interest to the zoologist than to the average visitor, but their ecological relationships to each other and to the changing vegetative conditions are part of the Park story.

The Shenandoah list includes one hundred and ninety-seven birds so far. Probably birds are observed more by Park visitors than are any other animals. The most conspicuous are the large soaring birds frequently seen from the



overlooks, these include hawks, vultures, and ravens. The raven is of particular interest because its voice and odd behaviour make it especially noticeable. The ruffed grouse is often seen along the shoulders of the Drive and frequently startles hikers on the trails. The loss of the chestnut by disease and cutting of oak forests probably played as large a part in the extirpation of the wild turkey as did hunting. Twenty-five wild turkeys were released in the Park, and since both the birds and the forest are protected, they have increased until now flocks of as many as sixty birds are seen. As with mammals, the ecological relationships of the birds is an important part of the Park story.

With too many visitors the interest in the herpetological fauna is a negative one. This is unfortunate because unreasonable fear of snakes reduces the pleasure of the Park experience for many visitors. The reaction of some people to kill any snake they see is very destructive to a part of the fauna that has been seriously reduced. Preliminary lists now include twenty-four reptiles and twenty-two amphibians. Compilation of existing field notes will probably extend these lists, although few studies in this field have been undertaken in the Park. Interpretation of these interesting animals is especially needed and great care must be taken in the way the subject is presented so that the necessary warning about the two poisonous species does not establish fears that will detract from visitors' enjoyment of the Park.

Very little is recorded about the insects of the Park. Among those that are conspicuous enough to be considered features, is the tent caterpillar which some years becomes so abundant in the wild cherry and fruit trees as to cause a great deal of comment about the destruction of the trees. The large mounds of the Allegheny Mound Ant are conspicuous in parts of the Park and are particularly well situated for interpretation along the Big Meadows Nature Trail.

Mountain streams are one of the principal Park features. The animal life in the streams is less frequently observed and requires more interpretation than do more conspicuous features. Probably very few visitors except the anglers ever get to see a brook trout in the Park streams or are many of them even aware that the fish are present. Hikers on the trails that skirt trout pools might frequently have an interesting experience in watching trout if they were advised ahead of time of the need for a stealthy approach and what to look for. The observation of fish and other stream animals is one of many small adventures that contribute to a satisfying Park experience.

(2) Status of Research

(a) Research Accomplished:

Geology. Various members of the National Park Service, U. S. Geological Survey, Virginia Geological Survey, and others have visited the Park from time to time and have done some field work, resulting mostly in scientific papers. Sumner M. Anderson, ECW Junior Geologist, summarized most the present knowledge on the geology by utilizing these papers and supplementing them with some field work. This summary is in manuscript form.

A geological tour of the Park (exclusive of the South District) to and from Washington was prepared for publication by the Natural History Division personnel, but it has never been released.

King, Phillip B., Geology of the Elkton Area, Virginia, Geological Survey Professional Paper 250, USGPO, Washington, 1950.

Reed, John C., Jr., Catoctin Formation Near Luray, Virginia, Bulletin of the Geological Society of America, 1955. Geology of a large part of the Park from Elkvalley Gap to Tanners Ridge. Includes geologic map and cross sections.

Botany. Berg, L. V. and Moore, R. B., Forest Cover Types of Shenandoah National Park, Virginia, manuscript and type map in Park files (1941). The preparation of this analysis of the forest cover of the Park represents the outstanding research accomplishment to date. The field work and preparation of the detailed type map with narrative descriptions required several years for completion and are principally the work of the senior author. Accompanying compilations are the work of the junior author.

Other botanical research accomplishments include the following:

Fosberg, F. Raymond and Walker, Egbert H., A Preliminary Check List of Plants in the Shenandoah National Park, Virginia and three supplements, all published in Castanea (1941, 1943, and 1955). There is listed a total of about 590 species, varieties, and forms of vascular plants found growing within the Park, almost all of which are substantiated by specimens deposited in the U. S. National Herbarium, the U.S. National Arboretum, and other institutions. Earlier collections and published notes which appeared at infrequent intervals were freely drawn upon in compiling this check list. This work is admittedly incomplete, especially concerning collecting and observations in the South District.

Also Schoonberger and Wynne, Bryophytes of Shenandoah. Also Patterson, Paul, additions to the Bryophytes of Shenandoah. (See reprint file for exact ref.)

Chick, W. Drew, Jr., Revised Check List of Amphibians in the Shenandoah National Park, Virginia, manuscript in Park files (1944). The annotated list now includes 22 species and is based on field observations made by



C. L. Groghan, James A. Fowler, and Chick. A number of these records may be considered doubtful because of lack of specimens. A Park amphibian collection has been started by the naturalist with 11 species represented to date. The appointment (1949) of Collaborator John Thornton Wood, a specialist in amphibians, should result in considerable additional knowledge of amphibian distribution, depending on Wood's ability to find time to do field work from time to time.

Clark, Austin H., Check List of Butterflies in the Shenandoah National Park, card catalog in Park files (1941). One hundred species and subspecies are listed (3 being well out of the Park) with notes on habitat, very general locality occurrence, and seasonal occurrence. The records are based on notes and limited collections made by the author and others of species in and near the Park prior to the Park's establishment. No specimens were collected in the Park proper.

History. Steers, Edward, The Shenandoah National Park: Its Possibilities for Historical Development, manuscript in Park files (1936). This study is primarily a general picture of settlement in the hollows of the Park area. It is based on a consideration of the economic factors relating to (1) the development of a mountain way of life prior to the Civil War, and (2) the decline following this conflict to conditions of squalor and poverty in existence at the time of Park establishment.

Other less extensive historical research has been done and published in various articles appearing in Bulletin Potomac Appalachian Trail Club and Shenandoah Nature Journal (later Shenandoah Magazine, Lambert's Travel Lore). The authors, Jean Stephenson, Samuel V. Moore, Harry R. Fulton, J. S. Wills, and Harry V. Strickler, deal with earliest historical backgrounds; Indian tribes, discoveries of John Lederer and Governor Spotswood, settlers, land grants, and surveys. The latest phase in the historical background of the Park - its establishment - is adequately covered by published accounts and manuscripts in the Park files, principally the work of G. Freeman Pollock, L. Ferdinand Zerkel, and Fred T. Amiss, and by other documents.

Archeology. Not much sound knowledge of the area has been discovered so far. Written history records little more than legend and tales of war and massacre. Apparently the settlers had slight concern for their own history and none at all for that of the Indians. Scanning of reports and correspondence files indicates that a number of artifacts of Indian origin have been found within the Park area, but unfortunately the few objects stored at headquarters have no records with them. The consensus of those who have expressed opinions in writing is that the Indians hunted, probably fought battles, and perhaps camped in the mountains; but there is no evidence that villages or any extended Indian residence has ever occurred within the area of the Park.

So far one archeological study has been made in the Park and the findings recorded in the MADISON RUN ROCK SHELTER IN THE SHENANDOAH NATIONAL PARK, by C. G. Holland, Quarterly Bulletin, Archeological Society of Virginia, June, 1953.

While the story of the Red Man is not vital in this area, it is of interest to many people and a knowledge of the local Indians and their habits would contribute to understanding of the ecology prior to settlement, and aid in predicting future forest cover.

(b) Research Needed:

Although generalized accounts of Park geology and historical backgrounds are available and good progress in the cataloging of the higher forms of plants and animals has been made, there remains much research work to be done to provide additional basic data upon which the interpretive program and other Park functions are to depend. There follows a list of some of the more important research proposals.

Geology. A more comprehensive geological survey of the Park based on adequate field work. A rock collection.

Botany. Continuation of cataloging the flora, especially in the South District and in outlying localities.

Distributional studies of the more important flora.

A reference collection of vascular plants.

Zoology. Continuation of cataloging the fauna with emphasis on the vertebrates.

Distributional studies of mammals, birds, and reptiles, with special emphasis on deer, bear, and wild turkey.

Continuous reference collections of vertebrates.

Continuation of stream studies by the Fish and Wildlife Service.

Biology. Ecological succession studies of several vegetative types to determine the changes and stages that these types reach and pass in reverting from man-used conditions to an unmodified natural condition. Changes in animal life should not be neglected.

History. There are many gaps in the present knowledge of the story of settlement of the Park area and of the life of the settlers themselves. Historical research is needed to supply such missing data; to supply interesting details with regard to the Spotswood Expedition, survey of the Fairfax Line, and use of various mountain gaps and peaks during the Civil War; and to authenticate secondary sources of data, as, for example, the interpretation of Lederer's route of travel in 1669. Field research is also needed to prove or disprove the presence at Browns, Ga. of "trenches" or "breastworks", and their role in the Civil War.



Archeology. Field studies of certain supposed prehistoric sites within the Park with search for artifacts.

Identification and evaluation of artifacts recovered.

Investigation of artifacts originally taken from the Park area and now in public or private collections.

NATIVE PLANT MATERIAL LIST  
FOR LANDSCAPE PLANTING IN SHENANDOAH NATIONAL PARK

Prepared Jan. 1960

List prepared from "Castanea, The Journal of the Southern Appalachian Botanical Club", Volume 6, October - November 1941, Numbers 6-7.

The "Castanea" listing and supplements numbered 1, 2, and 3 were extracted to provide the following list as having the best possibilities of growth in the Park.

FERN FAMILY

<i>Osmunda cinnamomea</i>	"	Cinnamonfern
<i>Osmunda claytoniana</i>	"	Interrupted-Fern
<i>Dennstaedtia punctilobula</i>	"	Hay-scented Fern
<i>Dryopteris noveboracensis</i>	"	New York Fern
<i>Polypodium vulgare</i>	"	Common Polypody

PINE FAMILY

<i>Abies balsamea</i>	"	Balsam Fir
<i>Picea rubens</i>	"	Red Spruce
* <i>Pinus purgens</i>	"	Table Mountain Pine
* <i>Pinus rigida</i>	"	Pitch Pine
* <i>Pinus strobus</i>	"	White Pine
* <i>Pinus virginiana</i>	"	Scrub Pine
<i>Tsuga canadensis</i>	"	Hemlock

CYPRESS FAMILY

<i>Juniperus virginiana</i>	"	Red Cedar
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YEW FAMILY

* <i>Taxus canadensis</i>	"	Yew
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SWEET GALE FAMILY

* <i>Myrica perigrina</i>	"	Sweet Fern
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WALNUT FAMILY

<i>Carya cordiformis</i>	"	Bitternut Hickory
<i>Juglans nigra</i>	"	Black Walnut
* <i>Carya tomentosa</i>	"	Mockernut Hickory
* <i>Carya ovata</i>	"	ShagBark Hickory

BIRCH FAMILY

*Betula lenta	+	Cherry Birch
*Betula lutea	-	Yellow Birch
*Corylus cornuta	-	Haselnut
Corylus americana	-	American Filbert
*Betula populifolia	-	Gray Birch

OAK FAMILY

Castanea pumila	-	Alleghany Chinkapin
*Quercus alba	-	White Oak
*Quercus rubra	-	Red Oak
*Quercus prinus	-	Swamp Chestnut Oak
Quercus velutina	-	Black Oak
*Quercus coccinea	-	Scarlet Oak

MAGNOLIA FAMILY

Liriodendron tulipifera	-	Tulip popular
Magnolia tripetala	-	Umbrella Magnolia

LAUREL FAMILY

Lindera benzoin	-	Spicebush
*Sassafras albidum	-	Sassafras

SAXIFRAGE FAMILY

*Hydrangea arborescens	-	Smooth Hydrangea
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SYCAMORE FAMILY

Platanus occidentalis	-	American Sycamore
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ROSE FAMILY

*Amelanchier canadensis	-	Shadblow Shadbush
*Amelanchier laevis	-	Alleghany Shadbush
*Amelanchier stolonifera	-	Running Shadbush
*Crataegus intricata	-	Thicket Hawthorn
*Crataegus macrosperna	-	Hawthorn
*Physocarpus opulifolius	-	Winebark
*Prunus pennsylvanica	-	Wild Pin Cherry
*Prunus serotina	-	Wild Black Cherry
*Prunus virginiana	-	Wild Choke Cherry
Pyrus americana	-	Mountain Ash
Pyrus coronaria	-	Crab-Apple
*Spiraea betulifolia	-	Birchleaf Spirea
Spiraea latifolia	-	Broadleaf Meadowsweet
Rubus odoratus	-	Thimbleberry



PEA FAMILY

*Cercis canadensis* - Eastern Redbud

HOLLY FAMILY

*Ilex montana* - Large-leaved Holly  
*Ilex verticillata* - Common Winterberry  
*Ilex opaca* - American Holly

SUMAC FAMILY

\**Rhus copallina* - Flameleaf Sumac  
 \**Rhus glabra* - Smooth Sumac  
 \**Rhus typhina* - Hairy Sumac  
 \**Rhus aromatica* - Fragrant Sumac

STAFF TREE FAMILY

\**Celastrus scandens* - American Bittersweet  
 \**Euonymus atropurpureus* - Eastern Wahoo

MAPLE FAMILY

\**Acer nigrum* - Sugar Maple  
 \**Acer rubrum* - Red Maple

BUCKTHORN FAMILY

\**Ceanothus americanus* - New Jersey Tea

GRAPE FAMILY

\**Parthenocissus quinquefolia* - Virginia Creeper

LINDEN FAMILY

*Tilia neglecta* - Basswood  
*Tilia americana* - American Linden

DOGWOOD FAMILY

*Cornus florida* - Flowering Dogwood  
 \**Cornus racemosa* - Gray Dogwood

HEATH FAMILY

\**Kalmia latifolia* - Mountain Laurel  
 \**Rhododendron calendulaceum* - Flame Azalea  
 \**Rhododendron nudiflorum* - Pink Azalea

*Vaccinium angustifolium	-	Lowbush Blueberry
*Vaccinium pallidum	-	Blue Ridge Blueberry
*Vaccinium stamineum	-	Deerberry
*Vaccinium vacillans	-	Lowbush Blueberry

EBONY FAMILY

*Diospyros virginiana	-	Persimmon
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OLIVE FAMILY

*Fraxinus americana	-	White Ash
*Chionanthus virginicus	-	White Fringetree

HONEYSUCKLE FAMILY

Sambucus canadensis	-	American Elder
Sambucus racemosa	-	Red-berried Elder
*Symphoricarpos orbiculatus	-	Indian Currant Coralberry
*Viburnum acerifolium	-	Mapleleaf
*Viburnum dentatum	-	Arrowwood

BUTTERCUP FAMILY

*Clematis	-	Clematis (Vine)
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WITCHHAZEL FAMILY

*Hamamelis virginiana	-	Witch Hazel
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Protection  
Page 1

MASTER PLAN  
FOR PRESERVATION AND USE  
OF  
SHENANDOAH NATIONAL PARK

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Volume III, General Park Information  
Section E. Protection

\*\*\*\*\*  
Prepared by Joe H. Beer Date 7/29/63  
Name

\*\*\*\*\*  
ACCEPTED BY: B. Taylor Harkin Date 8-12-63  
Superintendent

April 1963



Vegetative Cover Types: The Park, an area of 193,646 acres, is 99 per cent forested. Of second growth origin, the forest cover is predominantly mixed hardwoods, with oaks of one or more species occurring in most of the types. Chestnut oak and Northern red oak are the most prevalent tree species along the tops of the main ridges. Northern red oak, white oak, and black oak are well distributed, and bear oak is confined to the drier exposures. Other common hardwoods which are dominant in some types and associates in others include hickory species, American beech, yellow birch, red maple, yellow-poplar, American basswood, black cherry, black walnut, black locust, black gum, white ash, elm species, and American sycamore. Eastern white pine is a dominant species or major associate in mixture with hardwoods on about 15,000 acres. Other coniferous species include Eastern hemlock, Virginia pine, pitch pine, shortleaf pine, table-mountain pine, red spruce and Eastern redcedar.

