OCTOBER 1974 DEPARTMENT DIS7



SUSQUEHANNA & VER BASIN . FOSTER JOSEPH SAYERS DAM . NORTH BALD EAGLE CREEK, PENNSYLVANIA

Master Plan DESIGN MEMORANDUM NO. 3C





DEPARTMENT OF THE ARMY BALTIMORE DISTRICT, CORPS OF ENGINEERS P.O. BOX 1715 BALTIMORE, MARYLAND 21203

1 October 1974

SUBJECT: Foster Joseph Sayers Dam - Master Plan

Division Engineer, North Atlantic ATTN: NADPL-R

1. The inclosed Master Plan, Design Memorandum No. 3C, Foster Joseph Sayers Dam, Pennsylvania, has been prepared in accordance with the provisions of ER 1110-2-1150 and ER 1120-2-400 and is submitted for review and approval.

2. As required by the provisions of paragraph 20, ER 1110-2-1150, 5 copies of the Master Plan are furnished for OCE and 2 for NAD.

FOR THE DISTRICT ENGINEER:

1 Incl as (cys 1 thru 7)

Harold L. Nelam

WILLIAM E. TRIESCHMAN, Jr. OL Chief, Planning Division

### SUSQUEHANNA RIVER BASIN

### FOSTER JOSEPH SAYERS DAM NORTH BALD EAGLE CREEK PENNSYLVANIA

### DESIGN MEMORANDUM NO. 3C

MASTER PLAN

Department of the Army Baltimore District, Corps of Engineers Baltimore, Maryland 21203

October 1974

## U.S. ARMY ENGINEER DISTRICT, BALTIMORE

### BALTIMORE, MARYLAND

### SUSQUEHANNA RIVER BASIN

### FOSTER JOSEPH SAYERS DAM

### NORTH BALD EAGLE CREEK, PENNSYLVANIA

### DESIGN MEMORANDUM NO. 3C

#### MASTER PLAN

### **Related Reports**

Design Memorandum Number	Title	Submission Date	Approved by OCE
1	Hydrology and Hydraulic Analysis	Dec. 1962	Mar. 1963
2	General Design Memor- andum	Aug. 1963	Dec. 1963
3A	Preliminary Master Plan Supplement No. 1 - Preliminary Report, Public Use and Access	Sep. 1963	Mar, 1964
3B	Facilities Public Use and Access	Feb. 1967	Jun. 1967
010	Facilities Supplement No. 1 - Sewage Pumping	Mar. 1968	Jun. 1968
30	Stations Master Plan	Sep. 1968	•
4	Geology and Soils	Nov. 1963	Jan. 1964
5	Relocations-Railroads	Jun. 1964	Sep. 1964
6	Real Estate	Jan. 1964	Oct. 1964
7	Howard Protective Works	May 1964	Jul. 1964
8	Relocations - Highway	Dec. 1964	Feb. 1965
9	Embankment	Feb. 1965	Apr. 1965
10	Concrete Aggregates	Mar. 1965	Apr. 1965
11	Relocations - Utilities	Oct. 1965	Jan. 1966
12	<b>Relocations - Cemeteries</b>	Dec. 1965	Sep. 1966
13	Outlet Works	Nov. 1965	Jan. 1966
14	Spillway	Sep. 1965	Dec. 1965
15	Sedimentation Ranges	Mar. 1968	May 1968
16	Howard Resettlement	Jul. 1965	(withdrawn)

а

### Susquehanna River Basin

#### Foster Joseph Sayers Dam

### Pennsylvania

### Master Plan

#### Design Memorandum No. 3C

### Preface

This Master Plan, prepared in accordance with the requirements of ER 1120-2-400, 1 November 1971, sets forth provisions for the progressive and orderly husbandry of the resources of the project and their development for recreation and public use. The plan describes the manner in which all project lands, waters, forests, and other resources will be conserved, enhanced, developed, managed, and used in the public interest throughout the life of the project. The dam was operationally completed in August 1969 with the construction of the Federal portion of the recreational facilities completed in the fall of 1971. Construction and improvements of recreation facilities by the Commonwealth of Pennsylvania and the Borough of Howard are currently underway.

h

NAEPL-E

Dr. Maurice K. Goddard Secretary Department of Environmental Resources Commonwealth of Pennsylvania Harrisburg, Pennsylvania 17120

### Dear Dr. Goddard:

I am writing in reference to the Master Plan. Foster Joseph Sayers Dam. This document sets forth provisions for the progressive and orderly husbandry of the project resources and their development for recreation and public use. The District has prepared the inclosed draft with cooperation from the Department of Environmental Resources and several other Federal, State, and local agencies concerned with management of project lands.

I would like to extend to you and your staff an opportunity to provide any comments which would be pertinent to the inclosed draft. I do not anticipate any significant changes in the document, however, I would appreciate the opportunity to consider your comments. The plates to be included in the final document will be a multicolor presentation, thus improving quality and readability.

Due to our proposed date for submission, your reply should reach this office by 23 August 1974. If no reply is received by that date, I will assume that no comments will be forthcoming.

I would like to take this opportunity to thank you and your staff members for the continued cooperation received in the preparation of the subject document.

Sincerely yours,

2 Incl As stated ROBERT S. McGARRY Colonel, Corps of Engineers District Engineer

MCSWAIN/8b/22558/NABPL-E ROESLKE/NABEL-E MULBER/NABEL-E TRIESCALESS/NABPL NORTON/NABPD McGARRY/NABPE

rc: Environ. Res. Br.

Exhibit A-2.11



DEPARTMENT OF ENVIRONMENTAL RESOURCES P. 0. Box 1467 Harrisburg, Pennsylvania 17120

In reply refer to RM-R

August 30, 1974

Colonel Robert S. McGarry District Engineer Baltimore District - Corps of Engineers P. O. Box 1715 Baltimore, Maryland 21203

Dear Colonel McGarry:

We have reviewed the draft masterplan for Foster Joseph Sayers Dam and appreciate the extension of time to August 30th to allow us to complete our review.

The Plan is very detailed, and we believe that a thorough job was accomplished on the draft report; however, we do have general comments and wish to relate them to you.

- The draft does not consider future development at Bald Eagle State Park concerning non-water related facilities. It is likely that bicycling and hiking trails, as well as additional camping, would be among the activities considered during future development phases.
- 2. The picnic facilities proposed in this Plan are located along the ridge top. We believe, based on recent research data, that additional facilities should be planned for along the shore line.
- 3. Facilities for fishing and picnicking below the dam should be considered.
- 4. Additional space may be required for dry-boat storage. Future berthing slips may not be needed if this space is provided and is available near the lake.

Sincerely yours,

C. H. McConnell, Deputy Secretary

Resources Management

Evbibi+ A\_9 19

COMMONWEALTH OF PENNSYLVANIA



In reply refer to **WFC** 

GSA 191-29

NACE - John

NABE TO - KINDAR

#### DEPARTMENT OF ENVIRONMENTAL RESOURCES

P. O. Box 1467 Harrisburg, Pennsylvania 17120

August 8, 1973

Mr. Reese Morgan Baltimore District Office U. S. Army Corps of Engineers **Operations** Division P. O. Box 1715 Baltimore, Maryland 21203

Dear Mr. Morgan:

This is in reply to your recent telephone conversation with Mr. Earl F. Ferris regarding the subject project, which provides for Construction of Administration and Service Buildings, Marina and Picnic Facilities for Bald Eagle State Park at Blanchard Lake.

The project scope includes:

- 1. Administration Building with access drive and 12 parking spaces and space for 2 cars with trailers.
- 2. Service Building (Park Maintenance Building) with service drive and service court.
- 3. Marina Center Building with access drive and 39-car parking spaces.
- Boat Service Building with access drive, maintenance 4. area, launch ramp and service fuel dock.
- 5. Six comfort stations with water and sewer connections.
- 6. Two comfort stations with chemical toilets.
- Floating docks with 412 berthing slips. 7.
- 8. Marina parking for 324 cars and an auxiliary lot for 120 boat and trailer parking.
- Surfacing of existing stone roads and roadways through 9. existing parking areas.

#### Exhibit A-3.0

### August 8, 1973

### Mr. Reese Morgan

10. Walks, seeding and sewer and water connections to existing systems.

Low bids received by The General State Authority on July 11, 1973, for the above facilities:

Project No. G.S.A. 191-29, Administration and Service Buildings, Marina and Picnic Facilities

191-29.1 - General Construction\$1,045,210.00191-29.2 - Heating and Ventilation21,479.00191-29.3 - Plumbing158,000.00191-29.4 - Electrical46,416.00Total = \$1,271,105.00

Allocation = \$1,265,000.00

The project will be awarded by The General State Authority.

I have enclosed a copy of the General Site Plan upon which the major contract items have been noted.

Sincerely yours,

Perrego

D. W. Perrego, Director Bureau of Design

encl.

#### NASPL-E

16 October 1973

Mr. Ralph W. Abele Executive Director Pennsylvania Fish Commission P.O. Box 1673 Harrisburg, Pennsylvania 17120

#### Dear Mr. Abele:

The Corps of Engineers, Baltimore District, is currently in the process of preparing a Master Plan for the Foster Joseph Sayers Dam which is located on the West Branch of the Susquehanns River, Centre County, Pennsylvania. In accordance with Corps guidelines for water resources projects this document shall set forth provisions for the progressive and orderly husbandry of the resources of the project and their development for recreation and public use.

In order that the Master Plan may present a complete and comprehensive management plan responsive to the desirable uses and protection of the project resources, it is essential at this time that coordination between the Corps and the Pennsylvania Fish Completion be undertaken to insure the Fish Commission an opportunity to provide input into the master planning process.

So that your agency's desires and expertise may be incorporated into the subject Master Plan, I would appreciate your submission of a Fish nanagenent plan for Feater Jeseps Savers Development with additional communication staff members feel might be pertinent to the operation and maintenance of the project area.

On 3 October 1973, Mr. Jerrold D. McSwain, of the Environmental Resources Branch of the Planning Division contacted Mr. Edward Miller, Director, Sureau of Fisheries and Engineering who referred Mr. McSwain to Mr. Robert Hesser, Chief, Fisheries Management Section. At that time Mr. McSwain and Mr. Hesser discussed particular subject areas to be addressed by our Waster planning process. The topics discussed wore:

a. an inventory of the characteristics of fish resources of Foster Joseph Sayers Dan, discussing the diversity and stability of the fish

rc: Environ. Res. Br.

MCSWAIN/sb/22558/NAPIN\_di

NLIDON/ISLA TRIESCHMAN/MABPL

Exhibit A-4.0

16 October 1973

NABPL-E Mr. Ralph W. Abela

population and a management plan defining measures to be taken to insure a successful fisheries program at Fester Joseph Sayers Dam;

b. results of electro-shocking studies on project waters;

c. the procedure for review of chemical applications to the project's waters.

In addition to Mr. Miller's and Mr. Hesser's comments, we would also appreciate the appropriate personnel from your office commenting on these additional topics:

a. a statement of the Pennsylvania Fish Convission's policies and objectives;

b. an organizational chart of the cormission and the staff elements, both rangerial and technical, responsible for fishery management on Foster Joseph Sayers Daw;

c. cooperative efforts with other agencies;

d. regulations and their enforcement;

e. any interpretive services or project identification efforts; and

1. a summary of nonies expended and proposed hudgets and ticutables for development, operations and manarchest of fishery resources on the project.

The usefulness and value of our overell detailed partnerset bloc is creative dependent upon the cooperative planning efforts with all the upenders which will be directly involved in project subground. I loss forward to your agency's contribution in this effort. If you should desire norm detailed assistance or claridication on our conter plannin efforts or feel that a meeting would be desirable and appropriate, you may contact Nr. McSwein at (301) 962-2558.

We would appreciate having this information by 1 December 1973 in order that it may be included in the master planning process.

Sincerely yours,

WILLIAM E. TRIESCHMAN, Jr. .... Chief, Planning Divisioa

- 30 A.

2 Exhibit A-4.1



### COMMONWEALTH OF PENNSYLVANIA

PENNSYLVANIA FISH COMMISSION

HARRISBURG 17120

February 1, 1974

Mr. Gerald McSwain Planning Division U. S. Army Corps of Engineers Baltimore District P. O. Box 1715 Baltimore, Maryland 21203

Dear Mr. McSwain:

Thanks for your call, and I am enclosing the input from the various staff members related to the plans on Sayer Dam for your narrative description.

The only thing that we have not included would be a simple straight line chart from Executive Director to the Director of the Bureau of Fisheries and Engineering, to the Chief of the Fisheries Division, to the Chief of the Management Section.

U If there is any further information you need, please feel free to contact us.

Sincerely, ele

Ralph W. Abele Executive Director

RWA/t encl.

Exhibit A-4.2

NABPL-E

Mr. Ralph W. Abele Executive Director Pennsylvania Fish Commission Harrisburg, Pennsylvania 17120

### Dear Mr. Abele:

I am writing in reference to the Master Plan, Foster Joseph Sayers Dam. This document sets forth provisions for the progressive and orderly husbandry of the project resources and their development for recreation and public use. The District has prepared the inclosed draft with cooperation from the Pennsylvania Fish Commission and several other Federal, State, and local agencies concerned with management of project lands.

I would like to extend to you and your staff an opportunity to provide any comments which would be pertinent to the inclosed draft. I do not anticipate any significant changes in the document, however, I would appreciate the opportunity to consider your comments. The plates to be included in the final document will be a multicolor presentation, thus improving quality and readability.

Due to our proposed date for submission, your reply should reach this office by 23 August 1974. If no reply is received by that date, I will assume that no comments will be forthcoming.

I would like to take this opportunity to thank you and your staff members for the continued cooperation received in the preparation of the subject document. Additionally, I would especially like to convey this District's appreciation for the helpfulness and concern that has been characteristic of Mr. Robert B. Hesser, Chief, Fisheries Management Section, Bellefonte, Pennsylvania. Mr. Hesser's input has proven to be very valuable in the preparation of this Master Plan.

#### Sincerely yours,

2 Incl As stated

WILLIAM E. TRIESCHMAN, Jr. Chief, Planning Division

rc: Environ. Res. Br.

MCSWAIN/sb/22558/NABPL-E ROLSNKE/NABPL-E NELSOR/ALBEL TRIESCHMAN/NABPL

August 23, 1974

Mr. William E. Trieschman, Jr. Chief, Planning Division Baltimore District, Corps of Engineers P. O. Box 1715 Baltimore, Maryland 21203

> Re: NABPL-E Master Plan, Foster Joseph Sayers Dam

Dear Mr. Trieschman:

Your letter received on August 8, 1974, directed to Executive Director Ralph W. Abele, has been forwarded to this office for review and comment. We appreciate the opportunity to review this draft of the Master Plan for the Foster Joseph Sayers Dam, and want to thank you for the kind comments concerning the cooperation of our Fisheries Management Section Chief, Mr. Robert B. Hesser.

We are pleased with this draft of the plan and feel that the fisheries management activities have been adequately described. We do have some questions concerning the proposed subimpoundments, which are mentioned in this plan, and would appreciate having additional information on this subject when it becomes available.

Sincerely yours,

IR Mille

Edward R. Miller, Director Bureau of Fisheries and Engineering

ERM:dk cc: R. W. Abele R. B. Hesser

BABPL-E

16 October 1973

Mr. Glenn L. Bowers Executive Director Pennsylvania Game Commission Harrisburg, Pennsylvanis 17120

#### Dear Mr. Bowers:

The Corps of Engineers, Baltimore District, is currently in the process of preparing a Master Plan for the Foster Joseph Sayers Dam which is located on the West Branch of the Susquehanna River, Centre County, Pennsylvania. In accordance with Corps guidelines for water resources projects this document shall set forth provisions for the progressive and orderly husbandry of the resources of the project and their development for recreation and public use.

In order that the Master Plan may present a complete and comprehensive rangement plan responsive to the desirable uses and protection of the project resources, it is essential at this time that coordination between the Corps and the Pennsylvania Game Commission be undertaken to insure the Game Commission an opportunity to provide input into the master planning process.

Under correct plans two tracts will be as ranged by the Panonylvania Gova Commission. Lease DACA-31-3-72-660 includes 1.000 acres for wildlife conservation and management, and lease DACA-01-1-600170 includes 3.7 acres to provide a water supply for the Pennsylvania Game Countistion Tree and Earch Elementy. Co fact your alongy's desires and expertise may be incorporated into the subject Master Plan, I would appreciate your submission of a management plan for the wildlife, lands, waters, forest, and other resources to be conserved, enhanced, developed, managed, and used in the public interest under these leases.

On 3 October 1973, Mr. Jerrold D. McSwain, of the Environmental Resources Branch of the Planning Division contacted Mr. C. R. Kinley, Chief, Division of Land Management by telephone to preface this request and to identify appropriate personnel for coordination. At that time, several topics which we desire to be addressed in a management plan

rc: Environ. Res. Br.

MCSWAIN/sb/22553/MABPL-E PONSTUR/MADDL-E

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Plate 4





NABPL-E Hr. Glenn L. Bowers

were discussed. These topics include but should not be limited to the following:

a. a statement of the Pennsylvania Gaue Commission's policies and objectives;

b. an organizational chart of the commission and the staff elements responsible for the two subject areas;

c. general construction and maintenance regulations and procedures;

d. access and measures for general public use of the areas;

e. cooperative efforts with other agencies;

f. visitor and facility protection (enforcement of regulations, accident provention planning, and security, if applicable):

g. any interpretive services or project identification efforts including the development of signing specifications/standards,

h. en inventory of the characteristics and capabilities of resources of the two areas, discussing the diversity and atopility of commonants of the sites and a proposed monoscent plan defining measures to be taken to protect their natural qualities (soil crossion control, forest management, fire protection, and pare made event), and

1. A summary of monies which have been spont and proposed budgets and timetables for development, exercise and exercise of the two treater.

The usefulness and value of our overall detailed conservant plan is greatly dependent upon the concertive planning efforts with all the spencies which will be directly involved in project concertent. I look fortune to your agency's contribution in this effort. If you should desire more detailed assistance or clarification on our master planning efforts or feel that a meeting would be desirable and appropriate, you may contact Mr. McSwain at (301) 962-2558.

We would appreciate having this information by 1 December 1973 in order that it may be included in the master planning process.

Sincerely yours,

WILLIAM E. TRIESCHAR, Jr. Chiof, Flaundon Division



OFFICE OF EXECUTIVE DIRECTOR TELEPHONE AREA CODE 717 - 787-3633

COMMONWEALTH OF PENNSYLVANIA PENNSYLVANIA GAME COMMISSION P. O. BOX 1567 HARRISBURG. PA. 17120

January 16, 1974

#### ADMINISTRATIVE DIVISIONS:

ACCOUNTING ADMINISTRATION 787-5670 LICENSE SECTION 787-2084 PERSONNEL 787-7836 INFORMATION & EDUCATION 787-6286 LAW ENFORCEMENT 797.8745 LAND MANAGEMENT 787.6818 REAL ESTATE 767-6568 PROPAGATION 787-6711 RESEARCH 787-5529

787.4492

Mr. William E. Trieschman, Jr. Chief - Planning Division Baltimore District Corps of Engineers P. O. Box 1715 Baltimore, Maryland 21203

Attention: Mr. J. McSwain

#### Dear Mr. Trieschman:

Our detailed wildlife management plan for the Foster Joseph Sayers Reservoir will be completed by the end of February. We submit for your consideration an interim plan for the acreage included in the license granted to the Game Commission.

The attached map includes four areas within the license area and we propose the following development:

Area l

This zone includes 85 acres of fields and approximately 60 acres will be in agricultural crops, with the balance to be maintained as open areas. Some of the acreage in this zone is too wet to farm except during dry periods. We will also establish a shrub cover strip through this zone. One parking lot (20-40 car capacity) proposed for this area which will also serve Area #2.

#### Area 2

This river bottom, totaling approximately 146 acres, is in typical river bank cover with adjacent fields. Our plan for this area will include agricultural crops on approximately 40 acres of land.

#### Exhibit A-5.2

Area 3

This zone, approximately 410 acres in area, is predominately open fields with interspersed strips of timber. We plan to maintain the open field conditions by mowing and crop production on a minimum of 100 acres. Two parking lots are proposed for this area.

-2-

Our plan includes a sharecrop arrangement for Areas 1, 2 and 3.

Area 4

This zone, totaling approximately 390 acres, is in forest cover and will be managed as a forest game area. Management will be release cuttings and perhaps some thinnings.

We have also considered activity on the forested area south of the impoundment. This zone, Area 5, totals approximately 1485 acres and we plan to develop a trail that will traverse the entire area with a spur off the main trail. A parking lot off L.R. 872 south of the railroad is proposed on this area.

The trail and parking lot construction is contingent upon income derived from sharecropping of fields. Financial constraints will also limit habitat development within this forested area.

The Game Commission is also interested in the zone on the north side of U. S. Route 220. There are some fields that we would like to maintain as open areas. However, these lands are not with the bounds of our license. Of course, our activity in this zone would also be contingent upon our financial restraints.

Very truly yours Glenn L. Bowers Executive Director

Encl.

NABPL-E

Mr. Glenn L. Bowers Executive Director Pennsylvania Game Commission Harrisburg, Pennsylvania 17120

#### Dear Mr. Bowers:

I am writing in reference to the Master Plan, Foster Joseph Sayers Dam. This document sets forth provisions for the progressive and orderly husbandry of the project resources and their development for recreation and public use. The District has prepared the inclosed draft with cooperation from the Pennsylvania Game Commission and several other Federal, State, and local agencies concerned with management of project lands.

I would like to extend to you and your staff an opportunity to provide any comments which would be pertinent to the inclosed draft. I do not anticipate any significant changes in the document, however, I would appreciate the opportunity to consider your comments. The plates to be included in the final document will be a multicolor presentation, thus improving quality and readability.

Due to our proposed date for submission, your reply should reach this office by 23 August 1974. If no reply is received by that date, I will assume that no comments will be forthcoming.

I would like to take this opportunity to thank you and your staff members for the continued cooperation received in the preparation of the subject document.

Sincerely yours,

2 Incl As stated WILLIAM E. TRIESCHMAN, Jr. Chief, Planning Division

rc: Environ. Res. Br.

MCSWAIN/sb/22558/NABPL-E ROESEKE/NABPL-E

Exhibit A-5.4



OFFICE OF EXECUTIVE DIRECTOR TELEPHONE AREA CODE 717 - 787-3633 COMMONWEALTH OF PENNSYLVANIA PENNSYLVANIA GAME COMMISSION p. o. box 1567 harrisburg, pa. 17120

August 8, 1974

ADMINISTRATIVE DIVISIONS:

787-4492
787-5670
787-2084
787-7836
787-6286
787-5743
787-6818
787-6568
787-6711
787-5529

Mr. William E. Trieschman, Jr. Chief of Planning Division Department of the Army Baltimore District, Corps of Engineers P.O. Box 1715 Baltimore, Maryland 21203

Dear Mr. Trieschman:

We have reviewed the Master Plan for Foster Joseph Sayers Dam (Design Memorandum No. 3C). Your treatment of the various zones regarding management potential should result in an orderly management program for the reservoir lands.

On Page 9-21 you mention our "historic" lack of orientation to non-consumptive use. The Came Commission recognized this fact, and late in 1969 we began construction of sites that included non-consumptive type facilities. Most of these sites are adjacent to waterfowl areas. Our input in the Statewide Comprehensive Recreation Plan considers the magnitude of non-consumptive use, relating to the wildlife of the Commonwealth.

The Game Commission was consulted during the development of certain phases of your plan. We compliment your office on the cooperation of your person-. nel. Your plan is outstanding.

Very truly yours MUNA Glenn L. Bowers

Executive Director

#### Exhibit A-5.5

BUREAU OF MUSEUMS

#### WILLIAM PENN MEMORIAL MUBEUM AND ARCHIVES BUILDING

#### BOX 1026

#### HARRISBURG, PENNSYLVANIA 17108

October 9, 1973

Department of the Army Baltimore District, Corps of Engineers P. O. Box 1715 Baltimore, Maryland 21203 ATTN: Mr. J. D. McSwain

#### Re: Eagle Iron Works at Curtin Village Centre County, Pennsylvania

Gentlemen:

To bring the existing and proposed development of the Eagle Iron Works at Curtin Village up to date, the Historical and Museum Commission submits his subject matter.

As to general and long range development programs, the project remains essentially the same as submitted to your office on previous correspondence. The only general comment that could be made is that the total development will take more time to complete than previously stated and the cost of same will be somewhat increased. This may sound rather vague and lacking in specific data because of the following.

We have retained the professional firm of Berger/Parsons/ Spiers of Camp Hill, Pennsylvania to prepare a basic concept of master planning relating to our proposed programs, what has been completed, the existing physical features and the historical and archeological investigation completed or proposed. We hope to have this completed in 1974 and will submit same to your office for review and the necessary approvals.

As to the work in progress or completed as part of our program of development, I will outline the projects herein.

The Roland Curtin Mansion has been restored at a cost of \$250,000.00 and awaits its furnishing and assignment of operating personnel to allow it to be opened as part of our museum programs.

The professional firm assisting the Commission in the restoration project was Berger/Parsons/Spiers of Camp Hill and the contractor was Paul R. Spearly and Sons of Bellefonte, Pennsylvania. The resulting work in the project was excellent. Department of the Army October 9, 1973 Page 2

Personnel of the Commission completed and recorded an archeological investigation for the main areas slated for development with special interest placed upon the restoration/reconstruction of the Furnace, Forge and remains of the Canal and Canal Lock. The project was a tremendous success and the information will be used in future development and that under contract.

We entered into a professional agreement with Berger/Parsons/ Spiers for design documents for the restoration/reconstruction of the Forge and Furnace, which have been completed and we await approval of construction monies to award a contract.

We have a professional engineering agreement with the same firm for development of the project area including, utilities, construction of the canal and lock, parking, sewerage disposal, etc. This contract is about complete. When monies become available we hope to contract this work also.

The total expenditures estimated for these contracts is listed in the following manner. Because of the unknown quanities in our budget programs, we cannot estimate when the work will be done.

For Design (monies allocated)

Master Plan	\$ 10,000.00
Restoration/Reconstruction Forge and Furnace	55,000.00
Area Development	33,000.00

For Construction (no monies allocated)

Restoration/Reconstruction of H	Furnace \$250,000.00
Restoration/Reconstruction of F	Forge 250,000.00
Area Development	300,000.00

Rare fossils were discovered in the stones of the Mill and a project is underway at the site to continue the investigation of the materials.

The Village took a lot of water in the flooding caused by Hurricane Agnes in June of 1972. Some damage to the historic buildings was evident but no real harm was done. Some monies were spent to repair these happenings.

I hope this information will suffice until our master plan documents are ready and if more is needed, let me know.

Very truly yours,

H. H. M. Cent

Thomas H. McCarthy Chief, Planning and Construction

### Exhibit A-6.1

NABPL-E

Mr. William J. Wewer Executive Director Pennsylvania Historical and Museum Commission P.O. Box 1026 Harrisburg, Pennsylvania 17120

### Dear Mr. Wewer:

I am writing in reference to the Master Plan, Foster Joseph Sayers Dam. This document sets forth provisions for the progressive and orderly husbandry of the project resources and their development for recreation and public use. The District has prepared the inclosed draft with cooperation from the Pennsylvania Historical and Museum Commission and several other Federal, State, and local agencies concerned with management of project lands.

I would like to extend to you and your staff an opportunity to provide any comments which would be pertinent to the inclosed draft. I do not anticipate any significant changes in the document, however, I would appreciate the opportunity to consider your comments. The plates to be included in the final document will be a multicolor presentation, thus improving quality and readability.

Due to our proposed date for submission, your reply should reach this office by 23 Aurust 1974. If no reply is received by that date, I will assume that no comments will be formcoming.

I would like to take this opportunity to thank you and your staff members for the continued cooperation received in the preparation of the subject document.

#### Sincerely yours,

2 Incl As stated WILLIAM E. TRIESCHMAN, Jr. Chief, Planning Division

re: Troiven. Les. Br.

Exhibit A-6.2

NELSON/MERTA TRIESCHMAN/MALATA

Sanda Astronomica da c



# CENTRE COUNTY PLANNING COMMISSION

COURTHOUSE BELLEFONTE, PENNSYLVANIA 16823 814-355-1544

3 December 1973

Mr. Jerry McSwain Baltimore District Army Corps of Engineers Baltimore, Maryland 21203

Dear Jerry:

Pursuant to our recent phone conversation, the following contains a listing of what I would consider to be "problem areas" related to the Sayers Reservoir area.

- 1. An increase of mosquitoes It would seem as though portions of Howard Township (upstream from the State Park facilities) have experienced an increase in mosquito population since the reservoir has been in existence. It is thought that this has been the result of a raising of the water table due to the inability of the floodplain to adequately drain itself out during the Spring months. The existence of the old canal contributes to this problem. The Howard Township Supervisors have been in contact with Mr. Keith Schuyler, Vector Control Specialist, and Mr. Toney Miele, Park Superintendent. Both of these gentlemen work for the State Department of Environmental Resources.
- 2. The construction of the "Mount Eagle Connector Road" Since the construction of the Sayers Reservoir the people of Howard Township have become concerned about the lack of convenient access across the Bald Eagle Creek, particularly near the communities of Mount Eagle and Holters Crossing. The Pennsylvania Department of Transportation is currently designing a compromise alternative to satisfy the local desires. However, it is my understanding the Corps of Engineers will have to give final approval to the project.
- 3. Future use of the northern slope of the Bald Eagle Mountain In the past several years it has come to my attention that the people of the Howard area have expressed concern over the possible future use of the Bald Eagle Mountain between Howard Borough and Mount Eagle. The people are concerned that future development might tend to deface the mountain and thus detract from the existing aesthetic qualities of the area.

4. Sewer service and future development – It has been anticipated that there will be an increase in development activity in the Howard Township area north of new U.S. Route 220. This development will probably be of the recreation and summer home type. With the relatively poor soils in this area for the use of septic tanks and tile fields, it may be advisable to utilize the Corps' treatment facility which has been constructed below the impoundment area. The financing of this system would not be Corps' responsibility but their cooperation surely would be needed.

I think that the above pretty well covers those items which we previously discussed. If we can be of any further assistance, please feel free to contact me again.

Exhibit A-7.1

incerely yours, na po

Robert B. Donaldson Executive Director

RBD:ek

#### HABPL-E

16 October 1973

Reverend Jack Archer Chairman Howard Recreation Council Howard, Pennsylvania

#### Dear Reverend Archer:

This will serve to confirm discussions between Mr. Jerrold D. McSwain of the Environmental Resources Branch of the Planning Division and yourself on 10 October 1973. I am pleased at the continued interest and progress which the Borough of Howard is displaying in developing the two recreation tracts for the maximum benefits for the local residents.

As was discussed in the conversation between yourself and Mr. McSwain, the Corps of Engineers, Baltimore District, is currently in the process of preparing a Master Plan for Foster Joseph Savers Dam. In order that the Master Plan may present a complete and comprehensive management plan responsive to the desirable uses and protection of the project resources, it is essential at this time that the Borough of Moward be provided an opportunity to provide input into the master planning process.

Under current plans, two tracts will be managed for park and recreation purposes by the Borough of Noward, lease DACH-31-1-72-635 for 40.5 acres and lease DACH-31-1-73-679 for 5 acres. I would appreciate your subplassion of a namegement plan as discussed by you and Mr. Moswain.

The usefulness and value of our overall detailed management plan is greatly dependent upon the cooperative planning efforts with all the apencies which will be directly involved in project management. I look forward to your agency's contribution in this effort. If you should desire more detailed apsistance of clarification on our master planning efforts or feel that a mosting would be desirable and appropriate, you may contact Mr. McSwain at (301) 962-2558.

We would appreciate having this information by 1 December 1973 in order that it may be included in the master planning process.

Sincerely yours,

WILLIAM E. TRIBSCHMAN, Jr. Chief, Planning Division

rc: Environ. Res. Br.

MCSWAIN/sb/22558/ ROESEKE/ NELSO TRIESCIMA

Exhibit A-8.0

#### BEACH AREA

### LEASE DACW-31-1-72-635 40.5 ACRES

Frogres Report for 1972-1978

Rest rooms: Installed in Men's Room - 1 water closet, 1 urinal, and 1 lavatory. Installed in Ladies Room- 2 water closets and 1 lavatory.

Cleared underbrush in the park area. Furchased 11 picnic tables,1 drinking fountain, and placed garbage containers.

Leased a portion of the area to Howard Boat Club(Copy of lease inclosed)

Progress to date: Constructed launching area and docks.

Comments:

This past summer the park area was used for family reunions and church picnics with many favorable reactions from those who used the facility. The launching area leased to the Boat Club proved to be successful. It stimulated local interest in the area, resulting in many hours of manual labor donated to further the development of the area. Its the clubs intentions to have the parking areacompleted by 1975.

The progress thus far has been the sole responsibility of Howard Borough. All attempts to get Federal or State aid in developingthis area has proved fruitless. With a limited budget the progress is slow.

At the present time our attention has been directed to the possibility of opening the beach for swimming for the summer of 1974. The water has been tested periodically and the results have been very satisfactory for swimming. In order to open the beach we would have to place sand on the beach. It was hinted by a member of the Corp. of Engineers that perhaps the sand could be furnished free of charge, from a local sand bank under the domain of the Corp. of Engineers. Of course, the hauling of the sand would be at the expense of Howard Borough.

To open the existing bath house would require us to furnish plumbing fixtures consisting of 7 waterclosets,4 lavatories, 8 showers, 3 urinals, and 2 dressing rooms. Enclosed you will find a long range work schedule. To proceed any faster

with this plan, will depend entirely on available funds.

### LEASE DACW 31-1-73-679

This area consists of about 5 acres, it will be connected by a walkway to the center of town, where we are in the process of developing the Howard Central Park. Howard Central Park is progressing with the help of matching funds from the Penna. Dept. of Community Affairs. Because of not having the lease to the land, now known as lease DACW 31-1-73-679, we could not include this area when we applied for the Central Park. It may be possible to reapply at a latter date to receive matching state funds.

Please find enclosed a map which explains what we plan to do with this area. Since the building of the Foster Joseph Sayers Dam the financial strain on Howard Borough is more than we ever thaught possible. With a population of a mere 750, of which about 28% are retired, the local funds are hard to come by. Any suggestions you may have would be appreciated. A. Rest Rooms and Temporary Bath Houses:

The rest room facilities located in the picnic area consist of one men's facility 8 ft by 10 ft. of floor space, and the women's facility of the same size for a total of 160 mg. ft. The men's restroom will contain 1 waterelesst, iurinal, and 1 lowatory while the women's will contain 2 waterelessts and ilavatory. This facility will bentain plumbing fixtures that are reasonably priced, durable, and easy to maintain.

B.Sand for beach:

Will place about 1/2 of the beach area with sami. The remaining beach area adjacent to the sand will be in turf.

C. Water Fountains;

Will provide plumbing fictures such as drinking fountains and water fancets on existing water lines provided by the Corps of Engineers.

#### D.M.scellaneous Items;

The pionic area will be provided with fire places, pionic tables, garbage containers.

Clearing of under brush any planting of trees where needed.

#### Mork Schedule for 1978 to 1983

A. Bath House and Concession Stand:

The existing bath house and consession stand will be furnished with plumbing fixtures. the upn's bath house will contain 3 waterclosets, 3 urinals, 2 lavatories, 4 showers, and a dressing room. The women's will contain 4 waterclosets, 2 lavatories, 4 showers, and a dressing room. The materials used will be reasonably priced, durable, and easy to maintain.

B. Sand on Beach:

The remaining beach ares will be provided with sand. The remaining beach area adjacent to 'h' sand will be in turf.

- C. Construct a soft surfice path system approx. 1,050 ft. long and 6 ft. wide with 6, 300 sq. ft. of surface.
  - D. Construct a soft sur sce path system of undeformined length to facilitate pederthis directation throughout as antire site.

### Exhibit A-8.3

#### Work Schedule for 1983 to 1988

A.Paving:

Paving parking area #1 which is approximately 120 ft. by 100 ft. or 13,000 sq.ft. of surface.

b. Paving access road # which is approximately 640 ft long and 18 ft. wide for a total of 11,520 sq. ft. of surface

Work Schedule For 1988 to 1993

- A. Paving of park' ig area #2 which is approx. 200 ft by 60 ft. with 12,000 sq. ft. of surjace.
- B.Paving parking area # 3 which is approx. 200 ft. by 75 ft. with 15,000 sq. ft. of surface.

C. Paving acess road #2 which is approx. 760 ft. long and 15 ft. wide for a total of 13.680 sq. it. of surface.

- D.Paving a hard surface path system approx. 1300 ft. long and 8 ft. wide with 10,400 sq. ft. of surface.
- E. A small boat dock laux hingramp will be constructed . It will be approx. 15ft. by 40 ft. with approx. half of it located in the water.
- F. A combination boat doch and fishing pier approx. 110 ft. long and 6 ft. wide will be construct d. This facility will be constructed in such a manner and of such materials that it may be removed by sections at the end of each recreation season.

NABPL-E

Reverend Jack Archer Chairman Howard Recreation Council Howard, Pennsylvania 16841

### Dear Reverend Archer:

I am writing in reference to the Master Plan, Foster Joseph Sayers Dam. This document sets forth provisions for the progressive and orderly husbandry of the project resources and their development for recreation and public use. The District has prepared the inclosed draft with cooperation from the Borough of Howard and several other Federal, State, and local agencies concerned with management of project lands.

I would like to extend to you an opportunity to provide any comments which would be pertinent to the inclosed draft. I do not anticipate any significant changes in the document, however, I would appreciate the opportunity to consider your comments. The plates to be included in the final document will be a multicolor presentation, thus improving quality and readability.

Due to our proposed date for submission, your reply should reach this office by 23 August 1974. If no reply is received by that date, I will assume that no comments will be forthcoming.

I would like to take this opportunity to thank you for the continued cooperation received in the preparation of the subject document.

#### Sincerely yours,

2 Incl As stated WILLIAM E. TRIESCHMAN, Jr. Chief, Planning Division

rc: Environ. Res. Br.

MCSWAIN/sb/22558/NABPL-F ROESEKE/NABPL-F MILLSON/COLL TRIESGUARA/COLL

### SUSQUEHANNA RIVER BASIN

FOSTER JOSEPH SAYERS DAM PENNSYLVANIA

### Design Memorandum No. 3C MASTER PLAN

### EXHIBIT B

Leases for Public Park and Recreational Purposes

October 1974
# EXHIBIT B Leases for Public Park and Recreational Purposes

Leases	Agency
DACW-31-1-72-605	Commonwealth of Pennsylvania Department of Environmental Resources
DACW-31-1-72-660	Pennsylvania Game Commission
DACW-31-1-70-271	Pennsylvania Historical and Museum Commission
DACW-31-1-72-635	Borough of Howard
DACW-31-1-73-679	Borough of Howard

#### DEPARTMENT OF THE ARMY

# LEASE.

# FOR PUBLIC PARK AND RECREATIONAL PURPOSES

FOSTER JOSEPH SAYERS DAM

PROJECT AREA NO. DACW-31-1-72-605

THE SECRETARY OF THE ARMI under authority of Section 4 of the Act of Congress approved 22 December 1944, as amended (16 U.S.C. 460 d) hereby grants to the Commonwealth of Pennsylvania, Department of Environmental Resources, a lease for a period of forty (40) years commencing on the date of execution hereon, to use and occupy approximately four thousand one hundred seventy (4,170) acres of land, and one thousand seven hundred thirty (1,730) acres of recreation pool as shown on Exhibit "A"; a sanitary system consisting of trunk lines, lateral, three (3) sewage pumping stations, and a sewage treatment plant, all complete with related appurtenances and equipment as shown on Exhibit "D"; a water supply and distribution system including required water lines, valves, two (2) water supply wells with pumps, pump house, and chlorinator, a 200,000 gallon standpipe and related equipment as shown on Exhibits "B" and "C"; six (6) boat launching ramps, one (1) small boat landing, ten (10) floating pier sections, one (1) fishing pier, five (5) vault latrines, and two (2) pedestrian underpasses as shown on Exhibit "B", under the primary jurisdiction of the Department of the Army in the Foster Joseph-Sayers Dam Project area, hereinafter referred to as the premises, for public park and recreational purposes.

2. The lessee shall administer and maintain the premises in accordance with the KMSX MTRANE AND ALCONTRACTOR PLANMENT IN THE INFORMATION OF A STRANG AND ALCONTRACTOR PLANMENT IN THE INFORMATION OF A STRANG AND A S

a. Plans for management activities to be undertaken by the lessee or jointly by the U.S. Army Engineers and the lessee, including improvements and other facilities to be constructed thereon.

b. Budget of the lessee for carrying out the management activities.

c. Personnel to be used in the management of the area.

3. The lessee shall provide the facilities and services necessary to meet the public demand either directly or through concession agreements with third parties. All such agreements shall state that they are granted subject to the provisions of this lease and that the concession agreement will not be effective until approved by the District Engineer.

4. Admission, entrance or user fees may be charged by the lessee for the entrance to or use of the premises or any facilities constructed thereon, PROVIDED, prior written approval of the District Engineer is obtained. 5. The amount of any fees and all rates and prices characed by the lessee or its concensionaires for accommodations, functionary proval of the District Engineer. The lessee shall, by 15 April and 15 October of each year, submit to the District Engineer for approval a list of the fees, rates and prices proposed for the following 6 months, including justification for any proposed increase or decrease. The District Engineer will give written notice to the lessee of his approval of or objection to any proposed fee, rate or price and will, if appropriate, state an approved fee, rate or price for each item to which an objection has been made. The lessee and/or its concessionaires shall keep a schedule of such fees, rates or prices posted at all times in a conspicuous place on the leased premises.

