I. RIVER AREA INVENTORY FORM

A. General information:

1. Name of river: Shenandoah

2. Location of study unit(s): Mainstem of Shenandoah from Harpers Ferry to Front Royal; north fork of the Shenandoah from Front Royal to Brocks Gap. South fork of Shenandoah from Front Royal to Waynesboro.

3. State(s): Virginia, West Virginia

4. County(ies): West Virginia - Jefferson; Virginia - Clarke, Warren, Shenandoah, Rockingham, Page, Augusta

5. Major drainage basin (see appendix A): Number 1, North Atlantic slope basins (Potomac)

6. Population within 50 miles 1,600,000; 150 miles 16,400,000; 250 miles 41,000,000

7. Weather characteristics by seasons and inclusive dates when study unit(s) is best suited for public use and normal weather conditions during that period: Winter, December through March, cold and damp. Spring, April through June, cool with considerable rain. Summer, July through August, warm with thundershowers. Fall, September through November, cool and pleasant. Warm months are the season of maximum recreational use. Fall coloration has some impact.

B. Description and characteristics of river (by study unit(s)):

1. Number of miles in study unit(s): Shenandoah River mainstem, 47 miles; Tributary - North fork, 93 miles; South fork - 80 miles.

2. Width characteristics: Mainstem of Shenandoah 800 feet wide at Harpers Ferry, approximately 300 feet wide at Front Royal. North fork of the Shenandoah 200 feet at Front Royal narrowing to 50 feet at Brocks Gap. South branch of the Shenandoah 200 feet narrowing to 75-100 feet near Elkton.

3. Depth characteristics: Mainstem of the Shenandoah was generally shallow except in impoundments or above shoals. North fork of the Shenandoah has similar characteristics. South fork of the Shenandoah has shallow shoals with deeper pools.

4. Flow characteristics: Sluggish to moderate. During times of high flow, water moves at a more rapid rate.

5. Course characteristics and stability: Generally the river is meandering in a relatively stable channel. The middle section of the North fork of the Shenandoah becomes sinuous in an area known as the Seven Bends of the Shenandoah.

6. Bed material: Bedrock and gravel to silt.

7. Water quality (kind, degree and source of pollution): Both industrial and domestic pollution enter both forks of the Shenandoah well upstream and increase over its downward course. From outward appearances it would seem that the South fork carries more pollution than its sister tributary.

8. Type of fishery (warm or cold water) and dominant species of fish (commercial and sport): Mainstem of the Shenandoah is a warm water sport fishery with large mouth bass, other sunfish species, catfish, carp, suckers, and other rough fish. North fork of the Shenandoah supports a fishery for small mouth bass, rock bass, large mouth bass, catfish and other associated species. The South fork of the Shenandoah supports a fishery for small mouth bass, large mouth bass, other sunfish, catfish, carp, and other rough fish.

C. Description and characteristics of setting (by study unit(s)):

1. Nature of topography: The study unit section of the Shenandoah River courses through a wide valley with gently rolling hills.

2. Ecological type (deciduous, coniferous, prairie, desert, shrub, or other) and brief description: Mixture of coniferous and deciduous forest with approximately 75 percent deciduous of an oak-hickory type.

3. Important species of wildlife and status: Big game consists of deer and turkey. Small game consists of squirrel, rabbit and raccoon. Upland game birds consist of quail and ruffed grouse. It is worthy to note that a few bear are also reported.

D. River access:

1. Types and locations of public access (spot on map): Access is available by network of Federal, state and county roads.

2. Factors limiting public access (physical, legal): Private ownership legal factor in limiting public access.

E. Special scientific, educational and esthetic values:

1. Geologic: The North fork of the Shenandoah exhibits one of the finest examples of the stream meandering in the United States. Excellent examples of paleozoic rock may be found along the streams.

2. Biotic: Biotic community represents normal cross section of eastern hardwoods and old field communities.

3. Historic: The Shenandoah Valley, through which these streams run, represents many important epics in the history and development of the United States.