The only tree species which may be classed as rare or unusual is the Blue Ridge variant of balsam fir (Abies balsamea L. var. phanerolepis Fern.)

Grass areas include former fields and pasture land, the total acreage of which has greatly diminished since establishment of the Park as a result of natural reversion to forest under protection.

Barren areas include rock out crops, talus slopes, and bare tops of the higher mountains.

Aggregate Area of Major Cover Types

<u>Type</u>	<u>Area (Acres)</u>
Forest	192,476
Grass	450
Barren	720
Total	193,646

Forest cover extends almost unbroken from the lowest elevations, about 1,000 feet, at points along the Park boundary nearly to the top of the highest mountain, Hawksbill, 4,049 feet elevation. The major areas of grassland occur on the tops of the broader ridges, the most extensive one of which, Big Meadows, is in the central section of the Park.

Other conditions being equal, fires spread most rapidly in the bear oak, pitch pine and chestnut oak types; medium to high in grassland; and low to medium in the cove hardwoods. Resistance to control of fires is rated as very high in bear oak; high in the yellow pine types; low in cove hardwoods; medium to high in the other forest types; and low to medium in grassland.

Vegetative cover types of the Park were mapped and described in a study which was completed in 1941. See this for further information concerning the park vegetation.

Forest, Brush and Grass Fire Control: Previous to 1933 when protection of the area as a national park began, the land now included within the park was logged, farmed or pastured, and repeatedly burned. Local people generally were careless in their use of fire and indifferent toward the damage done by woods fires. The substantial progress made in the prevention and suppression of fires since Service protection began is clearly reflected by the following comparison of the fire record for the five-year periods 1933 - 1937, 1949 - 1953, with that for 1958 - 1962. Improved though it is, the record for the latter period leaves room for continued improvement.

Period	Number of Statistical Fires		Acreage Burned Inside Park
	Total	Class C,D,E Only	
1933 - 1937	96	39	2,307
1949 - 1953	69	21	919
1958 - 1962	43	8	94.10

The decline of incendiary and debris burning fires, increase in smoker and camper causes, and constancy of man-caused fires since 1933 are shown in the following comparison between the earliest and latest five-year periods of park protection.

Cause	1933 - 1937 Fires		1958 - 1962 Fires	
	Number	Per Cent	Number	Per Cent
Incendiary	50	52.1	15	34.0
Smoker	11	11.5	9	20.9
Debris burning	13	13.5	5	11.6
Camper	2	2.1	-	---
Railroad	1	1.0	-	---
Miscellaneous	14	14.6	7	16.3
Total man-caused	91	94.8	36	83.7
Lightning	5	5.2	7	16.3
Total all causes	96	100.0	43	100.0

SHENANDOAH NATIONAL PARK  
FIRE SUPPRESSION RECORD  
1961 - 1984

Year	Lightning	Man-Caused	A	B	C	D	E	All	Total Acres	Supp. Cost	R & Care Supp. Cost
1984	1	21	1	12	6	8	0	22	1,168	3,297	2.86
1985	-	4	2	2	2	-	-	4	126	672	6.38
1986	3	20	6	12	8	2	1	28	768	2,606	3.26
1987	-	14	2	6	6	-	-	14	186	660	3.67
1988	-	8	1	3	1	-	-	5	66	297	6.30
1989	-	6	1	2	3	-	-	6	119	1,141	9.59
1990	-	8	2	1	-	-	-	3	4	481	122.74
1991	1	12	6	6	2	-	-	18	66	1,613	23.70
1992	4	6	3	3	1	2	-	9	393	2,692	7.36
1993	1	8	2	6	1	2	1	9	506	2,681	6.79
1994	3	8	3	6	2	2	-	13	202	2,606	12.90
1995	2	2	2	1	1	4	-	4	43	614	11.96
1996	-	10	2	6	2	1	1	10	1,669	4,770	3.26
1997	-	7	2	4	-	1	-	7	620	2,878	6.43
1998	-	10	-	6	4	-	-	10	802	2,696	13.36
1999	-	7	-	7	-	-	-	7	21	1,408	66.81
2000	-	12	2	6	2	2	1	12	632	3,750	6.93
2001	1	6	3	2	1	-	-	6	26	882	35.92
2002	2	11	4	4	4	-	-	15	106	3,524	33.56
2003	1	9	4	3	3	-	-	10	136	2,378	17.61
2004	6	6	7	3	1	-	-	11	20	1,878	33.90
2005	2	5	5	2	-	2	2	7	1,245	17,069	13.70
2006	-	4	1	2	-	1	-	4	163	2,847	16.61
2007	2	2	2	3	-	-	-	4	7	2,168	309.42
2008	2	2	2	1	2	-	-	3	2	262	131.60
2009	1	3	3	1	1	-	-	4	16	1,906	119.12
2010	2	3	1	1	1	-	-	6	34	1,807	66.09
2011	1	3	-	-	1	-	-	4	24	1,416	69.00
Total	33	208	67	116	48	14	7	241	6,243	70,802	8.68



Two fire seasons occur each year, the spring season from February 15 to May 15, and the fall season from October 15 to December 15. April is the worst month of the year for fire occurrence, 21.6 per cent of the total number of statistical fires from 1933 to 1962 having occurred during that month.

Although, as indicated above, progress has been made in the reduction of fires due to some causes, after 30 years of park protection the figure of 83.7 per cent man-caused fires still remains undiminished. Prevention and suppression of man-caused fires continue to be the major fire control problem of the park, as it was 20 years ago.

Bills for recovery of suppression costs have been collected from the Norfolk & Western Railway, a local logger, and others. In June 1952 a local 19 year old youth was convicted for setting seven fires in and near the park during the preceding spring. Oral and visual appeals are made to park neighbors and visitors through the mediums of informal and formal talks, posters, park literature, stickers, fire danger signs, movies, local newspapers, and radio.

Some of the residents in relatively isolated valleys bordering the west boundary of the Park have an unfriendly attitude toward the Park. They must be considered a potential fire risk to the Park until relationships with them are substantially improved. Particularly patient and tactful promotion of good relations with such neighbors will need to continue. In Park employee contacts with other local mountain or rural residents it will be advisable to continue to encourage their cooperation with the Park and observance of safe practices in debris burning and other uses of fire.

The forests were in poor condition generally at the time of land acquisition for the Park. They contained much dead standing and down material, due mainly to logging, repeated fires, and the effects of the chestnut blight. To help restore more normal forest conditions and promote recovery, particularly in important locations, under the CCC program fire hazard reduction work was done on more than 9,000 acres of park forest land. No forest fire hazard reduction work is proposed at this time.

Step Up Plan - Fire Danger Information: The Fire Dispatcher will announce over the Park radio twice daily current and predicted fire danger. This information is provided to assist the fire organization in fulfilling the requirements of our Step Up Plan as outlined in the Forest Fire Control Plan.

Current fire danger will be announced as being either low, moderate, medium, high or extreme. The cumulative build-up will be given in numerical terms ranging from 1-200. This latter announcement can be used to assist in predicting future fire danger if the weather remains constant.

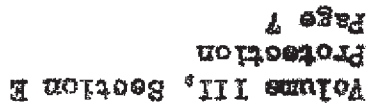
The daily fire danger radio broadcasts will be made promptly at 12 noon and again at 2:30 p.m. This schedule should permit re-evaluation of activities planned for the afternoon and make information available for planning the next day's activity. At the time of the 2:30 p.m. broadcast,

the 4-day forecast will be announced when this information is available from the Weather Bureau.

In the event of a going fire, additional fire danger information can be made available upon request to the Dispatcher.

It will not be necessary to acknowledge receipt of the fire danger broadcasts. If you are out of radio contact at the time of scheduled broadcast, you may request a repeat announcement from the Dispatcher.

(REF ID: A981)





Equipment: Sufficient hand tools are available to equip approximately 450 fire fighters in balanced tool units. The equipment is distributed about the Park in strategic locations, in 6, 10, and 15 man units, with an additional supply at park headquarters. Principal types of hand tools are listed below.

Axe  
Hoe, grub, hazel, or mattock  
Hook, brush  
Pump, backpack, 5 gal.  
Rake, fire  
Saw, crosscut, 1 and 2 man  
Shovel, l.h.r.p., size 0 and larger  
Tool, Pulaski

Mechanical equipment on hand includes the following items.

Fire Trucks (2):  
Ford,  $1\frac{1}{2}$  ton, 150 gal. tank, Barton 250 g.p.m. pump, front and mounted  
Chevrolet,  $1\frac{1}{2}$  ton, 400 gal. tank, Ribley and Harppinger 500 g.p.m. pump, midship mounted  
Portable Power Pumps (4):  
Pacific Marine, Type NY 1  
Pacific Marine, Type Y 3  
Hose:  
Linen,  $1\frac{1}{2}$  in. 4,600 ft. (approx.)  
Cotton, rubber lined,  $1\frac{1}{2}$  in. 8,800 ft. (approx.)  
Cotton, rubber lined, 2 $\frac{1}{2}$  in. 400 ft. (approx.)

Although needs will arise from time to time for items of fire equipment, no major items are required at present.

Building Fire Control: Building fires in the Park which have been reported since August 1943 are summarized below.

Structure	Date	Fire Cause	Point of Origin	Estimated Damage
Meadowsprings Shelter	11/28/46	Possible defective flue	Unknown	\$1,737
Evans Cabin, Skyland	6/22/47	Gasoline used to start fireplace fire	Wall	121
Lodge, Lewis Mountain	10/1/47	Chimney sparks	Roof	Nil
Skyland Dining Room	11/15/47	Unknown	Unknown	41,617
Formitory, Panorama	4/23/49	Defective electric heater cord	Floor	5

Building Fires Cont'd:

<u>Structure</u>	<u>Date</u>	<u>Fire Cause</u>	<u>Point of Origin</u>	<u>Estimated Damage</u>
Big Meadows Lodge	4/10/59	Sparks from Presto-Lite torch to solder copper tubing within partition	Partition between linen room & lounge on ground floor	2,281.95
Shelter at Pinnacles Picnic Area		Fire left in fire-place by picnickers, wind ignited wood partition	Partition & Seat between fire-places & 2 picnic tables	250.00

The possibility of building fires exists throughout the year, with increased risks during the heating season and season of greatest visitor use.

Of the approximately 186 Government owned structures in the Park, only about 35 are of other than frame construction. The exceptions are of masonry, masonry and frame, and steel construction. The 19 Government owned employee residences are all frame except one which is stone masonry. These buildings have either metal, asphalt, slate or asbestos roofing. In addition to the Government owned buildings, there are about 43 structures in the Park which are owned by the Virginia Sky-line Company, Inc., and operated or used by that company under a concession contract along with about 36 of the government owned buildings. Some of the concessioner's major structures, such as Big Meadows Lodge and Skyland Dining Room, are equipped with sprinkler systems.

Many of the structures in the Park are located in or close to woods or fields where they are exposed to a potential exterior fire risk. This requires the provision and maintenance of sufficient clearances around the structures and under those having open foundations.

Periodic inspections of buildings and surroundings are made by the protection organization. To the extent that funds permit, follow-up action is taken to remove the hazards and risks detected. Employees, visitors and neighbors are reminded of precautions to be observed in the interests of fire prevention through the use of signs and posters. Continued attention will need to be given the proper storage of combustibles, maintenance of good housekeeping conditions, safe operations, servicing of fire extinguishers, and observance of Service inspection requirements.

The organization available for building fire control is constituted and functions much the same as that previously outlined for forest fire control. During the operating season, concessioner employees are available to assist in suppressing building fires.

Service and concessioner employees are given periodic training and drills in fire suppression practices, use of fire equipment, and building fire prevention. A five-day Regional building fire control school was conducted in the Park in September, 1948 which was attended by 19 representatives from Shenandoah National Park and 24 representatives from other Service areas.

Information regarding water systems, including sources, storage facilities, distribution lines, hydrants, and pumping equipment is or will be presented in the Utilities section.

Fire trucks, portable power pumps and hose listed previously above are available for use in control of building as well as forest fires. In addition, four hose reel carts for  $1\frac{1}{2}$  inch hose and one for  $2\frac{1}{2}$  inch hose are on hand.

Approximately 150 fire extinguishers of the following types are on hand and appropriately placed:

- Carbon dioxide,  $2\frac{1}{2}$  lb. and 15 lb.
- Foam,  $2\frac{1}{2}$  gal.
- Soda-acid,  $2\frac{1}{2}$  gal.
- Dry chemical,  $2\frac{1}{2}$  lb., 5 lb., 10 lb.

Forest Insect and Disease Control: Spot or widespread attacks on various species of trees have been recurring each year by the locust leaf miner, Japanese beetle, fall webworm, white pine weevil, and walking stick. Occasional infestations of limited extent are on record for the Southern pine beetle.

At present the only forest insect demanding control activities is fall webworm. In 1952, 595 acres were aerial sprayed along Skyline Drive by helicopter at a cost of \$3,725.00. In 1953, 775 acres will be sprayed by mist blown along the Drive at a cost of \$6,852.00.

A spot infection of the oak wilt disease was discovered in the Park and confirmed by laboratory diagnosis in August 1953. This marks the first time that the presence of that disease has been positively identified in an eastern Service area. The infection is located in the north district, 8.3 miles south of the Front Royal entrance and about 200 feet east of the drive. It contained about 10 dead or dying northern red oak trees within an area of approximately  $50' \times 150'$ . In accordance with recommendations by the Bureau of Plant Industry, Soils, and Agricultural Engineering, control measures were applied and appropriate follow-up action is planned. With the cooperative assistance of the Bureau, aerial surveys of the Park for oak wilt infections are to be made, and a control program and estimate of funds will be prepared on the basis of the findings.

A white pine blister rust control program has been conducted in the Park since 1933. The disease was first discovered in the area now included within the Park in 1931 at Thornton Gap on wild gooseberry. Infections on Eastern white pine were found during 1933 in several Park locations, including Hawksbill Mountain, Big Meadows, Skyland, and Pinnacles. With the cooperation and assistance of the Blister Rust Control office, control work is performed each year in accordance with a planned program which is revised periodically to meet changes in control status and needs.

The program currently includes 37 widely distributed control areas totaling 3,980 acres of white pine and an aggregate control area of 14,270 acres which, during 1953, was placed 100 per cent on maintenance. To continue



maintenance of control of the disease in the existing control areas, it is estimated that an annual allotment of 8,818 areas will be required.