6. All monies received by the lessee from operations conducted on the premises, including, but not limited to, entrance and admission fees and user fees and rental or other consideration received from its concessionaires, may be utilized by the lessee for the administration, maintenance, operation and development of the premises. Any such monies not so utilized, or programmed for utilization within a reasonable time, shall be paid to the District Engineer at the end of each 5-year period. The lessee shall establish and maintain adequate records and accounts and render annual statements of receipts and expenditures to the District Engineer, except for annual or weekly entrance fees which also are honored at other recreational areas operated by the lessee. The District Engineer shall have the right to perform audits of the lessee's records and accounts, and furnish the District Engineer a copy of the results of such an audit.

7. All structures shall be constructed and landscaping accomplished in accordance with plans approved by the District Engineer. Further, the lesse shall not discharge waste or effluent from the premises in such a manner that such discharge will contaminate streams or other bodies of water or otherwise become a public nuisance.

8. The right is reserved to the United States, its officers, agents, and employees, to enter upon the premises at any time and for any purpose necessary or convenient in connection with river and harbor and flood control work, and to remove timber or other matered required for such work, to noon the premises when necessary, and/or to make any other use of the land as may be necessary in connection with public navigation and flood control, and the lessee shall have no claim for damages of any character on account thereof against the United States or any agent, officer or employee thereof.

9. Any property of the United States damaged or destroyed by the lessee incident to the exercise of the privileges herein granted shall be appropriate or replaced by the lessee to the satisfaction of the District Engineer.

10. The United States shall not be responsible for damages to property or injuries to persons which may arise from or be incident to the exercise of the privileges herein granted, or for damages to the properts of the lessee, or for damages to the property or injuries to the person of the lessee's of cers, agents, servants, or employees or others who may be on the premises at their invitation or the invitation of any one of them, arising from or incident to the flooding of the premises by the Government or flooding from any other cause, or arising from or incident to any other governmental activities, and the lessee shall hold the United States harmless from any and all such claims.

11. That at the time of the commencement of this lease, the lessee will obtain from a reputable insurance company, acceptable to the Government, liability or indemnity insurance providing for minimum limits of \$ 50,000.00 per person in any one claim, and an aggregate limit of \$ 150,000.00 for any number of persons or claims arising from any one incident with respect to bodily injuries or death resulting therefrom, and \$ 5,000.00 for damage to property suffered or alleged to have been suffered by any person or persons resulting from the operations of the lessee under the terms of this lease.

12. This lease may be relinquished by the lessee at any time by giving to the Secretary the Army, through the District Engineer, at least 30 days' notice in writing.

13. This lease may be revoked by the Secretary of the Army in the event the lessee choletes any of the terms and conditions of this lease and continues and persists therein for  $\omega$  period of 30 days after notice thereof in writing by the District Engineer.

14. On or before the date of expiration of this lease or its relinquishment by the lessee, the lessee shall vacate the premises, remove its property therefrom, and restore the premices to a condition satisfactory to the District Engineer. If, however, this lease is revoked, the lessee shall vacate the premises, remove its property therefrom, and restore the premises as aforesaid within such time as the Secretary of the Army may designate. In either event, if the lessee shall fail or neglect to remove its property and so restore the premises, then its property shall become the property of the United States without compensation therefor, and no claim for damages against the United States or its officers or agents shall be created by or made on account thereof.

15. The lessee or its concessionaires shall not discriminate against any person or persons because of race, creed, color or national origin in the conduct of its operations hereunder. The grantee furnishes as part of this contract an assurance (Exhibit E) that he will comply with Title VI of the Civil Rights Act of 1964 (78 Stat. 241) and Department of Defense Directive 5500.11 issued pursuant thereto and published in Part 300 of Title 32, Code of Federal Regulations.

16. All notices to be given pursuant to this lease shall be addressed, if to the lessee, to Secretary, Department of Environmental Resources, Commonwealth of Pa. P.O. Box1467, Darrisburg, Pennsylvania 17120 in to the Government, to the District Engineer, U.S. Army Engineer District, Baltimore, P.O. Box 1715, Baltimore, Maryland 21203

or as may from time to time be directed by the parties. Notice shall be deemed to have been duly given if and when inclosed in a properly sealed envelope or wrapper, addressed as aforesaid and deposited postage prepaid (or, if mailed by the Government deposited and the framewing privilege) in a post office or branch post office regularly maintained by the United States Government.

17. This lease is subject to all existing easements, and easements subsequently granted, for roadways, and utilities located or to be located on the premises, provided that the proposed grant of any easement will be coordinated with the lessee and easements will not be granted which will interfere with developments, present or proposed, by the lessee.

SEE ATTACHED SHEETS

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U.S. GOVERNMENT PRINTING OFFICE : 1967 OF-247-611

18. That, as of the commencement date of this lease, an inventory and condition report of all personal property and improvements of the Government included in this lease shall be made by a representative of the Government and a representative of the lessee to reflect the then present condition of said property. A copy of said inventory and condition report (Exhibit "G") shall be attached to and become a part hereof, as fully as if originally incorporated therein. At the expiration, revocation or termination of this lease a similar inventory and condition report shall be prepared and submitted to the District Engineer, U.S. Army Engineer District, Baltimore, P.O. Box 1715, Baltimore, Maryland 21203 said inventory and condition report to constitute the basis for settlement by the lessee with said officer for leased property shown to be lost, damaged or destroyed, any such property to be either replaced or restored to the condition required by Condition No. 26 hereof, or at the election of the Government reimbursement made therefor by the lessee at the current market value thereof.

19. The installation and/ or operation and maintenance of the sanitary system and water distribution system, hereinafter designated "facilities" shall be accomplished without cost or expense to the United States under the general supervision and subject to the approval of the officer having immediate jurisdiction over the property, hereinafter designated as "said officer", and in such manner as not to endanger personnel or property of the United States on the said United States land or obstruct travel on any road thereon. The grantee shall have the right of ingress and egress for such purposes.

20. The grantee shall supervise the said facilities and cause it to be inspected at reasonable intervals, and shall immediately repair any leaks found therein as a result of such inspection, or when requested by said officer to repair any defects. Upon completion of the installation of said line and the making of any repairs thereto, the premises shall be restored immediately by the grantee, at the grantee's own expense, to the same condition as that in which they existed prior to the commencement of such work, to the satisfaction of the said officer.

21. The United States reserves to itself the right to construct, use, and maintain across, over and/or under the right of way hereby granted, electric transmission, telephone, telegraph, water, gas, gasoline, oil and sewer lines and other facilities, in such manner as not to create any unreasonable interference with the use of the right of way herein granted.

Exhibit B-1.4

22. The United States shall not be responsible for damages to property or injuries to persons which may arise from or be incident to the construction, maintenance and use of said facilities.

23. That the grantee shall furnish through said facilities such service as may be required from time to time for governmental purposes on said land, provided that payment for such service will be made by the United States at rates which shall be mutually agreeable but which shall never exceed the most favorable rates granted by the grantee for similar service.

24. In the event all or any portions of said land occupied by said facilities shall be needed by the United States, or in the event the existence of said facilities shall be considered detrimental to governmental activities, the grantee shall from time to time, upon notice so to do, and as often as so notified, remove said facilities and related apportenances to such other location or locations on said land as may be designated by said officer, and in the event such line shall not be removed or relocated within ninety (90) days after any aforesaid notice, the United States may cause the same to be done at the expense of the grantee.

25. This instrument may be terminated by the Secretary of the Army upon a reasonable notice to the grantee if the Secretary of the Army shall determine that the right of way hereby granted interferes with the use or disposal of said land or any part thereof by the United States, or it may be terminated by the Secretary of the Army for failure, neglect, or refusal by the grantee fully and promptly to comply with any and all of the conditions of this grant, or for nonuse, or for abandonment.

26. That on or before the date of expiration of this lease or its termination by the lessee, the lessee shall vacate the demised premises, remove the property of the lessee therefrom, and restore the premises to as good order and condition as that existing upon the date of commencement of the term of the lease, dare ges beyond the control of the lessee and due to fair wear and tear excepted. If, however, this lease is revoked, the lessee shall vacate the premises, remove said property therefrom, and restore the premises to the condition aforesaid within such time as the Secretary of the Army may designate. In either event, if the lessee shall fail or neglect to remove said property and so restore the premises, then, at the option of the Secretary of the Army, said property shall either become the property of the United States without compensation therefor, or the Secretary of the Army may cause it to be removed and the premises to

be restored at the expense of the lessee, and no claim for damages against the United States or its officers or agents shall be created by or made on account of such removal or restoration work.

27. The conditions of this instrument shall extend to and be binding upon and shall inure to the benefits of the representatives, successors, and assigns of the grantee.

28. That it is understood that this instrument is effective only insofar as the rights of the United States in the said property are concerned; and that the grantee shall obtain such permission as may be necessary on account of any other existing rights.

29. The construction, use and maintenance of roads or streets, including culverts and other drainage facilities, shall be performed without cost or expense to the United States, under the general supervision and subject to the approval of the officer having jurisdiction over said premises.

30. The grantee shall at all times maintain said road or street in good condition and shall promptly make all repairs thereto needed to preserve a smooth surface highway.

31. The United States shall in no case be liable for any damages or injuries to said roads or streets which may be caused by or result from any operations undertaken by the Government, and no claim or right to compensation shall occur from such damages or injuries.

32. The United States reserves the right to make such connections between the road or street herein authorized and roads and streets on said lands as the Chief of Engineers may from time to time consider necessary, and also reserves to itself rights of ways for all purposes across, over, and/or under the right-of-way hereby granted; provided however, the such rights shall be used in a manner that will not create unnecessary interference with the use and enjoyment by the grantee of said right-of-way for highway purposes.

33. It is understood that the provisions of Conditions 29 and 31, supra, shall not abrogate or interfere with any agreements or committments made or entered into between the grantee and any other agency of the United States with regard to financial aid to the grantee in connection with the construction, maintenance, or repair of the roads or streets.

34. The United States shall not be responsible for damages to property or injuries to persons which may arise from or be incident to the construction, maintenance, and use of said road or street.

35. That this lease is subject to the provisions as cited in Contract No. DACW-31-69-C-0014, TRI-PARTY Agreement, approved 21 November 1968, attached hereto and made a part hereof. (Exhibit "F")

Exhibit B-1.6

IN WITNESS WHEREOF I have hereunto set my hand this  $474^{-1}$  day of  $A_{1} + 54^{-1}$  1973, by direction of the Assistant Secretary of the Assistant Secretary

of the Army.

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The above instrument, together with provisions and conditions thereof, is hereby accepted this lst day of June 1973.

BY

COMMONWEALTH OF PENNSYLVAN TA

Signed and sealed in the presence of:

Condi Manard

MAURICE K. GODDARD - Secretary

P.O. Box 1467 Harrisburg, Pennsylvania 17120 (Post Office Address)

Approved as to form and proposed manner of execution:

Assistant Attorney General Department of Justice

master have Date -

### DEPARTMENT OF THE ARMY LICENSE FOR WILDLIFE CONSERVATION AND MANAGEMENT PURPOSES ON FOSTER JOSEPH SAYERS LAKE PROJECT

NO. DACW-31-3-72-660

THE SECRETARY OF THE ARMY, under the authority of Section 3 of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq) and Section 4 of the Act of 22 December 1944, as amended (76 Stat. 1195; 16 U.S.C. 460d), hereby grants to the Commonwealth of Pennsylvania Game Commission, hereafter referred to as the licensee, a license for a period of twenty-five (25) years commencing on the date of final execution hereof, to use and occupy approximately 1030 acres as shown in red on Exhibit "A", Corps of Engineers Drawing, Foster Joseph Sayers Dam and Reservoir, Land Use Plan, Exhibit "A", attached hereto and made a part hereof for wildlife conservation and management purposes.

THIS license is granted subject to the following conditions:

1. That the licensee, in the exercise of the privileges hereby granted, shall conform to such rules and regulations as may be prescribed by the Secretary of the Army to govern the public use of the said project area, and with the provisions of Section 4 of the Act of Congress, approved 22 December 1944, as amended (76 Stat. 1195; 16 U.S.C. 460d)

2. That the licensee may construct upon said land such buildings, improvements, facilities, accommodations, fences, signs, and other structures as may be necessary for the purposes of this license, and may plant seeds, shrubs and trees, provided that all such structures shall be constructed and the landscaping accomplished in accordance with plans approved by the District Engineer, U.S. Army Corps of Engineers, in charge of the administration of the property.

3. That the licensee shall administer and maintain the said property, for the purposes of this license, in accordance with the master plan for the said project area and with an annual management program to be mutually agreed upon between the licensee and the said District Engineer, which may be amended from time to time as may be necessary. Such annual management program shall include, but is not limited to, the following:

a. Plans for management and development activities to be undertaken by the licensee or jointly by the Corps of Engineers and the licensee.

b. Budget of the licensee for carrying out the management and development activities.

c. Personnel to be used in the management of the area.

#### Exhibit B-2.0

d. Plans for supervising, patrolling and policing the licensed areas, including the water areas.

4. That the licensee shall protect the property from fire, vandalism and soil erosion, and may make and enforce such rules and regulations as are necessary, and within its legal authority, in exercising the privileges granted in this license, provided that such rules and regulations are not inconsistent with those prescribed by the Secretary of the Army to govern the public use of the area.

That the licensee, in exercising its governmental or proprietary 5. functions, may plant and harvest crops, either directly or by service contract or under sharecrop agreements with local farmers, to provide: (a) food for wildlife and (b) necessary compensation to farmers under any sharecrop agreement. Recognizing that a poor crop season may result in a lack of food for wildlife in a given future year, the licensee will be allowed to provide a reasonable surplus which will be held in reserve against a future poor crop season or may be disposed of by the State and the proceeds from the sale held in reserve against a future poor crop In any event, the lands will not be used by the State for the season. production of crops or any other purpose solely to produce revenue to defray costs of management of the wildlife area. Lands within the licensed area, available for lease for agricultural or grazing purposes, will be leased by the District Engineer. Monies collected by the state and not used to provide food for wildlife in a poor crop season shall be paid to the District Regineer at five year intervals. The licensee will establish and maintain adequate records and accounts and render periodic statements of receipts and expenditures in furtherance of its wildlife feeding program, as may be required by said District Engineer. The District Engineer shall have the right to perform audits of the licensee's records and accounts.

6. That the licensee may take, trap, remove, stock or otherwise control all forms of fish and wildlife within the said area, and may place therein such additional forms of fish and wildlife as it may desire from time to time, and shall have the right to close the area, or any parts thereof from time to time, to fishing, hunting or trapping, provided that the closing of any area to such use for fishing, hunting or trapping shall be consistent with the state laws for the protection of fish and wildlife; also, the licensee shall enforce the fish and game laws and such orders and regulations as may be issued by the Division of Game and Fish, and/or its Director, which laws, orders and regulations are consistent with its state-wide program.

7. That the water areas of the project shall be open to public use generally, without charge, for boating, swimming, bathing, fishing and other recreational purposes, and that ready access to and exit from such water areas along the shores of the project shall be maintained for general public use, when such use is determined by the Secretary of the Army not to be contrary to the public interest. However, no use of any area shall be permitted which is inconsistent with the state laws for the protection of fish and game.

2

Exhibit B-2.1

8. That this license is subject to all existing and future easements, leases, licenses and permits heretofore granted, or to be hereafter granted, by the United States concerning said lands; provided, however, that upon appropriate notifications by the licensee to said District Engineer, the United States, insofar as may be consistent with other uses and purposes of the project, will not enter into any new easements, leases, licenses or permits, or renewals thereof which will, in the opinion of the District Engineer, adversely affect the current operations of the licensee under the provisions of the license, or which will conflict with the definitely scheduled program of the license.

9. That the licensee shall not discriminate against any person or persons because of race, creed, color or national origin in the conduct of its operations hereunder. The grantee furnishes as part of this contract an Assurance (Exhibit B) that he will comply with Title VI of the Civil Rights Act of 1964 (78 Stat. 24) and Department of Defense Directive 5500.11 issued pursuant thereto and published in Part 300 of Title 32, Code of Federal Regulations.

10. That no cuts or fills along the shore line shall be made by the licensee without the prior approval of the said District Engineer.

11. That, within the limits of their respective legal powers, the parties to this license shall protect the project against pollution of its water.

12. That ingress to and egress from the project area shall be afforded the licensee over existing access roads, such interior roads as may be constructed, and at such additional places over Government-owned land as may be approved by said District Engineer. The licensee shall provide appropriate markings at its own expense.

13. That the right is hereby expressly reserved to the United States, its officers, agents and employees, to enter upon the said land and water areas, at any time and for any purpose necessary or convenient in connection with river and harbor and flood control work, and to remove therefrom timber, or other material, required or necessary for such work; to flood said premises when necessary, and/or make any other use of said land as may be necessary in connection with public navigation and flood control, and the licensee shall have no claim for damages of any character on account thereof against the United States or any agent, officer or employee thereof.

14. That any property of the United States damaged or destroyed by the licensee incident to the exercise of the privileges herein granted shall be promptly repaired or replaced by the licensee to the satisfaction of the said District Engineer.

15. That the United States shall not be responsible for damages to property or injuries to persons which may arise from, or be incident to,

#### Exhibit B-2.2

the exercise of the privileges herein granted, or for damages to the property of the licensee, or for damages to the property or injuries to the person of the licensee's officers, agents, servants or employees, or others who may be on said premises at their invitation or the invitation of any one of them, arising from or incident to the flooding of said premises by the Government or flooding from any other cause, or arising from or incident to any other governmental activities on the said premises, and the licensee shall hold the United States harmless from any and all such claims.

16. That this license may be relinquished by the licensee at any time by giving to the Secretary of the Army, through the said District Engineer, at least thirty (30) days' notice in writing.

17. That this license may be revoked by the Secretary of the Army in the event the licensee violates any of the terms and conditions of this license and continues and persists therein for a period of thirty (30) days after notice thereof, in writing, by the said District Engineer.

18. That on or before the date of expiration of this license or its relinquishment by the licensee, the licensee shall vacate the said Government premises, remove all property of the licensee therefrom, and restore the premises to a condition satisfactory to the said District Engineer. If, however, the license is revoked, the licensee shall vacate the premises, remove said property therefrom, and restore the premises as aforesaid within such time as the Secretary of the Army may designate. In either event, if the licensee shall fail or neglect to remove said property and so restore the promises, then acid property shall become the property of the United States, without compensation therefor, and no claim for damages against the United States, or its officers or agents, shall be created by or made on account thereof.

19. That within the limits of their respective legal powers, the parties to the lease shall protect the project against pollution of its water. The lessee shall comply promptly with any regulations, conditions, or instructions affecting the activity hereby authorized if and when issued by the Environmental Protection Agency and/or a state water pollution control agency having jurisdiction to abate or prevent water pollution. Such regulations, conditions, or instructions in effect or prescribed by the Environmental Protection Agency or state agency are hereby made a condition of this lease.

IN WITNESS WHEREOF, I have hereunto set my hand this day Notice Rea of 1973, by direction of the Assistant Secretary of the Army

(I&L).

Bordon M. Jotha

4 Gordon M. Hobbs Assistant for Real Property Exhibit B-2.3 OASA (&L)

The above instrument, together with the provisions and conditions thereof, is hereby accepted this 14 day of Myticale 1973.

COMMONWEALTH OF PENNSYLVANIA, PENNSYLVANIA GAME COMMISSION

BY Executive Director TITLE

# DEPARTMENT OF THE ARMY LEASE FOR PUBLIC PARK AND RECREATION PURPOSES ON

FOSTER JOSEPH SAYERS DAM AND RESERVOIR PROJECT

#### NO. DACW-31-1-70-271

THE SECRETARY OF THE ARMY, under authority of Section 4 of the Act of Congress approved 22 December 1944, as amended (16 U.S.C. 460d), hereby grants to Commonwealth of Pennsylvania, Pennsylvania Historical and Museum Commission a lease for a period of Twenty-five (25) years commencing on the date of execution hereof, to use and occupy approximately 149.38 acres of land and water areas under the primary jurisdiction of the Department of the Army in the Foster Joseph Sayers Dam and Reservoir Project Area, hereinafter referred to as the premises as shown on attached Exhibits "A", "B", "C" and "D", U.S. Army Engineer District, Baltimore, Real Estate Drawing No. 322, sheets 7, 13, 14 and 15 dated 5 March 1969 for public park and recreational purposes with the land area to be leased, described as follows:

#### TRACT NO. 712

A certain tract of land situate in the State of Pennsylvania, Centre County, Boggs Township and more particularly bounded and described as

follows:

Beginning at a corner common to the lands of H. L. Curtin, Jr., et ux, and the lands of Frank Fisher and at a point in the bank of Bald Eagle Creek, said point being the beginning of the first or South 83 1/2° West 152 rods line of lands described in a deed from John Curtin, Jr., et al, to H. L. Curtin, Jr. and Elizabeth O'Brien Curtin, his wife, dated 6 January 1961 and filed for record in Deed Book 275, page 392 in the records of Centre County, Pennsylvania, said point being further located North 70° 30' East 2,889 feet, more or less, from the Pennsylvania Railroad Company Centerline Valuation Station 1817+54; thence, from the said point of beginning with the lands of the said Fisher,

South  $77^{\circ}$  08' West passing a corner common to the lands of the said Curtin, Jr., et ux, and the lands of the said Fisher at approximately 2,508 feet, more or less, in all 2,533.48 feet to a point in the lands of the said Curtin, Jr., et ux; thence, severing the lands of the said Curtin, Jr., et ux, the following courses and distances:

#### Exhibit B-3.0

North 36° 48' West 420.61 feet

South 58° 42' West 433.04 feet to a point in the line of lands of the Estate of Hough Laird Curtin and at a point in the centerline of Pennsylvania Route Number 157; thence, with the lands of the said Estate and with the centerline of the said Route Number 157 the following courses and distances:

# North 34° 03' West 264.31 feet

North 47° 32' West 207.38 feet to a point in the right bank of the said creek; thence, leaving the lands of the said Estate and leaving the centerline of the said Route Number 157 and with the right bank of the said creek, downstream, in a Northeasterly direction approximately 270.75 feet to a point on the right bank of the said creek; thence, continuing with the right bank of the said creek by its meanders in an Easterly direction approximately 2,681.00 feet to a point in the line of the lands of H. L. Curtin, Jr., et ux; thence, leaving the right bank of the said creek and severing the lands of the said Curtin, Jr., et ux, the following courses and distances:

South 23° 58' East 155.59 feet North 66° 03' East 300.00 feet North 69° 40' East 240.00 feet to a point in the right bank or the said creek; thence, with the right bank of the said creek by its meanders downstream in a Southerly direction approximately 1,047.00 feet to a point on the right bank of the said creek; thence, continuing with the right bank of said creek by its meanders in a Southeasterly direction approximately 410.00 feet to a point of beginning, containing 92.21 acres, more or less.

The bearings used herein are referenced to the Pennsylvania State Rectangular Grid System (North Zone) - 1927 N.A. Adjustment.

#### TRACT NO. 1312

A certain tract of land situate in the State of Pennsylvania, Centre County, Boggs Township and more particularly bounded and described as follows:

#### Exhibit B-3.1

Beginning at a point in the line between the lands of Samuel L. Strayer, et ux, and the lands of John Curtin, Jr., Trustee and at a point 60.00 feet distant at right angles from the Centerline Station 199404 of proposed Pennsylvania Legislative Route Number 219 as delineated in drawings authorizing condermation of right-of-way of Pennsylvania Legislative Route 219, Section 15 R/W, made by Gannett Fleming Corddry and Carpernter, Inc. dated 13 June 1966 and approved 25 August 1966 by the Chief Deputy Secretary of Highways of the State of Pennsylvania, said point being located North 64° 10' East 189.00 feet from the intersection of the Centerline of Pennsylvania Legislative Route Number 14010 with the Centerline of Pennsylvania Legislative Route Number 14052; thence, from the said point of beginning and severing the lands of the said Strayer, et ux, and with the Southerly right-of-way line of the proposed highway, parallel with and distant 60.00 feet from the centerline of the said proposed highway.

North 66° 02' East 183.64 feet to a point 60.00 feet distant, at right angles from the Centerline Station 200+80 of the said proposed highway; thence, continuing to sever the lands of the said Strayer, et ux. and continuing with the right-of-way of the proposed bichway as shown on the said drawings.

South 25° 22' East leaving the Southerly right-of-way line of the proposed highway at approximately 50.00 feet, in all 125.00 feet to a point in the left descending bank of Bald Eagle Creek; thence, with the left descending bank of the said creek, upstream,

South 29° 24' West 162.47 feet to a corner common to the lands of the said Strayer, et ux, and the lands of the said Trustee; thence, leaving the left descending bank of the said creek and with the lands of the said Trustee,

North 38° 07' West 230.42 feet to the place of beginning, containing 0.64 acre, more or less.

The bearings used herein are referenced to the Pennsylvania State Rectangular Grid System (North Zone) - 1927 N.A. Adjustment.

#### TRACT NO. 1313

A certain tract of land situate in the State of Pennsylvania, Centre Courty, Boggs Township and more particularly bounded and described as follows:

> Beginning at a point in the line between the lands of John Curtin, Jr., Trustee and the lands of Samuel L. Strayer, et ux, and at a point 60.00 feet distant at right angles from the Centerline Station 199+04 of proposed Pennsylvania Legislative Route Number 219 as delineated in Drawings authorizing condemnation of right-of-way of Pennsylvania Legislative Route Number 219, Section 15 R/W made by Gannett Fleming Corddry and Carpenter, Inc. dated 13 June 1966 and approved 25 August 1966 by the Chief Deputy Secretary of Highways of the State of Pennsylvania, said point being located North 64° 10' East 189.00 feet from the intersection of the Centerline of Pennsylvania Legislative Route Number 14010 with the Centerline of Pennsylvania Legislative Route Number 14052; thence, from the said point of beginning and with the lands of the said Strayer, et ux,

> South 38° 07' East 230.42 feet to a point in the left descending bank of Bald Eagle Creek; thence, leaving the lands of the said Strayer, et ux, and with the left descending bank of the said creek, upstream,

South 39° 03' West 193.92 feet to a corner common to the lands of the said Trustee and the lands of John A. Barnhart and at a point in the centerline of the said Route Number 14010; thence, leaving the left descending bank of the said creek and with the lands of the said Barnhart and with the centerline of the said Route Number 14010, the following courses and distances:

North 48° 23 West 37.30 feet North 44° 40' West 72.07 feet North 39° 07' West 54.29 feet North 35° 12' West 57.49 feet North 27° 34' West 106.01 feet to a point in the line between the lands of the said Trustee and the lands of the said Barnhart and at a point in the centerline of the said Route Number 14010, and at a point in the

Southerly right-of-way line of the said proposed highway, said point being distant 60:00 feet at right angles from the Centerline Station 197+07.90 of the said proposed highway; thence, leaving the lands of the said Barnhart and leaving the centerline of the said Route Number 14010 and with the Southerly rightof-way line of the proposed highway, parallel with and distant 60.00 feet from the centerline of the proposed highway, as shown on the said drawings,

North 66° 02' East 189.43 feet to the place of beginning, containing 1.26 acres, more or less.

The bearings used herein are referenced to the Pennsylvania State Rectangular Grid System (North Zone) - 1927 N.A. Adjustment.

#### TRACT NO. 1400-2

A certain tract of land situate in the State of Pennsylvania, Centre County, Boggs Township and more particularly bounded and described as

follows:

Programming at a connect common to the lands of John A. Barnhart and the lands of John Curtin, Jr., Trustee and at a point in the left descending bank of Bald Eagle Creek and at a point in the Centerline of Pennsylvania Legislative Route Number 14010, said point being located South 30° 30' East 50.00 feet, more or less, from the intersection of the Centerline of Pennsylvania Legislative Route Number 14052 with the Centerline of Pennsylvania Legislative Route Number 14010; thence, from said point of beginning and with the left descending bank of the said creek, upstream, the following courses and distances:

#### South 47° 55' West 201.72 feet

North 68° 19' West 84.44 feet to a point distant 20.00 feet, at right angles from Centerline Station 24+50 of the centerline of a proposed channel change as shown on drawings authorizing condemnation of right-of-way of Fennsylvania Legislative Route 219, Section 15 R/W made by Gannett Fleming Corddry and Carpenter, Inc. dated 13 June 1966 and approved 25 August 1966 by the Chief Deputy Secretary of Highways of the State of Pennsylvania; thence, leaving the left descending bank of the said creek, and severing the lands of the said Barnhart and with the Northerly right-of-way line of the said proposed channel change as delineated on the said drawings by a curve to the right generally in a Northwesterly direction distant 20.00 feet from the centerline of the said proposed channel approximately 372.43 feet to a point 60.00 feet distant, at right angles, from Centerline Valuation Station 193+52 of proposed Pennsylvania Legilsative Route Number 219 as delineated on the said drawings; thence, leaving the Northerly line of the said proposed channel change and continuing to sever the lands of the said Barnhart and with the Southerly right-of-way line of the said proposed highway parallel with and distant 60.00 feet from the centerline of the said proposed highway.

North 66° 02' East 355.90 feet to a point in the line between the lands of the said Barnhart and the lands of the said Trustee, and at a point in the centerline of the said Route Number 14010; distant 60.00 feet at right angles from Centerline Station 197+07.90 of the said proposed highway; thence, leaving the Southerly right-of-way line of the proposed highway and with the lands of the said Trustee and with the centerline of the said Route Number 14010, the following courses and distances:

South 27° 34' East 106.01 feet South 35° 12' East 57.49 feet South 39° 07' East 54.29 feet South 44° 40' East 72.07 feet South 48° 23' East 37.30 feet to the place of beginning, containing 2.45 acres, more or less.

The bearings used herein are referenced to the Pennsylvania State Rectangular Grid System (North Zone) - 1927 N.A. Adjustment.

#### TRACT NO. 1500-1

A certain tract of land situate in the State of Pennsylvania, Centre

County, Boggs Township and more particularly bounded and described as

follows:

Beginning at a corner common to the lands of Frank Fisher, et ux, the lands of H. L. Curtin, Jr., et ux, and the lands of Milford E. Lucas, et ux, and at a point in the right descending bank of Bald

6

#### Exhibit B-3.5

Eagle Creek, said point being the beginning of the twenty-fourth or South 85° West 152 rods line of lands as described in a deed from the Federal Land Bank of Baltimore to Edgar Fisher, dated 19 November 1937 and filed for record in Deed Book 156, page 162, in the records of Centre County, Pennsylvania, said point being further located North 70° 30' East 2,889 feet, more or less, form the Pennsylvania Railroad Centerline Valuation Station 1817+54; thence, from the said point of beginning and with the lands of the said Lucas, et ux,

South Of 17' East, passing the center of a small unnamed drain at approximately 771.26 feet, in all 848.26 feet to a point in the Northerly right-of-way line of the Pennsylvania Railroad; thence, leaving the lands of the said Lucas, et ux, and with the Northerly right-of-way line of the said railroad, parallel and distant 50.00 feet from the centerline of the said railroad.

South 76° 42' West, repassing the center of the said small unnamed drain at approximately 26 feet, in all 225.69 feet to a point; thence, continuing with the Northerly right-of-way line of the said roalroad by a curve to the right in a generally Westerly orrection discant bold iee, from the centerine of the said railroad 298.86 feet to a point; thence, continuing with the Northerly line of the said railroad parallel with and distant 50.00 feet from the centerline of the said railroad,

North 88° 54' West 1,011.30 feet to a point in the Northerly right-of-way line of the said railroad; thence, leaving the Northerly right-of-way line of the said railroad and severing the lands of the said Fisher, et ux, the following courses and distances:

North 70° 11' West 515.80 feet North 57° 04' West 378,57 feet to a point in the line between the lands of the said Fisher, et ux, and the lands of the said Curtin, Jr., et ux; thence, with the lands of the said Curtin, Jr., et ux,

North 77° 08' East 2,371.50 feet to the place of beginning, containing 31.67 acres, more or less.

The bearings used herein are referenced to the Pennsylvania State Rectangular Grid System (North Zone) - 1927 N.A. Adjustment.

#### TRACT NO. 1501-1

A certain tract of land situate in the State of Pennsylvania, Centre

Country, Boggs Township and more particularly bounded and described as

follows;

Beglinning at a corner common to the lands of the Estate of Hugh Laird Curtin and the lands of H.L. Curtin, Jr. et ux, and at a point in the Centerline of Pennsylvania State Route Number 157 and at a point in the right descending bank of Bald Eagle Creek, said point being located North 38° 14' West 1,060 feet, more or less, from Pennsylvania Railroad Centerline Valuation Station 1817+54; thence, from the said point of beginning and with the lands of the said Curtin, Jr., et ux, and with the centerline of the said Foute Number 157, the following courses and distances:

South 47° 32' East 207.38 feet South 34° 03' East 264.31 feet South 33° 35' East 210.50 feet to a corner common to the lands of the said Estate and the lands of the said Curtin, Jr., et ux, and at a point in the centerline of the said Curtin, Jr., et ux, and continuing with the centerline of the said Route Number 157 and severing the lands of the said Estate, the following courses and distances:

South 35° 00' East 149.19 feet South 53° 47' East 141.11 feet to a corner common to the lands of the said Estate and the lands of the said Curtin, Jr., et ux, and at a point in the centerline of the said Route Number 157; thence, with the lands of the said Curtin, Jr., et ux, and with the centerline of the said Route Number 157,

South 26° 06' East 36.08 feet to a corner common to the lands of the said Estate and the lands of the said Curtin, Jr., et ux, and at a point in the centerline of the said Route Number 157 and at a point in the Northerly right-of-way line of the Pennsylvania Railroad; thence, leaving the lands of the said Curtin, Jr., et ux, and leaving the centerline of the said Route Number 157 and with the Northerly right-of-way line of the said railroad parallel with and distant 50.00 feet from the centerline of the said railroad,

North 89° 34' West, passing the center of Nittany Creek at approximately 449.00 feet, in all 537.30 feet to a point in the Northerly right-of-way line of the said railroad; thence, continuing with the Northerly right-of-way line of the said railroad by a curve to the left in a generally Westerly direction, distant 50.00 feet from the centerline of the said railroad, approximately 100.76 feet to a point 50.00 feet from the centerline of the said railroad; thence,

South 02° 45' West 25.00 feet to a point 25.00 feet distant from the centerline of the said railroad; thence, continuing with the Northerly right-of-way line of the said railroad by a curve to the left in a generally Westerly direction distant 25.00 feet from the centerline of the said railroad, approximately 287.49 feet to a point 25.00 feet distant from the centerline of the said railroad; thence,

South 04° 45' East 8.50 feet to a point 16.50 feet distant from the centerline of the said railroad; thence, continuing with the Northerly right-of-way line of the said railroad by a curve to the left in a generally Southwesterly direction approximately 503.44 feet to a point in the Northerly right-of-way line of the said railroad; thence,

North 369 45' West 25.50 feet to a point 40.00 reet distant from the centerline of the said railroad; thence, continuing with the Northerly right-of-way line of the said railroad by a curve to the left in a generally Southwesterly direction, distant 40.00 feet from the centerline of the said railroad approximately 428.83 feet to a point 40.00 feet distant from the centerline of the said railroad; thence,

North 51° 46' West 20.00 feet to a point 60.00 feet distant from the centerline of the said railroad; thence, from the said point and continuing with the Northerly right-of-way line of the said railroad, parallel with and distant 60.00 feet from the centerline of the said railroad, the following courses and distances:

South 38° 16' West 395.26 feet

South 38° 12' West passing the center of a back channel of the said Bald Eagle Creek at approximately 434.26 feet, in all 960.61 feet to a point in the right descending bank of the said Bald Eagle Creek; thence leaving the Northerly line of the said railroad and with the right descending bank of the said Bald Eagle Creek, downstream, the following courses and distances:

North 16° 05' West 102.26 feet North 06° 02' East 275.08 feet North 26° 25' East 262.34 feet North 47° 46' East 345.60 feet North 58° 57' East 498.25 feet North 37° 55' East 841.31 feet North 50° 40' East passing the confluence of the said Nittany Creek at approximately 111 feet, in all 449.14 feet to the place of beginning, containing 21.15 acres, more or less.

The bearings used herein are referenced to the Pennsylvania State Regtangular Grid System (North Zone) - 127 N.A. Adjustment.

The above described land totals 149.38 acres of land and water areas.

THIS LEASE is granted subject to the following conditions:

1. The lessee shall conform to such regulations as the Secretary of the Army may issue to govern the public use of the project area, and shall comply with the provisions of the above Act of Congress. The lessee shall protect the premises from tire, vanuation, and soft erosion, and may make and enforce such regulations as are necessary, and within its legal authority, in exercising the privileges granted in this lease, provided that such regulations are not inconsistent with those issued by the Secretary of the Army or with provisions of the above cited Act of Congress.

2. The lessee shall administer and maintain the premises in accordance with the U.S. Army Engineers' Master Plan and the implementing General Development Plan for the premises and with an annual Management Program to be mutually agreed upon between the lessee and the U.S. Army District Engineer in charge of the administration fo the project which may be amended from time to time as may be necessary. Such Annual Management Program shall include, but is not limited to, the following:

a. Plans for management activities to be undertaken by the lessee or jointly by the U.S. Army Engineers and the lessee, including improvements and other facilities to be constructed thereon.

b. Budget of the lessee for carrying out the management activities

c. Personnel to be used in the management of the area.

3. The lessee shall provide the facilities and services necessary to meet the public demand either directly or through concession agreements with third parties. All such agreements shall state that they are granted subject to the provisions of this lease and that the concession agreement will not be effective until approved by the District Engineer.

4. Admission, entrance or user fees may be charged by the lessee for the entrance to or use of the premises or any facilities constructed thereon, PROVIDED, prior written approval of the District Engineer is obtained.

5. The amount of any fees and all rates and prices charged by the lessee or its concessionaires for accomodations, food (except packaged goods), and services furnished or sold to the public shall be subject to the prior approval of the District Engineer. The lessee shall, by 15 April and 15 October of each year, submit to the District Engineer for approval a list of the fees, rates and prices proposed for the following 6 months, including justification for any proposed increase or decrease. The District Engineer will give written notice to the lessee of his approval of or objection to any proposed fee, rate or price and will, if appropriate, state an approved fee, rate or price for each item to which an objection has been made. The lessee and/or its concessionaires shall keep a schedule of such fees, rates or prices posted at all times in a conspicuous place on the leased premises.

6. All monies received by the lessee from operations conducted on the premises, including but not limited to, entrance and admission fees and user fees and rental of other consideration fees from its reacessionaires, may be utilized by the lessee for the administration, maintenance, operation and development of the premises. Any such monies not so utilized, or programmed for utilization within a reasonable time, shall be paid to the District Engineer at the end of each 5 year period. The lessee shall establish and maintain adequate records and accounts and render annual statements of receipt and expenditures to the District Engineer, except for annual or weekly entrance fees which also are honored at other recreational areas operated by the lessee. The District Engineer shall have the right to perform audits of the lessee's records and accounts, and to require the lessee to audit the records and accounts of third party concessionaires, and furnish the District Engineer a copy of the results of such an audit.

7. All structures shall be constructed and landscaping accomplished in accordance with plans approved by the District Engineer. Further, the lessee shall not discharge waste or effluent from the premises in such a manner that such discharge will contaminate streams or other bodies of water or otherwise become a public nuisance.

11.

8. The right is reserved to the United States, its officers, agents, and employees, to enter upon the premises at any time for any purpose necessary or convenient in connection with river and harbor and flood control work, and to remove timber or other material required for such work, to flood the premises when necessary, and/or to make any other use of the land as may be necessary in connection with public navigation and flood control, and the lessee shall have no claim for damages of any character or account thereof against the United States or any agent, officer, or employee thereof.

9. Any property of the United States damaged or destroyed by the lessee incident to the exercise of the privileges herein granted shall be promptly repaired or replaced by the lessee to the satisfaction of the District Engineer.

10. The United States shall not be responsible for damages to property or injuries to persons which may arise from or be incident to the exercise of the privileges herein granted, or for damages to the property of the lessee, or for damages to the property or injuries to the person of the lessee's officers, agents, servants, or employees or others who may be on the premises at their invitation or the invitation of any one of them, arising from or incident to the flooding of the premises by the Government or flooding from any other cause, or arising from or incident to any other governmental activities, and the lessee shall hold the United States harmless from any and all such claims.

11. This lease may be relinquished by the lessee at any time by giving to the Secretary of the Army, through the District Engineer, at least 30 days notice in writing.

12. This lease may be revoked by the Secretary of the Army in the event lessee violates any of the terms and conditions of this lease and continues and persists therein for a period of 30 days after notice thereof in writing by the District Engineer.

13. On or before the date of expiration of this lease or its relinquishment by the lessee, the lessee shall vacate the premises, remove its property therefrom, and restore the premises to a condition satisfactory to the District Engineer. If, however, this lease is revoked, the lessee shall vacate the premises, remove its property therefrom, and restore the premises as aforesaid within such time as the Secretary of the Army may designate. In either event, if the lessee shall fail or neglect to remove its property and so restore the premises, then its property shall become the property of the United States without compensation therefor, and no claim for damages against the United States or its officers or agents shall be created by or be made on account thereof.

12.

14. The lessee or its concessionaires shall not discriminate against any person or persons because of race, creed, color or national origin in the conduct of its operations hereunder. The grantee furnishes as part of this contract an assurance (Exhibit "E") that he will comply with Title VI of the Civil Rights Act of 1964 (78 Stat. 240) and Department of Defense Directive 5500.11 issued pursuant thereto and published in Part 300 of Title 32, Code of Federal Regulations.

