Bound

MULTIPLE-PURPOSE PROJECT
GRAND (NEOSHO) RIVER, KANSAS
ARKANSAS RIVER WATERSHED

COUNCIL GROVE LAKE

DESIGN MEMORANDUM NO. 2B

MASTER PLAN
(UPDATED)

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
TULSA DISTRICT
AUGUST 1975

10

CESWD-CO-RP (CESWT-OD-RP/3 Nov 89) 1st End Mr. McCauley/jw/7-2434
SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas, Supplement No. 4 to Design Memorandum No. 2B, Master Plan

Commander, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, TX 75242-0216 16 NOV 1989

FOR Commander, Tulsa District, ATTN: CESWT-OD-RP

Subject supplement is approved subject to the following comments:

a. General. When the name changes are made in the NRMS, the former names should be noted in order to track the data.

b. Drawing 93/6. It is not clear as to where the loop between Marina Cove and Neosho Park belongs. Is it a part of one of these recreation areas or will it be deleted? This should be shown.

FOR THE COMMANDER:

Gene R Dretke

Encl
wd

GENE R. DRETKE, P.E.
Acting Chief, Construction-Operations Division

CF (w/basic & encl)
CECW-ON

REPRODUCED AT GOVERNMENT EXPENSE

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74121-0061

REPLY TO
ATTENTION OF:

CESWT-OD-RP (1130) 03 NOV 1989

MEMORANDUM FOR Commander, Southwestern Division, ATTN: CESWD-CO-R

SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas, Supplement No. 4 to Design Memorandum No. 2B, Master Plan

The subject supplement is submitted for review and approval.

FOR THE COMMANDER:

Encl (4 cys)

JOHN P. CLARK, P.E.
Chief, Operations Division

REPRODUCED AT GOVERNMENT EXPENSE

Tulsa District's 50th Anniversary '39 '89

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

SUPPLEMENT NO. 4
TO
DESIGN MEMORANDUM NO. 2B
MASTER PLAN

1. Purpose. The purposes of this supplement are to:

a. Revise and update the public use area site plans to reflect as-built conditions.

b. Submit proposed future developments for approval.

c. Revise the public use area names to reduce confusion for the public.

2. Scope of Work. The as-built site plans of each public use area were taken from aerial photographs of the project, enlarged to a scale of 1 inch = 200 feet. Road alignments, shoreline and major facility locations were taken directly from the enlarged photographs. Field work was then performed at the project to verify the locations of all roads, facilities, utility lines and shoreline.

3. Discussion.

a. The enclosed public use area drawings show all park features added or modified since the last master plan drawings update in 1981. Plans for future development have also been shown on the drawings and indicated in the recreational facility charts. The following drawings were updated:

Drawing Number	Title
CB590-2B-93/3	Custer Park (formerly Richey Cove North)
CB590-2B-93/4	Kit Carson Cove and Richey Cove (formerly Richey Cove South)
CB590-2B-93/5	Outlet Park and Kansa View (formerly Outlet and Dam Site)
CB590-2B-93/6	Santa Fe Trail, Marina Cove and Neosho Park (formerly Neosho Park)
CB590-2B-93/8	Canning Creek Cove

b. The new recreation area names were requested by the Project Manager to eliminate confusion that was caused by having multiple park areas with the same names. The new names are based on the history of the Council Grove area, most of which centers around the Santa Fe Trail. Local historians and the general public were consulted on the new names.

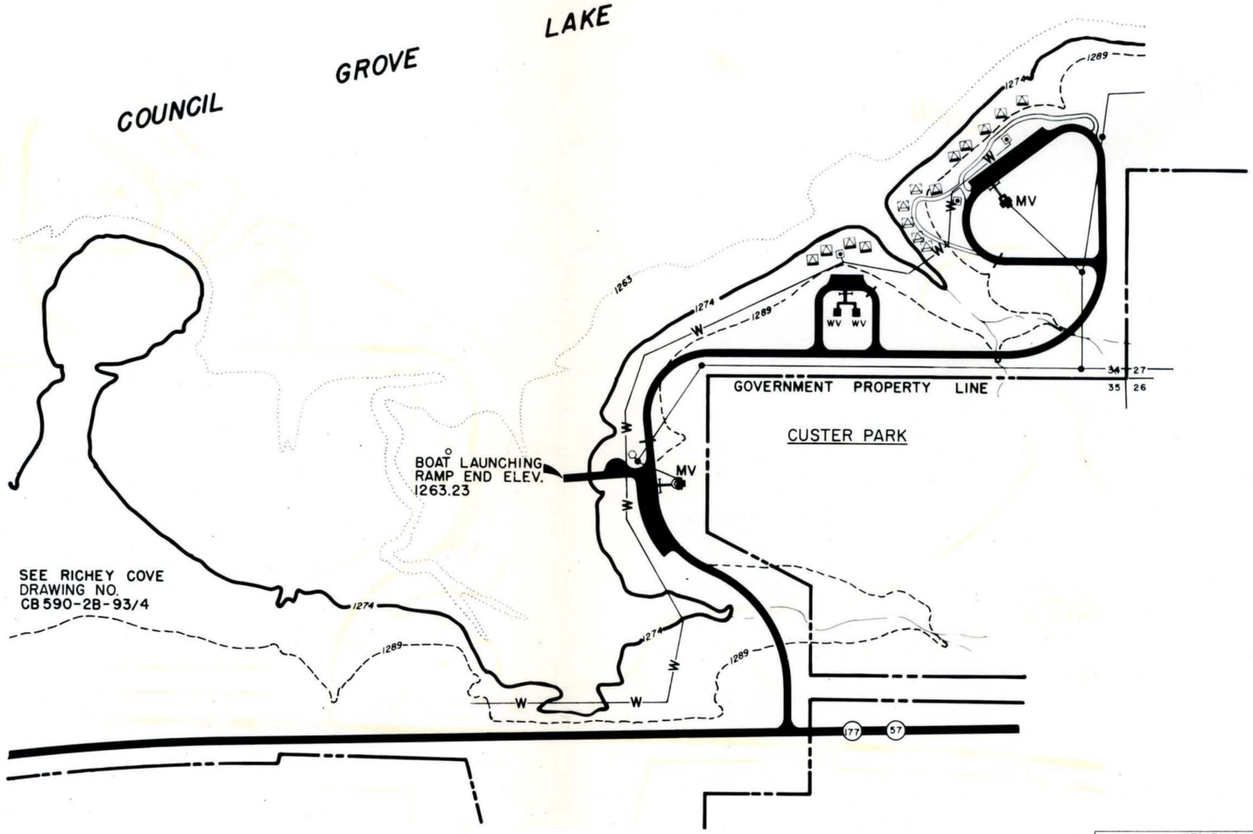
REPRODUCED AT WENT EXPENSE

c. Proposed future facilities are shown at Custer Park, Richey Cove, Santa Fe Trail and Canning Creek. These will be submitted for approval of SRUF funding in future fiscal years.

4. Recommendation. I recommend that this supplement be approved as submitted.

JOHN P. CLARK, P.E.
Chief, Operations Division

REPRODUCED AT GOVERNMENT EXPENSE



LEGEND

	EXISTING	PROPOSED
ROADS		
PAVED	▬▬▬	▬ ▬ ▬
IMPROVED	═══	
UNIMPROVED	═══	
TOILETS		
WOOD VAULT	■ WV	□ WV
CORRUGATED METAL VAULT	● CMT	○ CMT
MASONRY VAULT	MV	MV
WATERBORNE	WB	WB
WATERBORNE WITH SHOWER	WB/S	WB/S
GROUP PICNIC SHELTER	▬ GPS	▭ GPS
GROUP CAMPING SHELTER	▬ GCS	▭ GCS
PICNIC SITE	△	△
PICNIC / CAMPSITE WITH SHELTER	⛺	⛺
CAMPSITE (INCLUDES TABLE, UTILITY TABLE, PEDESTAL COOKER, AND REFUSE CAN)	▲	▲
CAMPSITE WITH ELECTRICAL HOOK-UP	▲	
WATER HYDRANT	⊕	
SECURITY LIGHT	○	
TRAILER SANITARY STATION	■ SS	□ SS
WATER LINE	—W—	
POWERLINE, OVERHEAD	—•—•—	
POWERLINE, UNDERGROUND	—P—	
SANITARY SEWER LINE	—S—	
TRANSFORMER	▣	
SEPTIC TANK & TILE FIELD	—SS—○	

RECREATIONAL FACILITIES

ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	2		2
WATERBORNE TOILET W/SHOWER			
WATERBORNE TOILET			
MASONRY VAULT TOILET	2		2
WOOD VAULT TOILET	2		2
CAMPSITES	10	5	15
PICNIC SITES			
PEDESTAL COOKERS	10	5	15
FIRERINGS			
LANTERN STANDS			
UTILITY TABLES	10	5	15
ELECTRICAL HOOK-UPS			
TRAILER SANITARY STATION			
REFUSE CANS	8	2	10
AREA LIGHT	1		1
WATER HYDRANTS	3		3
GROUP PICNIC SHELTER			
GROUP CAMPSITE			
CHANGE HOUSE			
CORRUGATED METAL VAULT TOILET			

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE

GRAND (NEOSHO) RIVER, KANSAS

CUSTER PARK

(RICHEY COVE – NORTH – RECREATION AREA)

SCALE OF FEET

200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS, OCTOBER 1989

CB590-2B-93/3

LEGEND

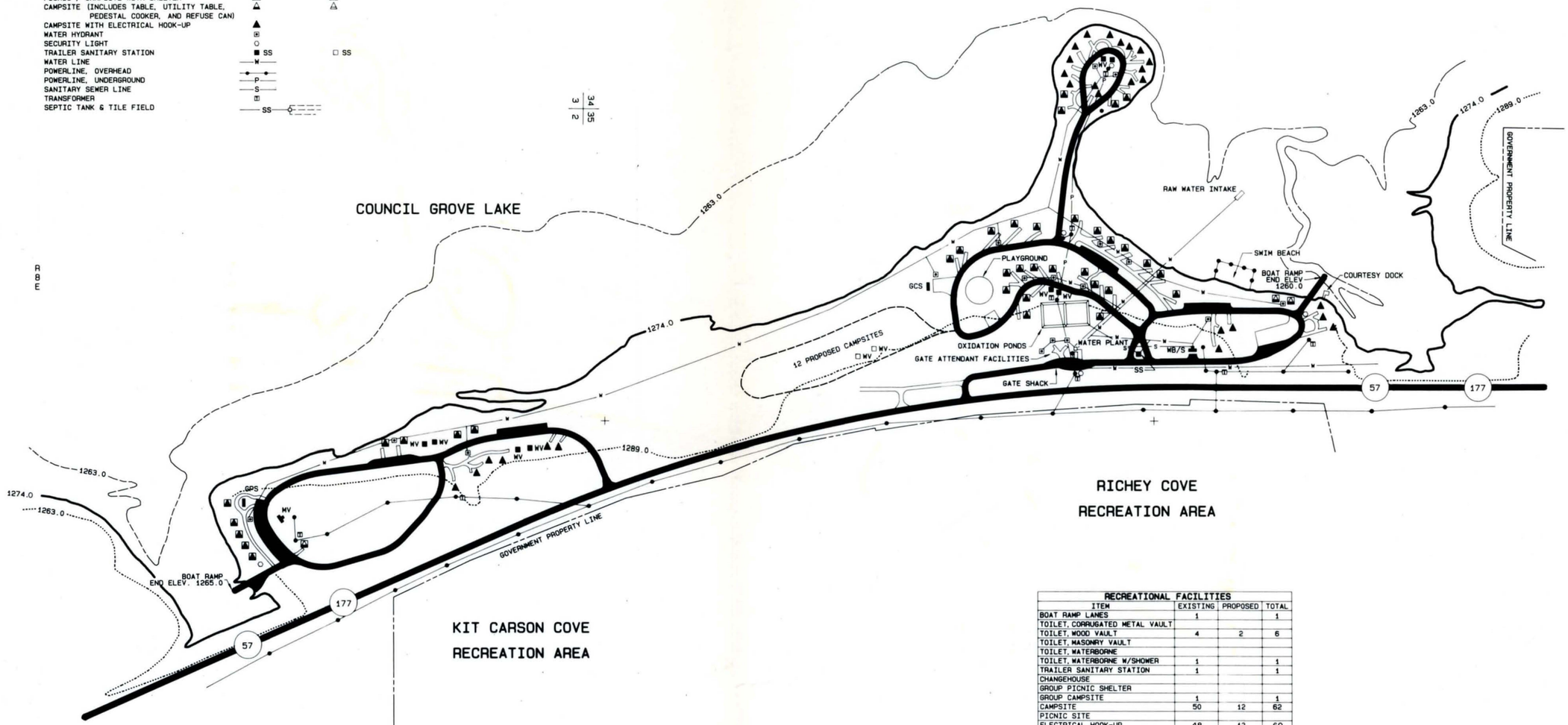
	EXISTING	PROPOSED
ROADS		
PAVED	▬▬▬	▬ ▬ ▬
IMPROVED	═══	
UNIMPROVED	═══	
TOILETS		
WOOD VAULT	■ WV	□ WV
CORRUGATED METAL VAULT	● CMT	○ CMT
MASONRY VAULT	▲ MV	△ MV
WATERBORNE	▲ WB	△ WB
WATERBORNE WITH SHOWER	▲ WB/S	△ WB/S
GROUP PICNIC SHELTER	▬ GPS	▭ GPS
GROUP CAMPING SHELTER	▬ GCS	▭ GCS
PICNIC SITE	△	△
PICNIC / CAMPSITE WITH SHELTER	⛋	⛋
CAMPSITE (INCLUDES TABLE, UTILITY TABLE, PEDESTAL COOKER, AND REFUSE CAN)	⛺	⛺
CAMPSITE WITH ELECTRICAL HOOK-UP	▲	
WATER HYDRANT	⛨	
SECURITY LIGHT	○	
TRAILER SANITARY STATION	■ SS	□ SS
WATER LINE	—W—	
POWERLINE, OVERHEAD	—•—•—	
POWERLINE, UNDERGROUND	—P—	
SANITARY SEWER LINE	—S—	
TRANSFORMER	⊟	
SEPTIC TANK & TILE FIELD	—SS—○═══	

T 16 S T 15 S

3 | 2 | 34 | 35

R 8 E

COUNCIL GROVE LAKE



RICHEY COVE
RECREATION AREA

KIT CARSON COVE
RECREATION AREA

RECREATIONAL FACILITIES

ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	1		1
TOILET, CORRUGATED METAL VAULT			
TOILET, WOOD VAULT	4		4
TOILET, MASONRY VAULT	1		1
TOILET, WATERBORNE			
TOILET, WATERBORNE W/SHOWER			
TRAILER SANITARY STATION			
CHANGEHOUSE			
GROUP PICNIC SHELTER	1		1
GROUP CAMPSITE			
CAMPSITE	16		16
PICNIC SITE			
ELECTRICAL HOOK-UP	15		15
PEDESTAL COOKERS	16		16
FIRERING	16		16
UTILITY TABLE	16		16
LANTERN STAND	7		7
REFUSE CAN	12		12
WATER HYDRANT	3		3
AREA LIGHT	1		1

RECREATIONAL FACILITIES

ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	1		1
TOILET, CORRUGATED METAL VAULT			1
TOILET, WOOD VAULT	4	2	6
TOILET, MASONRY VAULT			
TOILET, WATERBORNE			
TOILET, WATERBORNE W/SHOWER	1		1
TRAILER SANITARY STATION	1		1
CHANGEHOUSE			
GROUP PICNIC SHELTER			
GROUP CAMPSITE	1		1
CAMPSITE	50	12	62
PICNIC SITE			
ELECTRICAL HOOK-UP	48	12	60
PEDESTAL COOKERS	50	12	62
FIRERING	50	12	62
UTILITY TABLE	50	12	62
LANTERN STAND		12	12
REFUSE CAN	25	8	33
WATER HYDRANT	11	2	13
AREA LIGHT	4	1	5

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

KIT CARSON COVE & RICHEY COVE RECREATION AREAS (RICHEY COVE SOUTH)

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA, CORPS OF ENGINEERS
OCTOBER 1989

CB590-2B-93/4

COUNCIL GROVE LAKE

TOP OF DAM ELEVATION 1321.0'

GATE TOWER

WALK TO FISHING PLATFORM

ACCESS ROAD

OUTLET CHANNEL

OUTLET RECREATION AREA

MOTORCYCLE AREA

PICNIC AREA

FLOW

GRAND (NEOSHO) RIVER

AREA CLOSED

KANSA VIEW RECREATION AREA

GATE

MV

GPS

1263

1274

1289

57

TO COUNCIL GROVE 1.5 MILES

T 16 S

GOVERNMENT PROPERTY LINE

LEGEND

	EXISTING	PROPOSED
ROADS		
PAVED	▬▬	▬ ▬
IMPROVED	═══	
UNIMPROVED	═══	
TOILETS		
WOOD VAULT	■ WV	□ WV
CORRUGATED METAL VAULT	● CMT	○ CMT
MASONRY VAULT	▲ MV	△ MV
WATERBORNE	▲ WB	△ WB
WATERBORNE WITH SHOWER	▲ WB/S	△ WB/S
GROUP PICNIC SHELTER	▬ GPS	▭ GPS
GROUP CAMPING SHELTER	▬ GCS	▭ GCS
PICNIC SITE	△	△
PICNIC / CAMPSITE WITH SHELTER	⛺	⛺
CAMPSITE (INCLUDES TABLE, UTILITY TABLE, PEDESTAL COOKER, AND REFUSE CAN)	▲	▲
CAMPSITE WITH ELECTRICAL HOOK-UP	▲	
WATER HYDRANT	⊞	
SECURITY LIGHT	○	
TRAILER SANITARY STATION	■ SS	□ SS
WATER LINE	—W—	
POWERLINE, OVERHEAD	—•—•—	
POWERLINE, UNDERGROUND	—P—	
SANITARY SEWER LINE	—S—	
TRANSFORMER	⊟	
SEPTIC TANK & TILE FIELD	—SS—⊖	

RECREATIONAL FACILITIES

ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES			
WATERBORNE TOILET W/SHOWER			
WATERBORNE TOILET			
MASONRY VAULT TOILET	1		1
WOOD VAULT TOILET	4		4
CAMPSITES	5		5
PICNIC SITES			
PEDESTAL COOKERS	5		5
FIRERINGS	5		5
LANTERN STANDS			
UTILITY TABLES	5		5
ELECTRICAL HOOK-UPS			
TRAILER SANITARY STATION			
REFUSE CANS	7		7
AREA LIGHT			
WATER HYDRANTS	1	2	3
GROUP PICNIC SHELTER	1		
GROUP CAMPSITE			
CHANGEHOUSE			
CORRUGATED METAL VAULT TOILET			

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE

GRAND (NEOSHO) RIVER, KANSAS

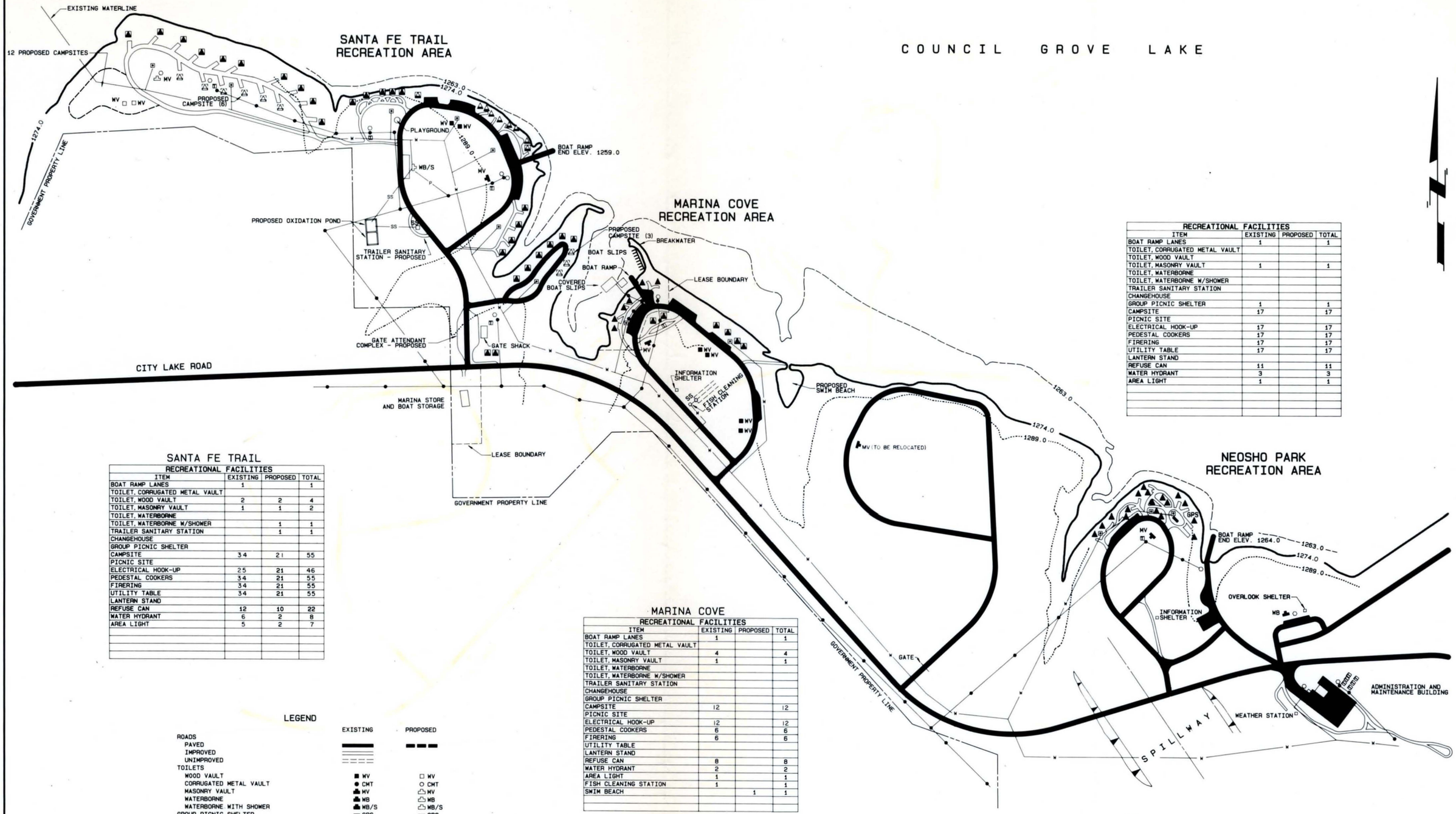
OUTLET AND KANSA VIEW RECREATION AREAS (OUTLET AND DAM SITE RECREATION AREAS)

SCALE OF FEET

200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS, OCTOBER 1989

CB590-2B-93/5



RECREATIONAL FACILITIES			
ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	1		1
TOILET, CORRUGATED METAL VAULT			
TOILET, WOOD VAULT			
TOILET, MASONRY VAULT	1		1
TOILET, WATERBORNE			
TOILET, WATERBORNE W/SHOWER			
TRAILER SANITARY STATION			
CHANGEHOUSE			
GROUP PICNIC SHELTER	1		1
CAMPSITE	17		17
PICNIC SITE			
ELECTRICAL HOOK-UP	17		17
PEDESTAL COOKERS	17		17
FIRERING	17		17
UTILITY TABLE	17		17
LANTERN STAND			
REFUSE CAN	11		11
WATER HYDRANT	3		3
AREA LIGHT	1		1

SANTA FE TRAIL

RECREATIONAL FACILITIES			
ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	1		1
TOILET, CORRUGATED METAL VAULT			
TOILET, WOOD VAULT	2	2	4
TOILET, MASONRY VAULT	1	1	2
TOILET, WATERBORNE			
TOILET, WATERBORNE W/SHOWER		1	1
TRAILER SANITARY STATION		1	1
CHANGEHOUSE			
GROUP PICNIC SHELTER			
CAMPSITE	34	21	55
PICNIC SITE			
ELECTRICAL HOOK-UP	25	21	46
PEDESTAL COOKERS	34	21	55
FIRERING	34	21	55
UTILITY TABLE	34	21	55
LANTERN STAND			
REFUSE CAN	12	10	22
WATER HYDRANT	6	2	8
AREA LIGHT	5	2	7

MARINA COVE

RECREATIONAL FACILITIES			
ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	1		1
TOILET, CORRUGATED METAL VAULT			
TOILET, WOOD VAULT	4		4
TOILET, MASONRY VAULT	1		1
TOILET, WATERBORNE			
TOILET, WATERBORNE W/SHOWER			
TRAILER SANITARY STATION			
CHANGEHOUSE			
GROUP PICNIC SHELTER			
CAMPSITE	12		12
PICNIC SITE			
ELECTRICAL HOOK-UP	12		12
PEDESTAL COOKERS	6		6
FIRERING	6		6
UTILITY TABLE			
LANTERN STAND			
REFUSE CAN	8		8
WATER HYDRANT	2		2
AREA LIGHT	1		1
FISH CLEANING STATION	1		1
SWIM BEACH		1	1

LEGEND

	EXISTING	PROPOSED
ROADS		
PAVED	▬▬	▬ ▬
IMPROVED	═══	
UNIMPROVED	= = = =	
TOILETS		
WOOD VAULT	■ WV	□ WV
CORRUGATED METAL VAULT	● CMT	○ CMT
MASONRY VAULT	⛰ MV	⛰ MV
WATERBORNE	⛴ WB	⛴ WB
WATERBORNE WITH SHOWER	⛴ WB/S	⛴ WB/S
GROUP PICNIC SHELTER	▬ GPS	▭ GPS
GROUP CAMPING SHELTER	▬ GCS	▭ GCS
PICNIC SITE	△	△
PICNIC / CAMPSITE WITH SHELTER	⛺	⛺
CAMPSITE (INCLUDES TABLE, UTILITY TABLE, PEDESTAL COOKER, AND REFUSE CAN)	⛺	⛺
CAMPSITE WITH ELECTRICAL HOOK-UP	▲	
WATER HYDRANT	⊞	
SECURITY LIGHT	○	
TRAILER SANITARY STATION	■ SS	□ SS
WATER LINE	—W—	
POWERLINE, OVERHEAD	—•—•—	
POWERLINE, UNDERGROUND	—P—	
SANITARY SEWER LINE	—S—	
TRANSFORMER	⊞	
SEPTIC TANK & TILE FIELD	—SS—⊖	

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

SANTA FE TRAIL, MARINA COVE AND NEOSHO PARK RECREATION AREAS (NEOSHO PARK)

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA, CORPS OF ENGINEERS
OCTOBER 1989

CB590-2B-93/6

LEGEND

	EXISTING	PROPOSED
ROADS		
PAVED	▬▬	▬ ▬
IMPROVED	═══	
UNIMPROVED	═══	
TOILETS		
WOOD VAULT	■ WV	□ WV
CORRUGATED METAL VAULT	● CMT	○ CMT
MASONRY VAULT	♣ MV	♧ MV
WATERBORNE	♣ WB	♧ WB
WATERBORNE WITH SHOWER	♣ WB/S	♧ WB/S
GROUP PICNIC SHELTER	▬ GPS	▭ GPS
GROUP CAMPING SHELTER	▬ GCS	▭ GCS
PICNIC SITE	△	△
PICNIC / CAMPSITE WITH SHELTER	⛺	⛺
CAMPSITE (INCLUDES TABLE, UTILITY TABLE, PEDESTAL COOKER, AND REFUSE CAN)	▲	▲
CAMPSITE WITH ELECTRICAL HOOK-UP	▲	
WATER HYDRANT	⊕	
SECURITY LIGHT	○	
TRAILER SANITARY STATION	■ SS	□ SS
WATER LINE	W	
POWERLINE, OVERHEAD	P	
POWERLINE, UNDERGROUND	P	
SANITARY SEWER LINE	S	
TRANSFORMER	⊞	
SEPTIC TANK & TILE FIELD	SS	

T 16 S T 15 S

KANSAS DEPARTMENT OF WILDLIFE AND PARKS COMPOUND

CHAIN LINK FENCE
OFFICE
1274.0
PLAYGROUND
GATE ATTENDANT FACILITIES
GOVERNMENT PROPERTY LINE
OXIDATION PONDS
SS
STORAGE BUILDING
1263.0
WB/S
GATE SHACK
LIFT STATION
PROPOSED COURTESY DOCK
GPS
PLAYGROUND
BOAT RAMP END ELEV. 1257.0
INFORMATION SHELTER
AMPHITHEATER
SWIMMING BEACH
1289.0
CANNING CREEK COVE RECREATION AREA
COUNCIL GROVE LAKE
LIFT STATION WB/S
GCS
BOAT RAMP END ELEV. 1262.23
PLAYGROUND
GPS
FAS 467
GOVERNMENT PROPERTY LINE

RECREATIONAL FACILITIES			
ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	2		2
TOILET, CORRUGATED METAL VAULT			
TOILET, WOOD VAULT	8		8
TOILET, MASONRY VAULT	1		1
TOILET, WATERBORNE			
TOILET, WATERBORNE W/SHOWER	2		2
TRAILER SANITARY STATION	1		1
CHANGEHOUSE			
GROUP PICNIC SHELTER	2		2
GROUP CAMPSITE	1		1
CAMPSITE	59	2	61
PICNIC SITE			
ELECTRICAL HOOK-UP	44	2	46
PEDESTAL COOKERS	58	2	60
FIRERING	56	2	58
UTILITY TABLE	55	2	57
LANTERN STAND			
REFUSE CAN	25		25
WATER HYDRANT	19		19
AREA LIGHT	5		5

COUNCIL GROVE LAKE

GRAND (NEOSHO) RIVER, KANSAS

CANNING CREEK COVE RECREATION AREA

SCALE OF FEET

200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA, CORPS OF ENGINEERS

OCTOBER 1989

CB590-2B-93/8

SWDCO-RP (SWTOD-RO/13 Mar 87) 1st End
SUBJECT: Council Grove Lake, Grand (NEOSHO) River, Kansas; Supplement No. 2 to Appendix F, Lakeshore Management Plan, Design Memorandum No. 2B, Master Plan (Updated)

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, TX 75242-0216 2 APR 1987

TO: Commander Tulsa District, ATTN: SWTOD-RO

Approved.

FOR THE COMMANDER:

for A. P. HUTCHISON
Chief, Construction-
Operations Division

CF (w/basic):
DAEN-CWO-R (dupe)

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74121-0061

REPLY TO
ATTENTION OF

SWTOD-RO

13 March 1987

SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas; Supplement No. 2 to Appendix F, Lakeshore Management Plan, Design Memorandum No 2B, Master Plan (Updated)

Commander, Southwestern Division
ATTN: SWDCO-R

1. A review has been made of the subject appendix. It has been determined that no changes are necessary.

2. This supplement is submitted for review and approval.

FOR THE COMMANDER:

JOHN P. CLARK, P.E.
Chief, Operations Division

SWDCO-RP (SWTOD-RM/13 Mar 86) 1st End
SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas, Supplement No. 3 to Design Memorandum No. 2B, Master Plan (Updated)

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, TX 75242-0216 2 APR 1986

TO: Commander, Tulsa District, ATTN: SWTOD-RM

Approved subject to the following comment:

Only six campsites were approved in your FY 86 SRUF program for Neosho Park. If you now plan to construct 10 units as stated, the analysis should be re-evaluated to assure yourself that it is economically feasible.

FOR THE COMMANDER:

Mark K. Kuwa

Encl wd

A. P. HUTCHISON
Chief, Construction-
Operations Division

CF (w/basic & encl):
DAEN-CWO-R (5 cys)

C.C. Corps
C.C. Vicksburg

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74121-0061

REPLY TO
ATTENTION OF

SWTOD-RM

SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas, Supplement No. 3 to Design Memorandum No. 2B, Master Plan (Updated)

13 MAR 1986

Commander, Southwestern Division
ATTN: SWDCO-RM

Enclosed subject supplement is submitted for review and approval.

FOR THE COMMANDER:

Encl (9 cys)

JAMES P. JONES, P.E.
Chief, Operations Division

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

SUPPLEMENT NO. 3
TO
DESIGN MEMORANDUM NO. 2B
MASTER PLAN
(UPDATED)

1. Purpose. The purpose of this supplement is to propose the construction of ten additional campsites in the Neosho Park Recreation Area and to pave an existing gravel camp road in the Richey Cove South area. The additional campsites will be constructed with FY 86 SRUF funds and the road will be paved with FY 86 operation and maintenance funds.

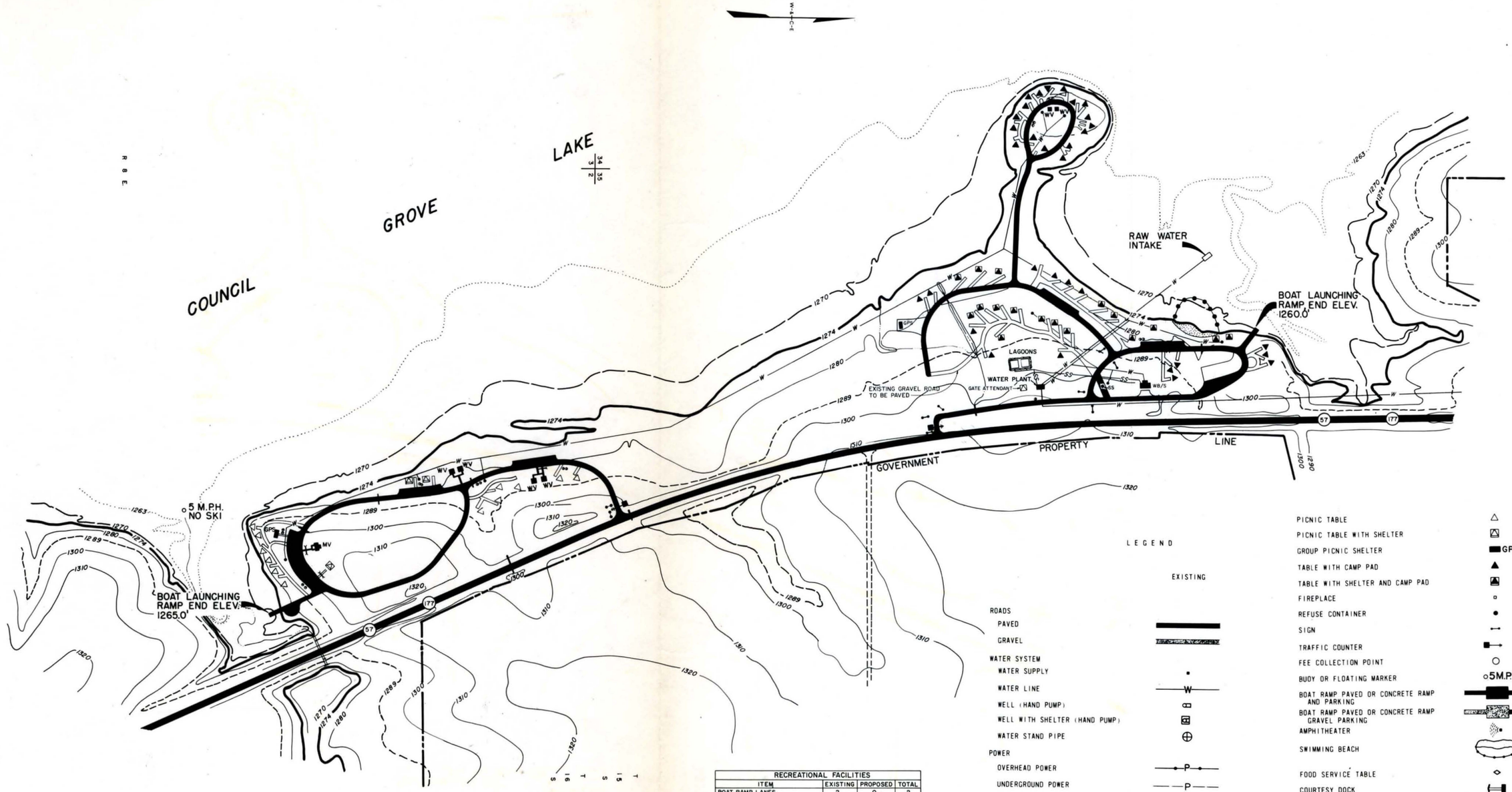
2. Justification.

a. Attendance has indicated a definite need for the additional campsites at Neosho Park. The existing facilities are being overused and are rapidly becoming a maintenance problem. The new campsites are not expected to increase visitation; however, they will help to decrease the overuse of the existing facilities and generate an increase in user fees.

b. A portion of the original exit road in Richey Cove South was closed in the 1983 season to eliminate a double entry road and to provide controlled access to the park through the fee station. The gravel road was constructed to provide circulation through the area and access to some previously constructed campsites. The road is the only section of gravel road in the park and the surfacing is needed to alleviate growing dust and maintenance problems.

3. Recommendation. I recommend that this supplement be approved as presented herein.

JAMES P. JONES, P.E.
Chief, Operations Division



RECREATIONAL FACILITIES			
ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	2	0	2
WATERBORNE TOILET W/SHOWER	1	1	2
WATERBORNE TOILET			
MASONRY VAULT TOILET	1	0	1
WOOD VAULT TOILET	3	0	3
* CAMPSITES	49	0	49
* PICNIC SITES			
PEDESTAL COOKERS	49	0	49
FIRERINGS	49	0	49
LANTERN STANDS			
UTILITY TABLES	49	0	49
ELECTRICAL HOOK-UPS			
REFUSE CANS (SINGLE)	21	0	21
REFUSE CANS (DOUBLE)			
WELLS (HAND PUMP)			
WATER HYDRANTS	8	0	8

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

LEGEND

EXISTING

ROADS
- PAVED
- GRAVEL

WATER SYSTEM
- WATER SUPPLY
- WATER LINE — W —
- WELL (HAND PUMP)
- WELL WITH SHELTER (HAND PUMP)
- WATER STAND PIPE

POWER
- OVERHEAD POWER — P —
- UNDERGROUND POWER — P —
- COURTESY LIGHT

SANITARY FACILITIES
- WOOD VAULT TOILET — WV
- MASONRY VAULT TOILET — MV
- WATER-BORNE TOILET — WB
- WATER TREATMENT PLANT — WTP
- SEWAGE DUMP STATION — SS
- WASTE STABILIZATION POND
- SEWER LINE — S —
- FORCE MAIN W/LIFT STATION — LS — FM —
- WATER-BORNE W/SHOWER — WB/S

- PICNIC TABLE
- PICNIC TABLE WITH SHELTER
- GROUP PICNIC SHELTER — GPS
- TABLE WITH CAMP PAD
- TABLE WITH SHELTER AND CAMP PAD
- FIREPLACE
- REFUSE CONTAINER
- SIGN
- TRAFFIC COUNTER
- FEE COLLECTION POINT
- BUOY OR FLOATING MARKER — 5 M.P.H.
- BOAT RAMP PAVED OR CONCRETE RAMP AND PARKING
- BOAT RAMP PAVED OR CONCRETE RAMP GRAVEL PARKING
- AMPHITHEATER
- SWIMMING BEACH
- FOOD SERVICE TABLE
- COURTESY DOCK

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

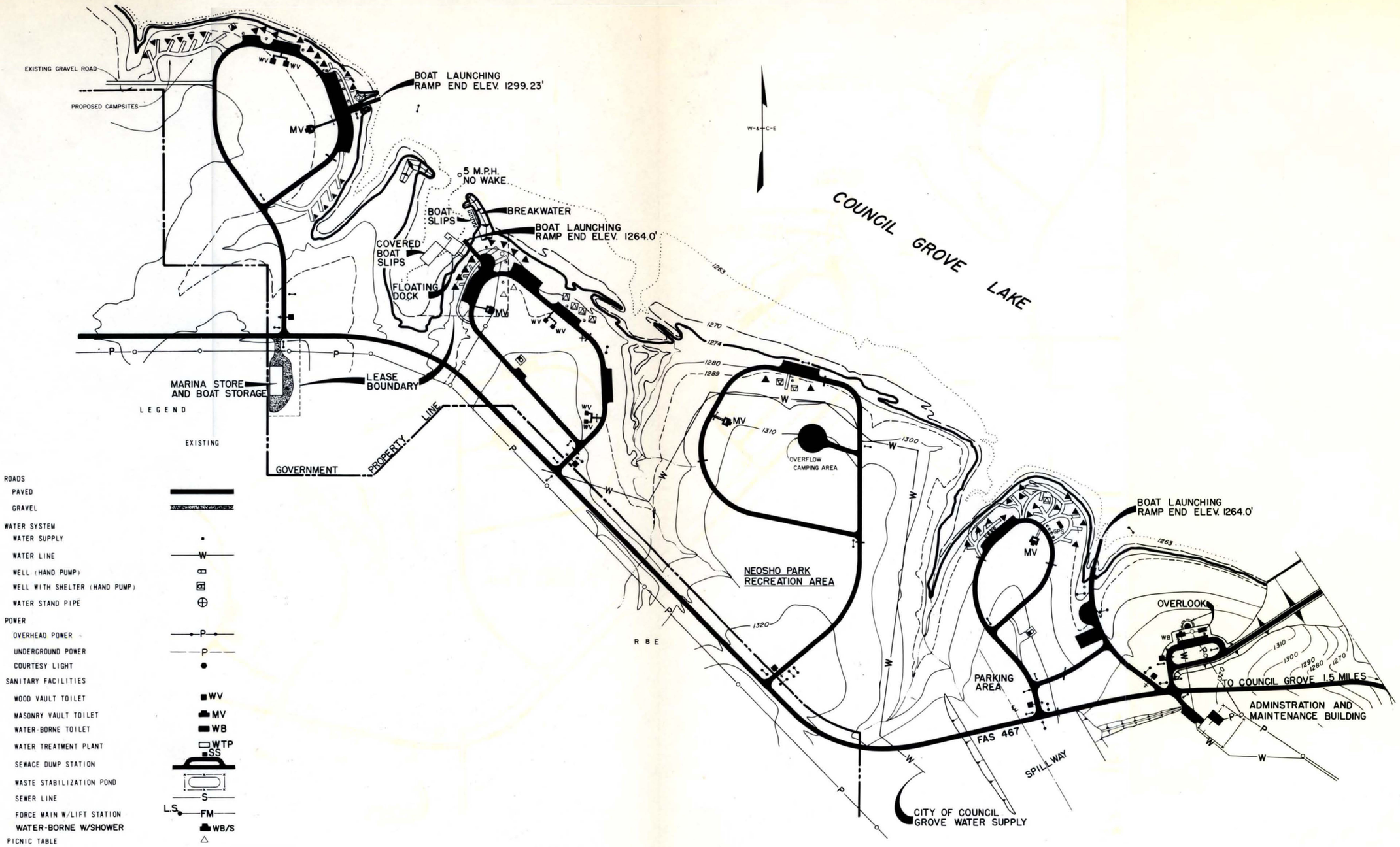
RICHEY COVE - SOUTH - RECREATION AREA

SCALE OF FEET

200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS

CB590-2B-93/4



ROADS
- PAVED
- GRAVEL

WATER SYSTEM
- WATER SUPPLY
- WATER LINE — W
- WELL (HAND PUMP)
- WELL WITH SHELTER (HAND PUMP)
- WATER STAND PIPE

POWER
- OVERHEAD POWER — P
- UNDERGROUND POWER — P
- COURTESY LIGHT

SANITARY FACILITIES
- WOOD VAULT TOILET — WV
- MASONRY VAULT TOILET — MV
- WATER-BORNE TOILET — WB
- WATER TREATMENT PLANT — WTP
- SEWAGE DUMP STATION — SS
- WASTE STABILIZATION POND
- SEWER LINE — S
- FORCE MAIN W/LIFT STATION — L.S. — FM
- WATER-BORNE W/SHOWER — WB/S

- PICNIC TABLE
- PICNIC TABLE WITH SHELTER
- GROUP PICNIC SHELTER — GPS
- TABLE WITH CAMP PAD
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- BUOY OR FLOATING MARKER — 5M.P.H.
- BOAT RAMP PAVED OR CONCRETE RAMP AND PARKING
- BOAT RAMP PAVED OR CONCRETE RAMP GRAVEL PARKING
- AMPHITHEATER
- SWIMMING BEACH
- FOOD SERVICE TABLE
- COURTESY DOCK

RECREATIONAL FACILITIES			
ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	3		3
WATERBORNE TOILET W/SHOWER		1	1
WATERBORNE TOILET	2		2
MASONRY VAULT TOILET	4		4
WOOD VAULT TOILET	4		4
* CAMPSITES	47	25	72
* PICNIC SITES			
PEDESTAL COOKERS	47	25	72
FIRERINGS	47	25	72
LANTERN STANDS			
UTILITY TABLES	47	25	72
ELECTRICAL HOOK-UPS			
REFUSE CANS (SINGLE)	7		7
REFUSE CANS (DOUBLE)	8	10	18
WELLS (HAND PUMP)	2		2
WATER HYDRANTS			

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

NEOSHO PARK RECREATION AREA

SCALE OF FEET

200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS

CB590-2B-93/6

SWDCO-RR (7 Mar 84) 1st Ind
SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas, Supplement 3 to Appendix D, Fish and Wildlife Management Plan, to Design Memorandum No. 2B, Master Plan (Updated)

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, TX 75242 2 APR 19

TO: Commander, Tulsa District, ATTN: SWTOD-RM

Approved.

FOR THE COMMANDER:

wd all incl

WALTER E. MCGOWAN, P.E.
Chief, Construction-
Operations Division

CF: w/incl
DAEN-CWO-R (2 cys)

SWDCO-RR (27 Feb 84) 1st Ind
SUBJECT: John Redmond Dam and Reservoir, Grand (Neosho) River, Kansas, Supplement 2 to Appendix D, Fish and Wildlife Management Plan, to Design Memorandum No. 8B, Master Plan (Updated)

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, TX 75242 2 APR 1984

TO: Commander, Tulsa District, ATTN: SWTOD-RM

1. Supplement 2 to Appendix D of the Project Master Plan for John Redmond Dam and Reservoir is approved provided the condition in the following paragraph is implemented.

2. The lake drawdown will begin on 5 July instead of 1 July 1984, as shown in the submitted plan.

FOR THE COMMANDER:

Walter E. McGowan

wd all incl

WALTER E. MCGOWAN, P.E.
Chief, Construction-
Operations Division

CF: w/incl
DAEN-CWO-R (2 cys)

SWDCO-RR (20 Mar 84) 1st Ind
SUBJECT: Pine Creek Lake, Little River, Oklahoma, Supplement 1 to Appendix D, Wildlife Management Plan, to Design Memorandum No. 5B, Master Plan (Updated)

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, TX 75242 3 APR 19

TO: Commander, Tulsa District, ATTN: SWTOD-RM

Approved.

FOR THE COMMANDER:

WALTER E. MCGOWAN, P.E.
Chief, Construction-
Operations Division

wd all incl

CF: w/incl
DAEN-CWO-R (2 cys)

SWDCO-RR (8 Mar 84) 1st Ind
SUBJECT: Revision of El Dorado Lake Staged Filling Plan

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, TX 75242 3 APR 1984

TO: Commander, Tulsa District, ATTN: SWTOD-RM

Approved.

FOR THE COMMANDER:

WALTER E. MCGOWAN, P.E.
Chief, Construction-
Operations Division

1 Incl
nc

SWDCO-RR (20 Mar 84) 1st Ind
SUBJECT: Kaw Lake, Arkansas River Oklahoma, Supplement 1 to Appendix D, Wildlife Management Plan, to Design Memorandum No. 4B, Master Plan

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, TX 75242

3 APR 1984

TO: Commander, Tulsa District, ATTN: SWTOD-RM

Approved.

FOR THE COMMANDER:

Walter E. McGowan

WALTER E. MCGOWAN, P.E.
Chief, Construction-
Operations Division

wd all incl

CF: w/incl
DAEN-CWO-R (2 cys)

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74121

10

REPLY TO
ATTENTION OF

SWTOD-RM

2 March 1984

SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas, Supplement 3 to Appendix D, Fish and Wildlife Management Plan, to Design Memorandum No. 2B, Master Plan (Updated)

Commander, Southwestern Division
ATTN: SWDCO-RR

7 MAR 1984

Subject supplement (Incl 1) is submitted for review and approval in accordance with ER 1130-2-400.

FOR THE COMMANDER:

1 Incl (9 cys)
as

JAMES P. JONES, P.E.
Chief, Operations Division

COUNCIL GROVE LAKE
Lake Level Manipulation Plan

Supplement 3 to Appendix D, Fish and Wildlife Management Plan

Purpose - The purpose of this supplement is to update the master plan to include the lake level manipulation plan requested by Kansas Fish and Game (KF&G). The lake level manipulation plan is intended to improve fish and wildlife resources of the lake.

Attached as Exhibit 1 is the plan agreed upon after coordination with the appropriate state and Federal agencies.

Duration of Operation - This plan is implemented only on a yearly basis due to water supply commitments.

Effects on Project Purposes - Boat ramps in public use areas extend to elevations 1260 ft. and 1265 ft. NGVD in Richey Cove South, to elevation 1264 ft. NGVD in Neosho Park, to elevation 1263 ft. NGVD in Richey Cove North, and to elevation 1257 ft. NGVD in Canning Creek. Therefore, all boat ramps will be usable with the proposed plan. Camping will not be affected as the lake will be at the lower elevation during the winter months. The Council Grove Project requested that the higher elevation during the recreation season not exceed 1273.5 ft. NGVD in order to provide a high water buffer zone for one of the parks that has facilities near elevation 1274.5 ft. NGVD. The Kansas Fish and Game therefore requested the high elevation be maintained at 1273.0 ft. NGVD. The water level management plan proposed in Exhibit 1 will not have a direct effect on the recreation at Council Grove Lake. However, it will indirectly improve recreational opportunities as it will improve fishing and hunting at the lake.

The proposed plan will not adversely affect the one concessioner located on Council Grove Lake, as the pool level will be brought up before the fishing and recreation seasons begin.

Coordination with Appropriate State and Federal Agencies - The plan has been coordinated with the Kansas Fish and Game and the Kansas Water Office. The Kansas Water Office submitted the plan to all other interested state agencies and cities with water supply contracts for water from Council Grove Lake. Their comments were incorporated in the plan submitted to our office.

Shoreline Improvements - The plan will have no effect on the shoreline. The established erosion pattern of the shoreline below elevation 1274 ft. NGVD has exposed rock outcroppings which produce natural protection for the shoreline. Shoreline problems result from flood inflows and high water levels which erode new areas above conservation pool level. The major concern is with the length of time flood waters are held and having the water level above conservation level at the time winds are most prevalent. Limited water quality data have been collected to document effects of water level management on water quality parameters. Turbidity or Secchi disc readings have indicated that improved water clarity has occurred with implementation of the water level management plans.

Proposed Lake Level Management Plan
For Council Grove Lake

1. From January 1 to March 14, 1984, maintain the lake level at 1270 ft. NGVD.

Benefits:

a. Reduce wave action on the shoreline and existing vegetation.

b. Eliminate algae growth on the riprap of the dam to enhance walleye spawning areas in the spring.

c. Provide a buffer against large spring inflows, reducing the chances for sudden drawdowns and large releases.

2. Beginning March 15, store excess inflows to raise the lake level to 1273 ft. NGVD.

Benefits:

a. Provide good spawning conditions for walleye which begin congregating off the dam in late March. Freshly inundated rocky areas will be free of algae which can have a detrimental effect on eggs and fry through oxygen depletion resulting in suffocation.

b. Create an expanded situation (increased littoral areas and volume) to encourage fish production.