4. Archeologic: It is reported that 20 archeological sites have been uncovered on the South fork of the Shenandoah River in Rockingham County. The remaining parts of the study area have not been intensively surveyed, but similar types of sites are to be expected.

F. Present quality of recreation and environmental factors limiting quality:

	Quality				Environmental
Kinds	Excellent	Good	Fair	Poor	Limiting factors
Boating:					
Motor			X to X		Depth of water
Non-motor		X			
Fishing		X to X			
Hunting					
Big game		X			
Small game		X			
Waterfowl			X to X		
Camping				X	Lack of available area and development
Swimming			X to X		Pollution and shallow water
Hiking			X		The Appalachian Trail follows the mountain region to the east and crosses the river at Harpers Ferry
Sightseeing	X to X				This is considering historic sites
Nature study			X		

G. Classification of study unit(s) (according to six ORRRC classes): Class 2, General Outdoor Recreation area; Class 6, Historical and cultural sites.

H. Status of economic development:

1. Characterize the economy of the general river area: Fair agricultural economy. Small business and industrial complex in most adjoining municipal areas.

2. Is the economy growing, declining, stagnant: What economic activities are there that are growing, declining: There is evidence of a growing economy. Business and industrial complexes in towns appear increasing. Agriculture is good but not increasing noticeably.

3. Describe the transportation routes to and through the general river area (rail, air, boat, auto) and facilities (such as landing strips, etc.): Commercial transportation facilities in towns and cities in the Shenandoah Valley are sufficient to allow substantial visitation. The area is criss-crossed by state, Federal and county roads. These routes are primarily oriented in north-south direction patterns. Major highways are U.S. No. 11 and U.S. No. 340. East-west routes crossing the basin are U.S. No. 50, U.S. No. 522, U.S. No. 211 and U.S. No. 33.

I. Describe present development and give the status of plans for water resource developments in the general area by Federal agencies and others that would drastically and permanently affect the study unit(s): On the South fork of the Shenandoah there are three power dams between Fort Republic and confluence with the North fork. On the North fork of the Shenandoah, there are low water dams. On the mainstem of the Shenandoah, there are two dams which are power-producing between the confluence and Harpers Ferry. U. S. Army Engineers have two plans involving the Shenandoah River as a part of the Potomac River Basin plan. One dam would be located at Brocks Gap on the North fork. The second site is near Staunton on the South fork of the Shenandoah.

J. What impact (detrimental or beneficial) will the following uses (present or planned) have on the qualities of the study unit(s):

1. Agriculture: It is anticipated that the present agricultural pattern in this area will continue. Cultivation practices will probably improve.

2. Forestry: Overcut stands are gradually improving. Little timber cutting noted at present. Forest Service lands are in good condition.

3. Mining: Several large limestone quarries were noted below Front Royal. These contribute some pollution to the river.

4. Transporation: Interstate Highway No. 81 will traverse the valley in a north-south direction.

5. Industrial: Industrial development in surrounding towns will continue to contribute to pollution of the rivers.

6. Recreation: Generally, river recreation does not seem to be a major activity; however, some emphasis is being placed on the development of summer cottages, particularly along the mainstem of the Shenandoah River.

7. Residential - Community: Some residential growth in communities along river was noted. This does not seem extensive at this time.

K. Condition of headwater lands and trends in management: The majority of the headwater lands are in Federal ownership and managed for protection of the watershed. Land immediately adjacent to the river is privately owned and mostly used for agriculture.

L. Land ownership (general pattern of Federal, State and private ownerships) (show on map): Land immediately adjacent to the river is privately owned and, as stated above, extensively used for agriculture.

M. Actions that have been taken or are planned to protect the natural qualities of the river and its environment (such as special State legislation, zoning, easements, etc.): None are known at this time.