15. All notices to be given pursuant to this lease shall be addressed, if to the lessee, to Executive Director, Commonwealth of Pennsylvania, Pennsylvania Historical and Museum Commission, Box 232, Harrisburg, Pennsylvania 17108; if to the Government, to the Distrist Engineer, U.S. Army Engineer District, Baltimore, P.O. Box 1715, Baltimore, Maryland 21203, or as may from time to time be directed by the parties. Notice shall be deemed to have been duly given if and when inclosed in a properly sealed envelope or wrapper, addressed as aforesaid and deposited postage prepaid (or, if mailed by the Government, deposited under its franking privilege) in a post office or branch office regularly maintained by the United States Government.

16. This lease is subject to all existing easements, and easements subsequently granted, for readways and utilities located or to be located on the premises, provided that the proposed grant of any easement will be coordinated with the lessee and easements will not be granted which will interfere with developments, present or proposed, by the lessee.

17. That any explanatory or directional signs provided by the lessee shall include wording or the Engineer Castle to indicate that the lands are U.S. Army, Corps of Engineers, lands. The design of said signs shall be approved by said District Engineer prior to erection.

18. The lessee shall not discharge waste or effluent from the leased property in such a manner that such discharge will contaminate streams or other bodies of water or otherwise become a public nuisance.

IN WITNESS WHEREOF I have hereunto set my hand this 13 day

13

of March

1972 by direction of the Assistant Secretary

of the Army.

SHERRY B MYERS Assistant for Real Property OASA (181)

#### Exhibit B-3.12

The above instrument, together with the provisions and conditions

thereof, is hereby accepted this

day of 1970.

COMMONWEALTH OF PENNSYLVANIA PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION

BY: S. K. Stevens TITLE: Executive Director

Approved as to form and manner of execution, Commonwealth

of Fonnsylvania, Deapriment of Justice

BY: Deputy Attorney General

# Exhibit B-3.13

#### LEASE

# FOR PUBLIC PARK AND RECREATIONAL PURPOSES

#### FOSTER JOSEPH SAYERS DAM

#### **PROJECT AREA** DACV-31-1-72-635

THE SECRETARY OF THE ARMY under authority of Section 4 of the Act of Congress approved 22 December 1944, as amended (16 U.S.C. 460d), hereby grants to

Borough of Howard a lease for a period of twenty-five (25) years commencing on date of execution , <u>KNAWARENEXON</u> to use and occupy approximately 40<u>+</u> acres of land and water areas under the primary jurisdiction of the Department of the Army in the Foster Joseph Sayers Dam Proj Area, hereinafter referred to as the premises as shown on attached Exhibits "A" & "B" attached , <u>MNENERE</u>thereto and made a, <u>EEEE</u> part hereof , for public park and recreational purposes.

THIS LEASE is granted subject to the following conditions:

1. The lessee shall conform to such regulations as the Secretary of the Army may issue to govern the public use of the project area, and shall comply with the provisions of the above cited Act of Congress. The lessee shall protect the premises from fire, vandalism, and soil erosion, and may make and enforce such regulations as are necessary, and within its legal authority, in exercising the privileges granted in this lease, provided that such regulations are not inconsistent with those issued by the Secretary of the Army or with provisions of the above cited Act of Congress.

2. The lessee shall administer and maintain the premises in accordance with the U.S. Array Engineers' Master Flan and the implementing General Development Plan for the premises and with an Annual Management Program to be mutually agreed upon between the lessee and the U.S. Army District Engineer in charge of the administration of the project, which may be amended from time to time as may be necessary. Such Annual Management Program shall include, but is not limited to, the following:

a. Plans for management activities to be undertaken by the lessee or jointly by the U.S. Army Engineers and the lessee, including improvements and other facilities to be constructed thereon.

b. Budget of the lessee for carrying out the management activities.

c. Personnel to be used in the management of the area.

3. The lessee shall provide the facilities and services necessary to meet the public demand either directly or through concession agreements with third parties. All such agreements shall state that they are granted subject to the provisions of this lease and that the concession agreement will not be effective until approved by the District Engineer.

4. Admission, entrance or user fees may be charged by the lessee for the entrance to or use of the premises or any facilities constructed thereon, PROVIDED, prior written approval of the District Engineer is obtained.

# ENG FORM 1736

#### PREVIOUS EDITIONS ARE OBSOLETE.

#### Exhibit B-4.0

- 1

5. The amount of any fees and all rates and prices charged by the lessee or its concessionaires for accommodations, food (except packaged goods), and services furnished or sold to the public shall be subject to the prior approval of the District Engineer. The lessee shall, by 15 April and 15 October of each year, submit to the District Engineer for approval a list of the fees, rates and prices proposed for the following 6 months, including justification for any proposed increase or decrease. The District Engineer will give written notice to the lessee of his approval of or objection to any proposed fee, rate or price and will, if appropriate, state an approved fee, rate or price for each item to which an objection has been made. The lessee and/or its concessionaires shall keep a schedule of such fees, rates or prices posted at all times in a conspicuous place on the leased premises.

6. All monies received by the lessee from operations conducted on the premises, including, but not limited to, entrance and admission fees and user fees and rental or other consideration received from its concessionaires, may be utilized by the lessee for the administration, maintenance, operation and development of the premises. Any such monies not so utilized, or programmed for utilization within a reasonable time, shall be paid to the District Engineer at the end of each 5-year period. The lessee shall establish and maintain adequate records and accounts and render annual statements of receipts and expenditures to the District Engineer, except for annual or weekly entrance fees which also are honored at other recreational areas operated by the lessee. The District Engineer shall have the right to perform audits of the lessee's records and accounts, and to require the lessee to audit the records and accounts of third party concessionaires, and furnish the District Engineer a copy of the results of such an audit.

7. All structures shall be constructed and landscaping accomplished in accordance with plans approved by the District Engineer. Further, the lessee shall not discharge waste or effluent from the premises in such a manner that such discharge will contaminate streams or other bodies of water or otherwise become a public nuisance.

8. The right is reserved to the United States, its officers, agents, and employees, to enter upon the premises at any time and for any purpose necessary or convenient in connection with river and harbor and flood control work, and to remove timber or other material required for such work, to flood the premises when necessary, and/or to make any other use of the land as may be necessary in connection with public navigation and flood control, and the lessee shall have no claim for damages of any character on account thereof against the United States or any agent, officer or employee thereof.

9. Any property of the United States damaged or destroyed by the lessee incident to the exercise of the privileges herein granted shall be promptly repaired or replaced by the lessee to the satisfaction of the District Engineer.

10. The United States shall not be responsible for damages to property or injuries to persons which may arise from or be incident to the exercise of the privileges herein granted, or for damages to the property of the lessee, or for damages to the property or injuries to the person of the lessee's officers, agents, servants, or employees or others who may be on the premises at their invitation or the invitation of any one of them, arising from or incident to the flooding of the premises by the Covernment or flooding from any other cause, or arising from or incident to any other governmental activities, and the lessee shall hold the United States harmless from any and all such claims.

11. That at the time of the commencement of this lease, the lessee will obtain from a reputable insurance company, acceptable to the Government, liability or indemnity insurance providing for minimum limits of  $\frac{1}{2} - \frac{1}{2} + \frac{1}$ 

#### Exhibit B-4.1

12. This lease may be relinquished by the lessee at any time by giving to the Secretary of the Army, through the District Engineer, at least 50 days' notice in writing.

13. This lease may be revoked by the Secretary of the Army in the event the lessee violates any of the terms and conditions of this lease and continues and persists therein for a period of 30 days after notice thereof in writing by the District Engineer.

14. On or before the date of expiration of this lease or its relinquishment by the lessee, the lessee shall vacate the premises, remove its property therefrom, and restore the premises to a condition satisfactory to the District Engineer. If, however, this lease is revoked, the lessee shall vacate the premises, remove its property therefrom, and restore the premises as aforesaid within such time as the Secretary of the Army may designate. In either event, if the lessee shall fail or neglect to remove its property and so restore the premises, then its property shall become the property of the United States without compensation therefor, and no claim for damages against the United States or its officers or agents shall be created by or made on account thereof.

15. The lessee or its concessionaires shall not discriminate against any person or persons because of race, creed, color/or national origin in the conduct of its operations hereunder. The grantee furnishes as part of this contract an assurance (Exhibit C) that he will comply with Title VI of the Civil Rights Act of 1964 (78 Stat. 241) and Department of Defense Directive 5500.11 issued pursuant thereto and published in Part 300 of Title 32, Code of Federal Regulations.

16. All notices to be given pursuant to this lease shall be addressed, if to the lessee, to The Borough of Howard, Main Street, Howard, Pennsylvania

if to the Government, to the District Engineer, U.S. Army Engineer District, Reltimenter, P.O., Box 1715, Baltimore, Narwland, 21203

Baltimore, P.O. Box 1715, Baltimore, Maryland 21203 or as may from time to time be directed by the parties. Notice shall be deemed to have been duly given if and when inclosed in a properly sealed envelope or wrapper, addressed as aforesaid and deposited postage prepaid (or, if mailed by the Government deposited and the franking provided in a post office or branch post office regularly maintained by the United States Government.

17. This lease is subject to all existing easements, and easements subsequently granted, for roadways, and utilities located or to be located on the premises, provided that the proposed grant of any easement will be coordinated with the lessee and easements will not be granted which will interfere with developments, present or proposed, by the lessee. See continuation sheet 4

IN WITNESS WHEREOF I have hereunto set my hand this 4<sup>Th</sup> of 0 The ,1972. By direction of the Assistant Secretary of the Army.

Gordon M. Hospis

Assistant for Real Property OASA (I&L)

The above instrument, together with the provisions and conditions thereof, is hereby accepted this  $-\frac{1}{2}\frac{24h}{2}$  day of  $-\frac{1}{2}\frac{2}{2}\frac{2}{2}\frac{2}{2}$ , 19  $\frac{2}{2}\frac{2}{2}$ 

U.S. GOVERNMENT PRINTING OFFICE : 1967 OF--247-61

#### Exhibit B-4.2

18. That any explanatory or directional signs provided by the lessee shall include wording or the Engineer Castle to indicate that the lands are U. S. Army, Corps of Engineers, land. The design of said signs shall be approved by said District Engineer prior to erection.

19. That, within the limits of their respective legal powers, the parties to the lease shall protect the project against pollution of its water. The lessee shall comply promptly with any regulations, conditions, or instructions affecting the activity hereby authorized if and when issued by the Environmental Protection Agency and/or a state water pollution control agency having jurisdiction to abate or prevent water pollution. Such regulations, conditions, or instructions in effect or prescribed by the Environmental Protection Agency or state agency are hereby made a condition of this lease.

20. Conditions 18, 19 and 20 were added prior to the execution of this lease.

# Exhibit B-4.3

### DEPARTMENT OF THE ARMY

#### LEASE

#### FOR PUBLIC PARK AND RECREATIONAL PURPOSES

#### FOSTER JOSEPH SAYERS DAM

PROJECT AREA NO. DACW-31-1-73-679

THE SECRETARY OF THE ARMY under authority of Section 4 of the Act of Congress approved 22 December 1944, as amended (16 U.S.C. 460d), hereby grants to The Borough of Howard, Pennsylvania

a lease for a period of twenty-five (25) years commencing on 1 June 1973 , and ending on 31 May 1998 , to use and occupy approximately five (5) acres of land and water areas under the primary jurisdiction of the Department of the Army in the Savers Dom Project Area, hereinafter referred to as the premises as shown on attached Exhibits "A" and "B" , numbered MAD 322 , numbered MAD 325 , numb

THIS LEASE is granted subject to the following conditions:

1. The lessee shall conform to such regulations as the Secretary of the Army may issue to govern the public use of the project area, and shall comply with the provisions of the above cired Act of Congress. The lessee shall protect the premises from fire, vandalism, and soil erosion, and may make and enforce such regulations as are necessary, and within its legal authority, in exercising the privileges granted in this lease, provided that such regulations are not inconsistent with those issued by the Secretary of the Army or with provisions of the above cited Act of Congress.

2. The lessee shall administer and maintain the premises in accordance with the U.S. Army Engineers' Master Plan and the implementing General Development Plan for the premises and with an Annual Management Program to be mutually agreed upon between the lessee and the U.S. Army District Engineer in charge of the administration of the project, which may be amended from time to time as may be necessary. Such Annual Management Program shall include, but is not limited to, the following:

a. Plans for management activities to be undertaken by the lessee or jointly by the U.S. Army Engineers and the lessee, including improvements and other facilities to be constructed thereon.

b. Budget of the lessee for carrying out the management activities.

c. Personnel to be used in the management of the area.

3. The lessee shall provide the facilities and services necessary to meet the public demand either directly or through concession agreements with third parties. All such agreements shall state that they are granted subject to the provisions of this lease and that the concession agreement will not be effective until approved by the District Engineer.

4. Admission, entrance or user fees may be charged by the lessee for the entrance to or use of the premises or any facilities constructed thereon, PROVIDED, prior written approval of the District Engineer is obtained. 5. The amount of any fees and all rates and prices charged by the lessee or its concessionaires for accommodations, food (except packaged goods), and services furnished or sold to the public shall be subject to the prior approval of the District Engineer. The lessee shall, by 15 April and 15 October of each year, submit to the District Engineer for approval a list of the fees, rates and prices proposed for the following 6 months, including justification for any proposed increase or decrease. The District Engineer will give written notice to the lessee of his approval of or objection to any proposed fee, rate or price and will, if appropriate, state an approved fee, rate or price for each item to which an objection has been made. The lessee and/or its concessionaires shall keep a schedule of such fees, rates or prices posted at all times in a conspicuous place on the leased premises.

6. All monies received by the lessee from operations conducted on the premises, including, but not limited to, entrance and admission fees and user fees and rental or other consideration received from its concessionaires, may be utilized by the lessee for the administration, maintenance, operation and development of the premises. Any such monies not so utilized, or programmed for utilization within a reasonable time, shall be paid to the District Engineer at the end of each 5-year period. The lessee shall establish and maintain adequate records and accounts and render annual statements of receipts and expenditures to the District Engineer, except for annual or weekly entrance fees which also are honored at other recreational areas operated by the lessee. The District Engineer shall have the right to perform audits of the lessee's records and accounts, and to require the lessee to audit the records and accounts of third party concessionaires, and furnish the District Engineer a copy of the results of such an audit.

7. All structures shall be constructed and landscaping accomplished in accordance with plans approved by the District Engineer. Further, the lessee shall not discharge waste or effluent from the premises in such a manner that such discharge will contaminate streams or other bodies of water or otherwise become a public nuisance.

8. The right is reserved to the United States, its officers, agents, and employees, to enter upon the premises at any time and for any purpose necessary or convenient in connection with river and harbor and flood control work, and to remove timber or other material required for such work, to flood the premises when necessary, and/or to make any other use of the land as may be necessary in connection with public navigation and flood control, and the lessee shall have no claim for damages of any character on account thereof against the United States or any agent, officer or employee thereof.

9. Any property of the United States damaged or destroyed by the lessee incident to the exercise of the privileges herein granted shall be promptly repaired or replaced by the lessee to the satisfaction of the District Engineer.

10. The United States shall not be responsible for damages to property or injuries to persons which may arise from or be incident to the exercise of the privileges herein granted, or for damages to the property of the lessee, or for damages to the property or injuries to the person of the lessee's officers, agents, servants, or employees or others who may be on the premises at their invitation or the invitation of any one of them, arising from or incident to the flooding of the premises by the Government or flooding from any other cause, or arising from or incident to any other governmental activities, and the lessee shall hold the United States harmless from any and all such claims.

11. That at the time of the commencement of this lease, the lessee will obtain from a reputable insurance company, acceptable to the Government, liability or indemnity insurance providing for minimum limits of 50,000.00 per person in any one claim, and an aggregate limit of 150,000.00 for any number of persons or claims arising from any one incident with respect to bodily injuries or death resulting therefrom, and 5,000.00 for damage to property suffered or alleged to have been suffered by any person or persons resulting from the operations of the lessee under the terms of this lease.

#### Exhibit B-5.1

12. This lease may be reliaquished by the lessee at any time by giving to the Secretary of the Army, through the District Engineer, at least 30 days' notice in writing.

13. This lease may be revoked by the Secretary of the Army in the event the lessee violates any of the terms and conditions of this lease and continues and persists therein for a period of 30 days after notice thereof in writing by the District Engineer.

14. On or before the date of expiration of this lease or its relinquishment by the lessee; the lessee shall vacate the premises, remove its property therefrom, and restore the premises to a condition satisfactory to the District Engineer. If, however, this lease is revoked, the lessee shall vacate the premises, remove its property therefrom, and restore the premises as aforesaid within such time as the Secretary of the Army may designate. In either event, if the lessee shall fail or neglect to remove its property and so restore the premises, then its property shall become the property of the United States without compensation therefor, and no claim for damages against the United States or its officers or agents shall be created by or made on account thereof.

15. The lessee or its concessionaires shall not discriminate against any person or persons because of race, creed, color/ $\delta F$  hational origin in the conduct of its operations hereunder. The grantee furnishes as part of this contract an assurance (Exhibit C ) that he will comply with Title VI of the Civil Rights Act of 1964 (78 Stat. 241) and Department of Defense Directive 5500.11 issued pursuant thereto and published in Part 300 of Title 32, Code of Federal Regulations.

16. All notices to be given pursuant to this lease shall be addressed, if to the lessee, to The Borough of Howard, Howard, Pennsylvania

if to the Government, to the District Engineer, U.S. Army Engineer District, Baltimore, P.O. Box 1715, Baltimore, Maryland 21203 or as may from time to time be directed by the parties. Notice shall be deemed to have been duly given if and when inclosed in a properly sealed envelope or wrapper, addressed as aforesaid and deposited postage prepaid (or, if mailed by the Government, deposited under its franking produces in a post office or pranen post office regularly maintained by the United States Government.

17. This lease is subject to all existing easements, and easements subsequently granted, for roadways, and utilities located or to be located on the premises, provided that the proposed grant of any easement will be coordinated with the lessee and easements will not be granted which will interfere with developments, present or proposed, by the lessee.

18. See Attached Page 4

IN WITNESS WHEREOF I have hereunto set my hand this 47<sup>Th</sup> of AV6457, 1973, by direction of the Assistant Secretary of the Army.

Gordon M. Hobbs Assistant for Real Property OASA(I&L)

The above instrument, together with the provisions and conditions thereof, is hereby accepted this day of , 19

BOROUGH OF HOWARD	
BY: Shet & Calder	
TITLE: Trange Dear,	

U.S. GOVERNMENT PRINTING OFFICE : 1967 OF-247-611

#### Exhibit B-5.2

18. That within the limits of their respective legal powers, the parties to the lease shall protect the project against pollution of its water. The lessee shall comply promptly with any regulations, conditions or instructions affecting the activity hereby authorized if and when issued by the Environmental Protection Agency and/or a state water pollution control agency having jurisdiction to abate or prevent water pollution. Such regulations, conditions or instructions in effect or prescribed by the Environmental Protection Agency or state agency are hereby made a condition of this lease.

# SUSQUEHANNA RIVER BASIN

# FOSTER JOSEPH SAYERS DAM PENNSYLVANIA

# Design Memorandum No. 3C MASTER PLAN

# EXHIBIT C

Selected References Pertinent to the History and Ecology of Central Pennsylvania

October 1974
Selected References Pertinent to the History and

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## SUSQUEHANNA RIVER BASIN

### FOSTER JOSEPH SAYERS DAM PENNSYLVANIA

### Design Memorandum No. 3C MASTER PLAN

### EXHIBIT D

List of Area Land Use Specialist, Centre County, Pennsylvania

October 1974

List of Area Land Use Specialists, Centre County, Pennsylvania

### SOILS

Edward J. Ciolkosz Asst. Prof. of Soil Genesis 316 Tyson Building University Park, PA 16802 (814) 865-1530

Roger Pennock, Jr. Assoc. Prof. of Soil Genesis 318 Tyson Building University Park, PA 16802 (814) 865-0139

#### GEOLOGY

Richard R. Parizek Prof. of Geology and Geophysics 340 Dieke Building University Park, PA 16802 (814) 865-3012

#### METEOROLOGY

Charles L. Hosler, Jr. Prof. of Meteorology 116 Dieke Building University Park, PA 16802 (814) 865-6546

### WATERSHED MANAGEMENT

William E. Sopper Prof. of Forest Hydrology 108 Land and Water Research Bldg. University Park, PA 16802 (814) 863-0291

121 Old Mill Road State College, PA 16801 (814) 238-7490

1325 Park Hills Avenue State College, PA 16801 (814) 238-5930

751 McKee Street State College, PA 16801 (814) 238-0618

1000B Plaza--601B State College, PA 16801 (814) 237-7115

416 Outer Drive State College, PA 16801 (814) 466-6095

### FOREST ECOLOGY AND SILVICULTURE

### Wilber W. Ward

Prof. of Silviculture 101 Ferguson Building University Park, PA 16802 (814) 865-7541

801 Fairway Road State College, PA 16801 (814) 238-1383

R. J. Hutnik Prof. of Forest Ecology 312 Forest Recources Laboratory University Park, PA 16802 (814) 865-4901

1658 Princeton Drive State College, PA 16801 (814) 237-3938

### PLANT IDENTIFICATION

Carl S. Keener Assoc. Prof. of Biology 306 Buckhout Laboratory University Park, PA 16802 (814) 865-6201

WEED CONTROL

Nathan L. Hartwig Assoc. Prof. of Weed Science 314 Tyson Building University Park, PA 16802 (814) 865-1906

#### ORNITHOLOGY

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### MAMMALOGY

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Plate 1

SHEET

DATE:



Plate 7











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\*





# Susquehanna River Basin Foster Joseph Sayers Dam Pennsylvania

### Design Memorandum No. 3C Master Plan

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### **APPENDICES**

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Number

### Title

А	Project Resource Management Plan
B*	Forest Management Plan
$C^*$	Fire Protection Plan

- D\* Fish and Wildlife Management Project Safety Plan
- $\mathbf{E}^*$

 $\ast$  To be prepared cooperatively with the appropriate agency(ies) and presented under separate cover.

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### Susquehanna River Basin

### Foster Joseph Sayers Dam

Design Memorandum No. 3C

### 1.0 Introduction

### 1.1 Project authorization.

1.1.1 Project document. The Foster Joseph Sayers Dam project was presented in the report of the Chief of Engineers dated 25 June 1954 and printed as House Document No. 29, 84th Congress, 1st session. This report recommended construction of three reservoirs--Curwensville, Alvin R. Bush, and Blanchard-at an estimated Federal cost of \$62,520,000 for construction and \$90,000 annually for maintenance and operation. These three dams were to be constructed and operated as a system on the West Branch Basin in conjunction with George B. Stevenson Dam which was to be constructed by the State. The four dams collectively formed a part of a comprehensive plan for flood control and waterresource development in the Susquehanna River Basin and were to provide needed protection to both agricultural and urban areas along the West Branch.

1.1.2 Authorization. The Foster Joseph Sayers Dam project was authorized as the Blanchard Dam and Reservoir project by the Flood Control Act of 1954 (Public Law 780, 83rd Congress, 2nd session, in accordance with House Document No. 29, 84th Congress, 1st session). The dam and lake by act of Congress, Public Law 90-46, was renamed in memory of Private First Class Foster Joseph Sayers, a former resident of Centre County, who was awarded the Congressional Medal of Honor posthumously for heroic service in World War II.

1.1.3 <u>Requirements</u> of non-Federal cooperation. The requirements for local cooperation are as follows:

1.1.31 <u>Coordination of George B. Stevenson Dam.</u> The Commonwealth of Pennsylvania furnished assurances satisfactory to the Secretary of the Army that it will coordinate operation of the George B. Stevenson Dam with the operation of the Curwensville, Bush and Sayers projects to secure optimum floodcontrol benefits from system operation. This agreement is in the form of a resolution adopted by the Water and Power Resources Board of the Commonwealth on 9 May 1956.

1-1

1.1.32 The Tri-Party Agreement. A document known as the Tri-Party Agreement between the Federal Government, the Commonwealth of Pennsylvania, and the borough of Howard dated 8 November 1968 agreed upon participation in a program for the construction, maintenance and operation of a sewage treatment system with a treatment plant. A copy of the Agreement as accepted by all parties is included in DM No. 3B, Public Use and Access Facilities, Appendix A.

1.1.4 <u>Recreation</u>. A summary of the outstanding agreements concerning recreation and other public uses are as follows:

1.1.41 <u>Bald Eagle State Park</u>. An agreement between the Commonwealth of Pennsylvania, signed 1 June 1973, set aside portions of project lands for Bald Eagle State Park. Basic facilities for public use and access have been provided by the Federal Government and leased to the Commonwealth of Pennsylvania (see Section 8). These basic facilities will be extended by the Commonwealth to serve areas where various recreational activities will be developed. The basic facilities provided by the Federal Government include sewerage trunk lines and treatment plant, a water supply distribution system with wells as a source of supply, bases for roads and parking areas, boat launching ramps, and docks. The State is in the process of furnishing all secondary connections to both sewerage and water systems, paving for roads and parking areas, picnic, beach, and marina facilities, and Jandscaping. The State will operate the State Park as well as the sewage treatment plant, and will maintain all the areas within the State Park.

1.1.42 Howard Community Parks. Two agreements between the Federal Government and the Borough of Howard were signed on 12 June 1972 and 14 August 1973 and provided for the leasing of 40.5 and 5 acres, respectively. In addition to the leasing of the land, it was agreed that the Federal government would provide basic sanitary facilities including a comfort station, a bath house, water mains, roads, and parking areas on the 40.5 acre site. The Borough of Howard agreed to provide all secondary sanitary fixtures, swimming, and boating facilities and future expansion of the park under a long term Master Plan (Appendix C, DM No. 3B).

1.1.43 <u>Wildlife management areas</u>. An agreement between the Federal Government and the Pennsylvania Game Commission, signed 14 September 1973 set aside portions of project lands for wildlife management. Basic facilities for public use and access will be provided by the Pennsylvania Game Commission. 1.1.44 Eagle Iron Works. An agreement between the Federal Government and the Pennsylvania Historical and Museum Commission, dated 13 March 1972, set aside a parcel of land for the development of a historical site in the vicinity of the old Eagle Iron Works near the upper end of the reservoir (see Section 8.0). Restoration and provisions for public access to this site will be accomplished by the Pennsylvania Historical and Museum Commission. All development will be coordinated with plans for use of lands and facilities by the Commonwealth which are adjacent to this site.

#### 1.2 Project purposes and benefits.

1.2.1 Project purposes. The Foster Joseph Sayers Dam is a unit in the comprehensive flood control plan for the West Branch Susquehanna River. The project has the primary objective of reducing flood heights at Lock Haven, Jersey Shore, Williamsport and at other downstream points along the West Branch Susquehanna River. The project will also be operated for water quality improvement along the lower reaches of Bald Eagle Creek and the West Branch Susquehanna River for neutralization of acid flows from mine drainage. The project will also be operated for public use insofar as is compatible with the flood control and water quality needs of the project. No monetary benefits have been determined for water quality improvement.

1.2.2 <u>Average annual benefits</u>. The average annual benefits at 1970 price levels were estimated to be:

Feature	Amount	Percentage of Total
Flood control	\$2,000,000	65
Recreation	880,000	28
Fish and wildlife	225,000	7
	\$3,105,000	100

### 1.3 Prior pertinent design memoranda.

1.3.1 General design memorandum (Design Memorandum No. 2). This publication established the general concept of the project, including public use, and the cooperation expected from State and local agencies in making the resources of the project available to the public.

1.3.2 Preliminary Master Plan (Design Memorandum No. 3A). The purpose of this publication was to appraise the scenic, biological, and recreational resources of the project; to establish criteria for the protection and administration of the resources of the project. 1.3.3 Preliminary Report, Public Use and Access Facilities (Supplement No. 1 to Design Memorandum No. 3A). This publication presented fundamental changes in concept from the Preliminary Master Plan which resulted during studies and discussions with local interests. It was primarily concerned with the requirement for treatment of sewage from the primary recreation area, and those from Howard Borough to protect the quality of water and prevent possible eutrophication of the reservoir.

1.3.4 Public Use and Access Facilities (Design Memorandum No. 3B). This publication describes the work proposed by the Government for public use as well as the contributions of State and local agencies in providing public use and access facilities at the reservoir. It includes design data and details to permit the preparation of necessary plans and specifications for the construction of the Federal portion of the development.

1.3.5 Public Use and Access Facilities (Design Supplement No. 1 to Design Memorandum No. 3B). This publication provides additional criteria and design data for preparation of plans and specifications.

1.4 Applicability of selected public laws.

1.4.1 Public Law 534, 78th Congress. This legislation, the 1944 Flood Control Act (approved 22 December 1944), authorized the construction, maintenance and operation of public park and recreation facilities in reservoir areas. It authorized the Secretary of War to grant leases to such lands, including structures or facilities to Federal, State, or local governmental agencies. Public use of the Foster Joseph Sayers Dam was provided under the authority of this Act.

1.4.2 Public Law 85-624 - Fish and Wildlife Coordination Act. Under the provisions of this Act, the U.S. Fish and Wildlife Service of the Department of the Interior, prepared a report in coordination with the Pennsylvania Game and Fish Commissions on the fish and wildlife resources of the project and made recommendations to mitigate the loss of wildlife areas and for preservation and development of the fish and wildlife potential. This report recommended the acquisition of 2,550 acres of land above the maximum pool at project cost for such purpose. After further study and consideration, the U.S. Fish and Wildlife Service determined that lands proposed to be acquired for the project would be adequate for wildlife purposes and withdrew its recommendation for the acquisition of the additional 2,550 acres. (See Appendix D of Design Memorandum No. 3A). 1.4.3 Public Law 89-72 - Federal Water Project Recreation Act. Inasmuch as the Foster Joseph Sayers Project had been authorized and planning initiated prior to the enactment of Public Law 89-72, recreational development was included under the general authority of Section 4 of the 1944 Flood Control Act. The project falls in Category B as set forth in Appendix I of ER 1120-2-404.

1.4.4 Public Law 89-80, Water Resources Planning Act. Public Law 91-575, 24 December 1970, authorized the Susquehanna River Basin Commission. Foster Joseph Sayers Dam lies within the basin area.

1.5 <u>Purpose of Master Plan</u>. The purpose of this Master Plan is to prescribe the policies, objectives, and programs necessary for the preservation, enhancement, development, maintenance, administration and management of all project resources and to provide resources, facilities and opportunities for maximum utilization and enjoyment throughout the life of the project.

1.6 <u>Scope of report</u>. The project site is composed of a variety of areas with varying physical characteristics and potentialities. This report will concern itself primarily with the development, management and utilization of project lands. This guidance will be provided through the preparation of the following elements:

1.6.1 <u>A Comprehensive Management Plan</u>. This plan will recommend proposed land and water use areas within the confines of the project. Recommended uses will be determined based on the resources capabilities and incorporated into long range goals and management policies for the project.

1.6.2 <u>A Facilities Development Plan</u>. In addition to designating uses for specific resource areas, the master plan will coordinate preliminary area development. This master plan will provide up-to-date estimates of recreation development costs and phased construction schedules for these facilities.

1.6.3 Coordination. This plan will facilitate continued liason and coordination established in earlier planning efforts and will initiate additional coordination necessary for a complete and comprehensive planning effort. An enthusiastic liason and coordination effort will be continued and/or sought with appropriate Federal, State, and local governmental agencies, regional and local planning bodies, local interest groups and interested individuals.

### 2.0 Project Description

2.1 Location. Foster Joseph Sayers Dam is located on Bald Eagle Creek in Centre County, Pennsylvania (Plate 3C-1). The dam structure is located approximately one mile upstream from the community of Blanchard and 14 miles above the mouth of Bald Eagle Creek at Lock Haven. US Route 220, running from Waverly, New York, on the north to Covington, Virginia on the south passes through the project lands and connects with the Pennsylvania Turnpike at Bedford, Pennsylvania. US Route 15, a main north-south artery for tourist traffic between the southeastern United States and the central Canadian provinces connects with US Route 220 at Williamsport, Pennsylvania. Interstate Route 80 crosses through Central Pennsylvania, immediately to the west of the project.

2.2 <u>Project data</u>. Pertinent dam and project data are summarized below:

#### TABLE 1

#### Project Data

Drainage Areas:		Percent Controlled b	y
Location	Square Miles	Foster Joseph Sayers I	)am
Bald Eagle Creek			
At dam	339	100	
Above Beech Creek	387	88	
At mouth	781	43	-
West Branch Susquehar	ina		
River:			
At Lock Haven (above	Э		
Bald Eagle Creek)	3,337	0	
At Williamsport Gage	e 5,682	6	
At Sunbury	6,990	4.9	
Elevations (feet above me	an sea level)		
Top of dam		683.0	
Guide taking line for fee	acquisition	662.0	
Spillway crest	1	657.0	
Upper limit of clearing		632.0	
Normal summer lake		630.0	
Minimum summer lake		628.0	
Winter lake		610.0	
Gate sill		590.0	

583.0

Streambed at centerline of dam

### Reservoir

Length of winter lake (elev. 610)	5.2 miles
Length of summer lake	7.8 miles
Length of flood control pool (elev. 657)	10.0 miles
Shoreline of winter lake (elev. 610)	10.6 miles
Shoreline of summer lake (elev. 630)	23.4 miles

Storage (acre feet)	Net	Cumulative
Dead storage (elev. 590.0)	20	20
Winter lake (elev. 610)	6 280	6 300
Minimum summer lake (elev. 628.0)	19,200	25,500
Flood control (elev. 657.0)	70,200	99,000
Spillway surcharge (elev. 677.7)	87,000	186,000

Reservoir surface, winter lake Reservoir surface, normal summer lake Reservoir surface at spillway crest Total land acquired

20	20
6,280	6,300
19,200	25,500
3,300	28,800
70,200	99 <b>, 000</b>
87,000	186,000

630 acres 1,730 acres 3,450 acres 7,991 acres (including 417 acres flowage easement)

## **Relocations:**

Railroad	9.9 miles
Highway	9.4 miles
Telephone lines	25.0 miles
Powerlines	22.5 miles
Cemeteries (3)	1,000 graves

#### Dam

Туре	Rolled earthfill
Length	6,835 feet
Height above streambed	100 feet
Width at top	25 feet
Width at base (maximum)	650 feet

### Spillway

Type -- Chute with uncontrolled concrete weir Length of weir crest -- 600 feet Height of crest above streambed at centerline of dam -- 74 feet

### Outlet Works

Type Number of conduits Diameter of conduit Number of service gates Number of emergency gates Number of leaf gates Type of service gates Type of emergency gates Type of leaf gates Size of gates Size of leaf gates Size of bulkhead leaf

1 7 Hydraulic wheel Hoist operated wheel Hoist operated with guides 7.0 x 15.0 feet 7.0 x 10.0 feet 7.0 x 4.75 feet

Controlled conduit

1

2

15 feet

Howard Protective Works

Type Length Elevation of crown Drainage structures Rolled earth levee 6,700 feet 667.0 2

### 2.3 Reservoir

Foster Joseph Sayers Reservoir 2.3.1 Physical features. has a maximum summer pool depth of 40 feet, an average depth of 16 feet and a volume of 28,800 acre feet. The surface area is 1,580 acres on the main lake with an embayment in the Hunters Run stream valley of an additional 150 acres. Temperatures in the lake range from a maximum of near 85 degrees F to a minimum of 32 degrees F. Maximum temperatures occur in July and August, the minimum generally occurring from December through March. The lake stratifies thermally and chemically with the stratification apparently beginning somewhat intermittently in April and May. then stabilizing in June. The shorter days and cooler weather of late September and October cause the fall break-up of stratification. Typical early summer, mid-summer and late summer thermal stratification patterns are shown on Figure 1. Discharge temperatures are held as near as possible to those that existed in the stream before the dam was built.



Figure 1

2.3.2 Water quality (chemical). The chemical quality of the water in Foster Joseph Sayers Lake is good. The only potential problem is the high nutrient level which may become conducive to algal growth; however, this is not a major problem at this time. This high nutrient level is a result of sewage effluents and agricultural runoff in the Bald Eagle Valley above the dam. Some of the nutrients and their approximate average concentration at the lake are: Nitrate (NO3)6.1 mg/l, Potassium 1.8 mg/l, Phosphate (PO4)0.47 mg/l, and organic nitrogen 0.3 mg/l. Other important chemical characteristics are the naturally high alkalinity and pH. The average alkalinity (CACO3) is 107 mg/l, and is currently used to control the acidity of downstream flows. The pH ranges from 7.4 to 9.6.

2.3.3 Water quality (biological). Foster Joseph Sayers Reservoir is biologically very active. The water is of good quality except for somewhat high nutrient and coliform levels. High coliform counts in the inflowing water had initially caused some concern about water-contact recreation in the reservoir. Measurements of fecal coliform populations have been monitored during the summers of 1972 and 1973. Results indicated that none of the samples exceeded accepted criteria/1 for safe swimming conditions (Table 3C-2.2).

Data concerning nitrates, heavy metals, and chlorinated hydrocarbons are not available; however, the presence of a healthy and diverse population of aquatic organisms indicates that these chemicals, if present, are not inducing adverse conditions. There is no evidence of eutrophic conditions in the lake.

### 2.4 Sequence of Operation.

2.4.1 General. The summer recreation lake will be maintained from mid-May to the first of September. As an aid to fish management, when and if requested by the Pennsylvania Fish Commission, provision has been made to fill initially to elevation 632 by mid-May and to drawdown to elevation 630 at such times as the Fish Commission determines to be most beneficial in the control of rough fishes, normally during late May or June. During the recreation season the storage between elevation 630 and 628 will be available for water quality control and will be discharged as required to neutralize acid flows in Bald Eagle Creek and the West Branch Susquehanna River. The winter conservation lake will be at elevation 610, plus or minus 2 feet, from mid-November to mid-March depending on prevailing flows on Bald Eagle Creek and the West Branch Susquehanna River. Raising to summer lake will begin in March and will follow the rule curve (Figure 2). An area capacity table and allocation of reservoir capacity are included as Tables 3 and 4, respectively.

 $\frac{1}{1 \text{ Water}}$  is considered unfit for swimming if the fecal coliform count exceeds a geometric mean of 200/100 on five different days.
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## TABLE 2

## FECAL COLIFORM COUNT

# Summers of 1972 and 1973<sup>1</sup>

	Bald Eagle	State Park	Howard Borough Park
<u>Date</u>	East Beach	West Beach	Howard Beach
1972 Result	<u>8</u> *		
6/12/72 7/24/72 7/31/72 8/07/72 8/21/72 9/05/72	3/100 ml. 5/100 ml. 0/100 ml. 4/100 ml. 15/100 ml. 10/100 ml.	0/100 ml. 5/100 ml. 0/100 ml. 0/100 ml. 3/100 ml. 33/100 ml.	8/100 ml. 2/100 ml. 6/100 ml. 2/100 ml. 3/100 ml.
1973 Result	8		
6/03/73 6/10/73 6/17/73 6/24/73 7/01/73 7/08/73 7/15/73 7/22/73 7/29/73 8/05/73 8/12/73 8/12/73 8/19/73 8/26/73	0/100 ml. 0/100 ml. 22/100 ml. 5/100 ml. 0/100 ml. 1/100 ml. 3/100 ml. 1/100 ml. 1/100 ml. 1/100 ml. 1/100 ml. 1/100 ml.	0/100 ml. 0/100 ml. 25/100 ml. 0/100 ml. 1/100 ml. 0/100 ml. 1/100 ml. 1/100 ml. 0/100 ml. 7/100 ml. 0/100 ml. 1/100 ml.	0/100 ml. 0/100 ml. 34/100 ml. 0/100 ml. 0/100 ml. 15/100 ml. 50/100 ml. 7/100 ml. 0/100 ml. 14/100 ml. 2/100 ml. 1/100 ml.
9/02/73	0/100 ml.	0/100 ml.	0/100 ml.

\*1972 results are incomplete due to Hurricane Agnes.

1/ Source: Anthony L. Miele, Superintendent, Bald Eagle State Park, Centre County, Pennsylvania. 2.4.2 <u>Regulation for downstream water quality</u>. One of the most difficult aspects of Sayers operation is maintaining downstream water quality. The chemical properties of the waters in Foster Joseph Sayers make it ideally suited for neutralization of acid waters. The West Branch Susquehanna River and Beech Creek, two very acid streams that meet Bald Eagle Creek downstream of Sayers Dam, make it essential to continuously release sufficient alkaline water from Sayers to maintain a downstream environment that will support fish.

Very careful regulation and monitoring of the acid-alkaline balance in the reach below the dam is essential to maintain downstream quality. This becomes especially critical while filling the lake each spring. Beech Creek and the West Branch Susquehanna River have automatic water quality monitors, at Monument and Renovo respectively, that analyze the water on a nearly continuous basis. With information from these monitors plus the wet samples taken by the dam operator at key locations in the area of the lake and a short distance downstream, it is possible to enhance the downstream water quality through regulation of the Sayers releases. Releases of alkaline water are coordinated with the changing acid quality and quantity of Beech Creek and the West Branch.

Generally, Sayers operates on an inflow equals outflow basis. If the acid condition of Beech Creek or the West Branch Susquehanna River becomes unusually severe, supplemental releases may lower the summer pool by approximately 2 feet (2800 ac.ft.) to elevation 628. Following Labor Day the pool may be lowered as required to elevation 610, thus making 22,500 acre feet of additional water available for downstream acid control. The rule curve presently requires that elevation 610 be attained by 15 November. During the winter acid conditions are less severe and it usually is not necessary to supplement flow downstream with more alkaline water than naturally flows through the impoundment.