The chestnut blight disease has killed or is killing all of the American chestnut trees in the Park. It is the most destructive tree disease that has invaded the eastern forests in modern times. Chestnut was formerly one of the most common and desirable tree species in the Blue Ridge Mountains. Effective or practical means of controlling the disease on an extensive scale have not been found.

No control measures have been applied against other forest diseases and none have been considered necessary or advisable to attempt.

Grazing and Browsing Control: Under its operating contract, the Virginia Sky-line Company, Inc. is permitted to keep a few saddle and pack horses during the operating season in a small fenced area at Skyland and Big Meadows designated for the concessioner's use. There is no other grazing or browsing by domestic or feral animals on Park land. Deer, the only grazing or browsing wildlife in the Park, do not occur in sufficient numbers to be unduly destructive to vegetation.

Vegetation Management: Revegetation - No revegetation is needed or proposed.

Special Shade Tree Care - The need for this type of work is limited largely to removal of hazardous trees and limbs in picnic areas, campgrounds, cabin, residence and other developed areas, and along roads.

Wood Utilization - Fuel wood and some construction materials have been obtained by salvage of dead chestnut; from razing undesired structures; from trees cut in construction and vista clearing projects, windthrown, sleet, fire and other damaged areas; and from dangerous trees and limbs removed for safety reasons. Wood will continue to be obtained from such sources where possible and practical. Needs for fuel wood, construction timbers and lumber which cannot be met by these means must be provided from sources outside the Park.

Public Use Area Vegetation Protection - Visitor use of developed areas is seasonal and the protection of vegetation in such areas has presented no extraordinary problems. No areas currently require special attention, other than enforcement of regulations and maintenance or provision of protective barriers, and those measures are to be continued.

Vista Clearing and Other Cuttings - Vista clearing and maintenance of vistas at parking overlooks and other designated locations along Skyline Drive is an important project which is carried on in accordance with an approved plan and program, and this will be a continuing activity. Other essential cuttings, such as for construction and development, will be done as called for in the applicable plans, specifications or other approved provisions.

Exotic and Noxious Plants - Maintenance of some degree of control of poison ivy in public use, residence and developed areas will be a recurring

need. Eight or more species of exotic trees occur in the Park, most of them having been planted as ornamentals at house sites before the Park was established, or originating from such plantings. Of these only ailanthus has reproduced or is reproducing to any considerable extent, and four other species appear to be losing out in competition with native tree growth. It seems likely that where forest vegetation develops and is maintained undisturbed ailanthus will be crowded out eventually, since it is relatively intolerant of shade and short lived. No exotic tree eradication work has been done, at least during the past six years, and none is programmed.

Special Problems : Special precautions are needed in the disposal of trash in open dump burning operations so as to prevent the spread of fire, and these precautions will need to be continued until a safer means of disposal is provided.

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Concessions and Other Agencies  
Page I

MASTER PLAN  
FOR PRESERVATION AND USE  
OF  
SHENANDOAH NATIONAL PARK

\*\*\*\*\*  
Volume III, General Park Information  
Section F. Concessions and  
Other Agencies

\*\*\*\*\*  
Prepared by

Name

Date

\*\*\*\*\*  
ACCEPTED BY:

Superintendent

Date



Concession Contracts and Permits: Revocable concession permits are two in number. One is with the Potomac Appalachian Trail Club, Permit No. 14-10-0137-0122, executed December 4, 1961, covering the period January 1, 1962 through December 31, 1966, to allow the permittee to operate five trailside shelter cabins for the accommodation of club members and all others desiring to use such facilities for overnight or extended shelter camping.

The other concession permit is with the Virginia Stage Lines, Inc., Permit No. 14-10-0137-0138, executed January 16, 1963, covering the period June 1, 1963 to December 31, 1963, to allow the permittee to transport passengers by motor bus or automobile via the Skyline Drive, in Shenandoah National Park on certain days in accordance with a designated schedule at approved passenger tariff rates, from approximately June 15 through October 27, 1963.

Our single concession contract is Park-wide in nature, and is with the Virginia Sky-Line Company, Inc., Contract No. 14-10-0100-1038, executed April 20, 1961, which runs from January 1, 1959 to December 31, 1988. The Concessioner is authorized to provide accommodations, facilities and services to the public as follows:

- (1) Lodgings, including but not limited to hotels, lodges, camps, cabins, housekeeping accommodations, dormitories, etc.
- (2) Food and beverage service, including but not limited to dining rooms, restaurants, cafeterias, grills, coffee shops, lunchrooms, soda fountains, refreshment stands, cocktail lounges, etc.
- (3) Automobile service stations, including but not limited to the sale of gasoline, motor oil and grease, accessories, tire repair service, etc.
- (4) General stores selling groceries, meats, foods, beverages, proprietary drugs and sundries, photographic supplies and equipment, souvenirs, works of art, handicrafts, books, smokers supplies, gifts, curios, etc.
- (5) Saddle and pack horse service, with or without commercial guide services, and to establish, maintain, and operate corrals, riding stables, and other facilities which are customary in connection with such services: PROVIDED, however, that the saddle and pack horse and commercial guide services authorized in this subsection shall not be considered as conferring upon the Concessioner any preferential right to provide such services to the exclusion of others who may be authorized to operate over park trails from bases located on privately-owned lands either within or in the vicinity of the Park.
- (6) Any and all facilities, services, and operations necessary to or customary in connection with any of the above-named operations, and such related and supplementary services as may be approved by the Secretary during the effective period of this contract.

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Page 3

(7) The Secretary reserves the right to determine and control the nature and type of merchandise and services which may be sold or furnished by the Concessioner within the Park.

As the concessioner enjoys the privilege of operating largely free of competition, certain controls are necessary, chief among which are plans approval, rate approvals, approval of merchandise and services offered, and compliance with minimum health and labor regulations and insurance requirements.

As required by provisions of the contract, assignments of land appropriate for the operations authorized are currently designated in a letter to the Concessioner dated March 30, 1960.

Also, as indicated in the contract, the Concessioner shall expend for improvements and rehabilitation an average of \$125,000 annually during the period January 1, 1959 to December 31, 1973. By December 31, 1966, the Concessioner is required to invest \$1,400,000, and an additional \$600,000 by December 31, 1973, or \$2,000,000 in all.

Below are listed the capacities of developed areas as of December 31, 1963, as to total number of buildings available for guests and employees.

UNIT NAME	TOTAL NO. OF ROOMS	LIVING ROOMS	AVAILABLE TO PUBLIC	EMP. ROOMS	BLDGS. GOV'T OWNED	BLDGS. NO. CO. OWNED	GUEST PILLOWS	NO EMP. PILLOWS
Elkwallow	4	0	0	4	0	2	0	8
Panorama	4	0	0	4	0	3	0	10
Skyland Lodge	200	30	159	41	17	25	432	88
Big Meadows Wayside	2	0	0	2	0	4	0	6
Big Meadows Lodge	105	6	70	29	2	15	217	73
Lewis Mountain Lodge	16	0	12	4	0	8	24	8
Swift Run	7	0	0	7	1	1	0	15
TOTALS	338	36	231	91	20	58	673	213

No overnight accommodations are offered to visitors at Elkwallow Wayside, Panorama, Big Meadows Wayside, or Swift Run, at which restaurant services are offered.

We have two subconcession agreements in force subordinate to the Virginia Sky-Line Co. contract, one with Lewis E. Wallihan covering saddle and pack horse services, and one with the Southern Highland Handicraft Guild, Inc., which sells traditional mountain craft articles.

In addition, there are Special Use Permits in force, consisting of those commonly granted in park areas, such as rights-of-way for power lines, gas lines, water lines, road uses, radio repeater stations, air navigation radio facilities, and telephone lines.

Also in the south section of the Park, we have 709.7 acres of land subject to scenic easements.

Other Agencies: Fire Control - A cooperative agreement was made on January 17, 1961, with the U. S. Forest Service, through arrangements with the Forest Supervisor of George Washington National Forest, whereby there is a closer degree of cooperation between the Forest and Park Service personnel in all phases of fire control.

A similar agreement was made on December 20, 1960, with the Virginia Forest Service, to define relationships and responsibilities with respect to mutual assistance in fire prevention, suppression and suppression. A "buffer zone" or strip of non-Federal land adjoining the boundary of the Park was established on appropriate maps, wherein costs of fire suppression are paid for by each agency.

A "Memorandum of Understanding", effective August 1, 1961, also was made with the Agricultural Research Service, Animal Husbandry Research Division, at Front Royal, Virginia, to define in general terms the basis for cooperation. This agreement was conformed to apply also, to the State Department Relocation Site at Front Royal, Virginia.

Under fire prevention measures, should be mentioned the fact that twice a year, Spring and Fall, the sprinkler systems of the Concessioners buildings at Big Meadows and Skyland are inspected by the Automatic Sprinkler Corporation of America, Youngstown, Ohio.

Water Resources Investigation - As part of a large scale program to complete water resources studies, a "Memorandum of Understanding" was executed on October 23, 1961, with the Commonwealth of Virginia, whereby its Department of Conservation and Economic Development, through the State Geologist, will continue water resource studies on Federal lands for a period not to exceed twenty years.

Cooperative Maintenance of Roads - As authorized under the Act of January 31, 1931, (48 Stat. 1053; 16 U.S.C. Sec. 6) we worked out an arrangement whereby the State Highway Department's forces handle snow and ice removal on five of our road segments. We issue a purchase order each year for this work.



Natural History Association - The Shenandoah Natural History Association has been growing gradually and now has annual sales exceeding \$5,000. It has rendered important aid to the Park by having printed nature trail booklets, visitor activity programs and miscellaneous items.

Blister Rust Control - The "Memorandum of Agreement of December 6, 1961, between the Department of the Interior and the Department of Agriculture, relating to the conduct of Forest Insect and Disease Surveys and Control on Lands of the U. S. Department of the Interior" is given strict attention.

By close cooperation with the U. S. Forest Service, the basic plan for blister rust control is formulated. Excellent coordination and execution of programs have been obtained.

Forest Pest Control - The "Service" and the National Academy of Science - National Research Council, by agreement of November 2, 1960, give stress to extreme care in application of pesticides to avoid destruction of Park fish and wildlife resources.

To accomplish this, as well as other features of the forest pest control program, we work closely with the U. S. Forest Service representatives in Harrisonburg, Virginia, in carrying out the full intent of the "Memorandum of Agreement of December 6, 1961," between the Department of the Interior and the Department of Agriculture.

Fish and Wildlife - To aid in the conservation and interpretation of biological resources, to secure advanced technical knowledge on fish and wildlife conservation, and to assist in informative surveys, we have at various times called upon the U. S. Fish and Wildlife Service, as indicated under the terms of "Memorandum of Understanding of June 15, 1960, between the National Park Service and the Fish and Wildlife Service," as approved by the Secretary of the Interior.

One result of the close coordination of efforts has been establishment of the innovation of "fishing for fun" in the Rapidan and Staunton Rivers, where fishing is restricted to artificial flies or lures having one barbless hook, and all fish caught must be returned unharmed to the streams.

Another effort resulted in the Virginia State Legislature amending the Code of Virginia, by adding Section 29-552, to provide for a special fishing license for trout fishing in Shenandoah National Park.

Public Health Services - Under terms of a cooperative agreement dated November 22, 1955, between the National Park Service and the U. S. Public Health Service, the Sanitary Engineering Inspection's of food handling facilities of the Concessioner are performed each year for us by the Sanitary Engineer Consultant.

Recommendations are made by the Public Health Service to cover:

- (a) Deficiencies which are the result of structural deficiencies.
- (b) Operational or housekeeping deficiencies.

Civil Defense Program - Close cooperation has been given to the office of Civil Defense. A Civil Defense Disaster Plan has been prepared for Shenandoah National Park personnel. Modifications have been made to the basement area toward making it acceptable as a restricted fallout shelter.

Services Provided Outside of Park: Accommodations for Overnight Use -  
Inasmuch as Shenandoah is an elongated Park - 85 miles (air) long and 2 to 13 miles wide, there are numerous types of accommodations bordering its boundaries. However, as the Park is within one day's drive of 75 million people, the outside accommodations have had but little material effect on the concessioner's business.

A list of the larger nearby towns, and the overnight accommodations are as follows:

<u>Towns</u>	<u>Hotels</u>	<u>Motels</u>
Front Royal, Virginia	4	17
Bentonville, Virginia		1
Sperryville, Virginia	1	
Luray, Virginia	2	12
New Market, Virginia		1
Shenandoah, Virginia		
Stanley, Virginia		
Elkton, Virginia	5	
Harrisonburg, Virginia	5	15
Charlottesville, Virginia	6	28
Waynesboro, Virginia	2	12
Staunton, Virginia	3	10

As to day use accommodations we again list the adjoining towns with the restaurants and other possible outstanding attractions, as follows:

<u>Towns</u>	<u>Number of Restaurants</u>	<u>Some other Attractions</u>
Front Royal, Virginia	24	Skyline Caverns Randolph Macon Academy
Bentonville, Virginia	1	
Sperryville, Virginia	4	

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Day Use Accommodations cont'd -

<u>Towns</u>	<u>Number of Restaurants</u>	<u>Some other Attractions</u>
Luray, Virginia	12	Luray Caverns Carillon Tower
New Market, Virginia	2	Endless Caverns Melrose Civil War Museum and Caverns Shenandoah Caverns
Stanley, Virginia	3	Swimming Pool
Elkton, Virginia	6	
Harrisonburg, Virginia	26	Massanutten Caverns Madison College
Charlottesville, Virginia	47	Monticello University of Virginia
Waynesboro, Virginia	24	
Staunton, Virginia	38	Woodrow Wilson's Birthplace



SNP-96

MASTER PLAN

HANDBOOK  
Chapter 2

Volume III. General Park Information

Type C  
Weather Data

Developed Area: Headquarters

Climate (Following for each Dev. Area)

Temperature

Maximum 97.0F

Minimum -6.0F

Average summer day-night temperature difference:

41.0F

Mean Temperature

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>April</u>	<u>May</u>	<u>June</u>
M Maximum	46.4	51.2	56.4	69.6	78.0	85.0
Mean	34.5	38.3	43.1	55.3	63.1	70.6
Minimum	22.5	25.4	29.7	40.5	48.2	56.1

	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Maximum	83.7	87.1	81.8	70.6	58.9	48.0
Mean	74.7	73.3	67.6	56.5	46.0	36.5
Minimum	60.2	59.5	53.4	42.5	33.0	21.7

Prevailing wind from SW to SE in summer; NW in winter.  
(known to be higher but not recorded)

Maximum recorded velocity 14 m.p.h. March

Subject to steady ☒ Frequent ☐

Strong winds ☐ occasionally tornadoes ☒ very seldom

hail ☐ small amount lightning ☒ high higher upon mountain

Downdrafts ☒ variable northers ☐ occasionally

Excessive humidity ☒ none other ☐

SNP-96

Annual rainfall 40.54; maximum rate of fall 4.3"  
Maximum snow pack 25'; average moisture content not calculated, but approx. 65%  
Structural failures caused by snow: Building 2-2, 2-5, 2-7, 2-9;  
Drawing No. NP-SHE-2391G.