N. Other: None

O. Sources of reference and information (maps, reports, agencies, persons, etc.): Field observations by study group included airplane flights over the entire valley; U. S. Corps of Engineers Potomac River Basin Report, February 1963; U.S.G.S. topographic maps; State, local and county highway maps; U. S. Forest Service maps; interview with members of staff of George Washington National Forest; information supplied by the National Park Service, Southeast Region; Whitewater in Northern Virginia and Northeastern West Virginia by Randy Carter, 1959-62; Bureau of Sport Fisheries and Wildlife, Branch of River Basin studies; George Washington National Forest.

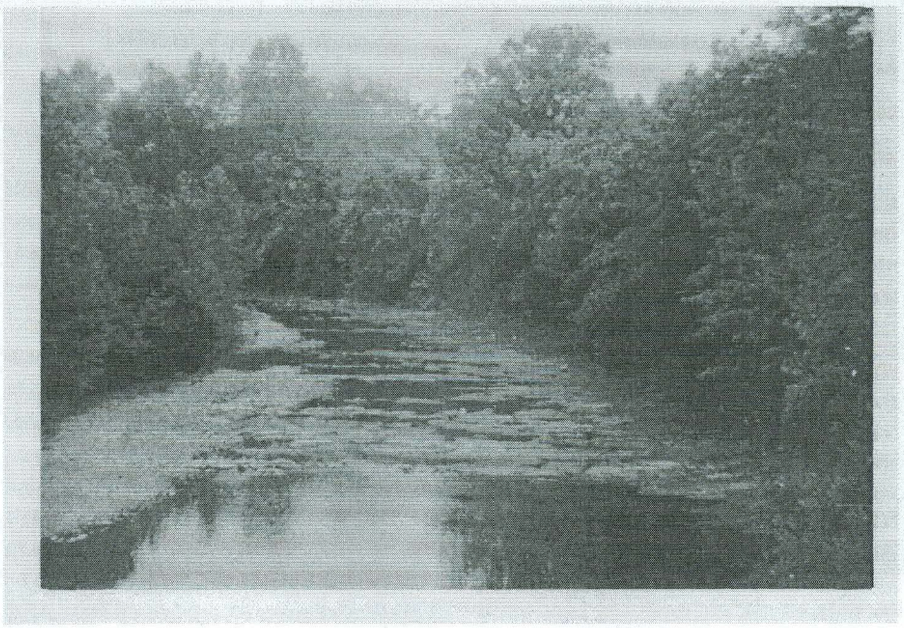
Q. Method of study: Investigation was made by car along segments of roads leading to or along the river. Airplane flights were made along the entire river valley. Information was gained by interview

PHOTOS

with Forest Service personnel and local residents. Information gained from U.S.G.S. topographic maps, Forest Service maps and road maps.

R. Period of study: A field study was made during all or part of a three-day period August 20, 21, 22, 1963.

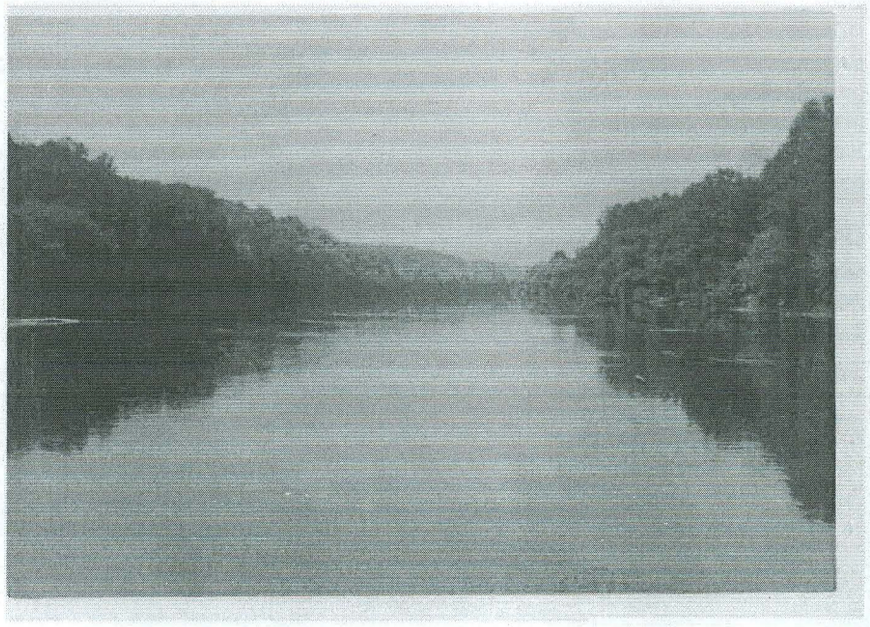
SHENANDOAH - NORTH
FORK - VA.
September 13, 1963