2.4.3 Leaf gate operation. The outlet tower is equipped with a selective withdrawal system that makes it possible to withdraw water from several levels in the lake. When the lake is stratified, this system can be used to influence the downstream temperature, alkalinity, D.O., or any other parameter that is found to differ vertically in the lake waters.

2.4.4 Flood control. The primary purpose of Foster Joseph Sayers dam is for flood control on Bald Eagle Creek and the West Branch Susquehanna River below Lock Haven, For flood control on the West Branch, operation is coordinated with Bush, Stevenson and Curwensville dams. The gates are essentially closed during periods of high flow, when releases from the dam would contribute to the flood peaks. Following floods the water impounded at Sayers during the flood is released at a non-damaging rate until the pool is drawn down to its normal level.

# TABLE 3

# FOSTER JOSEPH SAYERS DAM

# AREA/CAPACITY TABLE

Pool	Area	Capa	city	Pool	Area	Сара	city
elev	(acres)	ac-ft	inches	elev	(acres)	ac-ft	inches
588	0	0	0	634	1,960	36,190	2.00
590=gate	20	20	Ō	636	2,100	40,250	2.23
sill				638	2,210	44,560	2.47
592	40	80	0.004	640	2,340	49,110	2.72
594	60	180	0.01	642	2,450	53,900	2,98
596	120	360	0.02	644	2,610	58,960	3.26
598	270	760	0.04	646	2,730	65,300	3.62
600	360	1,390	0.08	648	2.850	70,880	3.92
602	410	2,160	0.11	650	2,980	76,610	4.24
604	460	3,030	0.17	652	3,120	82,710	4.68
606	520	4,010	0.22	654	3,260	89,090	4.98
608	570	5,100	0.28	656	3.400	95,570	5.29
610=conser	- 630	6,300	0.35	657=spi	111- 3.450	99,000	5.47
vation	lake	•	-	way	v crest	,	
612	710	7,640	0.42	658	3,540	102,510	5.67
614	800	9,150	0.51	660	3,670	109,720	6.07
616	900	10,850	0.60	662	3,820	117,210	6.55
618	1,000	12,750	0.71	664	3,950	124,980	6.91
620	1,090	14,840	0.82	666	4,100	133.030	7.37
622	1,200	17,130	0.95	668	4,250	142,380	7.89
624	1,330	19,660	1.09	670	4,400	151,030	8.36
626	1,470	22,460	1.24	672	4,550	159,980	8.85
628	1,570	25,500	1.42	674	4,700	169.230	9.38
630=summer	1,730	28,800	1.60	676	4,850	178,780	9.89
lake	-			678	5,000	188,630	10.43
632	1,850	32,380	1.79	680	5,150	198,780	10.99
		-		682	5,300	208,000	11.50
				683	5,380	212,000	11.73

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Foster Joseph Sayers Dam -- Allocation of Reservoir Storage Capacity

		Pool	TOTAL	STORAGE		INCREMENTAL	STORAGE
	Elev. Feet	Area, Acres	Acre Feet	Runoff Inches	Acre Feet	Runoff Inches	Allocation
Streambed	583.0	00	<b></b>	00			
· · · · · · · ·					20	00	Dead Storage
Gate Sill	590.0	20	20	00	6		
Conservation Lake	610.0	630	6,300	0.35	6,280	0.35	Conservation
<b>•</b> • • • • • •		1 700			22,500	1.25	Recreation
Recreation Lake	630.0	1,/30	28,800	1.60			
	<b>/ - - /</b>			· .	70,200	3.87	Flood Control
Spillway Crest	657.0	3,450	99,000	5.47			
Design Surcharge	677.8	4,980	186,000	10.38	87,000	4.91	Design Surcharge
					24.850	1.35	Reserve Surcharge
Top of Dam	683.0	5,380	212,000	11.73	-	- 22	<b>--</b>

River levels are monitored at Beech Creek Station on Bald Eagle Creek, at Renovo, on the West Branch Susquehanna River and at numerous other locations downstream from Lock Haven, Pennsylvania. Stages at these locations indicate how and when the Sayers dam should be operated for flood control.

## 2.5 Project structures.

2.5.1 Dam. The rolled-fill earth dam with a random rock section is 6,835 feet long with a maximum height of 100 feet above stream bed. The crest is 25 feet wide and accomodates a paved road for operational purposes. The top elevation of the dam is 683.0 feet above mean sea level, providing for a freeboard of 5.3 feet above the spillway design flood.

2.5.2 Howard protective works. The impervious embankment is 6,700 feet long with a top elevation of 667.0. The levee provides for protection against the standard project flood elevation 663.7, plus a freeboard of 3.3 feet. Drainage for the area inside the levee is provided by two 48-inch drainage structures and required ponding areas.

2.5.3 Spillway. The principal features of the spillway consist of an approach channel, a concrete ogee weir and apron, and a discharge channel. The spillway provides a means of releasing surplus flood waters from the reservoir and will prevent the overtopping and possible failure of the dam. The spillway, located through a ridge at the left abutment of the dam, is an uncontrolled chute type and provides sufficient capacity to pass a spillway design flood of 203,000 c.f.s.

2.5.4 Outlet works.

2.5.41 General. The primary purpose of the outlet works is to release stored flood waters. The works will also be used for water quality control releases.

2.5.42 Principal features. The principal features of the outlet works consists of a combined intake and gate structure with two hydraulically-operated service wheel gates, a single crane-operated emergency wheel gate for inspection, maintenance and emergencies, a 15-foot diameter conduit and a stilling basin. A simple trash rack with dual purpose bulkheads - multiple leaf gates are provided on the upstream face of the intake structure for maintenance of the emergency gate and for selected water releases from stratified storage. A service bridge provides maintenance access to the gate tower from the top of the dam. 2.5.43 Transition and outlet tunnel. A concrete transition section 35 feet long provides a gradual change in area and cross section from the rectangular gate passages to the circular conduit. With the reservoir filled to spillway crest, elevation 657.0, the maximum conduit discharge would be about 8, 650 c.f.s. with all gates fully open. Discharges from the outlet works are regulated in an effort to keep the total discharge within the capacity of the downstream channel including the overbank area which was subject to flooding prior to construction of the project.

2.5.44 Stilling basin and outlet channel. A horizontal stilling basin with baffle blocks and end sill is provided downstream from the exit portal to dissipate the energy of the high velocity conduit flow. The stilling basin is connected to the outlet portal by a flared transition, which includes a parbolic drop from the portal to the stilling basin floor. The basin is 45 feet wide with the floor at elevation 573.0. There is a row of baffle blocks at the downstream middle third of the basin and an end sill at the downstream end. The outlet channel has a 60-foot bottom width cut in rock for a distance of about 500 feet and terminates at the existing Bald Eagle Creek channel about 1,000 feet downstream from the stilling basin.

2.5.5 <u>Residence and shop area</u>. The location of the dam operators' house and shop area, as shown on Plate 4, is downstream of the dam.

2.5.6 Overlooks. Two overlooks which provide a view of the recreation pool are indicated on Plate 4.

An overlook is situated immediately off of old US Route 220 just south of the dam. This overlook provides an interesting view of the dam and embankment, the lake, and Bald Eagle Ridge. The second overlook is located off of relocated US Route 220 just north of the Howard causeway. This overlook provides a view of the causeway, the marina area, the lake, and Bald Eagle Ridge. No restrooms or picnic facilities are provided or presently planned for these areas.

2.5.7 Access roads. Four major park and recreation areas have been planned making maximum use of existing roads, with an additional 30, 600 feet of two lane roads and 12,000 feet of single lane, one-way roads completed under the contract for public use and access facilities. Access to these areas are described in the following sub-paragraphs. 2.5.711 <u>Bald Eagle Recreation Area.</u> This area will be served by a road net as shown on Plate II. Vertical alignment generally follows existing topography for economy and to maintain scenic views. Parking areas are graded and surfaced with crushed stone minimizing surface run-off. Guard rails have been provided to meet safety requirements with wheel stops provided on the downhill side of parking areas. The entrance road is 24 feet wide and was built under the Route 220 Relocation Contract. All other roads within the park are 18 feet wide with 6 foot shoulders.

2.5.712 <u>Greens Run Recreation Area.</u> The principal access into this area from relocated US Route 220 are two 18 foot wide roads shown on Plate 14. These are existing roads which have been improved. Parking areas have been provided as a part of the boat launching ramps and fishing pier described in Section 8.2.252.

2.5.713 Bald Eagle Mountain Recreation Area. Construction of roads in this area required special consideration to preserve the natural setting; consequently, extensive clearing and large scale earthwork were avoided. Access to the south portion of this area is provided in part by a 14 foot road which was constructed under the relocation contract for the Pennsylvania Railroad to provide access to a loading siding as well as the recreation area. This road has been widened to 18 feet and extended approximately 600 feet to the junction of the one-way loop road system which is 12 feet in width providing access to the camping area (Plate 13). These roads follow points of approximately equal elevation in order to minimize earthwork and clearing. No roads will be constructed in the northeast portion of the Bald Eagle Mountain Area at this time. Access to the reservoir will be gained by pathways leading to one of the two underpasses beneath the Pennsylvania Railroad which were constructed under the railroad relocation contract.

2.5.72 <u>Howard Borough Park</u>. Existing Borough streets providing access to this area are shown on Plate 16. Certain pathways through the park will be used both for pedestrian traffic and for park maintenance vehicles. Two parking areas are provided with a third to be constructed at a later date by the Borough of Howard if determined necessary.

Preliminary plans by the Borough called for the utilization of the abandoned railroad right-of-way as a walkway and green space. If this walkway were ever realized, it would provide an interesting, connecting "pedestrian way" through the Borough of Howard as indicated on Plate 16.

### 2.5.73 Underpasses.

2.5.731 <u>US Route 220</u>. An underpass has been provided from the day use areas of Bald Eagle Recreation Area to the area northwest of US Route 220 as shown on Plate 13. This underpass will permit vehicular and pedestrian access between the project lands above US Route 220 and all other activity areas.

2.5.732 <u>Pennsylvania Railroad</u>. An underpass under the relocated Pennsylvania Railroad provides pedestrian access between the Bald Eagle Mountain Camping Area and the lake as shown on Plate 15. An additional underpass is located approximately 3,000 feet west of the centerline of the dam for future use.

2.5.8 <u>Waste Treatment Plant</u>. The sewage treatment plant is located just downstream of the dam on the left bank of Bald Eagle Creek. The plant layout, control building, process description, and a tabulation of equipment items are illustrated in DM No. 3B, "Public Use and Access Facilities." The plant provides treatment for public use areas, operation and maintenance areas and the Borough of Howard.

# 3.1 Hydrologic and climatic characteristics.

3.1.1 <u>Rainfall--snowfall</u>. The mean annual precipitation in the watershed is about 38 inches. The maximum amount of annual precipitation recorded at Bellefonte and State College stations was about 48 inches in 1950. The average snowfall for the area is about 42 inches (see Table 5).

3.1.2 <u>Drainage basin</u>. The drainage area above the dam consists of two major areas, Spring Creek and Bald Eagle Creek (Plate 2). These sub-basins have not only dictated the design of the project structures, but also will determine to some extent the future operation of the project. The hydrology of these tributaries has been considered in the placement and programming of recreational facilities on the project.

The Spring Creek area has the most effect on the water quality of the lower Bald Eagle Creek and Foster Joseph Sayers Lake. Spring Creek drains a predominantly limestone area which produces water with very high alkalinity. State College and Bellefonte, Pennsylvania, add a high nutrient load to Spring Creek, with a power generating station at Milesburg adding a significant heat load.

Spring Creek sustains a very high flow to drainage area ratio during drought periods. The lowest cfs/square mile flow recorded is .62 cfs/square mile. This is an exceptionally high ratio for a Pennsylvania stream. Bald Eagle Creek above Spring Creek has had a flow to drainage area ratio of less than 0.009 during a severe drought.

3.1.3 <u>Temperature</u>. The average annual temperature is about 49 degrees. The Susquehanna Basin has a continental type of climate, modified somewhat by the moisture periodically entering the area from the Gulf of Mexico and the Atlantic Ocean. In the spring, daytime temperatures are mild but nights generally remain cold into April. Through most of July and August and frequently into September, tropical maritime air continues to prevail resulting in the persistence of summer heat and high humidity. The season's first frost, ending the growing season, usually occurs in mid-October. The ground alternately freezes and thaws until April, when the growing season begins. Mean monthly temperatures are presented in Table 6.



# TABLE 5

# MEAN MONTHLY RAINFALL AND SNOWFALL

	Precipitat	ion in Inches	Snowfall in Inches		
Month	Bellefonte, Pa.	State College, Pa.	Bellefonte	State College	
January	2.54	2.85	10.5	11.2	
February	2.24	2.54	9.1	10.7	
March	3.39	3.39	8.9	9.4	
April	3.57	3.45	2.4	2.5	
May	3.77	4.09	0.0	0.0	
June	3.90	4.00	0.0	0.0	
July	3.69	3.82	0.0	. 0.0	
August	3.83	3.55	0.0	Q.O	
September	2.82	2.88	0.0	0.0	
October	2.88	2.91	0.0	0.1	
November	2.46	2.67	1.5	2.3	
December	2.53	2.66	7.4	8.1	
Annual	37.62	38.81	. 39.8	44.3	
Years of Recor	•d 46	77	31	59	

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	T.	ABLE 6
Mean	Monthly	Temperatures

	Mean Temperature in Degrees Fahrenheit Bellefonte State College			
	Degrees	Fahrenheit		
Month	Bellefonte	State College		
January	28.4	27.2		
February	28.8	27.7		
March	34.4	3 <b>6.</b> 3		
April	47.9	47.9		
May	58.2	59.1		
June	67.1	67.1		
July	71.6	71.2		
August	69.3	69.2		
September	62.5	62.8		
October	51.9	51.7		
November	40.6	40.3		
December	29.6	30.0		
Annual	49.2	49.2		
Years of Record	16	74		

3.1.4 Winds and atmospheric inversions. The prevailing regional winds are generally from the west blowing to the east. Local winds consist of thermally-induced and terrain-induced currents. Thermally induced currents are produced as a result of the temperature differentials between the lake and the surrounding land surfaces. This differential will be most noticeable during the summer months when updrafts will occur during the daytime and downdrafts at night. Terrain-induced currents follow the stream along the valley floor. These terrain-induced currents are of particular importance because they tend to carry pollutants along the valleys which they follow. This potential source of pollution becomes even more critical when coupled with the atmospheric inversions characteristic of the valley.

Atmospheric inversions are the result of the collection of cold air during the long cold nights with relatively light winds. This cold air carried along the lower elevations of the valley by the terraininduced currents is covered with warmer air lying above the ridges. A problem arises when the colder air has become polluted. Because of the "blanket" of warm air along the higher elevations, little or no exchange of air from within the valleys to the higher elevations occurs. Consequently, any pollutants within the valley become "trapped" with their potential for dissipation into the less dense air over the valley significantly reduced.

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Presently, these inversions have not caused any major problem on project lands; however, the project will be very susceptable to any degradation of air quality upstream of the impoundment. The problems associated with inversions occurring over Bald Eagle Valley have been monitored for the pastten years and are currently being studied by the Pennsylvania State University, College of Earth and Mineral Sciences.

3.2 Geology. The Foster Joseph Sayers project lies within the Bald Eagle Valley, the western most valley of the Ridge and Valley Physiographic Province of central Pennsylvania. Rimmed by the Allegheny Plateau to the northwest and Bald Eagle Ridge to the southeast, the valley extends from Lock Haven, to Altoona. Pennsylvania, a distance of 70 miles. These foothills of the Allegheny Plateau which gradually rise to the escarpment of the Allegheny Front, are actually eroded remnants of the plateau itself. This area of folded and contorted anticlines and synclines is actually sediments of the Paleozoic era, from the Cambrian through the Pennsylvania systems. The geologic history of Bald Eagle Valley is inseparable from the history of the Appalachian Valley, which is estimated to have begun as much as five hundred million (500,000,000) years ago. At that time what is now the eastern United States was submerged by a large marine sea. Deposition of sediments was occurring and ultimately became the quartzite and conglomerates, the oldest rocks in the Appalachian Mountain regions today. A second deposition ultimately produced the sandstone and shale more commonly evidenced today by the outcroppings occurring throughout the valley.

During the aforementioned periods of deposition, vast numbers of marine animals inhabited the sea floor, and their hard parts, or the impressions of them made in the soft sediments, constitute the fossils that abound in the rocks common to the project area at the present time.

Following these periods of deposition, the large masses of land containing this marine sea began to rise. With this rise, the land was folded and faulted until a period was reached when little additional movement occurred. However, the surface was gradually reduced with streams taking their present courses on this plain. The whole country was uplifted once again, but slowly enough to allow the creeks to wear down their beds as fast as the land surfaces rose. Bald Eagle Valley was formed in this manner. It was in this last erosion period that glacial ice entered the upper part of the Susquehanna Valley at least once during the Illinoian stage, and at three different times during the Wisconsin stage. While it is generally accepted that the presence of ice in extensive masses or glaciers did not occur in Bald Eagle Valley, glacial activity in the form of periglacial phenomenon (occurrences of severe climate beyond the ice masses) did occur quite extensively throughout the valley. Deposits of wind-borne, fine-grained sand and silt and masses of rubble produced and brought to the surface by severe frost action were results of this periglacial activity.

These results are evidenced by the limestone caverns and aquifers, and huge boulder fields occurring in Bald Eagle Valley today.

Existing today are many features and characteristics to attest to the geological activity which has occurred on or surrounding the Foster Joseph Sayers project. Land forms and the physical properties of the soils are the consequences of this preceeding activity and has influenced the use of the land since inhabitation by man. Specifically, on the project area, three principal land masses can be defined: Bald Eagle Mountain and its slopes, the valley floor, and the slopes and ridge located on the northwestern side of the valley. These features collectively and individually provide opportunities and constraints for development and programming of the project area.

Specific information and soil characteristics have been detailed in DM No. 4, Geology and Soils. This Master Plan has considered all land use in relation to the geological capabilities of the site in the determination of suitable land uses. Realizing that the visual and physical qualities of the site are a product of past and present geological activity, this Master Plan will detail land use accordingly.

### 3.3 Topography--soils.

3.3.1 General. Bald Eagle Valley's topography and soils are a product of past geological activity and man's exploitation of the area. Topography and soils now provide the project with its most significant resource characteristic, consequently influencing all development and future management of the project area.

The generally flat valley floor, the surrounding ridges, and Bald Eagle Mountain (Plate 3), constitute the three major land form elements of the site. The potential uses of these areas have been predetermined or will be influenced by topographic and soil characteristics.

3.3.2 Valley floor. The valley floor consists of land ranging between 0--15 percent slope (Plates 3 & 5), and includes all of the land below and 25 percent of the land above spillway crest. These alluvial soils are of the Ashton-Huntington Association. The soils are on flood plains and terraces of materials washed from soils underlain by limestone. They are deep, well-drained, medium textured soils with moderate permeability, but are subject to periodic flooding. Most use problems associated with these soils



are related to the seasonally high water table. These areas generally will provide the more attractive recreational development. Understandably, all sites will have to be examined on a site-by-site basis due to the abundance of wet areas.

3.3.3 Upland areas. The upland areas and surrounding foothills constitutes roughly one-third (35 percent) of the land above spillway crest (Plate5). Slopes range between 15-30 percent. The soils are derived from acid gray and yellow shale, siltstone and fine grained sandstone and give rise to soils of the Becks--Buchanan--Brinkerton Association. These soils have developed in material weathered from mixed shale and sandstone at the base of hills. They have a firm, slowly permeable subsoil, and are moderately well drained to somewhat poorly drained. Most use problems are related to slope and some surface areas where during parts of the winter and spring months, water tables rise and create wet areas.

Uses which generally appear to be compatible on these areas include moderate recreational development and wildlife management.

3.3.4 <u>Bald Eagle Mountain</u>. The largest amount of project lands above spillway crest (40 percent) have slopes 30 percent or greater (Plate 5). These lands generally occur on Bald Eagle Mountain. The generally flat valley floor bordered by the massive Bald Eagle Mountain on the right creates the most significant visual amenity of the project. The slopes of Bald Eagle Ridge are very steep, varying from 25 to 40 percent. The most significant vistas occur on this ridge and are of a major regional significance. The soils are derived from acid red and gray sandstones that give rise to soils of the Dekalb--Lehew Association. Most of these soils are very stony with an area generally lying between the 1, 200 and 1,600 foot contours that is entirely heavy talus. Use problems of these soils are related to slope, sandstone fragments, and droughtiness. While all of these areas are forested, they are only moderately well suited or poorly suited to trees.

Use of these slopes for activities other than forest and game preserves is unfeasible, although some passive recreational activities such as hiking and hunting should prove feasible.

3.4 Ecology.

3.4.1 Botanical elements. There are six fairly distinct plant communities in the Bald Eagle Valley (Plate 3). Their boundaries are for the most part determined by slope position, slope aspect and soil conditions. 3.4.11 Mixed oak. This plant community often covers the entire slope on the plateau side (left side) of the valley although oak-pine communities may often be found on lower slope positions of both sides of the valey. The top of Bald Eagle Ridge is primarily chestnut oak (Quercus prinus) with occasional groupings of white pine (Pinus strobus) in saddles along the ridge line.

3.4.12 <u>Birch-oak</u>. The heavy talus area of the upper mid-slope of Bald Eagle Ridge supports a birch-oak community. The upper and lower elevational limits of this community are almost entirely defined by the distribution of large stones.

3.4.13 Oak-pine. The lower mid-slope is mixed oak with the species composition being quite similar to that of the plateau slope. This community then integrates into an oak-pine community in the lower slope position.

3.4.14 <u>Agricultural</u>. Thirty to forty percent of the valley floor remains in agricultural plant communities. These are almost entirely restricted to cereal grains, hay and pasture crops.

3.4.15 Abandoned fields. Most of the valley floor on project lands is in abandoned farm land which varies from communities composed largely of goldenrod (Solidago spp.) to hawthorne (Crataegus spp.), hawthorne-white pine (Pinus strobus), and aspenwhite pine (Populus tremuloides) mixtures depending upon length of time since agricultural use last occurred. Dense thickets of red alder (Alnus rubra) may also be found invading these areas but are much more site specific. They are most usually restricted to the wettest sites in abandoned pastures.

3.4.16 Annual flood plain. The last distinct community occurs within the annual flood plain of Bald Eagle Creek. This community is rich in both overstory and understory species. The overstory is usually dominated by hardwoods composed of slippery elm (Ulmus fulva), sycamore (Platanus occidentalis), and white oak (Q. alba), although both white pine and hemlock (Tsuga canadensis) may be locally important. The most important understory species is red osier dogwood (Cornus stolonifera) which in the wetter areas forms essentially impenetrable thickets.

### 3.4.2 Zoological elements.

3.4.21 General. The animal population in the project area can be generalized into three categories: terrestrial animals whose life cycle is basically restricted to land habitats, aquatic animals whose life cycle is spent in the water, and wetland animals whose life cycle is very dependent upon an intricate balancing of land and water habitats. A description of where animal populations occur specifically, will be detailed in paragraph 3.6, Delineation of management zones.

3.4.22 Terrestrial. The terrestrial ecosystem of the project area consists of a substantial variety of wildlife species (Tables 30 and 31, Section 9.4.32). The plant community distribution creates an abundance of habitat types which are optimal for support of large mammal and bird populations. Principal mammal species common to the project area include the white-tailed deer (Odocoileus virginianus) and cottontail rabbit (Sylvilagus floridanus). Bird populations are high and are composed of close to 200 species using the valley at some time during their annual cycle. Among the game bird species there are good resident populations of wild turkey (Meleagris gallopavo silvestris) and ruffed grouse (Bonasa umbellus).

3.4.23 Aquatic. Twenty-seven species of fish dominate the aquatic ecosystem of the reservoir. These species were identified by a study conducted in July 1972 (Table 6a). Several of these predominantly warm water types owe their presence to a stocking program instituted by the Pennsylvania Fish Commission and the US Department of Interior, Bureau of Sport Fisheries and Wildlife.

Currently, the resident fish population is dominated by carp (Cyprinus carpio) and brown bullheads (Ictalurus nebulosus). Immediately downstream of the dam in Bald Eagle Creek, the fish population is restricted primarily to carp and black bullhead (Ictalurus melas).

3.4.24 <u>Wetland</u>. Essentially all of the species of puddle ducks common to the eastern United States can be found in the coves and surrounding wetland areas of the reservoir. Migrating waterfowl are using the reservoir as a resting and feeding area during the spring and fallmonths. The only waterfowl species with any significant amount of nesting activity, however, is the wood duck (Aix sponsa).

Beaver (Castor canadensis), muskrat (Ondatra zibethica) and raccoon (Procyon lotor) are the most important furbearers with raccoon being especially abundant at the present time.

Birdlife is also abundant and diversified in the wetland areas of the reservoir (Table 31). Especially good nesting populations of wood-cock (Philohea minor) can currently be found on project lands with Bald Eagle Valley serving as an important migration corridor for the species.

## TABLE 6A

Aquatic Species, Foster Joseph Sayers Lake July 1972

## Scientific Name

Ambloplites rupestris Anguilla rostrata Catostomus commersoni Cyprinus carpio

Esox lucius Esox masguinongy Esox niger Etheostoma olmstedi Hypentelium nigricans Ictalurus natalis Ictalurus nebulosus Lepomis auritus Lepomis gibbosus Lepomis macrochirus Micropterus dolomieui Micropterus salmoides Notemigonus crysoleucas Notropis cornutus Notropis hudsonius Notropis procne Notropis rubellus Notropis spilopterus Perca flavescens Pimephales notatus Rhinichthys atratulus Semotilus corporalis Stizostedion vitreum

### Common Name

Rockbass American Eel White Sucker Carp (very abundant in dam) Northern Pike Muskellunge Chain Pickerel Tesselated Darter Northern Hog Sucker Yellow Bullhead Brown Bullhead Redbreast Sunfish Pumpkinseed Sunfish Bluegill Smallmouth Bass Largemouth Bass Golden Shiner Common Shiner Spottail Shiner Swallowtail Shiner Rosyface Shiner Spotfin Shiner Yellow Perch Bluntnose Minnow Blacknose Dace Fallfish Walleve

Source: Dr. Robert Scherer, Lock Haven State College, Lock Haven, Pennsylvania

### 3.5 Land use.

3.5.1 <u>General</u>. Land use in Bald Eagle Valley has occurred in three general phases: initial settlement, exploitation of natural resources, and maintenance of an economic base through agricultural and mining activities.

3.5.2 Settlement and exploitation. Initially when settlers came into the valley, the steep slopes of Bald Eagle Ridge limited development to the valley floor and surrounding foothills. This is evident today as no substantial development has occurred on this ridge.

As the valley was settled, land owners soon realized the tremendous resource base of the surrounding area and consequently, the subsequent degradation of many sites was to follow. Logging was the first major disturbance, and in the beginning, it served mainly to clear the land for agriculture. By the beginning of the twentieth century, however, it was being carried out for the wood products themselves. These products consisted of lumber from the hardwoods and white pine, "chemical wood" from hemlock, and charcoal for iron furnaces from all species. The entire area was clearcut by the early twenties including even the steepest and stoniest slopes. The lower slopes and valley floor had contained hardwoodpine and white pine-hemlock communities while the upper slopes were largely oak-chestnut (Castanea dentata). The intensive logging followed by fire and chestnut blight has left a forest which is largely mixed-oak with some oak-pine communities. Logging still continues in the valley and it is once again done primarily on a clear cutting system. Today's products however are almost entirely for pulp mills.

3.5.3 Industry and commerce. By 1849, the iron industry which previously had been quite substantial was declining and the majority of the timber lands had been cut over. The economic base became rather static and agriculture and mining emerged as a base for the economy.

Agriculture in the valley has probably never been a high profit business. It has been restricted almost entirely to hay, cereal grains, and some beef and dairy cattle production. The valley soils are only fair by agronomic standards plus much of the tillable area will be flooded every few years. Farms in the valley today are primarily marginal operations. The residual effects of the farming can be seen today on project lands in the patchwork of abandoned fields and woodlots situated along US Route 220. Two industrial power plants have also probably affected conditions in the Bald Eagle Valley. The first was the West Virginia Pulp and Paper Mill (WESVACO) at Tyrone in the southwest end of the valley. Odors resulting from the mill's operations funneled up the valley during atmospheric inversion periods. The ecological importance of this atmospheric pollution in the valley was never determined. It does not exist today due to closing of the WESVACO plant several years ago.

The second industrial plant of note is the West Penn Power Plant at Milesburg. This is a coal fueled electric power plant, which has been the source of some smoke pollution. Again it has been of greatest importance during inversion periods, but unlike the paper mill pollution, its noticeable effects in terms of smog have been rather localized.

3.5.4 US Route 220. The construction of US Route 220 which runs the length of the valley and is a major North-South route through Pennsylvania has undoubtedly had considerable effect on the ecology of the area. Although industrial and commercial types of development along the highway have been minimal, it has provided the opportunity for a mobile public to construct housing in the area and commute 15 to 20 miles to work. This is the present direction of human population change in the valley. This change can probably be expected to continue at an increased rate along with increases in commercial and industrial development when the Appalachian Thruway is completed.

3.5.5 Foster Joseph Sayers Dam. The most recent major change on the valley was the construction of the Foster Joseph Sayers Dam. The initial impact of the reservoir on populations of wild plants and animals was to flood farmland and abandoned farmland which was in goldenrod-hawthorne-alder associations and remove the availability of this habitat for terrestrial animals. The species whose productivity were most affected were the ground nesting songbirds and mammals. The species which were probably affected to the greatest extent were red alder and woodcock. These species are community associates. The alder grew primarily on the seasonally wet sites and the woodcock fed on the soil invertebrates associated with these sites. The birds also used the alder for cover and nest sites. The communities in this length of the valley were practically all flooded. The dam has, however, become attractive to fairly large numbers of migrating waterfowl and increased numbers of marsh birds and shore birds (Table 31). Egrets and herons which did occasionally occur on Bald Eagle Creek appear to occur in greater numbers on the reservoir. Wood duck nesting which also previously occurred along the creek also appears to occur to a greater extent in the headwaters of the The increase in numbers of waterfowl using the area reservoir. for resting has greatly increased waterfowl hunting activity in the valley.

Undoubtedly cottontail rabbit populations in the area were greatly reduced due to the flooding of large amounts of primary habitat. The population densities of this species in unflooded areas are probably no greater or less than they were prior to flooding.

It is unlikely that populations of furbearers such as muskrat and beaver have increased as a result of the reservoir. In fact they may have decreased since before flooding the shoreline of the stream was fairly constant compared to the very large annual variation in the shoreline of the reservoir. During draw-down periods, these animals tend to move up small tributaries and the amounts of both food and space become limiting. Both species are terrestrial and based on studies in other areas, crowding in these small drainages may adversely affect breeding activity during the period from late January to early March. Raccoon populations have probably been little affected by the reservoir.

Deer populations may have been slightly decreased in the area when the fields in which they had fed to a large extent were flooded. Although deer density in the surrounding area may have been somewhat raised, the increase was probably small. In terms of feeding capacity the event which partially offset the loss of the farmlands was the relocation of the railroad. The banks of the railroad were seeded and do supply a considerable amount of deer forage.

## 3.6 Delineation of management zones.

3.6.1 <u>General</u>. As described in Section 3.4, the six distinct plant communities in the valley are somewhat varied and provide various constraints and opportunities for development. In order to further define specific acceptable uses of project lands a general reconnaissance survey was conducted. General ecological information on the project lands was collected. This information has been used in the development of this Master Plan and will continue to be used as a base for further study. Specific analysis and management details will be developed in Appendix B, Forest Management Plan; Appendix C, Fire Protection Plan; and Appendix D, Fish and Wildlife Management Plan.

3.6.2 <u>Management Area #1 (Plate 5)</u>. This area lies in the southeast section of the project on the Bald Eagle Mountain side of the reservoir. It extends from the dam site approximately three miles west to near the Borough of Howard. It is approximately three-quarters of a mile wide rising in elevation from the summer pool level of 630 feet to over 1,700 feet at the top of Bald Eagle Ridge. Due to varying species composition of vegetation along the slopes of this area, four zones have been identified for the purpose of analysis. 3.6.21 Zone 1-1. Slopes in this zone vary from 5 to 15 percent. The soils (Buchanan-Andover-Lindside) have generally severe to moderate limitations for development. Most use problems are related to seasonally high water tables and slow permeability.

Table 7 reflects the species composition of Zone 1-1 and gives very rough estimates of density, frequency and basal area of individual species. The entire zone is heavily vegetated with a substantial oak-white pine association.

Tree diameters in Zone 1-l are for the most part between 10 and 15 inches. They are 70 to 80 feet in height and between 60 and 70 years of age. These stands are characterized as being large pole to small sawtimber in size and for the most part even aged. Light thickets of small red maple (1 to 2 inches DBH) are scattered about this zone as are similar sized thickets of white pine. Ground vegetation is sparce with the only seedlings or advanced tree regeneration of any significance being white pine.

The most important game animals using the habitat of Zone 1-1 are deer, turkey and squirrels. Deer use of these stands will occur for the most part during fall months when the oak mast crop becomes an important food source. There are not enough thicket areas and in addition, the white pine thickets are for the most part too sparsely stocked to provide adequate resting areas. Since this is a north slope area, it will not be used to a great extent during the winter months due to the scarcity of cover except in years of excellent mast crops.

Wild turkey activity should be fairly high throughout the spring, summer and fall months with some birds persisting to use the few spring seeps in the zone during the winter period. Several flocks were using this zone during the fall of 1973.

Gray squirrel (Sciurus carolinensis) activity in this zone is mostly restricted to the sites with the largest trees. There is a good number of leaf nests in the area suggesting considerable breeding activity. Den trees are not abundant but are of particular importance where they occur, especially as winter cover.

A large number of songbirds may be found using this zone with the greatest species diversity being found between the railroad track and the lake edge. Among the birds of the forest which are somewhat unusual but may be seen or heard here are the pileated woodpecker (Hylatomus pileatus), scarlet tanager (Piranga olivacea), eastern bluebird (Sialia sialis), and whip-poor-will (Caprimulgus vociferus). Large flocks of black ducks (Anas rubripes) and

3-13

	1)	2.)	3)
Species	Dęnsity (Stems/Ac)	Basal Area (Sq.Ft./Ac)	Frequency
Ē	levation 630-	1000 Feet 🔹	
Eastern Red Cedar (Juniperus virginiana)	4.52	1.39	11.18
Red Maple ( <u>Acer rebrum</u> )	7.62	3.20	27.27
Slippery Elm ( <u>Ulmus</u> rebra)	1.40	0.72	18.18
Mockernut Hickory ( <u>Carya</u> <u>tomentosa</u> )	0.33	0.22	9.09
White Oak ( <u>Quercus</u> <u>alba</u> )	12.67	11.51	36.36
Red Oak ( <u>Quercus</u> rubra)	6.12	10.12	27.27
White Ash ( <u>Fraxinus</u> <u>americana</u> )	3.64	3.83	27.27
Chestnut Oak ( <u>Quercus</u> prinus)	6.36	5.17	27.27
Black Oak ( <u>Quercus</u> velutina)	8.52	6.77	27.27
Eastern White Pine ( <u>Pinus strobus</u> )	17.62	10.10	45.45
Eastern Hemlock ( <u>Tsuga</u> canadensis)	2.04	0.80	9.09
Basswood ( <u>Tilia</u> <u>americana</u> )	0.97	0.49	9.09
Black Walnut ( <u>Juglans nigra</u> )	2.46	2.48	9.09

Approximations of stand density, basal area, and frequency of species occurence for Zone 1-1, Management Area #1

Table 7

Number of stems greater than 5 inches DBH (diameter 4.5 feet above ground).
Sum of cross sectional area of tree stems greater than 5 inches DBH.

3) Percent of plots taken in the zone on which the species occurred.

mallards (<u>Anas platyrhynchos</u>) use this portion of the lake especially after the fall water draw-down. During the spring, summer, and fall months several species of marsh and shore birds may be seen along this section of the lake edge. The most common sighted will probably be the great blue heron (Ardea herodias).

Management alternatives for Zone 1-1 include some potential for limited intensive recreation such as the primative camping area completed by the Pennsylvania Bureau of State Parks during the summer of 1973 (Section 8.2.253). Any insect and disease caused mortality among the oaks in this zone will undoubtedly result in an increase in white pine with the white pine stands eventually dominating these slopes. Commercial logging in these areas would result in the same phenomenon. The exclusion of fire and the absence of catastrophic changes in the oak stands will result in a very slow but probable replacement of the oaks by white pine. Any changes resulting in the numbers of large trees and an increase in a brush layer of trees and shrubs is almost certain to increase deer activity in this area, as well as ruffed grouse activity and songbird species diversity. It will, on the other hand, decrease populations of wild turkeys and tree top species of songbirds (scarlet taniger, eastern bluebird, warblers) and woodpeckers as well as those of gray squirrels.

3.6.22 Zone 1-2. Vegetational Zone 1-2 differs from Zone 1-1 primarily in stand density and basal area (Table 8). The values of both of these parameters in Zone 1-2 are about double those in Zone 1-1. This is an average difference which is somewhat misleading for there are a number of sites in Zone 1-1 on which the density and basal area are as high or higher than any in Zone 1-2. The complexion of the data reflects the effects of a past history of partial cutting and highgrading (the cutting of only the most desirable specimens) in Zone 1-1 which apparently occurred to a lesser extent in Zone 1-2. An additional difference is the increased importance of black birch and decreased importance of white pine.

The zones are also similar in several respects. For instance the understory and ground vegetation are not perceptibly different. Additionally, heights and diameters of trees are essentially the same and there is great overlap in species composition.

The slopes in Zone 1-2 range between 15 and 20 percent. The soils vary from stony to rubble conditions in the upper portions. Most use problems are related to slope, stoniness, and shallow depth to bedrock. Even with this increase in slope and stoniness, there is little perceptible change in the ability of the site to support tree growth.



3-15

Species	1) Density (Stems/Ac)	2) Basal Area (Sq.Ft./Ac)	3) Frequency
	Elevation 1000-1	300 Feet	
Black Birch ( <u>Betula lenta</u> )	26.92	19,24	27.27
White Oak ( <u>Quercus</u> alba)	13.64	9.92	36.37
Red Oak (Quercus rubra)	32.04	45.24	54.54
Scarlet Oak ( <u>Quercus</u> <u>coccinea</u> )	3.08	2.80	9.09
Slippery Elm ( <u>Ulmus</u> rubra)	2.36	0.72	9.09
Black Oak ( <u>Quercus</u> velutina)	24.40	29.04	36.37
Chestnut Oak ( <u>Quercus</u> prinus)	27.50	15.48	45.45
Eastern White Pine (Pinus strobus)	6.60	4.64	18.18
Red Maple ( <u>Acer</u> <b>rebrum</b> )	10.24	8.12	9.09
White Ash (Fraxinus americana)	10.44	12.12	18.18
Shagbark Hickory (Corya ovata)	3.12	1.84	9.09

Table 8Approximations of stand density, basal area, and frequency<br/>of species occurence for Zone 1-2, Management Area #1

1). Number of stems greater than 5 inches DBH (diameter 4.5 feet above ground)

2) Sum of cross sectional area of tree stems greater than 5 inches DBH.

3) Percent of plots taken in the zone on which the species occurred.

With the exception of the water associated species, there is no difference in the wild animal and bird use of the area between Zones 1-1 and 1-2. Food and cover conditions are similar with possibly a few more den trees in Zone 1-2.

The lower and lower mid-slope areas of Zones 1-1 and 1-2 are closely related with expected climactic and successional characteristics being essentially the same.

3.6.23 Zone 1-3. Zone 1-3 is an abrupt and major change in vegetation, slope, and soil conditions. This is a birchoak community with the trees rooted in the interspaces of the stones of the heavy talus slope (Table 9). The heavy stone and rubble land associates with this zone severely limits its development potential for most activities.

Most of the trees are in the 8- to 12-inch diameter classes with scattered individuals that are between 18 and 20 inches. Tree heights are almost all between 30 and 40 feet with an occassional white pine that may be between 50 and 60 feet. Ice damage is severe on all species but most notable on the red oak. The understory in this zone consists of mountain laurel (Kalmia latifotia) and striped maple (Acer pensylvanicum), and occurs in low to medium density thickets. The slopes here vary from 30 to 40 percent.

Wild mammal use of the area also changes greatly in this zone. It will be primarily used for denning by red fox (<u>Vulpes fulva</u>), gray fox (<u>Urocyon cineroargenteus</u>), and porcupine (<u>Erethizon</u> <u>dorsatum</u>). It may be used to some extent for summer nesting by squirrels but its exposure and limited food production will restrict its winter use. Deer may use the area to some extent for browsing on the striped maple shoots.

Songbird use of Zone 1-3 will not be greatly different from that in other zones. One exception to this however, may be the increased frequency of occurrence of towhees (Pipilo erythrophthalmus) that are taking advantage of the laurel thickets for nesting cover.

The birch-oak stands of this heavy talus area if left completely undisturbed might see some increase in the importance of the oaks at the expense of the birches although the changes are not likely to be great even over a century or more of time. Mortality among the oaks will give some advantages to the birches which are capable of faster regeneration following disturbance. Ground fires could cause such changes. The reverse of this is not true, however, since widespread disease, insect or fire caused mortality among the birches will result in birches replacing birches.