Type of failure Roof too flat. Snow load too much. Crack length of cross beam.

Mechanical cooling required: period 6-15 to 10-1;  
evaporative none; refrigeration Air Conditioners

Special climatic requirements The climate at Headquarters is generally cooler in the summer than one mile to the west, where pass Run crosses US 211 and colder in the winter. Any where from 5° - 10° difference in temperature.

Site Data (Each Dev. Area)

Elevation 1000 - 1200, Longitude 78°22', Latitude 38°39', County Page

Topography (general description of surface characteristics) At foot of mountain a small amount of the area is flat. The surface seems free of rock. The slope of ground is approximately 6:1.

Vegetation (describe briefly) The area is quite heavily covered with pine and various low land deciduous tree (a great deal of locust growth)  
The trees are fairly large in cal. up to 3' mature trees.

SNP-96

Soil and Foundation Data (Each Dev. Area)

Geological description (to 10ft. min. depth)

Slate, Greenstone, Limestone, Quartzite, depth of topsoil -  
4" and over. See Water Resources Report, April 16, 1962.

Depth of water table Not yet known; believed to be 495 - 570"

Water permeability General

Forst penetration: Average 30"

Maximum known 30"

Bearing capacity (where tests have been made)                     

Varies (Good upon bedrock)

Foundation types usually used in vicinity                     

Concrete with steel reinforcing, stone, concrete block

Usual depth of foundations 36"

Special Foundation or soil problems                     

None

Structural failures due to soil or foundation design                     

None

Miscellaneous Design Considerations

Wood destroying insects Termites, wood borers

Flies Yes; Gnats - Yes

Posionous insects and

reptiles Rattlesnakes, copperheads, wasps, yellow jackets, bees

Other



Architectural Influences

1. Give brief architectural history of development and description of construction type(s) in existing ~~buildings~~ <sup>Rock Adair, & Util.</sup> buildings ~~sides are of stone w/ slate roofs, some w/ clapboard siding, several are of concrete block (prop. has stone facing), inside - wood frame.~~
2. Note any special historical archeological or traditional considerations related to design of future buildings ~~try to use stone facing on all administrative and maintenance buildings~~

Facilities for Contractor's Use

Electric power: Voltage 12 KV; Rate 25 kWh = 5.00/kwh net  
25 GPM well  
 Water Supply, rate 30 GPM well 300 kWh @ 4.66/kwh net  
GPM Spring 350 kWh @ 2.50/kwh net  
over 700 @ 1.50 kWh net

Telephone arrangements to be made with Chattanooga and Potomac  
Telephone Company, Culpeper, Virginia

Housing and Mess Facilities

Government: Location Pinnacles Residence Area  
~~Present - Approximately 7~~  
 Capacity Future - 20 Rate \$21 bi-weekly

Concessioner: Location Skyland  
 Capacity 432 total Rate \$1 to \$25

Commercial: Location Luray, Virginia  
Motel and  
 Distance 4 miles Type Motel Rate \$2 and up

Trailer Camps: Location Big Meadows Campground  
 Distance 23.6 miles Rate none

Construction Office Space Headquarters Maintenance Area  
 Charges None anticipated

Materials Storage Space Headquarters Maintenance Area  
 Charges None anticipated

Nearest Railroad Luray, Virginia  
 Line Norfolk and Western RR

Construction Season March 1 (earliest) through November 30 (latest)

SNP-96

Building Materials

Building stone: Source Trayfoot (SNP) and Massanutten Mountains

Distance from headquarters -----~~58.4~~--- 35.8 miles respectively

Kind Limestone, sandstone, greenstone Color Gray and Brown

Quarried ☒ \* Field ☒ Sawed ☐ % can be used from Park

Flagstone: Source Baughan Construction Company

Distance from headquarters 6 miles

Kind Scheuylor Soapstone Color Gray Quality Good

Coarse aggregate: Source Painter and Murry, Elkton, Virginia

Distance from headquarters 21 miles

Crushed rock ☒ Gravel ☒ Clean ☒

Screen analysis available Elkton

Sand (concrete): Source Baughan Construction Company

Distance from headquarters 6 miles

Impurities none Analysis available Froehling & Robertson Richmond, Virginia

Sand (plaster): Source Baughan Construction Co. through Arthur Ellis

Distance from headquarters 6 miles

Impurities none Analysis available same as above

Logs: Source Dean Lumber Company

Distance from headquarters 37 miles

Species Pine, oak, locust

Size 2" x 2"  
10" x 6" Conditions affecting availability, cost,

use Dean Lumber Company could supply other lumber. If tract is being cut at the time of construction

SNP-96

Lumber: Source ~~Daughan Construction Company~~

Species and types in each species stocked: \_\_\_\_\_

~~122 and 120~~

Kiln or air dried ~~kiln dried~~

Availability of West Coast Lumber and comparative cost:

~~Price \$11.500~~

Concrete Blocks (Give address of distributor, where made and types) ~~Valley Blocks in Harrisonburg, Virginia~~

~~(Daughan Construction Company)~~

Brick and Tile (nearest source and manufacturer)

Availability of ~~Shenandoah Brick and Tile, Winchester, Virginia~~

Plant or transit mix concrete ~~Daughan Construction Co.~~

Plant mix road materials ~~Frederick and Hardy~~

Concrete testing facilities ~~Schilling and Robertson~~

Light weight plaster or concrete aggregate \_\_\_\_\_

~~Arthur Ellis~~

Reinforcing steel ~~Daughan Construction Co. through J.B. Kendall~~

Structural steel ~~Smith and Greene, Richmond, Virginia~~

Other local building material of special interest

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



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MASTER PLAN

Vol III Sec G

HANDBOOK  
Chapter 2

Volume III. General Park Information

Weather Data

Developed Area: Big Meadows

Climate (Following for each Dev. Area)

Temperature

Maximum 85.0 °F

Minimum -11.0 °F

Average summer day-night temperature difference:

36.0 °F

Mean Temperature Average - 1952-1961.

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>April</u>	<u>May</u>	<u>June</u>
M Maximum	28.0	31.2	34.3	45.7	55.2	53.1
Minimum						
	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Maximum	67.2	60.3	49.9	42.2	39.7	30.3
Minimum						

Prevailing wind from SE in summer; NW in winter.

Maximum recorded velocity 20 m.p.h. March

Subject to steady ☒ Frequent ☐

Strong winds ☒ tornadoes very seldom

hail small amount lightning quite frequent

Downdrafts none northers occasionally

Excessive humidity none other ☐

Annual rainfall 51.94"; maximum rate of fall 5.85 (Nov)  
 Maximum snow pack 24"; average moisture content Not calculated but approximately 8%  
 Structural failures caused by snow: Building 5-41, 5-42, 5-43  
 Drawing No. MP-SHE-3110.

Type of failure Snow melted and went under footing, causing walls to bulge and floors heave and have to be repaired. Roofs on building not having enough pitch for mountain weather.  
 Mechanical cooling required: period none;  
 evaporative none; refrigeration none (at present)  
 Special climatic requirements Buildings need at least 3' footings, large aggregate stone on ground floor at least, 18" deep with drainage. Pitched roofs.

Site Data (Each Dev. Area)

Elevation 3500-3710, Longitude 78°26', Latitude 36°37'00", County Madison

Topography (general description of surface characteristics) The Big Meadows area is generally flat in the development portion of the area with three rather rocky areas with boulders. There are several marshy areas within the complex.

Vegetation (describe briefly) All vegetation is stunted slightly because of winds and the location atop the mountain. There are a large number of trees and shrubs. Both sparsely and densely located throughout the area. All the growth is second growth. A few trees of 18" - 22" tall exist. The shrub growth is quite extensive. Growing in the meadows meadows and along the wood edge. See Section D for plant material.

SNP-96

Soil and Foundation Data (Each Dev. Area)

Geological description (to 10ft. min. depth)

Greenstone and granite boulders, soil varies from 0' - 15' depending on location.

Depth of water table Unknown - a good number of springs in area.

Water permeability Generally impermeable except through fractures.

Forst penetration: Average 3'

Maximum known 3'6"

Bearing capacity (where tests have been made) Good upon bedrock

Foundation types usually used in vicinity Reinforced concrete, cinder block.

Usual depth of foundations 3'

Special Foundation or soil problems Rock encountered.  
Provided drainage on fill slopes or areas.

Structural failures due to soil or foundation design  
Foundation should be supplied inside all structural bearing walls.

Miscellaneous Design Considerations

Wood destroying insects Termites and wood borers

Flies yes; Gnats - yes      Posionous insects and  
reptiles Bees (yellow jackets), wasps, rattlers and copperheads.

Other Variety of snakes(23), salamander(17) species, lizards(7),  
turtles(8), toads and frogs(13).



Architectural Influences

1. Give brief architectural history of development and description of construction type(s) in existing buildings Wood frame, chestnut paneling, wood siding, concrete block and stone. Bldgs started in 1938. Small units 2 apts. Two new units incl. 15 apts
2. Note any special historical archeological or traditional considerations related to design of future buildings  
Big Meadows Visitor Center should be of the older style architecture to fit with existing building - rustic to semi-modern.

Facilities for Contractor's UseElectric power: Voltage 12 KV; Rate .03 for 1000 KW and overWater Supply, rate approx. 100 GPM. .52/1000 gal. (not charged at present except to concessioner)

Telephone arrangements to be made with \_\_\_\_\_

Chesapeake and Potomac Telephone Company, Culpeper, VirginiaHousing and Mess FacilitiesGovernment: Location Big Meadows Maintenance AreaCapacity Approximately 12 Rate 7.50 - 9.50 bi-weeklyConcessioner: Location Lodge Loop RoadCapacity Approximately 12 Rate \$60/mo. (2 persons in double room) Room & BoardCommercial: Location Lodge AreaDistance --- Type & Multiple units cottages Rate \$6 - \$13 (Double occup. 43% at \$3 rate)Trailer Camps: Location Big Meadows CampgroundDistance within area Rate noneConstruction Office Space varies (could be in maintenance area)Charges ---Materials Storage Space Big Meadows Maintenance AreaCharges ---Nearest Railroad Luray, VirginiaLine Norfolk and Western RRConstruction Season March 15 - November 15

SNP-96

Building Materials

Building stone: Source Trayfoot (GNP) and Massanutten Mt.

Distance from headquarters ----- 52 and 52 mi., respectively

Kind Greenstone, limestone, sandstone Color Gray and brown

Quarried ☒ Field ☐ Sawed ☒

Flagstone: Source Baughan Construction

Distance from headquarters 4 miles

Kind Schenckler soapstone Color gray Quality good

Coarse aggregate: Source Painter and Hardy, Elkton

Distance from headquarters 37 miles

Crushed rock ☒ Gravel ☐ Clean ☒

Screen analysis available Elkton

Sand (concrete): Source Baughan Construction

Distance from headquarters 4 miles

Impurities none Analysis available Freshling & Robertson  
Richmond, Va.

Sand (plaster): Source Arthur Ellis

Distance from headquarters 4 miles

Impurities none Analysis available \_\_\_\_\_

Logs: Source Dean Lumber - Elkton

Distance from headquarters 37 miles

Species Pine, oak

Size 2x6 - 16x16 Conditions affecting availability, cost,  
use Dean Lumber could supply other lumber, if tract is being cut  
at time of construction

SNP-96

Lumber: Source Baughan Construction

Species and types in each species stocked: \_\_\_\_\_

Kiln or air dried Kiln

Availability of West Coast Lumber and comparative cost:

Fir = \$11/100

Concrete Blocks (Give address of distributor, where made  
and types Valley Blocks in Harrisonburg (Baughan Construction)

Brick and Tile (nearest source and manufacturer)

Availability of: Shen Brick and Tile, Winchester, Va.

Plant or transit mix concrete Baughan Construction

Plant mix road materials Painter and Mundy

Concrete testing facilities Freshling and Robertson

Light weight plaster or concrete aggregate \_\_\_\_\_

Arthur Ellis

Reinforcing steel Baughan Construction (J. B. Kendall)

Structural steel Howe and Greene, Richmond, Va.

Other local building material of special interest



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Chapter 2

Volume III. General Park Information

Typo A  
Weather Data

Developed Area: Pinnacles Residence and Picnic Area

Climate (Following for each Dev. Area)

Temperature

Maximum 85.0 °F

Minimum -11.0 °F

Average summer day-night temperature difference:

36.0 °F

Mean Temperature Average 1932 - 1961 (Taken from Big Meadows)

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>April</u>	<u>May</u>	<u>June</u>
M Maximum						
Minimum	28.0	31.2	34.3	45.7	56.2	53.1
	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Maximum						
Minimum	67.2	60.3	49.9	42.2	39.7	30.3

Prevailing wind from SE - SW in summer; NW in winter.

(known to be higher but not recorded)  
Maximum recorded velocity 20 m.p.h. (March)

Subject to steady ☒

Frequent ☐

Strong winds ☒

tornadoes ☒ very seldom

hail ☒ small amount

lightning ☒ quite frequent

Downdrafts ☒ none

northers ☒ occasionally

Excessive humidity ☒ none other ☐

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Annual rainfall 31.94"; maximum rate of fall 5.85 (Nov)  
Maximum snow pack 24"; average moisture content not calculated but approx. 8%  
Structural failures caused by snow: Building All CCC buildings (temporary)  
Drawing No. SN-969.

Type of failure Set on concrete block - open beneath - no footings

Mechanical cooling required: period none;  
evaporative none; refrigeration none

Special climatic requirements Buildings need at least 3' footings, large concrete stone on ground floor at least 18" deep with drainage, pitched roofs.

Site Data (Each Dev. Area)

Picnic 3550 Longitude 78°21' Picnic Rappahannock  
Elevation Resid. 3215, Latitude 38°37'30" / 38°36'30" = Residence, County Page

Topography (general description of surface characteristics) Residence Area flatter than Picnic Area. Picnic Area approximately 3% slope with 10% slope for development. Residence on east slope; picnic area on crest of ridge.