3. From the time a lake level of 1273 ft. NGVD is reached until December 1, maintain a relatively stable lake level.

Benefits:

a. Provide stable spawning conditions to allow sufficient time for egg and fry development.

b. Maintain an expanded situation to encourage gizzard shad and minnow production.

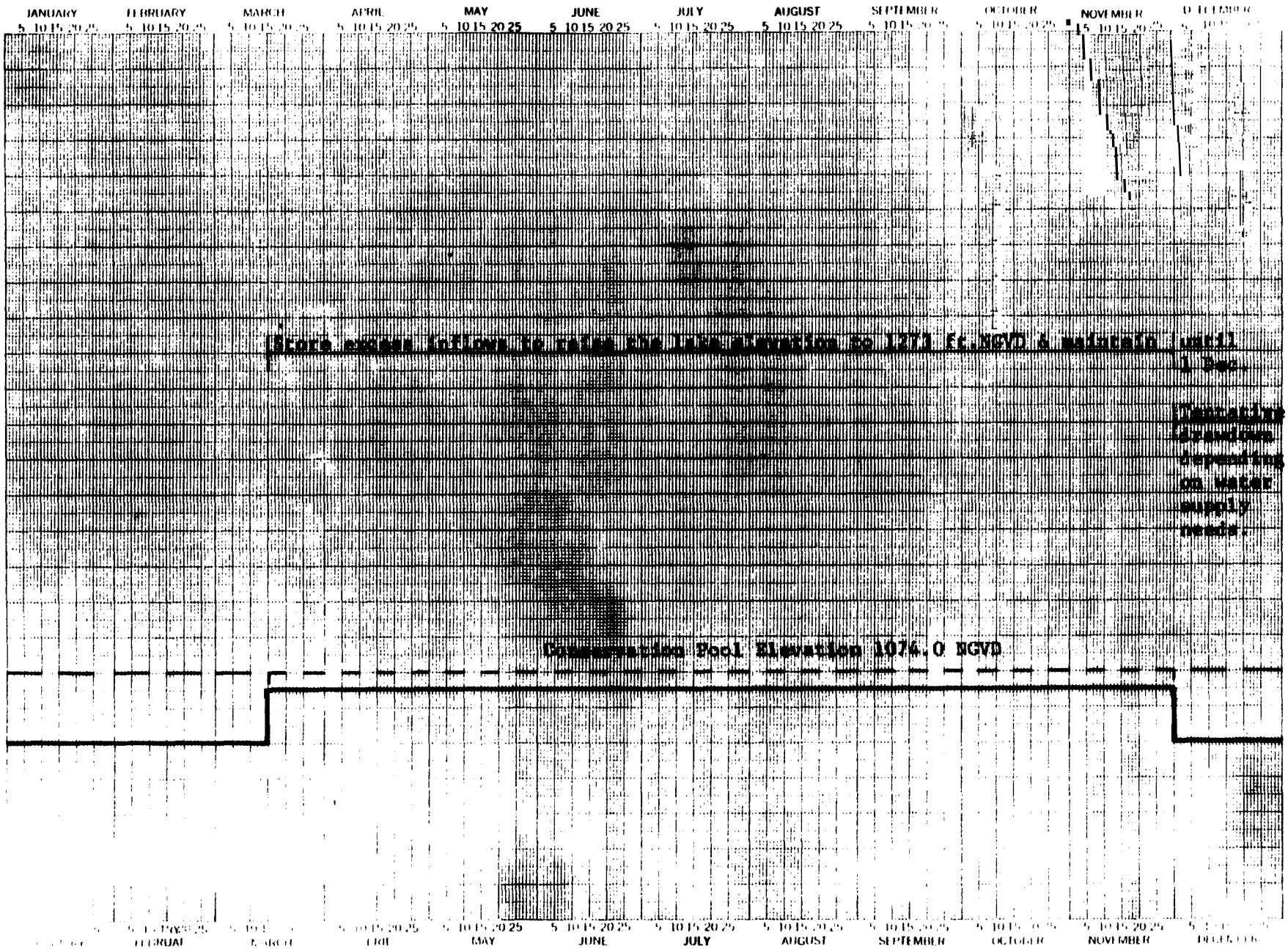
c. Provide potential stocking sites in flooded vegetation for the release of various fish species. This will result in higher survival rates for the stocked fish.

d. Facilitate better boat access to the upper reaches of the lake which is very important to set line fishermen and waterfowl hunters.

Adverse Reaction to the Manipulation Plan - There have been no adverse reactions to the plan as submitted to this office.

Manpower and Funding Responsibilities - There will be no costs incurred in implementing the plan. Effectiveness of the plan will be evaluated by Kansas Fish and Game personnel by fall test netting of the fishery populations and by waterfowl counts taken twice monthly by ground surveys. The one concessioner and local business in the immediate area will be surveyed to obtain reactions and identify any problems associated with planned water level changes.

Contingencies for Climatic Variations - If the lake elevation should rise above elevation 1273.0, the lake elevation will be maintained at the crest level. If the elevation exceeds 1274.0, normal flood control operations will be conducted. Should the lake elevation reach 1274.0, or exceed this elevation, the pool will be maintained at 1274.0 or returned to 1274.0 and maintained at this elevation until December 1, This contingency plan was adopted in order to prevent pulling the pool down during spawning season and provide water supply storage if needed during low flow periods.



Elevation (National Geodetic Vertical Datum)

Contingency Plan - - -

COUNCIL GROVE LAKE LEVEL MANAGEMENT PLAN - 1984

SWDCO-RP (29 Mar 83) 1st Ind
SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas, Supplement 2 to Appendix D, Fish and Wildlife Management Plan, to Design Memorandum No. 2B, Master Plan (Updated)

10

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, TX 75242

22 APR 1983

TO: Commander, Tulsa District, ATTN: SWTOD-R

Subject supplement is approved.

FOR THE COMMANDER:

for A. P. HUTCHISON
Chief, Construction-
Operations Division

w/d all incl

CF: w/incl
DAEN-CWO-R (2 cys)

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74121

10

REPLY TO
ATTENTION OF:

SWTOD-RM

SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas, Supplement 2 to Appendix D, Fish and Wildlife Management Plan, to Design Memorandum No. 2B, Master Plan (Updated)

Commander, Southwestern Division
ATTN: SWDCO-RR

2 [illegible] 1983

Subject supplement (Incl 1) is submitted for review and approval in accordance with ER 1130-2-400.

FOR THE COMMANDER:

for Jerry McNeil
JAMES P. JONES
Chief, Operations Division

1 Incl (9 cys)
as

TABLE OF CONTENTS (CONT)

EXHIBIT INDEX

EXHIBIT D
LAKE LEVEL MANIPULATION PROGRAM

COUNCIL GROVE LAKE
Lake Level Manipulation Plan

Supplement II to Appendix D, Fish and Wildlife Management Plan

Purpose - The purpose of this supplement is to update the master plan to include the lake level manipulation plan requested by Kansas Fish and Game (KF&G). The lake level manipulation plan is intended to improve fish and wildlife resources of the lake.

Attached as Exhibit 1 is the plan agreed upon after coordination with the appropriate State and Federal agencies.

Duration of Operation - This plan may only be implemented this year as it is a plan designed for walleye stocking that will take place this spring. The Kansas Fish and Game want to maintain a stable pool in order to prevent the newly stocked fish from being flushed through the gates. The plan will also provide habitat in flooded vegetation, which will result in higher survival rates for stocked fish. Other benefits will also be accomplished as described in Exhibit 1.

Effects on Project Purposes - Boat ramps in public use areas extend to elevations 1260 ft. and 1265 ft. NGVD in Richey Cove South, to elevation 1264 ft. NGVD in Neosho Park, to elevation 1263 ft. NGVD in Richey Cove North, and to elevation 1257 ft. NGVD in Canning Creek. Therefore, all boat ramps will be usable with the proposed plan. Camping will not be affected as the lake will be at the lower elevation during the winter months. The Council Grove Project requested that the higher elevation during the recreation season not exceed 1273.5 ft. NGVD in order to provide a high water buffer zone for one of the parks that has facilities near elevation 1274.5 ft. NGVD. The Kansas Fish and Game therefore, requested the high elevation be maintained at 1273.0 ft. NGVD. The water level management plan proposed in Exhibit 1 will not have a direct effect on the recreation at Council Grove Lake. However, it will indirectly improve recreational opportunities as it will improve fishing and hunting at the lake.

The proposed plan will not adversely affect the one concessioner located on Council Grove Lake, as the pool level will be brought up before the fishing and recreation seasons begin.

Coordination with Appropriate State and Federal Agencies - The plan has been coordinated with the Kansas Fish and Game and the Kansas Water Office. The Kansas Water Office submitted the plan to all other interested state agencies and cities with water supply contracts for water from Council Grove Lake. Their comments were incorporated in the plan submitted to our office.

Shoreline Improvements - The plan will have no effect on the shoreline. The established erosion pattern of the shoreline below elevation 1274 ft. NGVD has exposed rock outcroppings which produce natural protection for the shoreline. Shoreline problems result from flood inflows and high water levels which erode new areas above conservation pool level. The major concern is with the length of time flood waters are held and having the water level above conservation

level at the time winds are most prevalent. Limited water quality data have been collected to document effects of water level managemewnt on water quality parameters. Turbidity or Secchi disc readings have indicated that improved water clarity has occurred with implementation of the water level management plans.

Adverse Reaction to the Manipulation Plan - There have been no adverse reactions to the plan as submitted to this office.

Manpower and Funding Responsibilities - There will be no costs incurred in implementing the plan. Effectiveness of the plan will be evaluated by Kansas Fish and Game personnel by fall test netting of the fishery populations and by waterfowl counts taken twice monthly by ground surveys. The one concessioner and local business in the immediate area will be surveyed to obtain reactions and identify any problems associated with planned water level changes.

Contingencies for Climatic Variations - The manipulation plan includes no contingencies for climatic variations; however, it is understood that the manipulation plan is a guideline, and necessary coordination and minor changes in the plan will take place when climatic variations occur.

Aquatic Plant Control - Council Grove Lake does not have an aquatic plant problem and will probably never have a problem due to the turbidity of the lake.

Public Meeting - A public meeting was not held for implementation of this plan; however, personal contact was made with interested individuals.

Proposed Lake Level Management Plan
For Council Grove Lake

1. From January 1 to March 14, 1983, maintain the lake level at 1270 ft. NGVD.

Benefits:

a. Reduce wave action on the shoreline and existing vegetation.

b. Eliminate algae growth on the riprap of the dam to enhance walleye spawning areas in the spring.

c. Provide a buffer against large spring inflows, reducing the chances for sudden drawdowns and large releases.

2. Beginning March 15, store excess inflows to raise the lake level to 1273 ft. NGVD.

Benefits:

a. Provide good spawning conditions for walleye which begin congregating off the dam in late March. Freshly inundated rocky areas will be free of algae which can have a detrimental effect on eggs and fry through oxygen depletion resulting in suffocation.

b. Create an expanded situation (increased littoral areas and volume) to encourage fish production.

3. From the time a lake level of 1273 ft. NGVD is reached until December 1, maintain a relatively stable lake level.

Benefits:

a. Provide stable spawning conditions to allow sufficient time for egg and fry development.

b. Maintain an expanded situation to encourage gizzard shad and minnow production.

c. Provide potential stocking sites in flooded vegetation for the release of various fish species. This will result in higher survival rates for the stocked fish.

d. Facilitate better boat access to the upper reaches of the lake which is very important to set line fishermen and waterfowl anglers.

Discussion of Benefits:

The ultimate goal of the water level manipulation plan on Council Grove Reservoir is the enhancement of the fisheries and wildlife habitat, and consequently improving the hunting and fishing opportunities.

Exhibit 1

The basic function of this plan will be to provide a rising water level in the early spring to improve spawning and nursery areas for fish, hold a relatively stable level throughout summer and fall to allow the fish to grow into an expanded area, and improve waterfowl hunter access as well as make the area more attractive to waterfowl.

PAST PERFORMANCE:

Council Grove was one of the first reservoirs in Kansas to have a water level manipulation plan implemented. Since that time, the plan has changed many times in order to take advantage of certain climatic, vegetative or physical conditions but in every case, the area to be affected has always been the four feet in elevation between 1270 and 1274. This has allowed the shoreline to stabilize within the four foot area probably as much as it is going to.

The total amount of area subject to the planned fluctuation utilizes approximately 25-30% of the normal storage area and does not interfere with any flood storage. Perhaps the most important benefit derived from this or any other water level manipulation plan is the buffer zone created by the increased storage in the early spring and the lower controlled releases that are often coordinated between agencies during critical periods such as during the walleye spawn.

Due to the size of the reservoir in relation to its watershed, the lake is often very volatile, rising very rapidly and high, which often necessitates large downstream releases which can be very detrimental to the fish populations. The large releases which had to be made in 1979, 1980, and 1981 were largely responsible for the loss of these year classes. As can be seen from Table 1, recruitment of young of the year walleye is a serious problem as the walleye population has come under serious distress. The loss of three sequential year classes of walleye has seriously hampered the viability of the species in this reservoir. For this reason, a stocking of three million walleye fry was made in 1982 to boost the population.

A fair number of adult walleye still exist in the reservoir so that given suitable spawning conditions, a naturally produced year class of walleye could yet be produced.

White bass, like the walleye, have not fared well of late as can be seen in Table 2. White bass are far more popular than walleye but have none the less decreased in density. Whites have increased slightly in number in the last three years but are still not up to suitable numbers.

Crappie, on the other hand, have fared fairly well. Both the catch per unit of effort and the average size have remained relatively high, as can be seen in Table 3. White crappie are quite tolerant of turbid water so long as adequate forage exists.

The fishery in Council Grove Reservoir is currently suffering from several problems, most notably the lack of adequate production. Both walleye and white bass have suffered substantial reduction in their populations over a period of years, probably due to a number of environmental factors. The 1983 proposal is specifically designed to enhance all fish production.

Waterfowl conditions in 1981 were good as the flooded smartweed created diversed marsh-like conditions that are very attractive to ducks. Water levels are very critical to hunting as much of the area is unaccessable during periods of low water and waterfowl use is greatly curtailed.

TABLE 1

Comparison of walleye sampling results for Council Grove Reservoir

Year	Total No.	YOY	% YOY	No./1000 ft.^{2}	Mean Length	Mean Length
1979	5	0	0	.52	551.60	1,818.00
1980	21	1	4.76	2.18	545.05	2,041.19
1981	5	0	0	.52	578.40	2,388.00

TABLE 2

Comparison of white bass sampling results for Council Grove Reservoir

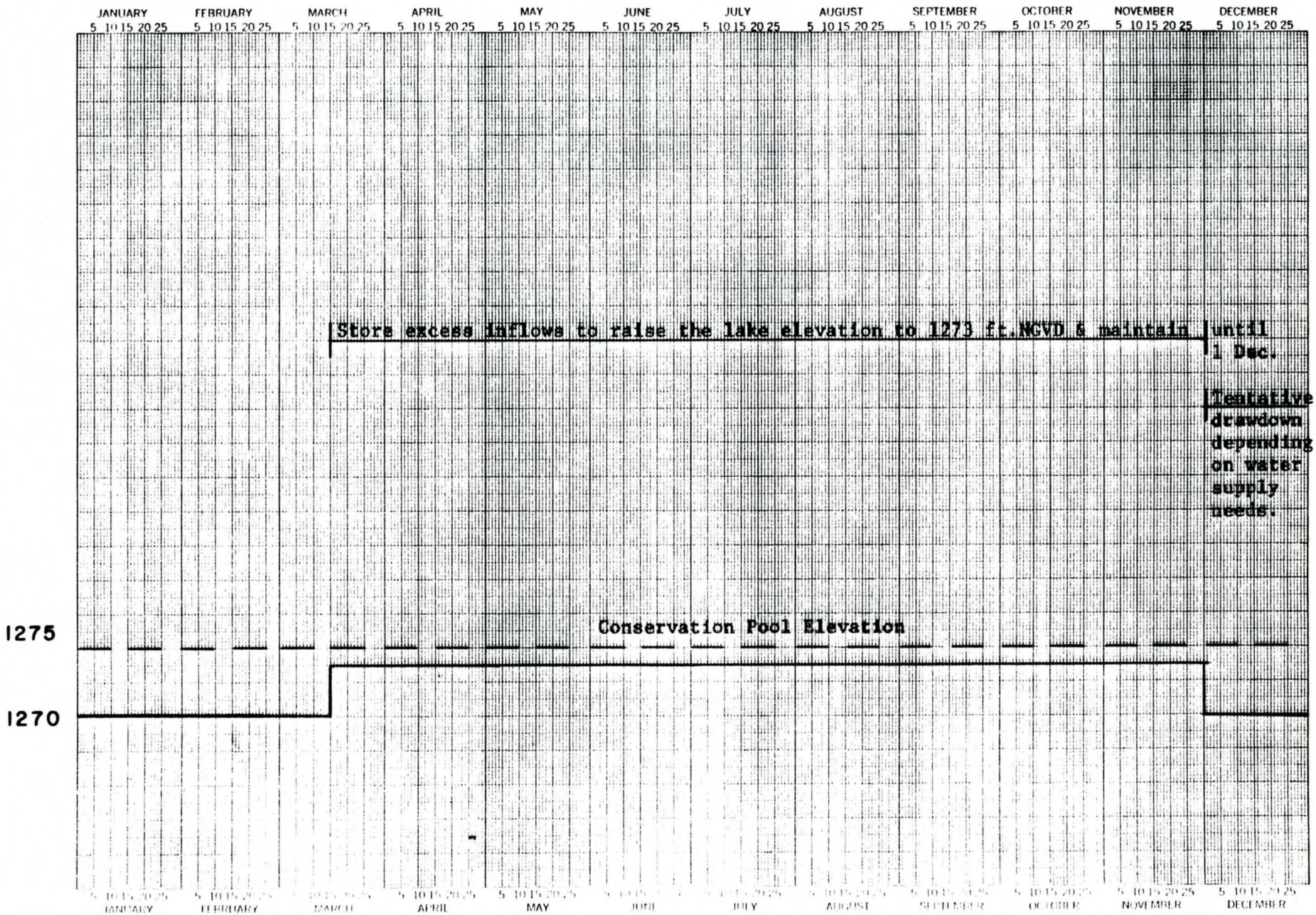
Year	Total No.	No./1000 ft.^{2}	Mean Length	Mean Weight
1979	4	.4167	295	331.25
1980	16	1.667	308.06	413.31
1981	9	.9375	321.56	440.44

TABLE 3

Comparison of white crappie sampling results for Council Grove Reservoir

Year	Total No.	No./Trap	Mean Length	Mean Weight
1979	467	38.9	140.10	62.77
1980	452	37.7	211.18	136.15
1981	464	38.7	206.63	129.15

K&E 1 YEAR BY DAYS X 250 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.



COUNCIL GROVE LAKE LEVEL MANAGEMENT PLAN - 1983

SWDCO-RM (25 May 1982) 1st Ind
SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas, Supplement 1 to Appendix D, Fish and Wildlife Management Plan, to Design Memorandum No. 2B, Master Plan (Updated)

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, TX 75242 3 JUN 1982

TO: Commander, Tulsa District, ATTN: SWTOD

Supplement 1 to Appendix D, SAB, is approved.

FOR THE COMMANDER:

for A. P. HUTCHISON
Chief, Construction-
Operations Division

wd all incl

CF: w/basic & incl
CDR USACE(DAEN-CWO-R) 2 cys

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74121

10

REPLY TO
ATTENTION OF:

SWTOD-RM

SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas, Supplement 1 to Appendix D, Fish and Wildlife Management Plan, to Design Memorandum No. 2B, Master Plan (Updated)

Commander, Southwestern Division
ATTN: SWDCO-RR

25 MAY 1982

Subject supplement (Incl 1) is submitted for review and approval in accordance with ER 1130-2-400.

FOR THE COMMANDER:

1 Incl (9 cys)
as

JAMES P. JONES
Chief, Operations Division

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER KANSAS
SUPPLEMENT I
TO
APPENDIX D
FISH AND WILDLIFE MANAGEMENT PLAN
TO
DESIGN MEMORANDUM NO. 2B
MASTER PLAN
(UPDATED)

1. Purpose. The purpose of this supplement is to add the Water Fluctuation Program to Appendix D.

2. Discussion. The water fluctuation program was prepared in accordance with multiple letter SWDCO-R/SWDED-W, dated 4 February 1981, subject: Manipulation of Pool Levels to Improve Fish and Wildlife Habitat.

3. Substitutions and Additions. Upon receipt and approval indorsement for this supplement the attached page (c) and the water fluctuation program (Exhibit D) shall be added to Appendix D.

Insert
c
Exhibit D

FOR THE COMMANDER:

JAMES P. JONES
Chief, Operations Division

TABLE OF CONTENTS (CONT)

EXHIBIT INDEX

EXHIBIT D
WATER FLUCTUATION PROGRAM

COUNCIL GROVE LAKE
WATER FLUCTUATION PLAN

Supplement I to Appendix D, Fish and Wildlife Management Plan

Purpose - The purpose of this supplement is to update the master plan to include the water fluctuation plan requested by Kansas Fish and Game (KF&G). The water fluctuation plan is intended to improve fish and wildlife resources of the lake.

Attached as Exhibit 1 is the plan agreed upon after coordination with the appropriate State and Federal agencies.

Duration of Operation - This plan is being implemented for the first time this year. It is an attempt to duplicate water level conditions that took place last year due to unusually dry weather conditions, only with less extreme lake elevations. As this plan is being attempted for the first time, its success will need to be evaluated before it is decided to request it on a permanent basis.

Effects on Project Purposes - The water fluctuation plan has been reviewed and concurred in by Council Grove and Tulsa District Office personnel. No adverse impacts upon project purposes are anticipated.

Coordination with Appropriate State and Federal Agencies - The plan has been coordinated with the Kansas Fish and Game and the Kansas Water Office.

Shoreline Improvements - The drawdown between 1 December and 15 May will allow for the establishment of smartweed and other vegetation above elevation 1270. When flooded, this vegetation will improve water clarity, increase numbers of fish food organisms resulting in good fish growth and survival, and improve fishing success. It will also provide waterfowl benefits in the fall.

Adverse Reaction to the Fluctuation Plan - The only adverse reaction to the plan involved objections by the marina operator on the lake. His major objections concerned the poor fishing in the upper end of the cove in which his marina is located. Elevation 1270 lowers the water level in the upper end of the cove to the point that fish attractors located there are not covered by water. He stated this affected his business as the crappie fishermen would not come to the cove and fish. He withdrew his objection when the project manager explained the plan and stated he would move the uncovered fish attractors so they would be in the water at elevation 1270. Additional attractors would also be placed at other appropriate locations in the cove.

Manpower and Funding Responsibilities - There will be no costs incurred in implementing the plan. The KF&G will monitor the effects of the water fluctuation on the fishery on a yearly basis.

Contingencies for Climatic Variations - The fluctuation plan includes no contingencies for climatic variations; however, it is understood that the fluctuation plan is a guideline, and necessary coordination and minor changes in the plan will take place when climatic variations occur.

Aquatic Plant Control - Council Grove Lake does not have an aquatic plant problem and will probably never have a problem due to the turbidity of the lake.

Public Meeting - A public meeting was not held for implementation of this plan; however, personal contact was made with interested individuals.

Recommendations for 1982 Water Level Management
Council Grove, John Redmond, and Elk City Lakes

Council Grove Lake
Discussion of 1980-1981 Operations

The 1980 and the original 1981 water level management plans followed the typical outline used in most years since 1974. This plan called for a spring rise in water level; a July 1 drawdown; a small rise in September-October; and a December drawdown.

Following the July drawdown in 1980 about 150 acres of the exposed shoreline were planted to Japanese millet. In September about 30 acres of cocklebur along the Neosho River were plowed under and replanted with wheat. Due to abnormally low rainfall during the last half of 1980, the lake level fell to a low of 1267.6 ft. msl and none of this vegetation was flooded.

Dry weather continued during the first half of 1981 with the lake level falling to a low of 1266.9 ft. msl on May 15. This exposed about 700 acres or 20% of the lake bottom and resulted in an excellent stand of smartweed on this part of the lake bottom.

Thus, a major objective of establishing vegetation on a part of the lake bottom was achieved, and the water level management plan was altered by deleting the proposed July 1981 drawdown. The water level was also held at elevation 1272 instead of 1274 in order to maintain more of the smartweed in a living condition. This effort was successful and much of the smartweed survived the floods in early July. In late August it was estimated that 25% of the smartweed in four feet or more of water was still alive; 50% of the smartweed in three to four feet of water was still alive; 75% of the smartweed in two to three feet of water was still alive; and 100% of the smartweed in water less than two feet deep survived.

A decision to lower the water level in December was made to set the stage for the 1982 plan and to avoid ice and wave damage to the existing shoreline vegetation.

Lake conditions were greatly improved in 1981. Water clarity averaged 15 inches through much of the year. Although the lake bottom became more turbid following heavy runoff, it quickly cleared once normal level was reached.

An abundance of plankton was observed in the flooded vegetation, and the recruitment of game fish is expected to be excellent. Fishing success was better in 1981 than in the two previous years.

Several positive changes in the fish population are expected as a result of this unplanned major drawdown but can not be confirmed until future sampling is completed.

Water level manipulation has long been recognized as a valuable tool in waterfowl management. The presence of desirable flooded vegetation during the waterfowl migration is necessary to attract and hold birds. A midsummer

Exhibit I

drawdown followed by planting the exposed shoreline with Japanese millet has been a successful attraction to waterfowl in the past when fall runoff raised the water into the millet. However, the smartweed established naturally in the spring of 1981 provided better waterfowl conditions than the millet planted in earlier years and saved the cost of millet seed and planting. Smartweed is an excellent waterfowl attracting plant, and it can be partly flooded as early as mid-June and remain alive until maturity.

Council Grove Lake
1982 Water Level Management

The improved lake conditions of 1981 has prompted a modified water level management proposal for 1982 whereby the lake level would be fluctuated to duplicate the smartweed growing conditions created in 1981. The success of this plan will depend on the timing of spring floods and the volume of inflow. The following are period by period water level recommendations and a brief discussion.

1. January 1 - May 15: Hold water at elevation 1270.

   This is an attempt to encourage the establishment of smartweed above elevation 1270. Release rates during this period should be kept under 1,200 cfs whenever possible. Coordination by telephone is important when changes are being considered during this period. Minor changes in the plan may be requested depending on actual water levels and fish spawning conditions. The critical fish spawning period is March 15 through May 1. It may be desirable to hold water level elevation up to 1274 during this time.

   Note: Walleye stocking is planned in 1982 since untimely drawdowns have made natural recruitment difficult. The walleye population can be maintained at a fishable level by stocking if necessary.

2. May 15: Raise water level to 1272 by holding excess inflow.

   This rise will flood a part of the smartweed established during the low water period. Expected benefits will include: improved water clarity, abundant fish food organisms resulting in good growth and survival, and improved fishing success.

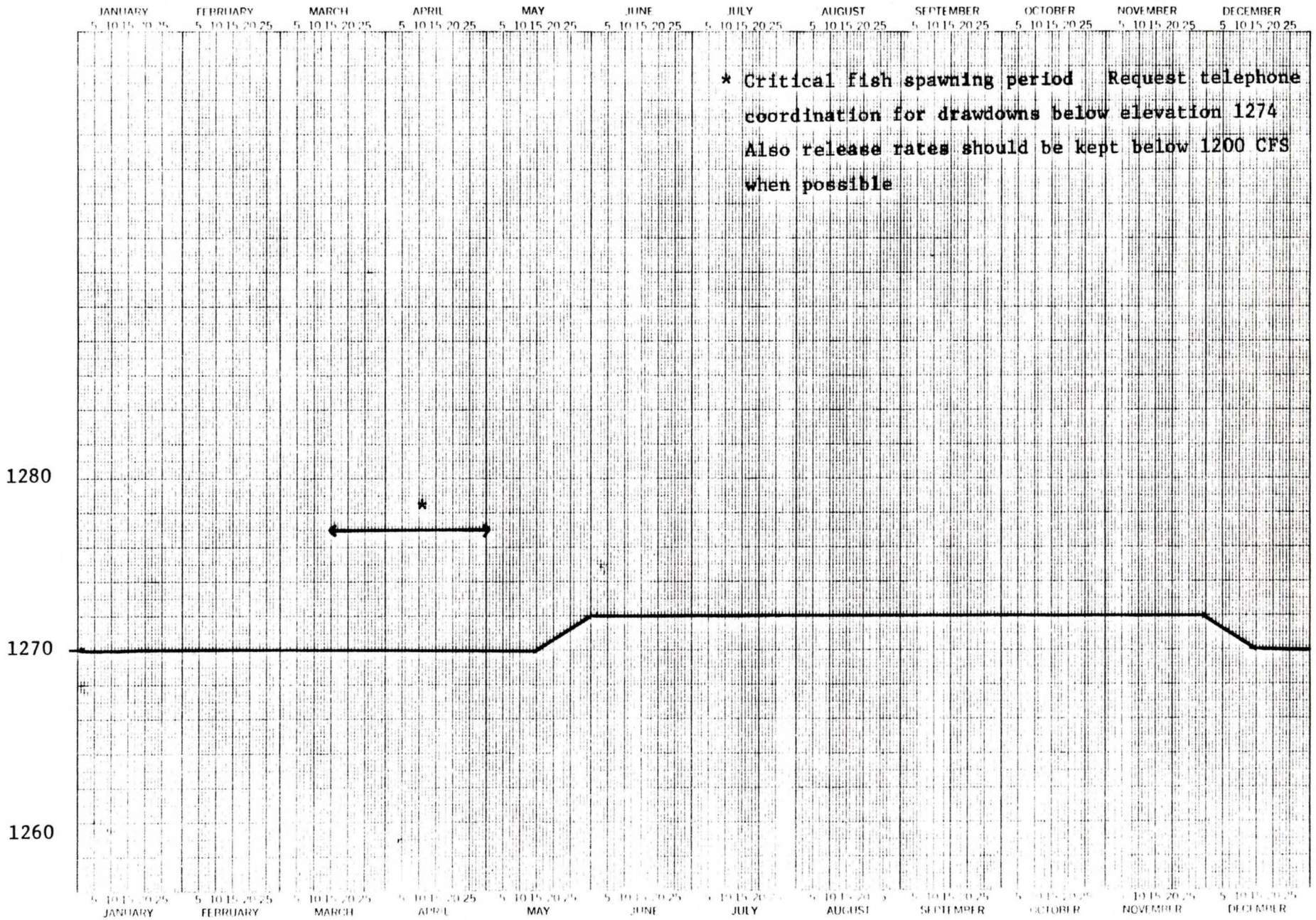
3. May 15 - December 1: Hold at elevation 1272.

   Attempt to maintain the smartweed by holding a stable water level. Waterfowl conditions can be enhanced by partially flooding the vegetation during the waterfowl season.

4. December 1 - December 15: Lower water level to elevation 1270.

   This drawdown is necessary to set the stage for the 1983 water level management plan and to avoid ice and wave damage to the shoreline and established vegetation.

Note: Since smartweed can survive standing water once it has been established, the main purpose of this plan is to maintain the smartweed that invaded the exposed shoreline during the unplanned severe drawdown in 1980-1981 and to realize the fishery and wildlife benefits which have been attributed to this development.



Council Grove Lake Water Level Management 1982 Proposal

SWDCO-RR (5 Jun 81) 1st Ind
SUBJECT: Council Grove Lake, Appendix F, Supplement No. 1 to the Master Plan
Lakeshore Management Plan

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street,
Dallas, TX 75242 25 JUN 1981

TO: Commander,Tulsa District, ATTN: SWTOD

Approved.

FOR THE COMMANDER:

1 incl w/d

A. P. HUTCHISON
Chief, Construction-
Operations Division

CF: w/incl
CDR USACE (DAEN-CWO-R) 2 cys

LIST OF GRANDFATHERED DOCKS
COUNCIL GROVE LAKE

Permit Number	Dock Owner
CG0001	Kansas, Oklahoma Council of the Church of Christ

SWDCO-RR (8 Jun 81) 1st Ind
SUBJECT: Heyburn Lake, Appendix F, Supplement No. 1 to the Master Plan, Lakeshore Management Plan

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, TX 75242 25 JUN 1981

TO: Commander, Tulsa District, ATTN: SWTOD

Approved.

FOR THE COMMANDER:

1 incl w/d

A. P. HUTCHISON
Chief, Construction-Operations Division

CF: w/incl
CDR USACE (DAEN-CWO-R) 2 cys

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74121

REPLY TO
ATTENTION OF:

SWTOD-R

8 June 1981

SUBJECT: Heyburn Lake, Appendix F, Supplement No. 1 to the Master Plan, Lakeshore Management Plan

Commander, Southwestern Division
ATTN: SWDCO-RM

1. A review has been made of the subject Appendix. It is determined that no changes are necessary.

2. Attached is a list of grandfathered docks (Incl 1) which should be made part of the subject Appendix.

3. This supplement is submitted for review and approval.

FOR THE COMMANDER:

JAMES P. JONES
Chief, Operations Division

1 Incl
as

LIST OF GRANDFATHERED DOCKS
Heyburn Lake

Permit No.	Dock Owner	Removal Date
HEY 001	Bartlett-Collins Employees Club, Inc	1984

SWDCO-RR (8 Jun 81) 1st Ind
SUBJECT: Hulah Lake, Appendix F, Supplement No. 1 to the Master Plan, Lakeshore Management Plan

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, TX 75242 25 JUN 1981

TO: Commander, Tulsa District, ATTN: SWTOD

Approved.

FOR THE COMMANDER:

A. T. HUTCHISON
Chief, Construction-
Operations Division

CF: w/cy basic
CDR USACE (DAEN-CWO-R) 2 cys

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74121

REPLY TO
ATTENTION OF:

SWTOD-R

8 June 1981

SUBJECT: Hulah Lake, Appendix F, Supplement No. 1 to the Master Plan, Lakeshore Management Plan

Commander, Southwestern Division
ATTN: SWDCO-RM

1. A review has been made of the subject Appendix. It is determined that no changes are necessary.

2. This supplement is submitted for review and approval.

FOR THE COMMANDER:

JAMES P. JONES
Chief, Operations Division

SWDCO-RR (5 Jun 81) 1st Ind
SUBJECT: Toronto Lake, Appendix F, Supplement No. 1 to the Master Plan, Lakeshore Management Plan

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, TX 75242 25 JUN 1981

TO: Commander, Tulsa District, ATTN: SWTOD

Approved.

FOR THE COMMANDER:

1 incl w/d

A. P. HUTCHISON
Chief, Construction-Operations Division

CF: w/incl
CDR USACE (DAEN-CWO-R) 2 cys

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74121

REPLY TO
ATTENTION OF:

SWTOD-R

5 June 1981

SUBJECT: Toronto Lake, Appendix F, Supplement No. 1 to the Master Plan, Lakeshore Management Plan

Commander, Southwestern Division
ATTN: SWDCO-RM

A review has been made of the subject Appendix. It has been determined that no changes are necessary.

Attached is a list of grandfathered docks (Incl 1) which should be made part of the subject Appendix.

This supplement is submitted for review and approval.

FOR THE COMMANDER:

1 Incl
as

JAMES P. JONES
Chief, Operations Division

GRANDFATHERED DOCKS
TORONTO LAKE

Number	Name of Owner
TR0001	Gilbert R. Duncan
TR0002	Francis D. Cummin

SWDCO-RR (8 Jun 81) 1st Ind
SUBJECT: Wister Lake, Appendix F, Supplement No. 1 to the Master Plan, Lakeshore Management Plan

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, TX 75242 25 JUN 1981

TO: Commander, Tulsa District, ATTN: SWTOD

Approved.

FOR THE COMMANDER:

A. P. HUTCHISON
Chief, Construction-
Operations Division

CF: w/cy basic
CDR USACE (DAEN-CWO-R) 2 cys

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74121

REPLY TO
ATTENTION OF:

SWTOD-R

8 June 1981

SUBJECT: Wister Lake, Appendix F, Supplement No.1 to the Master Plan, Lakeshore Management Plan

Commander, Southwestern Division
ATTN: SWDCO-RM

1. A review has been made of the subject Appendix. It has been determined that no changes are necessary.

2. This supplement is submitted for review and approval.

FOR THE COMMANDER:

JAMES P. JONES
Chief, Operations Division

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74121

10

REPLY TO
ATTENTION OF:

SWTOD-R

5 June 1981

SUBJECT: Council Grove Lake, Appendix F, Supplement No. 1 to the Master Plan Lakeshore Management Plan

Commander, Southwestern Division
ATTN: SWDCO-RM

A review has been made of the subject Appendix. It has been determined that no changes are necessary.

Attached is a list of grandfathered docks (Incl 1) which should be made part of the subject Appendix.

This supplement is submitted for review and approval.

FOR THE COMMANDER:

for JAMES P. JONES
Chief, Operations Division

1 Incl
as

SWDCO-RP (SWTOD-RM 12 May 81) 1st Ind
SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas, Supplement No. 2 to Design Memorandum No. 2B, Master Plan (Updated)

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, TX 75242 27 MAY 1981

TO: Commander, Tulsa District, ATTN: SWTOD-RM

Subject supplement is approved subject to the following comment:

Plates, general. The gravel road symbol on the legend should be corrected to agree with the symbol used on the site layout.

FOR THE COMMANDER:

wd all incl

A. P. HUTCHISON
Chief, Construction-
Operations Division

CF: w/basic & incl
CDR USACE (DAEN-CWO-R) 5 cys

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74121

REPLY TO
ATTENTION OF:

SWTOD-RM

SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas, Supplement No. 2 to Design Memorandum No. 2B, Master Plan (Updated)

Division Engineer, Southwestern
ATTN: SWDCO-RM

12 MAY 1981

Subject supplement (Incl 1) is submitted for review and approval.

FOR THE DISTRICT ENGINEER:

Alan W. Thiemann
for JAMES P. JONES
Chief, Operations Division

1 Incl (9 cys)
as

30 copies prepared

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

SUPPLEMENT NO. 2
TO
DESIGN MEMORANDUM NO. 2B
MASTER PLAN
(UPDATED)

DEPARTMENT OF THE ARMY
TULSA DISTRICT CORPS OF ENGINEERS
OKLAHOMA

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

SUPPLEMENT NO. 2
TO
DESIGN MEMORANDUM NO. 2B
MASTER PLAN
(UPDATED)

TABLE OF CONTENTS

TABLE INDEX

DRAWING INDEX

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

SUPPLEMENT NO. 2
TO
DESIGN MEMORANDUM NO. 2B
MASTER PLAN
(UPDATED)

1. Purpose. The purposes of this supplement are to:

a. Update the public use area site plans to reflect as-built conditions.

b. Update the land use allocations as shown in Table 1, Supplement No. 1.

c. Prepare a new land use allocation map to replace Drawing No. CB590-2B-93/9.

2. Justification. The revisions and/or additions proposed in this supplement are considered necessary to maintain the Master Plan's usability as a working document in the operation and maintenance of the project. The updated site plans are needed as an aid in maintaining a current facility inventory and the land allocation table is used as a part of the land management program. Changing drawing 93/9 from multi-color to black and white is recommended in order to prevent undue delay in reproduction, ease of obtaining additional reproduction, and a more economical method of reproduction.

3. Recommendation. I recommend that this supplement be approved as presented herein.

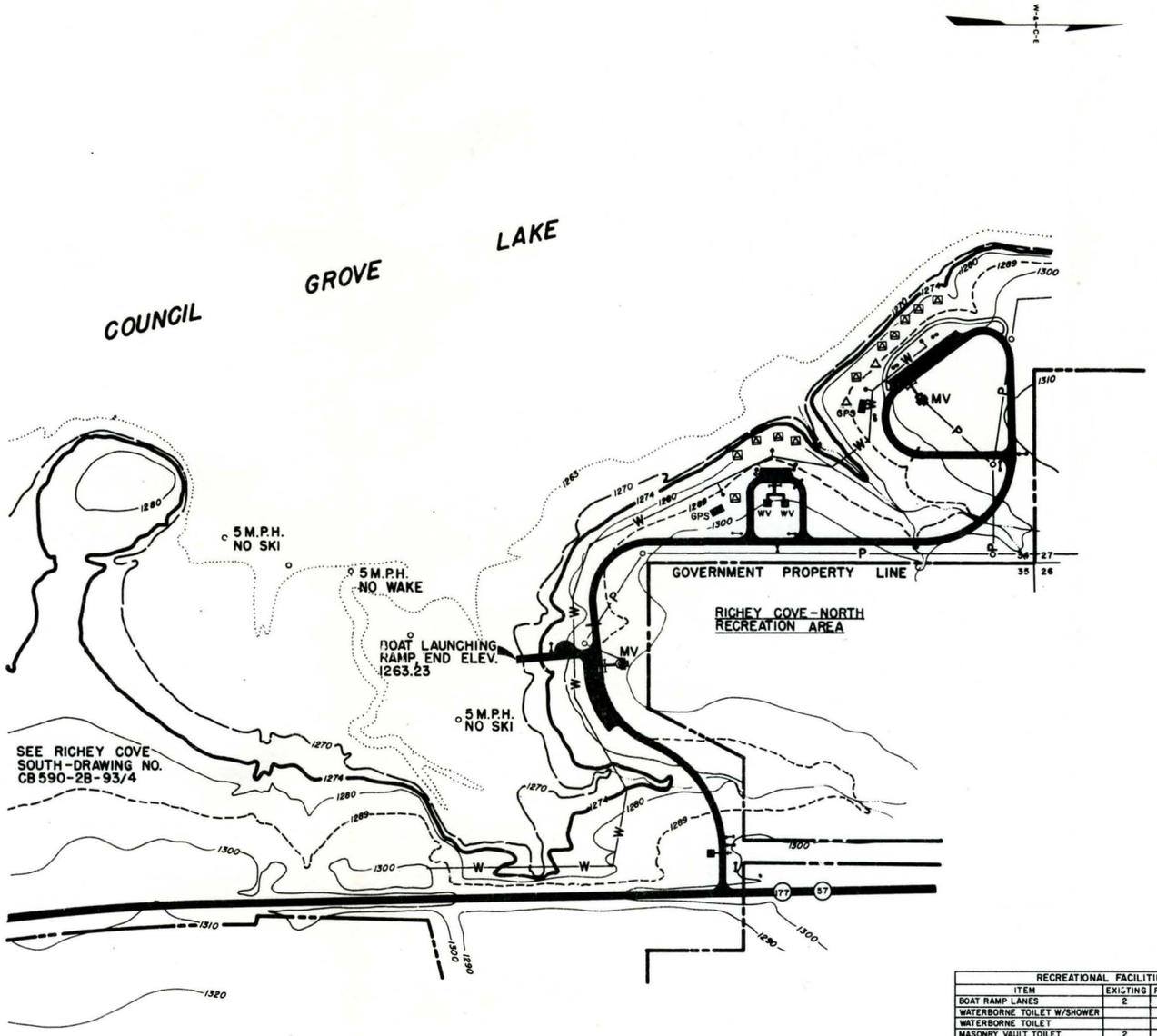
JAMES P. JONES
Chief, Operations Division

TABLE I
LAND USE ALLOCATIONS

Lands acquired in fee	5,975 acres (1)
Conservation pool	3,235 acres (2)
Total land allocated	2,740 acres

Zoning Classification	Total acres from fee boundary to conservation pool (elev. 1274.0)
Project Operations	70
Operations: Recreation - Intensive Use	
Richey Cove (North)	22
Richey Cove (South)	60
Dam Site	41
Outlet Area	50
Neosho Park	57
Canning Creek Cove	107
Quasi-Public Lease	5 (3)
Subtotal - Recreation - Intensive Use	342
Operations: Recreation - Low Density	370
Operations: Wildlife Management	1,958 (4)
Total Lands Allocated	2,740

(1) Acreage as shown in 1980 Real Estate audit.
(2) Acreage as shown in 1980 pertinent data book.
(3) Acreage as shown on current lease.
(4) Lands licensed to the Kansas Fish and Game Commission. The license also contains 680 surface acres of water.