3-17

Species	1) Density (Stems/Ac)	2) Basal Area (Sq.Ft./Ac)	3) Frequency
Elev	ation 1300-1	500 Feet	
Black Birch ( <u>Betula lenta</u> )	66.00	44.68	100.00
Striped Maple (Acer pensylvanicum)	1.24	10.56	10.00
Eastern White Pine ( <u>Pinus strobus</u> )	7.80	6.12	30.00
Red Oak ( <u>Quercus</u> rubra)	19.12	13.36	40.00
Chestnut Oak ( <u>Quercus prinus</u> )	18.16	20.24	30.00
Red Maple ( <u>Acer rubrum</u> )	7.04	3.04	30.00
Gray Birch ( <u>Betula populifolia</u> )	4.08	1.88	10.00

Table 9Approximations of stand density, basal area, and frequency<br/>of species occurence for Zone 1-3, Management Area #1

1) Number of stems greater than 5 inches DBH (diameter 4.5 feet above ground). 2) Sum of cross sectional area of tree stems greater than 5 inches DBH.

3) Percent of plots taken in the zone on which the species occurred.

3.6.24 Zone 1-4. Zone 1-4 covers the ridge top of Bald Eagle Ridge. It is close to being a pure stand of chestnut oak (Table 10). Tree diameters in these stands are again mostly in the 8- to 12- inch diameter class with a few between 18- to 20-inches. These larger individuals are almost certainly between 100 and 150 years old and some may be older. Ice damage is also severe in this zone which sometimes gives a unique appearance to some of the old trees that are rarely more than 40 feet in height and may have bent, gnarled branches that are half the diameter of the trunk.

Wild mammal use of this zone will largely be restricted to the summer and fall months. Den trees are fairly abundant but food is limiting. Most of the food in this zone is in the form of acorns.

Most of the songbirds occurring on the lower slopes may also occur on the ridge top. One notable change is the increased frequency of occurrence of birds of prey, principally the hawks (Table 31). This can be expected primarily in the spring and fall months when these birds can be seen migrating and taking advantage of the thermal currents off of Bald Eagle Ridge.

Plant succession in this area and under the present community conditions will be a slow process and except for the lower slope will not be very dramatic. The chestnut oak stands on the ridge can be considered to be climax. Disturbances that might result in severe mortality in this species will tend to increase the productivity of scrub oak (Q. ilicifolia) and pitch pine (Pinus rigida). Chestnut oak will eventually increase to assume a dominant position, however.

3.6.3 Management Area #2. This area lies between the railroad and the lake and is bounded on the northeast by the Howard Recreation Area (Plate 6). The southwest boundary is a line beginning at the point where the recreational pool crosses abandoned US Route 220, connecting at a perpendicular angle with the railroad. The alluvial soils are of the Andover, Melvin, and Purdy series. Most use problems are related to seasonally high water tables and slowly permeable subsoils. Slopes are three to five percent. This land previously supported grazing and hay crops. The residual effects of these past farming operations are evidenced by the abandoned fields and The old fence rows common to these abandoned adjacent woodlots. fields now contain slippery elm, gray dogwood (Cornus racemosa), butternut (Juglans cinerea), black willow (Salix nigra) and an occasional white pine. The open fields are presently in perennial herbs composed mainly of goldenrod, grasses, and sedges. The woodlots are composed of large old white pine and hardwood associations similar to area #1, zone 1-1.

Species	1) Density (Stems/Ac)	2) Basal Area (Sq.Ft./Ac)	3) Frequency
	Elevation 1500	)-1750 Feet	· · · · · · · · · · · · · · · · · · ·
Chestnut Oak (Quercus prinus)	129.08	121.96	100,00
Red Oak ( <u>Quercus</u> rubra)	9.76	4.96	50.00
Pitch Pine ( <u>Pinus</u> rigida)	6.28	2.04	25.00

Table 10Approximations of stand density, basal area, and frequency<br/>of species occurence for Zone 1-4, Management Area #1

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1) Number of stems greater than 5 inches DBH (diameter 4.5 feet above ground).

2) Sum of cross sectional area of tree stems greater than 5 inches DBH.

3) Percent of plots taken in the zone on which the species occurred.

Brush and open field species of songbirds can be seen here such as the meadowlarks, tohees, field sparrows, and plovers. All of the waterfowl species (Table 31) using the reservoir, shorebirds, and marsh birds and woodcocks can be seen using the section of the lake immediately adjacent to this area. Some wood duck and possibly some mallard nesting may occur in this area and can be promoted under proper management.

Deer will use these openings for feeding to some extent especially during the early spring months. A good population of cottontail rabbits can be expected in the area throughout the year. Raccoon and muskrat may also be expected in this area, especially along the shoreline and small tributaries.

Succession in this area will take place primarily in the form of brush invasion of open fields. Gray dogwood, slippery elm, hawthorne, aspen and white pine will be the primary invaders. This is likely to be a very slow process, however, due to the very high population of field mice in these old field communities. These animals not only consume seed falling in the area but also girdle seedlings and sprouts which always results in seedling growth suppression and often death.

In terms of existing qualities and assumed potential, this area is one of the most suitable for intensive wildlife management. It already contains a broad array of plant species and niche types, bird species diversity is high and could be higher under a management program. Pedestrian access can be provided from the abandoned portion of old US Route 220 upstream and the Howard Borough Park downstream.

At the southeast end of the area, the abandoned railroad bed forms a peninsula out into the lake. This peninsula is becoming very bushy and will provide excellent nesting and brooding cover areas. It could also make an excellent waterfowl observation and photography area.

3.6.4 Management area #3. This area lies, for the most part, along the lower slope of Bald Eagle Ridge south of the railroad (Plate 6). It is roughly the shape of a right triangle with one leg being about one-half mile long on the northeast end and the other running southwest along the railroad a distance of about 2 1/2 miles. The slope varies from 10 to 25 percent with the widest part of the area reaching the steep, heavy talus zone. The soils are essentially all in the Andover Laidig association and are almost all stony. Most use problems are related to moderately slow permeability and stoniness.

This area has four major vegetation zones. A 70-acre clearcut makes up one of the zones while the other three are tree stands.

3.6.41 Zone 3-1. The clearcut zone lies at the northeast end of the area and was cut between five and seven years ago. The vegetation is composed of very dense thickets of red maple, dogwood (Cornus florida), hophornbean (Ostrya virginiana), white ash, and white oak seedlings and stump sprouts. It also has some very dense patches of blackberry (Rubus allegheniensis). If left undisturbed, it can be expected that this area will revert back to the white pine-hardwood associations common to this elevation on Bald Eagle Ridge.

Deer activity in this area and along the grassed railroad right-ofway that runs along the lower slopes of the ridge is especially high. A large number of songbirds will continue to be found in this area along with some cottontail rabbit populations.

3.6.42 <u>Zone 3-2</u>. Along the upper edge of the clearcut (950 foot contour) an <u>upslope</u> area is composed of an array of stand conditions. Species composition is reflected by Table 11.

Table 11.	Approximations o	of stand	density,	basal a	rea, and	fre-
	quency of species	occuren	ce for Z	one 3-2,	Manage	ment
	$Aica \pi 0.$					

<u>Species</u>	Density 1) (stems/Ac) High-Graded	Basal Area 2) (aq. ft./Ac) Hardwood Zone	3) Frequency	
Black O <b>a</b> k (Q. velutina)	3.50	2.08	50	
Red Maple ( <u>Acer rubrum</u> )	4.90	1.58	50	
White Oak (Q. <u>alba</u> )	24.56	45.76	100	
Eastern White Pine ( <u>Pinus strobus</u> )	6.64	2.68	50	
Chestnut Oak (Q. prinus)	4.35	5.92	50	
White Ash (Fraxinus american	11.40 a)	17.69	50	•

1) Number of stems greater than 5 inches DBH (diameter 4.5 feet above ground).

2) Sum of cross sectional area of tree stems greater than 5 inches DBH.

3) Percent of plots taken in the zone on which the species occurred.

As indicated by Table 11, white oak is the most dominant species in terms of frequency and basal area. Part of the area has been high graded leaving a few large "wolf" trees with an understory of hickory and red maple pole-sized trees. Parts of the area were cut more heavily than others which has resulted in large differences in numbers of sapling sized trees in the understory. In the uncut portion of this area the amounts of standing dead timber is large. It may be that the high-grading was a salvage operation to use the dying trees. It appears that the cutting may have occurred about 10 years ago and that the dead trees have been dead for about that long. These stands had been almost pure oak as evidenced by the fact that all of the standing dead trees are oak species.

The most important game animals using this area are deer, turkey, and squirrels. Again, as indicated in zones 1-1 and 1-2, management area 1, since this is a north slope, it will not be used to a great extent during the winter months due to the scarcity of cover. Deer use of this area will occur for the most part during the fall months when the oak mast crop becomes an important food source. With the large amount of standing dead timber, this area would attract the woodpeckers, tangers, bluebird, and whip-poor-wills associated with the old stands.

3.6.43 Zone 3-3. The third zone of vegetation is a narrow strip about 400 feet wide and two miles long that runs adjacent to and parallels the railroad right-of-way. As indicated in Table 12, the zone is characterized by an uneven-aged stand of white pine and hemlock with scattered large oak trees and an understory of spicebush (Lindera benzoin), witch-hazel (Homamelis virginiana), black-haw (Viburnum prunifolium) and hawthorne.

Wildlife use of this zone will not be significantly different than that of vegetative zones 3-1 and 3-2; but with its associated vegetative diversity, more deer, songbird, and rabbit activity can be expected. Additionally, significant grouse populations are associated with the brushy woodlands common to this zone.

3-23

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Species	l) Density <u>(Stems/Ac)</u> Hemlock-S	2) Basal Area (Sq. Ft. /Ac) Shrub Zone	3) Frequency
Hemlock ( <u>Tsuga canadensis</u> )	78.96	33.32	100
White Oak (Q. <u>alba</u> )	49.14	39.26	100
Red Oak (Q. <u>rubra</u> )	30.09	67.64	100
Red Maple (Acer rubrum)	30.92	9.00	100

Table 12. Approximations of stand density, basal area, and frequency of species occurence for Zone 3-3, management area #3.

1) Number of stems greater than 5 inches DBH (diameter 4.5 feet above ground).

2) Sum of cross sectional area of tree stems greater than 5 inches DBH.

3) Percent of plots taken in the zone on which the species occurred.

3.6.44 Zone 3-4. The fourth community lies between the third zone of vegetation and the project's boundary. This area as indicated in Table 13 is composed largely of pole-sized aspen, oak, red maple, and some dogwood. Unlike other areas on Bald Eagle Ridge, there is no advanced regeneration of oak or white pine on the ground. Grouse, turkey, and deer are currently using the area for feeding and cover. The grouse are primarily concentrated in the white pine-hemlock-shrub area and the turkey in the oak stands. Deer use the area but their activity is highest in the vicinity of the clearcut (zone 3-1).

Species	1) Density <u>(Stems/Ac)</u> Aspen P	2) Basal Area (Sq. Ft. /Ac) ole Zone	3) Frequency
Aspen ( <u>Populus</u> tremuloides)	91.67	29.15	67
Red Oak (Q. <u>rubra</u> )	14.69	33.35	33
Black Oak (Q. <u>velutina</u> )	34.78	12.45	33
White Oak (Q. <u>alba</u> )	24.00	19.18	33
Red Maple (Acer rubrum)	40.31	11.73	67
Hemlock ( <u>Tsuga</u> canadensis)	38.56	17.04	33

Table 13. Approximations of stand density, basal area, and frequency of species occurrence for Zone 3-4, Management Area #3.

1) Number of stems greater than 5 inches DBH (diameter 4.5 feet above ground).

2) Sum of cross sectional area of tree stems greater than 5 inches DBH

3) Percent of plots taken in the zone on which the species occurred.

Even though aspen and red maple are the more dominant species, this area will slowly succeed to an oak-hardwood association similar to that of the oak associations along the lower slopes of Bald Eagle Ridge.



3.6.5 <u>Management Area #4</u>. This area begins where the edge of the summer pool meets the abandoned section of US Route 220 and then goes southwest between the railroad track and the lake shore to the boundary of lands currently leased to the Pennsylvania Historical and Museum Commission (Plate 6). It is an alluvial site with the soils being in the Melvin-Dunning series. Most use problems are related to the high water tables. The area is almost entirely abandoned farmland on slopes of zero to three percent with the old fields succeeding to goldenrod (Solidago spp.), wild carrot (Daucus carota), various grasses (Gramineae spp.), and sedges (Carex spp.). The edges of the fields are rimmed with slippery elm, ash, box elder (Acer negundo) and white pine. Some elm and red osier dogwood invasion of the field is occurring.

The lake is very shallow in the vicinity of this area as indicated by the exposure of 160 acres of land when the water level is lowered to winter pool. The narrowness of the lake (300-400 feet), the brushy banks, and the residual brush that sticks out above the water make this a choice area for migrating waterfowl as well as wood ducks which are fledged here.

Woodcock are currently using this area along with songbirds, rabbits, and some deer. This area is quite open and lacks the vegetative diversity necessary for supporting any substantial amount of wildlife.

3.6.6 <u>Management Area #5</u>. This area is a 150 acre unit of land which encompasses the Curtin Iron Works along Bald Eagle Creek (Plate 6). The slope of the land is zero to three percent and the soils are of the Lindside, Melvin, and Dunning series. Most use problems of these alluvial soils are associated with high water tables.

The area is currently under stands of goldenrod with some elm and red osier dogwood invasion presently occurring. Any succession in this area is expected to be slow due to the high rodent populations currently common to the site.

Due to the relative openness of these fields wildlife activity is essentially limited to rabbit and songbird populations. If vegetative density and diversity were increased, the additional cover and food sources would increase wildlife activity and species diversity.

## 3.6.7 Management Area #6.

3.6.71 General. This parcel of land lies at the southwest end of the reservation (Plate 6). It encompasses the lands between the north edge of Bald Eagle Creek and the reservoir and the south side of US Route 220. Both the topography and soils of the area are quite variable. They consist of floodplain alluvium and gray shale residium. Most use problems are related to seasonally high water tables and moderate to slow permeable soils.

3.6.72 Zone 6-1. There are three floodplain areas that can be considered management zones (Plate 6). The first lies west of the Curtin bridge and is suited to the agricultural type management that was common to these lands prior to their being acquired by the Federal Government. Due to the openness of the area and lack of food and cover, this area has and will continue to have very little wildlife activity. Succession if left undisturbed will be to hawthorn, Virginia pine (Pinus virginiana), white pine, and slippery elm.

3.6.73 Zone 6-2. The second zone is an area approximately 150 acres in size that is currently in goldenrod-grass cover. It is bounded by a strip of trees along the Bald Eagle stream bank and steep wooded slopes on the other three sides. Slopes range between 5 to 10 percent with the soils somewhat poorly drained and occassionally flooded. In the past, they may have been used for pasture and hay crops but grain farming would require the construction of drainage ditches.

Deer activity on this area is relatively high as is that of nesting woodcock populations. There are a number of ground nesting species of songbirds but use by this group of animals is suppressed by the lack of shrubs. Raccoon activity is also high in this area due to the nearness of the creek.

Any succession is likely to be slow and consists of red osier and box elder associations with a white pine-mixed oak climax.

3.6.74 Zone 6-3. The third zone is the upland portion of the area generally defined by the change in slope occurring along the present woodlines. the wooded areas are supporting mixed hardwood stands consisting mainly of oak species. Their primary importance is to provide an edge effect with the abandoned farmlands. These farmlands are now in the earliest stages of succession with communities of ragweed (Ambrosia artemisifolia), foxtail (Alopcerus spp.), tickclover (Desmodium sp.) and a number of similar species dominating the area. If left to natural succession, goldenrod would gain dominance and then be invaded by hawthorne and Virginia pine.

This part of the area is currently most important for cottontail rabbit production. It is generally species poor from the standpoint of numbers of animals using the area. If natural succession is allowed to take place, it will become more productive in terms of wild animals. It may also be put into grain production and if correctly managed to leave winter cover will also be more productive.


3.6.8 Management Area #7. This area is approximately 3 1/2 miles long and averages about one-half mile in width (Plate 6). The topography is undulating in nature with slopes of three to eight percent except on some of the slopes directly above the lake edge which are between 20 and 30 percent. The soils are a gray shale residuum and are for the most part of the Brinkerton-Blairton-Tygart series.

There are two plant communities of significance. The first is the mixed-oak stand at the west end of the area and covering the steep slopes just above the lake. These stands are primarily mixed-oak with some Virginia pine. The mixed oak is climax and if these stands were cut, burned or otherwise disturbed one can expect that the oak will succeed oak. The Virginia pine borders are an expected transition type of vegetation between the old fields and the oak stands on this type of site.

The second major type of community is the goldenrod-grass type of vegetation that covers most of the area. Old fence rows in these fields contain slippery elm and gray dogwood while the wet areas contain red osier dogwood and red alder. Succession in these fields will be to hawthorne, Virginia pine, white pine, and slippery elm.

This area supports a fairly large variety of songbirds, woodcock and cottontail rabbits. It is also used by deer and a fair population of gray squirrels can be found in the oak stands. Brush areas are more productive than the open fields.

3.6.9 <u>Management Area #8</u>. This area extends from the edge of the reservoir to US Route 220 and east from Howard causeway to the dam site (Plate 6). This area is very similar to management area #7 in topography, soils, and vegetation. Due to the similar existing physical conditions as described in area 7, vegetative succession for the abandoned fields is the same. The hardwood stands consist mainly of oak species and white pine associations in the small sawtimber size class. These woodlots form an interesting patchwood effect with the abandoned fields along US Route 220 and will serve to separate recreational activity areas. The understory in most of the forested areas is heavy and presently would discourage intensive use. The area especially the open fields has a rich fauna of songbirds. Any significant disturbance will generally decrease the magnitude of this resource.

Suggested uses of areas 7 and 8 would include both intensive and extensive recreational activities. In addition to the wildlife and recreational values, these fields and woodlots also provide an interesting diversity of plant associations and several attractive vistas of the lake area along US Route 220. 3.6.10 <u>Management Area #9</u>. This area is approximately six miles long beginning at the dam site and running southwest parallel to US Route 220 (Plate 6). The slopes vary from 15 to 30 percent with most of the soils in the Berks-Weikert series. These soils are shallow and well drained, with slow to moderately rapid permeability. Most use problems are related to the depth to bedrock, slope, and occassional seasonally wet areas.

The lower slopes of this area are abandoned pasture lands. The vegetation consists of goldenrod, grass, and sedges that are being invaded by hawthorne, blackberry, slippery elm along old fence lines and small drainage branches, and to appearing in the upper most edges of these open fields. The mid-slope has a discontinuous belt of Virginia pine and white pine that grades into mixed-oak stands on the upper slope. The Virginia pine and white pine vary in size from saplings to mature stands while the mixed-oak stands are primarily small sawtimber. Along the uppermost slopes chestnut and white oak dominate the area and are essentially in a climax These climaxed stands have suffered rather extensive ice stage. damage with small areas (50-100 sq. ft.) left open. These openings appear to be a combined function of previous high grading in the stands and the ice damage common to the ridge. White pine is currently appearing in these areas and to some extent throughout the understory of the entire upper ridge. Some of these stands are quite dense and provide a substantial amount of wildlife cover.

Turkey, deer, squirrel, ruffed grouse, and an array of songbird species can be found using the wooded portion of the entire ridge. As succession continues in the old fields of the lower slopes, wildlife productivity will increase, especially cottontail rabbits and songbirds. Succession will take place primarily in the form of brush invasion of the open fields. Hawthorne-pine associations will be the primary invaders with slippery elm and blackberry moving out from old fence rows and drainage branches.

Climatically, this slope and ridge enjoys a southern exposure which will extend wildlife use to a greater extent throughout the winter months. Aesthetically, the area is pleasant with the open fields and forested areas providing diverse, interesting vistas to the lake area. Unfortunately, relocated US Route 220 negatively influences this area both visually and audibly and will detract from most recreational experiences on this ridge.

3.6.11 <u>Management Area #10</u>. The areas immediately downstream from the dam are characteristic of the old valley floor associations and were farmed prior to construction (Plate 6). The soils are nearly all level floodplain soils developed in alluvial materials from limestone uplands. They are moderately to slowly permeable and poorly drained. A substantial part of this area was utilized for borrow materials during construction of the dam (see Plate 7). Most vegetative cover is restricted to the lower slopes of Bald Eagle Ridge which abuts Bald Eagle Creek immediately below the outfall from the dam. The open areas which comprise the majority of this area are lightly vegetated with perennial grasses, sages, and herbs. Little vegetative succession is presently occurring.

Wildlife use is generally restricted to songbirds, cottontail rabbits, and some raccoon along the creek bank. If left undisturbed, these areas would be invaded by goldenrod-hawthorne associations with some elm and red osier dogwood expected. If this invasion were allowed to continue both wildlife species diversity and productivity could be expected to increase.

3.7 <u>Heritage features</u>. The prehistoric and historic occupation of Bald Eagle Valley has produced few areas unique or worthy of preservation; but its earlier importance in the development of the iron industry along with its rich reserve of natural resources has made it the most significant valley in Centre County.

3.7.1 <u>Archeological sites</u>. An archeological survey/l conducted by Jacob Gruber of Temple University identified two areas of substantial merit.

3.7.11 Bald Eagle's Nest was an early historic settlement situated across the creek from the present Milesburg; from here a major Indian path traversed the valley to the remaining major settlement, Great Island. This path most likely crossed or came close to present project lands.

3.7.12 Great Island preceeded Bald Eagle's nest and seems to have been a prehistoric center of population and, apparently, the western-most extension of major Iroquoian settlement in the area. Great Island is located on the West Branch of the Susquehanna near the present Lock Haven.

Other than these two sites, situated at either end of the valley, there is little evidence of prehistoric settlements in Bald Eagle Valley itself. A speculation posed by Gruber attributes this absence to the insufficiency of non-glaciated, agricultural, clay soils necessary to sustain the large settled populations of the prehistoric periods.

71 Gruber, Jacob W. "An Archaeological Survey of Some Dam Areas In Berks, Carbon, Tioga, and Center Counties, Pennsylvania." 1965 Temple U., National Park Service Contract 14-10-0529-2737

Gruber, Jacob W. "An Archaeological Survey At Certain Reservoir Areas In Pennsylvania." 1966. Temple University, National Park Service Contracts 14-10-0529-2853 and 14-10-0529-2866. 3.7.2 Historic sites. Centre County was a wilderness inhabited only by Muncy Indians when William Penn took possession of his colony in 1681. In 1720 a war broke out between the Delawares and the Iroquois Nation. The conflict over vast tracts of hunting grounds in central Pennsylvania resulted in the Iroquois occupying the conquered area with the Muncy moving west. The Mingo tribe of the Shawnees, driven north by the Spanish, formed an alliance with the victorious Iroquois.

Colonial settlement came to Bald Eagle Valley in the late 1760's, but the area located near today's project lands was not to be settled until 1778. At that time, David DeLong arrived to settle in Howard Township, but left soon after leaving the township deserted until the next decade. Samuel Schenck later arrived to become the first permanent settler. The descendants of Schenck inhabit the valley today.

The principal historic site remaining in the project area is the Eagle Iron Works--Curtin Village complex.

3.7.21 Eagle Iron Works. In 1810 Roland Curtin and Miles Boggs formed a partnership for the purpose of constructing a forge on Bald Eagle Creek. Five years later Curtin bought out his partner. The site was near relatively high quality iron deposits, and there were dense forests to provide fuel, a supply of limestone for a flux, and water for power. Charcoal, bloom, bar, and rod iron were produced here. Two thousand tons of pig iron were produced yearly.

3.7.22 Curtin Village. Curtin Village is the former ironmaster's plantation which functioned for over 100 years under the auspices of the Curtin family. The village had its own sawmill, gristmill, store, railroad station, church, and school. Workers' houses, many of which still stand, are one-and-one-half or twostory frame dwellings. Curtin's mansion house, (c. 1830) located immediately adjacent to project lands, is a two-and-one-half-story Federal style building with stuccoed exterior stone walls. The Eagle Iron Works--Curtin Village is listed in the National Register of Historic Places. 3.7.23 <u>Bald Eagle--Spring Creek Navigation Canal</u>. Passing through the old Eagle-Iron Works is the remains of the Bald Eagle--Spring Creek Navigation Company canal. The canal, completed in 1847-8, provided a major means of transporting the products of the valley to Lock Haven and on to the West Branch of the Susquehanna. Locks 11 through 23 were located on present project lands. At present, locks 11, 13, 23 and 24 are standing and are rather well-preserved. Although the county's canal era lasted only 17 years, the canal played an important role in the settlement of the area and the subsequent exploitation of the valley's natural resources. Coordination will be established with the Commonwealth of Pennsylvania in order that a plan for preservation can be implemented if determined feasible.

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# 4.0 Factors Influencing and Constraining Resource Development and Management

4.1 General. Properly planned and administered, the completed Foster Joseph Sayers Reservoir can be expected to accomodate the anticipated heavy visitation and provide the high quality recreational opportunities sought by the general public. In the preparation of this Master Plan, the natural determinants have been weighed objectively against the cultural desirability or need for specific land uses. This section will provide an overview of the most significant constraints and develop their predicted effects on the environmental and recreational resources of the project.

#### 4.2 Topography, geology, and soils.

4.2.1 <u>Topography</u>. Topography is generally one of the most significant limiting factors in the development of project land. The typical ruggedness of Bald Eagle Ridge prohibits intensive development in most locations, restricting most development to the alluvial deltas and floodplains of the valley floor. The predominance of steep slopes on the project area is not presently a crucial problem due to availability of valley floor and lower slope sites. The situation may become more critical in the future as the demand for recreation increases.

4.2.2 <u>Geology</u>. The geology of the area imposes no unusual constraints on development, however, depth to bedrock and stony outcroppings will have some site specific limitations.

4.2.3 Soils. In general, the soils found in the Foster Joseph Sayers Dam do not exhibit characteristics which severely constrain facility development. The most predominant limiting factors would be moderate to slow permeability and seasonally high water tables, but in terms of vegetation management the soils are considerably more limiting. Specifically, talus materials, sandstone fragments, and drougthiness render many areas poorly suited to many vegetative species; however, these areas are generally suitable for some passive recreational activities and general wildlife management. In terms of intensive forest management, poor soils render the majority of project land unsuitable.

Although the alluvial soils characteristic of the valley floor are generally suitable for intensive recreational development, they will have to be closely monitored in respect to their ability to withstand intensive use. Trampling, which generally occurs on these sites, may cause soil compaction, resulting in increased runoff and accelerated erosion. Vegetative cover may also be affected because of the reduction of air and water holding capacity of the soil. Soil compaction on use sites is not now a major problem in the project area because of limited use to date. Subsequent revisions of this Master Plan should examine all use areas in order that potential compaction problems may be identified and dealt with.

4.3 Natural features. As indicated in Section 3.0. the natural amenities of the project are of a high quality and suitable for providing many years of recreational activity for potential clientele. The continued utilization of these resources can only be accomplished if (1) the carrying capacity of the project is objectively realized and use controlled accordingly and (2) if undesirable encroachment is controlled and its impact upon project resources minimized. Population, residential and industrial growth, is expected to continue throughout the valley and is likely to significantly affect the project area. Air and water pollution appear to be the most immediate threats to the project because of the inversion characteristics of Bald Eagle Valley and the project's watershed which drains an area containing 80 percent of Centre County's population. In order that the environmental quality and natural amenities of the project receive appropriate consideration, the Corps will participate in regional planning processes and maintain all coordination established with agencies during preparation of this Master Plan.

4.3.1 Project area exploitation. Project area exploitation began when settlers came into the valley. Other than clearing of forest for agriculture purposes, the principal exploitation which has occurred is logging. The most recent long term use of the resources has been the purchase of project lands by the Federal Government.

4.3.11 <u>Timber</u>. As a result of the long period of timber exploitation, the forest which now covers the project area is second growth or later and consists largely of average to low quality trees. Enough natural recovery of the forest has occurred to provide a pleasant scenic area for public enjoyment and wildlife management. Due to generally poor soils, the continued improvement of the forest resoruces will be slow and is not likely to reach substantial silvicultural value. Through a forest management program designed for implementation on project lands (Appendix B), comprehensive management, associated wildlife management, and stand improvement will be considered in order that the chief goal of sustaining a desirable forest environment for recreation use can be realized.

4.3.12 Quarrying. Quarrying activities on project lands have been generally restricted to an area just north of Bullit Run (Plate 7). Initially a large sandstone quarry (Quarry #1) was worked here; however, this quarry has been abandoned for many years and is now entirely revegetated by a mixed oak-pine community. Two other small shale quarries are located between the sandstone quarry and old US Route 220. Quarry #2 (Plate 7) has not been used for several years. Some preliminary restoration measures are scheduled for FY75 by the Pennsylvania Bureau of State Parks. Quarry #3 is being strip mined for shale materials on a limited basis by State Park and Corps personnel. Restoration plans will be developed by the Operations Division of the Corps of Engineers in conjunction with the Pennsylvania Bureau of State Parks. These plans will be oriented towards proposed future uses and aesthetic requirements. Until restoration plans have been completed, it is recommended that no further extraction of materials be permitted.

# 4.3.2 Potential degrading sites.

4.3.21 Borrow areas. Three major borrow areas were utilized during construction of the dam and embankment and are shown on Plate 7. The final grading of each of these areas was accomplished in a manner that is not visually disruptive to the visitor passing through it. Presently no reforestation of these areas has been accomplished. It is recommended that areas D and F be reforested and that area B be made available for agricultural leasing. If because of poor soil conditions, area B does not prove to be suitable for agriculture, then the area should also be reforested. Areas B and F because of their somewhat isolated locations might offer the potential for some types of wildlife forestry research concerning revegetation for wildlife production purposes. Presently the Cooperative Wildlife Research Unit at Pennsylvania State University is considering area F and surrounding lands for such a purpose. This Master Plan would concur that wildlife research is a suitable use for either of these areas.

Area D is located near an area currently programmed for intensive day-use activities. Presently the area is lightly covered with grasses and sages with moderate to severe erosion occurring. The Pennsylvania Bureau of State Parks and the Soil Conservation Service are cooperatively developing a management plan to control erosion and initiate revegetation. Pending review, immediate implementation of this plan or an acceptable alternative plan is recommended.

4.4 <u>Reservoir plan of operation</u>. The most serious constraint resulting from operation of the reservoir is the effect of water fluctuation on fish and wildlife populations. Drawdown in the fall and winter as described in Section 2.4 is disadvantageous to most riverbank mammals, waterfowl and to fisheries management in general.



Because of flood control and downstream water quality requirements, the seasonal drawdowns cannot be eliminated; however, a specific recommendation will be made in Section 9.4 concerning water fluctuation.

# 4.5 Adaptability of project structures for recreation.

4.5.1 <u>General</u>. The dam, spillway, and embankments are the major man-made features associated with operation of the reservoir. Neither the dam, spillway, or embankments serve any direct recreational function. Overlook facilities are provided at two locations on the project area (Plate 4). Each of these areas affords interesting vistas of the lake.

4.5.2 Howard Protective Works. The Howard Protective Works is an impervious embankment 6,700 feet long with a top elevation of 667 feet. The crown is 10 feet in width. It is recommended that the crown be surfaced with crushed stone and improved in accordance with EM 1110-2-301. These improvements would facilitate the use of the levee as a recreational walkway principally for the citizenry of Howard. The walkway would link two recreational areas currently leased by Howard (Plate 16), thus becoming an important component of the Howard Community Parks system.

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5.1 General. The prediction of public visitation is a difficult and complicated process. The relationships between supply and demand are often complicated because of the necessity of determining empirical conclusions utilized in the planning process. Using even the most sophisticated techniques available, all projections over time become less and less reliable due to changing social and economic factors. Realizing these constraints, visitation projections for this Master Plan were developed based on general perceptions of observed recreational activities within the project's area of influence. While these conclusions leave much to be desired in terms of predictable accuracy, they can be used as general projections for continuing planning purposes.

#### 5.2 Market area characteristics.

5.2.1 General. Foster Joseph Sayers Lake is one of the largest lakes in Central Pennsylvania. With its large surface acreage and potential for the provision of many diverse outdoor recreation activities, the project will have a wide area of influence for outdoor recreational activities. The political division used throughout this examination was the county, primarily because of the great amount of demographic data available versus what is normally available for lesser civil divisions, such as townships. For the purpose of this examination, counties included for analysis included only those with 50 percent or more of the population within the 50 mile radius. The majority of day-use (80 percent) is anticipated to come from two visitation market areas: primary and secondary.

5.2.2 Primary visitation market area. The primary visitation market area (Plate 8) essentially encompasses Centre and Clinton counties and approximates a one-half to one hour drive. Predominantly, use from this zone (roughly equivalent to 0-25 air miles) will be dayuse oriented and will be rather intensive in nature. Composition of groups will be quite diversified and range from individual and small groups to large formally organized school and college classes. Principal acitvities which recreationists from this zone will seek include picnicking, hiking, hunting, fishing, boating, nature study, and sightseeing.

5.2.3 Secondary visitation market area. The secondary visitation market area (roughly equivalent to 25-50 air miles) is generally within a two hour drive and encompasses all or portions of 18 Pennsylvania counties (Plate 8). Recreation use from this zone will be primarily wateroriented with considerable less participation in land extensive activities such as hunting, hiking, nature study, picnicking and sightseeing.



# 5.2.4 Demographic profile.

5.2.41 <u>General</u>. The patterns of recreation preferences and frequency are as varied as the characteristics of the market area's population. Thus, it is helpful to determine the demographic characteristics of a market area before any generalizations can be made about how the residents of that area will recreate. As evidenced by the relative absence of large towns or urban centers (Table 14), the principal portions of the market area are rural. The only major, urbanized areas within the dayuse zone are State College, Lock Haven, and Bellefonte.

5.2.42 Observations. In order to give a general indication of the way residents of the visitation market area will participate in outdoor recreation, several demographic characteristics were examined. These include population and projected population growth, age distribution, education, income and occupation,

5.2.43 Population and population growth. Table 15 indicates that the visitation market area is generally rural with a low population density when compared to state wide figures. Urban communities in this zone are relatively small with several areas showing a loss between 1960 and 1970. Pennsylvania State University at State College has had a localized effect on Centre County's demographic characteristics; however, the affect of the student population on use of the project are expected to be minimal due to the time of year when they are in residence. During the last ten years population growth has been considerable in the primary zone as indicated by Table 15. However, if the student populations which accounted for 25 percent of Centre County's 1970 population were adjusted to reflect only year-around residents, population growth would have been significantly below the national The secondary zone also showed a very small increase trend. from 1960 to 1970 suggesting that the entire visitation market area grew slowly which appears to be in accord with the national trend of migration to the larger, more industrialized urban areas.

5.2.44 Population projections. Table 16 indicates estimates of population growth in the project's area of influence. As reflected by Table 16, projections suggest that the trend of slow growth is expected to change and that population growth in the project's area of influence will approximate the State trend. There are two reasons which may significantly contribute to the reversal of this trend: (1) the continuing influence of Pennsylvania State University, and (2) the improved access into the area created by Interstate 80 and US Route 220. Any future growth will be greatly dependent upon the continued development of improved transportation routes, industrial development and the ability of the region to successfully retain and attract young persons.

# TABLE 14

# TRENDS IN POPULATION SIZE FOR<br/>SELECTED COMMUNITIES WITHIN50 MILE RADIUS1960 AND 1970

Community	Popu: 1960	lation 1970	Percent	Airline mileage
	1700	17/0	<u>onange</u>	
PRIMARY VISITATION MARKET	r AREA			
Lock Haven Bellefonte Renovo Jersey Shore State College	11,748 6,088 3,316 5,613 22,409	11,427 6,828 2,620 5,322 33,778	-2.7 12.1 -21.0 -5.2 50.7	10 13 20 21 22
SECONDARY VISITATION MARK	KET AREA			
Milton	7,972	7,723	-3.1	30
Philipsburg	3,872	3,700	-4.4	33
Williamsport	41,967	37,918	-9.6	34
South Williamsport	6,972	7,153	2.6	34
Montoursville	5,211	5,985	14.9	38
Lewisburg	5,523	6,376	15.4	38
Tyrone	7,792	7,072	-9.2	41
Selinsgrove	3,948	5,116	29.6	42
Clearfield	9,270	8,176	-11.8	43
Northumberland	4,156	4,102	-1.3	43
Huntingdon	7,234	6,987	-3.4	44
Sunbury	13,687	13,025	-4.8	45
Emporium	3,397	3,074	-9.5	46
Mount Union	4,091	3,662	-10.5	48

Source: 1970 Census, U.S. Department of Commerce

# TABLE 15 TRENDS IN POPULATION SIZE FOR THE PRIMARY AND SECONDARY VISITATION MARKET AREAS, 1960-1970

	I	Population	1970	Percent	Percent of Change					
	1960	1970	Density	Urban	Urban	Rural	Total			
United States	179,325,647	203,211,926	-	-		-	+13.3			
Pennsylvania	11,319,366	11,793,909	262.3	71.5	4.1	4.5	4.2			
Primary Zone	116,199	136,988	65.5	42.2	18.95	9.2	17.9			
Secondary Zone	376,316	382,586	66.6	30.6	6.05	3.2	1.7			
Area of Influence	492,515	519,574	66.05	36.4	12.5	6.2	5.5			
(Primary &										
Secondary)		-	•							

Source: 1970 Census, U.S. Department of Commerce

Table 16. PROJECTION OF POPULATION FOR THE PRIMARY AND SECONDARY VISITATION MARKET AREAS, 1975-1990.

Pennsylvania	<u>1975</u> 12,001,090	<u>1980</u> 12,319,165	<u>1985</u> 12,822,389	<u>1990</u> 13,385,204	Percent Change <u>1975-1990</u> +11.5
Primary Zone	142,013	154,813	155,675	167,498	+17.9
Secondary Zone	391,855	396,499	409,668	426,516	+ 8.8
Area of Influence (Primary & Secondary)	533,868	551,312	565,363	594,014	+11.2

Source: Pennsylvania Projection Series Summary, Office of State Planning and Development, 1973.

The localized effect of the Pennsylvania State University on population growth is expected to continue, but gradually decrease in importance. The most significant impact socially or economically on the project will be greatly determined by subdivision now occurring at Milesburg and along US Route 220.

5.2.45 Age distribution. Of all social and economic factors, the most significant influence on whether one engages in a recreational activity is age; the older the individual, the fewer activities he participates in. Based on the data in Table 17, one might expect a significantly larger demand for recreation because of the relatively low median age for the visitation market area. However, this is not anticipated because of the large student population represented which has only a small number in attendance during the summer recreational season.

Table 17. Age distribution for the primary and secondary visitation market areas.

	<u>Under 18</u>	Over 65	Median Ag		
Pennsylvania	32.6%	10.8%	30.7		
Primary Zone	30.4%	5.15%	26.3		
Secondary Zone	33.6%	10.5%	29.3		
Total Visitation Market Area	32.0%	7.8%	27.8		

Source: 1970 Census, Department of Commerce

The age composition of the region has been affected to a limited extent by the outmigration of young individuals to the larger urban areas. This trend has resulted from the lack of professional level jobs and the unavailability of new housing. Whether this outmigration will be halted by new job opportunities and housing is not clear, but its ultimate effect upon the median age and consequently use of the project may ultimately reduce the total number of project visitors.

5.2.46 Economic characteristics. The economic history of the visitation market area can be divided into three major phases: (1) primary resource dependency, 1800-1890; (2) loss of competitiveness, exhaustion of resources and realignment of economic activities, 1890-1940, and (3) development of industries and service activities, 1940 to present. Presently, this region can be described as having a small economic base that is not undergoing expansion. Government workers have increased noticeably, reflecting the growth of Pennsylvania State University and to some extent that of Lock Haven State College in Clinton County. Wholesale and retail trade employment and service employment have risen. On the other hand, manufacturing has suffered along with declining agricultural activities.

5.2.47 Educational level. The educational level of Centre and Clinton County residents compares favorably with overall state averages (Table 18). Centre County showed an especially high number of high school and college graduates, but this can be attributed almost exclusively to the University. Even if the effect of the University was disregarded, the median number of years completed in both Centre and Clinton Counties would approximate state averages.

5.2.48 <u>Occupations</u>. Labor force composition for Centre and Clinton Counties is reflected in Table 19, and indicates the relative importance of Pennsylvania State University on the proportion of white collar and service workers in Centre County, and thus the region.

5.2.49 Income. Median income levels for Centre and Clinton Counties fall significantly below the overall state median (Table 20). The greatest majority of family and individual incomes (46.3 percent) fall between \$4,000 and \$9,999 (Table 20), as opposed to the overall State incomes where 47 percent of the families and individuals had incomes \$10,000 and over.

5.2.5 Public use implications. Although the market-area population characteristics identified above were not specifically utilized in the determination of expected visitation to the Foster Joseph Sayers Dam, the implication of these observations were used to temper use estimations and evaluate prior studies by the Bureau of Outdoor Recreation (BOR).1/ If Table 14 is examined in conjunction with BOR information concerning participation rates in outdoor recreation, the following can be noted. Participation in outdoor recreation increases with the degree of urbanization. Thus, the relatively close urbanized populations of State college, Lock Haven, and Bellefonte, can be expected to utilize the project at a greater rate than the more rural residents of the remainder of the market area. BOR has also found that age has the greatest influence on participation. It can be seen in Table 17 that the market area's population, disregarding the university's effect, approximates the state median and consequently, use of the project by the average resident will closely correlate with state averages. BOR has also established that education, income and occupation

I/ Mueller, Eva, and Gerald Garin, ORRRC Study Report 20, Participation in Outdoor Recreation: Factors Affecting Demand Among Adults. 1962. Washington, D. C.