Vegetation (describe briefly) Good-sized oaks, hickories, pines, locust, larch, sassafras, chestnut, elm, maple, sassafras, birch, black cherry, blueberry, sweet fern, basswood (poplar) Aspen

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Soil and Foundation Data (Each Dev. Area)

Geological description (to 10ft. min. depth)

See Water Resources Report - 1960

Pinnacles Pionia Ground

Depth of water table Unknown (on surface at present)

Water permeability Generally impermeable except through fractures

Forst penetration: Average 3'

Maximum known 3'6"

Bearing capacity (where tests have been made) Varies (good upon bedrock)

Foundation types usually used in vicinity none

Usual depth of foundations 36"

Special Foundation or soil problems none

Structural failures due to soil or foundation design

Slope in fill should also have drainage, included because of heavy rains

Miscellaneous Design Considerations

Wood destroying insects Termites, Borers

Flies Yes; Gnats - Yes Posionous insects and

reptiles Rattlesnakes and Copperheads; wasps; yellow jackets, bees

Other

1. Give brief architectural history of development and description of construction type(s) in existing All OGC Bldgs, non buildings in the downtown office, rail station, other transit station at public mall.
2. Note any special historical archeological or traditional considerations related to design of future buildings

20 KWH @ 5.8¢/KWH net

300 1000 0 4.64/1000 net

350 KPH @ 2.54 VOLTS rot

cost 70¢ @ 1.50/MB net

1994

50755 495454

221 05-000000

Rate 50 per 1000

2324

### Arrests Residence



1997

## References



Building Materials

Building stone: Source Troyfoot (SNP) and Massanutten Mountains  
Pinnacles

Distance from ~~headquarters~~ ----- 43 and 45 miles

Kind limestone and sandstone (greenstone) Color Gray and Green

Quarried ☒ Field ☒ Sawed ☐ <sup>a</sup>can be used from Park

Flagstone: Source Baughan Construction Company

Distance from headquarters 6 miles

Kind Schenley Soapstone Color Gray Quality Good

Coarse aggregate: Source Painter and Mumby, Elkton, Virginia  
Pinnacles

Distance from ~~headquarters~~ 30 miles

Crushed rock ☒ Gravel ☒ Clean ☒

Screen analysis available Elkton

Sand (concrete): Source Baughan Construction Company

Distance from headquarters 6 miles

Impurities ----- Analysis available Freshling & Robertson  
Richmond, Virginia

Sand (plaster): Source Baughan Construction Company through Arthur Ellis

Distance from headquarters 6 miles

Impurities ----- Analysis available same as above

Logs: Source Dean Lumber Company

Distance from headquarters 37 miles

Species Pine, Oak, Locust

2" x 2"  
 Size 16" x 16" Conditions affecting availability, cost,  
 use Dean Lumber Company could supply other lumber if tract is  
being cut at the time of construction.

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Lumber: Source Baughen Construction Company

Species and types in each species stocked: \_\_\_\_\_

Pine and Fir

Kiln or air dried Kiln Dried

Availability of West Coast Lumber and comparative cost:

Fir 214/100

Concrete Blocks (Give address of distributor, where made and types Valley Blocks in Harrisonburg, Virginia

(Baughen Construction Company)

Brick and Tile (nearest source and manufacturer)

Availability of: Shenandoah Brick and Tile, Winchester, Virginia

Plant or transit mix concrete Baughen Construction Co.

Plant mix road materials Imhoff and Mundy

Concrete testing facilities Brookling and Robertson

Light weight plaster or concrete aggregate \_\_\_\_\_

Arthur Eitzen

Reinforcing steel Baughen Construction Co. through J. B. Kendall

Structural steel Heck and Green, Richmond, Virginia

Other local building material of special interest

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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Type A

Weather Data

Developed Area: Lewis Mountain

Climate (Following for each Dev. Area)

Temperature

Maximum 85.0 °F

Minimum 11.0 °F

Average summer day-night temperature difference:

36.0 °F

Mean Temperature

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>April</u>	<u>May</u>	<u>June</u>	
M Maximum	28.0	31.2	34.3	43.7	56.2	59.1	(Taken from Big Meadows)
Minimum							

	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Maximum	67.2	60.3	49.9	42.2	39.7	30.3
Minimum						

Prevailing wind from SE to SW in summer; N in winter.

Maximum recorded velocity 20 m.p.h.

Subject to steady ☒

Frequent ☐

Strong winds ☒

tornadoes ☐ very seldom

hail ☐ small amount

lightning ☐ quite frequent

Downdrafts ☐ none

northers ☐ occasionally

Excessive humidity ☐ none

other ☐

SNP-96

Annual rainfall 51.94; maximum rate of fall 5.85 (Nov.)  
Maximum snow pack 24"; average moisture content not calculated  
Structural failures caused by snow: Building \_\_\_\_\_;  
Drawing No. NP-SHE-30468.

Type of failure None

Mechanical cooling required: period None;  
evaporative None; refrigeration None

Special climatic requirements Most areas on the mountain do  
not require cooling. No special climatic requirement.

Site Data (Each Dev. Area)

Elevation 3375-3450, Longitude 78°28'45", Latitude 35°26'15", County Greene

Topography (general description of surface characteristics) Very rocky. Generally flatter than most areas. Rocks seem  
to be near ground surface. Greenstone

Vegetation (describe briefly) Heavily wooded with oak. Large  
trees. Some laurel and azaleas. Undergrowth. Little wild flower  
growth.



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Soil and Foundation Data (Each Dev. Area)

Geological description (to 10ft. min. depth)

See water resources map 1961. From greenstone to quartzite to  
granodiorite.

Depth of water table From 150 - 300' (anticipated)

Water permeability General impermeable except through fractures.

Forst penetration: Average 3'

Maximum known 3' 6"

Bearing capacity (where tests have been made) \_\_\_\_\_  
(Good upon bedrock)

Foundation types usually used in vicinity \_\_\_\_\_

Reinforced. Concrete, cinder block, stone.

Usual depth of foundations 3'

special Foundation or soil problems Rock encountered.

provide footing under all bearing walls and drainage beneath and  
around buildings.

Structural failures due to soil or foundation design

None

Miscellaneous Design Considerations

Wood destroying insects Termites and wood borers (carp ants)

Flies Yes; Gnats, Yes Posionous insects and

reptiles Bees (yellow jackets), wasps, rattlers, copperheads

Other Varieties of snakes - black snake, salamanders, lizards,  
turtles and toads

Architectural Influences

1. Give brief architectural history of development and description of construction type(s) in existing buildings wood frame and stone structures, associated buildings
2. Note any special historical archeological or traditional considerations related to design of future buildings

Should be as stated above

Facilities for Contractor's Use

Electric power: Voltage 7.2 KV; Rate None available; could use Concessioner microwave

Water Supply, rate 31 GPM spring; 2 wells prop.

Telephone arrangements to be made with Chesapeake and Potomac Telephone Company, Gulpeser, Virginia

Housing and Mess Facilities

Government: Location None

Capacity \_\_\_\_\_ Rate \_\_\_\_\_

Concessioner: Location Lodge Area

Capacity 25 Rate \$5 - \$10 per room

Commercial: Location Big Meadows

Distance 6.3 Type cottages Rate 12.25 (double occup. 12.25 + 1.25 rate)

Trailer Camps: Location Lewis Mountain Campground

Distance \_\_\_\_\_ Rate None

Construction Office Space Varies

Charges \_\_\_\_\_

Materials Storage Space Big Meadows Maintenance Area (some at Lewis Mt. if not too much)

Charges None

Nearest Railroad Linton, Virginia

Line Norfolk and Western Railroad

Construction Season March 15 (earliest) to November 15 (latest)

SNP-96

Building Materials

Building stone: Source Trayfoot (SNP) and Massanutten Mountain  
Lewis Mountain  
Distance from ~~Headquarters~~ 28.5 miles and 37.7 miles respectively  
Kind Greenstone, limestone, sandstone Color gray and brown  
Quarried ☒ Field ☐ Sawed ☒

Flagstone: Source Dean Lumber Co. through T. W. Mundy, Elkton, Virginia  
Lewis Mountain  
Distance from ~~Headquarters~~ 12 miles  
Kind Sandstone Color Brown Quality Good

Coarse aggregate: Source T. W. Mundy, Elkton Limestone, Grottoes Sand  
Lewis Mountain and Gravel  
Distance from ~~Headquarters~~ 21 mi-Mundy; 32 mi-Grottoes  
Crushed rock ☒ Gravel ☐ Clean ☐  
Screen analysis available Elkton and Grottoes

Sand (concrete): Source Elkton Limestone and Grottoes Sand and Gravel  
Lewis Mountain  
Distance from ~~Headquarters~~ 21 and 32 miles respectively  
Impurities \_\_\_\_\_ Analysis available Elkton and Grottoes

Sand (plaster): Source Dean Lumber  
Lewis Mountain  
Distance from ~~Headquarters~~ 12 miles  
Impurities Clear white sand Analysis available Elkton Limestone

Logs: Source Dean Lumber  
Distance from ~~Headquarters~~ 12 miles  
Species Oak, pine (yellow and white, occasionally other species)  
2" x 2"  
Size 16" x 16" Conditions affecting availability, cost,  
use Dean Lumber Company could supply other lumber if tract is  
being cut at time of construction

SNP-96

Lumber: Source Dean Lumber Company

Species and types in each species stocked: \_\_\_\_\_

Kiln or air dried All western kiln dried and native material.  
1/2 and 1/12 (depending on demand)

Availability of West Coast Lumber and comparative cost:  
Fire available. D<sup>2</sup> for in framing \$20 - \$25 more for western

Concrete Blocks (Give address of distributor, where made  
and types Available through Dean Lumber Co. Manufacturer - Valley  
Blocks, Harrisonburg, Virginia, cement and polite blocks

Brick and Tile (nearest source and manufacturer)

Availability of: Through Dean Lumber Co. (Manufacturer - Brick, Webster -  
Roanoke; Tile Daniel Brick and Tile, Richmond)

Plant or transit mix concrete Superior Concrete, Elkton, Va.

Plant mix road materials Painter and Mandy, Elkton, Va.  
Prochman and Robertson, Inc.

Concrete testing facilities Richmond, Virginia

Light weight plaster or concrete aggregate \_\_\_\_\_

Dean Lumber Company

Reinforcing steel Dean Lumber Company

Through Dean Lumber Company (Source: J. C. Kendall  
Structural steel & Co., Washington, D. C.; Richmond Steel, Richmond)

Other local building material of special interest



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Chapter 2

Volume III. General Park Information

Weather Data

Developed Area: Loft Mountain (See Big Meadows)

Climate (Following for each Dev. Area)

Temperature

Maximum 85.0 °F

Minimum -21.0 °F

Average summer day-night temperature difference:

36.0 °F

Mean Temperature      Average 1952-1961

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>April</u>	<u>May</u>	<u>June</u>
M Maximum	28.0	31.2	34.3	48.7	56.2	53.1
Minimum						

	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Maximum	67.2	60.3	49.9	42.2	39.7	30.3
Minimum						

Prevailing wind from SE to SW in summer; NW in winter.

Maximum recorded velocity 20 m.p.h. March

Subject to steady ☒ Frequent ☐

Strong winds ☒ tornadoes ☒ very seldom

hail ☒ small amount lightning ☒ quite frequent

Downdrafts ☒ northerly ☒ occasionally

Excessive humidity ☒ other ☐

SNP-96

Annual rainfall 51.94"; maximum rate of fall 4.85 (Nov.)  
Maximum snow pack 24"; average moisture content not calculated but approx. 2%  
Structural failures caused by snow: Building \_\_\_\_\_;  
Drawing No. NP-SHE-30360.

Type of failure none

Mechanical cooling required: period none;  
evaporative none; refrigeration none (in buildings)  
Special climatic requirements Buildings need at least 3" footings,  
large aggregate stone on ground floor at least 18" deep with drainage.  
Pitched roofs.

Site Data (Each Dev. Area) Longitude 76°40' Albemarle  
Elevation 3100 - 3800, Latitude 38°15' Rockingham  
County \_\_\_\_\_

Topography (general description of surface characteristics) Atop Big Flat Mt. (very flat) along a ridge to gap  
between Big Flat and Loft Mt. 15-1 slope.

Vegetation (describe briefly) All second growths very small, locust  
growth, a few large oak 12-18" cal. Off to either side of the ridge  
down 400' or so are larger mature trees. Shrub and ground cover growth  
is very dense, also grass areas.

SNP-96

Soil and Foundation Data (Each Dev. Area)

Geological description (to 10ft. min. depth)

Weathered quartz and phyllite fragments. Rock outcropping all over area. Louisa formation 35'-115'. Catoclin formation 115'-320'.

Waverton formation 0-35'. (See water resources report, December 20, 1962).

Depth of water table Static water level 5 - 10'

Water permeability Generally impermeable except through fractures

First penetration: Average 3'

Maximum known Unknown (probably 3' - 4' -- open to weather)

Bearing capacity (where tests have been made)                     

Good upon Bedrock (plenty of Bedrock)

Foundation types usually used in vicinity Reinforced concrete, circular block

Usual depth of foundations At least 3'

Special Foundation or soil problems Solid rock 1' or so on east side and surface rock on west side of mountain.

Structural failures due to soil or foundation design  
none

Miscellaneous Design Considerations

Wood destroying insects Termites and wood borers

Flies yes; Gnats - yes; Posionous insects and

reptiles Copperheads, timber rattlesnake, wasps, bees (yellow jackets)

Other snakes (black snake)

Architectural Influences

1. Give brief architectural history of development and description of construction type(s) in existing buildings The buildings now being constructed are comfort stations (concrete block with wood shingles)
2. Note any special historical archeological or traditional considerations related to design of future buildings In most cases the buildings will have from 90° - 270° views.

Facilities for Contractor's UseNone at present, expectElectric power: Voltage 220-200; 12 KV Rate no rates as yetWater Supply, rate Approximately 40 GPM well; 8 GPM springTelephone arrangements to be made with Chesapeake and Potomac, Culpeper, VirginiaHousing and Mess FacilitiesGovernment: Location Loft Mt. seasonal qtrs. (not constr. yet)Capacity Approximately 16 Rate \$16.50 bi-weeklyConcessioner: Location Loft Mt. - Multi-housing and seasonal qtrs (not constructed yet)Capacity Approximately 16 (seas.) Rate noneCommercial: Location Elkton, VirginiaDistance 20 miles Type Hotel Rate \$2 and upTrailer Camps: Location Lewis Mountain DevelopmentDistance 23 miles Rate noneConstruction Office Space none at presentCharges noneMaterials Storage Space Storage area assigned to ConcessionerCharges noneNearest Railroad Elkton, VirginiaLine Norfolk and Western RRConstruction Season March 15 to November 15



SNP-96

Building Materials

Building stone: Source Trayfoot (SNP) and Massanutten Mountain  
Loft Mountain

Distance from ~~headquarters~~ ----- 6 miles and 30 miles, respect.

Kind Limestone and Sandstone Color Grey and Brown

Quarried ☒ Field ☐ Sawed ☒

Flagstone: Source Dean Lumber through T.W. Mundy, Elkton, Virginia  
Loft Mountain

Distance from ~~headquarters~~ 21 miles

Kind Sandstone Color Brown Quality Good

Coarse aggregate: Source T. W. Mundy, Elkton Limestone, Grottoes, Sand  
and Gravel

Distance from ~~headquarters~~ 24 miles (Mundy); 10 miles (Grottoes)

Crushed rock ☒ Gravel ☐ Clean ☐

Screen analysis available Elkton and Grottoes

Sand (concrete): Source Elkton Limestone and Grottoes Sand and Gravel

Distance from headquarters 24 and 10 miles, respectively

Impurities none Analysis available Elkton and Grottoes

Sand (plaster): Source Dean Lumber

Distance from headquarters 21 miles

Impurities Clean white sand Analysis available Elkton Limestone

Logs: Source Dean Lumber

Distance from headquarters 21 miles

Species Oak, Pine (yellow and white occasionally other species)

Size 2x2" - 16x16" Conditions affecting availability, cost,  
use Dean Lumber could supply other lumber if tract is being cut  
at time of construction

SNP-96

Lumber: Source Dean Lumber

Species and types in each species stocked: \_\_\_\_\_

Kiln or air dried All western kiln dried and native mat. 1/2 and 1/12 (depending on demand)

Availability of West Coast Lumber and comparative cost:

Fire available. Differ in freeding - \$20-25 more for western material

Concrete Blocks (Give address of distributor, where made and types Available through Dean Lumber - manufactured - Valley Blocks, Harrisonburg, Virginia - cement and solite blocks

Brick and Tile (nearest source and manufacturer)

Availability of: Through Dean Lumber - Manuf. brick (Roanoke Webster);  
Tile - Daniel Brick and Tile, Richmond

Plant or transit mix concrete Superior Concrete, Elkton

Plant mix road materials Painter and Hardy, Elkton  
Prochling and Robertson, Inc.