LEGEND

EXISTING

ROADS
- PAVED
- GRAVEL

WATER SYSTEM
- WATER SUPPLY
- WATER LINE
- WELL (HAND PUMP)
- WELL WITH SHELTER (HAND PUMP)
- WATER STAND PIPE

POWER
- OVERHEAD POWER
- UNDERGROUND POWER
- COURTESY LIGHT

SANITARY FACILITIES
- WOOD VAULT TOILET
- MASONRY VAULT TOILET
- WATER-BORNE TOILET
- WATER TREATMENT PLANT
- SEWAGE DUMP STATION
- WASTE STABILIZATION POND
- SEWER LINE
- FORCE MAIN W/LIFT STATION
- WATER-BORNE W/SHOWER
- PICNIC TABLE
- PICNIC TABLE WITH SHELTER
- GROUP PICNIC SHELTER
- TABLE WITH CAMP PAD
- TABLE WITH SHELTER AND CAMP PAD
- FIREPLACE
- REFUSE CONTAINER
- SIGN
- TRAFFIC COUNTER
- FEE COLLECTION POINT
- BUOY OR FLOATING MARKER
- BOAT RAMP PAVED OR CONCRETE RAMP AND PARKING
- BOAT RAMP PAVED OR CONCRETE RAMP GRAVEL PARKING
- AMPHITHEATER
- SWIMMING BEACH
- FOOD SERVICE TABLE
- COURTESY DOCK

RECREATIONAL FACILITIES

ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	2		2
WATERBORNE TOILET W/SHOWER			
WATERBORNE TOILET			
MASONRY VAULT TOILET	2		2
WOOD VAULT TOILET	2		2
* CAMPSITES		6	6
* PICNIC SITES	13		13
PEDESTAL COOKERS	13		13
FIRERINGS			
LANTERN STANDS			
UTILITY TABLES	13		13
ELECTRICAL HOOK-UPS			
REFUSE CANS (SINGLE)			
REFUSE CANS (DOUBLE)	5		5
WELLS (HAND PUMP)			
WATER HYDRANTS	4		4

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

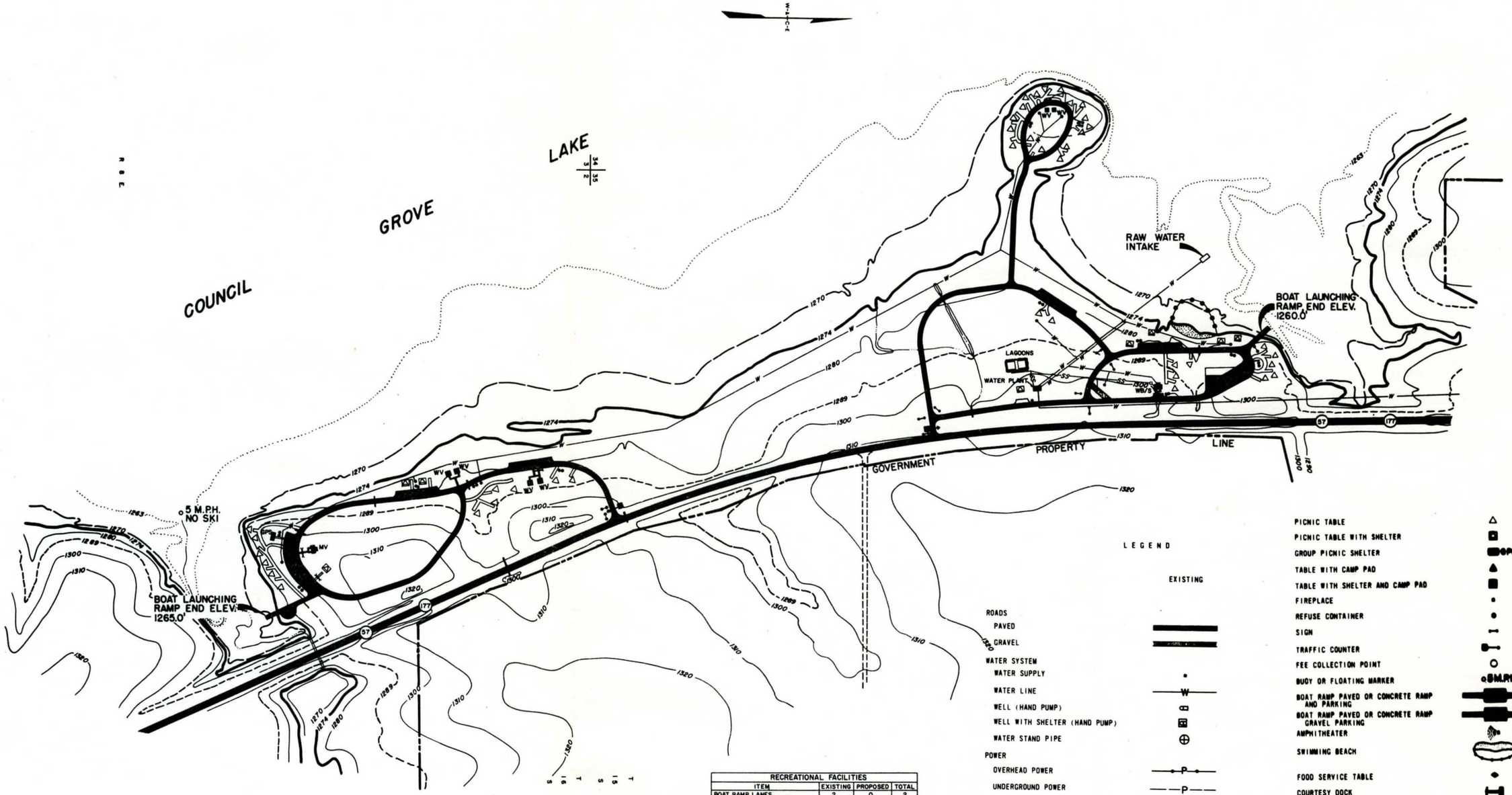
RICHEY COVE - NORTH - RECREATION AREA

SCALE OF FEET

200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS

CB590-2B-93/3



RECREATIONAL FACILITIES			
ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	2	0	2
WATERBORNE TOILET W/SHOWER	1	1	2
WATERBORNE TOILET			
MASONRY VAULT TOILET	1	0	1
WOOD VAULT TOILET	3	0	3
* CAMPSITES	49	0	49
* PICNIC SITES			
PEDESTAL COOKERS	49	0	49
FIRERINGS	49	0	49
LANTERN STANDS			
UTILITY TABLES	49	0	49
ELECTRICAL HOOK-UPS			
REFUSE CANS (SINGLE)	21	0	21
REFUSE CANS (DOUBLE)			
WELLS (HAND PUMP)			
WATER HYDRANTS	8	0	8

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

LEGEND

EXISTING

ROADS
- PAVED
- GRAVEL

WATER SYSTEM
- WATER SUPPLY
- WATER LINE (W)
- WELL (HAND PUMP)
- WELL WITH SHELTER (HAND PUMP)
- WATER STAND PIPE

POWER
- OVERHEAD POWER (P)
- UNDERGROUND POWER (P)
- COURTESY LIGHT

SANITARY FACILITIES
- WOOD VAULT TOILET (WV)
- MASONRY VAULT TOILET (MV)
- WATER-BORNE TOILET (WB)
- WATER TREATMENT PLANT (WTP)
- SEWAGE DUMP STATION (SS)
- WASTE STABILIZATION POND
- SEWER LINE (S)
- FORCE MAIN W/LIFT STATION (L.S. FM)
- WATER-BORNE W/SHOWER (WB/S)

- PICNIC TABLE
- PICNIC TABLE WITH SHELTER
- GROUP PICNIC SHELTER (GPS)
- TABLE WITH CAMP PAD
- TABLE WITH SHELTER AND CAMP PAD
- FIREPLACE
- REFUSE CONTAINER
- SIGN
- TRAFFIC COUNTER
- FEE COLLECTION POINT
- BUOY OR FLOATING MARKER (5 M.P.H.)
- BOAT RAMP PAVED OR CONCRETE RAMP AND PARKING
- BOAT RAMP PAVED OR CONCRETE RAMP GRAVEL PARKING
- AMPHITHEATER
- SWIMMING BEACH
- FOOD SERVICE TABLE
- COURTESY DOCK

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

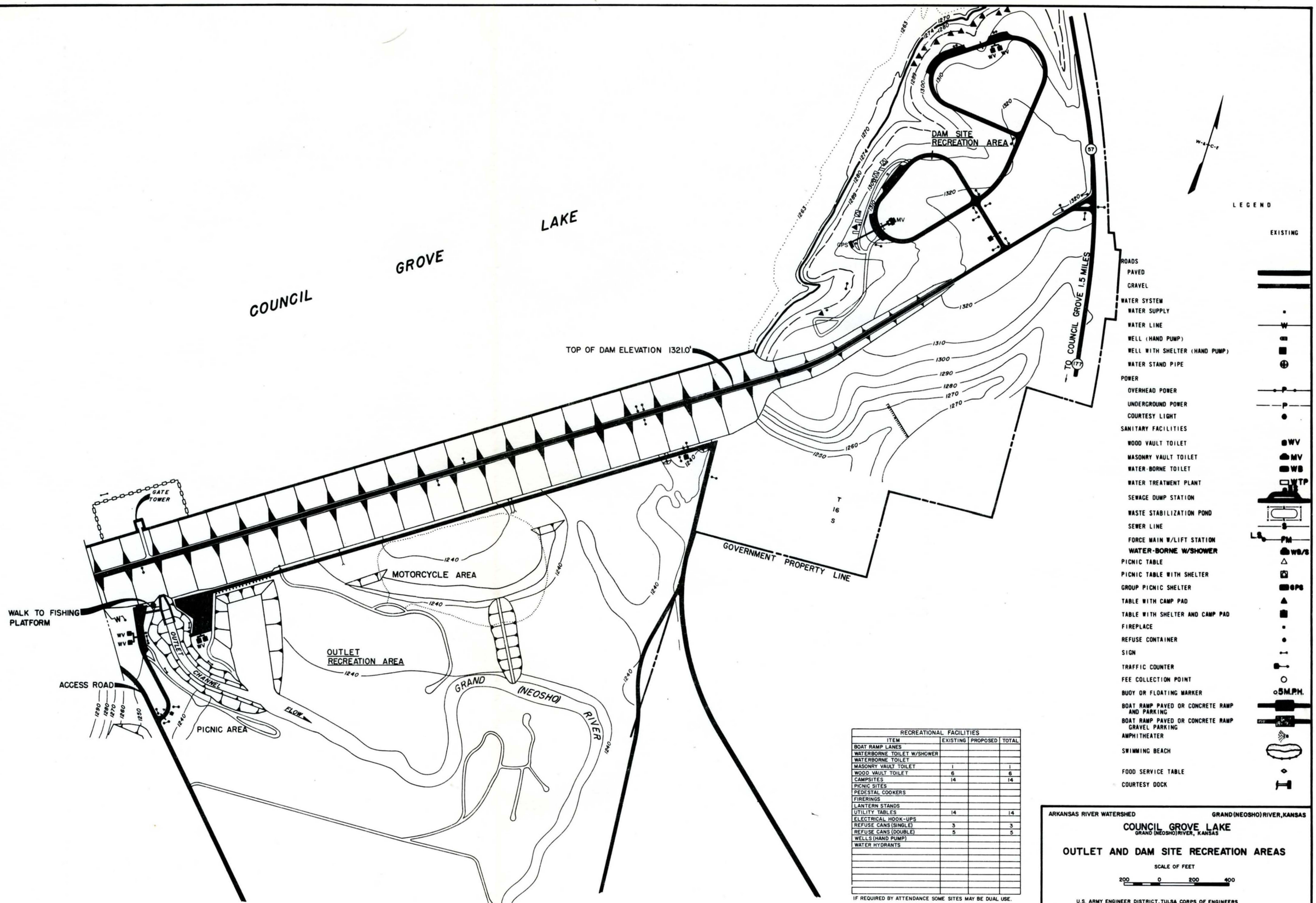
RICHEY COVE-SOUTH-RECREATION AREA

SCALE OF FEET

200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS

CB590-28-93/4



RECREATIONAL FACILITIES

ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES			
WATERBORNE TOILET W/SHOWER			
WATERBORNE TOILET			
MASONRY VAULT TOILET	1		1
WOOD VAULT TOILET	6		6
CAMPSITES	14		14
PICNIC SITES			
PEDESTAL COOKERS			
FIRERINGS			
LANTERN STANDS			
UTILITY TABLES	14		14
ELECTRICAL HOOK-UPS			
REFUSE CANS (SINGLE)	3		3
REFUSE CANS (DOUBLE)	5		5
WELLS (HAND PUMP)			
WATER HYDRANTS			

IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

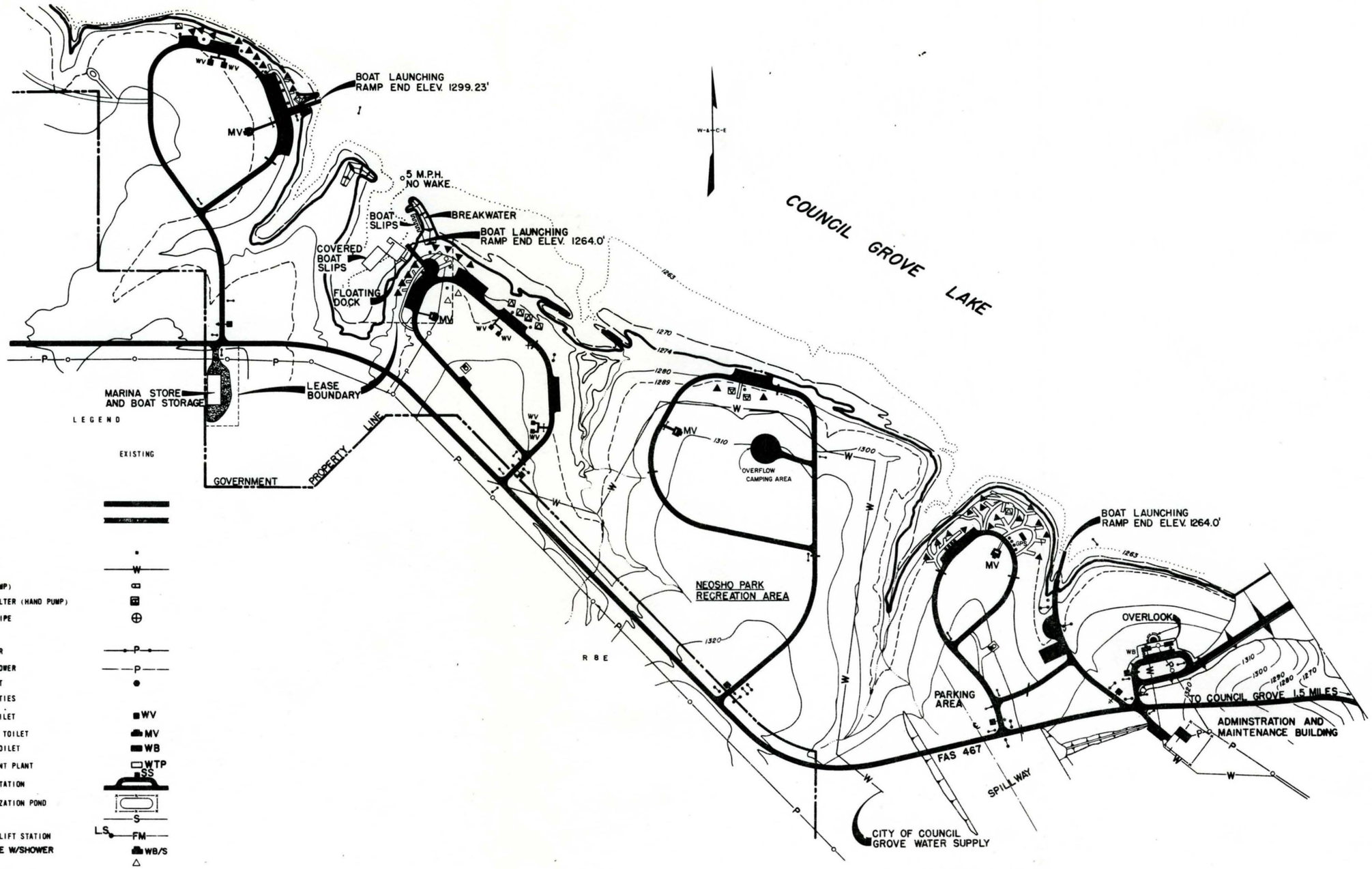
OUTLET AND DAM SITE RECREATION AREAS

SCALE OF FEET

200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS

CB590-28-93/5



LEGEND

EXISTING

ROADS
- PAVED
- GRAVEL

WATER SYSTEM
- WATER SUPPLY
- WATER LINE
- WELL (HAND PUMP)
- WELL WITH SHELTER (HAND PUMP)
- WATER STAND PIPE

POWER
- OVERHEAD POWER
- UNDERGROUND POWER
- COURTESY LIGHT

SANITARY FACILITIES
- WOOD VAULT TOILET
- MASONRY VAULT TOILET
- WATER-BORNE TOILET
- WATER TREATMENT PLANT
- SEWAGE DUMP STATION
- WASTE STABILIZATION POND
- SEWER LINE
- FORCE MAIN W/LIFT STATION
- WATER-BORNE W/SHOWER

- PICNIC TABLE
- PICNIC TABLE WITH SHELTER
- GROUP PICNIC SHELTER
- TABLE WITH CAMP PAD
- TABLE WITH SHELTER AND CAMP PAD
- FIREPLACE
- REFUSE CONTAINER
- SIGN
- TRAFFIC COUNTER
- FEE COLLECTION POINT
- BUOY OR FLOATING MARKER
- BOAT RAMP PAVED OR CONCRETE RAMP AND PARKING
- BOAT RAMP PAVED OR CONCRETE RAMP GRAVEL PARKING
- AMPHITHEATER
- SWIMMING BEACH
- FOOD SERVICE TABLE
- COURTESY DOCK

RECREATIONAL FACILITIES			
ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	3		3
WATERBORNE TOILET W/SHOWER		1	1
WATERBORNE TOILET	2		2
MASONRY VAULT TOILET	4		4
WOOD VAULT TOILET	4		4
* CAMPSITES	47	25	72
* PICNIC SITES			
PEDESTAL COOKERS	47	25	72
FIRERINGS	47	25	72
LANTERN STANDS			
UTILITY TABLES	47	25	72
ELECTRICAL HOOK-UPS			
REFUSE CANS (SINGLE)	7		7
REFUSE CANS (DOUBLE)	8	10	18
WELLS (HAND PUMP)	2		2
WATER HYDRANTS			

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

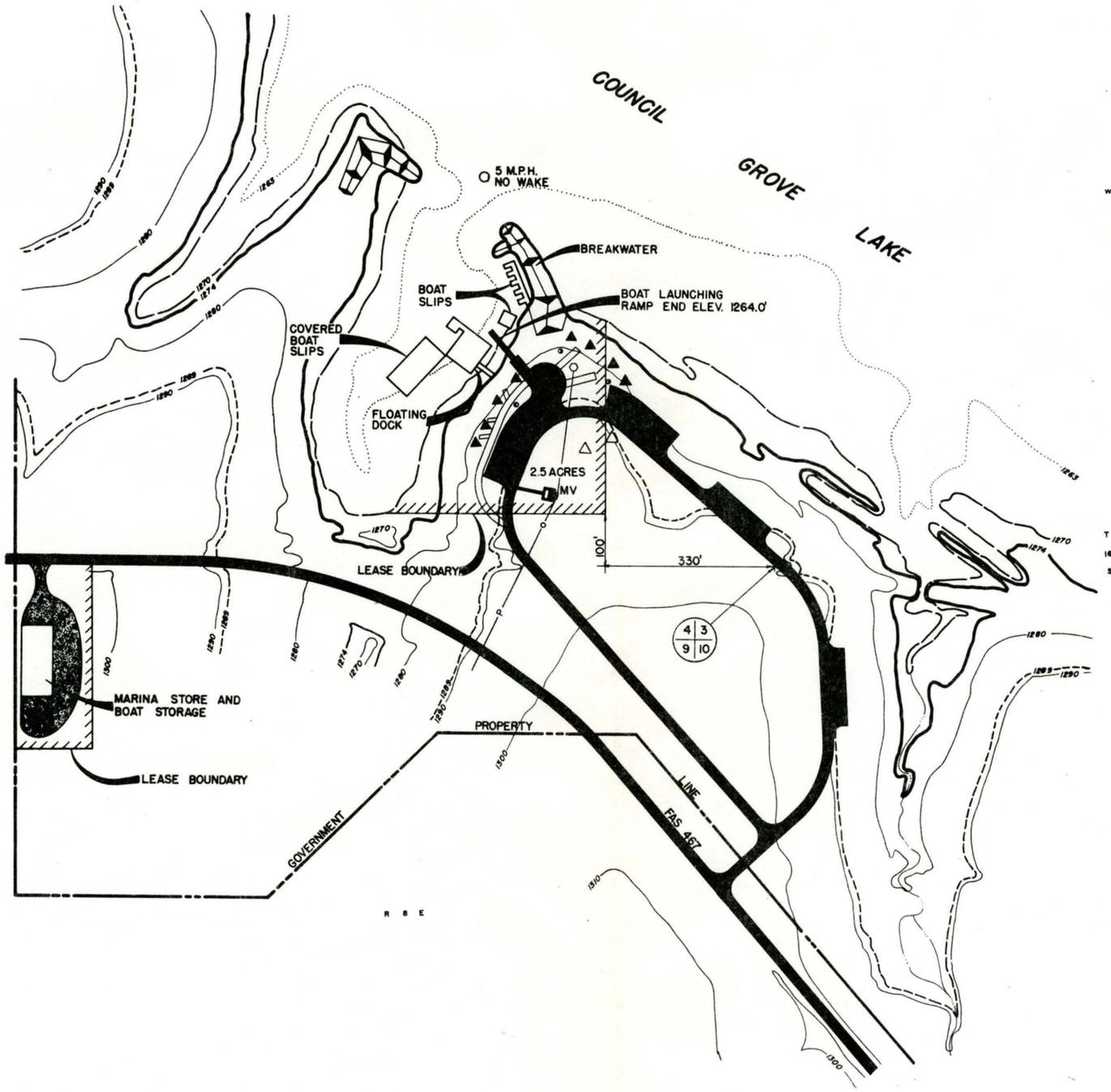
NEOSHO PARK RECREATION AREA

SCALE OF FEET

200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS

CB590-28-93/6



LEGEND

EXISTING

ROADS
- PAVED
- GRAVEL

WATER SYSTEM
- WATER SUPPLY
- WATER LINE
- WELL (HAND PUMP)
- WELL WITH SHELTER (HAND PUMP)
- WATER STAND PIPE

POWER
- OVERHEAD POWER
- UNDERGROUND POWER
- COURTESY LIGHT

SANITARY FACILITIES
- WOOD VAULT TOILET
- MASONRY VAULT TOILET
- WATER-BORNE TOILET
- WATER TREATMENT PLANT
- SEWAGE DUMP STATION
- WASTE STABILIZATION POND
- SEWER LINE
- FORCE MAIN W/LIFT STATION
- WATER-BORNE W/SHOWER

- PICNIC TABLE
- PICNIC TABLE WITH SHELTER
- GROUP PICNIC SHELTER
- TABLE WITH CAMP PAD
- TABLE WITH SHELTER AND CAMP PAD
- FIREPLACE
- REFUSE CONTAINER
- SIGN
- TRAFFIC COUNTER
- FEE COLLECTION POINT
- BUOY OR FLOATING MARKER
- BOAT RAMP PAVED OR CONCRETE RAMP AND PARKING
- BOAT RAMP PAVED OR CONCRETE RAMP GRAVEL PARKING
- AMPHITHEATER
- SWIMMING BEACH
- FOOD SERVICE TABLE
- COURTESY DOCK

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

NEOSHO PARK CONCESSION AREA

SCALE OF FEET

100 0 100 200

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS

CB590-28-93/7

LEGEND

EXISTING

ROADS
- PAVED
- GRAVEL

WATER SYSTEM
- WATER SUPPLY
- WATER LINE — W
- WELL (HAND PUMP)
- WELL WITH SHELTER (HAND PUMP)
- WATER STAND PIPE

POWER
- OVERHEAD POWER — P
- UNDERGROUND POWER — P
- COURTESY LIGHT

SANITARY FACILITIES
- WOOD VAULT TOILET — WV
- MASONRY VAULT TOILET — MV
- WATER-BORNE TOILET — WB
- WATER TREATMENT PLANT — WTP
- SEWAGE DUMP STATION — SS
- WASTE STABILIZATION POND
- SEWER LINE — S
- FORCE MAIN W/LIFT STATION — LS, FM
- WATER-BORNE W/SHOWER — WB/S
- PICNIC TABLE
- PICNIC TABLE WITH SHELTER
- GROUP PICNIC SHELTER — GPS
- TABLE WITH CAMP PAD
- TABLE WITH SHELTER AND CAMP PAD
- FIREPLACE
- REFUSE CONTAINER
- SIGN

- TRAFFIC COUNTER
- FEE COLLECTION POINT
- BUOY OR FLOATING MARKER — 5M.P.H.
- BOAT RAMP PAVED OR CONCRETE RAMP AND PARKING
- BOAT RAMP PAVED OR CONCRETE RAMP GRAVEL PARKING
- AMPHITHEATER
- SWIMMING BEACH
- FOOD SERVICE TABLE
- COURTESY DOCK

FORESTRY, FISH AND GAME COMPOUND

SEWAGE LAGOONS

PROPERTY LINE

GOVERNMENT

CAMPING AREA

WATER PLANT

5 M.P.H. NO SKI

RAW WATER INTAKE

5 M.P.H. NO SKI

BOAT LAUNCHING RAMP END ELEV. 1257.0'

GATE ATTENDANT HOUSE

CANEY CREEK COVE RECREATION AREA

AMPHITHEATER

CAMPING AREA

OVERFLOW CAMPING AREA

BOAT LAUNCHING RAMP END ELEV. 1262.23'

5 M.P.H. NO WAKE

5 M.P.H. NO SKI

FAS 467

TO DAM 2 MILES

COUNCIL GROVE LAKE

RECREATIONAL FACILITIES			
ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	2		2
WATERBORNE TOILET W/SHOWER	1	1	2
WATERBORNE TOILET			
MASONRY VAULT TOILET	2		2
WOOD VAULT TOILET	8		8
* CAMPSITES	50	18	68
* PICNIC SITES			
PEDESTAL COOKERS	50	18	68
FIRERINGS	50	18	68
LANTERN STANDS			
UTILITY TABLES	50	18	68
ELECTRICAL HOOK-UPS			
REFUSE CANS (SINGLE)			
REFUSE CANS (DOUBLE)	12	6	18
WELLS (HAND PUMP)			
WATER HYDRANTS	15		15

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

CANNING CREEK COVE RECREATION AREA

SCALE OF FEET

200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS

CB590-28-93/8

CORPS OF ENGINEERS

U.S. ARMY

T 15 S

T 16 S

R 8 E

LARDS CR.

GRAND (NEOSHO) RIVER

GILMORE CREEK

SLOUGH CR.

SHORT CR.

MUNKERS CR.

CANNING CREEK

RICHEY CREEK

COUNCIL GROVE LAKE

CANNING CREEK COVE

RICHEY COVE (NORTH)

RICHEY COVE (SOUTH)

DAM SITE AREA

NEOSHO PARK

OVERLOOK

ADMINISTRATION AND MAINTENANCE BUILDING

EMERGENCY SPILLWAY

COUNCIL GROVE

13 57

LEGEND

- PROJECT OPERATIONS
- OPERATIONS - RECREATION - INTENSIVE USE
- OPERATIONS - RECREATION - LOW DENSITY
- OPERATIONS - WILDLIFE MANAGEMENT

PERTINENT ELEVATIONS M.S.L.

1289	TOP OF FLOOD CONTROL POOL
1280	5-YEAR FLOOD FREQUENCY (INITIAL)
1270	TOP OF CONSERVATION POOL, 2860 AC. (INITIAL)
1263	10-YEAR FREQUENCY DRAWDOWN (INITIAL)

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

PUBLIC USE- LAND UTILIZATION

SCALE OF FEET
2000 0 2000 4000

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS

159-2B-93/9

10

SWDCO-RR (SWTED-DA 5 Mar 73) 3d Ind
SUBJECT: Council Grove Lake, Grand (Neosho) River, Kans, Appendix A, Project Resource Management Plan, to DM No. 2B, Master Plan

DA, Southwestern Division, Corps of Engineers, Main Tower Building, 1200 Main Street, Dallas, TX 75202 12 FEB 1981

TO: District Engineer, Tulsa, ATTN: SWTOD

1. Appendix A, SAB, is approved subject to the following comments:

a. Paragraph 4-01. The Maintenance Leader, WL-8, is not shown.

b. Paragraph 5-01c. The Webbers Falls Project Manager is listed as having the responsibility for maintaining all facilities. This is questionable.

c. Paragraph 6-02a. The following sentence needs to be rewritten to clarify its meaning:

In these cases, restoration and still fines are used to determine future resource degradation.

d. Paragraph 6-02c. The state health laws, rules and regulations of Kansas should govern Council Grove Lake.

2. This appendix should be reviewed and updated annually for accuracy. Minor pen and ink changes can be approved by the District.

FOR THE DIVISION ENGINEER:

wd all incl

A. P. HUTCHISON
Chief, Construction-
Operations Division

CF: w/incl
HQDA(DAEN-CWO-R) 2 cys

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74102

SWTED-DA

5 March 1973

SUBJECT: Council Grove Lake, Grand (Neosho) River, Kans, Appendix A, Project Resource Management Plan, to DM No. 2B, Master Plan

Division Engineer, Southwestern

Subject appendix (Incl 1) is submitted for review and approval in accordance with ER 1130-2-400.

Eddie L Morris

1 Incl (7 cys)
as

EDDIE L. MORRIS
LTC, CE
Acting District Engineer

25 copies prepared

SWDCO-OR (SWTED-DA 5 Mar 73) 1st Ind
SUBJECT: Council Grove Lake, Grand (Neosho) River, Kans, Appendix A, Project Resource Management Plan, to DM No. 2B, Master Plan

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, TX 75202 08 MAR 1974

TO: District Engineer, Tulsa, ATTN: SWTED-DA

1. Appendix A to Design Memorandum No. 2B, Master Plan for Council Grove Lake, Grand (Neosho) River, Kansas, is approved subject to the following comments or inclusions at subsequent revisions, whichever is appropriate.

a. Paragraph 2. Engineer Manual 1130-2-320 is no longer in effect and should be deleted.

b. Paragraph 5. The "General" portion of this paragraph should be retitled and put into a separate paragraph of its own.

c. Paragraph 6a. The information concerning development and visitation is only needed in support of the management program for the parks. While this appendix does provide a brief description of the areas as required by ER 1130-2-400, only token mention has been made throughout this appendix regarding resource management. This paragraph should be expanded and new paragraphs inserted, where appropriate, that present management problems and their proposed solutions. The following are some items of resource management that should be covered in greater detail or included in this appendix.

(1) Control of traffic.

(2) Periodic closing of the area for maintenance purposes, reduction of energy consumption, or better utilization of available manpower.

(3) Overuse of the area.

(4) Overflow areas.

(5) Contract work versus project forces.

(6) Number of cleanups required to keep facilities in a satisfactory manner throughout the year in relation to visitor use so that visitor complaints are minimized.

(7) Management philosophies regarding grass cutting; e.g., how much to cut, when to cut, what should remain in natural state, seeding of selected areas in wildflowers to reduce mowing, etc.

(8) Control operations for unwanted vegetation in parks, road rights-of-way, etc.

(9) Disposal of solid waste or vault toilet contents; i.e., frequency and disposal location.

(10) Resealing schedule of park roads.

(11) Debris removal from lake.

(12) Testing potable water systems and public bathing areas.

(13) rodent control.

(14) Horticulture principles; i.e., pruning trees and shrubs, fertilizer applications, type of grass seed to use, removal of hazardous trees, etc.

(15) Control of livestock.

(16) Buoying and marking of swimming beaches, hazardous areas, channel markers, lake markers, and barricade placement during flood conditions.

(17) Activities involving adjoining adjacent landowners involving brush removal, construction of steps, etc.

(18) Management of historical or archaeological sites, if applicable.

(19) Use of off road vehicles.

(20) Other areas of resource management concepts and practices involving management of the resources at the project.

d. Paragraph 6b. Since this information is required in the master plan, this paragraph should be deleted. Specifics for management of the quasi-public areas should be presented here.

e. Paragraph 7.

(1) Signs should conform to the SWD Sign Handbook and reference should be made to this document.

(2) Vehicle maintenance should be covered.

f. Paragraph 11. The current use fee legislation should be stated. Also, this paragraph may need to be revised in light of the most recent law regarding Corps of Engineer Use Fee Areas.

g. Paragraph 12e. The most recent legislation regarding water pollution should be stated.

h. Paragraph 20. This paragraph should be expanded to include a general discussion of other major insect pests and vectors of disease which are important at the Council Grove project. Also, herbicide activities should be included along with a reference made to ER 1130-2-332.

i. A visitation chart showing the annual attendance since impoundment and the projected attendance should be included.

j. Reference to appropriate ER's and other criteria is noticeably missing. These references would be of particular importance to personnel using this management plan; i.e., reference to a particular chapter in SWDR 1130-2-7 would provide additional information needed to carry out a management function in the discussion of some ranger activities. References should be included where appropriate.

2. This appendix should be reviewed and updated annually. A page should be inserted at the end of the plan showing the date the appendix was reviewed and the signature of the reviewer. Minor pen and ink changes can be approved by the District. The plan should be completely reevaluated and submitted for approval every five years.

SWDCO-OR (SWTED-DA 5 Mar 73) 1st Ind
SUBJECT: Council Grove Lake, Grand (Neosho) River, Kans, Appendix A, Project Resource Management Plan, to DM No. 2B, Master Plan

3. Approval of this appendix does not circumvent the need of additional approvals at District, Division, or OCE level when required by existing directives. A specific example would be personnel spaces.

FOR THE DIVISION ENGINEER:

wd all incl

GEORGE W. STAPLES
Chief, Construction-Operations Division

CF: w incl
HQDA (DAEN-CWO-R) w 2 cy incl

SWTOD-RM(SWTED-DA 5 Mar 73) 2nd Ind
SUBJECT: Council Grove Lake, Grand (Neosho) River, Kans, Appendix A, Project Resource Management Plan, to DM No. 2B, Master Plan

DA, Tulsa District, CE, PO Box 61, Tulsa, OK 74121 17 Nov 80

TO: Division Engineer, Southwestern, ATTN: SWDCO-OR

Subject updated appendix (Incl 1) is submitted for review and approval in accordance with ER 1130-2-400.

FOR THE DISTRICT ENGINEER:

1 Incl (9 cys)
as

JAMES P. JONES
Chief, Operations Division

SWTOD-RM(SWTED-DA 5 Mar 73) 2nd Ind
SUBJECT: Council Grove Lake, Grand (Neosho) River, Kans, Appendix A, Project Resource Management Plan, to DM No. 2B, Master Plan

DA, Tulsa District, CE, PO Box 61, Tulsa, OK 74121 17 Nov 80

TO: Division Engineer, Southwestern, ATTN: SWDCO-OR

Subject updated appendix (Incl 1) is submitted for review and approval in accordance with ER 1130-2-400.

FOR THE DISTRICT ENGINEER:

1 Incl (9 cys)
as

JAMES P. JONES
Chief, Operations Division

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74102

SWTED-DA

5 March 1973

SUBJECT: Council Grove Lake, Grand (Neosho) River, Kans, Appendix A, Project Resource Management Plan, to DM No. 2B, Master Plan

Division Engineer, Southwestern

Subject appendix (Incl 1) is submitted for review and approval in accordance with ER 1130-2-400.

Eddie L Morris

1 Incl (7 cys)
as

EDDIE L. MORRIS
LTC, CE
Acting District Engineer

25 copies prepared

d. Paragraph 6b. Since this information is required in the master plan, this paragraph should be deleted. Specifics for management of the quasi-public areas should be presented here.

e. Paragraph 7.

(1) Signs should conform to the SWD Sign Handbook and reference should be made to this document.

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f. Paragraph 11. The current use fee legislation should be stated. Also, this paragraph may need to be revised in light of the most recent law regarding Corps of Engineer Use Fee Areas.

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h. Paragraph 20. This paragraph should be expanded to include a general discussion of other major insect pests and vectors of disease which are important at the Council Grove project. Also, herbicide activities should be included along with a reference made to ER 1130-2-332.

i. A visitation chart showing the annual attendance since impoundment and the projected attendance should be included.

j. Reference to appropriate ER's and other criteria is noticeably missing. These references would be of particular importance to personnel using this management plan; i.e., reference to a particular chapter in SWDR 1130-2-7 would provide additional information needed to carry out a management function in the discussion of some ranger activities. References should be included where appropriate.

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(19) Use of off road vehicles.

(20) Other areas of resource management concepts and practices involving management of the resources at the project.

SWDCO-OR (SWTED-DA 5 Mar 73) 1st Ind
BJECT: Council Grove Lake, Grand (Neosho) River, Kans, Appendix A, Project Resource Management Plan, to DM No. 2B, Master Plan

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, TX 75202 08 MAR 1974

TO: District Engineer, Tulsa, ATTN: SWTED-DA

1. Appendix A to Design Memorandum No. 2B, Master Plan for Council Grove Lake, Grand (Neosho) River, Kansas, is approved subject to the following comments or inclusions at subsequent revisions, whichever is appropriate.

a. Paragraph 2. Engineer Manual 1130-2-320 is no longer in effect and should be deleted.

b. Paragraph 5. The "General" portion of this paragraph should be retitled and put into a separate paragraph of its own.

c. Paragraph 6a. The information concerning development and visitation is only needed in support of the management program for the parks. While this appendix does provide a brief description of the areas as required by ER 1130-2-400, only token mention has been made throughout this appendix regarding resource management. This paragraph should be expanded and new paragraphs inserted, where appropriate, hat present management problems and their proposed solutions. The llowing are some items of resource management that should be covered in greater detail or included in this appendix.

(1) Control of traffic.

(2) Periodic closing of the area for maintenance purposes, reduction of energy consumption, or better utilization of available manpower.

(3) Overuse of the area.

(4) Overflow areas.

(5) Contract work versus project forces.

(6) Number of cleanups required to keep facilities in a satisfactory manner throughout the year in relation to visitor use so that visitor complaints are minimized.

SWDCO-OR (SWTED-DA 5 Mar 73) 1st Ind
SUBJECT: Council Grove Lake, Grand (Neosho) River, Kans, Appendix A, Project Resource Management Plan, to DM No. 2B, Master Plan

3. Approval of this appendix does not circumvent the need of additional approvals at District, Division, or OCE level when required by existing directives. A specific example would be personnel spaces.

FOR THE DIVISION ENGINEER:

wd all incl

GEORGE W. STAPLES
Chief, Construction-Operations Division

CF: w incl
HQDA (DAEN-CWO-R) w 2 cy incl

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

APPENDIX A
PROJECT RESOURCE MANAGEMENT PLAN
TO
DESIGN MEMORANDUM NO. 2B
MASTER PLAN (REVISED)

DEPARTMENT OF THE ARMY
TULSA DISTRICT CORPS OF ENGINEERS
TULSA, OKLAHOMA
(UPDATE) DECEMBER 1980

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

APPENDIX A
PROJECT RESOURCE MANAGEMENT PLAN
TO
DESIGN MEMORANDUM NO. 12B
MASTER PLAN (REVISED)

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X - SUBMISSION

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, OKLAHOMA

APPENDIX A
PROJECT RESOURCE MANAGEMENT PLAN
TO
DESIGN MEMORANDUM NO. 12B
MASTER PLAN (REVISED)

I - INTRODUCTION

1-01. Purpose. This appendix is prepared as a guide for resource development, maintenance, protection, and use of all project land and water areas, including public use and project lands under outgrant for special purposes.

1-02. Authorization. The Project Resource Management Plan is authorized by ER 1130-2-400, dated 20 May 1971, subject: Project Operation, Recreation-Resource Management of Civil Works Water Resource Projects, and changes 1 through 5 dated 1 December 1971, 23 December 1971, 15 June 1972, 26 January 1973, and 26 September 1974, respectively. General considerations covering resource management and public use are contained in the following directives: ER 1130-2-303, Project Operation, Maintenance Guide; ER 1120-2-400, Recreation Resources Planning CCH1-3), ER 405-2-835, Real Estate, Management and Utilization of Civil Works Lands; and supplemented by letters and memoranda from the Chief of Engineers and the Division Engineer.

1-03. Master Plan. This appendix is a part of the Master Plan for the development and management of Council Grove Lake, Oklahoma.

II - PROJECT DESCRIPTION

2-01. Project purpose and authorization. Council Grove Reservoir, now designated as Council Grove Lake, is a unit in the comprehensive plan for development of the Grand (Neosho) River Basin Kansas for flood control, water supply, recreation, and other uses. Council Grove Lake and Dam is located in Morris County, Kansas, at river mile 449.9 or 1.5 miles northwest of the city of Council Grove, Kansas. The lake is operated to provide flood protection in the reach of the Grand River between the damsite downstream to the upper limits of Pensacola Lake, Oklahoma, when operated with other constructed and authorized projects in the Grand (Neosho) River Basin. The project was authorized by the Flood Control Act of 17 May 1950 (Public Law 516, 81st Congress, Chapter 188, 2d Session) as a modification of the general comprehensive plan for flood control and other purposes approved by the Flood Control Act of 22 December 1944, (60 Stat. 642), and further amended by Section 4 of the Flood Control Act of 1952, approved 3 September 1954.

2-02. Operational procedures. Council Grove Lake controls the runoff from a drainage area of 246 square miles. The conservation pool, with a top elevation of 1274.0 feet above sea level, covers a surface area of 3,235 acres, has a shoreline length of 37 miles, and storage capacity of 48,500 acre-feet. The flood control pool, at elevation 1289.0, increases the total storage capacity to 112,265 acre-feet and the surface area to 5,400 acres. Operation of the project results in the lake's stable pool at elevation 1274.0 feet, MSL. by 15 July. The 1270.0 pool level is retained until 1 November, then raised in stages to elevation 1274.0 feet, MSL. by March, when the cycle is repeated. This operational procedure is designed to achieve recreation benefits.

2-03. Land acquisition.

a. General. Council Grove Lake Lands were purchased under the Eisenhower 1953 Land Acquisition Policy which allows the purchasing of fee titles to all land acquired for damsite, construction area, permanent structure area, and reservoir area lying below a block-out purchase line encompassing the five year flood pool at elevation 1289.0. The maximum flowage easement is at elevation 1306.0. This will protect against wave action, back erosion, induced surchange, and backwater effects. The acquisition guide contour for fee acquisition is at elevation 1289.0, the estimated elevation which the reservoir will reach once in every five years.

b. Fee lands. The project includes an area of 5,975 acres required in fee and 3,222 acres of flowage easement, with a usable land area of 3,235 acres when the lake is at normal power pool elevation. In general, the limiting guideline for easement acquisition in the flat area is elevation 1306.0 which provides 10.5 feet of freeboard above a full flood control pool. In the area of backwater effects, the guideline is elevation 1295.5 or the elevation of the envelope curve of backwater effects of the 50-year

flood occurring after 50 years of accumulated sediment. Fee simple title was acquired to lands required for construction of the dam and for operation and maintenance purposes in the damsite area. Project lands, in general, were purchased in fee title to include elevation 1274.0. Minerals (oil and gas) were purchased or subordinated in accordance with current land acquisition policy.

c. Utilization. Under current management proposals, all minor amounts of project land are considered necessary for project purposes. Some 2,638 acres of land and water area are licensed to the Kansas Fish and Game Commission for management purposes.

2-04. Public-use areas. There are six strategically placed public-use areas located in the lake area. These are Damsite, Richey Cove (South) Richey Cove (North), Canning Creek Cove, Outlet Channel, and Neosho Park. The facilities are designed primarily to serve the visitation demands of the population within a 50-mile radius. Emphasis has been directed toward day-use facilities in order to obtain maximum benefits for the public. Maintenance of the 5 Corps-managed public-use areas, project buildings and grounds, overlook structures, embankment and dam, spillway and outlet works structures, and channel is performed by project personnel and/or service contracts. Types of work include resurfacing of roads and parking areas, mowing around project buildings and structures, preventive maintenance, general upkeep, painting, and repairs and replacements caused by fair wear and tear or vandalism on project buildings, structures, and public-use facilities. Other activities include maintenance of project-owned equipment, replacement of riprap on the embankment and outlet channel, cleanup of drift and debris along the 37 miles of shoreline, and construction of erosion control structures and public-use facilities. Daily inspections are made of all public-use areas, and major repairs are scheduled for off-season recreation periods. Contracts are awarded for cleanup and mowing in the public-use areas. Descriptions of the public use areas are as follows:

a. Corps of Engineers.

(1) Dam Site. The Dam Site area includes development overlooking the lake on the left abutment and at the outlet works stilling basin below the dam. Access to the abutment area is from the left abutment access road. The right outlet works area is accessible from a county road leading from the town of Council Grove. Both areas are open, with sparse tree cover, and require an extensive reforestation program to develop a desirable park appearance. Exiting facilities include bituminous surfaced primary roads and parking area, wood and masonry vault-type restrooms, concrete picnic tables, refuse containters, fireplaces, individual and group picnic shelters, and a fishing pier. In 1967 this area attracted 120,300 visitors. This figure increased to 153,200 in 1971, and averaged 147,100 over the next 5 years. Visitation has decreased from 64,800 in 1975 to 22,100 in 1979 with an average of 55,680 for 1976 thru 1978.

(2) Richey Cove (South). This area is on the east shore of the lake and is approximately 1 mile north of the damsite. The area is accessible from Kansas State Highway 177. The area, generally flat near the shoreline with rolling terrain farther from the lake, has scattered clumps of trees and shrubs. It requires an extensive reforestation program to provide a park appearance. Present development consists of bituminous surfaced roads and parking areas, concrete boat ramps, water supply, wood and masonry vault-type restrooms, concrete picnic tables, refuse conainers, fireplaces, individual and group picnic shelters, shower-toilet, trailer sanitary station, and a beach area. Future development in the area consists of a changehouse, individual picnic shelters, concrete picnic tables, fireplaces, refuse containers, and secondary roads and parking areas. In 1967 recorded attendance at this area was 83,000 which increased to 242,800 visitors in 1971. The area averaged 152,500 visitors through the next 5-year period, and its 1971 attendance was 24 percent of the total project visitation. In 1975 visitation decreased to 177,000, to 171,900 in 1979, and averaged 174,450 the past 5 years.

(3) Richey Cove (North). This area, on the east shore of the lake, is approximately 2 miles north of the dam and separated from Richey Cove (South) by Richey Creek. The site is accessible from Kansas State Highway 177. Native grasses cover most of the area, and naturally occurring tree and shrub growth is confined to the small draws. Extensive reforestation is required to present a park appearance. Existing development includes bituminous surfaced roads and parking areas, concrete boat ramp, water supply, wood and masonry vault-type restrooms, concrete picnic tables, refuse containers, fireplaces, and individual and group picnic shelters. Proposed facilities to supplement the existing development include a waterborne restroom, concrete picnic tables, refuse containers, fireplaces, and individual picnic shelters. This area first recorded visitation of 35,100, increasing gradually to 66,000 in 1971. In 1975 visitation declined to 37,800, and in 1979 to 32,400.

(4) Canning Creek Cove. The Canning Creek Cove public-use area is situated on the west shore of the lake. Entrance into the area is from US Highway 56 to the south or from the county road extending along the southern edge of the lake. The area, generally flat to gently rolling, is open pastureland and with tree growth along the draws, around former homesteads, and, in some instances, along fence lines. The site requires extensive reforestation to provide a park appearance. Present recreational development consists of bituminous surfaced roads and parking areas, concrete boat ramps, water supply, wood and masonry vault-type restrooms, shower-toilet, trailer sanitary station, electric hook-ups, concrete picnic tables, trash receptacles, fireplaces, individual and group picnic shelters, and individual campsites with related facilities. Proposed facilities to be included in the area are a swimming beach, changehouse, group picnic shelter, concrete picnic tables, refuse containers, fireplaces, playground equipment, and secondary roads and parking areas. In 1967 this area had a recorded visitation of 75,500 persons. Visitation declined to 61,200 persons in 1969, then increased to 112,000 visitors in 1971. In 1975 visitation increased slightly to 112,600 but decreased to 50,200 in 1979, averaging over the last five years 177,720.

(5) Neosho Park. This public-use area is located upstream from the dam and extends along approximately 2 miles of the sough shore of the lake. The area is accessible from a county road which parallels the south shore of the lake. This site supports only sparse tree cover, with the trees generally growing in the draws and on the steep slopes near the water. Existing recreational development includes bituminous surfaced roads and parking areas, concrete boat ramps, water supply, wood and masonry vault-type restrooms, concrete picnic tables, refuse containers, fireplaces, individual and group picnic shelters, a commercial concession, and an overlook. The commercial concession offers covered boat storage, rental boats, fishing supplies, refreshments, groceries, a cafe, motor rental, and marine repair service to the general public. Additional facilities to be provided consist of water supply, individual picnic shelters, shower-toilet, and playground equipment. This is the most heavily used park on the lake. Through the past 5 years the area has averaged 33 percent of the total project visitation. The recorded visitation has steadily increased from a total of 201,100 persons in 1967 to 316,000 visitors in 1971. In 1975 this figure decreased to 212,600, to 211,000 in 1979; averaging 244,780 over the past 5 years.

(6) Outlet Channel. This public use area is located immediately downstream from the dam on either side of the stilling basin and river channel. It is accessible from US Highway 56 and the county road which parallels the south shore of the lake. Existing recreation facilities include bituminous surfaced roads and parking areas, water supply, wood vault-type restrooms, refuse containers, secondary roads, off-road motorbike trail area, and a fishing walkway along the west stilling basin wall. Most of the visitation to this area is for the purpose of fishing. Visitation in 1967 was 41,320, increasing to 245,600 in 1973. In 1975 visitation decreased to 140,400; average for the last 5 years was 93,980.

b. Quasi-public organization lands. The Kansas-Oklahoma Conference, United Church of Christ, leases 5.30 acres of project lands. The area, located on the right shoreline of a peninsula formed by the Grand (Neosho) River and Munkers Creek, has minor development and is used mainly as a means of access to the shoreline from the Conference's extensively developed private property.

c. Public use visitation. Visitation at Council Grove Lake for the years 1972 through 1979 is shown on page 2-5.

COUNCIL GROVE VISITATION CHART (FISCAL YEARS 1972-79)

	1972	1973	1974	1975	1976	1977	1978	1979	Total
Canning Creek	198,400	117,900	116,500	112,600	129,100	107,600	189,100	50,200	1,021,400
Neosho Park	408,000	259,300	250,200	212,600	347,100	283,800	169,400	211,000	2,141,400
Outlet Channel	90,000	245,600	238,000	140,400	115,800	98,000	54,800	60,900	1,043,500
Damsite	62,400	73,900	67,500	64,800	84,000	50,000	57,500	22,100	482,200
Richey Cove South	216,400	132,800	145,200	177,000	190,400	203,300	131,600	171,900	1,369,100
Richey Cove North	94,000	37,400	54,700	37,800	45,000	50,200	34,600	32,400	386,100
Other Areas	53,200	19,600	19,200	20,800	29,200	25,600	14,600	10,100	192,300
Remote Areas	53,200	19,600	19,200	20,800	29,200	28,100	19,200	48,900	238,200
Overlook	84,400	122,300	93,600	92,200	89,800	70,800	48,100	41,200	642,400
Total	1,260,000	1,028,400	1,004,100	879,000	1,060,100	917,400	718,900	648,700	7,516,600

III - OPERATIONAL FACILITIES

3-01. Maintenance facilities. Maintenance facilities and equipment for the Council Grove project are located in the storage and shop area of the administration and maintenance building. The project does not have a specific area designated as a sign shop, paint shop, or carpentry shop. These functions are accomplished in a space set apart within the administration and maintenance building. All new signs, whether wood signs used for directional or informational purposes or metal signs used for traffic control, are purchased from the District central sign shop at Eufaula Lake. The project has adequate maintenance facilities; no additional facilities are needed. Major equipment used for maintenance and management activities includes:

Nomenclature	No.
Truck, 2-ton, 4x2, flatbed-dump, w/winch	1
Trailer, tilt-deck, 10-ton	1
Motor grader, small, Gallion Model 503	1
Tractor crawler, small, w/dozer, Case 1000 D	1
Farm tractor, IH	1
Pickup, 4x2, IH 74	2
Pickup, 4x2, F 75	1
Pickup, 4x2, C 77	1
Boat, pontoon, 24-foot	1
Motor, 50-hp	1
Crane	1

3-02. Storage facilities.

a. Maintenance and construction supplies and materials. Project storage facilities consist of the administration and maintenance building, equipment yard, and a paint storage building. The project building houses those items which are subject to damage by weather or are considered to need added security. Items which are large, bulky, and can withstand the weather are stored openly in the equipment yard. The paint and oil storage building is used solely for flammable or toxic materials and is isolated from the project building.

b. Vehicles and equipment. Vehicles and equipment used for the maintenance of the project are stored in the project building and the equipment yard. The equipment yard is enclosed by a 6-foot chain link fence with a 3-strand barbed wire climb barrier on top. The vehicles are further secured by removing the keys, locking doors, and storing the keys in a locked metal storage case within the project building.

3-03. Office and administrative facilities. The project office is an integral part of the maintenance building, a 44- by 72-foot, one-story, brick masonry structure, located downstream from the right abutment of the dam. It provides an administrative area consisting of a general office, conference room, entrance lobby, and rooms for the Project Manager and Park Ranger to direct the operation and maintenance of the project and to maintain logs and records of all activities. Included also are spaces for project maps, cabinets, bookshelves, and necessary file space to accommodate project publications, reference material, and supplies.

IV - OPERATIONAL STAFF

4-01. Staffing and organization. The Council Grove project manager is responsible for all operation and maintenance activities of the project, including resource and recreation management activities. The present organization, is as follows:

Title	Grade	Authorize No.
Administration		
Council Grove		
Project Manager	GS-09	1
Clerk-Typist (PPT)	GS-03	1
Maintenance and Repair		
Crane Operator	WG-10	1
Maintenance Worker	WG-06	1
Laborer	WG-02	1
Resouce Management		
Park Tech	GS-5/7	1
Park Ranger	GS-5/7	1

The present staff, although adequate to detect and/or prevent the unauthorized use of or damage to project facilities, area, or resources and to perform the variety of basic duties concerned with construction, maintenance, and operations of the project structures and recreation areas, requires the following additional personnel during the peak recreational season.

Title	Grade	No.
Summer Park Technician (Temporary)	GS-04	4
Laborer (Temporary)	WG-02	2

The Park Technician provides additional assistance during the peak recreational season by patrolling the lake for detection of encroachment, vandalism, theft, safety hazards, grass fires, and any unauthorized use of public property. Laborers perform a variety of manual labor duties involved in keeping the project presentable during the heavy visitation period. Project work includes resurfacing of roads and parking areas, mowing around project buildings and structures, preventative maintenance, general upkeep,

painting, repairs and replacements caused by fair wear and tear or vandalism on project buildings, structures, and public-use facilities; maintenance of project-owned equipment, replacement of riprap on the embankment and outlet channel, and cleanup of drift and debris along the 37 miles of shoreline.

V - RESOURCE MANAGEMENT

5-01. Park management problems. The following are some of the management problems with possible solutions that can reasonably be expected to be encountered in the operation of Council Grove Lake.

a. Traffic Control. Control of traffic can be maintained in a similar manner in all developed areas. There are several methods possible: natural barriers such as trees and rocks along the roadways, guardrails, use of resurfacing of roadways and parking areas, picnic sites, and use of traffic control signs. Also, Corps Personnel will monitor heavily used areas, assist with traffic control as needed in accident scenes and road closures, and support local fire and law enforcement agencies.

b. Periodic closing of parks. Parks are periodically closed for maintenance, economy, personnel, restoration of areas, etc. based on the area's use or overuse. If an area is overused to the point where natural vegetation deterioration is evident, the area will be closed periodically to allow it to recover. Overflow areas designated by the Project Manager will be used when necessary to help prevent excessive deterioration of fragile areas and to provide the public with sufficient areas to carry out various recreational activities.

c. Facilities maintenance. The maintenance of all facilities in a satisfactory manner is the responsibility of the Webbers Falls Project Manager. To assist in this effort, service contracts are used. All work performed by the contractor is monitored by corps personnel in accordance with the contract specifications.

d. Mowing policy. In all mowing contracts there are specific details about how much grass to cut, what areas should be mowed, areas suitable for planting wildflowers, and what areas should be left in natural state.

e. Toilet pumping. All toilets are cleaned and vault types are pumped out at intervals specified in the contract or as requested by the Project Manager. All vault toilets located within the flood pools are pumped out prior to inundation during flooding periods.

f. Solid waste disposal. All solid waste, including litter in the area and along the roadside, is picked up as specified in the contract or as directed by the Project Manager. All areas have covered refuse cans at each building, camp and picnic site, and boat ramp, and in other areas that are heavily used.

g. Debris removal. Removal of drift and other debris from developed public-use areas and other heavily used areas is accomplished as soon as possible after flooding occurs so that normal use of the land and water may be resumed.

h. Water supply testing. The procedure for testing Corps operated water supplies is outlined in ER 1130-2-407. At the present all recreation area water is tested with the exception of water at the project office and the overlook and outlet channel which are connected to the City of Council Grove water system.

i. Erosion control. Erosion is a current problem. If problems do arise, appropriate control or preventive measures will be taken; these measures would consist of drainage control, terracing, riprap, ditch and wash checks, seeding and sodding, or other accepted measures.

j. Livestock control. A fencing plan has been developed for the purpose of controlling and keeping cattle from public-use and water areas.

k. Hazardous areas. All swimming beaches, and hazardous areas are marked with buoys, channel markers, signs, and Lake Location Markers to protect and warn vistors of existing potential hazardous areas.