		· ·	
	Centre County	Clinton County	Pennsylvania
None	0.5%	0.45%	1.4%
Elementary (8 years completed)	13.4%	12.6%	14.7%
High School Graduate	66.15%	53 <b>. 0</b> %	34.0%
College (4 years or more)	20.3%	7.1%	8.7%
Median Number of Years Completed	12.5	12.1	12.0

# Table 18Percent of Population Completing Elementary,<br/>High School, and College

÷4.,

12

Source: 1970 Census, U. S. Department of Commerce

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#### TABLE 19

# Labor Force Composition Pennsylvania, Centre County and Three Surrounding Counties

	WHITE COLLAR	BLUE COLLAR	FARM	SERVICE
Pennsylvania	27.8	58.7	1.5	12.0
CENTRE COUNTY	36.2	43.9	2.8	17.1
Clearfield County	22.6	64.9	1.5	11.0
Clinton County	24.6	62.1	2.0	11.3
Lycoming County	25.0	62.4	1.8	10.8

WHITE COLLAR -- Professional technical and kindred workers Managers and administrators (except farm) Sales workers Clerical and kindred workers

BLUE COLLAR -- Craftsmen and kindred workers Operatives Laborers (except farm)

FARM -- Farmers, farm managers, farm laborers and farm foremen

SERVICE -- Service and private household workers

Source: <u>Centre County, Pennsylvania Population Analysis with Selected</u> <u>Economic Characteristics</u>, Centre County Planning Commission, Bellefonte, Pennsylvania

# Family and Individual Incomes

Clinton County Pennsylvania Centre County Percent Number Percent Number Income Levels Number Percent 5,665 1,411 14.0 362,804 12.0 000 -- \$3,999 32.7 6,860 512,877 17.0 \$4,000 -- \$6,999 39.6 2,367 24.0 725,772 \$7,000 -- \$9,999 2,893 16.7 3,124 32.0 24.0 1,400,677 47.0 1,906 11.0 2,937 30.0 \$10,000 and over 9,839 17,324 3,002,130 Median Income -- 1969 Median Income - 1969 Median Income -- 1969 \$8,905 \$7,961 \$9,558

Centre County, Clinton County, and Pennsylvania, 1970

Source: 1970 Census, U.S. Department of Commerce

5-10

TABLE 20

are class related factors which show a strong relationship with outdoor activity, the higher educated being greater participants. Those of minimal education and lower incomes tend to be the much older people who participate very little in outdoor activities. Based on the past ORRRC study report's findings, income exerts a significant influence on participation in outdoor recreation. After allowance is made for the influence of other chartacteristics, participation still rises with income from the lowest to the middle income groups, and then declines slightly. Activities such as driving, hiking, picnicking, and nature study, which entail minimal expense and time, increase in frequency with income, whereas hunting and to some extent fishing, which are likely to involve more expense, equipment, and time, are not income related. While all of the above observations lead to the general conclusion that the market area residents of the project will tend to recreate at a rate comparable to state averages, they do not cast any light, other than inferentially, on whether or not residents will choose to visit the The number of competing recreation areas must first project. be determined before such conclusions can be made.

# 5.2.6 Competing recreation areas--observations.

5.2.61 General. The Foster Joseph Sayers project is located within the North Central High Mountain Area (NCHMA) (Plate 9). The boundaries of this area are generally defined by Interstate 80 on the south, US 219 on the west, US 6 on the north and US 15 on the east. The total area is about 2.5 million acres. Approximately 1.1 million acres of this total is State Forest land. Other thousands of acres are owned by the Pennsylvania Game Commission.

Because much of this region remains in a natural, unspoiled condition and is in public ownership in the form of State Forest lands, the 1970 Pennsylvania State Comprehensive Outdoor Recreation Plan (SCORP) recommended that large tracts of this area be designated "State Primative Areas" and the wilderness aspect be maintained. A further recommendation suggested that recreation sites and complexes on the periphery of the NCHMA be developed for intensive day-use and overnight recreation. These "buffer areas" would then absorb demand for intensive types of recreation generated by the growing populations. The Foster Joseph Sayers project was specifically cited by the SCORP as one of these potential "buffer areas".

5.2.62 <u>Recreation impoundments</u>. While the project is essentially surrounded with state parks oriented to naturalresource, land-extensive programs, the Foster Joseph Sayers Lake is unique in that it is the only major recreation impoundment in the immediate area with a surface acreage suitable for intensive motorboating activities. Several other Corps of Engineers projects are located in central Pennsylvania, (Table 21), but due to their distance from the project area or in the case of Alvin R. Bush, small surface acreage, their effect on Sayers is expected to be minimal.

Table 21. Corps of Engineers Reservoirs, Central Pennsylvania.

Na	me	Water Area	Air Mileage From Site			
1.	Raystown Lake	8,300 acres	45			
2.	Curwensville Lake	790 acres	45			
3.	Alvin R. Bush Lake	160 acres	27			
4.	Tioga-Hammond Lakes (Under construction)	1,210 acres	63			
5.	Cowanesque Lake	410 acres	80			

Several other small recreation impoundments are located within the project's primary visitation zone, but due to their size, these impoundments are oriented to swimming, fishing, and some low horsepower boating; consequently, no significant effect on project visitation is expected.

A 1972 open space and recreation survey conducted by the Centre County Planning Commission inventoried all types of recreation and open space complexes. These complexes (Plate 10) serve as a good indication of the types and quantities of available recreation opportunities within the immediate vicinity of the project. Major recreational user needs also indicated by the study were (1) the expansion of opportunities for all types of trail activities, coordinated with the maintenance and development of open space corridors which are linked to adjacent regional and state trail systems; (2) facilities for specialized individual and group sports of the day-use category (e.g. target shooting, flying, turf games, team turf sport areas, and juvenile low organized games and play equipment); (3) facilities for outdoor related winter acitivites such as downhill skiing, snowmobiling, ice boating, and crosscountry skiing and snowshoeing, if interest continues to grow; (4) additional day-use and overnight camping facilities possibly coordinated with a regional trail system to provide a hostel system (lodging and shelter areas); (5) a continuation of programs to protect and propagate wildlife and fish life to insure their availabity to the

public for hunting and fishing activities; (6) preservation of unique natural or ecological areas; and (7) provision of a cultural center coordinating the numerous cultural, educational, and creativeaesthetic activities.

#### 5.3 Summary, public visitation.

5.3.1 General. The Foster Joseph Sayers Lake is located in a region rich with many natural resource oriented lands. State parks, forest and game lands along with several Corps of Engineers projects combine to make this one of the most attractive areas in the state in terms of providing outdoor recreation opportunities.

5.3.2 Principal benefits. Within the area of influence of the project, social and economic characteristics indicate that continuing increasing demand for resource based activities can be expected. If, in fact, the establishment of the NCHMA is realized, the most significant and immediate pressure on the project will be in the form of intensive, day-use activities. The most immediate day-use pressures can be expected from the State College, Bellefonte, and Lock Haven population centers. This demand will be principally oriented towards boating, fishing, picnicking, hunting and the development of camping and trail activities.

5.3.3 Secondary Benefits. The project will also serve many secondary, but still important, functions such as the preservation of open space in Centre County and the opportunities for fish and wildlife propagation programs benefiting surrounding as well as immediate project lands.

#### 5.4 Visitation projections.

5.4.1 General. In 1963, BOR studied the surrounding area and the project plan, and furnished recommendations for recreational development and an estimate of recreational use. The Bureau reported that, with adequate development, the project should receive an annual attendance of 380,000 persons within three years of completion, with an ultimate annual visitation of 650,000 within twentyfive years. Findings and conclusions of the report are included in Appendix A, DM No. 3A, Preliminary Master Plan for Blanchard Reservoir (Foster Joseph Sayers Dam), September 1963. Design of recreation facilities was based upon these estimates. Since the submission of BOR's report no major, unexpected social or economic deviations have occurred, therefore, this Master Plan recommends that use-estimation figures generatd by BOR's study should be used as a continuing basis for project planning. 5.4.2 Applicability of ER 1120-2-403. ER 1120-2-403 was not utilized to recalculate attendance for the following reasons:

1. Based on a comprehensive examination of social and economic factors affecting the project area (Section 5.2), no major changes were noted that would significantly affect original estimates by BOR.

2. A careful review of Technical Report No. 2, Estimating Initial Reservoir Recreation Use, failed to disclose any project which could be considered representative of Foster Joseph Sayers, requiring any comparison to be based on such extensive subjective judgement and adjustments as to render the method unsatisfactory.

#### 5.4.3 Recreation attendance.

5.4.31 General. Although initial and ultimate predictions were developed by the 1963 BOR study, no prediction was made on the type or increments of demand for specific outdoor recreation. In order that the adequacy of planned developments by the managing agencies be evaluated, this Master Plan utilized the initial and ultimate visitation predictions to develop in greater detail specific design loads for required facilities.

5.4.32 Visitation curve. In order to estimate the increments of future recreation, a visitation curve was empirically selected to approximate future demand 1/ (Figure 2). Expected increments of visitation are presented in Table 22.

Table 22. Expected Increments of Visitation, Foster Joseph Sayers

Year	Projected Annual Attendance (AV)
1975	350,000
1980	503,750
1990	617,500
2000	645,775

I/ Duck, Lester G., and Beard, Paul F., The Deviation of Average Annual Recreation Benefits Costs and Alternative Costs in Multiple Purpose Project Analysis Including Future Recreation Increments: Survey Scope Investigations, Technical Paper No. 5, U.S. Army Engineer Division, Southwestern and U.S. Army Engineer Division, Ohio River, June 1969. 5.5 Design load. A National Park Service method of calculating design load was modified for calculating a design load for the initial and subsequent increments of visitation. Expressed mathematically, the design load equation is:

$$DL(od) = \frac{80\% \times AV \times 33\%}{14}$$

DL(od) = One Day Design Load

- 80% = Percent of annual visitation that can be expected to use facilities during the normal recreation season
- AV = Projected annual attendance
- 14 = The number of weeks during the normal recreation season
- 33% = Percent of weekly visitation expected on a normal summer Sunday

One day design loads for 1975, 1980, 1990 and 2000 are listed in Table 23.



TANTO POL TANTIC ODC LACITICO DEDISIL DOGODI LODICI DOGODI DEVEL	Table	23.	Public	Use	Facilities	Design	Loads.	Foster	Joseph	Savers
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	<u>1975</u>	1980	1990	2000
Annual Visitation	350 <b>,</b> 000	503,750	617,500	645 <b>,</b> 775
One Day Design Load (DL(od)) AV x 80% x 33% 14	6,600	9,499	11,644	12,177
Swimming Instant Design Load (IDL) <u>DL(od) x 34%</u> <u>3</u>	748	1,077	1,320	1,380
Parking (IDL/4)	187	269	330	345
Picnicking IDL = $\frac{DL(od) \times 47\%}{3}$	1,551	2,232	2,736	2,862
Tables (IDL/5.5)	282	406	497	520
Parking (Tables x 1.3 Cars 30%*	257	369	452	473
Camping IDL = <u>DL(od) x 11%</u>	726	1,045	1,281	1,339
IDL/4	182	261	320	335
Parking Bestrooms				
Boating (IDL/3)	220	316	388	406
Hunting IDL = $\frac{DL(od) \times 3\%}{I}$	198	284	349	365
Fishing IDL = $\frac{DL(od) \times 5\%}{2}$	165	237	291	304

\* Thirty percent of the picnickers can be expected to be swimming at any one time. The required parking can, therefore, be reduced by 30 percent.

# Table 23. Public Use Facilities Design Loads (Continued)

	1975	1980	1990	2000
Hiking IDL = $\frac{DL(od) \times 15\%}{2}$	495	712	873	913
Boating IDL = $\frac{DL(od) \times 15\%}{1.5}$	660	949	1,164	1,218
Capacity** Unrestricted Restricted	220 630	220 630	220 630	220 630
Parking (1 car and trailer space/boat)	220	316	388	406

\*\* Boating capacity of Foster Joseph Sayers Lake Unrestricted horsepower (1100 acres) = 1 powerboat/5 acres of water Restricted horsepower (630 acres) = 1 powerboat/1 acre of water

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# 6.0 Coordination with Public and Private Bodies

6.1 General. This section itemizes all pertinent public and private agencies and individuals which were contacted in the formulation of the Master Plan. It identifies their relationship to Foster Joseph Sayers Dam and coordination with the Corps. Letters received from many of these agencies are contained in Exhibit A.

In order to determine (1) existing cooperative programs at Foster Joseph Sayers, (2) the desirability and feasibility of existing and/ or future agency involvement at Foster Joseph Sayers, and (3) other pertinent information related to the development of this Master Plan, a list of specific information requirements was completed and cross referenced to appropriate agencies and organizations. The matrix indicated in Table 24 is an index of existing and potential involvement by those agencies and organizations contacted.

The brief summary which follows further demonstrates general attitudes and existing, planned, or possible actions by selected agencies with which coordination efforts were established.

#### 6.2 Federal agencies.

#### 6.2.1 Department of Interior

6.2.11 <u>Bureau of Outdoor Recreation</u>. This agency assisted in the preparation of an evaluation of general outdoor recreation needs within the area of influence of the project and an evaluation of the ability of existing outdoor recreation facilities in the zone of influence to fulfill needs of the public. Recommendations and cost estimates for recreation were submitted in a report on 6 March 1963. Letters of transmittal and the report are included in Appendix A, DM No. 3A, Preliminary Master Plan, Foster Joseph Sayers Dam.

6.2.12 U.S. Fish and Wildlife Service. This agency prepared special reports on fishery and wildlife resources related to the Foster Joseph Sayers Dam project. These reports were submitted in August and September 1963 and are included in Appendices C and D respectively of DM No. 3A, Preliminary Master Plan, Foster Joseph Sayers Dam. During preparation of this Master Plan, this agency was recontacted in order that they have the opportunity to provide input in the development of the fish and wildlife sections. A letter of reply is contained in Exhibit A of this DM. TABLE 24. COORDINATION MASTER PLAN, FOSTER JOSEPH SAYERS

BLE 24. COORDINATION MA	ASTER	PLAN,	FOSTE	r Jos	SEPH SAYI	ERS			ня	ц.	++			versity	de de		ental		م	
	AGENCIES	Bureau of Outdoor Recreation	US Fish and Wildlife Service	National Park Service	Pennsylvania Depart- ment of Environmen- tal Resources (DER)	Bureau of State Parks	Pennsylvania Game Commission	Pennsylvania Fish Commission	Pennsylvania Historica and Museum Commissio	Pennsylvania Departmen of Transportation	Pennsylvania Departmen of Community Affairs	Pennsylvania Office of State Planning and Development	Pennsylvania Bureau of Forestry	Pennsylvania State Uni	Lock Haven State Colle	Centre County Planning Commission	Centre County Environm Board	Borough of Howard	State College Bird Clu	Penn Central Railroad
AREAS OF INVOLVEMENT Fish and Wildlife Management						×	×	×	×		1			×	х		×		х	
Forest Management						×	×							×	1		×			
Water Quality					×											×				
Recreation		×			×	×	×	×	×		×	×	×	×	×	×	×	×	×	
Fishery			×					X						×	×		X			
Local Archeology				×					X					×			· ·			
Local History				×					X				1	×		×				
Boating Regulations and Safety								X									: .			
Regional Planning				1						×	×	×				×				×
Fire Protection & Prevention						×														
Health Regulations					×	-														· ·

#### 6.3 State agencies (Commonwealth of Pennsylvania).

6.3.1 <u>Pennsylvania Department of Environmental Resources</u> (DER). Several Bureaus under the Department of Environmental Resources (DER) have either direct or indirect responsibilities for natural resources management, public health, air-water quality, and recreation.

6.3.11 Bureau of State Parks. Principally, the Bureau of State Parks has the most important direct responsibilities with the management of Bald Eagle State Park. The park is currently operated under lease DACW-31-1-72-605, (Exhibit B). This lease includes 4,170 acres of land and the 1,730 acre recreation lake. In lieu of a Master Plan for lands and waters currently under lease, the Corps of Engineers requested by letter dated 16 October 1973 that DER submit an interim management plan. A reply received 11 January 1974 from DER (Exhibit A), indicated that no extensive inventory of natural resource capabilities has been completed and that no Master Plan is currently programmed. The reply did indicate that specific area surveys have been accomplished by DER personnel in conjunction with resource management projects in the park area.

6.3.12 <u>Bureau of Forestry</u>. The Bureau of Forestry assists in all facets of forest land management and pest control. Also, cooperative agreements between the Bureau of State Parks and the Bureau of Forestry have been established for fire protection.

6.3.13 Bureau of Water Quality Management. The Bureau of Water Quality Management constantly searches out and eliminates sources of pollutants in the project's watershed through its enforcement responsibilities.

6.3.2 Pennsylvania State University. The University has and is expected to continue to utilize the project for field trips and research. Many departments assisted the Baltimore District in the preparation of this Master Plan through their provision of technical materials and data concerning the project area.

6.3.3 Lock Haven State College. Similar to Pennsylvania State University, Lock Haven State utilizes the project area for field trips and also supplied information for inclusion in this Master Plan.

6.3.4 <u>Pennsylvania Game Commission</u>. The Pennsylvania Game Commission currently manages 1,030 acres under lease DACW-31-3-72-66 for wildlife conservation and management and 3.7 acres under lease DACW-31-1-69-178 to provide a water supply for the Pennsylvania Game Commission's Tree and Shrub Nursery (Exhibit B). In lieu of a detailed wildlife management plan, the Corps of Engineers requested by letter dated 16 October 1973 that the Game Commission submit an interim management plan. This plan was provided by letter dated 16 January 1974 and is included in Exhibit A. The Game Commission also works in coordination with the Bureau of State Parks helping to determine areas of Bald Eagle State Park that are open to hunting, supplying nursery stock of game food species for planting on the park, and enforcing the State Game Laws on the entire Foster Joseph Sayers project area.

6.3.5 Pennsylvania Fish Commission. Coordination between the Corps of Engineers and the Fish Commission was undertaken to insure the proper management of fishery resources of the project. By letter of 1 February 1974 the Fish Commission submitted a management plan for the Foster Joseph Sayers Lake (Exhibit A). In addition to providing technical services, the Fish Commission carries out a substantial game fish stocking program and is responsible for enforcement of the Pennsylvania fish and boating laws.

6.3.6 Pennsylvania Historical and Museum Commission, Bureau of Museums. Currently the Bureau of Museums manages under lease DACW-31-1-70-271, 149.38 acres of land which essentially encompasses the Eagle Iron Works and Curtin Village (Exhibit B). A Master Plan for the development of this area is presently underway and is expected to be completed during the summer of 1974. Plans provide for the restoration of the Eagle Iron Works and Curtin Village to become exhibits in the total program of a historic village presentation. Preliminary plans also call for the Museum Commission to participate in cooperative efforts for songbird management and providing fishing access to Bald Eagle Creek.

6.4 Local agencies.

6.4.1 <u>Centre County Planning Commission</u>. The Centre County Planning Commission is a regional planning agency which provides planning assistance for the county and local jurisdictions. Principal responsibilities include supervision of land use and general development of the county. An additional function is to coordinate the plans and policies of other agencies in the best interest of comprehensive planning. As such, all future land-use actions at Foster Joseph Sayers Dam project should be brought to the attention of the Commission. The cooperative efforts of the Commission should also be sought specifically in the development of land use zoning related to the lands surrounding the project boundary. 6.4.2 Borough of Howard. The Borough of Howard currently manages 40.5 and 5 acres under leases DACW-31-1-72-635 and DACW-31-1-73-679, respectively (Exhibit B). Management plans for the two areas were submitted by letter, 13 November 1973 (Exhibit A). Initial recreation facilities (parking area and bathhouse) were provided by the Corps. Future development is contingent upon presently unavailable local capital funds. 7.1 General. The allocation of land use areas was based on the following criteria: (1) the opportunities inherent in the project lands, (2) the ease of public access, (3) the activity preferences of the visitation market area, (4) projected recreational requirements, (5) favorable relationships between specific land use areas, and (6) constraints of existing lease agreements with state agencies.

7.2 Definition of land use categories. In developing land use categories, the land use classification contained in ER 1120-2-400 was used as a guide. An explanation of land use categories applied in this Master Plan follows. They provide for a wide variety of activities and are highly appropriate to conditions at the Foster Joseph Sayers Dam project.

7.2.1 <u>Recreation land use</u>. Areas allocated for public recreational use encompass all highly developed sites and certain undeveloped areas which are not allocated to other uses. Recreation land uses are divided into three categories:

7.2.11 Intensive recreation use areas. These lands are generally suitable for intensive recreation activities. They are characterized by flat areas, well drained soils, and are mostly restricted to the valley floors.

7.2.12 Medium density recreation use areas. These lands are less suited for intensive development, although they may accommodate the same recreational activities. Their slopes are more varied and will usually have some additional physical use limitations such as seasonal wetness or stoniness.

7.2.13 Low density recreational use areas. Areas recommended for this use are largely undeveloped general access land which contain few recreational facilities. These areas generally have steep slopes, poor soil, and are only moderately well suited for forest or wildlife management.

7.2.2 Wildlife management and habitat areas. Project lands of significance to wildlife are recommended for this use and shall be only minimally disturbed or altered, if at all. While the primary purpose of this land will be for management of wildlife, such land will serve a secondary function of providing land-extensive, recreational activities (hiking, birdwatching, nature study). 7.2.3 <u>Nature study and interpretive areas</u>. There have been no nature study areas at Foster Joseph Sayers since its initial construction, in spite of the abundance of wildlife. Nevertheless, birdwatchers have been attracted to the area, especially following impoundment. This Master Plan will not propose zoning of any specific lands for this purpose; however, the development of nature study opportunities by the Bureau of State Parks and the Game Commission will be enthusiastically encouraged. The 150-acre site surrounding the Eagle Iron Works and Curtin Village (Plate 12), is recommended as an historical interpretive area and zoned accordingly.

7.2.4 Project operation areas. Lands allocated to provide for safe and efficient project operation for those authorized purposes other than recreation and fish and wildlife are generally limited to the sites and surrounding lands on which project operational structures are located.

#### 7.3 The land use plan. (Plates 11 and 12)

7.3.1 Intensive recreation use areas. This land use is allocated to approximately1,017 acres or 24.4 percent of lands available for recreation (Table 25). The majority of this acreage is currently managed by the Pennsylvania Bureau of State Parks. It is intended that these sites be intensively developed to maximize their land and water capacities and recreational potential. Lands included in this use category must accomodate a significantly higher density of recreationist than other project areas; thus, sites zoned for this must be physically capable of handling this use as well as easily accessible/to large numbers of lake visitors.

The convenient access provided by US Route 220 provides access to all lands on the northwest side of the lake. This as well as the availability of relatively flat alluvial lands on the valley floor and existing facilities, has dictated that the majority of all intensive density land be located northwest of the lake (Plate 11). Table 25. Land Use Categories, Foster Joseph Sayers.

Total Project Acreage*		7,574	(100%)
Summer Pool Acreage Restricted Unrestricted	630 1,100	1,730	(22.8%)
Recreational Land Acreage Intensive Medium Density Low Density	1,017 (24.4%) 1,069 (25.6%) 2,084 (49.9%)	4,170	(55.1%)
Wildlife Management		1,030	(13.6%)
Historical Interpretation		150	(2.0%)
<b>Project Operation</b>		494	(6.5%)

\*Precentages and totals are subject to rounding errors.

7.3.2 Medium density recreational use areas. This land use is allocated to approximately 1,069 project acres or 25.6% of the lands available for recreation (Table 25). Green's Run Recreation Area and land adjacent to the northwestern edge of US Route 220 comprise the majority of this acreage. All medium density sites are or will be accessible from US Route 220 and interior project roads. The old abandoned fields and mixed oakhardwood associations cover the majority of this acreage. Use problems include slope, erosion and seasonal wetness.

7.3.3 Low density recreation use areas. These lands encompass 2,084 acres or 49.9% of land available for recreation. Most of these areas are restricted to the slopes of Bald Eagle Ridge, and upper most slopes of the ridge northwest of the reservoir. These lands are almost exclusively forested pine-hardwood associations with the exception of several abandoned fields located on the southeastern edge of the reservoir above Howard causeway. All recreation facilities on these lands should be sparsely distributed so as to ensure maximum privacy in a natural setting for visitors who prefer passive recreational experiences. These areas will appeal to hikers, hunters, fishermen, and will provide opportunities for nature study and wildlife management. The primary distinction between "low density recreation use areas" as proposed herein and "lands zoned for wildlife management" is that:

1. General access will be encouraged through the provisions of numerous trail activities, and

2. Cultivation of agricultural crops for wildlife purposes will be permitted only where no conflict occurs with primary recreation purposes.

7.3.4 Wildlife management and habitat areas. The majority of all project acreage at Foster Joseph Sayers Reservoir supports a diversity of habitats for water fowl, upland game, bird and mammalian species (Section 3.0). In order that this valuable resource not only be assured, but developed, this Master Plan proposes the allocation of 1,030 acres or 13.6% of all project lands to wildlife management and habitat use (Plate 11). This is not to suggest that wildlife management and habitat development will be occurring only in these areas, or that only wildlife management will be occurring here; instead, multiple use development techniques will be emphasized on all project lands. However, lands zoned for wildlife management will be developed primarily for the purposes of maximizing and enhancing the wildlife amenities inherent to the site. Public access and use will be encouraged to the extent that it does not conflict with the aforementioned primary purposes.

The majority of these lands are located in the headwater areas of the land above Bullit Run's confluence with the lake. It is recommended that all land zoned for wildlife management and habitat use be managed under lease to the Pennsylvania Game Commission (refer to Fish and Wildlife Management, Section 9.0).

7.3.5 <u>Historical Interpretation Areas</u>. Oue hundred and fifty acres (2.0%) of the total project land will be utilized for historical interpretation. This tract essentially encompasses Curtin Village and Eagle Iron Works which will be restored/reconstructed by the Pennsylvania Historical and Museum Commission. The Curtin Village (Eagle Iron Works) is listed in the National Register of Historic Places. Planned development will be further discussed in Section 8.2.4.

7.3.6 Project operational lands. Only a small percentage (6.5%) of the total project land is utilized for project operational functions (Plate 11). These lands include approximately 494 acres and are generally reserved for a maintenance area and project safety purposes. Most project operational areas are not well suited to recreational use with the exception of the downstream area immediately below the outfall. This area is proposed for development of a downstream fishing access point.

Some project operational areas situated on the downstream side of the dam are moderately well suited to agriculture, wildlife or forest management uses. All project operational areas will serve a secondary function of providing "buffer areas" between operation structures and recreation areas.
7.4 Additional acquisition of land. Based on anticipated visitation and present project purposes, no additional land areas are recommended for acquisition. 8.1 General. The land use plan (Plate 12) allows for general public access to all project lands with the exception of dam, spillway, outlet works, and embankment. Presently, major leases have been granted to four agencies: (1) Pennsylvania Bureau of State Parks, (2) Pennsylvania Game Commission, (3) Pennsylvania Historical and Museum Commission, and (4) the Borough of Howard. Several small subleases have been granted to original owners for agricultural purposes (see Section 8.3.4).

### 8.2 Proposed recreational facilities.

8.2.1 <u>General</u>. Proposed recreational facilities development at Foster Joseph Sayers was detailed in DM No. 3A, Preliminary Master Plan. This Master Plan has reviewed all completed development and additional proposed development at Foster Joseph Sayers Reservoir in respect to the land use plan (Section 7.0) which established the resource capabilities of the project and developed a concept for zoning of project lands. The over-all development is envisioned as activity centers formed by the developed recreational sites, with the intensity of recreational use distributed from these points over many of the project lands.

An explanation of all development is presented in the following paragraphs.

## 8.2.2 Bald Eagle State Park.

8.2.21 Status. Presently under leases entailing 4,170 acres in fee and 1,730 acres for a recreation pool, all lands which were determined suitable for recreation by the land use plan are managed by the Commonwealth of Pennsylvania, Department of Environmental Resources, Bureau of State Parks.

8.2.22 Site location. The 5,900 acres leased to the Commonwealth are shown on Plate 12. It is anticipated that these areas will be the most intensively developed and heavily used areas on the project. The land areas include almost every topographic feature characteristic of the park: Bald Eagle Ridge, the abandoned fields and woodlots of the valley floor, and the slopes and small ridge to the northwest of the lake. From vantage points on Bald Eagle Ridge, a panorama of Bald Eagle Valley provides the most significant visual amenity of the project.

8.2.23 Existing conditions. The state park was open to the general public during the summer of 1971. At present, initial facilities provided by the Federal government are available for public use. In addition, the Bureau of State Parks expects completion of its Phase I development during the Fall of 1974. Phase I development includes:

1. Administration Building with access drive and 12 parking spaces and space for 2 cars with trailers.

2. Service Building (Park Maintenance Building with service drive and service court).

3. Marina Center Building with access drive, maintenance area, launch ramp and service fuel dock.

4. Boat Service Building with access drive, maintenance area, launch ramp and service fuel dock.

5. Floating docks with 412 berthing slips.

6. Marina parking for 324 cars and an auxiliary parking lot for 120 boats and trailers.

7. Six comfort stations with water and sewer connections.

8. Two comfort stations with chemical toilets.

9. Surfacing of existing stone roads and roadways through existing parking areas.

10. Walks, seeding and sewer and water connections to exisitng systems.

The primative camping area (35 sites) in the Bald Eagle Mountain Recreaton Area (Plate 12) is scheduled to be open during the summer of 1974. All other major facilities will be opened for the 1975 recreation season.

8.2.24 Existing Plans and Policies. DM No. 3B, Public Use and Access Facilities, and Supplement No. 1 to DM No. 3A, preliminary Report, Public Use and Access Facilities, presented fundamental concepts detailing the development of public use areas within the project.

The basic facilities provided initially by the Federal Government included sewerage trunk lines and treatment plant, a water supply distribution system with wells as a source of supply, roads, parking areas, boat launching ramps and docks. The State is presently constructing all secondary connections to both sewerage and water systems, picnic and marina facilities, and providing landscaping. A summary of both Federal and State expenditures is provided by Table 26. 8.2.25 Planned development. The 1974-75 Fiscal Year Budget Request for the Department of Environmental Resources contains as priority item #3 of 18 projects, "Construction of Beach Facilities": and will provide for beach and bathhouse facilities.

Through a series of site visits with the park superintendent, general development and policies were discussed in order that they might be presented in this Master Plan. A Master Plan for Bald Eagle State Park has not been completed.

Table 26. Recreational Development Cost and Obligations, FosterJoseph Sayers Dam.

Federal Cost (Construction)

Access Roads, Unit 1 Other	133,439 21,561
Waterwells Other	29,656 344
Sanitary Systems Other	1,703,402 1,265
Public Use and Access	1,982,668
Total	\$3, 872, 335
State Cost	
General Construction	\$1,045,210
Heating and Ventilation	21,479
Plumbing	158,000
Electrical	46,416
Total	\$1, 271, 105

Presently, Bald Eagle State Park has been divided into three management units: Bald Eagle Recreation Area, Greens Run Recreation Area, and Bald Eagle Mountain Recreation Areas (Plates 13, 14, and 15, respectively). Each of these areas as indicated by the land use plan, Section 7.0, has distinctly different resource characteristics which will support specific types of recreation use.

8.2.251 Bald Eagle Recreation Area. This area is located on the left bank one mile upstream from the dam and includes all but a small portion of lands zoned for intensive use (Plate 13). Medium density and low density lands are also included in this management unit and will provide the opportunity for a variety of programmed activities.

Present and future site plans call for development of this area to support intensive recreation activities. Basic boat launching ramps, a graded swimming beach, access and interior roads, parking areas, basic water and sewage facilities were provided by the Federal government. Future development and improvement will be accomplished by the State. Plate indicates location of the marina, rest room facilities and the state park administrative and maintenance buildings currently under construction by the State. This development is to include the provision of all basic facilities, such as fireplaces, trash receptacles, picnic tables, trails, signs and landscaping (See appendix B, Design Memorandum 3A).

Relocated Highway US Route 220 passes through this area and provides access via a park entrance road. A network of interior park roads provide circulation within the area.

8.2.252 Greens Run Recreation Area. This area lies upstream from the Howard causeway constucted for LR 14012 (Plate 14). These lands have been programmed for medium density use. Principal development will be to accommodate land extensive activities such as hiking, nature study, fishing and hunting.

Access to this area will be provided from an existing north-south section of old LR 14052, which is connected to US Route 220 by paved access roads. Presently, one fishing pier, two boat launching sites, a comfort station, and parking areas have been provided by the Federal government.

# 8.2.253 Bald Eagle Mountain Recreation Area.

(Plate 15). The mountain slope above the southeastern shoreline, between the dam and the Borough of Howard, is zoned for low density. While this area is probably the most interesting in terms of vegetative diversity and scenic amenities, the steep slopes and generally poor soils require that use be limited. Current development includes a 35-site primitive camp ground, comfort stations, and access roads. Clearing has been kept to a minimum and future development will be restricted in order that the natural amenities can be protected. Access is provided in part by an 18-foot road, surfaced with six inches of selecte materials surfacing.

At the junction of the camping area, the road narrows to 12-feet and serves as a one-way loop road system through the camping area. Access to the lake is provided by pathways leading to an underpass beneath the Pennsylvania Railroad.

Design data and details indicating roads and parking area, water supply and sanitary facilities, boating facilities, fishing pier, and beach development are provided by Design Memorandum No. 3B.

# 8.2.3 Pennsylvania Game Commission.

8.2.31 Status. Presently under leases entailing 1,033 acres, all lands which were zoned for wildlife management and habitat areas are managed by the Pennsylvania Game Commission.

8.2.32 <u>Site locations</u>. The 1,033 acres leased to the Game Commission are shown on Plate 12, and are located adjacent to the lake from Bullit Run to the upstream end of the project.

8.2.33 Existing conditions. These lands generally occur on the upper-most reaches of the summer pool and a portion of the lower slopes of Bald Eagle Ridge. As indicated by Section 3.0, flora and fauna diversity across the lands is high with substantial populations of game species currently using the area.

A detailed wildlife management plan is currently under preparation by the Game Commission. A preliminary plan indicates that four management areas will be developed in order to specifically address problems unique to these areas. These four areas and management proposals are discussed in Section 9.4, Fish and Wildlife Management.

# 8.2.4 Pennsylvania Historical and Museum Commission.

8.2.41 <u>Status</u>. Approximately 150 acres are leased to the Pennsylvania Historical and Museum Commission.

8.2.42 <u>Site location</u>. This tract is located in the upper reaches of the project area approximately three miles east of Milesburg adjacent to US Route 220 and Bald Eagle Creek on LR 14010.

8.2.43 Existing conditions. The 150 acres are adjacent to 10 additional acres encompassing the Roland Curtin Mansion which is owned by the Historical and Museum Commission. The total area (160 acres), lands which are currently owned by the Corps and the Historical and Museum Commission, is mostly bottom land and is bounded on the south by the railroad, on the east by private farm lands and on the north by portions of Bald Eagle Creek and US Route 220.

The development of the Eagle Iron Works and Curtin Village is currently under way with research, design, and retoration to be completed by the Historical and Museum Commission.

The historical and archeological research along with the restoration of the Roland Curtin Mansion has been completed. The following is a list of the existing buildings or site improvements in the museum area:

1. Roland Curtin Mansion--Existing Iron Master's home restored under a recent construction contract by the Historical and Museum Commission, at a cost of \$250,000. The mansion now awaits its furnishings and assignment of operating personnel to allow it to be opened as a part of the museum program.

2. Family House--Existing building presently occupied in tenancy by H. L. Curtin.

3. Two tenant houses of no historic value.

4. Workers village made up of nine existing houses and numerous outbuildings.

5. Company Store.

6. Foreman's House.

7. Remains of the deteriorated Grist Mill.

8. Remains of furnace and associated buildings.

9. Site and remaining foundations for Iron Works Forge.

10. Remains of the Canal and Lock System.

11. LR 14010 and the metal truss bridge over Bald Eagle Creek are to be closed to through traffic and used as an entrance to the site following the relocation of LR 14010.

8.2.44 Existing plans and policies. Engineering and design studies have been completed for the restoration/reconstruction of the forge and furnace. A contract will be awarded for construction of the facilities upon approval of construction monies. Preparation of a Master Plan is under way detailing development of the project area including utilities, construction

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of the canal and lock, parking, sewerage disposal and general husbandry of all lands leased and owned by the Historical and Museum Commission.

Staff requirements anticipated for operation of the site upon completion is estimated to be fifteen (15) persons. The facility will be primarily oriented towards day-use and open year around. Projected annual visitation is 250,000 visitors.

8.2.45 Total expenditures.

The total expenditures estimated for contracts follows.

Restoration of Curtin Mansion (Comple	\$250,000	
Design (In Progress)		
Master Plan	,	\$10,000
Restoration/Reconstruction Forge	& Furnace	\$55,000
Area Development		\$33,000
For Construction (No monies presently	available)	
Restoration/Reconstruction of Fur	nace	\$250 <b>,</b> 000
Restoration/Recostruction of Forg	ge	\$250 <b>,</b> 000
Area Development		\$300,000

# 8.2.5 Borough of Howard. (Plate 16)

8.2.51 Status. Two tracts are currently leased to the Borough of Howard  $\overline{of 40.5}$  acres and 5 acres. The Master Plan for the 40.5 acres was included as Exhibit B of Appendix C, Design Memorandum No. 3B, Public Use and Access Facilities. Although a Master Plan has not been approved for the five (5) acre tract, planned uses appear to be compatible with land use recommendations of Section 7.0.

8.2.52 Site locations. Each of these areas are indicated on Plate 16. The 40.5 acre area is located outside of the Howard Levee on the reservoir just south of the Borough. The five acres are located just inside the levee at the northern end. 8.2.53 Existing conditions. The Federal government provided a bathhouse and a comfort station with water and sewage connections for the 40.5 acre site. The Borough will provide all furnishings, plumbing fixtures, and required lighting for both leased areas.

Two access roads and parking areas are indicated on Plate 16 with the grading and drainage provided by the Federal government. Park roads, parking areas and certain pathways to accommodate maintenance vehicles have been graded and furnished with a subbase. Base course and surfacing will be placed by the Borough, except for one access road which was provided by the Federal government.

Maximum day use for the Borough's park was estimated by a consulting firm for the 1985 population of Howard. Predicted maximum day use populations are 1,210. Detailed development and management plans are included in Design Memorandum No. 3B.

A launching area and docks were constructed during the summer of 1973 by the Howard Boat Club. This area has been subleased to the club subject to their ability to maintain the area in a manner which provides no physical hazards and is visually compatible with surrounding project lands.

The five (5) acre site is to be used primarily as a little league/softball field and a picnic area. Picnic tables, fire places, and some small play equipment along with a comfort station are to be provided when funding become available.

8.2.6 Project operational lands.

8.2.61 Status. These lands are currently reserved principally for project safety and providing "buffer areas" as indicated in Section 7.3.5. The majority of these lands are not well suited to recreational use with the exception of the buffer strip above US Route 220 between the Boggs-Howard Township lines and Township Road T484 and an area below the outfall which would be suitable for a downstream fishing access point. This strip of approximately 12 acres above US Route 220 has been zoned for low density recreation because of its limited acreage. The provision of a downstream fishing access point will be dependent on a cooperative cost sharing agreement between the Corps and Pennsylvania Fish Commission.

8.2.62 <u>Site location</u>. Project operational lands are shown on Plate 12.

8.2.63 Existing conditions. The buffer strip above US Route 220 is currently in goldenrod, grass and sedge associations with scattered invasion of hawthorne and pine occurring from small mixed hardwood-pine stands and old fence rows. It is recommended that a visual buffer of red pine be established along this strip to screen the developing hillside (see Section 9.2.3).

Project lands immediately below the dam, spillway and embankment are a series of open fields with scattered mixed stands along old fence rows and stream banks. These lands are currently covered with goldenrod-grass-sage associations with the exception of one 16.63 acre tract No. 1613, which has been leased to the original owner for agricultural purposes. Songbird use of this area is relatively high.

8.3 Administration of leases.

8.3.1 General. State and local agencies who are presently leasing lands at the Foster Joseph Sayers Dam project are indicated in Exhibit B. These leases have been executed under the authority of Section 4 of the Act of Congress, approved 22 December 1944, as amended (16 U.S.C. 460d). Specific guidance is provided by ER 405-1-830, Section XIII.

8.3.2 Purpose and requirements of leases. The purpose of these existing leases is to encourage State and political subdivisions to assume responsibility for the administration and development of project lands for public park, recreation, and fish and wildlife purposes. The lease generally obligates the lease to administer and maintain the property in accordance with this Master Plan, the implementing general development plan and an annual management program. Specific agreements and requirements are to be mutually agreed upon between the lease and the District Engineer.

Presently, only the Borough of Howard has completed a Master Plan for development of its lands. It is expected that all agencies will complete a Master Plan detailing development and management of lands currently under their leases. Submission of these plans will be at the earliest feasible date.

8.3.3 ER 405-2-835. Under ER-405-2-835, Change 3, dated 30 August 1965, lands acquired for Civil Works project will be utilized and allocated under four priorities.