Concrete testing facilities Richmond, Virginia

Light weight plaster or concrete aggregate \_\_\_\_\_

Dean Lumber

Reinforcing steel Dean Lumber

Structural steel Through Dean Lumber; (Source: J.E. Kendall & Co. Washington, D.C.; Richmond Steel, Richmond, Virginia)

Other local building material of special interest

SNP-96

MASTER PLANVol III Sec G  
HANDBOOK  
Chapter 2Volume III. General Park Information

TYPE A

Weather DataDeveloped Area: Pond Ridge (or Bearle Gap)Climate (Following for each Dev. Area)TemperatureMaximum 85.0 °FMinimum -11.0 °F

Average summer day-night temperature difference:

36 °FMean Temperature Average 1952 - 1961

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>April</u>	<u>May</u>	<u>June</u>
M Maximum						
Minimum	28.0	31.2	34.3	48.7	56.2	53.1
	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Maximum						
Minimum	67.2	60.3	49.9	42.2	39.7	30.3

(Taken from  
Big Meadows)Prevailing wind from SE to in summer; W in winter.Maximum recorded velocity 20 m.p.h. (March)Subject to steady ☒Frequent ☐Strong winds ☒tornadoes very seldomhail small amtlightning quite frequentDowndrafts Nonenorthers occasionallyExcessive humidity None other ☐

SNP-96

Annual rainfall 51.94"; maximum rate of fall 5.85 (Nov.)

Maximum snow pack 24"; average moisture content \_\_\_\_\_% <sup>Not calculated</sup> but approx. 8

Structural failures caused by snow: Building no;

Drawing No. NP SHE 2127.

Type of failure \_\_\_\_\_

Mechanical cooling required: period \_\_\_\_\_;

evaporative \_\_\_\_\_; refrigeration \_\_\_\_\_

Special climatic requirements Not much different than other  
high points on the Drive

Site Data (Each Dev. Area)

Elevation 2940 - 2985, Longitude 78° 46' 15", Latitude 38° 08' 45", County Augusta

Topography (general description of surface characteristics) The Drive is on the top of the crest of a ridge, while the development would be on the west side of the ridge. (A portion of the road work has already been completed and abandoned - Pond Ridge. Beagle Gap-not as steep as Pond Ridge, gradual slope - some exposure of stone.

Vegetation (describe briefly) Pond Ridge - large oak and hickory,  
(also in the area of Rhododendron) Laurel and azalea.

Beagle Gap - Open with fringe area wooded, oaks, dogwood, azalea.

(Rhododendron in vicinity)



SNP-96

Soil and Foundation Data (Each Dev. Area)

Geological description (to 10ft. min. depth)

Pond Ridge = quartzites, phyllites & chales of the Chilhowee group,  
Weynton & Loudoun formations, Antietam & Catoctin formations on the  
east ridge. Beagle Gap = unknown.

Depth of water table unknown

Water permeability Generally impermeable except through fractures.

Forst penetration: Average 3'

Maximum known 3' - 6"

Bearing capacity (where tests have been made) \_\_\_\_\_

Good upon bedrock

Foundation types usually used in vicinity Reinforced

Concrete, Cinder Block

Usual depth of foundations 3'

Special Foundation or soil problems Provide footing under  
all bearing wall and drainage beneath and around buildings.

Structural failures due to soil or foundation design

None

Miscellaneous Design Considerations

Wood destroying insects Termites and wood borers (carpenter ants)

Flies yes, Gnats yes \_\_\_\_\_ Posionous insects and

reptiles Bees (yellow jackets) wasps, rattlers, copperheads

Other Varieties of snakes-black snake, salamanders, lizards,

turtles and toads

Architectural Influences

1. Give brief architectural history of development and description of construction type(s) in existing buildings None at either place.
2. Note any special historical archeological or traditional considerations related to design of future buildings  
None

Facilities for Contractor's Use

Electric power: Voltage None @ present Rate \_\_\_\_\_.

Water Supply, rate Pond Ridge flow pipe - east spring on west side.

Telephone arrangements to be made with None yet

Housing and Mess Facilities

Government: Location To be located at Loft Mt. & Princeton Cottage Area. Closest now available at Big Meadows

Capacity approx. 2 to 4 persons Rate \$8 bi-weekly

Concessioner: Location Loft Mt., now at Lewis Mt.

Capacity 24 Rate Unknown

Commercial: Location Waynesboro, Virginia

Distance 16 & 9 miles, resp. Type Motel Rate \$4 and up

Trailer Camps: Location Loft Mt.

Distance 13 & 20 miles resp. Rate None

Construction Office Space None

Charges None

Materials Storage Space Loft Mt.

Charges None

Nearest Railroad Chesapeake & Ohio; Norfolk and Western, Waynesboro, Va.

Line \_\_\_\_\_

Construction Season March 15 - November 15.

SNP-96

Building Materials

Building stone: Source Augusta Block - Staunton

Distance from headquarters ----- 61 miles

Kind Sandstone Color                     

Quarried ☒ Field ☐ Sawed ☐

Flagstone: Source Augusta Block - Staunton

Distance from headquarters 61 miles

Kind Sandstone & Limestone Color Brown & Gray Quality Good

Coarse aggregate: Source Grottoes Sand & Gravel, Grottoes, Va.

Distance from headquarters 53 miles

Crushed rock ☐ <sup>Creek</sup> Gravel ☒ Clean ☐

Screen analysis available Grottoes

Sand (concrete): Source Grottoes Sand & Gravel

Distance from headquarters 53 miles

Impurities                      Analysis available Grottoes

Sand (plaster): Source Augusta Block - Staunton

Distance from headquarters 61 miles

Impurities                      Analysis available                     

Logs: Source Dean Lumber

Distance from headquarters 3 1/2 miles

Species Oak, Pine (yellow & white)

Size 2" x 2" to 16" x 16" Conditions affecting availability, cost,  
use Dean Lumber could supply other lumber if tract is being  
out at the time of construction.

SNP-96

Lumber: Source Crozet Lumber Co., Crozet, Va.  
Republic Lumber Co., Waynesboro, Va.

Species and types in each species stocked: Western

Type material - Republic

Native lumber

Pine and Oak - Crozet

Kiln or air dried Republic - Kiln<sup>n</sup> Dried Crozet - western  
and native.

Availability of West Coast Lumber and comparative cost:

Difference - Framing \$20 - \$25 more for western material

Concrete Blocks (Give address of distributor, where made  
and types Augusta blocks - Staunton (manufacturer and distributor)  
Cement and weblite (same as solito)

Brick and Tile (nearest source and manufacturer)

Availability of: Through Augusta Blocks brick - Roanoke weblite

Plant or transit mix concrete Waynesboro

Plant mix road materials Waynesboro - asphalt

Concrete testing facilities Froehling & Robertson, Inc.  
Richmond, Va.

Light weight plaster or concrete aggregate Augusta Block

Reinforcing steel Republic Lumber Co.

Structural steel Through Republic Lumber Co.

Other local building material of special interest



SNP-96

MASTER PLAN

Vol. III SEC. 4  
HANDBOOK  
Chapter 2

Volume III. General Park Information

Weather Data

Developed Area: Skyland and Concess. Deadening

Climate (Following for each Dev. Area)

Temperature

Maximum 85.0 °F

Minimum -11.0 °F

Average summer day-night temperature difference:

36.0 °F

Mean Temperature Average 1952-1961 (Taken from Big Meadows)

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>April</u>	<u>May</u>	<u>June</u>
M Maximum	28.0	31.2	34.3	48.7	56.2	55.1
Minimum						
	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
Maximum	67.2	60.3	49.9	42.2	39.7	30.3
Minimum						

Prevailing wind from SE to <sup>SW</sup> W in summer; W in winter.

Maximum recorded velocity 20 m.p.h. (March)

Subject to steady ☒

Frequent ☐

Strong winds ☒

tornadoes ☒ very seldom

hail ☒ small amount

lightning ☒ quite frequent

Downdrafts ☒ none

northers ☒ occasionally

Excessive humidity ☒ none

other ☐

SNP-96

Annual rainfall 51.94"; maximum rate of fall 5.85 (Nov)  
Maximum snow pack 24"; average moisture content not calcu-  
lated but  
appr. 8%  
Structural failures caused by snow: Building 0-29;  
Drawing No. NP-SHE-3111.

Type of failure Frost heaving at office building on outside  
sidewalk. (not enough gravel under concrete)

Mechanical cooling required: period None;  
evaporative None; refrigeration None (at present)

Special climatic requirements Buildings need at least 3' footings,  
large aggregate stone on ground floor at least 18" deep with drainage,  
pitched roofs.

Site Data (Each Dev. Area)

3500-3730-Skiyard 38°-36'-Skiyard Page-Skiyard  
Elevation 3200-3360-CD, Latitude 38°-34'-CD, County Madison-Corona Dead.

Topography (general description of surface character-  
istics) The Skiyard Area is on a fairly steep grade, while Corona  
Reading is relatively flat. The entire area is rocky. A stream passes  
near the Corona Deadening Campground.

Vegetation (describe briefly) Some of the larger wooded areas  
within the Park are located at these areas. A very large stand of  
hemlock is located here. Because of the amount of water at various  
locations, growth is lush.

SNP-96

Soil and Foundation Data (Each Dev. Area)

Geological description (to 10ft. min. depth)

The area is made up of Cretaceous Greenstone, Swift Run Formation and  
Grapediorite. (See Prel. Water Report, Water Resources Office,  
Corcoran Designing-White Oak Canyon Area, June 15, 1961)

Depth of water table 535' - 645' (See Skyland Water Report)

Water permeability Generally impermeable except through fractures.

Forst penetration: Average 3'

Maximum known 306"

Bearing capacity (where tests have been made) \_\_\_\_\_

Varies (good upon bedrock)

Foundation types usually used in vicinity Concrete reinforced  
foundation

Usual depth of foundations 3'

Special Foundation or soil problems Rock excavation is quite  
often necessary in this area and other areas in the Park when a  
depth of over 5' is to be attained.

Structural failures due to soil or foundation design

The angle of repose here should be no greater than 1 1/2-2. Slope in fill  
should also have drainage, included because of heavy rains.

Miscellaneous Design Considerations

Wood destroying insects Termites and wood borers

Flies Yes Gnats - Yes Posionous insects and

reptiles Rattlesnakes, Copperheads, Wasps, Yellow Jackets

Other \_\_\_\_\_

Architectural Influences

1. Give brief architectural history of development and description of construction type(s) in existing buildings Wood frame, concrete block, bark sides. Dark Buildings originally stone and stone facades were Pollack property.
2. Note any special historical archeological or traditional considerations related to design of future buildings  
Use of bark buildings, log buildings, cinderblock buildings and stone buildings.

Facilities for Contractor's Use

Electric power: Voltage 12 KV-Skyland Rate 50 kWh @ 5.60/kwh net  
300 kWh @ 4.50/kwh net  
350 kWh @ 2.50/kwh net  
over 700 kWh @ 1.50/kwh net

Water Supply, rate 19 GPM wells - Skyland GPM Springs  
17 GPM wells - Campers Deedering

Telephone arrangements to be made with Cheasapeake and Potomac Telephone Company, Culpeper, Virginia

Housing and Mess Facilities

Government: Location Pinnacles  
Capacity Present - approx. 7 Future - 20 Rate \$21 bi-weekly

Concessioner: Location Skyland  
Capacity 432 Total Rate From \$6 to \$26

Commercial: Location Luray, Virginia  
Distance 10 miles Type Motel Rate \$2 and up

Trailer Camps: Location Big Meadows  
Distance 6 miles Rate none

Construction Office Space Headquarters  
Charges none

Materials Storage Space Enclosed Yard - Skyland  
Charges none

Nearest Railroad Hazfok and Western RR  
Line Luray, Virginia

Construction Season March 15 through November 15



SNP-96

Building Materials

Building stone: Source Troyfoot (SNP) and Massanutten Mts.

Distance from headquarters ----- 43 and 50 mi, respectively

Kind Limestone & Sandstone (Greenstone) Color Gray and brown

Quarried ☒ Field ☒ Sawed ☐ " can be used from Park

Flagstone: Source Baughen Construction Company

Distance from headquarters 4 miles

Kind Schuyler  
Serpentine Color Gray Quality Good

Coarse aggregate: Source Painter and Mundy, Elkton, Virginia

Distance from headquarters 37 miles

Crushed rock ☒ Gravel ☒ Clean ☒

Screen analysis available Elkton

Sand (concrete): Source Baughen Construction Company

Distance from headquarters 4 miles

Impurities none Analysis available Frothing & Robertson Richmond, Virginia

Sand (plaster): Source Baughen Construction Co. through Arthur Ellis

Distance from headquarters 4 miles

Impurities none Analysis available same as above

Logs: Source Dean Lumber Company

Distance from headquarters 37 miles

Species Pine, Oak

Size 2x2 - 16x16 Conditions affecting availability, cost,

use Dean Lumber Co. could supply other lumber if tract is being

cut at the time of construction

SNP-96

Lumber: Source Baughan Construction Company

Species and types in each species stocked: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Kiln or air dried Kiln dried

\_\_\_\_\_

Availability of West Coast Lumber and comparative cost:

Fir = \$11/100

\_\_\_\_\_

Concrete Blocks (Give address of distributor, where made

and types Valley Blocks in Harrisonburg, Virginia

(Baughan Construction Company)

Brick and Tile (nearest source and manufacturer)

Availability of: Shenandoah Brick and Tile, Winchester, Virginia

Plant or transit mix concrete Baughan Construction Co.

Plant mix road materials Painter and Wandy

Concrete testing facilities Froehling and Robertson

Light weight plaster or concrete aggregate \_\_\_\_\_

Arthur Ellis

Reinforcing steel Baughan Construction Co. through T. B. Kervill

Structural steel Houck and Greene, Richmond, Virginia

Other local building material of special interest

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

THE NEW YORK PUBLIC LIBRARY

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New York, N.Y.

1911

1911

NAME & CAPACITY

PROPOSED  
EXISTING

OWNER

U.S.

LOCATION

OTHERS

PRIMO. COIT.

ROCK FISH

POND RIDGE

LOFT MT.

SIMONS GAP

SWIFT MOUNT

SWIFT RCH GAP

SOUTH RIV.

LOUIS MT.

CAMP HOOVER

B.F.

COMBINE ROAD

SEVING

PINN. RES.

PINN. RIG.

ADOTS.

THORN. GAP

ELKMANLOW

MATT. ARM

PINEY RIV.

DICKER R.

NORTH RIV.

ALSTON

WILL.