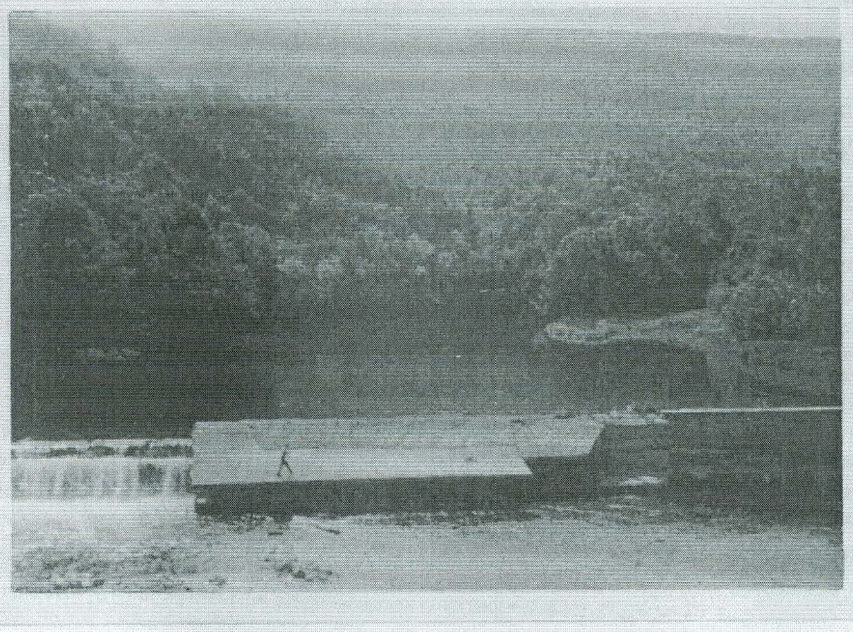
1. Near headwaters of North Fork showing extreme low flow.