5-02. User fee areas. Canning Creek Cove, Neosho Park (1, 3 &4), Richey Cove South (1 & 2) are designated areas where the user fee program is implemented. Signs are posted at the approach to each area to inform the public that a daily fee will be charged for overnight camping. Campers purchase their permit from a uniformed Park Ranger or a uniformed gate attendant assigned to collect the user fee. This duty is performed in conjunction with the Ranger's other assigned activities. Records of costs versus money collected are maintained. The costs include only those in excess of the ones which would occur if the fee program were not implemented. (ER-1130-2-7) 1 Jun 76.

5-03. Cooperative activities.

a. Biological management. The Kansas Fish and Game Commission has 2,638 acres of project land and water area under license for wildlife management purposes. The acreage is managed to offer a wide variety of food, cover, and breeding and nesting habitat for migratory waterfowl and upland game species. Croplands occupy the major portion of the wildlife lands and are managed in accordance with proper conservation practices. Crop rotation is used as an aid in maintaining soil fertility and to provide more varieties of food, cover, and nesting habitat for wildlife. Grassland management procedures include delayed mowing for the protection of nesting wildlife and establishment of small food plots within the grassland areas to provide additional food for wildlife.

b. Reforestation. The Forestry Division, State Department of Agriculture, State of Kansas, is implementing a plan for the environmental improvement of project lands by establishing and promoting vegetation suitable for recreation use, wildlife, shoreline and soil stabilization. The objectives of the 5-year plan will be attained by mechanical aeration and fertilization of the soil, establishing sod-forming grasses, block

plantings of various species of bare-root seedlings, individual plantings of ball and burlapped trees, landscaping selected structures and signs, and the use of barriers to control pedestrian and vehicular traffic. The State Division of Forestry was responsible for the maintenance of all vegetation established during the program for a period of 5 years from the date of each site planting.

c. Fire control. Every effort is made to control grass and forest fires on public-owned lands and to cooperate with local firefighting organizations to control fires which may start on lands adjacent to or on public land. Fireguards are constructed and maintained at key points to control fires. The land-use plan requires that the lessee not burn the leased area and that he agree to suppress any fires that may be accidentally started. Project personnel have various kinds of fire control equipment, including bulldozers, fire truck, and power equipment. A detailed firefighting and fire prevention plan is presented in Appendix C, Fire Protection Plan.

VI - VISITOR AND RESOURCE PROTECTION

6-01. Ranger activities. Park Ranger activities are designed to protect and preserve the Government land in its natural condition and to serve the visiting public. The Ranger's attitude, efficiency, appearance, and willingness to be helpful demonstrate an efficient operation that is equitable to all of the public. The Park Ranger protects the project area and the public property to which he is assigned and attempts to obtain compliance with all rules and regulations concerning the use of project lands and water. The Ranger assures that the needs of visitors to the project are satisfied, as far as practicable, and inspects facilities provided in the recreation areas to assure that the facilities are maintained in good condition. The Ranger corrects, when possible, any unsatisfactory condition or problem he encounters on the project. When on patrol, he carries in his possession brochures, maps, and information pamphlets relative to the project. Ranger land activities include, but are not limited to, inspection of leases and licenses assigned by the district offices, building construction on commercial leases, and recreational facilities. He also patrols the project lands for the purpose of detecting encroachments, unauthorized use, construction, vandalism, fires, pollution problems, and theft. He also gathers data for many recreational reports. Water activities include patrolling the lake area to enforce rules and regulations; promoting water safety by furnishing safety regulations; advising as to hazards of the lake; and giving information regarding State and Federal regulations relating to water safety laws and fishing and hunting. For particular aspects of Ranger activities, refer to SWDR 1130-2-7.

6-02. Law enforcement.

a. General. The Project Manager and Park Ranger will issue citations to persons violating provisions contained in Section 234 of the Flood Control Act of 1970 (Public Law 91-611) and policy established in ER 190-2-4. The citations may direct the appearance of the violator before a US Magistrate or may require the payment of a fine. The project has four citation authority rangers. These rangers received a 40-hour training course on writing citations concerning Title 36 violations and problems associated with resource management citations. Resource management at the project has been improved greatly through the use of the citation program; unauthorized cattle grazing, wood cutting, sand and gravel removal, trash dumping, etc. have all been significantly reduced. Serious offences are referred to the local US Magistrate for action In these cases, restoration and still fines are used to determine future resource degradation. The County Sheriff's Department and the Kansas Highway Patrol provide patrols for all parts of the lake area as extensively as their workloads will permit. The Kansas Fish and Game Commission enforces fish and wildlife laws. Its personnel are largely responsible for safe use of the water area by the public. Close coordination is maintained between the Project Manager and these law enforcement officials, including definite plans for a joint plan of action to control pollution, vandalism, and visitor harrassment and to enforce boating regulations and fish and wildlife laws.

b. Waterway safety. Zoning of the lake area to promote safe boating, swimming, and skiing has been and is being accomplished by the Corps of Engineers through buoying of designated beach areas and the construction and installation of floating information and warning signs. Skiing and speed boating are prohibited in restricted areas, embayments, swimming areas, and in the areas of the lake which are reserved for fishing. Under the provisions of the Kansas State Boating Act, the Kansas Fish and Game Commission has the responsibility of enforcing the provisions of the Act. The Commission will promote safety and enforce zoning established by the Corps of Engineers. See appendix E for the boating safety plan.

c. Public health. The development and use of the project is planned for the public interest, and the utmost consideration is given to maintenance to ensure high standards of public health and safety. The State health laws and rules and regulations of the Oklahoma State Health Department are applicable to the facilities located on project land. Disposal of wastes, trash, and debris is not permitted on Government land except at State-approved temporary sanitary landfill sites. At these sites, open burning and surface water runoff are not permitted, and the solid waste must be covered with a layer of soil daily.

d. Pollution Control. The project shall be operated and maintained in accordance with the following Executive Orders, Acts, and Regulations on pollution:

(1) Executive Order 11288.

(2) Federal Environmental Pesticide Control Act of 1972.

(3) Solid Waste Disposal Act, 21 October 1976, Section 6001.

(4) Clean Air Act of 1974, Section 118.

(5) Noise Control Act of 1972, Section 4.

(6) Federal Water Pollution Control Act Amendments of 1972.

(7) Safe Drinking Water Act of 1974, Section 1447.

(8) AR 200-1, Change 2, 14 November 1975, Environmental Protection and Enhancement.

(9) ER 1130-2-334, 1 May 1974, Water Quality Management at Corps Civil Works Facilities.

(10) ER 1130-2-407, 18 January 1974, Operating and Testing Potable Water Systems.

(11) SWDR 1130-2-9, 16 May 1978, Water monitoring at Bathing Beaches.

(12) EPA Regulation, 29 January 1976, Marine Sanitation Devices.

(13) ER 1130-2-413, 15 August 1977, Pest Control Program for Civil Works Projects.

6-03. Safety - Visitor and employee. The safety of the visiting public is the prime responsibility of the Project Manager. All facilities provided on the project are maintained in good, safe condition at all times. Project personnel continually inspect the concession establishments and facilities for unsafe practices or violations of the public health codes. The concessionaire is promptly advised to correct any deficiency. Questionable health conditions are reported to State health agencies. A continual surveillance of the lake and project lands is conducted for potential hazards to the public. Safe boating, skiing, swimming, and wading are promoted through distribution of literature, posters, and presentation of informal talks about water safety to interested groups. Also, a vehicular traffic program is conducted consisting of continual maintenance of roads and the provision of informational and directional signs and displays as may be required for control and guidance of the visiting public. All employees are provided initial instruction in safety principles that will enable them to properly perform their work in a safe manner. Biweekly safety meetings for all employees serve as a time to review past records, to give instructions, and to establish policy and procedures for the future. Additional details of the safety program are included in appendix E, Project Safety Plan.

VII - OTHER LAND USES

7-01. Concessionaire activities. A concessionaire operates a recreation commercial business on Government-owned land strategically located on the south shore of the lake in the western part of the Neosho Park public-use area. The concession meet the demands of project visitors by providing facilities for storage, rental, and repair of boats and concession buildings offering the sale of bait, fuel, fishing and hunting supplies, meals, refreshments, souvenirs, and similar items. In addition to the normal lease requirements, the concession is inspected for the proper disposal of trash, rubbish, and other refuse; compliance of sanitary facilities with approved plans, both State and Federal; the maintenance of structures, slips, and operating equipment; and unauthorized developments or activities. Where violations are noted, the concession is notified in writing of the unsatisfactory condition and requested to correct the defect within a reasonable period of time.

7-02. Encroachments. No encroachment or trespass of major significance has occurred on the Council Grove Lake project. Project personnel maintain surveillance of the public-owned land, observing for unauthorized uses such as grazing and agricultural use without benefit of lease; any type of right-of way without benefit of an easement or license; dumping of trash or refuse; construction on lands not outgranted; removal of borrow and other similar encroachments. When an encroachment is suspected, a complete investigation is performed to determine whether an actual encroachment exists. The violator is then courteously informed of his infringement by personal contact or in writing. Obvious temporary-type encroachments or trespasses are resolved and corrected at field level. If efforts to remove the trespasser are not successful, or if the individual persists in his vviolation, the incident is referred to the District Office for appropriate action. In cases of encroachment where permanent-type structures are involved, the person responsible is notified of the encroachment and the matter referred to the District Office for further action.

7-03. Use by adjoining landowners. As stated in ER 1130-2-400, mere ownership of land adjoining project lands conveys no special right to Government Land. However, such rights are often indicated to the general public due to the development and use of the shoreline land by individuals, thus discouraging use by the general public as provided for by Section 4, Flood Control Act of 1944, as ammended. Applications for leasing permits will be reviewed thoroughly by the Corps of Engineers.

7-04. Off-road vehicles. Off-road vehicles areas must meet the criteria outlined in ER-1130-2-405 dated 17 Jan 74. Periodic inspections of these areas will be made to note any excessive deterioration or adverse environmental impacts. Use of other areas are off limits to off-road vehicles. There are no off-road vehicle areas on the project.

7-05. Historical and archeological sites. Surveys of historical and archeological sites are presently under study; however, this information will not be available until the next update.

VIII - TRAINING AND PUBLIC EDUCATION

8-01. In-service training program. An informal career and safety program for employees development is carried out by the Project Manager. This program includes providing job-oriented instructions and the encouragement of employee self-development through participation in local courses given by education and public service groups and enrollment in U.S. Army correspondence courses. The Project Manager is responsible for the training of Park Rangers and assuring that District policy is understood. The program is designed to expose the Ranger to the basic requirements of the Park Manager position and at the same time make available additional information through reference material, correspondence courses, schools, and seminars in order that the employee may broaden his knowledge in the resource management field at his own discretion.

8-02. Visitor education and interpretation program. At the present time, brochures, maps, copies of Title 36, and other District publications are furnished to the public at the project office or by project personnel. Upon request, project personnel speak and/or present illustrated programs about the natural features of the project, plans for the project, the purposes of the project, and the impact of the project on the local area.

IX - PEST CONTROL

9-01. Pest control program. The major pests that the project must control are mosquito's, beavers, and ground hogs. Mosquitos are a nuisance to visitors, beavers have destroyed many of the young trees in many of the camping areas, and ground hogs have destroyed the embankments of levees in the project area. A regular pest control surveillance is not in force at the project. Suppressive practices which may be employed during the summer months consist of spraying chemicals or pesticides in areas managed by the Corps of Engineers. When chemicals or pesticides are used, care is to be exercised to ensure that proper safety procedures are followed and the applications made in accordance with the recommendations of the manufacturer and the provisions of applicable State and Federal laws and in accordance with ER-1130-2-332. Only those chemicals which are registered by the Environmental Protection Agency are to be used. Project personnel involved in the use of chemicals are required to be trained and certified through the Kansas State Certification Program and/or the Army Certification short course conducted at Ft. Sam Houston, San Antonio, Texas.

X - SUBMISSION

10-01. Submission and approval. The original Appendix A was submitted to Southwestern Division for approval on 14 May 1975 and received 30 June 1975.

10-02. Review. The project manager shall review and update this plan annually. A copy of minor pen and ink changes shall be forwarded to Master Plan Section, Recreation-Resources Management Branch for inclusion in the record copy. The project reviewer shall sign and date the log below upon completion of the annual review.

ANNUAL REVIEW LOG

Year	Signature	Title	Date
1981			
1982			
1983			
1984			
1985			
1986			
1987			
1988			
1989			
1990			

SWDCO-RR (SWTOD-RM 23 Oct 80) 1st Ind
SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas, Appendix E, Project Safety Plan to DM No. 2B, Updated Master Plan

DA, Southwestern Division, Corps of Engineers, Main Tower Building, 1200 Main Street, Dallas, TX 75202 18 NOV 1980

TO: District Engineer, Tulsa, ATTN: SWTOD

1. Appendix E, Safety Plan to DM No. 2B, Updated Master Plan, Council Grove Lake, Grand (Neosho) River, Kansas, is approved subject to the following comment:

Paragraph 8-04(b) - All three pickups should have the same equipment if these vehicles are to be used in search and rescue missions.

2. This appendix should be reviewed and updated annually. Minor pen and ink changes can be approved by the District.

FOR THE DIVISION ENGINEER:

Walter E. McGowan

wd all incl

WALTER E. MCGOWAN
Acting Chief, Construction-Operations Division

CF: w/incl
HQDA(DAEN-CWO-R) (dupe)

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74121

REPLY TO
ATTENTION OF

SWTOD-RM

23 October 1980

SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas, Appendix E, Project Safety Plan to DM No. 2B, Updated Master Plan

Division Engineer, Southwestern
ATTN: SWDCO-OR

Subject updated appendix (Incl 1) is submitted for review and approval in accordance with ER 1130-2-400. Comments contained in 1st Indorsement, 17 May 1976, have been incorporated.

FOR THE DISTRICT ENGINEER:

1 Incl (9 cys)
as

JAMES P. JONES
Chief, Operations Division

SWDCO-RR (SWTOD-O 8 Apr 76) 3d Ind
SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas Appendix C, Fire Prevention Plan, to DM No. 2B, Updated Master Plan

DA, Southwestern Division, Corps of Engineers, Main Tower Building, 1200 Main Street, Dallas, TX 75202 4 SEP 1980

TO: District Engineer, Tulsa, ATTN: SWTOD

The plan is approved subject to the following comments:

a. There is no discussion of how the project determines current levels of the hazard, resulting from condition of vegetation, temperature, relative humidity, moisture availability, wind, etc. Neither is there any discussion of levels of readiness relative to the hazard levels. This should be described.

b. Reference paragraph 2-03. The Corps policy is to manage for wildlife with grazing as a tool, not a primary purpose.

c. Reference paragraph 2-06. Fire Occurrence maps should be noted as being developed and the file location specified.

d. Reference drawing 93/6. A fire lane outside the Corps project property line does not appear to be under the Corps jurisdiction. The remaining portion inside the project area does not appear to be needed.

FOR THE DIVISION ENGINEER:

Mark R. King
for A. P. HUTCHISON
Chief, Construction-Operations Division

wd all incl

CF: w/incl
HQDA (DAEN-CWO-R) 2 cys

SWTOD-RM (SWTOD-O 8 Apr 76) 2nd Ind
SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas Appendix C, Fire Prevention Plan, to DM No. 2B, Updated Master Plan

DA, Tulsa District, CE, PO Box 61, Tulsa, OK 74121

TO: Division Engineer, Southwestern, ATTN: SWDCO-OR

Concur with comments contained in SWDCO-R 1st Ind. Comments have been included in the revised appendix (Incl 1).

FOR THE DISTRICT ENGINEER:

John C. Maples

1 Incl (9 cys)
as

JOHN C. MAPLES
Acting Chief, Operations Division

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

APPENDIX C
FIRE PREVENTION PLAN
TO
DESIGN MEMORANDUM NO. 2B
UPDATED MASTER PLAN

DEPARTMENT OF THE ARMY
TULSA DISTRICT CORPS OF ENGINEERS
TULSA, OKLAHOMA
APRIL 1976
REPRINTED SEPTEMBER 1980

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

APPENDIX C
FIRE PREVENTION PLAN
TO
DESIGN MEMORANDUM NO. 2B
UPDATED MASTER PLAN

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GRAND (NEOSHO) RIVER, KANSAS

APPENDIX C
FIRE PREVENTION PLAN
TO
DESIGN MEMORANDUM NO. 2B
UPDATED MASTER PLAN

I - INTRODUCTION

1-01. Purpose. The purpose of this Fire Prevention Plan is to establish policies, equipment, specific action, and manning guides and to train personnel in the prevention, detection, and suppression of woodland and range fires on fee lands administered by the Corps of Engineers.

1-02. Authority. This Fire Prevention Plan is prepared in accordance with the requirements of ER 1130-2-400, 28 May 1971 and changes 1 through 5 dated 1 December 1971, 23 December 1971, 15 June 1972, 26 January 1973, and 26 September 1974, respectively.

1-03. Master plan. This appendix is a part of the Master Plan for the development and management for Council Grove Lake, Grand (Neosho) River, Kansas.

II - PROJECT DESCRIPTION

2-01. General. There are 3,115 acres of land subject to fire protection measures by the Corps of Engineers at Council Grove Lake. The area consists of level forested bottom lands undulating to rolling valley uplands. The topography of the area immediately adjacent to the shoreline is flat and the land rises gently to rolling hill structure. The area supports a forest-grassland cover type. Much of the area can be classified as true rangeland. Native woodlands occur generally as narrow bands and patches of trees along inlets and on north slopes.

2-02. Forest. Forested areas surrounding the lake are characteristic of the elm-ash-cottonwood forest and oak-hickory forest. The predominant overstory vegetation includes post oak, blackjack, American elm, cottonwood, hickory, and eastern red cedar. The predominant understory includes native grasses, sumac, wild grape, sassafras, and numerous shrubs.

2-03. Grasslands. The grasslands under the control of Corps of Engineers are primarily managed for grazing. The predominant native grasses present are big bluestem, little bluestem, switchgrass, Indian grass, foxtail, tall dropseed, and grama grasses.

2-04. Fuel composition. Vegetative litter accumulations are light to heavy. Open areas, grown up in flashy fuels such as grass, present the biggest opportunity for a rapidly spreading fire. Wind and ground surface temperatures in these areas are apt to be higher than in adjacent woods and fuel accumulations are subjected to large and rapid fluctuations of moisture.

2-05. Fire hazard.

a. Almost all fires in this region are man-caused, either intentionally or through carelessness. "Hot boxes" on railroad cars, lighted cigarettes thrown from vehicles, and trash and brush fires which escape control are leading causes of fires, but not necessarily in this order. A recent history of fires experienced and burned is not available. Fire damage has to be in excess of 25 acres or more before it is reported.

b. The possibilities of fire are relatively high in the early spring before "green up" and in the late summer and early fall. However fires may occur anytime in the year when the vegetation is dry. Range fires in this area are common phenomena, mostly due to agricultural burning, trash and brush fires, and accidental fires. During recent history there have been five to ten fires annually which affect Corps property. Some of these cover as much as several hundred acres. Most of these fires generally do no more damage than would be done in a controlled burn for wildlife management.

2-06. Risk areas. Public-use areas are the areas of highest fire risk because of the large numbers of people who visit them. Outside public-use areas, the risk varies in proportion wth the number of people who come in

contact with a site. The damage from wildfires on these areas is less significant than in a public use area. These lands, nonetheless, are subject to tangible damages such as injury to young growth, soils, wildlife habitat, forage and loss in recreational value. To determine actual fire risk areas, an updated fire occurrence map will be developed which depicts problem areas as well as number and size of fires occuring each year. Chronic fire areas will receive close scrutiny and appropriate actions taken.

III- ORGANIZATION AND TRAINING

3-01. General.

a. Considering the dispersed activities of the Corps personnel, it is likely that a fire on Corps land could do considerable damage before control equipment could arrive. For this reason, it is necessary to maintain and equip a highly mobile well-trained organization.

b. The fire organization will consist of the project manager, park rangers, operation and maintenance foreman, and the operation and maintenance workers.

c. A chart of the fire control organization is as follows:

DISPATCHER

FIRE BOSS

POWER EQUIPMENT OPERATOR — CREW BOSS
LINECREW

3-02. Personnel and duties.

a. Designation of positions. The dispatcher, fire boss, crew boss, and their alternates, shall be definitely designated, by postiion, to avoid confusion at the time of the fire and to more positively direct training opportunitites.

b. Dispatcher. The dispatcher will be the clerk-typist. Her duties will include:

(1) The dispatchment of men and equipment efficiently and to provide communications with:

(a) Fire detectors (rangers, police, public, etc.)
(b) Initial attack forces
(c) Firefighting ground command post
(d) Other facilities (city fire department, police, Corps projects, etc.)
(e) Centers for information (schools, towns, factories, etc.)
(f) Adjoining protection agencies (US Forest Service, State Forestry Service)
(g) Kansas Fish & Game Management area personnel.

(2) Assisting in the preparation and maintenance of a fire map showing existing roads, proposed roads, fire lanes, and water replenishing stations. Each road's name, length, termination point, and time required to travel from one point (project office) to another point, must be incorporated into the map.

(3) In addition to the training set forth in this plan, the dispatcher shall be provided with definite written guidelines to assist him in dispatching the appropriate personnel and equipment for the situation.

c. Fire boss. The fire boss may be the project manager, park ranger operation and maintenance foreman, or other designated individual. His duties are to assure prompt, effective fire control action and will include:

(1) Before arrival at fire.

(a) Obtain the best available information on the location of the fire, the forces and equipment being sent, and the current forcasted weather conditions.

(b) On larger fires, travel by a route that will provide a vantage point for sizing up the fire.

(2) On arrival at the fire.

(a) Determine the probable spread of the fire.

(b) Notify the dispatcher of the adequacy of the resources assigned to the fire, give an estimate of the fire potential, and the additional resources required.

(c) Inventory and analyze possible environmental damage, both as a result of the fire and of possible fire control strategies.

(d) Prepare a plan of control.

(e) Organize resources according to the plan.

(f) Assign men and equipment on arrival.

(g) Brief crew boss.

(h) Check welfare and safety of all personnel and make sure all equipment is secured from danger of fire.

(i) Direct and coordinate fire suppression.

(j) Keep dispatcher informed.

(k) Maintain high level of performance.

d. Crew boss. The crew boss will be selected in advance from qualified personnel at the project and given the same training as the fire boss. His duty is to direct field action to control the fire in accordance with the plan of the fire boss and to see that the work is safely accomplished. He has the latitude to make decisions within the limits of the plan given to him.

e. Power equipment operators. These individuals will be knowledgeable in the safe, efficient use of the equipment which they are

operating in the building of firelines, the suppression of spot fires and in mopping-up activities.

f. Line crew members. The line crew will be selected from the available operation and maintenance workers. Their duties include: the loading of fire tool boxes and extra backfire torch fuel; the fueling of backfire torches and chain saw; and the filling of water tanks and backpack tanks with water. Other activities are to safely and efficiently attack a fire as trained, while utilizing the most appropriate equipment.

3-03. Fire control training. Each project employee will receive fire control training commensurate with his duties within the fire organization. The resident engineer is responsible for all training. Training materials and assistance are readily available from the Division of Extension, Extension Forestry, Kansas State University and the US Forest Service. Training materials available consist of films, slide programs, correspondence courses, and assorted literature. Assistance available consists of fire schools and individual presentations. The levels of training are as follows:

a. Fire boss and crew boss. A minimum of 12 hours of fire control training will be given annually. The following subjects will be presented:

Fire Prevention	1 Hour
Fire Safety	2 Hours
Fire Characteristics and Behavior	2 Hours
Methods of Attack	2 Hours
Use of Hand Tools	1 Hour
Use of Power Equipment	4 Hours

b. Power equipment operator. A minimum of 4 hours of fire control training will be given annually. The following subjects will be presented:

Fire Safety	2 Hours
Fire Characteristics and Behavior	1 Hour
Methods of Attack	1 Hour
Use of Power Equipment	4 Hours

c. Dispatcher. A minimum of 3 hours of fire control training will be given annually. The following subjects will be presented:

Emergency Operations	1 Hour
Dispatching	1 Hour
Communications	1 Hour

d. Line crewmen. A minimum of 5 hours of fire control training will be given annually. The following subjects will be presented:

Fire Safety	2 Hours
Fire Characteristics and Behavior	1 Hour
Method of Attack	1 Hour
Use of Hand Tools	1 Hour

Since many members of a fire control organization work alone much of the time, the ability to exercise initiative, assume responsibility, and perform routine duties efficiently, are qualities that will be developed.

3-04. Fire equipment.

a. Corps of Engineers. Fire suppression tools and equipment available at the project office are as follows:

1 - Sedan, radio-equipped
1 - Pickup, 1/2 ton, radio-equipped
2 - Pickups, 1/2 ton
1 - Flatbed truck, 2 ton, w/winch
1 - Base radio station
1 - Pontoon boat, 24 feet, 50 HP
1 - Aluminum outboard motorboat, 14 foot
1 - Front end loader
1 - Motor grader
1 - Tilt trailer
1 - Dozer, 1,000 B Case (additional equipment used w/dozers are listed in para 6-02b.)
1 - Farm tractor w/attachments
1 - Tank on skids, 1,000 gallon, w/portable pump
1 - Sprayer on trailer, 200 gallon, w/front-mounted pump
2 - Pumps, backpack
3 - Rakes
4 - Shovels
2 - Saws, crosscut or power
3 - Axes
4 - Swatters

b. Cooperating Agencies. In addition to the Corps of Engineers personnel, there are local fire departments which may be called upon if the necessity arises. Letters of agreements have been made with the cooperating agencies that they will respond to a fire call from the Corps of Engineers. The fire departments' areas of response are shown on exhibit B. The cooperating fire departments are:

(1) Council Grove, Kansas - 316-767-5678 - Council Grove has two 1,000 gallon tank trucks available for service in rural areas. There is no charge for their service.

IV - FIRE PREVENTION ACTIVITIES

4-01. General. The objective is to reduce the number of fires and acres burned to a minimum on Corps land. Major emphasis will be placed on prevention and presuppression through special attention to the following:

a. Public education.

(1) Maps, brochures, and other literature designed for issuance to the public will include information about fire prevention and a place and method for reporting fires.

(2) Fire danger warning signs will be erected at the main entrance to extensively used public-use areas. The signs will be adjusted daily to indicate the degree (low, moderate, high, or extreme) of fire danger.

(3) During seasons of high fire hazard, informal public appearances, radio broadcasts, and articles in local newspapers will be employed to promote and stress fire prevention.

(4) Rangers, covering daily a definite territory, by their mere presence and/or contact with the users of the project will have a deterrent effect in regard to carelessness with fire.

b. Project personnel. It will be the responsibility of each supervisor to instruct the employees working immediately under his supervision to maintain an effort toward the prevention of fires as all times. Special attention will be given to the following points:

(1) Extinguish, before leaving, any fires that may be built on the job site.

(2) Observance of all "No Smoking" signs when conditions make it necessary that they be posted.

(3) Proper disposal of matches and smoking materials.

(4) Observe safety requirements contained in the safety manual during welding operations.

(5) Project employees will be instructed to be observant on fires on adjacent private property. These fires should be reported to the project manager who can take appropriate steps to notify the landowner or other agencies, or take appropriate action to protect Corps property if the rate and direction of spread indicates such danger exists. Cooperation in this manner will help win the support of local landowners.

4-02. Fire laws. Permissible open burning will be in accordance to the Kansas Air Quality Control Act adopted 1 January 1971, amended 27 December 1972, which restricts or limits burning to:

a. Open fires purposely set for the instruction and training of firefighting personnel when authorized by the appropriate Government entity.

b. Fires set for the elimination of a fire hazard which cannot be removed by any other means.

c. Fires set for the removal of dangerous or hazardous material where there is no other practical or lawful method of disposal.

d. Campfires or other fires used solely for recreational purposes.

e. Fires purposely set to forest and rangeland for a specific reason in the management of forests or game in accordance with practices recommended by the Kansas Fish and Game Commisison and the US Forest Service.

f. The burning of trees, brush, grass, and other vegetable matter in the clearing of land and right-of-way maintenance operations, if (a) prevailing winds at the time of burning are away from any city or town, the ambient air of which may be affected by air contaminants from buring, (b) the burning is controlled so that a traffic hazard is not being created as a result of the air contaminants being emitted.

g. The burning of hydrocarbons which are spilled or lost as a result of pipeline breaks or other accidents involving the transportation of such material or which are generated as wastes as the result of oil exploration, development, refining, or precessing operations, if the following conditions are met:

(1) The material cannot be practically recovered or otherwise lawfully disposed of in some other manner.

(2) The burning must not be conducted within a city or town in such proximity thereto that the ambient air of such community or town may be affected by the air contaminants being emitted.

(3) The initial burning may begin only between 1 hour after sunrise and 2 hours before sunset, and additional fuel may not be intentionally added to the fire at times outside the limits stated above.

(4) The burning must be controlled so that a traffic hazard is not being created as the result of the air contaminants being emitted.

4-03. Burning control. Presuppresion activities.

a. Detection of fires. During normal routine surveillance of the lake area, rangers will make use of all sight points along their routes for the purpose of obtaining the widest views possible to discover fires which may start at a distance from the patrol route.

b. Transportation system. Trucks will be outfitted in advance with all tools and equipment needed by a firefighting crew.

c. Fire breaks. The breaks shall involve placing 25- to 30-foot lanes at strategic locations, 1/4 mile or further apart. Roads and breaks shall be utilized where possible. Lanes will be seeded to cool season grasses to reduce maintenance and serve as wildlife food. The lanes shall be fitted to the topography as inconspicuously as possible.

d. Tools, equipment, and supplies. Acquisitions will be made prior to the fire season for all tools, equipment, and supplies likely to be needed in combating fire. They will be provided in such volume as to outfit a crew of the size likely to be available.

e. Personnel. Firefighting crews will be limited in size and have less than 10 men to a crew. Each man will have definite duties assigned to him. As a member of a permanent crew, these duties are essentially the same at each fire. The principle is that of fixing the responsibility for given portions of the work.

f. Risk areas. An up-to-date fire occurrence map will be maintained to aid in detecting problem areas, determining the probable number and size of fires which occur each year and shall include fuel hazard types. Problem areas of long standing will receive close scrutiny in the planning processes.

g. Fireproofing.

(1) Intensive use sites. Campgrounds and heavily used areas will be fireproofed by: Removal of litter and flammable material; construction of fire lanes around the area; providing fireplaces and grates; and felling dead snags in and adjacent to areas of heavy use.

(2) Low density use areas. Grazing has a distinctly beneficial influence in reducing the fire hazard. Grasses and forage plants, when present in the forest, constitute the most readily inflammable portion of the fuel for fires. When this material is removed by grazing, the fire hazard is reduced, the start of the fire is rendered less easy and a rapid spread made less possible.

V - FIREFIGHTING SAFETY

5-01. General. Since firefighting is hazardous and is physically tiring, safety is of utmost importance at all times. Proper training in firefighting techniques and safety factors is a joint responsibility of the fire boss and Operations Division of the District Office.

a. Personnel.

(1) No worker will be assigned to fire duty if he is obviously overweight or underweight or has heart, lung, or other internal defects.

(2) Employees, especially those over 45 years of age, will not be assigned from an appreciably long period of sedentary work directly to strenuous firefighting, unless they are known to be in reasonably good physical condition.

(3) No fire crewmember will be worked continuously for long periods of time without relief. If possible, fireline duties will be rotated to provide equal distribution of difficult work.

b. Clothing and equipment.

(1) Hardhats will be worn by personnel working on the fireline.

(2) Firefighters will wear durable, loose-fitting, cuffless trousers. The loose-fitting clothing affords more protection against burns caused by the radiant heat. Long-sleeved shirts are mandatory to protect the arms from heat, sunburn, scratches, and insects. Clothes made of cotton are more desirable than synthetic clothing due to the reduced flammable properties of cotton.

(3) Gloves will be worn to protect hands and make handwork easier.

(4) All new hand tools will be inspected for defects before being placed in firefighting service and all fire tools will be inspected at least semiannually to insure their proper functioning and safe operation.

(5) All personnel wearing glasses shall wear safety glasses or face shields while fighting fires.

c. Training.

(1) Workers shall be instructed on area hazards and safe working practices before starting work.

(2) The firefighters shall understand the crew boss's authority to issue instructions and shall follow such instructions at all times, particularly during emergencies.

(3) Safety in firefighting shall be the topic of one regular safety meeting to be held before the fire season in addition to the other scheduled "Fire Safety" training.

d. First aid.

(1) First aid kits will be inspected for proper materials and oxygen tanks, if available, will be checked for proper functioning and a full supply of oxygen.

(2) In the event of an accident requiring professional medical treatment, notify the nearest medical facility that an injured person is enroute, the type of injury involved, and method of transport of the person. The names of hospitals, clinics and ambulance service, along with telephone numbers will be displayed on all bulletin boards located at park entrance and at the project office.

VI - FIRE SUPPRESSION

6-01. General.

a. Upon receiving a report of a fire in the reservoir areas or immediately adjacent thereto, the dispatcher or other responsible member of the project personnel will immediately initiate action to direct a crew to the location of the fire.

b. The fire suppression crew, from two to six men in size and under the leadership of a fire boss, will be dispatched by motor vehicle or motorboat. The getaway time from receipt of the report of a fire should not exceed 10 minutes.

c. This crew will take the standard tools and equipment provided for firefighting to the fire. The equipment is kept together at a designated point so as to be immediately available without the necessity of selection from a general supply storeroom.

d. Immediately upon arrival at a fire, the fire boss will make an inspection of existing conditions and decide on the best method of attack. As soon thereafter as possible, he will determine if additional men will be needed, then a radio request may be made for assistance. In any event, the dispatcher will be kept informed by radio of the progress being made.

e. Upon request for further assistance from a crew at a going fire, the dispatcher at the area office will, insure that standby crew is dispatched as soon as possible.

f. The fire boss will not abandon the fire until it has been completely suppressed, or until he is relieved by some other responsible member of the project fire protection organization.

6-02. Firefighting tactics. Firefighting tactics will vary according to fuel, topography, wind, humidity, and availability of personnel and equipment. The following basic tactics are normally applicable.

a. Small fires (5 acres or less). If the fuel is light and water is available from tankers or backpacks, the head of the fire will be attached from inside the burn. On stronger fires, the attack will begin at the heel of the fire. Knock down the flank on one side, cross the head with a fireline, then kock down the opposite flank. The line, 2 to 6 feet wide, will be the shortest line possible avaoiding sharp angles and crooks.

b. Large Fires (over 5 acres).

(1) Power equipment. Operations with mechanical equipment will begin constructing a debris-free line from the unloading point near the point of origin of the fire, along one or both flanks, to the advancing head of the fire. No attempt will be made to hold this line. At the head of the fire, a control line will be developed far enough ahead to permit backfiring to burn an area of 50 or more feet. Equipment will be held at the advance flanks until backfirelines have successfully held the fire. A list of mechanized equipment used in fire control is found in paragraph 3-04a. The line crews will be equipped in accordance with Table 6-1.

TABLE 6-1

LIST OF FIRE TOOLS FOR USE WITH MECHANIZED EQUIPMENT

	Crew Size		
	6-Man	12-Man	25-Man
Axes, double or single bit	1	2	4
Hooks, Brush	1	1	3
Saws, Crosscut or Power	1	1	1
Shovels, LHRP	1	2	6
Pumps, Backpack	2	4	8
Rakes, Fire	2	4	8
Torch	1	1	2
Hardhats	6	12	25

(2) Crews with hand tools and small power equipment. The fire locator; line cutters with axes, brush hooks, and power saws; linemen with rakes, Pulaski hooks, hoes, and mattocks; backfiring man; and line-holding crew with backpack pumps, rakes, and shovels follow each other in sequence ahead of the fire, beginning from an anchor point at the flank of the advancing fire head. The line cutting unit will clear an area 6 to 8 feet in width of brush, tall grass, logs, and other debris. The line raking unit develops a line about 2 feet in width. Each man will remove only a part of the material on the ground with one or two strokes of the rake and then move forward. The last man in the crew preceding the backfiring man, thus, reaches the mineral soil. The crew boss will stay just behind the backfiring man to inspect the line and to control the rate of line firing. The line holding crew protects the backfire and controls spot fires. When the head fire is under control the flanks will be controlled in the same way.

TABLE 6-2

LIST OF FIRE TOOLS FOR USE BY HANDLING CREW

	Crew Size		
	6-Man	12-Man	25-Man
Axes, double or single bit	1	2	4
Hooks, Brush	1	2	4
Saws, Crosscut or Power	1	1	1
Shovels, LHRP	2	4	8
Rakes, Fire	4	8	16
Swatters	4	8	16
Pumps, Backpack	2	4	8
Hardhats	6	12	25

c. Grass fuels. In tall grass, the same procedures described in paragraph (2) above will be used. More lead time will be provided for a grass fire since its rate of spread is high. In low or sparse grass, backfiring may not become necessary. Swatters and water will be used on the fire.

d. Securing the area (mopping-up). This work consists of going over the area systematically, felling and suppressing fire in all burning snags and putting out completely all smoldering fires. While the mopping-up work is in progress and until it is completed, a patrol will be maintained along the control line. The duties of the patrolman are to find and extinguish any fires which may start across the control line, to improve the fire line when needed, and to put out any burning material inside the fire area which threatens to spread fire.

6-03. Fire reports. Individual fire reports will be prepared, giving all particulars related to the cause, location, damage, and effectiveness of control of all fires which occur at the project. Fire incident records will be kept to provide as sensitive an indicator as possible of increases or decreases in the number of fires, acreages burned, and changes in geographical locations of fire origins.

VII - ANNUAL ESTIMATED COST

7-01. General.

a. Average annual training cost.

Number	Level	Hours of Training	Total Cost
1	Fire boss	12	108.00
1	Crew boss	12	103.00
1	Power equipment	4	22.00
1	Dispatcher	3	14.00
3	Fireline	5	65.00
		Cost in wages	312.00
		Instructor cost	75.00
		Total	387.00
	b. Fire equipment and maintenance		50.00
	c. Suppression cost		50.00
	d. Total estimated annual cost		487.00
	e. Estimated suppression cost per year per land acre		0.16

VIII - SUMMARY

8-01. Summary. The fire control plan will serve as a guide for the protection of the project from forest and range fires. Coordination of fire prevention, detection, and suppression with local fire departments and area residents will be the responsibility of the park manager. Fire control training for each Corps employee assigned to the project fire organization will be conducted utilizing training materials and assistance from the Kansas Division of Forestry and the US Forest Service. Training materials available from these agencies are films, slide programs, correspondence courses, and assorted literature. Powered equipment and hand tools for fire suppression are available and kept in readiness for immediate action. Radio communication will be utilized for increased mobility. Fire suppression activities will be handled primarily by the project fire organization, and local fire crews or area residents, if needed. A continuing program of fire prevention will be conducted utilizing signs, posters, leaflets, and personal contacts with area residents and visitors. In addition, the news media will be used during known or suspected periods of high forest and range fire activity.

IX - SUBMISSION, APPROVAL AND REVIEW

9-01. Submission and approval. This appendix C was submitted to Southwestern Division for approval on 8 April 1976 and was approved on 20 May 1976. A copy of the submission letter and approval indorsement shall be, upon approval, attached to the appendix as exhibit E.

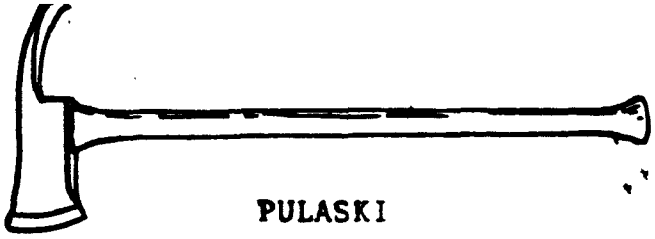
9-02. Review. The project manager shall review and update this plan annually. A copy of minor pen and ink changes shall be forwarded to Master Plan Section, Recreation-Resources Management Branch, for inclusion in the record copy. The project reviewer shall sign and date the log below upon completion of the annual review.

ANNUAL REVIEW LOG

Year	Signature	Title	Date
1981			
1982			
1983			
1984			
1985			
1986			
1987			
1988			
1989			
1990			

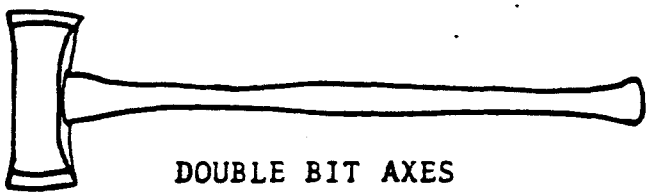
EXHIBIT A

FIRE TOOLS USED BY HANDLING CREW



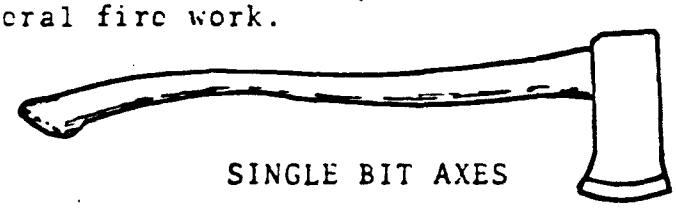
PULASKI

The Pulaski tool provides an ideal combination tool for grubbing or trenching in duff, matted vines or slash. It is also well balanced for chopping. The mattock is not too wide for work in rocky areas. It is a favorite tool of smoke chasers and fire fighters, also for general maintenance work.



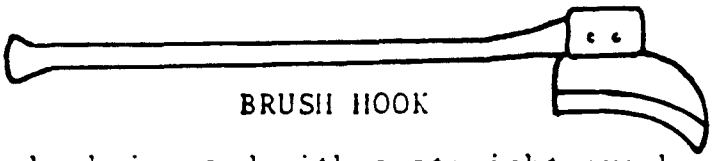
DOUBLE BIT AXES

The standard all purpose fire axe is a balanced, rugged tool which has the ability to take the abusive treatment of general fire work.



SINGLE BIT AXES

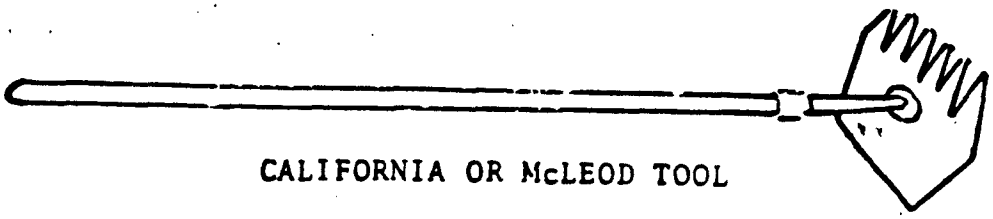
This first grade axe is suitable for ordinary chopping by inexperienced men. It is used in limited areas where safety regulations prevent the use of double bit axes, or where no experienced men are available. Theoretically this tool is safer than a double bit axe, when men are working close together, but field experience does not bear out this contention. The double bit axe provides the advantage of two blades of equal size with consequent greater efficiency and reliability.



BRUSH HOOK

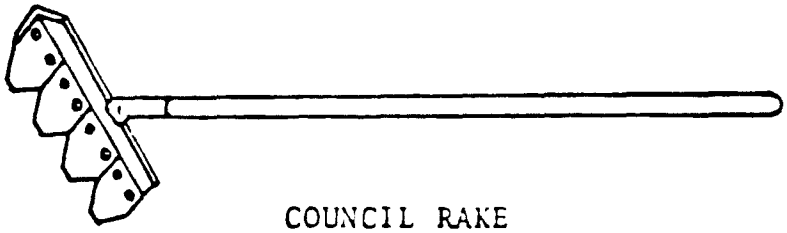
The brush hook is used with a straight overhead "swing and pull" motion and shears off limbs at a 45°-60° angle to the grain with much less effort than trying to cut at 90° crossgrain.

Unskilled men can operate this tool more effectively than an axe, with less chance of damage to the tool or injury to themselves.



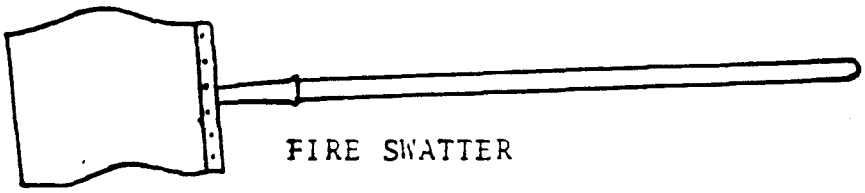
CALIFORNIA OR McLEOD TOOL

In competition with other fire hand tools, the McLeod has proved to be the most effective hand fire line tool available for use by experienced fire fighters. The hoe blade is very useful in cutting through deep litter, matted brush, squaw carpet, bear clover and similar fuels, also for trenching, grubbing, or slashing low limbs. The rake tines are of a non-clogging design and are very effective in pine needles, duff and leaf mold. The strong rake teeth are very useful in hauling out brush and other cut material.



COUNCIL RAKE

The council rake is widely used in the Eastern Hardwood belt and Southern pine region. Sharp edges of the blade cut through small roots and matted grass easily. The sharpened ends will cut into sunbaked rangeland or serve for light trenching. For use in leaves, pine needles and light duff the rake meets all ordinary requirements.

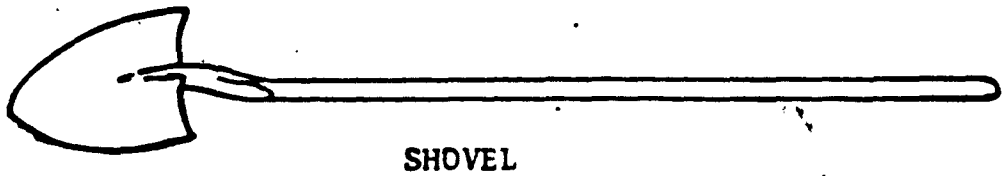


FIRE SWATTER

The fire swatter is especially valuable in smothering grass and grain fires. In arid and semi-arid regions of the Southern and Western states it is frequently the sole implement used in direct attack on range fires, and for mop-up work following water equipment.

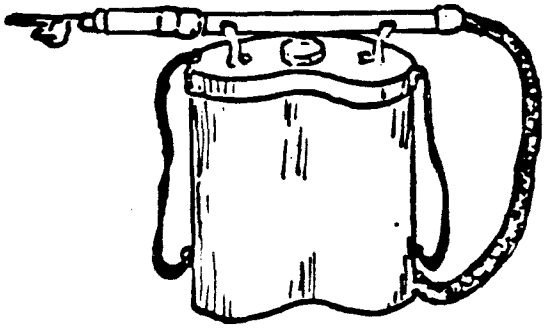
In many areas it is used as a flail to beat out fires in grass and similar growths. When used in light grass a continuous blotting action is more effective and prevents spreading sparks to the unburnt area.

Exhibit A



SHOVEL

An essential tool for fire suppression in almost all parts of the country is a good shovel. The shovel can be used for scraping, chopping, grubbing and cutting with both edges sharpened.

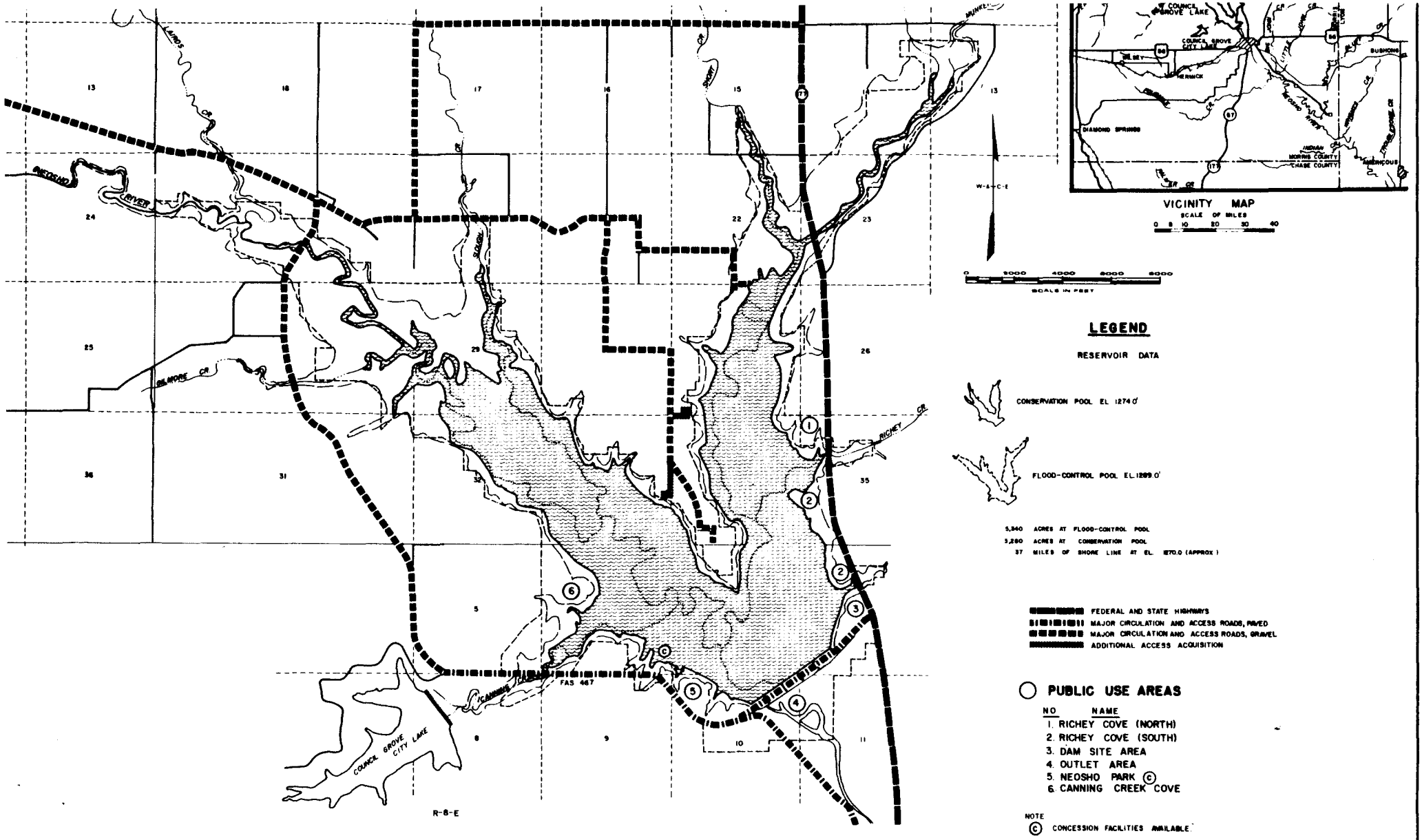


BACK-PACK PUMP

The back-pack pump is useful where powered pumps cannot be used. These pumps can be used to cool "hot" spots or to extinguish debris during mop-up operations. The interchangeable nozzles make it possible to pump a stream or spray.

EXHIBIT B

RESPONSE AREA MAP - LOCAL FIREFIGHTING AGENCIES



RESPONSE AREA MAP

Council Grove Fire Dept will respond to all areas of Govt property.