RESIDENCE

ADMIN.

OTHER

CONGRESS.

MS

P-1 Radio Bldg. (1835g.56) X  
P-2 Radio Bldg. (1785g.56) X  
P-3 Radio Bldg. (2275g.56) X  
P-4 Radio Bldg. (1765g.56) X  
P-5 Community Dial Off. (704) X  
P-6 Radio Bldg. (441) X  
P-7 Ground Relay Bldg. (66) X

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CONCESSION

See Attached Sheets on O-Series

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BLDG NO.

NAME &amp; CAPACITY

Vol. III,  
Page 3

NOTE

BLDG NO.	NAME & CAPACITY	OWNER				USE				LOCATION														OTHERS	NOTE									
		EXISTING	PROPOSED	RES.	CONCRESS.	OTHER	ADMIN.	RESIDENCE	UTIL.	VISITORS	PRINC. COFF.	ROCK FISH	POUND RIDGE	LOFT MT.	STIMMONS GAP	SWIFT HON	SWIFT HON GAP	SOUTH RIVER	LEWIS ST.	CAMP HOOVER	B.M.	CONCRESS LEAD.	SKYLAND			PLIN. RES.	PLIN. POC.	HILLS	THORN. GAP	ELK WALLOW	MATT. AVE	PINEY RIV.	BIGNEY RIDGE	NORTH RIVER
1-1	Adm. Bldg. 140, 2450 Cu. Ft.	X	X	X			X								X												X							160,000.00
2-2	Employee (Bath) 1, 500	X	X	X																							X							22,867.90
2-3	" " 16, 870	X	X	X																							X							11,000.00
2-4	" " 15, 566 Cu. Ft.	X	X	X																							X							10,000.00
2-5	" (522 bath) 60,250	X	X	X																							X							22,867.90
2-7	" " 1, 585 Cu. Ft.	X	X	X																							X							22,667.90
2-8	" 8 rooms, 23, 949 Cu. Ft.	X	X	X																							X							12,000.00
2-9	" 5 bath, 60,250	X	X	X																							X							22,867.90
2-14	" 6 rooms, 17, 839 Cu. Ft.	X	X	X																							X							7,556.60
2-17	" 7 rooms, 13, 890 Cu. Ft.	X	X	X																							X							8,100.00
2-18	" 11 rooms, 18, 045 Cu. Ft.	X	X	X																							X							16,100.00
2-21	Apple, 44,250 Cu. Ft.	X	X	X																							X							1,678.51
2-22	Cherry, 44,250 Cu. Ft.	X	X	X																							X							1,987.39
2-23	Oak, 71,659 Cu. Ft.	X	X	X																							X							1,714.21
2-25	Emply 700, 642, 245 Cu. Ft.	X	X	X																							X							21,055.54
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3-10	Garage 2640 Cu. Ft.	X	X	X																							X							1,100.00
3-23	Garage 3158 Cu. Ft.	X	X	X																							X							1,100.00
3-24	Garage 2305 Cu. Ft.	X	X	X																							X							235.00
3-26	Garage (2 rooms) 33300 Cu. Ft.	X	X	X																							X							720.00
3-29	Garage 4890 Cu. Ft.	X	X	X																							X							1,500.00
3-30	Garage 9660 Cu. Ft.	X	X	X																							X							2,960.00

Vol. III,  
Page 3

**TAKEN FROM BUILDING FOLDER FILE**

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NOTES

LOCATION

USE

OWNER

PROPOSED  
EXISTING

NAME & CAPACITY

BLDG.  
NO.

OTHERS

PRINC. COTT.

ROCK VISH

POND RIDGE

LOFT MT.

SYMMONS GAP

SWIFT RUN

SWIFT RUN GAP

SOUTH RIV.

LEWIS MT.

CAMP HOOVER

B.M.

COVERS DEAD.

SKYLAND

PINN. RES.

PINN. PIC.

HEDTS.

THORN GAP

ELK WALLON

MATT. ARN

EINEY RIV.

DICKEY RIDGE

NORTH ENT.

VISITORS

HTIL.

RESIDENCE

ADMIN.

OTHER

CONCESS.

WPS

10,700.00  
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Ent. Sta. 3,600'  
Ent. Sta. (2rooms) 1,795 0'  
Ent. Sta. (3rooms) 280 sq ft  
Ent. Sta. 48 sq ft

White Oak

Ranger Sta., 3rooms 4,970 0'  
Ranger Sta., 3rooms 2,107 0'  
Residence, 3rooms 21,040 0'  
Residence, 3rooms 28,930 0'  
Rang. Sta., 3rooms 9,744 0'

CLOSED SHELTERS

Shelter 3,464 0'  
Shelter (Rock Springs) 4,441 0'  
Shelter (Pocahontas) 2,520 0'  
Shelter (Doyle's Riv.) 4,970 0'  
Shelter (Corbin) 595 sq. ft

Indian Run

Trailside Shel. 2,510 0'  
Trailside Shel. 1,417 0'  
Shaver Hollow  
Trailside Shel. 1,947 0'  
Trailside Shel. 1,947 0'



[illegible]





BLDG.  
NO.

## NAME AND CAPACITY

BLDG. NO.	NAME AND CAPACITY	EXISTING		PROPOS. D		USE		LOCATION		NOTES
		PROPOS. D	EXISTING	PROPOS. D	EXISTING	USE	LOCATION	PROPOS. D	EXISTING	
14-1	Repart. Rm.	X	X	X	X	REPART.	REPART.	X	X	530.00
17-1	Pump House	X	X	X	X	PUMP	PUMP	X	X	3450.00
17-2	"	X	X	X	X	"	"	X	X	2620.00
17-3	"	X	X	X	X	"	"	X	X	3200.00
17-4	"	X	X	X	X	"	"	X	X	3660.00
18-1	Pres. Cabin (7Rm.)	X	X	X	X	PRES.	PRES.	X	X	10500.00
18-3	Crook (3Rm.)	X	X	X	X	CROOK	CROOK	X	X	4120.00
18-6	James Bldg. (3Rm.)	X	X	X	X	JAMES	JAMES	X	X	3300.00
21-2	Shed Station Mrs. Tom Shant (7Rm.)	X	X	X	X	SHED	SHED	X	X	12566.00
23-1	Visitor Center	X	X	X	X	VISITOR	VISITOR	X	X	16259.83
16-2	Fire Hose Reel House	X	X	X	X	FIRE	FIRE	X	X	120.00
16-3	"	X	X	X	X	"	"	X	X	120.00
16-4	"	X	X	X	X	"	"	X	X	120.00
16-5	"	X	X	X	X	"	"	X	X	120.00
16-6	"	X	X	X	X	"	"	X	X	120.00
16-7	"	X	X	X	X	"	"	X	X	120.00
16-8	"	X	X	X	X	"	"	X	X	120.00

NOTES

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NOTES

BLDG.  
NO.

NAME AND CAPACITY

SERIES OF FUTURE DEVELOPMENT	EXISTING	PROPOSED	GENERAL			USE			LOCATION															
			OTHER	QUICKS.	HPS	ADMIN.	RESIDENCE	OFFICE																
0-333	14 Rooms	X																						
0-334	14 Rooms	X																						
0-335	14 Rooms	X																						
0-336	14 Rooms	X																						
0-337	14 Rooms	X																						
0-338	14 Rooms	X																						
0-339	14 Rooms	X																						
0-340	6 Rooms	X																						
0-344	6 Rooms	X																						
2-1		X																						
2-6		X																						
2-10		X																						
2-11		X																						
2-20	Seasonal	X																						
2-29		X																						
2-30		X																						
2-31		X																						
2-32		X																						
2-33		X																						
2-34		X																						

OTHERS

PRINC. COTE.

HOOK RISE

WOND RIDGE

LOFT W.

SIMON'S GAP

SALT HON

SALT HON

LEWIS MT.

CAMP MOOVER

DAK.

COMERS DEAD.

SEYLAND

PLIN. RES.

PLIN. PIC.

HOPS.

THORN. GAP

ELKTON

WATT. ARE

PLIN. H.V.

DICKER H.

BORTH EMT.



[illegible]









Bldg. No.	Name & Capacity	Proposed Existing	Owner	Use	Location	Notes
			Other Concess. HFS	Visitor's Util. Residence Admin.	Others Princ. Cott. Rock Fish Pond Ridge Loft Mt. Simmons Gap Swift Run Swift Run Gap South Riv. Lewis Mt. Camp Hoover B.M. Combs Dead. Skyland Pinw. Res. Pinw. Pic. Edoys. Thorn. Gap Elk Wallon Matt. Arm Piney Riv. Dickey Ridge North Ent.	
16-9	Fire Hose Rec. House	X	X	X		120.00
16-10		X	X	X		
16-11		X	X	X		
16-12		X	X	X		
16-13		X	X	X		
16-14		X	X	X		
16-15		X	X	X		
16-16		X	X	X		
16-17		X	X	X		
16-18	White Oak Cottage	X	X	X		
16-19		X	X	X		
16-20		X	X	X		
16-21		X	X	X		
16-22		X	X	X		
16-23		X	X	X		
16-24		X	X	X		
16-25		X	X	X		
16-26		X	X	X		
16-27		X	X	X		120.00
16-28		X	X	X		135.00
17-7	Weir House 165 C'	X	X	X		150.00
23-2	Vla. Center	X	X	X		
23-3	Vla Center. So. Dist.	X	X	X		





Bldg. No.	Cottage Name	Cottage Size	O-SERIES (BASED ON 1962 FY)		Employees Rooms	Bldg. Gov't Owned	Bldg. Co. Owned	No. Guest Pillows	No. Employee Pillows	Proposed	
			Total No. Of Rooms	Living Rooms	Available To Public					Existing	Pg
0-3	Birch	6040 Cu	4	0	0	4	0	0	8	X	
0-14	Elkwallowsayside	20685 Cu	-	-	-	-	0	0	-	X	
0-528	Storage Shed \$156.47	67 Sq. '	1	0	0	0	0	0	0	X	
0-525	Panorama \$197,427.31	11,215 Cu	4	0	0	4	0	0	10	X	
0-512	Service Station #1		0	0	0	0	0	0	0	X	
0-513	Service Station #2		0	0	0	0	0	0	0	X	
0-40	Alabama		4	1	2	1	0	4	2	X	
	Appledore		2	0	2	0	0	4	0	X	
	Ash	2520 Cu	2	0	2	0	0	4	0	X	
	Ballenlums		3	1	0	2	0	0	5	X	
0-105	Birds Nest		2	1	1	0	0	3	0	X	
0-106	Boulder		3	0	3	0	0	7	0	X	
0-105	Birmingham		6	0	6	0	0	16	0	X	
0-106	Bushytop		6	0	6	0	0	24	0	X	
0-108	Canyon		14	0	14	0	0	66	0	X	
	Craigln		4	2	2	0	0	8	0	X	

Bldg. No.	Cottage Name	Cottage Size	Total No. Of Rooms	Living Rooms	Available To Public	Employees Rooms	Bldg. Gov't Owned	Bldg. Co. Owned	No. Guest Pillions	No. Employee Pillions	Hydrant
0-42	Dogwood	2700 Cu'	2	0	2	0		✓	4	0	X
0-29	Dining Room		4	1	0	3		✓	0	6	X
0-21	Dormitory "A"		8	0	0	8		✓	0	16	X
0-23	Dormitory "B"		8	0	0	8		✓	0	16	X
0-25	Dormitory "C"		4	0	0	4		✓	0	20	X
	Evans		4	1	3	0	✓		5	0	X
	Fell		5	2	4	0	✓		8	0	X
	Grey Cone		5	1	0	2	✓		0	4	X
0-105	Hazeltop		6	0	6	0		✓	16	6	X
0-41	Hemlock	2520 Cu'	2	0	2	0		✓	4	0	X
	Herburn		5	1	4	0	✓		8	0	X
0-307	Willtop		2	0	0	2		✓	0	4	X
	Butter		4	1	3	0	✓		6	0	X
0-46	Maple	5040Cu'	3	0	2	0		✓	4	0	X
	Kassanaton		2	1	1	0	✓		5	0	X
0-104	New Market		6	0	6	0		✓	24	0	X
0-30	Office Building		-	-	-	-		✓	-	-	X
	Peak View		4	1	3	0	✓		8	0	X
	Grove		4	0	4	0	✓		8	0	X

DEYLAND LODGE (CONF'D)



[illegible]



Bldg. No.		Cottage Name	Cottage Size	Total No. Of Rooms	Living Rooms	Available to Public	Employees Rooms	Bldg. Gov't Owned	Bldg. Co. Owned	No. Guest Pillows	No. Employee Pillows	Proposed	Estimate
0-111		Banquet Hall				SKYLAND LOD R -cont'd							
0-112		Cottage		5								X	X
0-121		Cottage		14								X	X
0-122		Cottage		1	0	0	0			0	0	X	X
0-329		Boiler Rm. Bldg. \$200	83Cu'	14								X	X
0-333		Cottage		14								X	X
0-334		Cottage		14								X	X
0-335		Cottage		14								X	X
0-341		Stor. Shed \$516.88		14								X	X
0-336		Cottage		18								X	X
0-337		Cottage		14								X	X
0-338		Cottage		14								X	X
0-339		Cottage		6								X	X
0-340		Cottage										X	X
0-342		Stor. Shed \$568.96										X	X
0-343		Stor. Shed										X	X

Bldg. No.	Cottage Name	Cottage Size	Total No. of Rooms	Living Rooms	Available To Public	Employees Rooms	Bldg. Gov't Owned	Bldg. Co. Owned	No. Guest Pillows	No. Employees Pillows	Proposed	Existing	P26
0-118	Wayside \$39,496.71	6408sq'	1	0	0	1		V	0	2	X	X	
0-528	"A"		1	0	0	1		V	0	4	X	X	
0-530	"B"	760 sq'	-	-	-	-		V	-	-	X	X	
0-522	Service Station	842 sq'	-	-	-	-		V	-	-	X	X	
0-162	Blackburg	3885cu'	2	0	2	0		V	4	0	X	X	
0-116	Black Rock	32686cu'	10	2	8	0		V	36	0	X	X	
0-163	Bridgesburg	3192cu'	2	0	2	0		V	4	0	X	X	
0-118	Doubletop \$62,949.04	5415sq'	14	0	14	0		V	58	0	X	X	
0-117	Banksville	36686cu'	10	2	8	0		V	36	0	X	X	
0-114	Lodge \$6,185.91	151890plus 33	33	0	21	12		V	47	35	X	X	
0-155	Kynochburg	2450cu'	2	0	2	0		V	4	0	X	X	
0-164	Mountain View	802 sq'	3	0	3	0		V	6	0	X	X	
0-149	Petersburg	3192cu'	2	0	2	0		V	4	0	X	X	
0-115	Piedmont	18800cu'	10	2	8	0		V	20	0	X	X	
	"A"		1	0	0	1		V	0	2	X	X	
	"B"		2	0	0	2		V	0	4	X	X	
0-514	"C"	291 sq'	2	0	0	2		V	0	4	X	X	
0-515	"D"	291 sq'	2	0	0	2		V	0	4	X	X	