8.3.31 Priority One. Priority One includes all lands used or to be used for the development of public park and recreational areas and administered by the Corps of Engineers, or other Federal, State, or local governmental agencies; and lands used or to be used for commercial concessions. 8.3.32 Priority Two. Priority Two lands include all lands to be used by a nonprofit organization or agency for the purpose of rendering a public recreational-educational service of a charitable nature on a non-exclusive basis.

8.3.33 <u>Priority Three</u>. Priority Three lands include all lands to be used by nonprofit organizations or agencies which function in the public interest to some extent by providing public recreational opportunities normally provided under Priorities One and Two above.

8.3.34 Priority Four. Priority Four lands include all lands not needed for operational or higher priority use, but requiring investment for yacht club development for the protection and care of private boats on a noncommercial basis or other club use.

8.3.4 Outleasing for agricultural and grazing purposes. ER 405-2-835 also provides that any lands retained for project purposes, future recreation, or fish and wildlife uses may be leased on an interim basis for agricultural and and grazing purposes. Presently, the following tracts have been outleased for agricultural purposes to the former owners or tenants.

Tract No.	Acreage
427	0.96
817	16.00
1300	22.00
1308	0.13
1401	46.62
1402-1	65.96
1402-2	1.67
1403	2.50
1500-2	7.72
1505	14.34

Under existing regulations, the former owners or tenants are entitled to outlease tracts on a year-to-year basis until approval of the Master Plan. Following approval, each tract can be leased for one 5-year term; subject to the lease's compatibility with approved uses in the Master Plan and concurrence by the principal managing agency. After the initial 5-year term, the tract must be advertised on a competitive bid basis.

No outlease will be granted without concurrence of the principal managing agency on whose lands the specific tract is included.

# 8.3.5 Conclusions and recommendations.

1. All lands will continue to be managed under the existing leases (see Exhibit B) for Priority One uses. In some instances, it may become desirable to allocate some tracts to other priority uses. This will be investigated on a case by case basis and will require concurrence of the principal managing agency.

2. Project lands which will be considered for outleasing for agricultural purposes include all tracts within land management areas #6, #7, and #10 (see Plate 6). In addition, all tracts listed in Section 8.3.4, and which do not fall within management areas #6, #7, and #10, may be leased to the original owner for the initial 5-year term. However, these tracts will revert back to control of the principal managing agency following termination of the initial 5-year lease. Exceptions will be considered if significant benefits can be anticipated from continued leasing of these tracts. Determination of whether or not these tracts will be leased for an additional 5-year term will be mutually agreed upon by Operations Division, Baltimore District, Corps of Engineers, and the principal managing agency. 9.0 Operation and Maintenance of the Project

9.1 General. The existing operation concept and management policies set forth in this Master Plan will serve as the basis for all management activities. These management policies will be further refined and more specifically defined in the following appendices:

Appendix A -- Project Resource Management Plan,

Appendix B -- Forest Management Plan,

Appendix C -- Fire Protection Plan,

Appendix D -- Fish and Wildlife Management Plan,

Appendix E -- Project Safety Plan.

Appendix A has been prepared and is presented under this cover. Appendixes B through E, upon their completion, will become part of this Master Plan and will be presented under separate cover.

9.2 Forest management.

9.2.1 <u>General</u>. The presence of the forested areas in the region surrounding Foster Joseph Sayers project is visually evident from many points in the valley. While the forested areas are not generally of any significant commercial value, much of the area's scenic appeal lies in its forested slopes and scattered woodlots. Unless future development of the project recognizes the contributing importance of the woodlands occurring throughout the project, these resources could easily be destroyed.

9.2.2 Management and treatment programs. The Pennsylvania Bureau of Forestry provides guidance and technical assistance to all agencies currently managing lands at Foster Joseph Sayers Reservoir. These forests will be managed with multiple consideration for timber, watershed protection, wildlife, and recreation. The project woodlands will not be managed beyond the degree necessary to satisfy the needs of: (1) aesthetic enhancement, (2) recreational activities, and (3) fish and wildlife programs. Tree planting programs for the purpose of aesthetic and recreational enhancement have been undertaken by the park superintendent. Bald Eagle State Park, in cooperation with the Game Commission. Tree and shrub plantings and seeding programs should be continued throughout all project lands. Special emphasis should be given to the many abandoned farm lots common to the project area. Species which would provide aesthetic diversity from the common oak-pine associations and also provide substantial cover and food habitat for wildlife species include:



## Shrubs

Redbud (Cercis canadensis)

Crabapple (Malus spp.)

Autumn Olive (Elaeagnus umbellata)

Privit (Ligustrum vulgare)

Mugo Pine (Pinus mugo compacta)

Red Alder (Alnus rubra)

Flowering Dogwood (Cornus florida)

Gray Dogwood (Cornus racemosa)

Bittersweet (Celastrus scandens)

Trees

Black Cherry (Prunus serotina)

Common Apple (Malus sylvestris)

Sour Cherry (Prunus cerasus)

Red Pine (Pinus resinosa)

White Spruce (Picea glauca)

European Alder (Alnus glutenosa)

Lombardy Popular (Populus nigra, var. lombardy)

As a general rule, cutting or thinning of stands will not be permitted. Only in cases of public safety or in some instances wildlife management, will any cutting be permitted. In all cases during the interim period prior to completion of Appendix B, Forest Management Plan, the following guidelines shall be followed:

1. No cutting by any agency will be done without expressed written permission of Operations Division, U.S. Army Engineer District, Baltimore. 2. All herbicides, fungicides, insecticides and other pesticides used shall be in accordance with the recommendations of the Federal Committee on Pest Control as set forth to meet those standards required by the Federal Environmental Protection Agency. Other guidelines include ER 1130-2-332, 1 November 1971, Pest Control Program for Civil Works Projects, and will be coordinated with the State District Forester.

### 9.2.3 Detailed future investigations.

1. Present forest management practices by public agencies and the Corps will be evaluated and expanded to comprehensively meet the projects aesthetic/recreation appeal and/or improve wildlife habitat.

2. Succession in the old field communities will be evaluated in terms of which areas will be allowed to revert to mixed pinehardwood planatations and which fields should be maintained as open space.

3. Consideration will be given to the establishment of a 100-foot border of red pine to be planted along the northwestern side of US Route 220 from the dam to Bullit's Run. This will screen the developed hillsides from motorists and project visitors. Red pine is suggested because it is not damaged by deer and grows well on relatively dry sites.

4. As a matter of policy, the forest management plan should encourage and support the enactments of suitable zoning regulations to preserve forest cover on surrounding project lands.

### 9.3 Fire protection.

9.3.1 General. The incidence of forest fires in the northeast region of the United States is minimized by climatic and forestial characteristics. The predominance of deciduous species and the frequency of rain and high humidity levels tend to keep the forest moist and resistant to fire. The high moisture level also encourages bacterial action which minimizes accumulations of forest floor tinder. The result of these natural characteristics is to contain fires to brush fires in open fields. Because of the many abandoned fields common to the project, these areas may become a serious hazard during periods of minimal rainfall and high fire danger. The anticipated popularity of the project's recreation facilities further increases the likelihood of accidental forest and brush fire.

9.3.2 <u>Management programs</u>. Plans to prevent and/or control fires will be developed in Appendix C of this Master Plan. When completed, this plan will include, but not be limited to, the following types of information: 9.3.21. <u>Restricted Access</u>. A plan will be developed for restricting public access to high risk areas within the project when fire indexes exceed a predetermined danger level.

9.3.22. <u>Fire Trails</u>. A system of fire lanes should be established throughout the project. This fire lane system should be coordinated with existing and proposed trails on project lands. The fire trail system should also be coordinated with any similar system on adjacent lands.

9.3.23. Personnel. A schedule of responsible personnel representing all concerned agencies will be defined detailing their administrative functions during periods of high fire hazard and outlining their responsibility during project fires.

9.3.24. Fire Warning System. A forest fire warning system to alert project users to the current fire hazard rating will be developed. This system will identify the locations within the public use areas where warning signs and devices will be displayed.

9.3.25. <u>Coordination</u>. A cooperative agreement has been established between the Pennsylvania Bureau of State Parks and the Pennsylvania Bureau of Forestry to assure that equipment and personnel can be used if needed to fight fires on Bald Eagle State Park. This agreement should be extended to cover all project lands and facilities. Additional cooperative agreements will be negotiated between the Baltimore District Office, the Pennsylvania Bureau of Forestry, and local fire-fighting units to utilize local, fire-trained personnel and equipment within the project when necessary.

9.4 Fish and wildlife management.

9.4.1 <u>General</u>. The Pennsylvania Fish Commission and the Pennsylvania Game Commission are the agencies with principal responsibilities for fish and wildlife management at the project. Hunting and fishing will be regulated on all project lands and waters in accordance with State laws and special zone regulations (Plate 17).

9.4.2 Fish management. The following paragraphs present the initial fishery management plan, a review of what actually transpired and a revised management plan. The following information was provided by the Pennsylvania Fish Commission, Harrisburg, Pennsylvania. 9.4.21 Initial management plan. Initially, preliminary projections were quite optimistic that an exceptional warm water fishery could be developed in the Foster Joseph Sayers Lake. This optimism was based on the fisheries that had developed in other relatively fertile reservoirs (Shenango and Pymatuning, for example) in Pennsylvania.

Species expected to be of major consequence in Sayers were largemouth bass, northern pike, walleye, muskellunge and a variety of panfish, including black crappie and channel catfish.

9.4.211 Largemouth bass. Bald Eagle Creek, prior to impoundment, offered little habitat for largemouth bass, being much more suited to smallmouth bass. However, with the anticipated fertility and turbidity, in conjunction with other general environmental features, it was assumed that the creek when impounded would provide excellent habitat for largemouth bass. Resident smallmouth were expected to make a relatively minor contribution to the reservoir fishery. Heavy stockings of largemouth bass fry and/or fingerlings were scheduled until a population could be established; following establishment of a population of largemouth bass, stocking of this species was to cease and the fishery was to be dependent on natural recruitment. To enhance spawning opportunities, provide "edge conditions" and provide habitat for spawning of both species of bass, efforts were made to insure that a section of the old railroad bed would be retained in the upper pool.

9.4.212 Northern pike. It was anticipated that a northern pike population could be established through early heavy stockings of fry, followed by fingerling plants. Experience in other reservoirs had been that, if established as the lake is first flooded, northern pike wil exploit the new habitat to great advantage providing a spectacular short term fishery for the first four or five years after impoundment and then stablizing at a lower level of return to the angler. A schedule of maintenance stockings was developed, because even though some adequate spawning sites may exist along the periphery of the lake, dependence on natural spawning of northern pike was not deemed wise.

9.4.213 <u>Walleye</u>. The environment anticipated for Sayers, particularly in reference to the expected high fertility, was not consistent with classic concepts of walleye habitat. However, based on results in fertile situations such as Pymatuning, Sayers appeared to offer an excellent opportunity to establish a good walleye fishery. Walleye were to be maintained through periodic heavy stocking of fry and there was some hope for natural recruitment.



9.4.214 <u>Muskellunge</u>. Muskellunge have been established for some years in Bald Eagle Creek and had done quite well. It was anticipated that muskellunge would prosper in the fertile reservoir and provide an outstanding trophy fishery. Muskellunge were to be maintained through regularly scheduled stockings of fingerlings.

9.4.215 Panfish. With the exception of black crappie and possible redear sunfish and channel catfish, no stockings of panfish were planned. Resident fishes of Bald Eagle Creek included pumpkinseed sunfish, bluegill, and brown bullheads. These species are quite prolific and would be quite capable of establishing more than adequate populations. There was some concern that these species might overpopulate if good gamefish populations were not established quite early.

9.4.216 <u>Carp</u>. The very early establishment of good populations of piscivorous gamefish was considered imperative if any control at all was to be exerted over carp. The initial proliferation of carp in the new reservoir was viewed as a distinct possibility. This is precisely what happened in the Allegheny Reservoir in Warren and McKean Counties, Pennsylvania.

9.4.22 History of fish plants and monies expended. A record of fish planted in Sayers and the associated cost are presented in Tables 27 and 28 respectively.

#### 9.4.23 Current situation and revised management plan.

9.4.231 General. The fishery at Sayers has not developed as anticipated. The resident fish population is currently dominated by carp, brown bullheads, bluegills, and pumpkinseeds. This is hardly the high quality fishery the Pennsylvania Fish Commission's management stockings were intended to produce. One factor which is suspected as being important in the failure to establish good populations from the early stocking of gamefish was the unstable environment produced by erratic fluctuation of water levels at critical times after stocking. There is no doubt that losses downstream were high in the case of northern pike and muskellunge since significant populations of both developed below the dam.

Fishery management in Foster Joseph Sayers Lake is now faced with a much more difficult situation, creating a fishery through manipulation of an established population rather than establishing a population in a new environment. The following revision of the initial management plan reflects past efforts to correct what were perceived as problems as well as outlining future plans.

# TABLE 27

# RECORD OF FISH PLANTED, FOSTER J. SAYERS LAKE

		Fry	Finger	ling	Adul	Lt
Year	Species	Number	Number	Size	Number	Size
1969	Largemouth					
	Bass	173,000	<del>.</del> .	-	89	14"
	Northern Pike	144,500	-	-		-
	Walleye	650,000	-	-	-	-
1970	Muskellunge	50,000	_	_	-	-
	Northern Pike	50,000	-	-	_	-
	Rock Bass	_	300	1-10"	-	-
1971	Largemouth					
	Bass	173,000	25,000	2"	_	-
	Muskellunge	250,000	6,000	1"	-	-
	Northern Pike	173,000	550	4-14"	-	-
	Striped Bass	_	2,800	4-5"	-	-
	Walleye 2	2,325,000	_	-	-	-
	Black Crappie	-	5,150	1-5"	-	-
	Channel Catfish	1 <del>-</del>	20,000	2-4"	-	- '
	Brown Trout	-	50,000	3-5"	-	
	Rainbow Trout	-	3,600	3-5"	-	-
1972	Muskellunge	-	3,125	7-10"	-	_
	Walleye 4	,325,000	1,025	3-7"	-	-
	Black Crappie	-	10,000	1-2"	-	-
	Channel Catfish	1 <del>-</del>	8,650	3"	-	-
1973	Northern Pike	500,000	-	· _	1,200	15 <b>-</b> 17"
	Muskellunge Largemouth	_	3,000	6-9"	-	-
	Bass		3,650	4-8"		_
	Redear Sunfish		27,500	1-2"	-	-

Source: Pennsylvania Fish Commission

9-7

# TABLE 28

# SUMMARY OF MONIES EXPENDED FOR FISHERIES MANAGEMENT AND FISH STOCKING AND A FIVE YEAR PROPOSED BUDGET

# FOSTER JOSEPH SAYERS LAKE, CENTRE COUNTY

Past Expenditures

			-	· .	
Year	Stocking Costs	Cost of Fish*	Management Expense	Totals	- 11 - 12 - 12 - 12 - 12 - 12 - 12 - 12
1969	209	20,197	100	20,506	
1970	164	4,320	50	4,534	
1971	724	91,061	50	91.835	
1972	435	99,852	180	100.467	
1973	575	31,988	95	32,658	
TOTALS	\$2,107	\$247,418	\$475	\$250,000	
. ·				· · · · ·	
					1
		Estimated Future Expend	itures	· ·	
1974	500	98,610	3,500	102.610	29 1
1975	500	7,785	500	8.785	
1976	500	98,610	600	99,710	
1977	500	6,920	500	7,920	
1978	500	97,745	3,500	101,745	
TOTALS	\$2,500	\$309 <b>,</b> 670	\$8,600	\$320,770	

\* Fish costs based on current commercial values.

Source: Pennsylvania Fish Commission

# 9.4.232 <u>Current management plan, Foster Joseph</u> Sayers Lake, Centre County.

9.4.2321 Largemouth bass. Largemouth bass fingerlings will be stocked on an annual basis in 1974, 1975, and 1976. This continued stocking of largemouth bass fingerlings is not consistent with normal practice. The intent is to establish a continuum of age groups to increase probability of successful spawning each year. The extremely high population density of brown bullheads and sunfish is regarded as a potential inhibitory factor in successful bass spawning. As this population stabilizes at a lower level, as it surely must, a rather strong year class of naturally reproduced largemouth which should form the foundation of a self-sustaining fishery is expected. No stockings of largemouth bass will be scheduled after 1976 unless specifically recommended by the Pennsylvania Fish Commission's management biologists as a result of survey.

9.4.2322 Northern Pike: Northern pike stockings have been successful to the extent that the species is present in the reservoir and in Bald Eagle Creek below the reservoir. In an effort to establish northern pike rather large fish, up to 14" in length, were stocked in 1971. The remainder of the northern pike stockings have been predominantly fry. In 1974, 1976, and 1978, northern pike fingerlings will be stocked. If these stockings do not provide a reasonable fishery, then northern pike will be deleted from the management plan, and the only esocid emphasized for the Sayers fishery will be tiger muskellunge.

9.4.2323 Walleye: Walleye fry will be planted on an every-other-year basis at a rate determined by the fishery management section. Fry will definitely be stocked in 1974, 1976, and 1978. Further stockings will be contingent upon the fishery management section's evaluation of the success of this program. To date, no fishery for walleye has developed. There is no question earlier stockings survived as a number of walleyes were taken upstream of Sayers during stream surveys by consultants for a power company. There is reason for optimism that walleye will provide a good fishery in Sayers.

9.4.2324 <u>Muskellunge</u>: Pure strain muskellunge will not be stocked in the reservoir proper. The stream (Bald Eagle Creek) will continue to be managed for muskellunge, but the emphasis at Foster Joseph Sayers will be on the Tiger Muskellunge (Northern Pike x Muskellunge Hybrid). Tiger muskellunge fingerlings will be stocked on an annual basis in 1974, 1975, 1976, 1977, 1978. This will be at a rate recommended by the fishery management section, Pennsylvania Fish Commission. The rationale behind this annual stocking is to get a population of fast growing, piscivorous game fish established as soon as possible. The stocking of tiger muskellunge in Foster Joseph Sayers Reservoir will have a high priority. The tiger muskellunge may be the only esocid managed for, if northern pike do not perform satisfactorily.

9.4.2325 Panfish: Further stockings of panfish, except redear sunfish, will not be conducted unless specifically recommended by fishery management staff. The redear sunfish is being closely observed in Pennsylvania impoundments and stocking in Foster Joseph Sayers will be based on these observations and on availability of fingerlings. No further stocking of channel catfish is recommended, unless channel cats 9" or longer are available.

9.4.2326 <u>Carp.</u> There is no feasible solution for the problem of overpopulation of carp. Hopefully, as gamefish become more abundant, the carp population will decrease and stabilize to a somewhat reduced level. No specific action to eliminate carp is planned.

9.4.2327 <u>Herbicides</u>. The use of herbicides in the lake will be administered if and when it becomes necessary by the Pennsylvania Department of Environmental Resources. All proposed applications shall be reviewed by the (1) Pennsylvania Department of Environmental Resources, Bureau of State Parks, (2) Pennsylvania Fish Commission, and (3) Operations Division, U.S. Army Engineer District, Baltimore.

9.4.2328 <u>State boating laws and</u> fishing regulations. State boating laws and fishing regulations will be enforced by personnel of the Pennsylvania Fish Commission who have arrest and citation authority for such enforcement under State law.

9.4.2329 Zoning of water areas. In

order to provide for segregation of uses, i.e. motorboating and waterskiing versus sailing and fishing, the lake has been zoned for high intensity use from Howard causeway to the dam. The water areas from the causeway to the upper reaches of the lake have been limited to "no wake" operation to provide an acceptable environment for sailing and fishing. Enforcement of these regulations will be accomplished by the Pennsylvania Fish Commission. 9.4.233 Conclusions and recommendations. 1. Improved coordination between the Corps, the Department of Interior's Bureau of Sport Fisheries and Wildlife and the Pennsylvania Fish Commission will be enthusiastically sought.

2. Appendix D, the Fish and Wildlife Appendix, should carefully consider the feasibility of providing sub-impoundments or other physical structures to minimize the erratic water level fluctuation and increase spawning opportunities. This will be further discussed in conjunction with the development of waterfowl ponds, Section 9.4.34.

3. The downstream, streambank areas immediately below the outlet works of the dam are currently receiving a high amount of fishing pressure. Consideration will be given to providing parking and foot access to the area along with vault latrines. The estimated cost for development of the access point is \$55,000.00, and is shown in Table 29. The provision of this facility will require the application of the cost-sharing provisions of Public Law 89-72, and cooperation of the Pennsylvania Fish Commission will be encouraged.

Table 29. Estimated Cost for Downstream Fishing Access Point, Foster Joseph Sayers

Item	Units	Total
Roadway (14 ft. access)	150 feet	\$1,500
Parking	15 cars	\$7,000
Site Development	L. S.	\$10,000
Trail/Unimproved Service Access	1200 feet	\$9 <b>,000</b>
Picnic Units (Includes 4 tables/l grill)	2	\$1,600
Sealed Pit Toilets	2	\$20,000
Net		\$49,100
Contingencies (12% <u>+</u> )		5,900
Total		\$55 <b>,</b> 000

# 9.4.3 Wildlife management.

9.4.31 General. The Pennsylvania Game Commission currently leases 1,030 acres of project land for the purpose of wildlife management. Hunting is permitted on project lands during appropriate seasons as indicated by Plate 17.

9.4.32 Current situation and management plans. The wildlife management lands at Foster Joseph Sayers are within a section of Pennsylvania which has an abundance of wildlife. Tables 30 and 31 indicate the diverse array of species common to the region. The birdlife around the lake is quite diverse and includes many game species popular with hunters. Migrating waterfowl pass over this area on their flights between the Susquehanna Flyway and the Lakes Regions of New York and Canada. A considerable number of these waterfowl presently use the lake and valley of the project as rest areas during their biannual migrations.

The Pennsylvania Game Commission has long been involved in game propagation in this portion of central Pennsylvania. This agency's program is aimed primarily at encouraging game species such as deer, wild turkey, woodcock and grouse. A number of management food plots have been programmed for development at Foster Joseph Sayers by the Game Commission (Plate 17). These include:

9.4.321 Area 1. This zone includes 85 acres of fields currently suited to agricultural type management. Even though drainage ditches have been constructed by previous owners, some areas still remain too wet to farm except during dry periods. The Game Commission intends to maintain 60 acres in agricultural crops, with the balance remaining in open areas. Shrub cover strips will be established through this zone to provide cover for birds and small game species. One parking lot (20-40 car capacity) will be developed to serve Areas #1 and #2. Access will be provided by US Route 220.

9.4.322 <u>Area 2</u>. Area #2 is in a typical river bottom association of goldenrod-grass cover with typical river bank cover on Bald Eagle Creek which transects the tract. Development plans for this area include agricultural crops on approximately 40 acres of this land. Tracts 1500-2 and 1505 are included in Area #2 and are presently outleased for agricultural purposes to their original owners.

#### TABLE 30

Mammals Observed in the Foster Joseph Sayers Region

### Common Name

Opossum Hairytailed Mole Starnosed Mole Short-tailed Shrew Long-tailed Shrew Smoky Shrew Least Shrew Little Brown Myotis Indiana Myotis Eastern Pipistrel Red Bat Big Brown Bat Black Bear Raccoon Least Weasel Long-tailed Weasel Mink Striped Skunk Red Fox Gray Fox Bobcat Woodchuck Eastern Chipmunk Red Squirrel Grey Squirrel Flying Squirrel Beaver Harvest Mouse White-footed Mouse Deer Mouse Woodrat Bog Lemming Meadow Vole Red-backed Vole Muşkrat Norway Rat House Mouse Jumping Mouse Porcupine Rabbit White-tailed Deer

## Scientific Name

(Didelphis marsupialis)
(Parascalons breweri)
(Condylung cristata)
(Blaning brevi caude)
(Sonov di gnon)
(Sorrex dispar)
(Sorex Tuneus)
(Uryptotis parva)
(Myotis lucifugus)
(Myotis socalis)
(Pipistrellus subilavus)
(Lasiurus borealis)
(Eptesicus fuscus)
(Ursus americanus)
(Procyon lotor)
( <u>Mustela</u> rixosa)
( <u>Mustela</u> <u>frenata</u> )
( <u>Mustela vison</u> )
(Mephitis mephitis)
(Vulpes fulva)
(Urocyon cinereoargenteus
(Trease muchice)
(Lynx rurus)
(Marmota monax)
( <u>Marmota monax</u> ) (Tamias striatus)
(Marmota monax) (Tamias striatus) (Tamiasciurus hudsonicus)
(Marmota monax) (Tamias striatus) (Tamiasciurus hudsonicus) (Sciurus carolinensis)
( <u>Marmota monax</u> ) ( <u>Tamias striatus</u> ) ( <u>Tamiasciurus hudsonicus</u> ) ( <u>Sciurus carolinensis</u> ) ( <u>Glaucomys sabrinus</u> )
(Lynx rurus) (Marmota monax) (Tamias striatus) (Tamiasciurus hudsonicus) (Sciurus carolinensis) (Glaucomys sabrinus) (Castor canadensis)
(Lynx rulus) (Marmota monax) (Tamias striatus) (Tamiasciurus hudsonicus) (Sciurus carolinensis) (Glaucomys sabrinus) (Castor canadensis) (Reithrodontomys humulis)
(Lynx rulus) (Marmota monax) (Tamias striatus) (Tamiasciurus hudsonicus) (Sciurus carolinensis) (Glaucomys sabrinus) (Castor canadensis) (Reithrodontomys humulis) (Peromyscus leucopus)
(Lynx rurus) (Marmota monax) (Tamias striatus) (Tamias striatus) (Sciurus carolinensis) (Glaucomys sabrinus) (Castor canadensis) (Reithrodontomys humulis) (Peromyscus leucopus) (Peromyscus maniculatus)
(Marmota monax) (Marmota monax) (Tamias striatus) (Tamiasciurus hudsonicus) (Sciurus carolinensis) (Glaucomys sabrinus) (Castor canadensis) (Reithrodontomys humulis) (Peromyscus leucopus) (Peromyscus maniculatus) (Neotoma floridana)
(Marmota monax) (Marmota monax) (Tamias striatus) (Tamias ciurus hudsonicus) (Sciurus carolinensis) (Glaucomys sabrinus) (Castor canadensis) (Reithrodontomys humulis) (Peromyscus leucopus) (Peromyscus maniculatus) (Neotoma floridana) (Synaptomys cooperi)
(Marmota monax) (Marmota monax) (Tamias striatus) (Tamias striatus) (Sciurus carolinensis) (Glaucomy's sabrinus) (Glaucomy's sabrinus) (Castor canadensis) (Reithrodontomy's humulis) (Peromyscus leucopus) (Peromyscus maniculatus) (Neotoma floridana) (Synaptomy's cooperi) (Microtus pennsylvanicus)
(Lynx runus) (Marmota monax) (Tamias striatus) (Tamias striatus) (Sciurus carolinensis) (Glaucomys sabrinus) (Castor canadensis) (Reithrodontomys humulis) (Peromyscus leucopus) (Peromyscus maniculatus) (Neotoma floridana) (Synaptomys cooperi) (Microtus pennsylvanicus) (Clethrionomys gapperi)
(Lynx runus) (Marmota monax) (Tamias striatus) (Tamias striatus) (Sciurus carolinensis) (Glaucomys sabrinus) (Castor canadensis) (Reithrodontomys humulis) (Reithrodontomys humulis) (Peromyscus leucopus) (Peromyscus maniculatus) (Neotoma floridana) (Synaptomys cooperi) (Microtus pennsylvanicus) (Clethrionomys gapperi) (Ondatra zibethicus)
(Marmota monax) (Marmota monax) (Tamias striatus) (Tamias striatus) (Sciurus carolinensis) (Glaucomy's sabrinus) (Castor canadensis) (Castor canadensis) (Castor canadensis) (Castor canadensis) (Castor canadensis) (Reithrodontomy's humulis) (Peromyscus leucopus) (Peromyscus maniculatus) (Peromyscus maniculatus) (Neotoma floridana) (Synaptomy's cooperi) (Microtus 'pennsylvanicus) (Clethrionomy's gapperi) (Ondatra zibethicus) (Eattus norvegicus)
(Lynx runus) (Marmota monax) (Tamias striatus) (Tamias striatus) (Sciurus carolinensis) (Glaucomys sabrinus) (Castor canadensis) (Castor canadensis) (Castor canadensis) (Castor canadensis) (Reithrodontomys humulis) (Peromyscus leucopus) (Peromyscus maniculatus) (Peromyscus maniculatus) (Peromyscus maniculatus) (Neotoma floridana) (Synaptomys cooperi) (Microtus pennsylvanicus) (Clethrionomys gapper]) (Ondatra zibethicus) (Rattus porvegicus)
(Lynx runus) (Marmota monax) (Tamias striatus) (Tamias striatus) (Tamias ciurus hudsonicus) (Sciurus carolinensis) (Glaucomys sabrinus) (Castor canadensis) (Castor canadensis) (Castor canadensis) (Castor canadensis) (Reithrodontomys humulis) (Peromyscus leucopus) (Peromyscus maniculatus) (Peromyscus maniculatus) (Peromyscus maniculatus) (Peromyscus maniculatus) (Neotoma floridana) (Synaptomys cooperi) (Microtus permsylvanicus) (Clethrionomys gapperi) (Ondatra zibethicus) (Rattus norvegicus) (Mis musculus) (Zanus budsonius)
(Lynx runus) (Marmota monax) (Tamias striatus) (Tamias striatus) (Tamias ciurus hudsonicus) (Sciurus carolinensis) (Glaucomys sabrinus) (Castor canadensis) (Castor canadensis) (Castor canadensis) (Reithrodontomys humulis) (Peromyscus leucopus) (Peromyscus maniculatus) (Peromyscus maniculatus) (Peromyscus maniculatus) (Peromyscus maniculatus) (Neotoma floridana) (Synaptomys cooperi) (Microtus pennsylvanicus) (Clethrionomys gapperi) (Ondatra zibethicus) (Rattus porvegicus) (Mus musculus) (Zapus hudsonius)
(Marmota monax) (Marmota monax) (Tamias striatus) (Tamias striatus) (Sciurus carolinensis) (Sciurus carolinensis) (Glaucomys sabrinus) (Castor canadensis) (Castor canadensis) (Reithrodontomys humulis) (Peromyscus maniculatus) (Peromyscus maniculatus) (Peromyscus maniculatus) (Peromyscus maniculatus) (Peromyscus maniculatus) (Peromyscus maniculatus) (Neotoma floridana) (Synaptomys cooperi) (Microtus pennsylvanicus) (Clethrionomys gapperi) (Ondatra zibethicus) (Rattus porvegicus) (Mus musculus) (Zapus hudsonius) (Erethizon dorsatum) (Sylyllagus floridanus)
(Marmota monax) (Marmota monax) (Tamias striatus) (Tamias striatus) (Sciurus carolinensis) (Sciurus carolinensis) (Glaucomys sabrinus) (Castor canadensis) (Reithrodontomys humulis) (Peromyscus maniculatus) (Peromyscus maniculatus) (Peromyscus maniculatus) (Peromyscus maniculatus) (Neotoma floridana) (Synaptomys cooperi) (Microtus pennsylvanicus) (Clethrionomys gapperi) (Ondatra zibethicus) (Rattus porvegicus) (Mis musculus) (Zapus hudsonius) (Erethizon dorsatum) (Sylvilagus floridanus)

Sources: Burt and Grossenheider, "A Field Guide To Mammals", Houghton Mifflin Co., Boston, 1956

> W. C. Grimm and R. Whitebread, <u>Mammal Survey of Pennsylvania</u>, Pennsylvania Game Commission, Harrisburg, 1952

Sable 31 Birds Observed an Foster Joseph Sayers Dam Centre County Pennsylvania

•	1901-1912	••••		Observ	ed in Ar			
Common Name	Scientific Name	Spring	Summer	Fall	Winter	Game	Species	Nesting
LOONS	ار این از می از می از می این است و کمی این این این این این این این این این ای							
Common Loon	Gavia immer	x	<b>x</b> .	x	x	· · · ·	1 x . x . x	
Red-throated Loon	G. stellata	X						
GREBES								•
Red-neck Grebe	Colymbus gresena hollolii	· x						
Horned Grebe	Colymbus auritus	· x	•	Χ.				
Red-bill Grebe	Podilymbus podiceps podiceps	x	х	x	x			x
CORMORANTS	······································						÷ .	
Double-crested Cormorant	Phalacrocoray auritus	. x		х	•.			
HERONS AND BITTERNS	1 · · · · · · · · · · · · · · · · · · ·		•			• •		· · ·
Great Blue Heron	Ardea herodias	x	х	х	х			
Green Heron	Butoridis virescens virescens	x	x	x		•	•	
Great Egret	Casmerodius albus egretta	x		x				•
Black-Crowned Night Heron	Nycticorax nycticorax hoactli	x		x				
Least Bittern	Irobeychus exilis exilis	х	x					
American Bittern	Botaurus lentiginosus	X		,				
IBISES								
Glossy Ibis	Plegadis falcinellus falcinellus	· X						1 · .
SWANS	an an early a first an				-			
Whistling Swan	Cygnus columbianus	x		х				
GEESE	**************************************						. i	• . •
Canada Goose	Branta canadensis	X ·		X	X	х		• •
DUCKS		•	-			•		· · ·
Mallard	Anas platyrhynchos platyrhynchos	х	х	х	x	х		<b>x</b>
Black Duck	A. rubripes	x	·	x		· X		* *
Gadwall	A. strepera					X		-1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1
Pintail	A. acuta tzitzihoa	···· X·				X		
Green-winged Teal	A. carolinensis	. x		х		X	· · ·	· •
Blue-winged Teal	A. discors	x		x		x		• •
American Widgeon	Mareca americana	x		x		x		-
Shoveller	Spatula clypeata	x x				x		
Wood Duck	Aix sponsa	$\therefore$ $\mathbf{\tilde{x}}$	x	x	· ·	x		x
Redhead	Aythya americana	· x			•	x		
Ring-necked Duck	A. collaris	x				x	÷11	. ·.
Canbas-back	A. valisineria	x			x			•
Greater Scaup Duck	A. marila nearctica	x		· ·		X	1. A.	
Lesser Scaup Duck	A. affinis	x		·X		x		
American Golden-eye	Bucephala clangula americana	X			x	x	• •	
Buffle-head	B. albeola	X		X	T-	<b>X</b>	111	•• •• •
Old-squaw	Clangula hyemalis	······································		x	· .	• X		
White-winged	Melanitta fusca deglandi	x				x		
Ruddy Duck	Oxyura jamaicensis rubida	x		x	x	x		
Hooded Merganser	Lophodytes cucullatus.	X		x	x	x	· · ·	4779
American Merganser	Mergus merganser americanus	X		x	x	x		1
Red-breasted Merganser	M. serrator	Chere 😿				· • •		
VULTURES		41			1.5			• •
Turkey Vulture	Cathartes aura	x	x	x			1 T	
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# TABLE 30

Mammals Observed in the Foster Joseph Sayers Region

### Common Name

Opossum Hairytailed Mole Starnosed Mole Short-tailed Shrew Long-tailed Shrew Smoky Shrew Least Shrew Little Brown Myotis Indiana Myotis Eastern Pipistrel Red Bat Big Brown Bat Black Bear Raccoon Least Weasel Long-tailed Weasel Mink Striped Skunk Red Fox Gray Fox Bobcat Woodchuck Eastern Chipmunk Red Squirrel Grey Squirrel Flying Squirrel Beaver Harvest Mouse White-footed Mouse Deer Mouse Woodrat Bog Lemming Meadow Vole Red-backed Vole Muskrat Norway Rat House Mouse Jumping Mouse Porcupine Rabbit White-tailed Deer

# Scientific Name

(Didelphis marsupialis)
(Parascalops breweri)
(Condylura cristata)
(Blarina brevicauda)
(Sorex dispar)
(Sorex fumeus)
(Cryptotis parva)
(Myotis lucifugus)
(Myotis sodalis)
(Pipistrellus subflavus)
(Lasiurus borealis)
(Eptesicus fuscus)
( <u>Drsus</u> <u>americanus</u> )
(Procyon Lotor)
(Mustela rixosa)
(Mustela frenata)
(Mustela vison)
(Webnitis mephilis)
(Vulpes Iulva)
(Urocyon Cinereoargeniceus)
(Lynx Fulus) (Marmota monax)
(Tomios striatus)
(Tamias Suriatus)
(Sciurus carolinensis)
(Glaucomys sabrinus)
(Caston canadensis)
(Beithrodontomys humulis)
(Peromyscus leucopus)
(Peromyscus maniculatus)
(Neotoma floridana)
(Synaptomys cooperi)
(Microtus pennsylvanicus)
(Clethrionomys gapperi)
(Ondatra zibethicus)
(Rattus norvegicus)
(Mus musculus)
(Zapus hudsonius)
(Erethizon dorsatum)
(Sylvilagus floridanus)
(Odocoïleus virginianus)

Sources: Burt and Grossenheider, "A Field Guide To Mammals", Houghton Mifflin Co., Boston, 1956

> W. C. Grimm and R. Whitebread, Mammal Survey of Pennsylvania, Pennsylvania Game Commission, Harrisburg, 1952

Sable 31 Birds Observed at Foster Joseph Sayers Dam Centre County Pennsylvania 1967-1973

		100 B		OL			
Common Name	Scientific Name	Spring	Summer	Fall	Winter	Game Species	Nesting
LOONS							
Common Loon	Gavia immer	, v	v	v	v		,
Red-throated Loon	G. stellata		~	Λ	А		
GREBES	<u></u>	· · ·				14 A A A A A A A A A A A A A A A A A A A	
Red-neck Grebe	Colymbus gresens hollolii	v					
Horned Grebe	Colymbus auritus	· · · · · · · · · · · · · · · · · · ·	•	v		•	
Red-bill Grebe	Podilymbus podicens podicens	v v	v	~ ~ ·	v		v
CORMORANTS	- our pour pour pour opp	. ^	<u>A</u>	Ą	л		. <b>^</b>
Double-created Cormorant	Phalacrocoray auritus	v		v			
HERONS AND BITTERNS	- mader ocer ay marriag	A .		Λ			
Great Blue Heron	Ardea herodias	· •	v	v	·v	*	
Green Heron	Butoridis virescens virescens	A V	Ŷ	4 V	л		
Great Egret	Casmerodius albus egretta	A V	<u>A</u>	Å.	•		
Black-Crowned Night Heron	Nycticorax nycticorax hoactli	A V		A V			
Least Bittern	Irobevchus exilis exilis	·· A	v	л			
American Bittern	Botaurus lentiginosus	x X	Δ.				
IBISES		•					•
Glossy Ibis	Plegadis falcinellus falcinellus	, A				•	,
SWANS		л					
Whistling Swan	Cygnus columbianus	÷	· · .	v			4
GEESE		•		<b>A</b>			
Canada Goose	Branta canadensia	v.			37	<b>NP</b>	
DUCKS	Lif and Canadonoid	· · · A	• .	А	л	<b>A</b> _:	1 N. T
Mallard	Anse pletyrhynchos pletyrhynchos		<b>1</b> 2				
Black Duck	A rubrings	- A	X	X	A.	X	X
Gadwall	A ginenera	an an A		A		X.	· .
Pintail	A acuta tzitzihoa		-			X	
Green-winged Teal	A. carolinensis	A				X ,.:	•• • .
Blue-winged Teal	A discorg	. X		X		X	
American Widgeon	Maraca americana	X		X.		X	·
Shoveller	Spetule clynesta	X		X		<u>x</u>	:
Wood Duck	Air grongo	<u>X</u>				X	
Redhead	Authun americana	X	х	х		<b>X</b> •	:, X
Ring-necked Duck	Aythya americana A collogia	. X				<u>X</u> .	
Caphos-book	A. contario	X	•			$\mathbf{X}$	
Guestan Segun Duck	A, vansileria	X			×		A Second
Legger Scoup Duck	A. marina nearcinea	X			• • •	X	1. A.
American Coldenaeve	Husenhole clongula amoricano	X		х		X	
Ruffle-head	Bucephara changua americana	a da di 🗙		_	x	X	
Old-squar	Clangula humania	X		X		X	
White winged	Molonitto Europ doglandi	X		X	•	X	
Buddy Duck	Organica Tusca degiandi	X				X	
Hooded Merganger	Lophodytes quoullatua	<u> </u>		X	X	<b>X</b> 1.	11
American Merganger	Margus marganger emericanus	· • · · · · · · · · · · · · · · · · · ·		X	x	X	, :
Red-broasted Marganger	Mergus merganser americanus			х	x	X	
NIL TIDES	m. Serrator	. Х				X	
Turkey Vulture	Cothertes sure					· · ·	
Turkey Valute	Canar tep aura	, <b>X</b>	x	Х	•.	· · · · · · · · · · · · · · · · · · ·	12.253
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				Observe	ed in Area		
Common Name	Scientific Name	Spring	Summer	Fall	Winter	Game Species	Nesting
HAWKS, EAGLES, HARRIERS, OSPREYS							
Sharp-shinned Hawk	Acciniter strigtus velov	v		x			
Cooper's Hawk	A conerii	x x		x			
Red-tailed Hawk	Butes ismaicensis	v	v	Ŷ	v		
Broad-winged Hawk	B nistynterus nistynterus	Ň	~	v	-		
Rough-legged Hawk	B lagonug	v v		Ŷ	x		
Golden Eagle	Aquila chrysaetos canadensis	Ŷ		21			
Bald Eagle	Halioeetus Jeucocenhalus	A	x	x			
Harrier	Circus cyaneus hudsonius	x	x	x	x		
Osprey	Pandion balicetus carolinensis	x	x	x			
Kestrel	Falco sparverus	x	x	x	x		
GROUSE, PHEASANTS, AND TURKEYS	aleo opurverub	21		••			
Ruffed Grouse	Bonasa umbellus	x				х	
Ring-necked Pheasant	Phasianus colchicus torquatus	x	x	х		X	
Turkey	Meleagris gallopavo	x				х	
RAILS, COOTS, AND GALLINULE							
Sora	Porzana carolina	х				х	
Gallinuli	Gallinula chloropus cachinnans	x	х	х		х	
American Coot	Fulica americana	x	x	х	х	Х	
PLOVERS	······································						
Killdeer	Charadrius vociferus vociferus	х	x	х			
American Golden Plover	Pluvialis dominica dominica				x		
Black-bellied Plover	Squatarola squatarola	х		х			
SNIPE, SANDPIPERS AND WOODCOCK							
Woodcock	Philohela minor	х				х	x
Common Snipe	Capella gallinago delicata			х		Х	
Upland Plover	Bartramia longicauda	х					
Spotted Sandpiper	Actitis macularia	х	х				
Solitary Sandpiper	Tringa solitaria solitaria	х		х			
Greater Yellow-legs	Totanus melanoleucus	х		х			
Lesser Yellow-legs	T. flavipes	х		X			
Pectoral Sandpiper	Erolia melanotos			х			
Least Sandpiper	E. minutilla			х			
Dunlin	E. alpina pacifica			х			
Semipalmated Sandpiper	Ereunetes pusillus	х		х			
Sanderling	Crocethia albo			х			
Dowitcher	Limnodromus griseus	х					
Hudsonian Godwit	Limosa hoemastica			х			
GULLS Hermine Coll	•						
Diag billed will	Larus argentatus	X			x		
Ring-billed guil	L. delawarensis	X	х	х	х		
DONAPARIE'S GUII	L. phuadelphia	х					
	Stowns binneds binneds			v			
Cospian Tern	Sterna nirundo nirundo	X		л			
Black-Tern	Chlidoning migna guminamor -i-	A V					
Diden Tetli	Controlmas mgra surmamensis	А					