LEGEND SEE DRAWING NO. CB 590-2B-93/3

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

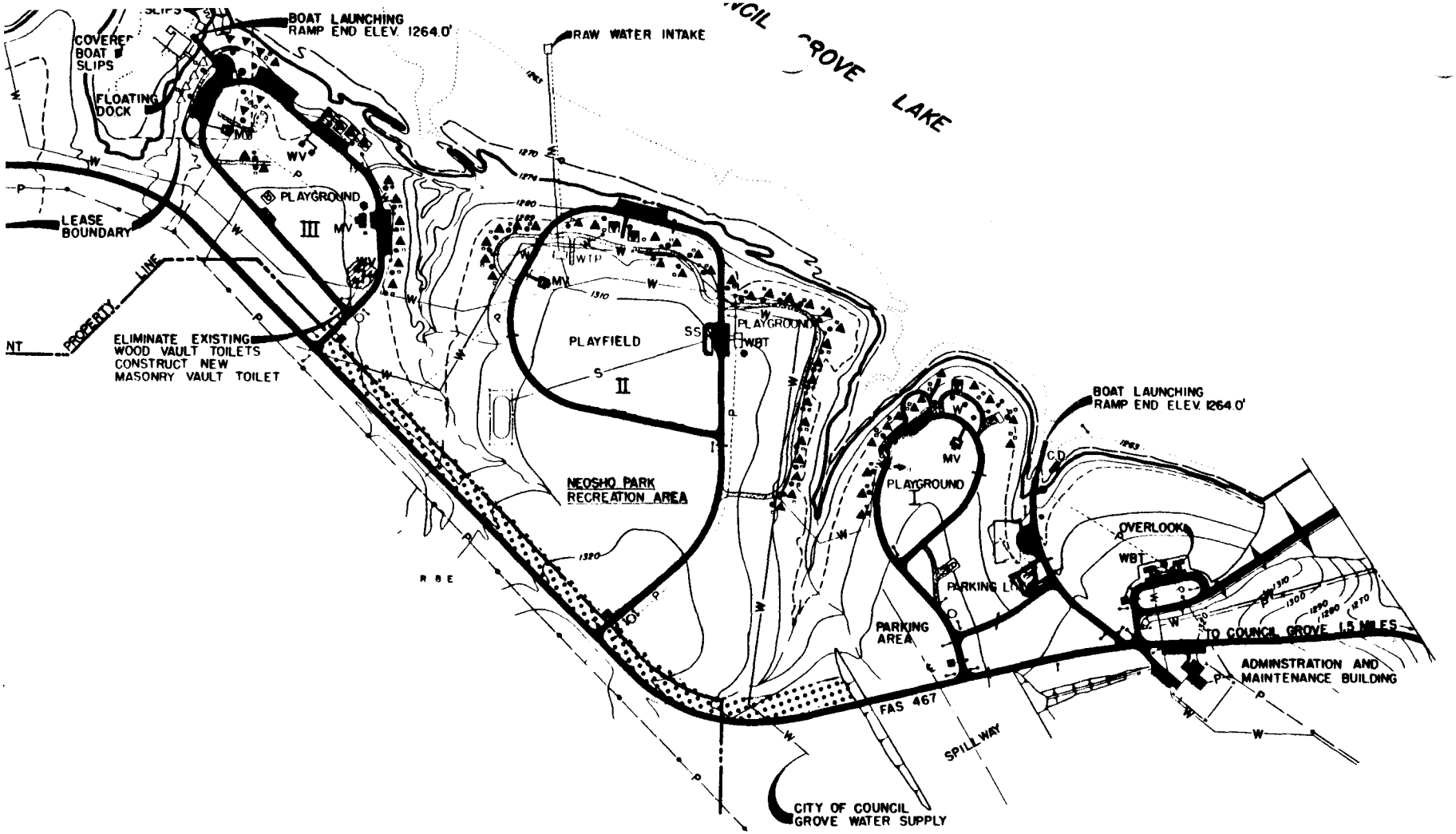
COUNCIL GROVE LAKE AREA

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1975

CB590-2B-93/2

EXHIBIT C

PROPOSED FIRE LANES



LEGEND SEE DRAWING NO. CB 590-28-93/3

FIRE LANE

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER, KANSAS

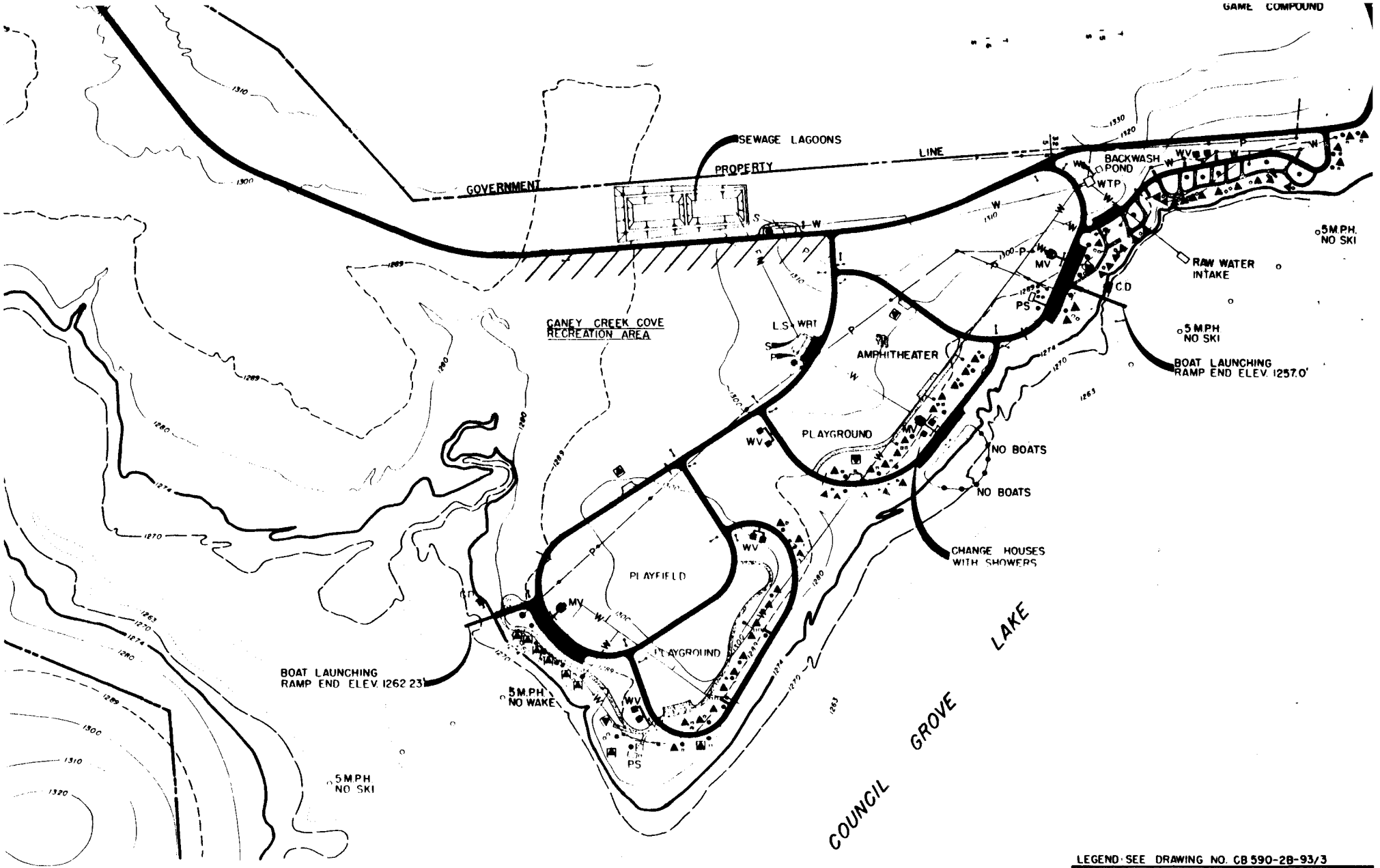
COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

NEOSHO PARK RECREATION AREA

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1975

CB590-28-93/6



LEGEND: SEE DRAWING NO. CB 590-2B-93/3

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER

COUNCIL GROVE LAKE

GRAND (NEOSHO) RIVER, KANSAS

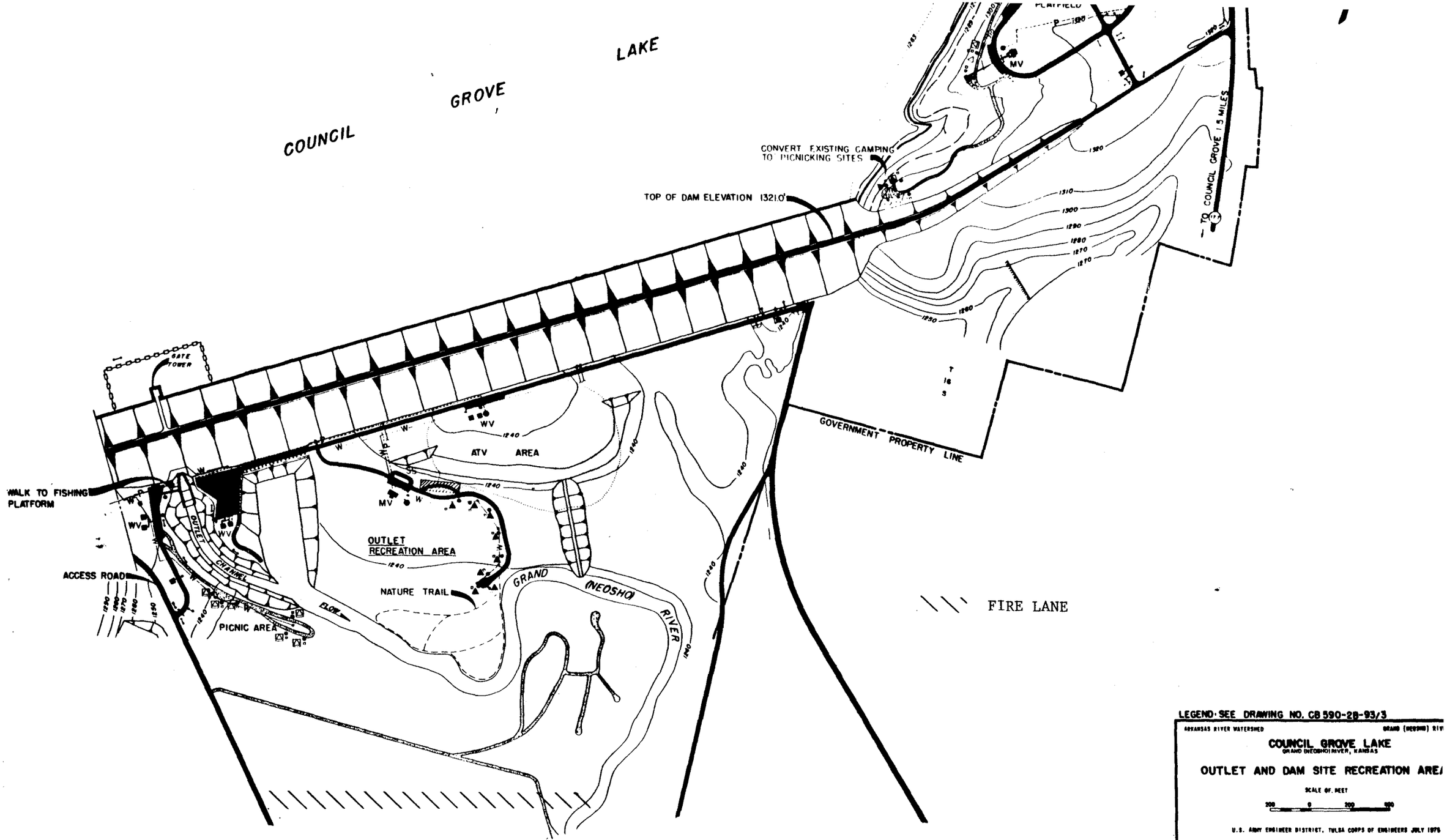
CANNING CREEK COVE RECREATION AI

SCALE OF FEET

200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY

CB59



LEGEND: SEE DRAWING NO. CB 590-28-93/3

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIV

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

OUTLET AND DAM SITE RECREATION AREA

SCALE OF FEET

200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1975

CB590-

EXHIBIT D

LETTERS OF AGREEMENTS

CITY OF COUNCIL GROVE

200 WEST MAIN TEL. NO. 316 767-5417

COUNCIL GROVE, KANSAS 66846

October 18, 1976

Mr. Cleon Linton
Corps of Army Engineers
Council Grove, Kansas 66846

Dear Mr. Linton:

The City of Council Grove, Kansas, does have a Rural Fire Department which will make calls and provide fire protection free of charge for the Corps of Army Engineers at the Council Grove Reservoir.

Yours truly,

C. C. HUNTER
Mayor

CCH:jd

Inel 2

SWTOD-RM 23 October 1980

SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas, Appendix E, Project Safety Plan to DM No. 2B, Updated Master Plan

Division Engineer, Southwestern
ATTN: SWDCO-OR

Subject updated appendix (Incl 1) is submitted for review and approval in accordance with ER 1130-2-400. Comments contained in 1st Indorsement, 17 May 1976, have been incorporated.

FOR THE DISTRICT ENGINEER:

1 Incl (3 cys)
as

JAMES P. JONES
Chief, Operations Division

APPENDIX E
PROJECT SAFETY PLAN
TO
DESIGN MEMORANDUM NO. 2B
UPDATED MASTER PLAN

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
OKLAHOMA
APRIL 1976
UPDATE SEPTEMBER 1980

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

APPENDIX E
PROJECT SAFETY PLAN
TO
DESIGN MEMORANDUM NO. 2B
UPDATED MASTER PLAN

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COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

APPENDIX E
PROJECT SAFETY PLAN
TO
DESIGN MEMORANDUM NO. 2B
UPDATED MASTER PLAN

I - INTRODUCTION

1-01. Purpose. This Safety Plan identifies common recurring hazards or unsafe conditions in each major phase or area of project operation. The plan includes construction, maintenance, public-use areas, visitor protection, equipment, boating and operation. The safety rules and regulations contained herein will be implemented to maintain acceptable safety standards throughout the project.

1-02. Authority. This appendix is prepared in accordance with the requirements of ER 1130-2-400, dated 28 May 1971.

1-03. References.

a. AR 385 series.

b. ER 385 series.

c. ER 1130-2-321.

d. EM 385 series.

e. SWDR 385 series.

f. SWDR 1130-2-8.

1-04. Master Plan. This appendix is part of the Master Plan for the development and managment of Council Grove Lake.

1-05. Implementation. A project safety officer will be appointed by the Project Manager. The safety officer will develop plans and programs to implement and enforce the pertinent provisions of EM 385-1-1, this safety plan, and the fire protection plan (appendix C).

1-06. Coordination. Frequent and continuing coordination will be established with the Kansas State Park and Resources Authority, Kansas Fish and Game Commission, Kansas Highway Patrol, and county and local police in the implementation and execution of this plan.

II - ADMINISTRATIVE FACILITIES

2-01. General.

a. Health and welfare. No employee shall be required to work in or under working conditions which are dangerous to their health and safety.

(1) Employees with duty assignments on operation and maintenance projects will wear protective headgear when performing outside operation and maintenance work assignments. The protective headgear shall meet the requirements for class A or class B as defined by the American National Standards Institute. Hardhats will be furnished by the Government and worn by all employees and visitors in designated hardhat areas.

(2) Safety shoes shall be provided by the Government and worn by employees who are engaged in work which requires such protection.

(3) Scaling, grinding, cutting, or dressing of metals, stone, masonry materials, and other operations which produce dust or subject the eyes or head to flying particles require the use of goggles having safety lenses and screens for side protection, or face masks, shields, or helmets giving equal protection. Protective equipment will be provided by the Government.

b. Housekeeping. All office and work areas shall be kept clean and any litter disposed of daily.

(1) Trash containers shall be emptied daily and refuse disposed of by approved means. All rags and waste soiled by combustible or flammable materials shall be placed in tightly closed metal containers and disposed of daily.

(2) All walkways and steps shall be kept free from mud, grease, or any other material or obstruction which would render them unsafe.

c. Electrical.

(1) All electrical outlets and extension cords shall be of the three conductor type.

(2) Ground fault interrupters shall be used with portable electrical handtools and equipment.

(3) Interior and exterior lighting systems shall be inspected periodically to insure that all work areas and galleries are properly lighted when work is in progress.

d. Tools.

(1) All tools shall be stored in designated racks or compartments. Tools shall be color-coded so they can be easily returned to their correct storage area after use.

(2) All handtools shall be kept in good repair and used only for the purpose for which designed. Tools having defects that impair their strength or render them unsafe for use shall be removed from service.

(3) Power tools shall be inspected, tested, and determined to be in a safe operating condition prior to use.

(4) All electrical tools shall be grounded by use of a multiconductor cord having an identified grounding conductor and multicontact polarized plug-in receptacle. Double insulated tools approved by the Underwriters Laboratory need not have a ground wire.

(5) The use of all air-operated handtools shall be in accordance with requirements of the Safety Manual, EM 395-1-1.

e. Ladders.

(1) Ladders shall conform to the latest edition of the Safety Codes for portable wood ladders (ANSI A 14.1) and portable metal ladders (ANSI A 14.2).

(2) Metal ladders shall not be used for electrical work where they may contact electrical conductors.

(3) Where necessary, ladder rungs will be coated with nonskid materials to prevent loss of footing or grip.

(4) Ladder-climbing safety devices shall be inspected semiannually to insure serviceability.

f. Storage.

(1) Flammable liquids shall be stored in approved-type safety containers which meet the requirements of the National Fire Protection Association. Smoking shall be prohibited in all areas where flammable, combustible, or similar hazardous materials are stored. "No Smoking" signs shall be posted in all prohibited areas.

(2) The use and storage of all compressed gas cylinders shall be in accordance with the requirements of the Safety Manual, EM 385-1-1.

(3) Government vehicles and equipment shall be parked or stored in predesignated areas to reduce congestion. Keys shall be removed at night and locked in a key cabinet in the Administration and Maintenance Building.

(4) Supplies shall be stored in an orderly manner in designated areas to conserve space and provide easy access. Material in bags, containers, bundles, or stored in tiers shall be stacked, block, interlocked, and limited in height so that they are stable and otherwise secured against sliding or collapse. Supplies and materials will not be stored in furnace rooms.

(5) All pesticides and chemicals shall be properly labeled and stored in a locked place not accessible to unauthorized personnel. Small

containers of concentrates shall be kept together in a box or suitable container within a storage room. Accurate inventories of concentrates shall be maintained. Locked storage for pesticides on vehicles shall also be provided. Stocks shall be inspected frequently for detection of leaks or spillage. Sparkproof lighting fixtures shall be installed and ignition hazards shall be eliminated in closed storage areas. All pesticide storage, mixing, and formulation areas shall have adequate ventilation to reduce hazard from inhalation of toxic vapors.

g. Welding and cutting. All welding and cutting apparatus, equipment, and operations shall be in accordance with standards and recommended practices of the American Welding Society, and the recommendations of the National Fire Protection Association. Each welding unit shall be equipped with a fire extinguisher as required by the General Safety Requirements Manual, EM 385-1-1.

h. Poisonous and harmful substances. All dusts, mists, fumes, gases, or other atmospheric impurities in the areas where persons are employed shall be brought within safe limits by elimination, ventilation, or filtration. Where these methods are impractical, appropriate protective equipment shall be provided.

i. Spray painting. All spray painting shall be done in a well-ventilated area when possible. Workmen shall wear face masks to prevent respiratory damage. Hose mask or air line respirators shall be worn by workmen spraying in close quarters.

j. Ventilation. All rooms and work areas shall be provided with adequate ventilation for the number of occupants.

k. Vehicle operation. Government vehicles shall be operated in accordance with the requirements of the Safety Manual, EM 385-1-1, and Tulsa District Safety Program, TDR 385-1-1.

l. Firefighting.

(1) Fire extinguishers of the proper size, shall be located in all buildings in accordance with requirements of the Safety Manual, EM 385-1-1, and inspected monthly to see that they are properly charged in accordance with appendix L, EM 385-1-1.

(2) A fire safety plan listing assignments shall be posted in various work areas.

(3) A chart shall be posted listing emergency telephone numbers such as fire and police departments, ambulance service, and the nearest hospital or doctor.

m. Warning signs.

(1) Signs shall be located near hazardous shop equipment to warn against potential hazards or unsafe practices.

(2) All obstructions of projections into a gallery shall be conspicuously marked.

n. Bulletin board and other safety information. Safety posters shall be posted in various shop work areas and on the bulletin boards.

o. Employee refresher operational exercises. Periodic operational exercises for abnormal or unusual emergency situations, shall be conducted as required in ER 1130-2-321.

2-02. Outlet works and spillway.

a. Machinery. Service and emergency gate operating machinery shall be checked frequently to insure that all safety features are intact. Belt and shaft guards, dogging devices, and similar safety devices shall be given particular attention.

b. Operating areas. Operating areas will be kept clean and free of oil, grease, or other materials which could contribute to accidents.

c. Galleries.

(1) Obstructions or projections into galleries which are pointed, sharp, or any other shape which may cause lacerations, contusions, or abrasions shall be covered with resilient material.

(2) Adequate lighting and ventilation shall be maintained at all times to ensure safe passage through the galleries.

(3) Any storage of flammable liquids in these areas is strictly forbidden.

III - PARK AND RECREATION FACILITIES

3-01. Camping and picnic areas.

a. Fireplaces. Fireplaces or pedestal charcoal grills shall be inspected periodically to insure that they are not a fire hazard. Areas around fireplaces shall be cleared of debris in order to prevent spread of fire. Grills shall be equipped with end flaps to control excessive draft from wind.

b. Trees. Dead limbs or trees, and weak growing trees that might be blown over in a heavy wind, shall be removed.

c. Tripping hazards. The area around picnic tables shall be landscaped and graded to eliminate tripping or falling hazards. Access paths shall be bordered by natural vegetation.

3-02. Boat ramps.

a. Signs and buoys. All boat ramps shall be adequately marked and signed and buoys in the vicinity of the ramps be maintained properly at all times.

b. Surface. Boat ramps shall be cleared of rocks, stones, debris, and/or any accumulation of algae that might render the ramp dangerous. Ground and riprap conditions around the ramp shall be maintained so that there are no dropoffs or sinkholes around the edges of the ramp.

3-03. Nature trails. Nature trials shall be inspected periodically to insure that they are free of safety hazards, especially poisonous plants.

3-04. Weed control. Application of chemicals, pesticides and disposal of used containers will be exercised to ensure that proper safety procedures are followed and applications are made in accordance with the recommendations of the manufacturer and the provisions of applicable State and Federal law. Only those chemicals which are registered or approved by the Federal Committee on Pest Control or otherwise controlled by Engineer Regulations may be used.

a. General. The perimeter areas of the parks not subject to intensive recreational use will be managed to encourage reversion of natural vegetation for the benefit of wildlife. The remainder of the recreation and park areas will be kept free of weeds and poisonous plants, normally by mechanical cutting.

b. Poisonous plants.

(1) Employees shall receive instructions in the recognition and identification of poisonous plants and provide protective ointments and appropriate protective clothing when eradicating them.

(2) Employees will be given immunization treatments when deemed necessary by a physician and authorized by the project manager.

(3) Poison ivy, poison oak, and poison sumac shall be controlled by using registered herbicides or other suitable methods of control as determined necessary.

c. Pesticides and chemicals.

(1) All pesticides are toxic to man to a greater or lesser degree, and must be used with care. Most of the accidents resulting from the use of pesticides have been a result of the careless disregard of precautions printed on the label. With very few exceptions, all pesticides must be regarded as potentially toxic to warm-blooded animals.

(2) It is important to distinguish between toxicity and hazard. Toxicity is defined as the potential of any chemical to produce damage. Hazard is defined as the probability that a given chemical will cause damage when used in a particular way or place. In some instances a highly toxic chemical is less hazardous for a certain use than one of a lower toxicity.

(3) The handling of concentrated pesticides and chemicals in the preparation of more dilute solutions is one of the most hazardous operations. Contamination of the skin with a concentrated pesticide or chemical can result in rapid poisoning and death. Maximum precautions, therefore, shall be observed in handling concentrated materials. All operators handling pesticides and chemicals shall be informed of the risks involved to themselves and others, and shall receive instructions for handling pesticides and chemicals safely and told what protective clothing and equipment needs to be used. New employees particularly, and those not trained in handling pesticides and chemicals, shall be given adequate training.

(4) Required medical examinations will be provided at Government expense.

(5) When pesticides and chemicals are employed, care shall be exercised to ensure that proper safety procedures are followed and that applications are made in accordance with the recommendations of the manufacturer and the provisions of applicable State and Federal laws. Only pesticides which are registered with Environmental Protection Agency (EPA) will be used and application will be in accordance with label directions.

(5) Empty containers shall not be left where children or pets have access. Empty containers shall be disposed of in accordance with the recommendations of the EPA, pursuant to the requirements and obligations in the Federal Environmental Pesticide Control Act of 1972.

(6) All handling and use of chemical pesticides shall be under the supervision of certified applicator and coordinated with the Chief, Resource Section, Operations Divisions.

3-05. Concessions. Each concession at the project shall be inspected not less than annually by personnel from the District Office, for compliance with terms and conditions of the lease. In addition, the concession shall be inspected for proper disposal of solid wastes; compliance of sanitary

facilities with approved plans, both State and Federal; the maintenance of structures, slips, and operating equipment; safety deficiencies; and unauthorized developments or activities.

3-06. Electrical outlets.

a. R/V, electrical hook-up boxes. General fault interrupters and electrical outlets shall be inspected monthly during recreation season.

b. Restrooms, picnic shelters, etc. Electrical outlets equipped with ground fault circuit interrupters will be inspected monthly during recreation season.

SECTION IV - SANITATION

4-01. Water supply criteria. All potable water at Civil Works projects will meet or exceed the minimum standards prescribed by the "Safe Drinking Water Act". (Public Law 93-523). Water from wells or other sources provided for human consumption shall meet state and local requirements. The water supply for the public-use areas shall be sampled monthly and the sample submitted to the State Board of Health for testing. If a sample is found to be unsafe, steps will be taken immediately to prevent human consumption until the cause of contamination has been eliminated. If the unsafe source is a Government well, the well shall be disinfected, pumped out, and resampled. If the unsafe source is a city or water district they shall be notified immediately of the unsafe condition. (ER 1130-2-407)

a. Implementation. The National Interim Primary Drinking Water Regulations promulgated in the Federal Register December 24, 1975, require the bacteriological monitoring of community water systems by June 24, 1977, and chemical monitoring by June 24, 1979; noncommunity water systems, chemical, and bacteriological monitoring required by June 24, 1979. Corps recreation potable water systems, including hand pumps, are classified as noncommunity water systems. Compliance requirements for noncommunity systems are considerably less stringent than for community water systems.

b. Monitoring. Monitoring requirements for noncommunity water supplies are as follows:

Component	System Type	Deadline for initial sampling after effective date (24 June 1977	Testing Frequency
1. Bacteriological	surface, ground	2 yr (24 June 1979)	quarterly unless state dictates otherwise)*
2. Chemical, inorganic chemicals, nitrate only	surface, ground	2 yr (24 June 1979)	quarterly (unless state dictates otherwise)*
3. Physical - turbidity	surface	2 yr (24 June 1979)	daily

*Although Federal installations are not required to meet state standards, state and local authorities should be consulted regarding more frequent testing than quarterly if analyses of component A (Bateriological) and/or B (chemical) exceeds allowable standards.

4-02. Swimming areas. Bathing beaches shall be monitored in accordance with SWDR 1130-2-9. This regulation provides for monitoring water at Corps designated bathing beaches to insure that the bacteriological, chemical, and physical numerical criteria conforms to Federal - State standards for primary contact recreation waters.

4-03. Water systems on leases. The project manager shall inform the lessee of the requirements set forth in ER 1130-2-407 and insure that all systems are operated in accordance with these guidelines. At least annually the project manager shall require the lessee to furnish evidence of a satisfactory surveillance program including regular testing to insure that prescribed standards are being met.

4-04. Sewage facilities.

a. Vault-type restrooms and trailer sanitary stations. The vaults shall be periodically pumped out and the waste disposed of in a State-approved sewage system. Vaults shall be treated with a disinfectant and a deodorant to control oder problems after each pump out.

b. Cleaning of restrooms. During the recreation season all restrooms shall be cleaned and treated with disinfectant as specified in the contract.

c. Oxidation ponds. Oxidation ponds, tile fields, or sewage lagoons shall be inspected periodically to insure that they are functioning properly and do not constitute a health hazard.

4-05. Solid waste disposal. All solid waste shall be disposed of in private or public sanitary land fills operated in accordance with standards approved by the State Board of Health.

4-06. Insect control.

a. Flies. An approved insecticide shall be sprayed on trash container lids, around restrooms, and around campsites as necessary to control flies. The use of mechanical fly traps shall also be considered.

b. Mosquitoes. Measures shall be taken to control mosquitoes in the park areas by spraying insecticide where it is not detrimental to wildlife or by draining breeding areas.

V - ACCESS

5-01. Roads.

a. General. Roads will be inspected and corrected for irregularities such as slides, settlement, rutting, potholes, washouts, damage to signs, guardrails, retaining walls, culverts, and other hazardous conditions.

b. Abandoned roads. Nonpublic roads within the project area, not required for the operation of the project or public access, shall be closed by means of appropriate barricades with advance warning signs.

5-02. Parking areas. Guard logs or barriers shall be set around parking areas, camping area turnouts, or picnic turnouts where there is danger of vehicles accidentally rolling out of control while unattended.

5-03. Traffic control.

a. Signs. Vehicular traffic control signs and markers on roads within the project boundaries will conform with the American National Standards Institute, Standard D6.1, Manual on Uniform Traffic Control Devices for Streets and Highways.

b. Barriers. Large rocks, log barriers, cables, etc., used to restrict traffic to the roads and parking areas will be maintained so as to perform their safety function at all times.

c. Lake warning signs. Warning signs shall be maintained on all roads ending in the lake as shown in TDR 385-1-1.

d. Swimming and launching area signs. Signs used at launching areas to keep swimmers, boats, and vehicles separated will be inspected frequently to insure their serviceability.

e. Off-road vehicles. Unlicensed off-road recreational vehicles, motorcycles, and motorbikes shall be confined to the area designated for their use and shall not be allowed to annoy or harass campers and picnickers. Motorized vehicles without mufflers shall not be permitted (see Title 36, CFR). Those operators who do not comply with Title 36 will be issued verbal or written warnings and, in aggravated cases, citations will be issued.

5-04. Pedestrian control.

a. Walkways. Walks will be maintained free of obstacles and safety hazards to provide convenient and safe pedestrian access and circulation to parking areas, bathhouses, restrooms, and other facilities.

b. Control. Physical or perceptual barriers which are used to control foot traffic shall be established and maintained so as to present no safety hazards.

VI - PUBLIC INFORMATION

6-01. Severe weather warning. Under severe weather conditions where there is a danger of flooding, the Project Manager shall alert Government contractors, concessionaires, and other appropriate private interests in the area, furnishing latest reports of the flood situation and predicted progress of flood stages in the area.

6-02. Fireside program. Night programs, safety talks, movies, and slides will be given by rangers during periods of high visitation.

6-03. Water safety.

a. Water Safety Council. Project personnel shall promote, develop, and maintain public interest in recreational safety. Also investigation shall be made as to the possibility of establishing with the community a Water Safety Council. Such organizations as the fire department, Kansas Fish and Game Commission, Boy Scouts, civic clubs, and news media personnel are excellent groups for participating in this type of activity. It is not intended that Corps personnel assume responsibility for the operation of the local council. After the initial contacts, project managers should step back and allow local interests to administer the program. It is not anticipated that the project manager be elected president or chairman, but he must be willing to provide adequate support to keep the group functioning. Suggestions for establishing local recreational safety councils are available in written form upon request to the Operations Division of the District Office.

b. Buoys.

(1) Appropriate buoys shall be maintained to control various activities and the speed of watercraft at the boat ramps, concession boat dock areas, swimming areas and other sites. "NO WAKE" rather than 5 mph buoys will be utilized around boat ramps and concession areas.

(2) Hazard area buoys which mark a hazard to boating, skiiing, fishing, etc., will be checked frequently to see that they are in the proper place and indicate the hazard involved.

(3) Buoyed instructional signs as shown in the SWD Sign Handbook shall be placed and maintained in appropriate areas.

(4) Project personnel shall make patrols to identify hazards and to maintain the established buoys. These patrols shall be more frequent during the summer recreational season when boating activity increases. The primary objective will be to mark nonmobile conditions such as sandbars.

(5) Coordination in placement of buoys will be made with the Kansas Fish and Game Commission and US Coast Guard. This coordination will be mainly through consideration of suggested changes or revisions submitted by these agencies.

c. Navigation hazards. A continual check for floating debris shall be made for water safety purposes. Cleanup measures shall be taken where necessary.

d. Bulletin boards. Posters and bulletins pertaining to water and boating safety shall be provided by the Corps of Engineers and displayed by concessionaires.

e. Safe boating week. Special emphasis shall be placed on Safe Boating Week with additional signs, posters, broadcasts, and articles.

f. Radio and television. Radio and television broadcasts shall be used to inform and educate the public in water safety practices.

g. Newspapers. Newspaper articles shall be used periodically to inform the public of water safety practices.

6-04. Speaking engagements. Rangers shall speak at service clubs, churches, schools, etc., to promote safety on the Corps controlled projects.

6-05. Terrain hazards. Signs as shown in the SWD Sign Handbook shall be erected to warn of unusual dangers such as steep bluffs, falling rocks, and other hazards. These signs will be checked frequently to insure that they have not been destroyed, misplaced, or defaced.

6-06. Location signs. Location signs as shown in the SWD Sign Handbook shall be placed in the parks and maintained to inform visitors of areas of importance.

6-07. Hunting areas. Designated "HUNTING" areas and "NO HUNTING" areas shall be posted during the proper season and coordinated with the Kansas Fish and Game Commission as they enforce the hunting regulations.

6-08. Firearms. Regulations concerning the use of firearms on Government property shall be displayed prominently in areas open to the public.

6-09. Emergency information. Emergency information shall be posted conspicuously in such places as the Project Manager decides necessary. This information shall contain the location of the nearest telephone and the addresses and telephone numbers of the nearest doctors, hospitals, police department, fire department, and Civil Defense Headquarters.

6-10. National emergency. During a national emergency, the Corps of Engineers shall work closely with the Civil Defense and assist in issuing emergency information. The project shall have personnel trained in radiological monitoring, first aid, and shelter management. Key personnel will be familiar with the Tulsa District Emergency Preparedness Plan and the Project National Emergency Situation Plan.

VII - GENERAL

7-01. Crowd control.

a. Patrols. Rangers shall patrol the public-use areas and maintain radio contact with officers of the county sheriff's office, and Kansas Highway Patrol.

b. Radio. Rangers shall use two-way radios as a means of communication to report on crowd control.

c. Local law enforcement coordination. The local police, sheriff's office or Kansas Highway Patrol shall be the law enforcing body. In cases of civil disturbances, all incidents relating to proposed or actual civil disturbances or demonstrations shall be promptly relayed by telephone to the District Engineer and to the local law enforcement officials. A chronological log of events shall be maintained by the field installation or activity for record and a followup report shall be made on ENG Form 4337, Incident Report. The District Physical Security Officer or Deputy District Engineer shall relay the telephone report to the Provost Marshal, Southwestern Division.

7-02. Health, safety, and welfare.

a. Prework planning. The project manager shall preplan all operation and maintenance activities and thoroughly review all unusual working conditions with each employee.

b. Weekly safety meetings. A weekly safety meeting for all employees shall be conducted covering topics related to current operations and activities. Minutes of these meetings shall be maintained at the project office. Additional instructions are contained in TDR 385-1-1.

c. First aid training. At least one employee in each work party of two or more shall be qualified to administer first aid. Minimum qualification shall be a current certificate in first aid issued by the American Red Cross or the United States Bureau of Mines. First aid shall be the subjedt of at least four safety meetings each year to promote interest and to maintain first aid skills.

d. First aid kits. First aid kits shall be installed in vehicles, boats, and shops.

e. Protective footwear. Protective footwear such as rubber boots, protective covers, ice clamp-ons, safety shoes, etc., shall be worn by employees who are engaged in work which requires such protection.

f. Safety equipment. Safety equipment and materials such as first aid kits, search, rescue and recovery equipment, portable signs and barricades, communications equipment, vehicles, motor launches, and fire fighting equipment will be maintained at each project.

(1) All necessary safety equipment needed for various jobs shall be issued to employees as needed.

(2) All boats shall be equipped with safety equipment as required by the Motor Boat Operators Manual issued by the Corps of Engineers.

g. Patrolling procedures. Procedures for patrolling and identifying hazards is found in Appendix A, paragraph 13, ER 1130-2-40.

h. Buoys, markers, signs, and barricades. Navigation channels, swimming areas, danger zones, and hazardous areas shall be properly marked with directional and information buoys, markers, signs, or barricades which conform to the Uniform State Waterway Marking System and the manual on Uniform Traffic Control Devices for Streets and Highways. Such devices will be placed and maintained to insure the public adequately against hazards. Tailwater areas and areas above spillways and dams will be properly marked with signs, buoys, booms, or other markers to define restricted and unsafe boating areas. Signal beacons will be installed as needed. Signs, buoys, and markers will be installed in connection with powerhouses, fish ladders, locks, and outlet control structures. Project roads and boat launching ramps will be adequately signed, marked, or barricaded for proper use and protection of the visiting public.

i. Vehicle safety.

(1) All vehicles shall be equipped with seatbelts and have a reminder sign on dashboard.

(2) Mud and snow tires shall be installed on Government vehicles during the winter months.

j. Rollover protection systems. All heavy equipment shall have rollover protection systems installed as required by EM 385-1-1.

k. Operation.

(1) Operators of Government vehicles must have a valid Government Motor Vehicle Operator's Identification Card and a valid State driver's license.

(2) Operators of self-propelled floating plant, up to and including vessels 65 feet in length, will be qualified and licensed by the US Coast Guard or the District Engineer as required by ER 485-1-20.

(3) Operators of self-propelled construction or materials handling equipment shall be qualified by the District Engineer as required by ER 385-1-20.

(4) The operation of all floating plants will be in accordance with the requirements of EM 385-1-1.

l. Machinery or equipment.

(1) Before any machinery or equipment is placed in use, it shall be inspected and tested by a competent mechanic and certified to be in safe

operating condition. Any machinery or equipment found to be unsafe shall be deadlined and its use prohibited until unsafe conditions have been corrected.

(2) Machinery or equipment will not be operated in a manner that will endanger persons or property.

(3) All equipment, Government-owned, leased, or contractor-owned, must comply with the general safety requirements of EM 385-1-1.

7-03. Emergency action. Emergency actions shown in Appendix C, Fire Prevention Plan, will be taken in case of fire.

VIII - BOATING SAFETY PLAN

8-01. Hazardous boating areas.

a. No wake boating areas.

(1) Bay between Richey Cove South #2 and Richey Cove North.

(2) Bay at Richey Cove South #1 boat ramp.

(3) Boat ramp at Neosho Park #1.

(4) Bay between Neosho Park #1 and Neosho Park #2.

(5) Concession Area Bay at Neosho Park #3.

(6) Boat ramp at Neosho Park #4.

(7) Bay at boat ramp on south end of Canning Creek area.

(8) Bay at boat ramp on north end of Canning Creek area.

b. No boating areas.

(1) Inside of buoy line surrounding structure.

(2) Swimming area at Richey Cove South #2.

c. Low water. When water levels at Council Grove Lake fall to/or below conservation pool, hazards will exist. At low water, shallow water will extend a great distance from shore. Inattentive boaters may experience difficulties in shallow areas:

d. High water.

(1) At times of high water it is common to find logs and other debris floating in the lake.

(2) When water is being discharged from sluice or tainter gates, hazards exist near the structure.

8-02. Hazard marking system.

a. Buoy system. Navigation channels, swimming areas, and all known danger zones and hazardous areas are properly marked with directional and informative buoys, markers, and signs. Coordination in placement of buoys has been made with Kansas Fish and Game Commission and the US Coast Guard.

(1) Appropriate buoys shall be maintained to control various activities and the speed of watercraft at the boat ramps, concession boat dock areas, swimming areas and other sites. "NO WAKE" rather than 5 mph buoys will be utilized around boat ramps and concession areas.

(2) Hazard area buoys which mark a hazard to boating, skiing, fishing etc.,, will be checked frequently to see that they are in the proper place and indicate the hazard involved.

(3) Buoyed instructional signs as shown in the SWD sign handbook shall be placed and maintained in appropriate areas.

(4) Project personnel shall make patrols to identify hazards and to maintain the established buoys. These patrols shall be more frequent during the summer recreational season when boating activity increases. The primary objective will be to mark nonmobile conditions such as sand bars.

b. Coordination. Coordination in placement of buoys will be made with the Kansas Fish and Game Commission and the US Coast Guard. This coordination will be mainly through consideration of suggested changes or revisions submitted by these agencies.

c. Navigation hazards. A continual check for floating debris shall be made for water safety purposes. Cleanup measures shall be taken where necessary.

8-03. Education and training efforts.

a. Employee education.

(1) Employee awareness. Every emplopyee will be familiar with the Motor Boat Operators Manual, to acquaint him/her with safe operating principles of motorboats.

(2) Water safety posters. Posters will be placed on shop bulletin boards to remind employees of safe boating practices.

(3) Accidents. Instructions for employees to follow in case of a boating accident or drowning will be posted on shop bulletin boards. (See Chapter V of this supplement.)

(4) First aid training. At least one employee in each work party of two or more shall be qualified to administer first aid. Minimum qualifications shall be a current certificate in first aid issued by the American Red Cross or the United States Bureau of Mines. First aid shall be the subject of at least four safety meetings each year to promote interest and to maintain first aid skills.

(5) First aid kits. First aid kits shall be installed in vehicles, boats, and shop.

(6) Weekly safety meetings. A weekly safety meeting for all employees shall be conducted covering topics related to current operations and activities. Minutes of these meetings shall be maintained at the project office. Additional instructions are contained in TDR 385-1-1.

b. Visitor education.

(1) Boat ramps.

(a) All ramps shall be adequately marked and signs and buoys in the vicinity of boat ramps will be maintained properly at all times to insure safe boating for the using public.

(b) A standard information sign, similar to the ones shown on Drawing No. 7-214.0 of the SWD sign handbook will be placed at boat launching facilities advising boat operators to be cognizant of the effect their wake can have on others and requesting them to show courtesy to other boaters. The following is suggested for use on this sign:

BE COURTEOUS
RESPECT THE RIGHTS OF OTHERS
REDUCE SPEED
WATCH YOUR WAKE

(c) Posters and bulletins pertaining to water and boating safety shall be provided by the Corps of Engineers and displayed by concessionaires. Information provided will include directions for the visitor in case of emergency.

(d) Special emphasis shall be placed on Safe Boating Week with additional signs, posters, broadcasts, and articles.

(e) Radio and television broadcasts shall be used to inform and educate the public in water safety practices.

(f) Newspaper articles shall be used periodically to inform the public of water safety practices.

8-04. Search and rescue missions.

a. Search, rescue, and recovery activities. Action will be started when project personnel are alerted. The alert may come from the county sheriff, Kansas Fish and Game Commission personnel, project rangers and personnel, or interested citizens. The county sheriff exercises the main law authority and is the primary director of the search activities. However, Corps personnel shall take action when information from a reliable source indicating the need for immediate participation is received. Close coordination will be maintained with the county sheriff, Kansas Fish and Game Commission personnel and other participating units.

b. Available equipment:

(1) 1 sedan with Corps radio and sheriff radio
3 pickups, one with Corps radio, sheriff radio, red light and siren/PA system
1 base station radio
1 portable radio
1 24 ft pontoon boat, 50 HP
4 portable lights
1 life ring
10 work vests
12 drag hook sets

1 wire basket stretcher
2 wool blankets
1 resuscitator

(2) First aid equipment, blankets, stretcher, drag hooks, and other similar equipment shall be stored at the project office. The equipment shall be checked and the motors started periodically to assure constant readiness of the boat.

c. Procedure in case of drowning or boating accident.

(1) Go to scene of accident with resuscitator and drags.

(2) Make complete investigation of accident. The following information is needed:

(a) Name of victim.
(b) Age of victim.
(c) Address of victim.
(d) Occupation of victim.
(e) Names and addresses of witnesses (at least two).
(f) Have witnesses describe how the accident happened.
(g) Time of accident.
(h) Time body was recovered.

(3) Notify Tulsa District Office by telephoning one of the following in the order listed:

(a) Mr. James P. Jones, 918-581-7343; home phone: 918-252-7357.

(b) Mr. John C. Maples, 918-561-7351; home phone: 918-437-1162.

(c) Mr. David W. Kendall, 918-581-7344; home phone: 918-743-0841.

(4) Copies of all incident reports (ENG Form 4337) involving boats or boating related accidents will be forwarded to the appropriate Coast Guard District as determined by the District Engineer.

8-05. Accident reporting.

a. Incident report. Incident reports will be sent through the Tulsa District Office and a copy will also be sent to the US Coast Guard District Headquarters.

b. Mishap report. A mishap report (ENG Form 3394) will be sent to the Safety Office for any public fatality, Government property damage of $250 or more from accidents, or when the incident might result in questions from OCE or a Congressman.

c. Boating regulations and search and rescue agencies. Boating regulations are enforced on Council Grove Lake by the Kansas Fish and Game

Commission. Local Game Protectors are: Dave Gentry, phone: 316-342-0101 and Dick Cole, phone: 913-632-2939. Additional State Game Protectors may also be contacted through the Morris County Sheriff's dispatcher, phone: 316-767-5615. Agencies with the capability of search and rescue are as follows:

(1) Emergency phone numbers:

Council Grove Police Department	316-767-5200
Kansas Highway Patrol	316-767-6514
Morris County Sheriff	316-767-5615
Corps of Engineers, Project Ofc, Council Grove Lake	316-767-6612
Emergency Preparedness Director, Dr. Carl Meyer	316-767-5615

(2) Hospitals and ambulance service:

Morris County Hospital	316-767-5151
Morris County Ambulance	316-767-5151

8-06. Hazard map. Exhibit A is a map showing location of boating hazards and no boating areas.

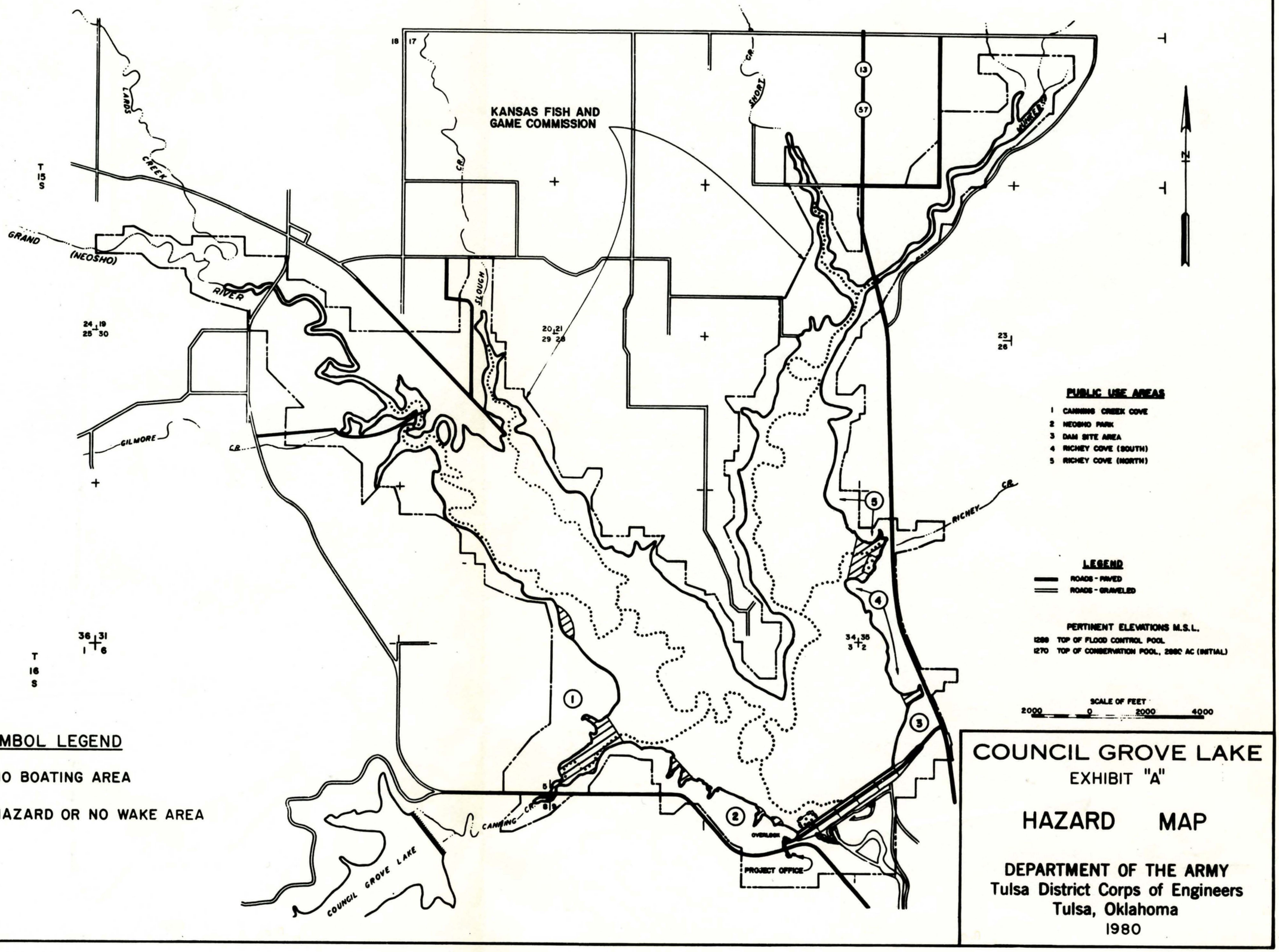
VII - SUBMISSION, APPROVAL, AND REVIEW

9-01. Submission and approval. The original Appendix E was submitted to Southwestern Division for approval on 6 April 1976 and was approved on 15 April 1976.

9-02. Review. The project manager shall review and update this plan annually. A copy of minor pen and ink changes shall be forwarded to Master Plan Section, Recreation-Resources Management Branch, for inclusion in the record copy. The project reviewer shall sign and date the log below upon completion of the annual review.

ANNUAL REVIEW LOG

Year	Signature	Title	Date
1981			
1982			
1983			
1984			
1985			
1986			
1987			
1988			
1989			
1990			



PUBLIC USE AREAS

1 CANNING CREEK COVE
2 NEOSHO PARK
3 DAM SITE AREA
4 RICHEY COVE (SOUTH)
5 RICHEY COVE (NORTH)

LEGEND

ROADS - PAVED
ROADS - GRAVELED

PERTINENT ELEVATIONS M.S.L.

1288 TOP OF FLOOD CONTROL POOL
1270 TOP OF CONSERVATION POOL, 2880 AC (INITIAL)

SCALE OF FEET
2000 0 2000 4000

SYMBOL LEGEND

NO BOATING AREA

HAZARD OR NO WAKE AREA

COUNCIL GROVE LAKE

EXHIBIT "A"

HAZARD MAP

DEPARTMENT OF THE ARMY
Tulsa District Corps of Engineers
Tulsa, Oklahoma
1980

Bound

10

SWDPL-R (SWTED-DA 8 Apr 77) 1st Ind
SUBJECT: Council Grove Lake, Grand (Neosho) River, Kans., Suppl. No. 1 to DM No. 2B, Master Plan (Updated)

DA, Southwestern Division, Corps of Engineers, Main Tower Building, 1200 Main Street, Dallas, TX 75202 3 MAY

TO: District Engineer, Tulsa

Subject supplement is approved.