2. View of North Fork showing forest screen and close association with agriculture lands.

3. Midstream pool area.



4. Typical impoundment behind low water dam.

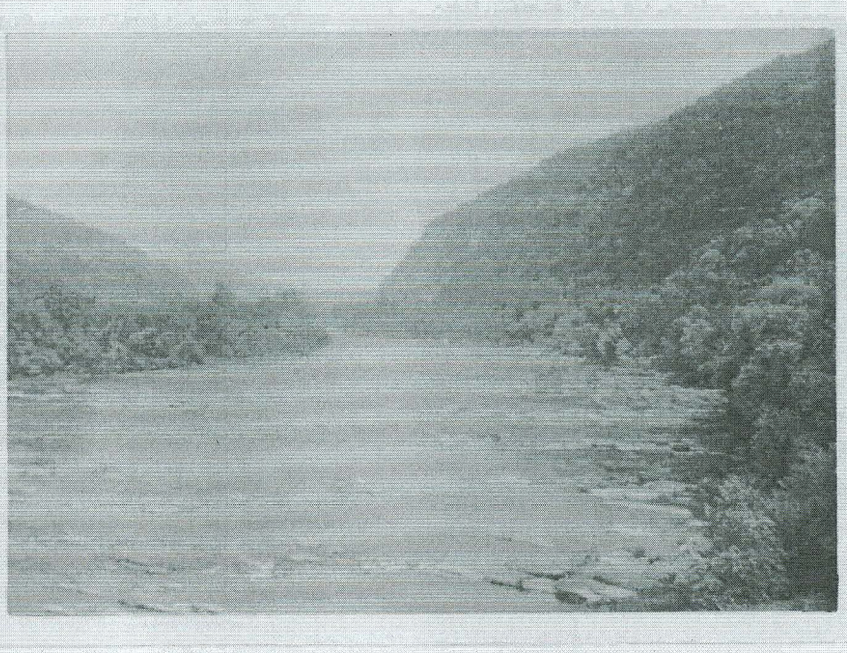


5. Typical low water dam.

6. South Fork with pollution in evidence.

SHENANDOAH - NORTH
FORK - VA.
September 13, 1963

MAP



7. Main stem of Shenandoah River near confluence with Potomac at Harpers Ferry.

CHARLOTTESVILLE

LEGEND

BOSTON
RICHMOND
EVANSTON

Scale 1:250,000

CONTOUR INTERVAL 100 FEET

TRANSVERSE MERCATOR PROJECTION

LOCATION DIAGRAM FOR NJ 17-6

RELIABILITY DIAGRAM

FOR SALE BY U. S. GEOLOGICAL SURVEY, WASHINGTON 25, D. C.

CHARLOTTESVILLE, VA., W. VA.