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				Observ	ed in Area		
Common Name	Scientific Name	Spring	Summeb	Fall	Winter	Game Species	Nesting
DOVES							
Bock Dove	Columba livia	v	v	v			
Mourning Dove	Zenaidura macroura	÷	Ŷ	v			
CUCKOOS	Bendidura macroura	л	Λ	Λ			
Yellow-billed Cuckoo	Coccurate americanus americanus	17		v			
Black-billed Cuckoo	Coccyzus americanus americanus	A V	v	л			
OWLS	coccyzus ci yan opinianius	A	~			•	
Great Horned Owl	Bubo winginianue						
GOATSUCKERS	Bubb virginiands	х					
Whin-poor-will	Coprimulaus ungiforma			77			
SWIFTS	capi muigus vocherus	х	X	А			
Chimney Swift	Chesture relation						
HUMMINGBIRDS	choetura pelagica	х	х	х			
Pubu-throated Humminghind	Anabilashwa zaluhuta	-					
VINCEISUEDS	Archilochus colubris	x	x	х			
Poltod Kingfishon							
WOODDECKERS	Megaceryle alcyon alcyon	х	х	х			
WOODFECKERS							
Plicker Diagonal Weathershow	Colaptes auratus	x	x	х			
Piteated woodpecker	Hylatomus pileatus	x	х	·X	х		
Red-beilled woodpecker	Centurus carolinus	x					
Ked-neaded woodpecker	Melanerpes erythrocephalus erythrocephalus	х					
Yellow-bellied Sapsucker	Sphyrapicus varius varius	x		х			
Hairy woodpecker	Dendrocopus villosus	х		х	х		
Downy woodpecker	D. pubescens	Х·	х	х	x		
FLYCATCHERS		•			· · ·		
Eastern Kingbird	Tyrannus tyrannus	x	·X	х			
Western Kingbird	T. verticalis				х		
Crested Flycatcher	Myiarchus crinitus	x	х	х			
Eastern Phoebe	Sayornis phoebe	х	х	х			х
Yellow-bellied Flycatcher	Empidonax flaviventris		· ,	Χ.			
Alder Flycatcher	E. traillii traillii	x	х	•			
Least Flycatcher	E. minimus	х			•		
Wood Pewee	Contopus virens	х			:		
Olive-sided Flycatcher	Nuttallornis borealis			х			
LARKS						•	
Horned Lark	Eremophila alpestris	х	х	х			
SWALLOWS	· · · · · · · · · · · · · · · · · · ·				• •		
Tree Swallow	Indoprocne bicolor	х			_		х
Bank Swallow	Riparia riparia riparia	X					
Rough-winged Swallow	Stelgidopteryx ruficollis serripennis	х	х	х			
Barn Swallow	Hirundo rustica erythrogaster	x ·	x	х			
Cliff Swallow	Petrochelidon pyrrhonota albifrons	x ·	x	X			
Purple Martin	Progne subis subis	x	x		•		
CROWS AND JAYS	*						
Blue Jay	Cyanocitta cristata	х	x	· X	х		
Raven	Corvus corax		x	×x	x		
Crow	C. brachyrhynchos	х	x	x	x	х	
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		Observed in Area					
Common Name	Scientific Name	Spring	Summer	Fall	Winter	Game Species	Nesting
CHICKADEES AND TITMICE							
Black-capped Chickadee	Parus atricapillus	х		х	x		
Tufted Titmouse	P. bicolor	x	х	x	x		
NUTHATCHES	<u>_</u> , <u></u>						
White-breasted Nuthatch	Sitta carolinensis	x	x	х	x		
WRENS							
House Wren	Troglodytes aedon	х	х	х			
Winter Wren	T. troglodytes			x			
Carolina Wren	T. Iudovicianus		х	x	х		
Long-billed Marsh Wren	Telmatodytes palustris	х		x			
MIMICS							
Mockingbird	Mimus polyglottos polyglottos	х	х	х			
Cathird	Dumetella carolinensis	х	х	x			
Brown Thresher	Toxostoma rufum rufum	x	x	x			
THRUSHES, BOBINS, AND BLUEBIRDS							
Robin	Turdus migratorius	x	x	x			x
Wood Thrush	Hylocichla mustelina	x	x	x			
Hermit Thrush	H. guttata faxoni	x					
Veerv	H. fuscenscens	x					
Eastern Bluebird	Slalia stalis		x	x			
GNATCATCHERS AND KINGLETS				••			
Blue-gray Gnatcatcher	Polioptila coerulea	x	x				x
Golden-crowned Kinglet	Regulus satrana satrana			х	x		
Buby-crowned Kinglet	B. calendula calendula	х		x			
PIPITS							
American Pipit	Anthus spinoletta rubescens	х		х			
WAXWINGS							
Cedar Waxwing	Bombycilla cedrorum		х	х			
SHRIKE	<u></u>						
Northern Shrike	Lanius excubitor borealis				x		
Loggerhead Shrike	Ludovicianus	x	x	х	x		
STARLINGS							
Starling	Sturnus vulgaris vulgaris	x	х	x	x	x	
VIREOS							
White-eved Vireo	Vireo griseus	x					
Yellow-throated Vireo	V. flavifrons			x			
Blue-headed Vireo	V. Bolitarius	x					
Red-eved Vireo	V. olivaceus	ÿ	x	х			х
WARBLERS	<u></u>						
Black and White Warbler	Mniotilta varia	x		х			
Golden-winged Warbler	Vermivora chrysonters	x					
Tennessee Warbler	V. peregrina	x		x			
Orange-crowned Warbler	V. celata celata	x					
Nashville Warhler	V. ruficanilla ruficanilla	x	x	x			
Parula Warbler	Parula americana	x					
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		Observed in Area						
Common Name	Scientific Name	Spring	Summer	Fall	Winter	Game Species	Nesting	
WARBLERS (CONT'D)								
Yellow Warbler	Dendroica petchia	x	x	x				
Magnolia Warbler	D. magnolia	x	x	••				
Cape May Warbler	D. Tigrina	Ŷ	Ŷ	x				
Black-throated Blue Warhler	D coerulescens	v	A	~				
Myrtle Warbler	D. coronata cononata	Ň		v		1		
Black-throated Green Warbler	D virens	÷		N V				
Chestnut-sided Warbler	D panguluanian	Ň		л		•		
Bay-breasted Warbler	D. pensylvanica	л			v			
Black-poll Warbler	D. striata	v			A			
Pine Warbler	D. Silliana	<u>~</u>						
Pairie Warbler	D. diasolon	Å						
Dolm Worklow	D. discolor	X	X					
Or on whind	D. painarum	X				•		
Northorn Water thrush	Seturus acrocapillus	X	X					
Northern water-thrush	5. noveboracensis	X		х				
Louisiana water-inrush	5. motacilla	х						
Connecticut warbier	Oporornis agilis				х			
Yellow-inroat	Geothlypis trichas	x	х	х		:		
Yellow-breated Chat	Icteria virens virens	x	x					
American Redstart	Setophaga ruticilla	x	х	х				
WEAVER FINCHES	<b>.</b>							
House Sparrow	Passer domesticus domesticus	x	x	х				
BLACKBIRDS,_MEADOWLARKS,_AND_ORIOLES								
Bobolink	Dolichonyx oryzivorus	х	X					
Meadowlark	Sturnella magna	х	х	х	x			
Red-wing Blackbird	Agelaius phoeniceus	х	х	х		х		
Orchard Oriole	Icterus spurius	х	· X					
Baltimore Oriole	I. galbula	x	х	х				
Rusty Blackbird	Euphagus carolinus	X		x		Х		
Boat-tailed Grackle	Cassidix mexicanus	x	. x ·	X		х		
Cowbird	Molothrus ater ater	x	X	х		х		
TANGERS								
Scarlet Tanger	Piranga olivacea	х	Х -	х				
FRINGILLIDS	·			•				
Cardinal	Richmomdena cardinalis	· x	х	х	x			
Rose-breasted Grosbeak	Pheucticus ludovicianus	x	x	x				
Indigo Bunting	Passerina cyanea	x	x	x				
Evening Grosbeak	Hesperiphona vespertina	x		x	x			
Purple Finch	Carpodacus purpureus purpureus	ÿ		ÿ	x			
House Finch		ÿ						
Pine Grosbeak	Pinicola enucleator leucura	Ŷ			x			
Redpoll	Acanthis flammea	v			Ŷ			
Pine Siskin	Spinus pinus pinus	Ŷ		v	Ŷ			
Common Goldfinch	S. tristis tristis	÷	v	v v	Ŷ			
Ruffed-sided Towhee	Pipilo erythrophthalmus	v	A V	÷.	~			
Savannah Sparrow	Passerculus sandwichensis	Ŷ	л	л				
oparion	- about cutus Ballawitchensis	~						

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		Observed in Area						
Common Name	Scientific Name	Spring	Summer	Fall	Winter	Game Species	Nesting	
FRINGILLIDS (CONT'D)								
Grasshopper Sp@rrow	Ammodramus savannarum	x	х					
Henslow's Sparrow	Passerculus henslowii	x						
Vesper Sparrow	Pooecetes gramineus gramineus	x	х	х				
Junco	Junco hyemalis	х		х	х	•		
Tree Sparrow	Spizella arborea arborea	х		Х	x			
Chipping Sparrow	S. passerina passerina	x	х					
Field Sparrow	S. pusilla pusilla	х	х	х				
White-crowned Sparrow	Zonotrichia leucophrys	х		х				
White-throated Sparrow	Z. albicollis	х		х				
Fox Sparrow	Passerella iliaca iliaca	х		х				
Lincoln's Sparrow	Melospiza lincolnii lincolnii			х				
Swamp Sparrow	M. georgiana	x		х				
Song Sparrow	M. melodia	х	х	х	х			

Source: Merrill Wood, Associate Professor of Zoology, Pennsylvania State University, Retired. 9.4.323 Area 3. Area #3 consists of approximately 410 acres and is predominately in open fields and is bounded by a strip of trees along Bald Eagle Creek stream bank and steep wooded slopes on the other three sides. Present plans call for maintaining the open field conditions by mowing and crop production on a minimum of 100 acres. Two parking lots are planned with access provided from LR 14052; and

9.4.324 <u>Area #4</u>. This area, totaling approximately 390 acres, was described as management area #3, Zone 3-4, in Section 3.9.44. Management plans call for the area to be developed as a forest game area. Forest management techniques to be utilized to increase species productivity and diversity include release cuttings and thinnings.

The Game Commission has expressed an interest in the development of a trail through Bald Eagle State Park. The construction of this trail will be subject to approval of the Bureau of State Parks and the Corps.

Crop production in all areas will be on a sharecrop arrangement with the trail and parking lot construction contingent upon income derived from the sharecropping.

9.4.33 <u>Habitat improvement</u>. Habitat improvement to date at Foster Joseph Sayers has been limited to some reforestation of open areas. Measures which will be considered for implementation as soon as possible include the following:

1. Planting waterfowl foods in the Hunters Run Bay area and a potential management area adjacent to the summer pool south of Howard Borough Park.

2. Developing waterfowl ponds on or near the lake water areas above the Howard causeway (Plate 17).

3. Controlling brush and tree invasion on a substantial portion of the abandoned fields along US Route 220.

4. When choosing trees for reforestation programs, utilize species which will provide additional cover and habitat, and are selfseeding.

Until a feasibility study on potential subimpoundments can be completed, the following specific recommendations are made as interim measures for fish and wildlife habitat improvement: 1. Fall drawdown should be delayed as late into November-December as feasible with the final date to attain winter pool level, elevation 610, flexible, based on existing and anticipated runoff, requirements for water quality control, and ice conditions;

2. That potential vegetation management programs for exposed drawdown areas be studied and if proven feasible, initiated in the headwater areas of the reservoir.

# 9.4.34 Conclusions and recommendations.

1. Wildlife management potential at Foster Joseph Sayers is expected to be excellent. The Game Commission will continue to be responsible for wildlife management on the 1,030 acres zoned for wildlife and that their technical experience be utilized to monitor the habitat conditions and recommended hunter restrictions and habitat improvements through all project lands.

2. Wildlife management efforts should be expanded to include measures to educate the public and provide areas for interpretive programs. Historically, most game commissions have not been oriented toward providing non-consumptive wildlife recreation; however, this should be specifically considered at Foster Joseph Sayers. An area with extremely high potential for waterfowl photography and bird watching is indicated on Plate 17. This area in addition to all others currently prohibiting no hunting should be reserved for non-consumptive uses of wildlife.

3. The Historical and Museum Commission will be encouraged to use all lands not in the immediate vicinity of historical exhibits for conservation and enhancement of songbirds and mammalian species. This area should be closed to all hunting.

4. Wildlife management specialists at Pennsylvania State University will be encouraged to utilize the project for research activities and demonstration. Their expertise will also be sought in conjunction with that of the Game Commission for the examination of any wildlife management problem.

5. At present water fluctuation at Foster Joseph Sayers creates severe limitations on management of fish breeding and waterfowl feeding and resting areas. There is an immediate need for the provision of water areas where the level of fluctuation would be minimal, occurring under only the most serious circumstances. Plate 17 indicates three areas where subimpoundments could possibly be located without substantial loss of flood storage capacity. A study will be initiated immediately to determine the feasibility of constructing such an area and to determine if sufficient interest exists for the game and fish commissions to participate in a cost sharing program.



There has been little attempt made so far to encourage waterfowl. The availability of high-quality, open bottomland sites makes waterfowl habitat improvement one of the highest priority management needs on the project.

6. All wildlife management programs and actions will be coordinated with other project programs such as forest management, recreation, and dam operation, in order to avoid resource management conflicts.

# 9.5 Public safety.

9.5.1 <u>General</u>. As additional recreation facilities and improved access are provided at Foster Joseph Sayers project, increased public visitations can be expected. With the increased visitations the inevitable problems of public accidents will require administrative emphasis on public safety.

Past studies have indicated four major areas of public safety problems are (1) lack of knowledge and risk-taking on the part of the public, (2) conflict of uses, (3) terrain hazards and weather conditions, and (4) lack of manpower and time. A Project Safety Plan will address each of these areas and will be cooperatively prepared by the U.S. Army Engineer District, Baltimore; the Pennsylvania Game Commission, the Pennsylvania Fish Commission; the Department of Environmental Resources, Bureau of State Parks; the Pennsylvania Historical and Museum Commission, and the Borough of Howard. When completed, the plan will become Appendix E of this Master Plan. Of necessity, this plan will address the following types of considerations:

9.5.2 First aid training. A statement of first aid training requirements for all resident project personnel will be required.

9.5.3 Traffic safety. A comprehensive traffic safety plan will detail traffic surveillance measures and controls. This plan will include any special measures to be instituted during periods of peak holiday traffic.

9.5.4 Water safety. A water safety plan that defines zoning of uses and rules and regulations will be prepared. Restricted lake areas, maximum allowable boating horsepower and speeds permitted, and no-wake areas within the project will be cooperatively planned. The rules and regulations for boating in the Commonwealth of Pennsylvania will be used and enforced by the Pennsylvania Fish Commission. The managing agencies will encourage local boaters to organize to present safety and boat handling courses. Until the Bureau of State Park's swimming beach is completed, swimming will only be permitted at the Borough of Howard's swimming area.
9.5.5 <u>Emergency information</u>. An emergency assistance plan wherein policies are outlined pertaining to public emergency assistance information will be prepared cooperatively by all landmanagment agencies. This plan will deal specifically with public display of emergency information to include the telephone numbers of rescue squads, police, hospitals, and project personnel. Also included in this plan will be the development of accident reporting procedures to be utilized by all land managment agencies. This plan will improve coordination between the Corps and managing agencies and will improve the quality and timeliness of accident reporting.

#### 10.0 Conclusions and Recommendations

10.1 <u>Conclusions</u>. From the information developed in this Master Plan, it is generally concluded that:

10.1.1 The construction of the Foster Joseph Sayers project has and will continue to increase water-oriented recreation in central Pennsylvania.

10.1.2 The most immediate use of the project will be day-use oriented and will serve the nearby communities of Howard, Lock Haven, Bellefonte, and State College.

10.1.3 The use of nondeveloped project areas with the lands currently leased to the Pennsylvania Game Commission will mitigate the loss of habitat inundated by the lake.

10.1.4 The opportunity to develop waterfowl habitat through the use of sub-impoundments should be studied and coordinated with all land managing agencies concerned with land management at the project.

10.1.5 The future character of the project will be affected by adjacent private development and land use.

10.1.6 The cooperative administrative and management involvement by the Federal, State and local agencies will assure optimum development and use of the project's resources.

#### 10.2 Recommendations

10.2.1 It is recommended that the coordination and leases between the various governmental agencies and the Corps of Engineers be continued to insure the continuity of management practices and future development.

10.2.2 It is recommended that this Master Plan and Appendix A be approved as an overall guide for future development and management of the Foster Joseph Sayers Dam Project.

# SUSQUEHANNA RIVER BASIN

### FOSTER JOSEPH SAYERS DAM PENNSYLVANIA

# Design Memorandum No. 3C MASTER PLAN

### APPENDIX A Project Resource Management Plan

October 1974

### Appendix A

### Project Resource Management Plan

1.0 General. The Foster Joseph Sayers Dam project is essentially complete at this time. Because of this, much of the information normally included in Appendix A has been incorporated into the main text of the Master Plan. Rather than duplicate this information, appropriate references will be provided.

2.0 Authority. See Section 1.1, Master Plan.

3.0 Operational concept of the project and the effect it has on recreation. See Sections 2.4, 4.4., 9.4.33, 9.4.34. Master Plan.

3.1 Sequence of water level fluctuation. As indicated in Section 4.4 the fall drawdown of the summer pool has a direct and significant adverse impact on waterfowl activity. In addition to the negative influence on waterfowl, the fall drawdown exposes over 1,000 acres of mud flats, creating a negative visual impact.

Boating access to the winter pool will be provided by a winter launching ramp as indicated on Plate 13.

3.2 Other than the previously mentioned negative influences and the restricted boating access, the operational concepts of Foster Joseph Sayers Dam will not adversely affect recreation.

4.0 Land acquisition. Project lands include 7,991 acres including 417 acres in flowage easement. The guide taking line for fee acquisition was elevation 662, or to a line measured 300 foot horizontally from the 657 foot contour, whichever was greater. The extent of any additional land acquisition (both fee title and easements) was such as to provide for construction and operation of the project for its authorized purposes of flood control, recreation, and fish and wildlife management.

Real estate maps detailing project lands are included in Blanchard Reservoir, Design Memorandum No. 6.

5.0 Description of public use areas. See Section 8.2, Master Plan.

6.0 Maintenance Facilities.

6.1 The dam operator's residences and the garage and shop building are located downstream from the dam structure as indicated in Plate 4.

6.2 Dam operator's residences. The residences are of brick veneer construction, consisting of three bedrooms, two baths, living, dining and utility rooms. The structures are on concrete slabs. A general plan and structural details of the residences are shown on Plates 6, 7, 8, and 9; Foster Joseph Sayers Dam and Reservoir, Operation and Maintenance Manual.

6.3 Garage and shop building. The shop and garage building is of concrete block construction on a concrete slab. The building consists of an office and radio room, lavatory, heater room, garage and shop area, soil samples room, paint storage room, equipment storage room and well house. The building has facilities to accomplish some carpentry, mechanical repair, and painting. The building also serves as an equipment cleaning facility. The general plan and structural details of the garage and shop building are shown on Plates 6 and 10, Foster Joseph Sayers Dam and Reservoir, Operation and Maintenance Manual.

6.4 The present maintenance facility is adequate until project modification occurs.

6.5 The Commonwealth of Pennsylvania, Bureau of State Parks will maintain an office and a maintenance building in the Bald Eagle Recreation Area, Bald Eagle State Park (Plate 13).

7.0 <u>Storage facilities</u>. Storage facilities at the project are incorporated within the existing maintenance building owned by the Corps and the Bureau of State Parks' maintenance building which is currently under construction. Once the state parks' building is complete, existing storage space for both agencies will be adequate.

### 8.0 Staffing.

8.1 Corps of Engineers. Responsibility for operations and maintenance of the Foster Joseph Sayers Dam is assigned to the Operations Division of the Baltimore Engineer District. Full time Government personnel, who will operate the dam and perform normal maintenance, consists of a head dam operator, W-9, and a dam operator, W-7.

During the summer months additional temporary help will supplement the permanent staff.

8.2 <u>Commonwealth of Pennsylvania</u>, Bureau of State Parks. Present personnel at Bald Eagle State Park include:

1 Park Superintendent

1 Labor Foreman

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- 2 Semiskilled Laborers
- 2 Water Systems Plant Operators
- 1 Security Officer

Requested additional personnel at Bald Eagle State Park include:

- 1 Auto Mechanic
- 1 Clerk Typist
- 1 Equipment Operator
- 1 Laborer
- 1 Maintenance Repairman
- 1 Security Officer
- 3 Semiskilled Laborers
- 1 Water Systems Plant Operator

9.0 Law enforcement arrangements and procedures. Law enforcement at the project is the immediate responsibility of the Park Superintendent and the dam tender. Enforcement of fishing and boating regulations is the responsibility of the Pennsylvania Fish Commission. The Pennsylvania Game Commission enforces all hunting regulations.

If infractions of any regulation occur and cannot be controlled by agency supervisors, the correct local, State or Federal authorities should be notified immediately.

10.0 Concessionaire activities. The only concessionaire operations currently planned for the project will be administered by the Bureau of State Parks. Details of concessionaire activities have not been finalized; but when completed, the Bureau of State Parks will be expected to comply with State and Federal regulations stipulated in the leasing documents.

**11.0** Pest control. Recognition of damage to the lake and forest ecology from pest attack will be the responsibility of each land managing agency. Presently no major pest problems exist on the project. In the future any treatment programs shall be in accordance with the recommendations of the Federal Committee on Pest Control as set forth to meet those standards required by the Federal Environmental Protection Agency. Other guidelines will include ER 1130-2-332, 1 November 1971 and will be coordinated with the State District Forester. Before any treatment plan is initiated, approval will be obtained from Pennsylvania Department of Environmental Resources, Bureau of State Parks, Pennsylvania Fish Commission, and Operations Division, U.S. Army Engineer District, Baltimore.



# SUSQUEHANNA RIVER BASIN

FOSTER JOSEPH SAYERS DAM PENNSYLVANIA

# Design Memorandum No. 3C MASTER PLAN

### EXHIBIT A

Letters of Coordination

October 1974

# EXHIBIT A Letters of Coordination

Letters	Agency			
A-1	United States Fish and Wildlife Service			
A-2	Commonwealth of Pennsylvania Department of Environmental Resources			
A-3	Commonwealth of Pennsylvania Department of Environmental Resources, Bureau of Design			
A-4	Pennsylvania Fish Commission			
A-5	Pennsylvania Game Commission			
A-6	Pennsylvania Historical and Museum Commission			
A-7	Centre County Planning Commission			
A-8	Borough of Howard			



UNITED STATES DEPARTMENT OF THE INTERIOR FISH AND WILDLIFE SERVICE BUREAU OF SPORT FISHERIES AND WILDLIFE Center Building, Room 225 6816 Market Street Upper Darby, Pennsylvania 19082

January 9, 1974

Mr. William E. Trieschman, Jr. Chief, Planning Division Army Corps of Engineers P. O. Box 1715 Baltimore, Maryland 21203

Dear Mr. Trieschman:

Thank you for your letter of November 26, 1973 concerning Master Planning for the Foster Joseph Sayers Dam, Centre County, Pennsylvania. Since a wildlife management plan and a fisheries management plan are currently being developed for the project area by the Pennsylvania Game and Fish Commissions, we cannot provide you with any meaningful comments at this time. Following receipt and review of such plans at our office, we feel that we would then be in a much better position to offer you some additional comments that may be pertinent to the operation and maintenance of the project.

In the meantime, please let us know if there is any way we can assist you in the development of a plan to provide fishermen access to the tailwater.

Sincerely yours,

Gerald G. Taylor

Supervisor Upper Darby Area Office Div. of River Basin Studies

# DEPARTMENT OF THE ARMY Baltimore District, Corps of Engineers P.O. Box 1715 Baltimore, Maryland 21203

#### NABPL-E

Dr. Haurice K. Goddard Secretary Environmental Resources Cosmonwealth of Pennsylvania Harrisburg, Pennsylvania 17120

#### Dear Dr. Goddard:

The Corps of Engineers, Baltimore District, is currently in the process of preparing a Master Plan for the Foster Joseph Savers Dam which is located on the West Branch of the Susquehanna River, Centre County, Pennsylvania. In accordance with Corps guidelines for water resources projects this document shall set forth provisions for the progressive and orderly husbandry of the resources of the project and their development for recreation and public use.

In order that the Master Plan may present a complete and comprehensive management plan responsive to the desirable uses and protection of the project resources, it is essential at this time that coordination between the Corps and the Commonwealth of Pennsylvania Department of Environmental Resources be undertaken to insure all agencies under the Department of Environmental Resources an opportunity to provide input into the waster plenning process.

Under current plans three leases will be managed by the Commonwealth of Tennavivania, Department of Environmental Resources; the major lease entailing 4,170 acres in fee and 1,730 acres for a recreation pool. The remaining two leases encompass small tracts for sewage pipeline and an access road to the sewage treatment plant. The three leases are DACM-31-1-72-605, DACM-31-2-73-676, and DACM-31-2-73-678, respectively. So that your agency's desires and expertise may be incorporated into the subject Master Plan, I would appreciate the submission of a management plan for the wildlife, lands, waters, forest, and other resources to be conserved, enhanced, developed, managed, and used in the public interest under these leases.

rc: Environ. Res. Be.

### MCSWAIN/sb/22558/NABPL-E

ROESEKE/NABPL-E NELSOM/MAJ PA TRIESCHIMAN/MAJA MCGARRY/NABDA

### NABPL-E Dr. Haurice K. Goddard

On 3 October 1973, Mr. Jerrold D. McSwein, of the Environmental Resources Branch of the Planning Division contacted Mr. Tony Miele, Park Superintendent, Bald Eagle Creek State Park by telephone to preface this request and to identify appropriate personnel for coordination. At that time, several topics which we desire to be addressed in a management plan were discussed. These topics include but should not be limited to the following:

a. a statement of the Environmental Resources, Bureau of State Parks' policies and objectives;

b. an organizational chart of the bureau and staff elements responsible for management and technical services of the subject areas;

c. general construction and maintenance regulations and procedures;

d. access and measures for general public use of the areas;

e. cooperative efforts with other agencies;

f. visitor and facility protection (enforcement of regulations, accident prevention planning, and security, if applicable);

g. any interpretive services or project identification efforts including the development of signing specifications/standards;

b. an inventory of the characteristics and capabilities of resources of the three areas, discussing the diversity and stability of components of the sites and a proposed management plan defining measures to be taken to protect their natural qualities (soil erosion control, forest management, fire protection, and game management);

1. a summary of monies which have been spent and proposed budgets and timetables for development, operation and management of the three tracts; and

, j. site plans, specifications, and typical plans for picnic, camping, switching, service buildings, and any other units/components of the subject areas.

On 3 October 1973 Nr. McSwain also contacted Mr. William Harmon of the Operation and Maintenance Division, Bureau of State Parks who referred Mr. McSwain to Mr. Russell Maurer an aquatic biologist within that Division. At that time specific aquatic control information was discussed. Mr. Maurer should now be familiar with the aquatic control information we are seeking and should have also briefed the Woodland Resource Management Section of our particular requirements.

### NASPL-E Dr. Maurice K. Goddard

The usefulness and value of our overall detailed management plan is greatly dependent upon the cooperative planning efforts with all the agencies which will be directly involved in project management. I look forward to your agency's contribution in this effort. If members of your staff should desire more detailed assistance or charification on our master planning efforts or feel that a meeting would be desirable and appropriate, they may contact Mr. William E. Trieschman, Jr., Chief, Planning Division at (301) 962-4710.

We would appreciate having this information by 1 December 1973 in order that it may be included in the master planning process.

Sincerely yours,

ROBERT S. McGARRY Colonel, Corps of Engineers District Engineer

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DEPARTMENT OF ENVIRONMENTAL RESOURCES Refer

Refer to: RM-P-M

Secretary

P. O. BOX 1447 HARRISBURG, PENNSYLVANIA 17120

December 5, 1973

Colonel Robert S. McGarry Department of the Army Baltimore District Corps of Engineers P. O. Box 1715 Baltimore, Maryland 21203

Dear Colonel McGarry:

Your letter dated October 23, 1973, requested information on a variety of topics for use in development of your Master Plan for the Foster Joseph Sayers Dam.

Because of the wide scope of information requested, I suggest that a meeting between our respective staffs be scheduled to discuss the proposed Master Plan.

I would, therefore, request that your Mr. William E. Trieschman, Jr. Chief, Planning Division, contact our Mr. William C. Forrey, Director, Bureau of State Parks, 301 Market Street, Room 601 Feller Building, Harrisburg, Pennsylvania 17101, to arrange for a mutually convenient meeting.

Sincerely yours MAURICE K. GODDARD

2 January 1974

NABPL-E

#### MEMO TO THE FILE

SUBJECT: Meeting of Agencies Concerned with Master Planning, Foster Joseph Sayers Dam, Centre County, Pennsylvania

1. A meeting was held on 14 December 1973 at the J.O. Keller Conference Center, Pennsylvania State University, University Park, Pennsylvania. Agencies and their representatives which attended are as follows:

#### Corps of Engineers

Mr. Donald W. Roeseke, Planning Div. 301-962-2558 Mr. Larry J. Lower, Planning Division. 301-962-2559 Mr. Karl Kaufman, Engineering Div. 301-962-3693 Mr. Ray Bruntmyer, Operation Div. 301-962-4886 Mr. Reese Morgan, Operations Div 301-962-4886 Mr. Jerrold D. McSwain, Planning Div. 301-962-2558

Bureau of Sport Fisheries and Wildife Mr. Ron Ulrich 215-597-3710

Pennsylvania Game Commission Mr. Nicholas I. Vukovick 717-787-9612 Mr. Ivan L. Dodd

Pennsylvania Bureau of State Parks Mr. Anthony L. Miele 717-787-4278 Mr. Russell F. Maurer 814-625-2775

Pennsylvania Fish Commission Mr. Robert B. Hesser 814-359-2754

Pennsylvania Historical and Museum Commission Mr. Thomas II. McCarthy 717-787-6944

Centre County Planning Cormission Mr. Robert B. Donaldson, 814-355-1544 Mr. Dan Pennick Mr. Dan McCuen Mr. Steven Bottiger

Centre County Environmental Board Mr. Gordon L. Trembley 814-237-2609

2. The purpose of this meeting was to permit Dr. Gene W. Wood, Wildlife Ecologist, Pennsylvania State University, School of Forestry to present the results and his conclusions from his study of the terrestrial ecosystems Foster Joseph Sayers Dam. NABPL-E MEMO TO THE FILE

SUBJECT: Meeting of Agencies Concerned with Master Planning, Foster Joseph Sayers Daw, Centre County, Pennsylvania

3. Following opening introductions, Larry J. Lower representing the Corps presented a short (15 minute) briefing to update the representatives on the status of the Foster Joseph Sayers project. Mr. Lower's briefing included the Corps' present Master Planning requirements, schedule for this Master Plan, and the work which has been accomplished to date. Mr. Lower also explained the purposes for which Dr. Wood was retained as a consultant and the purpose of Dr. Wood's study.

4. Dr. Wood then presented the results of his study, detailing the projects resource characteristics and developing conceptual management alternatives. Following Dr. Wood's initial presentation, the representatives were allowed to question Dr. Wood concerning his study. Based on the comments generated in this meeting and the data which Dr. Wood has collected, Dr. Wood will develop a written report that will be presented to the Corps for use in preparation and possible inclusion in the Master Plan.

5. Following Dr. Wood's presentation, members of the Corps' planning staff discussed with the various agencies the specific input we were requesting from them for inclusion in our Master Plan. All agencies with the exception of Pennsylvania State Parks seemed to understand our requirements and the meeting was completed. It was agreed that an additional meeting would be held with representatives from the Pennsylvania State Parks (see memo to the file, subject: Meeting Pa. State Parks, Master Plan, Foster Joseph Sayers, 2 January 1974.

McSWAIN

NAEPL-E

2 January 1974

MEMO TO THE FILE

SUBJECT: Meeting, Pennsylvania State Parks, Master Plan, Foster Joseph Sayers.

1. Reference is made to the letter dated 5 December 1973, to Colonel Robert S. McGarry, Baltimore District, Corps of Engineers, from Dr. Maurice K. Goddard, Department of Environmental Resources, Commonwealth of Pennsylvania, copy attached.

2. A meeting was held on 19 December 1973 between Mr. Larry J. Lower, NABPL-E, and Jerrold D. McSwain, NABPL-E, and the following DER staff members as requested in the referenced letter:

#### Bureau of State Parks

Resources Management Section 787-4278 W.J. Harmon, Chief, Russell Maurer, Aquatic Biologist Jerry Yocum, Landscape Architect

Maintenance Engineering Section 787-7398 Millard L. Haskin, Chief William W. Helliem, Sanitary Engineer

Program Services 787-8800 George H. Kaufman, Chief

Bureau of Resource Programming 787-6674 Larry B. Shurer, Landscape Architect

3. Mr. Lower opened the meeting with a brief summary of our Master Planning process and the type of information required for our Master Plan. A general discussion and question session followed with Mr. Lower and Mr. McSwain answering specific questions concerning our Master Planning process.

4. Following the meeting Mr. Lower and Mr. McSwain spent time with individual staff member answering their remaining questions.

5. This writer feels that the entire meeting was generally nonproductive due to the fact that Mr. James Lesher, Chief, Division of Operation and Maintenance who had initiated the meeting was not in attendance. Additionally, staff members who represented Mr. Lesher were generally not prepared to pursue our Master Planning requirements. It was agreed that Mr. Maurer would prepare the information that is available which we requested for the Master Plan and forward it to the District as soon as possible.



DEPARTMENT OF ENVIRONMENTAL RESOURCES

The Secretary

P. O. BOX 1467 HARRISBURG, PENNSYLVANIA 17120

Refer to: RM-P

January 11, 1974

Colonel Robert S. McGarry Department of the Army Baltimore District Corps of Engineers Post Office Box 1715 Baltimore, Maryland 21203

Dear Colonel McGarry:

The following information has been compiled for incorporation in your Master Plan for the Foster Joseph Sayers Dam:

- A. A statement of the Department of Environmental Resources, Bureau of State Parks' policies and objectives can best be derived from Outdoor Recreation Horizons. This publication was given to Mr. Jerrold D. McSwain at the December meeting of our respective staffs.
- B. An organizational chart of the Bureau of State Parks and staff elements is enclosed.
- C. General construction and maintenance regulations and procedures follow the guidelines presented in the Department's Standard Specifications for Construction, Form No. WCE-5, and Pennsylvania's Department of Highways Specifications, Form 408. Copies are on file in your offices.
- D. The present general public use areas include Upper Green's Run Launch, Lower Green's Run Launch, No. 1 Boat Launch Ramp, No. 2 Boat Launch Ramp and Bald Eagle Launch Ramp.

Upper Green's Run Launch Area includes boat launching, fishing, and picnicking (limited to eight picnic tables). This area is open daily from 8:00 A.M. to sunset and has a parking lot capacity for 65 cars.

Lower Green's Run Launch Area includes boat launching, fishing, and limited picnicking facilities, and this area provides a staging area

for sailboat racing every Sunday during the summer months. This launch is open 24 hours and provides parking for 70 cars.

Boat launch ramp No. 1 provides boat launching, fishing, and limited picnicking. Hours of operation are from 8:00 A.M. till sunset and the parking lot has a capacity of 110 cars. Boat launch ramp No. 2 has basically the same specifications as No. 1 area.

The Bald Eagle Launch Area also includes launching, fishing, and limited picnicking. This area is open for operation 24 hours and provides parking for 80 cars.

E. Cooperative efforts on this project have been with the following agencies: Pennsylvania Fish Commission, Pennsylvania Game Commission, U.S. Soil Conservation Service, Bureau of Forestry, Bureau of Water Quality Management, and The Pennsylvania State University.

The Fish Commission has stocked several million fish in this impoundment in order to establish a substantial game fish population. The results to date have not been very satisfactory, due to the large population of rough fish in this impoundment. The management of this fishery is under the jurisdiction of the Pennsylvania Fish Commission. The enforcement of the Pennsylvania fish laws and boating laws is also under their control. A cooperative effort on enforcement exists between State parks and Fish Commission personnel.

The Pennsylvania Game Commission helps to determine areas of park lands that are open to public hunting and the areas that should be restricted. Game protectors enforce the State Game Laws on these lands. The Park Superintendent also has the authority to enforce these laws. Nursery stock of game food species could be obtained from the Commission for planting on park lands. It should be noted that such a nursery exists next to this park complex.

The U.S. Soil Conservation Service is presently working on a plan for erosion control on the southeast aspect of the hill located northeast from the proposed beach area.

The Bureau of Forestry assists on all facets of forest land management and pest control.

The Department of Environmental Resources, Bureau of Water Quality

Colonel Robert S. McGarry Baltimore, Maryland

Management, constantly searches out and enforcably eliminates sources of pollutants in this watershed.

The Pennsylvania State University uses the project area for field trips and research. Present projects include the effects of high water on vegetation and a solar radiation study.

- F. Enclosed is a copy of the State Park Rules and Regulations which govern this area. Security is achieved by a full-time park ranger and one part-time summer ranger.
- G. Enclosed are the specifications for traffic control signs used at this State park. These signs help insure the user of locating the available facility as well as serving for traffic control and user safety.
- H. As of this time, no extensive inventory of the characteristics and capabilities of the natural resource of this park area has been completed. Specific area surveys have been done in conjunction with some of our present resource management projects. These projects include but are not limited to the following:
  - 1. The Virginia Pine stand at boat launch No. 2 will be cut to allow hardwood replacement.
  - 2. Soil erosion control measures in the form of diversion ditches along the southeast aspect of the proposed picnic area.
  - 3. Proposed future plantings of hardwoods and shrubs for game animals throughout the open area of the park. All efforts will be made to keep cover types diversified.
  - 4. Fire protection in the form of a formal fire plan submitted to the District Forester will include the mowing of safety strips in open dry fields.
  - 5. Constant surveying to recognize and deal with insect and disease problems in wooded areas.

I. Expenditures and proposed budget are as follows:

<u>Fiscal Year</u>	<u>Salary</u>	Wage	Materials & Supplies	<u>Cap. Equip</u> .
1970-1971	5,792	2,005	676.00	0
1971-1972	19,496	27,272	21,854.00	3,305.00
1972-1973	34,283	9,466	26,098.00	5,967.00
1973-1974*	35,500	5,000	25,000.00	0
1974-1975**	105,865	22,135	37,000.00	54,560.00

\* Estimated

\*\* Budget request. Increase due to the anticipated completion of the office, maintenance building and marina facilities.

#### - 3 -

Colonel Robert S. McGarry Baltimore, Maryland January 11, 1974

J. No Master Plan has been prepared for future development at Bald Eagle State Park and planning is not currently programmed for this area since no additional facilities are currently contained in the Five-year Capital Development Program.

General State Authority Project 191-29, "Administrative & Service Building and Marina and Picnic Facilities", for a contractual amount of \$1,271,105 is currently 12% completed.

The Department's 1974-75 Fiscal Year Budget Request contains as priority item #3 of 18 projects "Construction of Beach Facilities". This is basically the completion of General State Authority Project 191-29 above, and provides for beach and bathhouse facilities previously deleted due to inadequate funds.

Sincerely your MAURICE GODDARD

Enclosures