FOR THE DIVISION ENGINEER:

for BARRY G. ROUGHT, P. E.
Chief, Planning Division

wd incl

CF:
HQDA (DAEN-CWO-R) (5 cy)

Board

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74102

10

SWTED-DA

8 APR 1977

SUBJECT: Council Grove Lake, Grand (Neosho) River, Kans., Suppl No. 1 to DM No. 2B, Master Plan (Updated)

Division Engineer, Southwestern
ATTN: SWDPL-R

Subject supplement (Incl 1) pertaining to revision of land utilization plan for public-use areas is submitted for review and approval.

FOR THE DISTRICT ENGINEER:

for Donald R. Henderson
WELDON M. GAMEL
Chief, Engineering Division

1 Incl (9 cys)
as

30 copies prepared

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

SUPPLEMENT NO. 1
TO
DESIGN MEMORANDUM NO. 2B
MASTER PLAN
(UPDATED)

DEPARTMENT OF THE ARMY
TULSA DISTRICT CORPS OF ENGINEERS
OKLAHOMA

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

SUPPLEMENT NO. 1
TO
DESIGN MEMORANDUM NO. 2B
MASTER PLAN
(UPDATED)

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TABLE INDEX

DRAWING INDEX

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

SUPPLEMENT NO. 1
TO
DESIGN MEMORANDUM NO. 2B
MASTER PLAN
(UPDATED)

1. Purpose. - The purpose of this supplement is to revise the land utilization plan and to correct the acreages shown for the public-use areas and other land-use categories.

2. Scope of work. - This supplement proposes to revise the land-use allocations as shown on revised drawing 93/9, to correct the acreages for the public-use areas, and to add 15 acres of recreation - intensive use land for a quasi-public site.

3. Justification. - The Master Plan as submitted in August 1975 proposed that additional undeveloped lands on the left bank be added to the existing license of the Kansas Forestry, Fish and Game Commission for wildlife management purposes. Further study indicated that this would not be compatible with use of the adjoining land; therefore, it is proposed to leave the boundaries of the wildlife management lands as they are shown on the existing license. The additional lands will be zoned recreation - intensive use and recreation - low density. The additional recreation - intensive use lands are needed in order to grant the White Memorial Camp owned and operated by the United Church of Christ on adjoining lands a quasi-public lease down to elevation 1274.0 in order that they may operate and maintain existing floating facilities in accordance with the provisions contained in Appendix A, Project Resource Management Plan. Table 1 shows the revised acreages for the proposed land-use categories and table 2 shows the revised acreages that were found to be in error in the original submittal.

TABLE 1

LAND-USE ALLOCATIONS

Allocation	Acreage from fee boundary to normal pool (elevation 1274.0)
Project operations	70
Operations	
Recreation - Intensive use	352
Recreation - Low density	369
Wildlife management	1,958
Total	2,749

TABLE 2

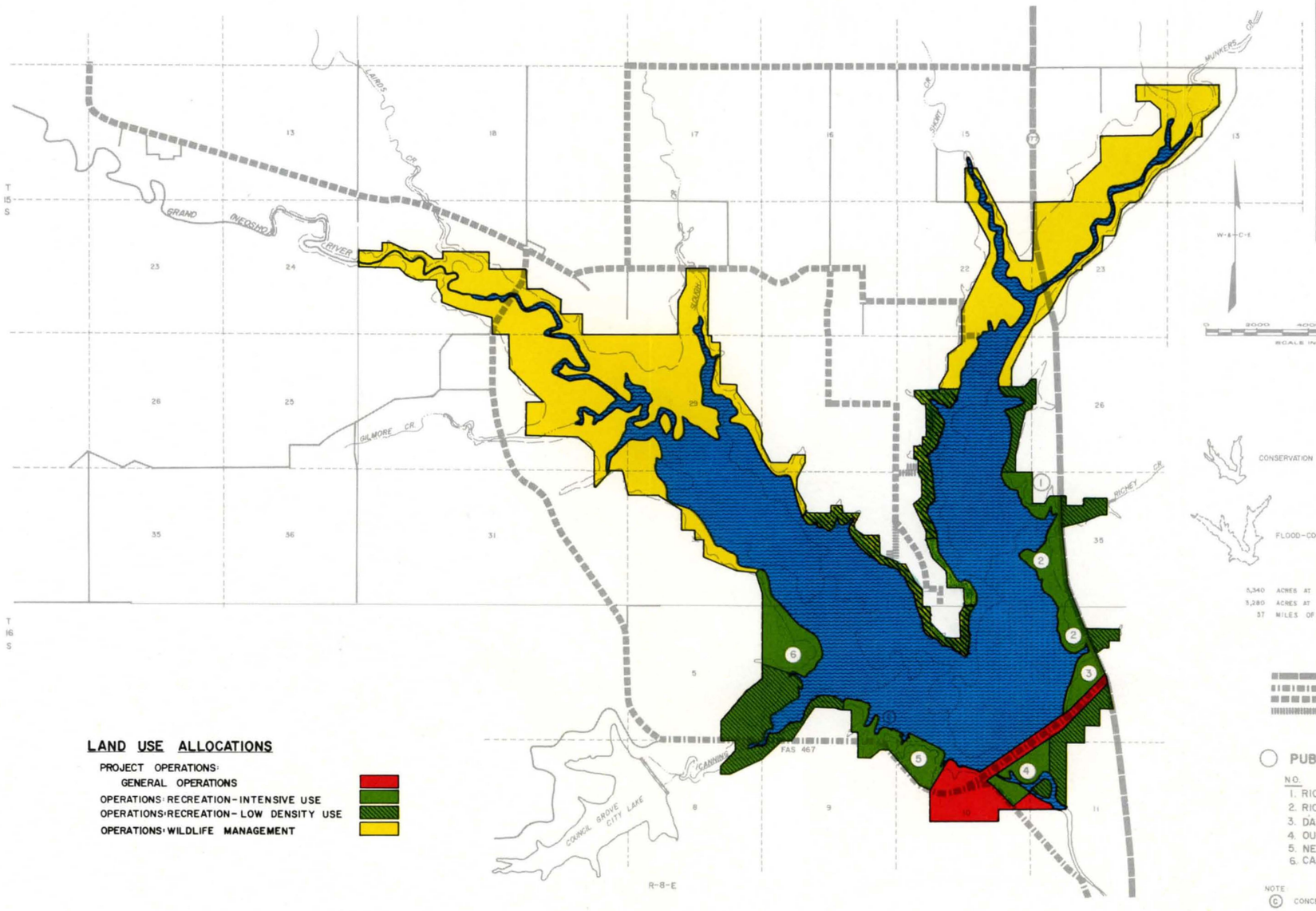
LAND REQUIREMENTS FOR PUBLIC-USE AREAS

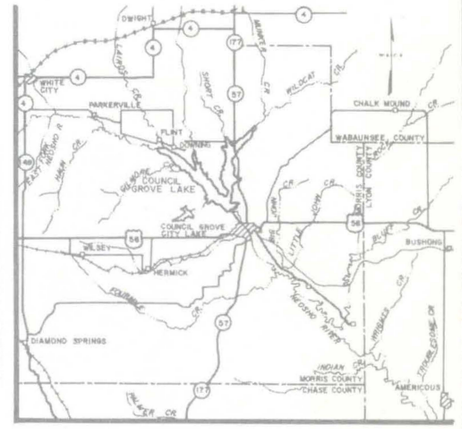
Area	Acreage above normal pool (elevation 1274.0)
Richey Cove (North)	22
Richey Cove (South)	60
Dam Site	41
Outlet Area	50
Neosho Park	57
Canning Creek Cove	107
Total	337

4. Recommendation. - I recommend that this supplement to the Master Plan for Council Grove Lake, Grand (Neosho) River, Kansas, be approved as presented herein.

FOR THE DISTRICT ENGINEER:

for Donald R. Henderson
WELDON M. GAMEL
Chief, Engineering Division





LAND USE ALLOCATIONS

PROJECT OPERATIONS:
GENERAL OPERATIONS
OPERATIONS: RECREATION - INTENSIVE USE
OPERATIONS: RECREATION - LOW DENSITY USE
OPERATIONS: WILDLIFE MANAGEMENT

LEGEND

RESERVOIR DATA

CONSERVATION POOL EL. 1274.0'

FLOOD-CONTROL POOL EL. 1289.0'

5,340 ACRES AT FLOOD-CONTROL POOL
3,280 ACRES AT CONSERVATION POOL
57 MILES OF SHORE LINE AT EL. 1270.0 (APPROX.)

FEDERAL AND STATE HIGHWAYS
MAJOR CIRCULATION AND ACCESS ROADS, PAVED
MAJOR CIRCULATION AND ACCESS ROADS, GRAVEL
ADDITIONAL ACCESS ACQUISITION

PUBLIC USE AREAS

NO.	NAME
1.	RICHEY COVE (NORTH)
2.	RICHEY COVE (SOUTH)
3.	DAM SITE AREA
4.	OUTLET AREA
5.	NEOSHO PARK (C)
6.	CANNING CREEK COVE

NOTE
(C) CONCESSION FACILITIES AVAILABLE.

LEGEND: SEE DRAWING NO. CB 590-2B-93/3

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

LAND USE ALLOCATIONS

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1975

CB590-2B-93/9

Revised March 1977

SWDCO-R (SWTOD-R 22 Apr 76) 1st Ind
SUBJECT: Council Grove Lake, Neosho River, Kansas, Appendix F, Lakeshore Management Plan to Design Memorandum No. 2B

DA, Southwestern Division, Corps of Engineers, Main Tower Building, 1200 Main Street, Dallas, TX 75202 17 MAY 1976

TO: District Engineer, Tulsa, ATTN: SWTOD

Appendix F for Council Grove Lake is approved.

FOR THE DIVISION ENGINEER:

A. P. HUTCHISON
Chief, Construction-
Operations Division

wd incl

CF: w/cy basic
DAEN-CWO-R

DM-BOUND

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74102

SWTOD-R

22 April 1976

SUBJECT: Council Grove Lake, Neosho River, Kansas, Appendix F, Lakeshore Management Plan to Design Memorandum No. 2B

Division Engineer, Southwestern
ATTN: SWDCO-R

Subject Appendix (Incl 1) is submitted for review and approval in accordance with ER 1130-2-406.

FOR THE DISTRICT ENGINEER:

John C. Maples

JOHN C. MAPLES
Acting Chief, Operations Division

1 Incl (6 cy)
as

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

COUNCIL GROVE LAKE
NEOSHO RIVER, KANSAS

APPENDIX F
LAKESHORE MANAGEMENT PLAN
TO
DESIGN MEMORANDUM NO. 2B

DEPARTMENT OF THE ARMY
TULSA DISTRICT CORPS OF ENGINEERS
OKLAHOMA
April 1976

COUNCIL GROVE LAKE
NEOSHO (GRAND) RIVER, KANSAS

APPENDIX F
LAKESHORE MANAGEMENT PLAN

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TABLE OF CONTENTS (cont'd)

EXHIBIT INDEX

Exhibit	Title
I	Permit
II	Map of Lake
III	Toilet Facilities
IV	Area Allocations

APPENDIX F
LAKESHORE MANAGEMENT PLAN
COUNCIL GROVE LAKE
KANSAS

SECTION I - INTRODUCTION

1-01 Purpose. The purpose of this appendix is to establish policy and guidance for the protection of desirable environmental characteristics of the lake and restoration of the shorelines where degradation has occurred through private exclusive use.

1-02 Authority. Authority for administering this policy is granted under Public Laws 86-717 and 87-874 charging the Chief of Engineers with the exercise of good conservation practices which will promote recreation, and with the operation and maintenance of water resource projects in the public interest, respectively.

1-03 References.

a. Section 4, 1944 Flood Control Act, as amended, PL 87-874.

b. The Act of 31 August 1951 (31 USC 483a).

c. The National Environmental Policy Act of 1969, PL 91-190.

d. The Federal Water Pollution Control Act Amendment of 1972 (FWPCA).

e. Title 36, Chapter III, Part 327, Code of Federal Regulations, "Rules and Regulations Governing Public Use of Water Resources Development Projects Administered by the Chief of Engineers."

f. Executive Order 11752.

g. 33 CFR 209.120. "Permits for Work in Navigable Waters or Ocean Waters."

h. ER 1130-2-406, Lakeshore Management at Civil Works Projects, 13 December 1974.

1-04 Private Exclusive Use Recreation Facilities. Facilities to be managed under this appendix include all facilities erected by private citizens on the shoreline and water areas for their private exclusive use. The following will not be permitted:

a. In existing or designated public recreation areas; however, facilities proximate thereto may be permitted when the structure does not detract from the intended use of that area.

b. In areas which have aesthetic values worthy of preservation.

c. In public organization recreation areas unless the facility is owned by the organization.

d. In hazardous areas near the dam and related facilities.

1-05 History. Council Grove Lake was authorized by the Flood Control Act of 1950 as one of seven reservoirs in the development of the Grand (Neosho) River Basin in Kansas and Oklahoma. In addition to flood control, the lake is also used for water quality control, conservation, recreation, and municipal water supply. Construction began in 1960, and the project was placed into operation in late 1964. The private recreation facilities located on Council Grove Lake were granted permits in 1968 under existing District policy which had developed at older lakes in eastern and southern Oklahoma. Permit holders are adjacent land owners. The only access to the facilities other than by water is through private property. Presently, there are only two structures on the lake.

SECTION II - OBJECTIVES OF THE PLAN

2-01 General. It is the policy of the Chief of Engineers to manage and protect the shoreline and the available resources of the lakeshore by making as much of the shoreline as possible available to the general using public for unrestricted use without endangering the safety and health of the users.

2-02 Commercial Concessions. Maximum effort will be put forth to attract concessionaires and to establish suitable, well-maintained businesses that will offer desirable water-related services to the general public. Presently, there is only one concession located on the lake at Neosho Park. This facility provides boat rental and service as well as mooring and dry storage space rental for privately-owned craft. Demand for additional facilities is non-existent at the present time.

2-03 Private Exclusive Use. Demand for private facilities on Council Grove Lake has been non-existent since the issuance of the initial permits in 1968. Under the current plan, no areas will be allocated for limited development, but the commitments to the present owners will be honored through implementation of a grandfather rights clause as part of the plan (see paragraph 5-03).

The dock belonging to the United Church of Christ will be moved from its present location to within the boundaries of the lease of the organization.

2-04 Public Involvement. The proposed lakeshore management plan was presented at a public meeting held in El Dorado, Kansas on 5 June 1975. Comments were invited but few were received expressing dissatisfaction with the plan either at the meeting or during the subsequent 30-day comment period. As the public use trends change and necessitate revision of this policy, maximum public participation in the formulation thereof shall be encouraged to insure that future policy changes are beneficial to the majority of the using public.

SECTION III - DESCRIPTION OF SHORELINE

3-01. Description. The total shoreline distance at normal conservation pool is 37 miles. The lake is located in the Flint Hills region. Relief in the lake runoff area from floodplains to ridgetops is approximately 275 feet. Cuesta-like ridges and scarps are formed by resistent limestone. The general area consists of rolling terrain, gently rounded hills, and steep-sided valleys. Predominant soils in the area are silty clay loams. The climax cover is a mixture of tall midgrasses. Big bluestem is dominant on the lower slopes and little bluestem on the upper slopes. Other area grasses are sand bluestem, buffalo grass, foxtail, blue grama, sideoats grama, Indian grass, Kentucky bluegrass, prairie three-awn, tall dropseed, windmill, and switchgrass.

3-02. Present Land Use. The total fee-owned land is 5,975 acres. One hundred twelve acres are used for project operations, 603 acres for public recreation (all administered by the Corps), 1,958 acres for state fish and wildlife management, and 80 acres for agricultural and grazing leases.

3-03. Existing Access. In addition to pedestrian access, 8 launching ramps with access roads and 5 severed roads around the lake are used by residents and sportsmen.

3-04. Private Development. The Council Grove Lake area has not been developed extensively. Construction has been confined to one area of about 30 acres just north of and adjacent to the public use area on the east side of the lake. The development is still in the planning stage and no dwellings exist at the present time.

SECTION IV - LAKESHORE ALLOCATION

4-01 General. Based on the criteria given in Section I of the appendix, the lakeshore is allocated into use classifications.

4-02 Allocations.

a. General Public Recreation Areas are those allocated within designated or developed public recreational sites. Privately-owned floating facilities will not be permitted. Commercial concession facilities are permitted. Modification of land form or vegetative characteristics is not permitted.

b. Public Organization Recreation Areas are designated for use by public organizations such as Boy and Girl Scouts, YMCA and YWCA and like organizations. Only those floating facilities owned by the organizations are permitted. Club sites under lease with the Corps of Engineers are allocated the same as these areas.

c. Protected Lakeshore Areas are designated to protect the environment and fish and wildlife values in accordance with the National Environmental Policy Act of 1969. Sites where the landscape is dominated by a feature object or a group of feature objects have been denoted as aesthetic areas. Private floating facilities will not be permitted in these areas. Modification of land form or vegetative communities by individuals in protected lakeshore areas will be permitted only after due consideration of the area.

d. Prohibited Access Areas are those allocated for project operation and for protection of the physical safety of the recreation visitors or of ecosystems. Privately-owned floating facilities are not permitted.

SECTION V - IMPLEMENTATION

5-01 General. A thorough survey has been conducted to determine the areas on the shoreline of the lake that are suitable for the mooring of private facilities in accordance with ER 1130-2-406. In investigating areas which might be suitable for floating facilities, the shoreline was sounded for depth and measured to determine the number of structures that could be accommodated. Adjacent terrain was inspected to determine accessibility. The survey concluded that there are no areas suitable for private exclusive use facilities on the lakeshore. A grandfather rights clause was implemented to protect the structures that are now on the lake. These facilities are protected under this clause until replacement is required or until the death of the permittee, or until sale or cessation of use of the facility by the owner.

5-02 Existing Docks Now Under Permit. Identification tags for permitted structures will be given to each permittee. The tags are to be displayed where they can be checked visually with ease. One is to be placed on the lake side of the structure and one on the shore side. The tags will be fabricated of 3M sign material, will be 5" x 8", and printed as shown in Exhibit II. Current permits will continue in effect until their expiration date of 30 April 1979. For all permits renewed after 1 July 1976, a charge of $10.00 for renewal and $5.00 per year for inspection will be made. Permits will be issued for three years. The $10.00 renewal fee includes the inspection fee for the first year. A total administrative charge of $20.00 will be collected at the time of permit issuance. Permits will be issued in person at the project office only to the owner upon presentation of valid identification.

5-03 Grandfather Rights Clause. A grandfather rights clause applies to every privately-owned facility presently on the lake.

a. Individually-Owned Structures will be permitted in an individual name, or in the names of husband and wife. The permit shall be renewable in that name only, or in the name of the husband and/or wife as long as either shall live, or until transfer of ownership.

b. Public Organization Owned Structures will be permitted in the name of the organization with a responsible individual listed and shall be renewable so long as the organization lease is current. Upon expiration or cancellation of the lease, that portion of the shoreline included in said lease will be allocated as protected lakeshore and the grandfather rights clause applied accordingly.

If any privately-owned structures becomes damaged to the extent that major repair is necessary, whether through neglect, accident or an act of nature, no new permit shall be issued for it.

5-04 Other Facilities and/or Activities That May Be Permitted.

a. Ski Jumps. Temporary revocable permits will be issued for ski jumps upon approval of plans of requesting club, group, or agency. Permits will not be issued for ski jumps proposed by an individual for private exclusive use.

b. Floating Swimming Platforms. Temporary revocable permits will be issued for floating swimming platforms upon approval of plans.

c. Mooring Buoys. Temporary revocable permits will be issued for mooring buoys upon approval of plans.

d. Access Paths. Pedestrian access paths approximately three feet or less in width may be constructed to the lakeshore. The path must follow a meandering route to prevent erosion and avoid the need for removal of trees and vegetation. The use permit does not convey the right to construct any structure (steps, bridges, etc.) in connection with the path.

e. Stairways or Steps. Stairways, tramways, and/or steps may be permitted. Massive steel, concrete, or mortared brick structures will not be permitted. All steps and stairways must be structurally sound and safe with adequate handrails. If painted, all steps and stairways will be painted a color that is visually compatible with the natural background. White, yellow, orange, and other highly visible colors will not be allowed. A license will be issued by the District Real Estate Office in accordance with paragraph 8-03 for such structures, provided the application and plans are approved.

f. Erosion Control Devices. Erosion control devices will be permitted where bank erosion is causing a problem or endangering adjacent private facilities. The erosion control structure may be of a riprap type, wooden, placed concrete, or masonry. A permit will be issued by the Resource Manager for such structures, provided the application and plans are approved.

g. Vegetation Alteration and Mowing. Vegetation alteration, mowing, and trimming will be allowed only in areas recommended by the Resource Manager, approved by the District Engineer, and marked by appropriate markers placed in the ground. No herbicides may be used for control of vegetation.

h. Tree Cutting. No living tree, brush, or shrub with a base diameter of three inches or larger, six inches above the ground, will be cut. Cutting or removal of trees will be allowed only after approval of application and issuance of permit. Each tree to be removed will be marked by the Resource Manager. Dead trees of any size may be removed after approval by the Resource Manager. The sale of any tree that is cut is prohibited. The defacing of vegetation, rocks, or other natural material by painting, whitewashing, coloring, or otherwise changing is prohibited.

i. Duck Blinds. Duck blinds will be allowed on the lake during duck hunting season. Temporary revocable permits will be issued after approval of plans for duck blinds. No permanent duck blinds will be allowed on the lake and all temporary blinds will be removed from the lake within five calendar cays after the close of the duck hunting season. Temporary duck blinds may be fastened to dead trees; however, in no case will attachments to live trees be allowed. After approval and issuance of a permit duck blinds may be placed on the lake not to exceed 30 days prior to the opening of duck season. The installation of items conducive to human habitation will not be allowed.

j. Submittal of Plans. The owners of all structures and/or facilities must submit plans and specifications for approval by the District Engineer or his authorized representative. Application must be made through the Resource Manager for all structures, mowing, vegetation alteration, or tree cutting. Permits will not be issued until plans have been approved.

5-05 Prohibited Facilities and Activities. The following facilities or activities are prohibited.

a. Piers. Any type of fixed pier or platform either on the land or extending into the water from the lakeshore is prohibited.

b. Pilings or Posts. Any type of piling or post driven into the lake bottom for the purpose of mooring or tying boats is prohibited.

c. Sewage or Outfall Structures. Any type of sewage or outfall structure is prohibited.

d. Fences. Any type of fence or similar structure is prohibited.

e. Channels, Canals, Excavations. Any type of channel, ditch, canal or excavation is prohibited unless the excavation is in conjunction with an approved erosion control structure, or other approved use of facility.

f. Buoys or Waterway Markers. Privately-owned buoys or waterway markers are prohibited; however, the Corps of Engineers will place navigational aids and safety buoys in the lake.

g. Gardens. Gardens or any type of lawn plantings are prohibited.

h. Burning. Burning of any material by private individuals is prohibited on any Government-owned lands managed by the Corps of Engineers.

i. Land Form Modification. Any type of land form modification, construction or other activity that changes the original or present condition of the land is prohibited. This includes but is not limited to beach construction, channel construction, bank terracing, cuts and fills or road and trail construction.

j. Trash. Accumulation of garbage, trash, refuse, litter or other similar material is prohibited.

5-06 Application for Permits will be in accordance with the requirements of Section VII.

SECTION VI - REMOVAL OF STRUCTURES

6-01 Permitted Facilities. At such time that the permittee ceases to operate or maintain the permitted facility, or upon expiration of permit, if non-renewable, or upon revocation of the permit, the permittee shall remove the facility within 30 days at his expense and restore the waterway and lands to their former condition. If the permittee fails to remove and restore to the satisfaction of the District Engineer, the District Engineer may do so by contract or otherwise and recover the cost thereof from the permittee. By 30 days written notice, mailed to the permittee by registered or certified letter, the District Engineer may revoke this permit whenever he determines that the public interest necessitates such revocation or when he determines that the permittee has failed to comply with the conditions of the permit. The revocation notice shall specify the reason for such action. If, within the 30-day period, the permittee in writing requests a hearing, the District Engineer shall grant such hearing at the earliest opportunity. In no event shall the hearing date exceed 60 days from the date of the hearing request. At the conclusion of such hearing, the District Engineer shall render a final decision in writing and mail such decision to the permittee by registered or certified letter. The permittee may appeal such decision in writing to the Division Engineer within five days of the receipt of the decision. The decision of the Division Engineer shall be rendered as expeditiously as possible and shall be sent to the permittee by registered or certified letter. The permittee may appeal such decision in writing to the Chief of Engineers within five days of receipt of the decision. The decision of the Chief of Engineers shall be final.

6-02 Non-Permitted Facilities.

a. Abandonment of Personal Property. Facilities will be considered abandoned after a diligent effort has been made to locate the rightful owner, his heirs, next of kin, or legal representative in accordance with Section 327.15, Part 327, Chapter III, Title 36, Code of Federal Regulations.

b. Unauthorized Structures. The construction or placing of any structure under, upon, or over the project lands or water is prohibited unless Part 327, Chapter III, Title 36, Code of Federal Regulations. All structures not in accordance with this regulation will be removed.

SECTION VII - APPLICATION FOR PERMITS FOR TEMPORARY FACILITIES AND/OR ACTIVITIES

7-01 Application for Permit. Applicants for temporary facilities such as ski jumps and duck blinds will submit plans and specifications for approval of the facility to include: structural design, anchorage method, materials, size and location of the facility, owners address and telephone number, the expected duration of use, and a statement of willingness to abide by the rules and regulations and conditions of the permit. Applicants for vegetative modifications should include the extent of the modification and the purpose for the work. Permits as mentioned in this paragraph will be issued in the name of the husband and or wife who owns the facility or heads the activity or in the name of a responsible individual when a group is the applicant. The permits are non-transferable, and revocable whenever the District Engineer determines that the public interest requires such revocation or that the permittee fails to comply with the conditions of the permit.

SECTION VIII - PERMITS

8-01 Lakeshore Use Permits will be issued for floating structures of any kind permanently moored on the lake. Lakeshore Use Permits are issued for vegetative modification activities which do not involve in any way a disruption to or a change in land form.

8-02 Department of the Army Permits under Section 404 of the Federal Water Pollution Control Act will be required for activities involving the discharge of dredged or fill material in the waters of the lake below the ordinary high water mark. Lakeshore Use Permits, paragraph 8-01 above, will not be used in these circumstances.

8-03 Real Estate Instruments. All commercial development activities and all activities by individuals which are not covered above and which involve grade, cuts, fills, other changes in land form or appropriate land-based support facilities required for private recreation facilities will be covered by a lease, license, or legal grant issued by the Real Estate Division.

8-04 Permit Administrative Charges. An administrative fee of $10.00 will be charged for the following:

a. Boat Mooring Buoy or Post
b. Ski Jump
c. Mooring Float (for recreational or other uses)
d. Land Use (mowing, vegetative modification, clearing)
e. Discharge of dredged or fill material ($100.00 for fills exceeding 2500 c.y.)
f. Duck Blind (any type)

SECTION IX - OTHER LAND AND WATER USES

9-01. Sewage and Solid Waste Disposal.

a. Project Lands. Sewage removal from the impervious vault type toilets is done by commercial contractors who dispose of the sewage in a total retention lagoon located on project lands. Sewage from the project office and overlook is disposed of by means of septic tank and sand filter systems. Solids are pumped from the septic tank by private contractors and disposed of in a state-approved manner. Solid waste disposal on lands operated and maintained by the Corps is carried out by a commercial contractor and the refuse is disposed of in a state-approved sanitary landfill located on private property.

b. Adjoining Lands. Rigorous standards are established and enforced by the State of Kansas for the sanitary disposal of sewage and solid waste.

9-02. Potential Pollution Sources. Potential pollution sources around the project include faulty septic tanks, subsurface disposal systems, private cabins, concessions, improperly operated sanitary landfills, open dumps, water treatment plants, open burning, odors, cattle feed lots, noise and wash and grease racks which drain into small retention ponds. To date, none of the above listed potential pollution sources other than cattle feed lots have had a significant adverse effect at the project. A routine surveillance and reporting program is carried out by project personnel for potential problems which might arise.

SECTION X - CONCLUSION AND RECOMMENDATIONS

10-01. Conclusion. This plan provides a means of establishing and maintaining protection of desirable environmental characteristics of the lake, and for the restoration of the shoreline where degradation has occurred through private exclusive use.

10-02. Review. This plan shall be reviewed every five years as a minimum, or at any time that public use trend changes necessitate. Any revisions hereto will be made in accordance with ER 1130-2-406 and will become a part of the plan following approval by the Southwestern Division Office.

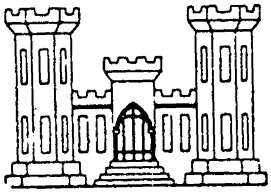
10-03. Recommendation. Approval of the plan as submitted is recommended.

EXHIBIT I

PERMIT

PERMIT
01234
EXPIRES 30 NOV. 1974

THIS PERMIT IS NON-TRANSFERRABLE AND MAY BE REVOKED AT ANY TIME



U.S. ARMY
CORPS OF ENGINEERS

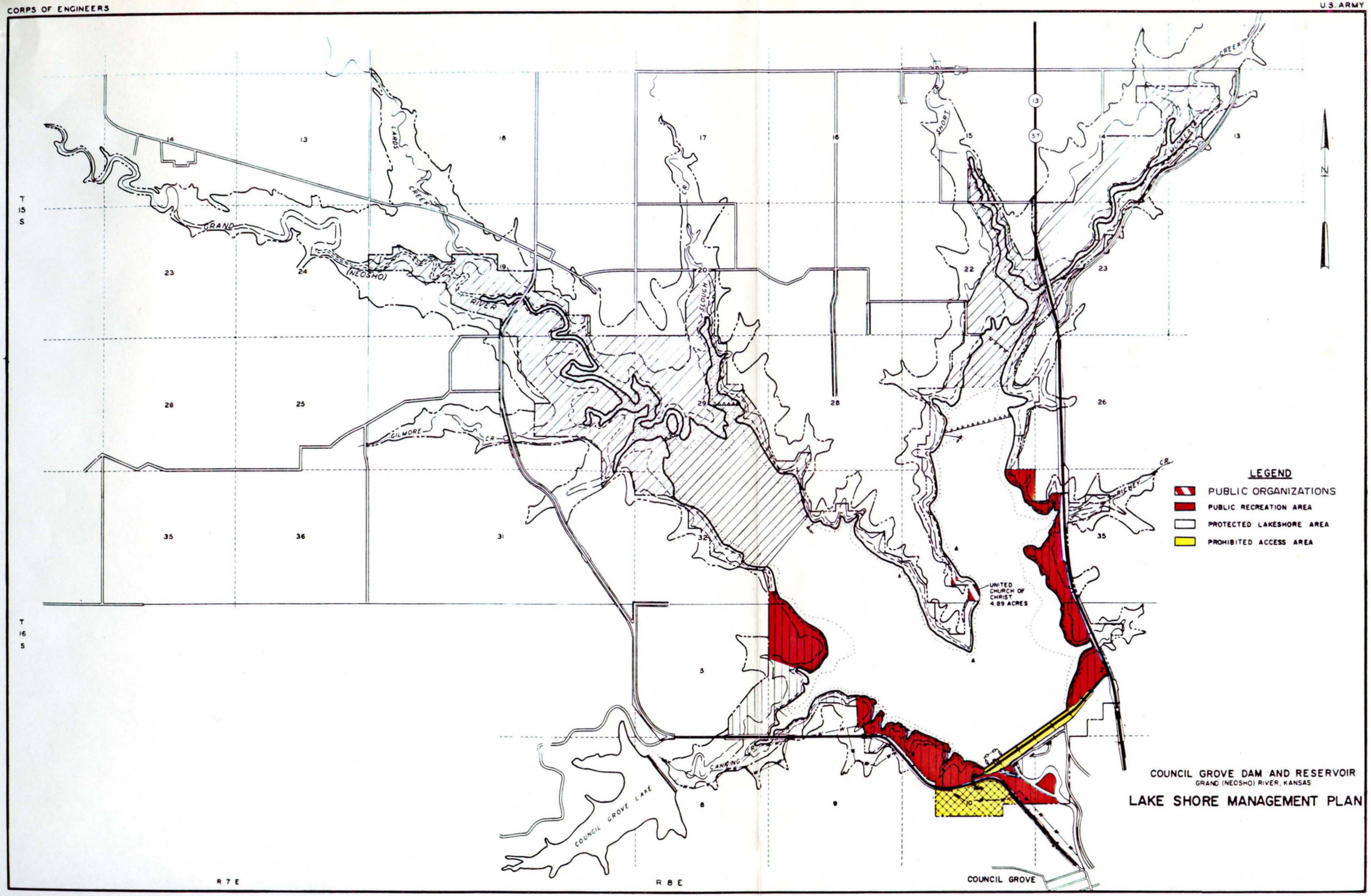
EXHIBIT-I

EXHIBIT II

MAP OF LAKE

CORPS OF ENGINEERS

U.S. ARMY



COUNCIL GROVE DAM AND RESERVOIR

GRAND (NEOSHO) RIVER, KANSAS

LAKE SHORE MANAGEMENT PLAN

EXHIBIT III

TOILET FACILITIES

COUNCIL GROVE LAKE

AREA	WATERBORNE	MASONRY VAULT	WOOD VAULT	TRAILER SANITARY STATION	MARINE SANITARY STATION
Canning Creek Cove		3	8	1	
Neosho Park #1		1			
Neosho Park #3		1	4		
Richey Cove #2		1	4		
Richey Cove #1 (S)		1	4		
Dam Site		1	2		
Neosho Park #4		1	2		
Neosho Park #2		1			
Outlet Channel (E)			2		
Outlet Channel (W)			2		
Richey Cove (N)		2	2		
Overlook	1				

EXHIBIT-III

EXHIBIT IV

AREA ALLOCATION

COUNCIL GROVE LAKE

Area Allocations

	Miles	Percent	Private Floating Facilities
Public Use Areas	5.5	14.9	0
Public Organizations	.1	.3	0
Limited Development Areas	0	0	0
Aesthetic Areas	0	0	0
Protected Lakeshore	30.7	83.0	2
Prohibited Access Area	.7	1.9	0
TOTAL LAKESHORE	37.0		
Game Management Shoreline	23.4	63.2	

DM BOUND

SWDCO-R (SWTOD-O 8 Apr 75) 1st Ind
SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas, Appendix C, Fire Prevention Plan, to DM No. 2B, Revised Master Plan

DA, Southwestern Division, Corps of Engineers, Main Tower Building, 1200 Main Street, Dallas, TX 75202 20 MAY 1976

TO: District Engineer, Tulsa, ATTN: SWTOD-O

1. Appendix C, Fire Protection Plan to Design Memorandum No. 2B, Council Grove Lake, is approved.

a. Paragraph 2-05. The paragraph should be expanded to give a recent history of fires experienced and acreage burned, by year.

b. Paragraph 3-04a. The list should give the equipment to be used with the dozer.

c. Paragraph 3-04b. The paragraph should describe any and all efforts made to obtain a written cooperative agreement between the Corps and the local agencies. On verbal agreements a memorandum for record should be written and a copy should be included in the plan. This memo should include such information as: areas in which the local agencies will respond; if one agency overlaps another, then the "priority of call," telephone numbers, etc.

d. Paragraph 4.01a(3). Any cooperation with the agencies actively engaged in the same endeavor should be mentioned.

e. Paragraph 6-02b. The discussion should indicate what power equipment would be used, particularly since the list contained in paragraph 3-04a does not include equipment normally used in fire control.

2. This appendix should be reviewed and updated annually. Minor pen and ink changes can be approved by the District. This plan should be completely reevaluated and submitted for approval five years from the date of this indorsement.

FOR THE DIVISION ENGINEER:

A. P. HUTCHISON
Chief, Construction-
Operations Division

wd all incl

CF: w/incl
HQDA (DAEN-CWO-R) 2 cys

DM- BOUND

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74102

8 APR 1976

SWTOD-O

SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas, Appendix C, Fire Prevention Plan, to DM No. 2B, Updated Master Plan

Division Engineer, Southwestern
ATTN: SWDCO-OR

Subject appendix (Incl 1) is submitted for review and approval in accordance with ER 1130-2-400. Changes have been made in compliance with comments contained in 1st Ind SWDCO-R, 18 August 1975 to letter SWTED-DA 30 June 1975 same subject.

FOR THE DISTRICT ENGINEER:

John C. Maples

1 Incl (9 cys)
as

JOHN C. MAPLES
Acting Chief
Operations Division

30 copies prepared

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

APPENDIX C
FIRE PREVENTION PLAN
TO
DESIGN MEMORANDUM NO. 2B
UPDATED MASTER PLAN

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
OKLAHOMA

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

APPENDIX C
FIRE PREVENTION PLAN
TO
DESIGN MEMORANDUM NO. 2B
UPDATED MASTER PLAN

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COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

APPENDIX C
FIRE PREVENTION PLAN
TO
DESIGN MEMORANDUM NO. 2B
UPDATED MASTER PLAN

I - INTRODUCTION

1-01. Purpose. - The purpose of this Fire Prevention Plan is to establish policies, equipment, specific action, and manning guides and to train personnel in the prevention, detection, and suppression of woodland and range fires on fee lands administered by the Corps of Engineers.

1-02. Authority. - This Fire Prevention Plan is prepared in accordance with the requirements of ER 1130-2-400, 28 May 1971 and changes 1 through 5 dated 1 December 1971, 23 December 1971, 15 June 1972, 26 January 1973, and 26 September 1974, respectively.

1-03. Master plan. - This appendix is a part of the Master Plan for the development and management for Council Grove Lake, Grand (Neosho) River, Kansas.

II - PROJECT DESCRIPTION

2-01. General. - There are 3,115 acres of land subject to fire protection measures by the Corps of Engineers at Council Grove Lake. The area consists of level first bottom lands undulating to rolling valley uplands. The topography of the area immediately adjacent to the shoreline is flat and the land rises gently to rolling hill structure. The area supports a forest-grassland cover type. Much of the area can be classified as true rangeland. Native woodlands occur generally as narrow bands and patches of trees along inlets and on north slopes.

2-02. Forest. - Forested areas surrounding the lake are characteristic of the elm-ash-cottonwood forest and oak-hickory forest. The predominant overstory vegetation includes post oak, blackjack, American elm, cottonwood, hickory, and eastern red cedar. The predominant understory includes native grasses, sumac, wild grape, sassafras, and numerous shrubs.

2-03. Grasslands. - The grasslands under the control of the Corps of Engineers are primarily managed for grazing. The predominant native grasses present are big bluestem, little bluestem, Indian grass, switch grass, foxtail, tall dropseed, and grama grasses.

2-04. Fuel composition. - Vegetative litter accumulations are light to heavy. Open areas, grown up in a flashy fuel such as grass present the biggest opportunity for a rapidly spreading fire. Wind and ground surface temperatures in these areas are more apt to be higher than in adjacent woods and fuel accumulations are subjected to rapid an large daily fluctuations of moisture.

2-05. Fire hazard.

a. Almost all fires in this region are man-caused, either intentionally or through carelessness. Lighted cigarettes thrown from vehicles, and trash and brush fires which escape control are the leadin cause of fires, but not necessarily in this order.

b. The possibilities of fire are relatively high in the early spring before "green up" and in the late summer and early fall. However, fires may occur anytime in the year when the vegetation is dry

2-06. Risk areas. - The public-use areas are the highest risk areas because of the large numbers of people who visit them. Outside the public-use areas, the risk varies in proportion with the number of people who come in contact with a site. The damage from wildfires on these areas is less significant than in a public-use area. These lands nonetheless, are subject to tangible damages such as injury to young

growth, soils, wildlife habitat, forage, and loss in recreational value. There is also a definite reduction in vitality of the remaining vegetation on the burned site, i.e., reduced vigor of many individual plants due to a reduction of food reserves; increased incidence of insect and disease infestation due to the susceptiveness of weakened plants and the ease of entrance through fire scars. Intangible or indirect losses include the deterioration of the site, and the effects from runoff water soil erosion, and streamflow.

III - ORGANIZATION AND TRAINING

3-01. General.

a. Considering the dispersed activities of the Corps personnel, it is likely that a fire on Corps land could do considerable damage before control equipment could arrive. For this reason, it is necessary to maintain and equip a highly mobile well-trained organization.

b. The fire organization will consist of the personnel attached to the project. This consists of the park manager, park rangers, operation and maintenance foreman, and the operation and maintenance workers.

c. A chart of the fire control organization is as follows:

DISPATCHER

FIRE BOSS

POWER EQUIPMENT OPERATOR — CREW BOSS
LINECREW

3-02. Personnel and duties.

a. Designation of positions. - The dispatcher, fire boss, crew boss, and their alternates, shall be definitely designated, by position, to avoid confusion at the time of the fire and to more positively direct training opportunities.

b. Dispatcher. - The dispatcher may be an administrative assistant or designee. His duties will include:

(1) The dispatchment of men and equipment efficiently and to provide communications with:

(a) Fire detectors (rangers, police, public, etc.)
(b) Initial attack forces
(c) Firefighting ground command post
(d) Other facilities (city fire department, police, Corps projects, etc.)
(e) Centers for information (schools, towns, factories, etc.)
(f) Adjoining protection agencies (US Forest Service, State Forestry Service)
(g) Flint Hills Wildlife Refuge personnel.

(2) Assisting in the preparation and maintenance of a fire map showing existing roads, proposed roads, fire lanes, and water replenishing stations. Each road's name, length, termination point, and time required to travel from one point (project office) to another point, must be incorporated into the map.

(3) In addition to the training set forth in this plan, the dispatcher shall be provided with definite written guidelines to assist him in dispatching the appropriate personnel and equipment for the situation.

c. Fire boss. - The fire boss may be the park manager, park ranger, operation and maintenance foreman, or other designated individual. His duties are to assure prompt, effective fire control action and will include:

(1) Before arrival at fire.

(a) Obtain the best available information on the location of the fire, the forces and equipment being sent, and the current forecasted weather conditions.

(b) On larger fires, travel by a route that will provide a vantage point for sizing up the fire.

(2) On arrival at the fire.

(a) Determine the probable spread of the fire.

(b) Notify the dispatcher of the adequacy of the resources assigned to the fire, give an estimate of the fire potential, and the additional resources required.

(c) Inventory and analyze possible environmental damage, both as a result of the fire and of possible fire control strategies.

(d) Prepare a plan of control.

(e) Organize resources according to the plan.

(f) Assign men and equipment on arrival.

(g) Brief crew boss.

(h) Check welfare and safety of all personnel and make sure all equipment is secured from danger of fire.

(i) Direct and coordinate fire suppression.

(j) Keep dispatcher informed.

(k) Maintain high level of performance.

d. Crew boss. - The crew boss will be selected in advance and from qualified personnel at the project and given the same training as the fire boss. His duty is to direct field action to control the fire in accordance with the plan of the fire boss and to see that the work is safely accomplished. He has the latitude to make decisions within the limits of the plan given to him.

e. Power equipment operators. - These individuals will be knowledgeable in the safe, efficient use of the equipment which they are operating in the building of firelines, the suppression of spot fires, and in mopping-up activities.

f. Linecrewmembers. - The linecrew will be selected from the available operation and maintenance workers. Their duties include: the loading of fire tool boxes and extra backfire torch fuel; the fueling of backfire torches and chain saw; and the filling of water tanks and backpack tanks with water. Other activities are to safely and efficiently attack a fire as trained while utilizing the most appropriate equipment.

3-03. Fire control training. - Each project employee will receive fire control training commensurate with his duties within the fire organization. The park manager is responsible for all training. Training materials and assistance are readily available from the Division of Extension, Extension Forestry, Kansas State University and the US Forest Service. Training materials available consist of films, slide programs, correspondence courses, and assorted literature. Assistance available consists of fire schools and individual presentations. The levels of training are as follows:

a. Fire boss and crew boss. - A minimum of 12 hours of fire control training will be given annually. The following subjects will be presented:

Fire Prevention	1 Hour
Fire Safety	2 Hours
Fire Characteristics and Behavior	2 Hours
Methods of Attack	2 Hours
Use of Hand Tools	1 Hour
Use of Power Equipment	4 Hours

b. Power equipment operator. - A minimum of 4 hours of fire control training will be given annually. The following subjects will be presented:

Fire Safety	2 Hours
Fire Characteristics and Behavior	1 Hour
Methods of Attack	1 Hour

c. Dispatcher. - A minimum of 3 hours of fire control training will be given annually. The following subjects will be presented:

Emergency Operations	1 Hour
Dispatching	1 Hour
Communications	1 Hour

d. Linecrewmen. - A minimum of 5 hours of fire control training will be given annually. The following subjects will be presented:

Fire Safety	2 Hours
Fire Characteristics and Behavior	1 Hour
Method of Attack	1 Hour
Use of Hand Tools	1 Hour

Since many members of a fire control organization work alone much of the time, the ability to exercise initiative, assume responsibility, and perform routine duties efficiently are qualities that will be developed.

3-04. Fire equipment.

a. Corps of Engineers. - Fire suppression tools and equipment available at the project office are as follows:

2 - Pickups, 1/2 ton, radio-equipped
2 - Pickups, 1/2 ton
1 - Flatbed truck, 2 ton, w/winch
1 - Base radio station
1 - Outboard motorboat, 16 foot
1 - Aluminum outboard motorboat, 14 foot
1 - Front end loader
1 - Motor grader
1 - Tilt trailer
1 - Dozer, 1,000 B Case
2 - Farm tractors w/attachments
1 - Tank on skids, 1,000 gallon, w/portable pump

1 - Sprayer on trailer, 200 gallon, w/front-mounted pump
2 - Pumps, backpack
3 - Rakes
4 - Shovels
2 - Saws, crosscut or power
3 - Axes
4 - Swatters

b. Cooperating agencies. - In addition to the Corps of Engineers personnel, there are local fire departments which may be called upon if the necessity arises. Verbal agreements have been made with the cooperating agencies that they will respond to a fire call from the Corps of Engineers. The fire departments, their capabilities, and limitations are as follows:

(1) City of Council Grove, Kansas, has a volunteer fire department. This service is available at the following rates:

1 - 1966 Army Studebaker, 6x6, with side-mounted pump and a 1,000-gallon tank. No charge.
1 - 1952 Diamond T, 2-ton truck with 1,000-gallon tank and a side-mounted pump. No charge.

(2) Morris County, Kansas, is in the process of purchasing equipment for rural fire runs, but makes, models, and capacities are not known.

IV - FIRE PREVENTION ACTIVITIES

4-01. General. - The objective is to reduce the number of fires and acres burned to a minimum on Corps land. Major emphasis will be placed on prevention and presuppression through special attention to the following:

a. Public education.

(1) Maps, brochures, and other literature designed for issuance to the public will include information about fire prevention and a place and method for reporting fires.

(2) Fire danger warning signs will be erected at the main entrance to extensively used public-use areas. The signs will be adjusted daily to indicate the degree (low, moderate, high, or extreme) of fire danger.

(3) During seasons of high fire hazard, informal public appearances, radio broadcasts, and articles in local newspapers will be employed to promote and stress fire prevention.

(4) Rangers, covering daily a definite territory, by their mere presence and/or contact with the users of the project will have a deterrent effect in regard to carelessness with fire.

b. Project personnel. - It will be the responsibility of each supervisor to instruct the employees working immediately under his supervision to maintain an effort toward the prevention of fires at all times. Special attention will be given to the following points:

(1) Extinguish, before leaving, any warming fires that may be built in cold weather.

(2) Observance of all "No Smoking" signs when conditions make it necessary that they be posted.

(3) Proper disposal of matches and smoking materials.

(4) Exercise extra care during welding operations.

(5) Project employees will be instructed to be observant of fires on adjacent private property. These fires should be reported to the resident engineer who can take appropriate steps to notify the landowner or other agencies, or take appropriate action to protect Corps property if the rate and direction of spread indicates such danger exists. Cooperation in this manner will help win the support of local landowners.

4-02. Fire laws. - Permissible open burning will be in accordance to the Kansas Air Quality Control Act adopted 1 January 1971, amended 27 December 1972, which restricts or limits burning to:

a. Open fires purposely set for the instruction and training of firefighting personnel when authorized by the appropriate Government entity.

b. Fires set for the elimination of a fire hazard which cannot be removed by any other means.

c. Fires set for the removal of dangerous or hazardous material where there is no other practical or lawful method of disposal.

d. Campfires or other fires used solely for recreational purposes.

e. Fires purposely set to forest and rangeland for a specific reason in the management of forests or game in accordance with practices recommended by the Kansas Department of Wildlife, the Flint Hills Wildlife Refuge, and the US Forest Service.

f. The burning of trees, brush, grass, and other vegetable matter in the clearing of land and right-of-way maintenance operations, if (a) prevailing winds at the time of burning are away from any city or town, the ambient air of which may be affected by air contaminants from burning, (b) the burning is controlled so that a traffic hazard is not being created as a result of the air contaminants being emitted.

g. The burning of hydrocarbons which are spilled or lost as a result of pipeline breaks or other accidents involving the transportation of such material or which are generated as wastes as the result of oil exploration, development, refining, or processing operations, if the following conditions are met:

(1) The material cannot be practically recovered or otherwise lawfully disposed of in some other manner.

(2) The burning must not be conducted within a city or town or in such proximity thereto that the ambient air of such community or town may be affected by the air contaminants being emitted.

(3) The initial burning may begin only between 1 hour after sunrise and 2 hours before sunset, and additional fuel may not be intentionally added to the fire at times outside the limits stated above.

(4) The burning must be controlled so that a traffic hazard is not being created as the result of the air contaminants being emitted.

4-03. Burning control. - Presuppression Activities.

a. Detection of fires. - During normal routine surveillance of the lake area, rangers will make use of all sight points along their routes for the purpose of obtaining the widest views possible to discover fires which may start at a distance from the patrol route.

b. Transportation system. - Trucks will be outfitted in advance with all tools and equipment needed by a firefighting crew.

c. Fire breaks. - The breaks shall involve placing 25- to 30-foot lanes at strategic locations, 1/4 mile or further apart. Roads and breaks shall be utilized where possible. Lanes will be seeded to cool season grasses to reduce maintenance and serve as wildlife food. The lanes shall be fitted to the topography as inconspicuously as possible.

d. Tools, equipment, and supplies. - Acquisitions will be made prior to the fire season for all tools, equipment, and supplies likely to be needed in combating fire. They will be provided in such volume as to outfit a crew of the size likely to be available.

e. Personnel. - Firefighting crews will be limited in size and have less than 10 men to a crew. Each man will have definite duties assigned to him. As a member of a permanent crew, these duties are essentially the same at each fire. The principle is that of fixing the responsibility for given portions of the work.

f. Risk areas. - An up-to-date fire occurrence map will be maintained to aid in detecting problem areas, determining the probable number and size of fires which occur each year and shall include fuel hazard types. Problem areas of long standing will bear close scrutiny in the planning processes.

g. Fireproofing.