BALTIMORE

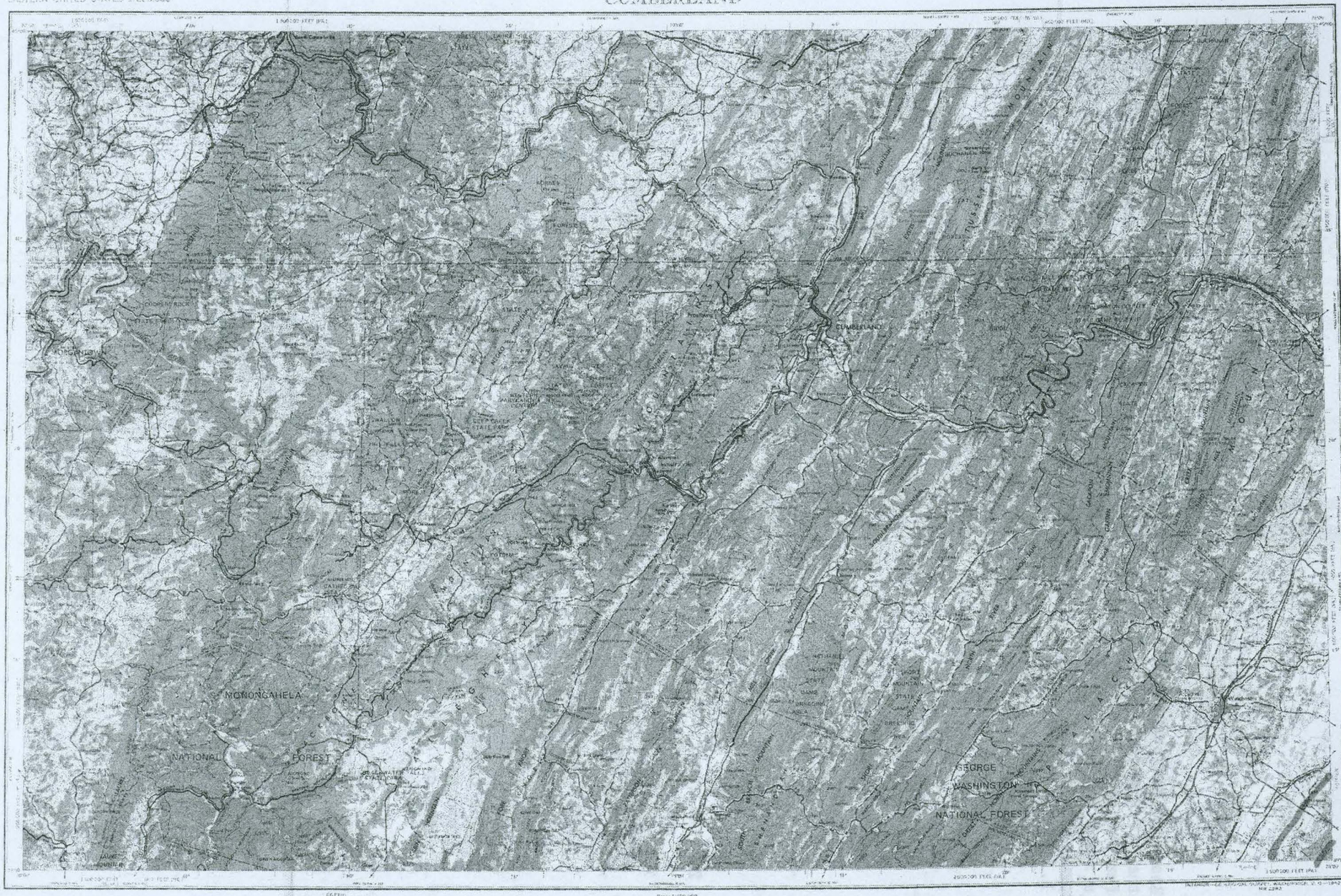
Scale 1:250,000

CONTOUR INTERVAL 50 FEET

TRANSVERSE MERCATOR PROJECTION

FOR SALE BY U. S. GEOLOGICAL SURVEY, WASHINGTON 25, D. C.

BALTIMORE, MARYLAND; PENNSYLVANIA
VIRGINIA; WEST VIRGINIA



BOSTON
RICHMOND
EVANSTON
Printed

CONTOUR INTERVAL 100 FEET
TRANSVERSE MERCATOR PROJECTION

FOR SALE BY U. S. GEOLOGICAL SURVEY, WASHINGTON 25, D. C.

CUMBERLAND, MD., PA., VA., W. VA.

II. CRITERIA

Based on the information and impressions gained during the study, evaluate the river area against the following five criteria. To qualify for further consideration for status in a national system of wild rivers, a river area should meet all of these criteria:

1. The river is still relatively undeveloped, unpolluted, and free-flowing and the scene as viewed from the river is pleasing whether primitive or rural-pastoral, or these conditions must be capable of restoration as far as practicable and within foreseeable legislative, financial and technical capabilities.

   Yes_____

   No X

   The entire valley is intensively developed for agriculture. Obstructions eliminate free-flowing qualities of the mainstem and the North and South forks of the Shenandoah. Industrial pollution in the North fork, South fork and the mainstem has drastically reduced quality.

2. The river area possesses recreation, scientific, historic, or esthetic values of outstanding quality.

   Yes X

   No_____

   The entire area has outstanding historical association. The valley itself is a pleasing pastoral scene.

3. The river area is large enough to sustain existing public recreation use or accumulate more without resulting in appreciable reduction of the quality of the experience or damage to the resource (rule of thumb: 50 miles long and 50 feet wide).

   Yes X

   No_____

   It is noted in several places that recreational use along the valley is increasing. Summer camps and picnic areas in private ownership, particularly in the lower region, were noticed. It is estimated that the river could handle more of this type of use.

4. The quality, size, and uniqueness of the river and its setting is of sufficient importance to attract use from beyond the boundaries of the locality and state(s) and would appear to outweigh other uses of the river.

   Yes X

   No

   The river itself is not considered unique, the area around, including the entire Shenandoah Valley, is of great historical interest.

5. Plans for other uses of the river or its setting that would permanently and drastically impair the natural conditions have not progressed to the point that construction has commenced.

   Yes X

   No

   Public hearings are now being held by the U. S. Corps of Engineers on Brocks Gap Reservoir on the North fork of the Shenandoah.