Bldg. No.	Cottage Name	Cottage Size	Total No. Of Rooms	Living Rooms	Available To Public	Employees Rooms	Bldg. Gov't Owned	Bldg. Co. Owned	No. Guest Pillows	No. Employees Pillows	Excluded Proposed	Page
0-316	"E"	291 Sq	2	0	0	2		✓	0	5	X	
0-326	"F"	1020 Sq	4	0	0	4		✓	0	15	X	
0-327	"G"	1020 Sq	4	0	0	4		✓	0	11	X	
0-332	Feeding Mach. Bldg.	128 Sq									X	
0-321	Stables (Feed Room)	541 Cu'	3	-	-	-		✓	0	0	X	
0-318	Emp. Dorm.	2312 Sq									X	
0-320	Emp. Dorm.										X	
0-324	Linum Storage	87 Cu'	1	-	-	-		✓	-	-	X	
0-344	Rapidan Cottage	2893 Sq	16								X	
0-276	"A"	2700 Cu'	2	0	2	0		✓	4	0	X	
0-277	"B"	2700 Cu'	2	0	0	2		✓	0	4	X	
0-278	"C"	2700 Cu'	2	0	2	0		✓	4	0	X	
0-279	"D"	4085 Cu'	2	0	2	0		✓	4	0	X	
0-280	"E"	4085 Cu'	2	0	2	0		✓	4	0	X	
0-283	"F"	2520 Cu'	2	0	2	0		✓	4	0	X	
0-285	"G"	2700 Cu'	2	0	2	0		✓	4	0	X	
0-278	Lodges	2448 Cu'	2	0	0	2		✓	0	4	X	
LEWIS MOUNTAIN LODGE												

BIG MEADOWS LODGE - cont'd

X



Bldg. No.	Cottage Name	Cottage Size	Total No. of Rooms	Living Rooms	Available to Public	Employee Rooms	Bldg. Gov't Owned	Bldg. Co. Owned	No. Guest Pillows	No. Employee Pillows	Proposed
0-281	Power Plant Bldg.	600 sq. ft.	1	-	-	-			-	-	X
0-211	Service Station		-	-	-	-	V		-	-	X
	Swift Room		7	0	0	7	V		0	16	X
				HARRIS MOUNTAIN LODGE - cont'd							
				SWIFT ROOM CROSSROADS							

MASTER PLAN

Writing the Master Plan Narrative

HANDBOOK

Chapter 2

Volume III, Section J  
Surveys Inventory  
Page I

MASTER PLAN

FOR PRESERVATION AND USE

OF

SHENANDOAH NATIONAL PARK

\*\*\*\*\*

Volume III, General Park Information  
Section J, Surveys Inventory

\*\*\*\*\*

Prepared by

Name

Date

APPROVED BY:

Superintendent

Date

TOPOGRAPHIC SURVEYS

DEVELOPMENT AREA		EXISTING DATA					PROPOSED WORK				SEE NOTE NO.
NAME	USE	DWG. NO.	DATE YR.	SCALE 1" =	C.I.	MON. 1" =	ACRES				
							C.I.	REVISE	NEW		
North Ent. and Browntown Rd.	Inter- sect. E Rd.	2451C	56	100'	5'	None	50	2		15	Some Sur- veys BPR 1981
North Ent. Res.	Resid. Area	2451C	56	100'	5'	None	20	1		11	BPR 1981
Dickey Ridge	Season. Qta.	2119A	53	100'	10'	None	20	1	3		
Piney River	Sea. Qta. Main Area	2558	62	50'	10'	None	20	2		7	Old CCC Area
Matthews Arm	Campgr.	3039	60	500'	50'	None	50	2		140	
Pinnacles	Season. Qta.	2557	62	50'		None	20	1		7	Old CCC Area
Comers Deadening	Campgr.	Drawing made in 1986 to be revised for M.P. Nonp					50	2		100	
Skyland	Various Areas in v. 3111	62	100'	100'	10'	Some	20	1	17 Acres to be added to inter- sect. sites		
Big Meadows	" "	3110A	62	150'	10'	Some	20	1	9 Acres 4.5 Ac.		
Big Meadows	Group C.	2568	63	500'	20'	None	50	2		56	

MON - MONUMENTS IN PLACE  
C.I. - CONTOUR INTERVAL

MON - MONUMENTS IN PLACE  
C.I. - CONTOUR INTERVAL



TOPOGRAPHIC SURVEYS

DEVELOPMENT AREA		EXISTING DATA				PROPOSED WORK			SEE NOTE NO.
NAME	USE	DWG. NO.	DATE YR.	SCALE 1" =	C. MON.	SCALE 1" =	Q.I. REVISED	ACRES	
Lewis Mt.	CampGr. Inter-	5046H	60	60'	5'	Some 20'	1	3	See Note 10
Swift Run Gap	Change	2122A	59	200'	10'	Some 1959 & 1960 (cont. same scale)	1	3	See Note 10
Loft Mt.	Conc. Area	3121	62	50'	5'	Gr. 1/2", as bench moves into area.	1	3	See Note 10
Dando	Group C. G.	3112A	62	200'	5'	None 40'	1	3	See Note 10
Pond Ridge or Beagle Gap	V.C. & CampGr.	2127	54	50'	5'	Some 50'	2	64	See Note 10
Rocky Mt. Ent. Sta.	Widening	2556	62	100'	-None	40'	2	2	See Note 10
Princeton Cottage	Rea.	3103A	62	200'	10'	None 20'	2	5	See Note 10
Parking Areas	Misc.	-	-	-	-	20'	1	10	See Note 10
South District along Drive	Minor surveys to lay water and sewer systems at 5' interval.	-	-	-	-	-	-	-	See Note 10
SR. PA. Black Rock Gap	-	-	-	-	-	-	-	-	See Note 10
Garner's Gap	-	-	-	-	-	-	-	-	See Note 10

MON - MONUMENTS IN PLACE  
Q.I. - CONTOUR INTERVAL

TOPOGRAPHIC SURVEYS

DEVELOPMENT AREA		EXISTING AREA				PROPOSED WORK			SEE NOTE NO.
NAME	USE	DWG. NO.	DATE YR.	SCALE 1" =	3.1 MON.	SCALE 12" =	ACRES		
							O.I.	REVISE	
AS BUILTS * SURVEYS OF									
Big Meadows	Water & Sewer	3110A		Complete topo & Record all cultural features & locate all util. lines & structures.					
Skyland	"	3111	Same						
Lewis Mt.	"	3046B	Same						
Edgemo.	"	2391C	Same						
Boundaries	"			Many monuments have been lost. The exact amount of work not yet known, but one example 400 MI. is 100 miles of monuments, 6 miles of new work and 25 miles to be established (Survey made by Gilroy)					

MON - MONUMENTS IN PLACE  
C.I. - CONTOUR INTERVAL



BOUNDARY SURVEYS: (See Boundary Status Report.)

RECONNAISSANCE SURVEYS: Horse Trails in North and South Districts  
 Water, Sewer and Power - North Entrance Residential Area -NP-SHE24610  
 Power, Water and Sewer at Matthews Arm. Campground NP-SHE3039  
 Location of Water and Sewer Line for three Comfort Stations - South  
 District - NP-SHE2567  
 Roads, Power, Water and Sewer for Comers Deadening Campground.  
 Roads, Power, Water and Sewer for Swift Run Gap Int. 2122A  
 Power and Sewer on portions of Loft Mt. NP-SHE 3123.  
 Water, Sewer and Roads at Dundo Gr. Campground NP-SHE 3112A.  
 South District Visitor Center and Campground. Complete Reconnaissance  
 on Water, Sewer, Power and Roads.  
 Location of various areas off Mountain which would be suitable for  
 Campgrounds in Winter.

AS BUILT SURVEYS: (See Topographic Surveys)

BASE SURVEYS FOR INTERPRETIVE AND MANAGEMENT USE:

	<u>Survey Complete</u>	<u>Partially Complete</u>	<u>Not Started</u>
Natural History			
Archeological		With the amount of work involved in obtaining this data, very little is available at this time. However, all the areas involved are being worked on in relation to the Big Meadows Visitor Center exhibit plans. This should be prepared by 1964. Some of this will be worked on by the History Division in WASO.	
Historical			

Other

OTHER SURVEYS: Water Surveys have been progressing in the Park since July 1, 1961. It is the intention of the Park to keep these in progress until sufficient water has been located at our proposed developed areas, and existing developed areas, in order to supply the sufficient projected water demand.

Aquatic life surveys or stream surveys are obtained periodically by the U. S. Fish and Wildlife Service in cooperation with the Commission of Game and Inland Fisheries of the State.



Campground Use Surveys are made by the Rangers.

Traffic flow surveys are made on each through road in the Park:  
340, 211, 33, 250, Interstate 64, and Browntown Road.

Building condition surveys as well as individual building reports are made. Power lines are also surveyed as to their location.

A Gypsy Moth survey is made by the Park General, to determine if moths are present in Park trees.

EODC-60-MP-4 (8/61)

Volume I, Chapter 5  
Design Analysis  
Beagle Gap Developed Area  
Page 1

MASTER PLAN  
FOR THE PRESERVATION AND USE  
OF  
Shenandoah National Park

\*\*\*\*\*

Chapter 5, Design Analysis

Beagle Gap Developed Area  
NP-SHE 2584-A

\*\*\*\*\*

Approved

Prepared by: J. Beer, Landscape Architect Date April 1, 1964  
Revised July 27, 1964

\*\*\*\*\*

Approved

Drawing approved \_\_\_\_\_ Date \_\_\_\_\_

(Note: Acceptance of Design Analysis is assumed upon approval  
of corresponding Master Plan Development Plan.)

General Considerations: The South District Visitor Center Development Area is located along the Skyline Drive of Shenandoah National Park, approximately six miles north of Rockfish Gap at Mile 99.5. This land is owned by George T. and Ann M. Lawrence, Plot C-16; while the land to the south of the Drive at this point belongs to W. B. Wonderly (west side of the Drive).

The area is 5.4 miles north of the South District southernmost entrance station, Mile 104.7, and 11.8 miles north of Humpback Rock Visitor Center on the Blue Ridge Parkway.

The South District Visitor Center Development Area is located in the gap between elevations 2250 and 2600'. At present, nearly half of the proposed site is open pasture. The remainder consists of oak, hickory, etc. The geology is made up of some exposed greenstone.

The topography ranges from flat near the Drive to 4:1 slopes. The registered temperatures range from -11.0°F in the winter to 85°F during the summer, based on temperature readings at Big Meadows.

There are no buildings in the proposed area; however, there was a building at one time.

There will be housing in this area for seasonal personnel only. In transferring the location of the visitor center from Hoormans River to Beagle Gap this housing was moved to this location also. Master Plan drawing NP-SHE-3106A shows the following seasonal housing at the former Hoormans River location: 4 Rangers, 4 Naturalists, and 1 Caretaker. The Rangers would man the Rockfish entrance station and furnish protection in this vicinity. The naturalist personnel would operate the visitor center and furnish interpretive services in the adjacent area.

Circulation: No paved roads now exist and the dirt roads are too narrow for use. The visitor center will be set approximately 250' from the Drive with an entrance road of approximately 1,050 LF to the visitor center and a 120-car parking area which will be used by visitors. There is also an additional 3,500 LF of road to the picnic area which provides for sixty picnickers. The picnic road would be a one-way loop road. A road of 500' to the seasonal quarters will be necessary with parking for 10 cars. This facility will be placed in a heavily wooded area.

All of the roads and parking areas should be kept out of the view of the visitor center which is from due east, south to due west.

Visitor Use Facilities: This Visitor Center is urgently needed in the South District of Shenandoah to provide orientation for an ever increasing number of Park visitors to this forty mile segment of Shenandoah. In 1963 there were over 564,000 visitors to this district. This was prior to the completion of any facilities whatsoever in the south one



third of the Park. Loft Mountain Campground was opened May 29, to campers and is already having excellent use. There is a good percentage of visitors to the South District from the Blue Ridge Parkway. With the completion of the Parkway and Interstate U. S. 64 through Rockfish Gap, travel to the South District will swell to a visitation in the neighborhood of a million visitors annually. Because of the complex travel pattern caused by the many possible routes of ingress and egress, a visitor center in each major district is a basic requirement to properly serve the visiting public.

The visitor center will function as an introduction to Shenandoah National Park and to the National Park Service. It will also serve as an information center for visitors continuing on south via the Blue Ridge Parkway to the Great Smoky Mountains. Helping visitors to plan a leisurely journey through Shenandoah or southwest to the Smokies via the Parkway is an important service given visitors to this Park. It will complement, not compete with services offered by Parkway facilities.

Museum Exhibits, an audio-visual program, publications sales and personal contact with service personnel on duty at the center will furnish visitors with the quality of orientation and information expected by Park visitors.

The centers' interpretive requirements are to explain the fascinating story of ecological changes which have occurred in the plant and animal species in the Park. Depletion of these natural resources by unwise practices and their remarkable recovery under National Park Service protection will be stressed.

Shenandoah is a prime example of the latent healing forces in nature that take over whenever the opportunity arises. The South District interpretive theme will stress the recovery of the Park biota. Although all three visitors centers will tell the overall Park story each stresses a facet of the whole story. The Dickey Ridge Center stresses geologic forces, while the Big Meadows center stresses man's influence on the Blue Ridge. The South District center will stress the plant and animal aspect of the mountain environment and biological forces at work which supplements the interpretive story of the Blue Ridge Parkway.

With the construction of the new visitor center at Big Meadows in the Central District and the existing visitor center at Dickey Ridge, a new visitor center to handle district visitors is needed.

SOUTH

The proposed Beagle Gap Picnic Area, with two comfort stations, is also available to the public, and it is 11.8 miles to the nearest picnic area to the south and 20 miles to the nearest picnic area to the north.

Management Facilities: Maintenance of the center will be provided from the sub-district maintenance area to be located at Loft Mountain.

Four seasonal Ranger Naturalists or Information Receptionists or a combination of the two will be the chief uniformed personnel. Principal supervision will be under the District and Sub-district naturalists with a GS-5 seasonal directly responsible for operation of the center and interpretive activities in the immediate vicinity of the facility.

Immediate supervisors will be the South District Naturalist who will reside at the proposed Princeton Cottage housing development and the Assistant District Naturalist who will reside at the Swift Run housing area. The four seasonals needed to operate the center<sup>will</sup> reside at the nearby seasonal housing area to be constructed to house some of the seasonal personnel at Beagle Gap.

<sup>DISTRICT</sup>  
Offices for the Naturalist and the District Ranger will be located in the visitor center.

Utilities: Water for the development will come from the vicinity of Greenwood Hollow Creek, pumped to an underground tank north of the proposed visitor center. The water supply hinges on the State geologist's survey in the area.

Sewage will be disposed of by a septic tank and leaching field to the east of the picnic area.

The power would be obtained from VEPCO on either side but more preferably from the east side of the Skyline Drive with a load slightly larger than at Dickey Ridge.

Miscellaneous: A panoramic view of 180' may be seen from the visitor center site. All of the picnic area will be in wooded terrain. A large TV tower is visible on Bear Den Mountain from the proposed visitor center. The tower is approximately one mile distant.