(1) Intensive use sites. - Campgrounds and heavily used areas will be fireproofed by: Removal of litter and flammable material; construction of fire lanes around the area; providing fireplaces and grates; and felling dead snags in and adjacent to areas of heavy use.

(2) Low density use areas. - Grazing has a distinctly beneficial influence in reducing the fire hazard. Grasses and forage plants when present in the forest, constitute the most readily inflammable portion of the fuel for fires. When this material is removed by grazing, the fire hazard is reduced, the start of the fire is rendered less easy and a rapid spread made less possible.

V - FIREFIGHTING SAFETY

5-01. General. - Since firefighting is hazardous and is physically tiring, safety is of utmost importance at all times. Proper training in firefighting techniques and safety factors is a joint responsibility of the fire boss and Operations Division of the District Office.

a. Personnel.

(1) No worker will be assigned to fire duty if he is obviously overweight or underweight or has heart, lung, or other internal defect.

(2) Employees, especially those over 45 years of age, will not be assigned from an appreciably long period of sedentary work directly to strenuous firefighting, unless they are known to be in reasonably good physical condition.

(3) No fire crewmember will be worked continuously for long periods of time without relief. If possible, fireline duties will be rotated to provide equal distribution of difficult work.

b. Clothing and equipment.

(1) Hardhats will be worn by personnel working on the fireline.

(2) Firefighters will have durable, loose fitting, cuffless trousers. The loose fitting clothing affords more protection against burns caused by radiant heat. Long-sleeved shirts are mandatory to protect the arms from heat, sunburn, scratches, and insects.

(3) Gloves will be worn to protect hands and make handwork easier.

(4) All new hand tools will be inspected for defects before being placed in firefighting service and all fire tools will be inspected at least semiannually to insure their proper functioning and safe operation.

c. Training.

(1) Workers shall be instructed on area hazards and safe working practices before starting work.

(2) The firefighters shall understand the crew boss's authority to issue instructions and shall follow such instructions at all times, particularly during emergencies.

(3) Safety in firefighting shall be the topic of one regular safety meeting to be held before the fire season.

d. First aid.

(1) First aid kits will be inspected for proper materials and oxygen tanks checked for proper functioning and a full supply of oxygen.

(2) In the event of an accident requiring professional medical treatment, notify the nearest medical facility that an injured person is enroute, the type of injury involved, and method of transport of the person.

VI - FIRE SUPPRESSION

6-01. General.

a. Upon receiving a report of a fire in the reservoir area or immediately adjacent thereto, the dispatcher or other responsible member of the project personnel will immediately initiate action to direct a crew to the location of the fire.

b. The fire suppression crew, from two to six men in size and under the leadership of a fire boss, will be dispatched by motor vehicle or motorboat. The getaway time from receipt of the report of a fire should not exceed 10 minutes.

c. This crew will take the standard tools and equipment provided for firefighting to the fire. This equipment is kept together at a designated point so as to be immediately available without the necessity of selection from a general supply storeroom.

d. Immediately upon arrival at a fire, the fire boss will make an inspection of existing conditions and decide on the best method of attack. As soon thereafter as possible, he will determine if additional men will be needed, then a radio request may be made for assistance. In any event, the dispatcher will be kept informed by radio of the progress being made.

e. Upon request for further assistance from a crew at a going fire, the dispatcher at the area office will, as soon as possible, send additional men and equipment.

f. The fire boss will not abandon the fire until it has been completely suppressed, or until he is relieved by some other responsible member of the project fire protection organization.

6-02. Firefighting tactics. - Firefighting tactics will vary according to fuel, topography, wind, humidity, and availability of personnel and equipment. The following basic tactics are normally applicable.

a. Small fires (5 acres or less). - If the fuel is light and water is available from tankers or backpacks, the head of the fire will be attacked from inside the burn. On stronger fires, the attack will begin at the heel of the fire. Knock down the flank or one side, cross the head with a fireline, then knock down the opposite flank. The line 2 to 6 feet wide, will be the shortest line possible avoiding sharp angles and crooks.

b. Large fires (over 5 acres).

(1) Power equipment. - Operations with mechanical equipment will begin constructing a debris free line from the unloading point near the point of origin of the fire, along one or both flanks, to the advancing head of the fire. No attempt will be made to hold this line. At the head of the fire, a control line will be developed far enough ahead to permit backfiring to burn an area of 50 or more feet. Equipment will be held at the advance flanks until backfirelines have successfully held the fire.

TABLE 6-1

LIST OF FIRE TOOLS FOR USE WITH MECHANIZED EQUIPMENT

	Crew Size		
	6-Man	12-Man	25-Man
Axes, double or single bit	1	2	4
Hooks, Brush	1	1	3
Saws, Crosscut or Power	1	1	1
Shovels, LHRP	1	2	6
Pumps, Backpack	2	4	8
Rakes, Fire	2	4	8
Torch	1	1	2
Hardhats	6	12	25

(2) Crews with hand tools and small power equipment. - The fire locator; line cutters with axes, brush hooks, power saws; linemen with rakes, Pulaski hooks, hoes, mattocks, backfiring man; and line holding crew with backpack pumps, rakes, and shovels; follow each other in sequence ahead of the fire beginning from an anchor point at the flank of the advancing fire head. The line cutting unit will clear an area 6 to 8 feet in width of bruch, tall grass, logs, and other debris. The line ranking unit developes a line about 2 feet in width. Each man will remove only a part of the material on the ground with one

or two strokes of the rake and then move forward. The last man in the crew preceding the backfiring man, thus, reaches the mineral soil. The crew boss will stay just behind the backfiring man to inspect the line and to control the rate of line firing. The line holding crew protects the backfire and controls spot fires. When the head fire is under control the flanks will be controlled in the same way.

TABLE 6-2

LIST OF FIRE TOOLS FOR USE BY HANDLING CREW

	Crew Size		
	6-Man	12-Man	25-Man
Axes, double and single bit	1	2	4
Hooks, Brush	1	2	4
Saw, Crosscut or Power	1	1	1
Shovels, LHRP	2	4	8
Rakes, Fire	4	8	16
Swatters	4	8	16
Pumps, Backpack	2	4	8
Hardhats	6	12	25

c. Grass fuels. - In tall grass, the same procedures described in (2) above will be used. More lead time will be provided for a grass fire since its rate of spread is high. In low or sparse grass, backfiring may not become necessary. Swatters and water will be used on the fire.

d. Securing the area (mopping-up). - This work consists of going over the area systematically, felling and suppressing fire in all burning snags and putting out completely all smoldering fires. While the mopping-up work is in progress and until it is completed, a patrol will be maintained along the control line. The duties of the patrolman are to find and extinguish any fires which may start across the control line, to improve the fire line when needed, and to put out any burning material inside the fire area which threatens to spread fire.

6-03. Fire reports. - Individual fire reports will be prepared, giving all particulars related to the cause, location, damage, and effectiveness of control of all fires which occur at the project. Fire incident records will be kept to provide as sensitive an indicator as possible of increases or decreases in the number of fires, acreages burned, and changes in geographical locations of fire origins.

VII - ANNUAL ESTIMATED BUDGET

7-01. General.

a. Average annual training cost

Number	Level	Hours Training		Total Cost $
1	Fire boss	12		108.00
1	Crew boss	12		103.00
1	Power equipment	4		22.00
1	Dispatcher	3		14.00
3	Fireline	5		65.00
			Cost in wages	312.00
			Instructor cost	75.00
			Total	387.00

b. Fire equipment and maintenance 50.00

c. Suppression cost 50.00

d. Total estimated annual cost 487.00

e. Estimated suppression cost per year per land acre 0.16

VIII - SUMMARY

8-01. Summary. - The fire control plan will serve as a guide for the protection of the project from forest and range fires. Coordination of fire prevention, detection, and suppression with local fire departments and area residents will be the responsibility of the park manager. Fire control training for each Corps employee assigned to the project fire organization will be conducted utilizing training materials and assistance from the Kansas Division of Forestry and the US Forest Service. Training materials available from these agencies are films, slide programs, correspondence courses, and assorted literature. Powered equipment and hand tools for fire suppression are available and kept in readiness for immediate action. Radio communication will be utilized for increased mobility. Fire suppression activities will be handled primarily by the project fire organization, and local fire crews or area residents if needed. A continuing program of fire prevention will be conducted utilizing signs, posters, leaflets, and personal contacts with area residents and visitors. In addition, the news media will be used during known or suspected periods of high forest and range fire activity.

DM-BOUND

SWDCO-R (SWTOD-O 6 Apr 76) 1st Ind
SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas, Appendix E, Project Safety Plan, to DM No. 2B, Updated Master Plan

DA, Southwestern Division, Corps of Engineers, Main Tower Building, 1200 Main Street, Dallas, TX 75202 15 APR 1976

TO: District Engineer, Tulsa, ATTN: SWTOD-O

1. Appendix E, Project Safety Plan to Design Memorandum No. 2B, Council Grove Lake, is approved.

2. This appendix should be reviewed and updated annually. Minor pen and ink changes can be approved by the District.

FOR THE DIVISION ENGINEER:

Walter E. McGowan

WALTER E. MCGOWAN
Acting Chief, Construction-Operations Division

1 Incl
wd all cys

CF: w/incl
HQDA (DAEN-CWO-R) 2 cys

DM-BOUND

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74102

6 APR 1976

SWTOD-O

SUBJECT: Council Grove Lake, Grand (Neosho) River, Kansas, Appendix E, Project Safety Plan, to DM No. 2B, Updated Master Plan

Division Engineer, Southwestern
ATTN: SWDCO-OR

Subject appendix (Inclosure 1) is submitted for review and approval in accordance with ER 1130-2-400.

FOR THE DISTRICT ENGINEER:

John C. Maples

JOHN C. MAPLES
Acting Chief
Operations Division

1 Incl (9 cys)
as

30 copies prepared

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

APPENDIX E
PROJECT SAFETY PLAN
TO
DESIGN MEMORANDUM NO. 2B
UPDATED MASTER PLAN

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
OKLAHOMA

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

APPENDIX E
PROJECT SAFETY PLAN
TO
DESIGN MEMORANDUM NO. 2B
UPDATED MASTER PLAN

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COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

APPENDIX E
PROJECT SAFETY PLAN
TO
DESIGN MEMORANDUM NO. 2B
UPDATED MASTER PLAN

I - INTRODUCTION

1-01. Purpose. - This Safety Plan identifies common recurring hazards or unsafe conditions in each major phase or area of project operation. The plan includes construction, maintenance, public-use areas, visitor protection, equipment, and operation. The safety rules and regulations contained herein will be implemented to maintain acceptable safety standards throughout the project.

1-02. Authority. - This appendix is prepared in accordance with the requirements of ER 1130-2-400, dated 28 May 1971.

1-03. References.

a. AR 385 series.

b. ER 385 series.

c. ER 1130-2-321.

d. EM 385 series.

e. SWDR 385 series.

f. SWDR 11130-2-8.

1-04. Master plan. - This appendix is part of the Master Plan for the development and management of Council Grove Lake.

1-05. Implementation. - A project safety officer will be appointed by the resident engineer. The safety officer will develop plans and programs to implement and enforce the pertinent provisions of EM 385-1-1, this safety plan, and the fire protection plan (appendix C).

1-06. Coordination. - Frequent and continuing coordination will be established with the Kansas State Park and Resources Authority, Kansas Forestry, Fish and Game Commission, Kansas Highway Patrol, and county and local police in the implementation and execution of this plan.

II - ADMINISTRATIVE FACILITIES

2-01. General.

a. Health and welfare. - No employee shall be required to work in surrounding or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety.

(1) Employees with duty assignments on operation and maintenance projects will wear protective headgear when performing outside operation and maintenance work assignments. The protective headgear shall meet the requirements for class A or class B as defined by the American National Standards Institute. Hardhats will be furnished by the Government and worn by all employees and visitors in designated hardhat areas.

(2) Safety shoes shall be provided by the Government and worn by employees who are engaged in work which requires such protection.

(3) Scaling, grinding, cutting, or dressing of metals, stone, masonry materials, and other operations which produce dust or subject the eyes or head to flying particles shall require the use of goggles having safety lenses and screens for side protection, or face masks, shields, or helmets giving equal protection.

b. Housekeeping. - All office and work areas shall be kept clean and any litter disposed of daily.

(1) Trash containers shall be emptied daily and refuse disposed of by approved means. All rags and waste soiled by combustible or flammable materials shall be placed in tightly closed metal containers and disposed of daily.

(2) All walkways and steps shall be kept free from mud, grease, or any other material or obstruction which would render them unsafe.

(3) Galleries shall be kept clear of materials that may hinder safe passage. Materials to control slipping hazards shall be used over slippery surfaces that cannot be avoided or cleared.

c. Electrical.

(1) All electrical outlets and extension cords shall be of the threeconductor type.

(2) Ground fault interrupters shall be used with portable electrical handtools and equipment.

(3) Interior and exterior lighting systems shall be inspected periodically to insure that all work areas and galleries are properly lighted when work is in progress.

d. Tools.

(1) All tools shall be stored in designated racks or compartments. Tools shall be color-coded so they can be easily returned to their correct storage area after use.

(2) All handtools shall be kept in good repair and used only for the purpose for which designed. Tools having defects that impair their strength or render them unsafe for use shall be removed from service.

(3) Power tools shall be inspected, tested, and determined to be in a safe operating condition prior to use. Continued periodic inspections shall be made to assure safe operating condition and proper maintenance.

(4) All electrical tools shall be grounded by use of a multiconductor cord having an identified grounding conductor and multicontact polarized plug-in receptacle. Double insulated tools approved by the Underwriters Laboratory need not have a ground wire.

(5) The use of all air-operated handtools shall be in accordance with requirements of the Safety Manual, EM 395-1-1.

e. Ladders.

(1) Ladders shall conform to the latest edition of the Safety Codes for portable wood ladders (ANSI A 14.1) and portable metal ladders (ANSI A 14.2).

(2) Metal ladders shall not be used for electrical work where they may contact electrical conductors.

(3) Where necessary, ladder rungs will be coated with nonskid materials to prevent loss of footing or grip.

(4) Ladder-climbing safety devices shall be inspected frequently to insure serviceability.

f. Storage.

(1) Flammable liquids shall be stored in approved-type safety containers which meet the requirements of the National Fire Protection Association. Smoking shall be prohibited in all areas where

flammable, combustible, or similar hazardous materials are stored. "No Smoking" signs shall be posted in all prohibited areas.

(2) The use and storage of all compressed gas cylinders shall be in accordance with the requirements of the Safety Manual, EM 385-1-1.

(3) Government vehicles and equipment shall be parked or stored in predesignated areas to reduce congestion. Keys shall be removed at night and locked in the Administration and Maintenance Building.

(4) Supplies shall be stored in an orderly manner in designated areas to conserve space and provide easy access. Material in bags, containers, bundles, or stored in tiers shall be stacked, block, interlocked and limited in height so that they are stable and otherwise secured against sliding or collapse. Supplies and materials will not be stored in durnace rooms.

(5) All pesticides and chemicals shall be properly labeled and stored in a locked place not accessible to unauthorized personnel. Small containers of concentrates shall be kept together in a box or suitable container within a storage room. Accurate inventories of concentrates shall be maintained. Locked storage for pesticides on vehicles shall also be provided. Stocks shall be inspected frequently for detection of leaks or spillage. Sparkproof lighting fixtures shall be installed and ignition hazards shall be eliminated in closed storage areas. All pesticide storage, mixing and formulation areas shall have adequate ventilation to reduce hazard from inhalation of toxic vapors.

g. Welding and cutting. - All welding and cutting apparatus, equipment and operations shall be in accordnace with standards and recommended practices of the American Welding Society, and the recommendations of the National Fire Protection Association. Each welding unit shall be equipped with a compatible fire extinguisher.

h. Poisonous and harmful substances. - All dusts, mists, fumes, gases, or other atmospheric impurties in the areas where persons are employed shall be brought within safe limits by elemination, ventilation, or filtration. Where these methods are impractical, appropriate protective equipment shall be provided.

i. Spray painting. - All spray painting shall be done in a well-ventilated area when possible. Workmen shall wear face masks to prevent respiratory damage. Hose mask or air line respirators shall be worn by workmen spraying in close quarters.

j. Ventilation. - All rooms and work areas shall be provided with adequate ventilation for the number of occupants.

k. Vehicle operation. - Government vehicles shall be operated in accordance with the requirements of the Safety Manual, EM 385-1-1, and Tulsa District Safety program, TDR 385-1-1.

l. Firefighting.

(1) A-B-C dry chemical fire extinguishers of the proper size, shall be located in all buildings in accordance with requirements of the Safety Manual, EM 385-1-1, and inspected monthly to see that they are properly charged in accordance with appendix L, EM 385-1-1.

(2) A fire safety plan listing assignments shall be posted in various work areas.

(3) A chart shall be posted listing emergency telephone numbers such as fire and police departments, ambulance service, and the nearest hospital or doctor.

(4) During the fire season, all vehicles will be equipped with the standard firefighting equipment.

(5) Inspection and tests of all mobile fire apparatus shall be conducted weekly to assure it is in satisfactory operating condition.

m. Warning signs.

(1) Signs shall be located near hazardous shop equipment to warn against potential hazards or unsafe practices.

(2) All obstructions of projections into a gallery shall be conspicuously marked.

n. Bulletin board and other safety information. - Safety posters shall be posted in various shop work areas and on the bulletin boards.

o. Employee refresher operational exercises. - Periodic operational exercises for abnormal or unusual emergency situations, shall be conducted as required in ER 1130-2-321.

2-02. Outlet works and spillway.

a. Machinery. - Service and emergency gate operating machinery shall be checked frequently to insure that all safety features

are intact. Belt and shaft guards, dogging devices, and similar safety devices shall be given particular attention.

b. Operating areas. - Operating areas will be kept clean and free of oil, grease, or other mateirals which could contribute to accidents.

c. Galleries.

(1) Obstructions or projections into galleries which are pointed, sharp, or any other shape which may cause lacerations, contusions, or abrasions shall be covered with resilient material.

(2) Adequate lighting and ventilation shall be maintained al times to ensure safe passage through the galleries.

(3) Any storage of flammable liquids in these areas is strictly forbidden.

III - PARK AND RECREATION FACILITIES

3-01. Camping and picnic areas.

a. Fireplaces. - Fireplaces or pedestal charcoal grills shall be inspected periodically to insure that they are not a fire hazard. Areas around fireplaces shall be cleared of debris in order to prevent spread of fire. Grills shall be equipped with end flaps to control excessive draft from wind.

b. Trees. - Dead limbs or trees, and weak growing trees that might be blown over in a heavy wind, shall be removed.

c. Tripping hazards. - The area around picnic tables shall be landscaped and graded to eliminate tripping or falling hazards. Access paths shall be bordered by natural vegetation.

3-02. Boat ramps.

a. Signs and buoys. - All ramps shall be adequately marked and signs and buoys in the vicinity of boat ramps will be maintained properly at all times to insure safe boating and swimming for the using public.

b. Surface. - Boat ramps shall be cleared of rocks, stones, debris, and/or any accumulation of algae that might render the ramp dangerous. Ground and riprap conditions around the ramp shall be maintained so that there are no dropoffs or sinkholes around the edges of the ramp.

3-03. Nature trails. - Nature trails shall be inspected periodically to insure that they are free of safety hazards, especially poisonous plants.

3-04. Weed control.

a. General. - The perimeter areas of the parks not subject to intensive recreational use will be managed to encourage reversion of natural vegetation for the benefit of wildlife. The remainder of the recreation and park areas will be kept free of weeds and poisonous plants, normally by mechanical cutting.

b. Poisonous plants.

(1) Employees shall receive instructions in the recognition and identification of poisonous plants and provided protective ointments and appropriate protective clothing when eradicating them.

(2) Employees will be given immunization treatments when deemed necessary by a physician and authorized by the reservoir manager or resident engineer.

(3) Poison ivy, poison oak, and poison sumac shall be controlled by using registered herbicides or other suitable methods of control as determined necessary.

c. Pesticides and chemicals.

(1) All pesticides are toxic to man to a greater or lesser degree, and must be used with care. Most of the accidents resulting from the use of pesticides have been a result of the careless disregard of precautions printed on the label. With very few exceptions, all pesticides must be regarded as potentially toxic to warm-blooded animals.

(2) It is important to distinguish between toxicity and hazard. Toxicity is defined as the potential of any chemical to produce damage. Hazard is defined as the probability that a given chemical will cause damage when used in a particular way or place. In some instances a highly toxic chemical is less hazardous for a certain use than one of a lower toxicity.

(3) The handling of concentrated pesticides and chemicals in the preparation of more dilute solutions is one of the most hazardous operations. Contamination of the skin with a concentrated pesticide or chemical can result in rapid poisoning and death. Maximum precautions, therefore, shall be observed in handling concentrated materials. All operators handling pesticides and chemicals shall be informed of the risks involved to themselves and others, and shall receive instructions for handling pesticides and chemicals safely and told what protective clothing and equipment needs to be used. New employees particularly, and those not trained in handling pesticides and chemicals, shall be given adequate training.

(4) When pesticides and chemicals are employed, care shall be exercised to ensure that proper safety procedures are followed and that applications are made in accordance with the recommendations of the manufacturer and the provisions of applicable State and Federal laws. Only pesticides which are registered with Environmental Protection Agency (EPA) will be used and application will be in accordance with label directions.

(5) Empty containers shall not be left where children or pets have access. Empty containers shall be disposed of in accordance with the recommendations of the EPA, pursuant to the requirements and obligations in the Federal Environmental Pesticide Control Act of 1972.

(6) All handling and use of chemical pesticides shall be under the supervision of certified applicator and coordinated with the District Office Biologist.

3-05. Concessions. - Each concession at the project shall be inspected not less than annually by personnel from the District Office, for compliance with terms and conditions of the lease. In addition, the concession shall be inspected for proper disposal of solid wastes; compliance of sanitary facilities with approved plans, both State and Federal; the maintenance of structures, slips, and operating equipment; safety deficiencies; and unauthorized developments or activities.

3-06. Private floating facilities. - Private floating recreational facilities shall be inspected no less than annually to assure compliance with existing rules and regulations. If an inspection reveals conditions at or on any floating structure which makes it unsafe from a safety, navigation, or other standpoint, such conditions must be corrected immediately by the owner upon receipt of notification by Corps personnel.

IV - SANITATION

4-01. Water supply. - Water from wells or other sources provided for human consumption shall meet the requirements of ER 1130-2-407. The water supply for the administration and public-use areas shall be sampled weekly for bacteriological examination and annually for chemical analysis or at any time if a problem is suspected. The samples shall be submitted to the State Board of Health for testing. If a sample is found to be unsafe, steps will be taken immediately to prevent human use until the cause of contamination has been eliminated. If the unsafe source is a Government well, the well shall be disinfected, pumped out, and resampled. If the unsafe source is a city or water district they shall be notified immediately of the unsafe condition.

4-02. Swimming areas. - Bathing beaches shall be monitored in accordance with SWDR 1130-2-9. This regulation provides for monitoring water at Corps designated bathing beaches to insure that the bacteriological, chemical, and physical numerical criteria conforms to Federal - State standards for primary contact recreation waters.

4-03. Water systems on leases. - Resource managers shall inform the lessee of the requirements set forth in ER 1130-2-407 and insure that all systems are operated in accordance with these guidelines. At least annually Resource Managers shall require the lessee to furnish evidence of a satisfactory surveillance program including regular testing to insure that prescribed standards are being met.

4-04. Sewage facilities.

a. Vault-type restrooms and trailer sanitary stations. - The vaults shall be periodically pumped out and the waste disposed of in a State-approved sewage system. Vaults shall be treated with a disinfectant and a deodorant to control odor problems after each pump out.

b. Cleaning of restrooms. - During the recreation season all restrooms shall be cleaned daily and treated with disinfectant twice weekly.

c. Oxidation ponds. - Oxidation ponds, tile fields, or sewage lagoons shall be inspected periodically to insure that they are functioning properly and do not constitute a health hazard.

4-05. Solid waste disposal. - All solid waste shall be disposed of in private or public sanitary land fills operated in accordance with standards approved by the State Board of Health.

4-06. Insect control.

a. Flies. - An approved insecticide shall be sprayed on trash container lides, around restrooms, and around campsites as necessary to control flies. The use of mechanical fly traps shall also be considered.

b. Mosquitoes. - Measures shall be taken to control mosquitoes in the park areas by spraying insecticide where it is not detrimental to wildlife or by draining breeding areas.

V - ACCESS

5-01. Roads.

a. General. - Roads will be inspected and corrected for irregularities such as slides, settlement, rutting, potholes, washouts, damage to signs, guardrails, retaining walls, culverts, and other hazardous conditions.

b. Abandoned roads. - Nonpublic roads within the project area, not required for the operation of the project or public access, shall be closed by means of appropriate barricades with advance warning signs.

5-02. Parking areas. - Guard logs or barriers shall be set around parking areas, camping area turnouts, or picnic turnouts where there is danger of vehicles accidentally rolling out of control while unattended.

5-03. Traffic control.

a. Signs. - Vehicular traffic control signs and markers on roads within the project boundaries will conform with the American National Standards Institute, Standard D6.1, Manual on Uniform Traffic Control Devices for Streets and Highways.

b. Barriers. - Large rocks, log barriers, cables, etc., used to restrict traffic to the roads and parking areas will be maintained so as to perform their safety function at all times.

c. Lake warning signs. - Warning signs shall be maintained on all roads ending in the lake as shown in TDR 385-1-1.

d. Swimming and launching area signs. - Signs used at launching areas to keep swimmers, boats, and vehicles separated will be inspected frequently to insure their serviceability.

e. Off-road vehicles. - Off-road recreational vehicles, motorcycles and motorbikes shall be confined to the main throughfares and shall not be allowed to annoy or harass campers and picnickers. Motorized vehicles without mufflers shall not be permitted (see Title 36, CFR). Those operators who do not comply with Title 36 will be issued verbal or written warnings and, in aggravated cases, citations will be issued.

5-04. Pedestrian control.

a. Walkways. - Walks will be maintained free of obstacles and safety hazards to provide convenient and safe pedestrian access and circulation to parking areas, bathhouses, restrooms, and other facilities.

b. Control. - Physical or perceptual barriers which are used to control foot traffic shall be established and maintained so as to present no safety hazards.

VI - PUBLIC INFORMTION

6-01. Severe weather warning. - Under severe weather conditions where there is a danger of flooding, the reservoir manager shall alert Government contractors, concessionaires, and other appropriate private interests in the area, furnishing latest reports of the flood situation and predicted progress of flood stages in the area.

6-02. Fireside program. - When time permits, night programs, safety talks, movies, and slides will be given by rangers during periods of high visitation.

6-03. Water safety.

a. Water safety council. - Project personnel shall promote, develop, and maintain public interest in recreational safety. Also investigation shall be made as to the possibility of establishing with the community a Water Safety Council. Such organizations as the fire department, Kansas Forestry, Fish and Game Commission, Boy Scouts, civic clubs, and news media personnel are excellent groups for participating in this type of activity. It is not intended that Corps personnel assume responsibility for the operation of the local council. After the initial contacts, project managers should step back and allow local interests to administer the program. It is not anticipated that the project manager be elected president or chairman, but he must be willing to provide adequate support to keep the group functioning. Suggestions for establishing local recreational safety councils are available in written form upon request to the Operations Division of the District Office.

b. Buoys.

(1) Appropriate buoys shall be maintained to control various activities and the speed of watercraft at the boat ramps, concession boat dock areas, swimming areas and other sites. "NO WAKE" rather than 5 mph buoys will be utilized around boat ramps and concession areas.

(2) Hazard area buoys which mark a hazard to boating, skiing, fishing, etc, will be checked frequently to see that they are in the proper place and indicate the hazard involved.

(3) Buoyed instructional signs as shown in the SWD Sign Handbook shall be placed and maintained in appropriate areas.

(4) Project personnel shall make patrols to identify hazards and to maintain the established buoys. These patrols shall be

more frequent during the summer recreational season when boating activity increases. The primary objective will be to mark nonmobile conditions such as sandbars.

(5) Coordination in placement of buoys will be made with the Kansas Forestry, Fish and Game Commission and US Coast Guard. This coordination will be mainly through consideration of suggested changes or revisions submitted by these agencies.

c. Navigation hazards. - A continual check for floating debris shall be made for water safety purposes. Cleanup measures shall be taken where necessary.

d. Bulletin boards. - Posters and bulletins pertaining to water and boating safety shall be provided by the Corps of Engineers and displayed by concessionaires.

e. Safe boating week. - Special emphasis shall be placed on Safe Boating Week with additional signs, posters, broadcasts, and articles.

f. Radio and television. - Radio and television broadcasts shall be used to inform and educate the public in water safety practices.

g. Newspapers. - Newspaper articles shall be used periodically to inform the public of water safety practices.

h. Search, rescue, and recovery activities. - Action will be started when project personnel are alerted. The alert may come from the county sheriff, Kansas Forestry, Fish and Game Commission rangers, project rangers and personnel, or interested citizens. The county sheriff exercises the main law authority. The Kansas Forestry, Fish, and Game Commission is the primary director of the search activities. However, Corps personnel shall take action when information is received from a reliable source indicating the need for immediate participation. Close coordination will be maintained with the county sheriff, Kansas Forestry, Fish and Game Commission rangers, and other participating units.

(1) Equipment available at the project office for these activities is as follows:

4 Pickups, 1/2 ton, 2 radio equipped
1 Base radio station
1 Boat 18-foot, 60 HP
4 Portable lights
10 Work vests
1 Life ring
12 Drag hook sets
1 Wire basket stretcher
2 Wool blankets
1 Resuscitator

(2) First aid equipment, blankets, stretcher, drag hooks, and other similar equipment shall be stored at the project building. The equipment shall be checked and the motors started at least weekly to assure constant readiness of the boats.

6-04. Speaking engagements. - When time permits, rangers shall speak at service clubs, churches, schools, etc., to promote safety on the Corps controlled projects.

6-05. Terrain hazards. - Signs as shown in the SWD Sign Handbook shall be erected to warn of unusual dangers such as steep bluffs, falling rocks, and other hazards. These signs will be checked frequently to insure that they have not been destroyed, misplaced, or defaced.

6-06. Location signs. - Location signs as shown in the SWD Sign Handbook shall be placed in the parks and maintained to inform visitors of areas of importance.

6-07. Hunting areas. - Designated "HUNTING" areas and "NO HUNTING" areas shall be posted during the proper season and coordinated with the State Game and Fish Commission as they inforce the hunting regulations.

6-08. Firearms. - Regulations concerning the use of firearms on Government property shall be displayed prominently in areas open to the public.

6-09. Emergency information. - Emergency information shall be posted conspicuously in such places as the Resident Engineer decides necessary. This information shall contain the location of the nearest telephone and the addresses and telephone numbers of the nearest doctors, hospitals, police department, fire department, and Civil Defense Headquarters.

6-10. National emergency. - During a national emergency, the Corps of Engineers shall work closely with the Civil Defense and assist in issuing emergency information. The project shall have personnel trained in radiological monitoring, first aid, and shelter management. Key personnel will be familiar with the Tulsa District Emergency Preparedness Plan and the Project National Emergency Situation Plan.

VII - GENERAL

7-01. Crowd control.

a. Patrols. - Rangers shall patrol the public-use areas during the summer months. They shall maintain radio contact with officers of the county sheriff's office, and Kansas Highway Patrol.

b. Radio. - Rangers shall use two-way radios as a means of communication to report on crowd control.

c. Local law enforcement coordination. - The local police, sheriff's office or Kansas Highway Patrol shall be the law enforcing body. In cases of civil disturbances, all incidents relating to proposed or actual civil disturbances or demonstrations shall be promptly relayed by telephone to the District Engineer and to the local law enforcement officials. A chronological log of events shall be maintained by the field installation or activity for record and a followup report shall be made on ENG Form 4337, Incident Report. The District Physical Security Officer or Deputy District Engineer shall relay the telephone report to the Provost Marshal, Southwestern Division.

7-02. Health, safety, and welfare.

a. Prework planning. - The resident manager shall preplan all operation and maintenance activities and thoroughly review all unusual working conditions with each employee.

b. Weekly safety meetings. - A weekly safety meeting for all employees shall be conducted covering topics related to current operations and activities. Minutes of these meeting shall be maintained at the project office. Additional instructions are contained in TDR 385-1-1.

c. First aid training. - At least one employee in each work party of two or more shall be qualified to administer first aid. Minimum qualification shall be a current certificate in first aid issued by the American Red Cross or the United States Bureau of Mines. First aid shall be the subject of at least four safety meetings each year to promote interest and to maintain first aid skills.

d. First aid kits. - First aid kits shall be installed in vehicles, boats, and shops.

e. Protective footwear. - Protective footwear such as rubber boots, protective covers, ice clamp-ons, safety shoes, etc., shall be worn by employees who are engaged in work which requires such protection.

f. Safety equipment.

(1) All necessary safety equipment needed for various jobs shall be issued to employees as needed.

(2) All boats shall be equipped with safety equipment as required by the Motor Boat Operators Manual issued by the Corps of Engineers.

g. Vehicle safety.

(1) All vehicles shall be equipped with seatbelts and have a reminder sign on dashboard.

(2) Mud and snow tires shall be installed on Government vehicles during the winter months.

h. Rollover protection systems. - All heavy equipment shall have rollover protection systems installed as required by EM 385-1-1.

i. Operation.

(1) Operators of Government vehicles must have a valid Government Motor Vehicle Operator's Identification Card and a valid State driver's license.

(2) Operators of self-propelled floating plant, up to and including vessels 65 feet in length, will be qualified and licensed by the US Coast Guard or the District Engineer as required by ER 485-1-20.

(3) Operators of self-propelled construction or materials handling equipment shall be qualified by the District Engineer as required by ER 385-1-20.

(4) The operation of all floating plant will be in accordance with the requirements of EM 385-1-1.

j. Machinery or equipment.

(1) Before any machinery or equipment is placed in use, it shall be inspected and tested by a competent mechanic and certified to be in safe operating condition. Any machinery or equipment found to be unsafe shall be deadlined and its use prohibited until unsafe conditions have been corrected.

(2) Machinery or equipment will not be operated in a manner that will endanger persons or property.

(3) All equipment, Government-owned, leased, or contractor-owned, must comply with the general safety requirements of EM 385-1-1.

7-03. Emergency action. - Emergency actions shown in Appendix C, Fire Prevention Plan, will be taken in case of fire.

Bennds

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SWDPL-R (SWTED-DA 2 Oct 75) 3d Ind
SUBJECT: Council Grove Lake, Grand (Neosho) River, Kan, DM No. 2B, Master Plan (Updated)

DA, Southwestern Division, Corps of Engineers, Main Tower Building, 1200 Main Street, Dallas, Texas 75202

15 APR 1976

TO: District Engineer, Tulsa

1. Subject master plan for Council Grove Lake is approved subject to comments in previous indorsements.

2. In regard to comment 2 in the 2d Ind, the District should place additional emphasis on review of A-E prepared plans to assure compliance with SWD and OCE comments furnished your office on previously submitted master plans and to improve the quality of the planning effort to be forwarded for approval.

FOR THE DIVISION ENGINEER:

for Juan L. Hobson

JOEL F. WILSON
Acting Chief, Planning Division

CF:
DAEN-CWO-R

DAEN-CWO-R (2 Oct 75) 2nd Ind
SUBJECT: Council Grove Lake, Grand (Neosho) River, Kan, DM No. 2B, Master Plan (Updated)

DA, Office of the Chief of Engineers, Washington, D.C. 20314 26 Mar 76

TO: Division Engineer, Southwestern
ATTN: SWDPL-R

1. The subject Master Plan for Council Grove Lake, Kansas is approved subject to Division comments and the following additional comments:

a. Page 5-7, Paragraph 5-16. The statement, "There are no environmental or ecological features that have affected the development of the existing public use facilities or will affect the construction of proposed facilities" is directly opposite of present Corps environmental policy. Rather, the philosophy is what are the impacts on the environment, not how does the environmental features affect development. Granted, engineering and design must consider the natural forces that impose a threat to the integrity or safety aspects of facilities but, with application of the environmental viewpoint stated above, it has been shown that the environmental costs are, in some cases, too great to endure; so development was either altered, moved or not initiated. And, in some cases, the benefits were not limited to preservation of environmental quality, but a savings in the initial construction costs and the O&M costs were achieved. This point needs further study.

b. Page 6-1 Coordination. There is no discussion on the results of coordination with the State Park agency, or what efforts were made, to coordinate and encourage their participation in cost-sharing recreation development and assuming all O&M responsibilities. All future recreation development of this project is subject to the cost-sharing principles of P.L. 89-72 in accordance with Administration policy. In addition, no mention of compatibility with the State Outdoor Recreation plan has been presented.

c. Paragraph 7.04, states that there is a requirement for additional land to be acquired to provide access to recreational areas. Under current rulings of the Office of Chief Counsel, there is no authority to acquire lands for such purposes in this project. Such acquisition will require specific congressional authorization.

d. Generally, scientific nomenclature should be used in association with common names when reference is made to flora and fauna to relieve any confusion associated with colloquialism.

2. It is suggested that in the future, prior to submitting the Master Plan all comments and issues should be resolved, to the extent possible between the Division and District during the draft stage of master plan preparation. A Master Plan with twenty-three comments seriously detracts from its purpose

DAEN-CWO-R (2 Oct 75) 2nd Ind
SUBJECT: Council Grove Lake, Grand (Neosho) River, Kan, DM No. 2B, Master Plan (Updated)

and usefulness. It should be noted that indorsements do not necessarily become attached to all outstanding copies which often leads to misunderstandings within and between Corps elements and other agencies.

FOR THE CHIEF OF ENGINEERS:

wd all incl

GEORGE BRAZIER
Chief, Construction-Operations Division
Directorate of Civil Works

SWDPL-R (SWTED-DA 2 Oct 75) 1st Ind
SUBJECT: Council Grove Lake, Grand (Neosho) River, KS, DM No. 2B, Master Plan (Updated)

DA, Southwestern Division, Corps of Engineers, Main Tower Building, 1200 Main Street, Dallas, Texas 75202 25 Nov 75

TO: HQDA (DAEN-CWO-R)
WASH DC 20314

1. Forwarded recommeding approval of the land use portion of the subject master plan.

2. Those portions of the plan pertaining to development and management of the project resources are approved subject to the inclosed comments which should be considered and incorporated in the plan, as appropriate, prior to implementing the development or action involved.

FOR THE DIVISION ENGINEER:

BARRY G. ROUGHT
Chief, Planning Division

2 Incl
4 cy incl 1 wd
Added 1 incl
2. as

CF:
SWTED-DA w/incl 2

Comments on Master Plan for Council Grove Lake,
Grand (Neosho) River, Kansas, DM No. 2B

1. It is noted in the GDM that future water supply is provided for the Council Grove project. This should be reflected in this paragraph.

2. Para 1-04. Due to the emphasis on environmental protection and public health, it is recommended that the following public laws be added:

a. PL 92-500 Federal Water Pollution Control Act of 1972.

b. PL 93-523, Safe Drinking Water Act.

c. PL 92-516, Federal Insecticide, Fungicide and Rodenticide Act.

d. PL 86-717, Conservation of Forest Lands at Reservoir Areas.

3. Para 1-04c. This paragraph should be expanded by adding the following:

".... and OCE/OMB implementation policy made these provisions applicable to projects completed prior to 1965."

4. Para 2-02a. The paragraph should be expanded to mention the frequency, duration and times of year droughts are usually experienced.

5. Para 3-02a(2). Code 711 funds are not "operation funds." This should be corrected.

6. Para 3-02a(3). The discussion indicates $177,000 has been expended on preparation of the plan. If a part of the expenditure was for implementation of the plan, that point should be made along with approximate amounts for preparation and for implementation.

7. Para 4-04a. A map should be furnished to show the locations and extent of these associations and other cover types with a legend. The legend should give a brief description of the condition of the vegetation.

8. Para 4-04b(1). Other major sport fishes present in the lake should be listed such as channel catfish.

9. Para 4-05. A narrative description of Council Grove Lake water quality is presented. It would appear that the water quality monitoring programs of the lake under ER 1130-2-334 dated 1 May 1974 and Corps bathing beaches under SWDR 1130-2-9 dated 10 May 1974 would provide data on test results of a few basic parameters for the reader's evaluations of the water quality. Consideration should be given to provision of same.

10. Para 5-03. The paragraph should be expanded to provide a discussion of each soil type - series association or management group. The discussion

should include brief discriptions, management characteristics and peculiarities. In addition, a map showing the location and extent of each soil type should be furnished. If feasible this map should be combined with the vegetative associations requested by comment 7 above.

11. Para 7-05a(1).

a. "Fee Containers" are assumed to be the vaults installed for use when the honor system of fee collection was legal. Since this method of fee collection is no longer authorized, all references to fee containers should be deleted. This comment also applies to paragraphs 7.06a(1), 7.07b(1), 7.09a(1), and 7-10a(1).

b. Since this area is to be developed exclusively for picnicking use, any reference to fee collection here should be deleted.

12. Para 7-07a(1), b(1),(2) and (3). These paragraphs do not agree with development shown in the tabulation in paragraph 7-07c, the cost estimate or drawing 93/5. This should be reconciled.

13. Para 7-08. Provision of the "ATV scramble area" in close proximity to the proposed camping area is not concurred in. Also, development of the camping area (at approximately $10,000 per unit) is questionable since it would be too small to administer economically. In view of the above, it is recommended that the proposed camping area be designed for day use activities and the scope of development reduced accordingly.

14. Para 8-01. According to the pool elevation probability curve shown on Figure 2-1, elevation 1289 (f.c. pool) has a recurrence interval of 12 years for future conditions rather than 10 years as shown. This should be corrected.

15. Para 8-03.

a. It is recommended that sewage from vault toilets be kept fresh by intermittent aeration from compressed air units (small and inexpensive to operate) so that it will not upset the biological action of the receiving treatment ponds (causing odors). Unless the proposed stabilization ponds are total retention ponds it is doubtful that this process will meet the quality requirements of the National Pollutant Discharge Elimination System.

b. The treatment process for the showers wastewaters should be discussed.

16. Para 8-11. The list of additional facilities does not agree with some of the tabulations in Section VII. These should be reconciled.

17. Para 8-15. Consideration should be given to installing electrical hookups for campers in some of the camping areas.

18. Para 9-04, first sentence. This sentence should be revised since "all" recreation areas at Council Grove Lake are not camping areas and fees cannot be collected for day use. Also, it should be noted that one camping area is required by law to be "free."

19. The title, "Construction and Maintenance Laborers" should be changed to "Construction and Maintenance Worker." The need for a Chief Park Ranger is questionable unless there is more than one ranger to be supervised or he is assigned supervisory duties over rangers at other projects.

20. Para 11-01. The discussion should be revised to give a concept plan for development and management of the vegetative resource for the entire project area. The relationship of the plan described and this plan should be defined.

21. Para 13-01. The conceptual wildlife and fishery management plans of the Kansas Forestry Fish and Game Commission should be presented. The discussion should include major species managed together with a general description of the management procedures used.

22. Drawing 93/6. The end elevation for the launching ramp located at Neosho Park IV should be 1259.23 rather than 1299.23.

23. Drawing 93/9. In order for the updated master plan to become a useful management tool this drawing should show all of the roads around the project, the limits of recreation areas, and major landmarks, i.e. White Memorial Church Camp.

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74102

SWTED-DA

2 OCT 1975

SUBJECT: Council Grove Lake, Grand (Neosho) River, Kan, DM No. 2B, Master Plan (Updated)

Division Engineer, Southwestern
ATTN: SWDPL-R

1. Subject design memorandum (Incl 1) is submitted for review and approval in accordance with EM 1130-2-302.

2. Questions regarding the estimates should be referred to Mr. Buell O. Atkins, Environmental Resources Section, Planning Branch.

FOR THE DISTRICT ENGINEER:

Donald R. Henderson for
WELDON M. GAMEL
Chief, Engineering Division

1 Incl (9 cys)
as

35 copies prepared

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

MULTIPLE-PURPOSE PROJECT

GRAND (NEOSHO) RIVER, KANSAS

ARKANSAS RIVER WATERSHED

DESIGN MEMORANDUM NO. 2B

COUNCIL GROVE LAKE

MASTER PLAN

(Updated)

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
TULSA DISTRICT
AUGUST 1975

WILSON & COMPANY
ENGINEERS
ARCHITECTS

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

UPDATED
MASTER PLAN

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COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS
UPDATED
MASTER PLAN

I - INTRODUCTION

1-01. Project authorization. Council Grove Reservoir, later changed to Council Grove Lake, was authorized for construction by the Flood Control Act of 17 May 1950 (Public Law 516, 81st Congress, Chapter 188, 2nd Session). Departmental authority for administration of land and water areas is contained in Section 4 of the Flood Control Act approved 22 December 1944 (58 Stat. 889) and by Section 4 of the Flood Control Act of 1946 (60 Stat. 642), as further amended by Section 209 of the Flood Control Act of 1954, approved 3 Spetember 1954.

1-02. Project purposes. - Council Grove Lake was authorized for construction as an integral part of the authorized reservoir projects in the upper Grand (Neosho) River basin for flood control, recreation, fish and wildlife, and water quality.

1-03. Purpose of the master plan. - The purpose of this Updated Master Plan is to document and present current data concerning recreational development, biological and environmental resources, health control and agricultural land management at Council Grove Lake.

1-04. Application of public laws. - The following public laws are applicable to Council Grove Lake.

a. Public Law 534-78, Flood Control Act of 1944. - Section 4 of the act as amended in 1946 and 1954, authorizes the Corps to construct, maintain, and operate public parks and recreational facilities in reservoir areas and to grant licenses for lands, including facilities, preferably to Federal, State, or local governmental agencies.

b. Public Law 85-624, Fish and Wildlife Coordination Act (1954). - This act as amended in 1958 sets down the general policy that fish and wildlife conservation shall receive equal consideration with other project purposes and be coordinated with other features of water resource development programs. Opportunities for improving fish and wildlife resources and adverse effects on these resources shall be examined along with other purposes which might be served by water resources development.

c. Public Law 89-72, Federal Water Project Recreation Act of 1965. - The act requires that not less than one-half the separable costs of developing recreational facilities at Federal reservoir projects be shared by a non-Federal public body.

d. Public Law 89-80, Water Resources Planning Act (1965). - This act established the Water Resources Council and gives it the responsibility to encourage the development, conservation, and use of the Nation's water and related land resources on a coordinated and comprehensive basis.

e. Public Law 93-251, Water Resources Development Act of 1974. - Section 107 of this law establishes a broad Federal policy which makes it possible to participate with local government entities in the costs of sewage treatment plant installations. Participation may be warranted for the provision of treatment of sewage resulting from the operation of recreation facilities at Corps of Engineers water resources development projects. EC No. 1165-2-120 June 1974 explains the interim guidance measures necessary to implement the terms of this public law.

1-05. Scope of the report. - This Updated Master Plan analyzes present recreational and environmental facilities, estimates future attendance, determines the recreational potential and recommends further development of recreational areas at Council Grove Lake. The plan studies the physical and cultural characteristics of the lake area and recommends ultimate methodology for the development and use of these resources.

II - PROJECT DESCRIPTION

2-01. Location. - Drawing No. 93/1 shows the general location of Council Grove Lake in relationship to the State of Kansas. The Council Grove Lake Dam Site is located at mile 449.9 of the Grand (Neosho) River in Morris County, Kansas, approximately 1.5 miles north of the City of Council Grove and approximately 35.5 miles south of the City of Manhattan. The lake, and government property surrounding it, is located in Morris County, Kansas. Primary roads providing access to the project locality are: U.S. Highway No. 56, an east-west road through the City of Council Grove between Herington and Osage City; and Kansas State Highway No. 177, a north-south road through the City of Council Grove between Manhattan and Cottonwood Falls. Access to the public use areas on the east side of the lake is available directly from State Highway No. 177 with access to areas on the south side of the lake available from FAS 467, an east-west hard surface road. Access to the north side of the lake is by means of gravel secondary roads and is somewhat limited.

2-02. Project data. - The pertinent data for Council Grove Lake is presented in Table 2-1.

TABLE 2-1
PERTINENT DATA

LOCATION - Grand (Neosho) River
DRAINAGE AREA - 246 square miles
SHORE LINE - 37 miles (at conservation pool elevation 1270.0)

ELEVATIONS, AREAS, AND STORAGE

Feature	Elevations	Lake Area (Acres)	Lake Capacity (Acre-Feet)
Top of dam	1321.0	-	-
Flood-control pool	1289.0	5,340	114,000
5-year flood frequency pool	1284.0	4,570	89,600
Conservation pool*	1274.0	3,280	50,600
Conservation pool*	1270.0	2,860	38,300
10-year frequency drawdown pool	1261.0	1,800	17,400

Note: All elevations in this report are referred to mean sea level, 1929 General Adjustment, and all horizontal control to North American Datum, 1927, both by the U.S. Coast and Geodetic Survey.

* Conservation pool elevation varies due to fluctuating pool operation.

a. Climate. - Council Grove Lake lies in an area characterized by a typical continental climate with warm summers and moderately cold winters. Summer temperatures are often high and prolonged while sub-zero temperatures during the winter seldom continue for more than a few days. The normal mean temperatures for this region average about 80 degrees in July and 31 degrees in January. The average frost-free season is about 172 days, from April 23 to October 15. Because the lake area is subject to polar continental and gulf moisture air masses, the weather changes rapidly and frequently. Severe storms, with hail and damaging winds, vary widely from year to year with the highest frequency of severe storms during the months of May and June. Prevailing summer winds are from the south with periods of high winds normally occurring in March, April and May. Abundant sunshine and strong wind movements cause relatively high evaporation rates during the summer months. Winters are normally open until December, when occasional blizzards may produce short periods of severe weather, however, the ground is usually covered with snow for only a few days at a time. Average annual rainfall in the area is about 32 inches with approximately 72 percent of the total annual precipitation occurring from mid-April to mid-October. Average annual evaporation is about 53 inches.

b. Description of the Grand (Neosho) River Basin. - Above the dam site of Council Grove Lake, the Grand (Neosho) River Basin is somewhat oval shaped and has a drainage area comprising 246 square miles.

This portion of the basin is formed by the highlands of the Flint Hills. The area is characterized by flat-floored stream and river valleys with margins composed of rolling uplands. Trees are generally found only along the tributary stream channels and bordering the main channel of the river. The valley is devoted to tillable crops with petroleum production and cattle grazing prevalent in the uplands.

c. Description of the Council Grove Lake Area. - The Council Grove Lake area is shown on Drawing No. 93/2. Council Grove Lake has a conserva-tion pool covering an area of 3,280 acres and inundates a total of 5,340 acres at the flood control pool elevations. At conservation pool level, the lake is about 3/4-mile wide at the dam and extends about 3/4-mile upstream, from which point it extends about 2-3/4 miles up the Grand (Neosho) River valley and about 2-1/4 miles up Munkers Creek forming two main arms about 1/2 to 3/4 miles wide. In addition, the lake extends up the main channel of the Grand (Neosho) River and up Munkers Creek for approximate distances of 1-4/5 and 9/10 miles, respectively. The two main arms of the lake form a large "V" with the apex at the dam. The shoreline is quite regular with larger coves formed at Richey and Canning Creeks. The surrounding Flint Hills topography results in an area characterized by prominent hills and scenic valleys. Timber groves of the elm-ash-cottonwood and the oak-hickory forest cover types occur along

permanent waterways contrasting sharply with the surrounding treeless tall grass prairie. Throughout the region, rock outcroppings consist of alternating layers of limestone and shale. Bedrock in the area is sedementary and permian in age. Relief from flood plains to ridge tops is approximately 275 feet. Regional dip is slightly northwest at approximately 20 feet per mile. Cuesta-like ridges and scarps are formed by resistant limestones. The general area is characterized by rolling terrain with ridges, gently rounded hills, and steep sided valleys. There are six predominant soil types in the Council Grove Lake area consisting of Dwight Silty Clay Loam, Florence Cherty Silty Clay Loam, Labette Silty Clay Loam, Sogn Rock Clay Loam, Tully Silty Clay Loam, and Reading Silty Loam.

d. Project structures. - Principal project structures consist of an earth-fill embankment, outlet works and gate tower, spillway and other project structures described below.

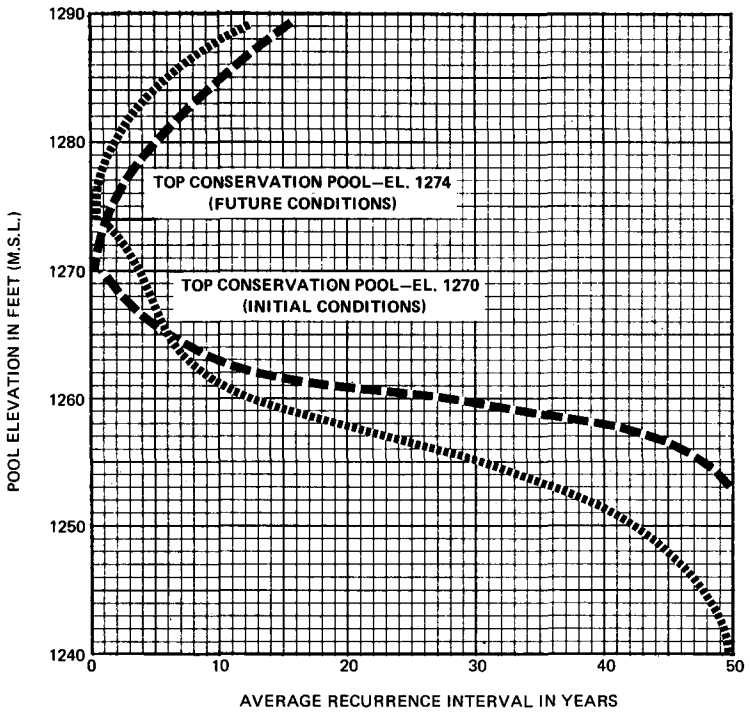
(1). Earth fill embankment. - The embankment, which is a rolled earth-fill structure extending across the valley from the left abutment to the spillway at the right abutment, has a crest length of 6,500 feet, a maximum height above the original streambed of 96 feet, and a crest width of 32 feet. The upstream face of the embankment is protected from wave action by riprap, and downstream slopes are protected by grasses. A roadway, 24 feet in width, with guard rails along both sides extends along the crest of the dam.

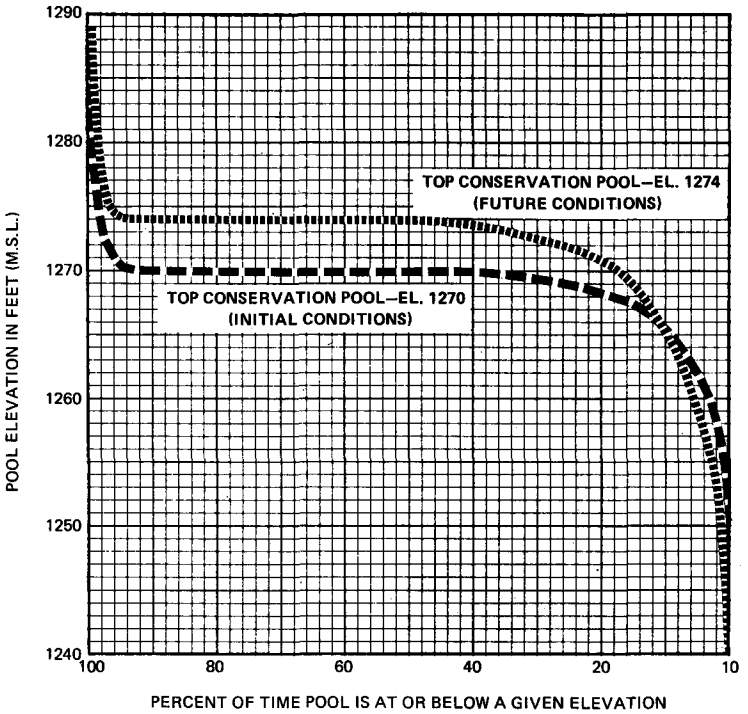
(2). Spillway. - The spillway is an uncontrolled open cut 500 feet wide, located in a saddle near the right abutment with a crest elevation of 1306.0.

(3). Outlet works. - The gate tower and outlet works located near the right abutment house a gate controlled flood-control conduit 17 feet in diameter, and a 24-inch diameter low-flow pipe. Provisions for future water supply consist of a 24-inch diameter intake located in the gate tower.

(4). Other project structures. - Other project structures consist of an administration-maintenance building, an overlook building, a modern restroom building, and service and access roads.

2-03. Project operation. - The plan for future development presented is based on a conservation pool elevation of 1274.0 feet and the pool elevation probabilities as shown by Figure 2-1. The normal pool elevation changes according to a related sequence. Between 1 March and 15 April the pool is maintained at elevation 1272.0 feet, m.s.l. After 15 April the pool elevation is gradually raised 2 feet to elevation 1274.0 feet, m.s.l. by 15 June. This pool elevation (1274.0) is maintained until 15 August, then lowered to elevation 1270.0 feet m.s.l. by 1 September. The 1270.0 pool level is retained until 1 November, than raised in stages to elevation 1272.0 feet, m.s.l. by 1 March,





RESERVOIR POOL ELEVATION PROBABILITIES
(Conservation pool elevation 1274.0)

FREQUENCY	ABOVE ELEVATION 1274.0	FREQUENCY	BELOW ELEVATION 1274.0
Once in 12 years	1289.0	Once in 50 years	1240.0
Once in 5 years	1284.0	Once in 10 years	1261.0
Once in 2 years	1280.0	Once in 5 years	1267.0

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS
TULSA DISTRICT CORPS OF ENGINEERS

FIGURE 2 – 1
POOL ELEVATION PROBABILITIES

when the cycle is repeated. This operational procedure is designed to achieve maximum benefits for the authorized project purposes of recreation, fish and wildlife, and water quality control without compromising the project flood control capabilities. The fluctuating pool elevations may vary from year to year.

2-04. Visitation. -

a. General. - Procedures and formulative data used in determining the ultimate visitation for the year 2020 at Council Grove Lake were developed from Tulsa District surveys, attendance records, and other data. Attendance projections were based on population projections for counties within the area of influence of Council Grove Lake. These counties are shown on Drawing No. 93/1. Future visitation is based on the assumption that recreational use will increase in a manner proportionate to the past and projected population growth within the area of influence, and that the same factors accounting for past visitation will be present in the future population. Land and water areas of the project available for recreation and the degree of crowding that recreationists will tolerate before seeking alternate areas for recreation or alternate types of recreation are the basis for the optimum visitation estimate.

b. Population projections. - The historical and projected populations of the counties in the Council Grove Lake area are shown in Table 2-2.

TABLE 2-2

PAST AND PROJECTED POPULATION OF COUNTIES IN THE COUNCIL GROVE LAKE AREA OF INFLUENCE

	Past Population U.S. Bureau of Census				Projected Population		
Counties	1970	1971	1972	1973	1980	2000	2020
Chase	3,408	3,647	3,594	3,599	3,123	2,503	2,061
Clay	9,890	10,227	10,251	10,163	10,384	11,322	13,003
Dickinson	19,993	23,742	23,333	23,907	27,637	37,624	50,755
Lyon	32,071	27,745	30,216	30,892	25,220	24,103	22,404
McPherson	24,778	24,508	24,109	24,720	26,311	30,403	35,777
Marion	13,935	15,070	15,161	15,479	13,965	13,427	12,996
Morris	6,432	6,894	6,944	6,851	6,009	5,038	4,199
Osage	13,352	13,808	13,567	13,784	12,855	13,961	15,501
Pottawatomie	11,755	12,385	12,418	12,925	11,979	12,871	14,168
Riley	56,788	36,972	38,349	40,144	35,485	31,233	23,269
Saline	46,592	46,840	45,421	46,477	59,888	64,439	65,954
Shawnee	155,322	156,522	171,999	173,848	190,649	261,663	349,637
Wabaunsee	6,397	6,546	6,852	6,801	5,956	5,345	4,961
Total	400,713	384,906	402,214	409,590	429,461	513,932	614,685

c. Projected visitation. - From the historical and projected population of the area of influence of Council Grove Lake and the present visitation, a projection of future visitation can be made as shown by Table 2-3.

TABLE 2-3
PROJECTION OF VISITATION

Year	Past and Projected Population	Council Grove Lake Visitation (Actual)	Visitation as Percent of Population (Actual)	Visitation as Percent of Population (Projected)	Projected Visitation
1970	400,713	870,000	217.1		
1971	384,906	1,012,400	263.0		
1972	402,214	1,260,000	313.3		
1973	409,590	1,028,400	251.0		
1980	429,461			261.1	1,121,323
2000	513,932			261.1	1,341,876
2020	614,685			261.1	1,604,943

It is anticipated that the point at which the degree of crowding referenced in paragraph a above, will occur near the year 2000 with an approximate annual visitation of 1,342,000 persons. The visitation should stabilize at about this level throughout the remaining life of the project.

2.05. Facilities required to support future visitation. - Tulsa District surveys have indicated about 17 percent of the annual visitors attend during the peak month of use and the visitation on weekends during this period is about 66 percent of the 17 percent total. The optimum number of visitors expected to visit the project on a weekend day during the peak month of use in the year 2000 is as follows:

17 percent annual visitors attend during the peak month:
1,342,000 x 0.17 = 228,140
Weekend visitation is about 66 percent of this 17 percent:
228,140 x 0.66 = 150,572
Weekend days during the peak month (8):
150,572 ÷ 8 = 18,821 - peak weekend day visitors.

a. Camping sites. - Tulsa District surveys made at similar projects indicate the average percentage of visitors who will use the campsites is expected to be about 7 percent.

There is an average of 3 persons per vehicle using campsites. Therefore:

Peak month weekend daily visitors	18,821	
7 percent camping use	1,317	
3 persons per camping group	439	
Camping sites required		439

The calculated number of campsites, therefore, is 439. At the present time there are 114 identifiable campsites available for public use at Council Grove Lake. An additional 122 campsites are proposed, and with two existing campsites converted to picnic sites, future campsites will total 234. Siting of additional campsites to attain the calculated 439 campsites will necessitate undesirable crowding or locations too far from the lake as to render them undesirable.

b. Picnic Sites. - Attendance reports at Council Grove Lake and surveys at similar projects indicate that about 8% of the peak month weekend visitors are picnickers. As shown in IWR Research Report 74-R1 prepared by U.S. Army Engineer District, Sacramento, 60 percent of the picnickers do not intend to use the facilities. This percentage appears to be reasonable for use at Council Grove Lake.

There is an average of three persons per vehicle picnicking. Therefore:

Peak month weekend daily visitors	18,821
8 percent picnickers	1,505
40% desiring facilities	602
3 persons per vehicle	200
1.5 turnover (parties per site)	133
Total number of picnic sites required	133

At the present time there are 36 picnic sites available for public use at Council Grove Lake, this would require an additional 97 sites to accommodate the anticipated visitation; however, an additional 23 sites are proposed, and with seven existing picnic sites converted to camping sites, future picnic sites will total 52. As with campsites, in paragraph a above, siting of additional picnic sites to attain the calculated 133 picnic sites will necessitate undesirable crowding or locations too far from the lake as to render them undesirable.

c. Boat ramps. - Surveys from the Tulsa District indicate that about 9 percent of the vehicles at a project have boats and trailers. Data gathered in 1972, and 1973 at Council Grove Lake also show average peak month boating use to be about 9 percent. The average number of persons per vehicle is about 3. In addition, EM 1110-2-400, dated September 1, 1971, states that each ramp will accommodate 40 boat launchings per normal weekend day.

Therefore:

Peak month weekend daily visitors	18,821
9 percent boating accommodations	1,694
3 persons per boating group	565
40 boat launchings per weekend day	14
Boat ramps required	14

Paragraph 8-06 states there are no additional boat ramps proposed. At the present time, there are 8 boat ramps at Council Grove Lake.

III - PROJECT STATUS

3.01. - Project development and operation chronology. - Construction began on Council Grove Lake in 1960 and the project was placed in full flood control operation in October 1964. The first contract for construction of public-use facilities was awarded in May of 1964 and the last one was completed in August of 1965.

3-02. Chronology of expenditures for public use and environmental resources.

a. Federal Government. -

(1). A summary of the existing recreational facilities of Council Grove Lake is shown in Table 2-1.

(2). As of January 1975 the cost of the existing facilities shown in Table 2-1 are as follows:

014	Construction funds	$653,000
711	Project operation funds	126,600
	TOTAL	$779,600

(3). In addition to the above amount a total of $177,000 has been expended on the Forest and Vegetative Management Plan prepared by Extension Forestry, Kansas State University.

b. Non-federal public concessionaire. - The approximate value of the commercial concession located in the Neosho Park recreation area is $47,000.

TABLE 3-1

SUMMARY OF EXISTING RECREATION FACILITIES

Item	Recreation Area						
	Richey Cove (North)	Richey Cove (South)	Dam Site	Outlet	Neosho Park	Canning Creek Cove	Totals
Camping Units	-	45	2	-	27	40	114
Picnic Units	13	2	14	-	7	-	36
Group Picnic Units	2	1	-	-	1	2	6
Wood Vault Toilets	1	3	1	2	3	3	13
Masonry Vault Toilets	2	2	1	-	3	3	11
Water Supply	4	7	-	1	2	15	29
Boat Ramp	1	2	-	-	3	2	8
Swimming Beach	-	1	-	-	-	1	2
Water Treatment Plant	-	1	-	-	-	1	2

IV - RECREATIONAL AND ENVIRONMENTAL RESOURCES OF THE PROJECT AREA

4-01. Geologic. - Council Grove Lake is located in the Flint Hills region of Kansas. This region lies along the western boundary of the Prairie Plains physiographic province and represents the first step in the transition from the hilly Prairie Plains to the flatter and higher terrain of the Great Plains province of western Kansas. The geology of the Flint Hills region is generally summarized as follows: Rocks of Pennsylvanian, Permian and Cretaceous ages are exposed at the surface. In general, the sequence of outcropping rock units becomes progressively younger in an east-west direction across the region. Mantling large portions of these older rocks are wind-blown deposits (loess) and water-laid sediments forming the stream valley flood plains and terrace deposits adjacent to the main streams. The limestone beds in the Flint Hills contain large amounts of flint or chert. Where these beds mantle the uplands, erosion of the underlying soft shales has been retarded resulting in prominent hills and escarpments.

4-02. Archeologic. - Seventeen archeological sites have been recorded on the Council Grove Lake project area. Five are inundated, seven are in the flood control pool, and five are above the flood control pool.

One multi-component site in the flood control pool was excavated in 1962, and 1964, and found to contain evidence of an Early Middle Woodland occupation and a distinctive Middle Archaic occupation which represents a heretofore unknown cultural group now designated as the Munkers Creek Phase. The presence of this unique component caused this site to be listed on the National Register of Historic Places as the William Young Archeological Site. This site is at the edge of the conservation pool, flooded sloughs have surrounded it, and eventually it will be destroyed by wave action. The Tulsa District and the Kansas State Archeologist are planning research and field studies to determine the best means of mitigation for the site.

A Late Archaic and/or Early Middle Woodland site in the flood control pool was tested. This site was disturbed by cultivation and farm buildings; no further work was recommended. Another site which is possibly a Middle Archaic village was tested and slight traces of surviving subsurface cultural material were noted beneath the cultivation zone. The site is in an area where road realignment has taken place close by. It was recommended by the state archeologist that the area be reinvestigated before any additional work is done.

Also, tested were a habitation site of Archaic and/or Early Middle Woodland peoples, a small Archaic habitation site, a small habitation site of Late Archaic and/or Middle Woodland peoples, and a small site which did not yield enough evidence for an accurate cultural appraisal.

Inundated sites are a Middle Woodland habitation area excavated in 1962; a habitation site identified as possibly representing Early Middle Woodland peoples; a habitation site of the Middle Ceramic period, Pomona Focus, which was excavated in 1962; a small village site which was tested but not identified; and a Late Archaic habitation site which was tested during the survey.

One site above the flood control pool was totally destroyed by borrow activites for the nearby highway relocation. Surface materials from the site indicated it was a Middle Ceramic or Late Woodland village.

A habitation site attributed to Late Archaic and/or Early Middle Woodland was recorded above the flood control pool, as well as a habitation site attributed to the Ceramic period, probably Middle Woodland.

Two stone-filled burial mounds above the flood control pool have been excavated and one has been restored. A medium sized mound contained the remains of a cremation and secondary burials representing eleven individuals. Artifact material indicated the mound was probably constructed by Middle Woodland Peoples.

The second stone-filled mound was small and contained the cremated and secondary remains of at least seven individuals. Two cultures appear to be represented in the artifact materials. The earlier and probably original builders of the mound were Early Middle Woodland people. It was later used by a group affilitated with the Central Plains Phase.

4-03. Historic. - Council Grove Lake takes its name from the city of Council Grove, Kansas, known as the birthplace of the old Santa Fe Trail and for many years the last outfitting post between the Missouri River and Santa Fe, New Mexico. Emporia, home of newspaper editor William Allen White, is 18 miles southeast of Council Grove, and Topeka, the State Capitol, is about 50 miles northeast of the dam.

The area's historical heritage dates to 1541 when the Spanish explorer, Coronado, traveled through this section. The Kansas Memorial Building in Topeka contains a sword picked up on the Kansas plains where it had been dropped by one of Coronado's men. The area is rich in romantic stories of the frontiersmen and the early pioneer. It is said that Kit Carson cut the name of "Council Grove" on a buffalo hide and nailed it to the huge oak tree under which a treaty with the Osage Indians was signed in 1825, to establish a trail for overland freighters in their territory. The marked stump of the Council Oak is still visible on the northside of Main Street in Council Grove.

Post Office Oak, where letters were left for caravans passing through the area between 1825 and 1847, still stands on the same side of the street. The Santa Fe Trail's peak traffic year was 1860, when a Government survey reported 3,000 wagons, 7,000 men, and 60,000 mules used the route. Heavy traffic continued until after the Civil War.

Other historical points of interest in Council Grove are the Last Chance Store, Old Hays Tavern, the Old Indian Warning Bell, Custer Elm, Padilla Monument, Old Cowboy Jail, and the Monument to the Unknown Indian. The Madonna of the Trail Monument, a tribute to the courageous women who helped settle the west, is located in a grove where travellers camped in the 1800's.

4-04. Ecologic. -

a. Vegetative associations. - There are three basic vegetative associations in the Council Grove Lake area. These are the tall grass prairie association, the elm-ash-cottonwood association and the oak-hickory association. Much of the area can be classified as true rangeland. The entire lake area lies within the Kansas-Oklahoma bluestem (Flint Hills) region and represents a portion of the only extensive area of natural grazing land classified as a humid tall grass prairie region. Native woodlands occur generally as narrow bands and patches of trees along rivers and intermittent streams and on north slopes. Many of the sites in the lowland areas support commercial tree growth.

(1). Tall grass prairie association. - This vegetation receives its name from the fact that when not abused, the tall grass species are dominant. Among the dominant grasses when the association is not overgrazed are Big Bluestem and Little Bluestem. As persistent overgrazing or mowing occurs, other less desirable grasses, such as Buffalograss and Foxtail, invade.

(2). Elm-ash-cottonwood association. - This association also known as the bottomland hardwoods, lies along streams and in their flood plains. These sites are more mesic than the woods encountered in the ravines and on the hillsides. The American Elm, dominates the floodplain woods. Other important tree species found in the overstory of these woods are Sycamore, Cottonwood, Bitternut Hickory, Shagbark Hickory, and several species of Oak.

(3). Oak-hickory association. - Progressing from the flood plain up the step hillsides and ravines, a change in vegetation occurs. At the base of steep hillsides and ravines Bur Oak and Bitternut Hickory are common. Chestnut Oak, (Quercus prinoides) becomes the dominant plant further up on the hillsides. There are numerous other species connected with this association, but they occur in smaller numbers and in scattered areas.

b. Fish and wildlife.

(1). Fish. - Fisheries management at Council Grove Lake has included stocking of walleye, northern pike, black bass, white bass and crappie. In addition to stocked species the lake also supports populations of native species. Thirty-five species of fish have been reported as existing in the lake area (Cross, 1967).

(2). Wildlife. - The project is located within the principal range of both bobwhite quail and prairie chicken in Kansas. Other species include mourning dove, cottontail rabbit, fox squirrel, coyote, ducks, geese, and deer, all of which receive a moderate amount of hunting pressure. Trapping is insignificant in this area, but good populations of muskrat, mink, raccoon, and some beaver are available.

Waterfowl populations are variable with fluctuating lake levels in marsh areas of the lake. Duck populations have been good during fall seasons with up to 3,000 mallards and 150 large Canada geese present in wintering populations. Spring build-ups are infrequent in this area.

The Kansas Forestry, Fish and Game Commission presently manages an area of 2,638.35 acres in the upper arms of the lake for fish and wildlife management purposes.

(3). Endangered wildlife species. - Endangered wildife species possibly occurring or migrating through the general area of Council Grove Lake are as follows:

Whooping Crane
Southern Bald Eagle
American Peregrine Falcon

4-05. Environmental aspects. - The region of Council Grove Lake is characterized by rolling terrain with ridges, gently rounded hills, and steep sided valleys. The valley in which Council Grove Lake is located is relatively flat with well defined margins. The uplands are somewhat rugged and in many places descend rather steeply into the primary lake area. Limestone and shale in alternating layers comprise most of the rock of the area. Differential erosion of these contrasting rock types due to their different erosion resistance results in the rolling relief typical of the local Flint Hills area.

In general, the water quality of Council Grove Lake is very good for a potable public water supply. It requires only standard or routine clarification and treatment. The turbidity of Council Grove Lake is considered average for lakes in this region of the state. Turbidity of the water is attributable to suspended colloidal matter which disturbs clearness and diminishes the penetration of light.

4-06. Recreational resources. - The location of developed recreational areas at Council Grove Lake are shown on Drawing No. 93/2. The general description and types of uses at each area are as shown by Table 4-1.

TABLE 4-1

EXISTING RECREATIONAL RESOURCES

Recreation Area	Boat Ramp	Fishing	Swimming Beach	Picnic Facilities	Camping	Group Shelter
Richey Cove (North)	X	X		X		X
Richey Cove (South)	X	X	X	X	X	X
Dam Site		X		X	X	X
Neosho Park	X	X		X	X	X
Canning Creek Cove	X	X	X	X	X	X

Other recreational resources made available through the physical facilities listed above are power and sail boating, water skiing, hunting, hiking, nature study, and sight-seeing. Uses within the various recreation areas will be altered in order to achieve the desired separation between camping and day-use facilities, however, the types of uses featured at the project will not be changed.

V - FACTORS INFLUENCING AND CONSTRAINING RESOURCE DEVELOPMENT AND MANAGEMENT

5-01. General. - Council Grove Lake, at conservation pool level, covers most of the alluvial soils and the low and intermediate terrace deposits in the immediate vicinity. Exposed rock ourcroppings, however, are of aesthetic value and have been used and will continue to be used as such during the life of the project.

Since the filling of Council Grove Lake, certain ecological systems have been disturbed and changed. These however, have been replaced, readjusted, or enhanced through proper resource management. The establishment of the lake and its attendant recreational developments have improved the general environmental and scenic aspects of the area.

5-02. Demographic. - Council Grove Lake is located entirely within Morris County, therefore the economic and cultural geography of the area is best summarized by using Morris County as a basis.

Morris County is sparsely populated with a 1970 population of 6,432 which represents a loss of 960 people during the ten-year period from 1960 when the population was 7,392. Table 2-2 shows the projected population for Morris County steadily declining through the year 2020. However, Table 2-2 also shows the population of the Council Grove Lake area of influence to be increasing in population in the future.

In general, the economy of Morris County is stable with the dominant economic factor represented by agriculture. Both farming and ranching are common with a trend toward devoting more land to cattle raising. Principal crops consist of wheat, grain sorghum, corn, and soybeans. Minerals produced in Morris County in 1970 were petroleum, stone, sand and gravel in order of value. The per capita income for 1959 and 1969 was $1,795 and $3,317, respectively.

Morris County contains no colleges or universities. Council Grove, the county seat, contains several historic structures and points of interest relating to the Santa Fe trail. The social life of the area is typical of most rural ranching areas of this region.

It is estimated that through June 1973, flood damages prevented by operation of Council Grove Lake reached $2,079,000. The project provides flood protection in the valley below the dam and added protection along the Neosho River.

The potential for industrial, commercial and residential development within the Council Grove Lake area of influence could cause a recreation demand at the project beyond that which the presently developed recreational facilities could handle. The Master Plan outlines future recreational development which can be implemented to satisfy the demand.

The Council Grove Lake area has a typical continental climate, summers are warm and winters are moderately cold. Precipitation is heaviest in late spring and early summer, occurring mostly during thunderstorms. Winters are generally moderate until December, when occasional blizzards may produce short periods of severe weather. Average annual rainfall is 32.03 inches. Normally, approximately 70 percent of the total annual precipitation falls during the usual growing season. The average frost-free season is 172 days, April 23 to October 15.

Because the project area is in the path of the polar continental and gulf moisture air masses, the weather changes rapidly and frequently. Prevailing summer winds are from the south. Periods of high wind can be expected in March, April, and May. Severe storms, with hail and damaging winds, vary widely from year to year. May and June are months of greatest severe storm frequency. This environment provides a climate favorable to outdoor sports and recreation during much of the year.

5-03. Topography and soils. - There are six predominant soil types in the Council Grove project area ranging from silty clay-loam to silty loam soils. Generally, these six soil types can be classified into two distinct groups: those suitable for cultivation with certain practices, and those not suitable for cultivation, but suitable for grazing or woodlands with certain practices.

The topography and soil capability are a definite influence in the development of the resources. Those soil areas most suitable for cultivation in the project area generally lie below the conservation pool elevation and so have little impact on the development of recreation uses. Those soils which are marginal or unsuited for cultivation are generally situated at higher elevations along slopes and hilltops, and because of location will be best adapted to low and intensive recreational uses. These soil types, with certain practices, are not considered to have serious limitations for development of recreational uses.

5-04. Accessibility. - Principal roads furnishing access to the area in which Council Grove Lake is located are the following:

U.S. Highway No. 56, in east-west highway serving the Council Grove Lake area between Herington and Osage City.
State Highway No. 177, a north-south highway serving the area between Manhattan and Cottonwood Falls.
FAS 467, a hard surface road running north and northwest from the city of Council Grove and east-west along the southern edge of the project and also providing graveled access to the northwesterly reaches of the lake.

Access to the north side of the project is by graveled secondary roads leading from State Highway Nthe existence of the foreign tax. The Federal Estate Tax return was due April 28, 1971 (but was filed January 29, 1971).

5-05. Area of influence. - The Council Grove Lake area of influence is outlined in paragraph 2-04a and shown on Drawing No. 1. Public recreation areas, especially those that feature water-oriented recreation, are in short supply in this region, when viewed from the standpoint of the existing and projected population. With increasing leisure time, increased recreational facilities will be needed. In addition, as camping vehicles, and associated equipment, become more numerous and more sophisticated, the need for more numerous and improved camping facilities becomes apparent. Such facilities exist now and are planned for future development at Council Grove Lake.

5-06. Related recreational and historical areas. - Listed below are the related major recreational and historical areas in the vicinity of Council Grove Lake. Parks and recreation areas generally associated with the various cities and villages in the vicinity are not listed. The historical sites are those listed by the current National Register of Historic Places.

These major areas are as follows:

Chase County

Chase County State Lake, near Cottonwood Falls
State Highway Commission wayside parks, 4 sites near Cottonwood Falls
Chase County Courthouse Historic Site, Cottonwood Falls

Dickinson County

State Highway Commission wayside parks, 2 locations near Abilene
State Highway Commission wayside park, near Herington
Eisenhower Home Historic Site, Abilene
Lebold (C.H.) House Historic Site, Abilene
Union Pacific Railroad Depot, Solomon

Geary County

Corps of Engineers, Milford Lake, near Junction City
Geary County State Lake, south of Junction City
Rock Springs 4-H Camp, south of Junction City
First Territorial Capitol, Fort Riley Military Reservation, near Junction City
Bogan Archeological Site, Milford Lake
Wetzel (Christian) Cabin Historic Site, 2 miles east of Junction City

Lyon County

Lyon County State Lake, northeast of Emporia
Corps of Engineers, John Redmond Lake, Game Management Area, near Hartford
State Highway Commission wayside park, near Emporia
State Highway Commission wayside park, near Olpe
White (William A.) House Historic Site, Emporia
Hartford Collegiate Institute Historic Site, Hartford

Marion County

Corps of Engineers, Marion Lake, near Marion
State Highway Commission wayside park, near Peabody
State Highway Commission wayside park, near Florence
State Highway Commission wayside park, near Marion
State Highway Commission wayside park, near Lincolnville
Harvey House Historic Site, Florence
Pioneer Adobe House Historic Site, Hillsboro
Old Peabody Library Historic Site, Peabody

Morris County

Council Grove Historic District, Council Grove
Farmers and Drovers Bank Historic Site, Council Grove
Kaw Methodist Mission Historic Site, Council Grove
Last Chance Store Historic Site, Council Grove
William Young Archeological Site, Council Grove Lake

Osage County

Corps of Engineers, Melvern Lake, near Lyndon
Corps of Engineers, Pomona Lake, near Pomona
Osage County State Lake and Park, near Scranton
Strawbridge Reservoir, near Carbondale
State Highway Commission Safety Rest Area, US-75,
five miles north of Lyndon

Riley County

Corps of Engineers, Tuttle Creek Lake, near Manhattan
State Highway Commission wayside park, near Riley
Rocky Ford Recreation Area, Manhattan
Deep Creek Fishing Area, near Manhattan
Goodnow Memorial Home Historic Site, Manhattan

Wabaunsee County

State Highway Commission wayside park, near Wamego
State Highway Commission wayside park, near McFarland
State Highway Commission wayside park, near Maple Hill
Beecher Bible and Rifle Church Historic Site, Wabaunsee

5-07. Reservoir plan of operation. - Fluctuations in pool elevation will occasionally block access to the camping area located on the point at Richey Cove South as the land elevation of the roadway is only a few feet above normal summertime conservation pool elevation. Existing facilities, such as concrete picnic tables and individual picnic shelters, located below the flood control pool elevation, will sustain occasional flood damage. Future facilities sited below the same elevation can be expected to sustain similar damage.

5-16. Environmental and ecological features. - There are no environmental or ecological features that have affected the development of the existing public use facilities or will affect the construction of proposed facilities. In the development and management of the recreational resources associated with this project, every effort will be made to preserve the area in its natural state, insofar as is practicable.

VI - COORDINATION WITH OTHER AGENCIES

6-01. Federal agencies. -

a. U.S. Bureau of Sport Fisheries and Wildlife. - (Fish and Wildlife Service in 1959). This agency submitted in 1959 a report on fish and wildlife resources in relation to Council Grove Lake. The report was prepared in cooperation with the Kansas Forestry, Fish and Game Commission. A copy of this report is contained in Design Memorandum No. 3, General Design, submitted 1 July 1959. A subsequent letter dated 22 May 1962, from the Kansas Forestry, Fish and Game Commission requested that certain lands in the project area be made available for wildlife management.

b. U.S. Public Health Service. - The health and sanitation program for Council Grove Lake was developed in cooperation with the U.S. Public Health Service and the Kansas Department of Health and Environment. A report, "Evaluation Report on Vector Problems Related to the Proposed Corps of Engineers' Council Grove Reservoir, Morris County, Kansas," was submitted by letter dated 14 September 1959.

c. U.S. Forest Service. - In cooperation with the U.S. Forest Service, the Division of Extension, Extension Forestry, Kansas State University, is implementing a plan for the environmental improvement of project lands by establishing vegetation suitable for recreation use, wildlife habitat, and shoreline and soil stabilization. The objectives of the 5-year plan will be attained by mechanical aeration and fertilization of the soil, establishing sod-forming grasses, block plantings composed of various species of trees that are native to the region, individual plantings of balled and burlapped trees for accent, landscaping near selected structures and signs, and the use of barriers to control pedestrian and vehicular traffic. The Extension of Forestry of Kansas State University is responsible for the maintenance of all vegetation established through this program for a period of 5 years from the date of each planting.

d. U.S.D.A. Soil Conservation Service. - A unified Soil Conservation Plan was developed with the assistance of representatives of the Soil Conservation Districts serving the lake area and in cooperation with representatives of the agricultural agencies of the area. The plan contains provisions for erosion control, development of permanent vegetation, improved pasture management, and controlled grazing.

e. Other federal agencies. - Throughout the history of this project, continuing coordination has also been maintained with the Bureau of Outdoor Recreation, the Environmental Protection Agency, the Coast Guard Auxiliary, and the National Register of Historic Places.

6-02. State agencies. -

a. Kansas Forestry, Fish and Game Commission. - The Kansas Forestry, Fish and Game Commission presently has 2,638 acres of project land and water area under license for wildlife management purposes. The acreage is managed to offer a wide variety of food, cover, and breeding and nesting habitat for migratory waterfowl and upland game species. The Commission also has the responsibility for enforcement of the provisions of the Kansas State Boating Acting Act. Lake patrols enforce the State legislation, promote safety, and enforce zoning established by the Corps of Engineers.

b. Kansas Department of Health and Environment. - The development and use of the project land and water are planned for the public interest, and the utmost consideration is given to the maintenance of high standards of public health and safety. The health laws, rules, and regulations of the Kansas Department of Health and Environment are applicable to all facilities located on the project.

c. Kansas State Forester. - An Outdoor Recreational Forest and Vegetation Management Plan was prepared in 1969, by the State Forester in cooperation with the U.S. Forest Service. This plan is described in detail in subparagraph c, under paragraph 6-01.

d. Other State Agencies. - The Corps has cooperated fully with law enforcement officers of the state of Kansas, who are responsible for the enforcement of laws relative to civil actions, fish and game conservation, public health and sanitation, boating, and prevention of pollution. Coordination has also been maintained with the Kansas State Highway Commission and the State Historical Society.

VII - PHYSICAL PLAN OF DEVELOPMENT

7-01. Zoning of project lands and waters. - Drawing No. 93/9 shows the land and water use allocations for Council Grove Lake. The following classifications are utilized for land use allocations:

Land Use Classification		Area
Project Operations		215.89 acres
Operations:	Recreation - Intensive Use	2,357.81 acres
Operations:	Recreation - Low Density Use	181.32 acres
Operations:	Wildlife Management	3,220.14 acres
	Total Fee Acquisition	5,975.16 acres

a. Operations: Recreation - Intensive Use. - Lands acquired for project operations and allocated for use as developed public-use areas for intensive recreational activities by the visiting public, including areas for concession and quasi-public development. No agricultural uses are permitted on these lands except on an interim basis for terrain adaptable for maintenance of open space and/or scenic values.

b. Operations: Recreation - Low Density Use. - Lands acquired for project operations and allocated for low density recreation activities by the visiting public as required, as open space between intensive recreational developments or between an intensive recreational development and land which, by virtue of use, is incompatible with the recreational development and would detract from the quality of the public use. Such incompatible land may be located either on the project or adjacent to the project. Land required for ecological workshops and forums, hiking trails, primitive camping, or similar low density recreational use available for a significant role in shaping public understanding of the environment will be under this allocation. No agricultural uses are permitted on this land except on an interim basis for terrain adaptable for maintenance of open space and/or scenic values.

c. Operations: Wildlife Management. - These are lands and waters acquired for project operations and allocated as habitat for fish and wildlife or for propagation of such species. Such lands are continuously available for low-density recrational activities. At Council Grove Lake, these lands are licensed to the Kansas Forestry, Fish and Game Commission for wildlife management. At multipurpose pool level, wildlife management land comprises 2,120.98 acres; wildlife management waters, 1,099.16 acres.

d. Historical sites. - See paragraph 4-02. The William Young (Munkers Creek) Archeological Site is listed in the National Register of Historic Places. The site is located at the confluence of Short Creek and Munkers Creek.

e. Interim uses. - Full consideration is and will continue to be given to all appropriate interim uses, such as farming and grazing on undeveloped government lands.

7-02. Project structures site plan. - Drawing No. 93/6 shows the project structures in the administration area of Council Grove Lake. The existing project structures in the administration area are the following:

Combination administration and maintenance building.

Maintenance yards.

Covered overlook structure with an informational sign and a parking area.

Waterborne toilet facilities in a separate structure, but served from the same parking area as the overlook structure.

The spillway, shown on Drawing No. 93/6, and the gate tower, shown on Drawing No. 93/5, can be considered as project structures. These are described in detail in Paragraph 2-02d.

Future project structures in the administration area are also shown on Drawing No. 93/6. These include the addition of a visitor center wing onto the existing administration-maintenance building and an attendant parking area. The visitor center addition should provide information and displays of the natural, scientific, historical, archeological, and other resources of the Council Grove Lake area, in addition to providing information to direct visitors to public use sites and areas.

7.03. Summary of recreation areas. - See Drawing No. 93/2.

Recreation Area	Size (acres)	Location
Richey Cove (North)	33	East shore, north central
Richey Cove (South)	82	East shore, central
Dam Site	50	East shore, south
Outlet Area	58	Immediately below dam
Neosho Park	127	South shore, east
Canning Creek Cove	107	South shore, central
Total Area	457	

7.04. Additional land requirements. - See Drawing No. 93/9. It is recommended that additional land be acquired to provide public access to government lands on the north and west shores of the lake. The point of land between the two arms of the lake is a popular fishing area. Presently, the only convenient overland access to the area is over private property. The owner requires a fee from persons wishing to cross his property. Land to be acquired will include access roads rights-of-way with two small areas for convenience parking. Approximately 3.4 acres of land will be required to provide access to this area. The north shore area contains about 2.0 acres, while the west shore area contains 1.4 acres.

7.05. Richey Cove (North) Recreation Area. - Drawing No. 93/3. This recreation area located on the north side of Richey Cove on the Munkers Creek arm of the lake contains approximately 33 acres. The area is in rolling flint hills terrain and has sparse natural tree cover.

a. Existing development. - The existing development of the area provides facilities for boaters, fishermen, picnickers, and casual visitors. Sanitary facilities and a public water supply provide services for the area.

(1). Fee collection container. - This container is located near the entrance to the area on the access road to the area. The container provides access control to the Richey Cove (North) area.

(2). Boat ramp. - A boat ramp to serve the area is located on the south shore of the area facing Richey Cove.

(3). Picnic area. - The entire area is reserved for picnicking. No camping is allowed in the Richey Cove (North) area.

(4). Sanitary facilities. - Two masonry vault toilets and two wood vault toilets are provided to serve the area.

(5). Water supply. - A raw water intake and a water treatment plant are located in the Richey Cove (South) area with water supply lines extending to the Richey Cove (North) area. Four water supply points are provided adjacent to picnic facilities.

(6). Electrical system. - Electricity, supplied by a public utility company, is brought overhead to the masonry vault toilets and to an area light located adjacent to the boat ramp.

(7). Interior roads. - The network of roads constructed in this area consists of 0.9 miles of 16 foot wide roadway with bituminous surface and 0.1 miles of 12 foot wide gravel access road.

(8). Access road. - Access to the Richey Cove (North) area is directly from State Highway 177 which lies along the eastern boundary of the area.

b. Future development. - Future development will provide additional picnicking facilities. Additional water supplies are also provided to serve the area. The estimated cost of the additional development is shown by Table 15-2.

(1). Picnic areas. - It is intended that the Richey Cove (North) Recreation Area be exclusively for picnicking use. Additional picnic tables, fireplaces, and refuse containers are proposed.

(2). Water supply. - Additional water supplies are proposed to serve the existing and proposed picnic areas.

(3). Nature trail system. - A nature trail system is proposed with a point of beginning in the northern portion of the Richey Cove (North) Recreation Area and extending into the low density recreation area adjacent to the north boundary. An automobile access and parking area will be supplied at the point of beginning.

(4). Playground. - A playground is proposed in this area consisting of playground equipment of such a character that it will not compete with the environment of the area.

c. Summary tabulation. -

	Picnic Units	Vault Toilets	Waterborne Toilet	Water Supply	Boat Ramp
Existing development	13	8	0	4	1
Future development	12	-	0	3	-
Ultimate development	25	3	0	7	1

7.06. Richey Cove (South) Recreation Area. - Drawing No. 93/4. This recreation area, located on the east shore of the Munkers Creek Arm of the lake above the dam site area contains approximately 82 acres. The area is gently sloping with sparse natural tree cover.

a. Existing development. - The existing development of the area provides facilities for boaters, fishermen, picnickers, campers, and casual visitors. Sanitary facilities and a public water supply provide services for the area.

(1). Fee collection containers. - There are two fee collection containers in this area, one to serve the northern sector and one to serve the southern sector. These containers provide access control to the entire Richey Cove (South) area.

(2). Boat ramp. - Two boat ramps are located in the area, one serving the northern sector and one serving the southern sector.

(3). Picnic area. - No specific area is set aside for the exclusive use of picnicking, however, picnicking can take place at any user space.

(4). Camping area. - The entire area is utilized principally for camping and most user spaces are developed as such.

(5). Sanitary facilities. - Six wood vault toilets and two masonry vault toilets are provided to serve the area.

(6). Water supply. - A raw water intake and a water treatment plant are located in the northern sector with lines extending to 4 supply points in the northern sector and 3 supply points in the southern sector.

(7). Electrical system. - Electricity, supplied by a public utility company, is brought overhead to the water treatment plant and the masonry vault toilet in the northern sector and to the masonry vault toilet and an area light in the southern sector.

(8). Interior roads. - The network of roads constructed in this area consists of 1.0 miles of 16 foot wide bituminous surfaced roadway in the northern sector and 0.6 miles of 16 foot wide bituminous surfaced roadway in the southern sector. Also included are 0.2 miles of 12-foot wide circulatory road.

(9). Access road. - Access to both the northern and southern sectors of this recreation area is directly from State Highway 177 which borders the area on the east.

b. Future development. - Future development will provide additional facilities for campers. Additional sanitary facilities, water supplies and gravel circulatory roads are proposed to serve the area. The estimated cost of the additional development is shown by Table 15-3.

(1). Camping areas. - It is intended that the Richey Cove (South) Recreation Area be exclusively for camping use. Additional camping spaces with tables, fireplaces, and refuse containers are proposed.

(2). Sanitary facilities. - Waterborne toilets, with flush toilets and showers are proposed to serve the existing and proposed camping areas in the northern and southern sectors. Waste stabilization ponds are proposed to provide for sewage treatment.

(3). Water supply. - Additional water supplies will be provided to serve the existing and proposed camping areas and the proposed waterborne toilets.

(4). Electrical system. - A public utility company is presently supplying electrical power to the existing masonry vault toilets, and the water treatment plant. Future distribution from these points to proposed facilities will be underground.

(5). Interior roads. - 0.2 mile of gravel circulatory road is proposed to serve the future camping spaces in the northern and southern sectors.

(6). Playgrounds. Four playgrounds will be located in this area, consisting of playground equipment of such a character that it will not compete with the environment of the area.

c. Summary tabulation. -

	Camping Units	Vault Toilets	Waterborne Toilets	Water Supply	Boat Ramp
Existing development	45	5	0	7	2
Future development	30	-	2	15	-
Ultimate development	75	5	2	22	2

7.07. Dam Site Recreation Area. - Drawing No. 93/5. This recreation area, located adjacent to the left abutment of the dam, contains approximately 50 acres. The area is characterized by moderate to steep slopes with sparse tree cover.

a. Existing development. - The existing development of this area provides facilities for fishermen, picnickers, campers and casual visitors. Existing development in this area includes sanitary facilities, but does not include a water supply.

(1). Picnic area. - The primary use of the Dam Site Recreation Area is intended to be for picnicking, although two camp sites have been developed at a relatively remote site adjacent to the dam. Positive separation of picnicking and camping uses due to location is considered excellent.

(2). Camping area. - A small site containing two camping spaces has been developed in an isolated area adjacent to the dam.

(3). Sanitary facilities. - Two wood vault toilets and one masonry vault toilet are provided to serve the area.

(4). Water supply. - Existing development of this area does not include a water supply.

(5). Electrical system. - Existing development does not include any facilities requiring electrical power.

(6). Interior roads. - Existing roads in this area include 0.8 mile of 16 foot bituminous surfaced road and 0.3 mile of 12 foot gravel surface road.

(7). Access road. - Access to this area is directly from the left abutment access road.

b. Future development. - Future development will provide additional facilities for campers. Although the primary use of the area will be for picnicking, positive separation of the two uses is not considered to be a problem due to the physical aspects of distance of separation and terrain. The estimated cost of the additional development is shown by Table 15-4.

(1). Fee Collection Container. - A fee collection container is proposed near the entrance, providing control to the entire area.

(2). Picnic area. - It is intended that the primary use of the area be for picnicking. As development for this use is complete, no new facilities are proposed.

(3). Camping area. - Additional camping facilities with tables, fireplaces, and refuse containers are proposed.

(4). Electrical system. - Distribution of electrical power to the courtesy light near the existing masonry vault toilet will be underground from a metering point on overhead public utility company lines adjacent to the area.

(5). Interior roads. - No new road development will be required to serve existing or proposed facilities.

(6). Playgrounds. - Two playgrounds will be located in the area. A playground will consist of playground equipment of such a character that it will not compete with the environment of the area.

c. Summary Tabulation. -

	Camping Units	Picnic Units	Vault Toilets	Waterborne Toilet	Water Supply	Boat Ramp
Existing development	2	14	2	-	0	-
Future development	-	5	-	1	6	-
Ultimate development	0	19	2	1	6	-

7.08. Outlet Recreation Area. - Drawing No. 93/5. The Outlet Recreation Area, located directly below the dam, contains approximately 58 acres. The area is relatively flat and has a stand of mature river bottom timber along the lower river channel.

a. Existing development. - Facilities for fishermen and the casual visitor are provided in this area on the southwest bank of the outlet channel. Existing development on the northeast bank includes sanitary facilities, a parking lot and a gravel fishing access road. There is no water supply available on the northeast bank.

(1). Sanitary facilities. - Four wood vault toilets, two on either side of the outlet channel, serve the area.

(2). Electrical system. - Electricity, supplied by a public utility company, enters the Outlet Area from the administration area near the outlet structure.

(3). Interior roads. - The area is served by 0.7 mile of 16 foot bituminous surface road and 0.6 miles of 12 foot gravel road. The area is accessible from county roads running north from the City of Council Grove. In addition, access to the southwest bank is also from a county road adjoining the right abutment access road.

(4). Fishing platform. - Existing development includes a steel fishing platform attached to the southwest abutment of the downstream outlet tunnel. Access to the platform is by a foot path leading from the parking lot.

b. Future development. - Future development will include picnic facilities and water supplies on the southwest bank with camping spaces, sanitary facilities, water supplies, a nature trail system, and an all-terrain-vehicle scramble area on the northeast bank. The estimated cost is shown by Table 15-5.

(1). Camping area. - A new camping area is proposed about 0.2 mile east of the outlet channel. Proposed facilities include camp pads with tables, fireplaces, and refuse containers.

(2). Sanitary facilities. - A waterborne toilet, with flush toilets and showers is proposed to serve the proposed camping area. A waste stabilization pond will provide for sewage treatment.

(3). Water supply. - Additional water supplies will be provided to serve the additional picnic spaces in the portion of the area southwest of the outlet channel with new water supplies provided in the proposed camping area northeast of the outlet channel. The new water supplies could be provided by a water line from the Council Grove water treatment plant or from the Resident Office.

(4). Electrical system. - A public utility company is presently supplying electrical power to a point adjacent to the southwest bank of the outlet channel. Distribution from this point to the proposed waterborne toilet northeast of the outlet channel will be underground where possible.

(5). Interior roads. - A new bituminous surface 16 foot roadway is proposed to serve the new camping spaces. This roadway is 0.3 mile in length and will terminate with a cul-de-sac.

(6). Nature trail system. - A nature trail and fishing access system is proposed through the river bottom timber south of the proposed camping area. The trail will roughly parallel the course of the river with a point of beginning adjacent to the camping area.

(7). ATV scramble area. - An all-terrain-vehicle scramble area is proposed northeast of the proposed camping area. Facilities include a parking area, wood vault toilets, water supply and refuse containers. This use facility will occupy an old construction debris disposal area below the dam.

(8). Picnic facilities. - Picnic facilities will be provided in that portion of the Outlet Recreation Area south of the outlet channel. Included are tables with individual shelters, fireplaces and refuse containers.

(9). Playground. - One playground will be located in this area. A playground will consist of playground equipment of such a character that it will not compete with the environment of the area.

c. Summary tabulation. -

	Picnic Units	Camping Units	Vault Toilets	Waterborne Toilet	Water Supply
Existing development	0	0	2	0	1
Future development	8	6	2	1	9
Ultimate development	8	6	4	1	10

7-09. Neosho Park Recreation Area. - Drawing No. 93/6. This area, containing approximately 127 acres, is located on the right bank immediately upstream from the dam. The park is divided into four areas: Neosho Park I, II, III and IV. This classification was made to aid the public in identifying the areas and to simplify maintenance records. The upper portion of the area is relatively flat with gentle to steep slopes along the drainage courses.

a. Existing development. - The existing development of the area provides facilities for boaters, fishermen, picnickers, campers, and casual visitors. Sanitary facilities and two water supply wells provide services for the area.

(1). Fee collection containers. - A total of four fee collection containers are located near the entrances to the four separate areas included in this recreation area. These containers provide access control for the entire area.

(2). Boat ramps. - Three boat ramps, one at Neosho Park No. 1, one at Neosho Park No. III (marina), and one at Neosho Park No. IV, provide adequate launching facilities for the area.

(3). Picnic area. - Neosho Park No. II is reserved for the exclusive use of picnicking and other day-use activities.

(4). Camping area. - Neosho Park Nos. I, III and IV are used principally for camping and user spaces are developed as such.

(5). Sanitary facilities. - Three masonry vault toilets and six wood vault toilets are provided to serve the area.

(6). Water supply. - Water supply for this area consists of two water supply wells. No water is available in Neosho Parks Nos. II and IV.

(7). Electrical system. - Electricity, supplied by a public utility company, is brought overhead to the masonry vault toilet and the security light in the concession lease area of Neosho Park No. III.

(8). Interior roads. - Road construction in this area consists of 2.1 miles of 16 foot bituminous surface road and 0.4 mile of 12 foot gravel road.

(9). Access road. - Access to the four separate parts of the Neosho Park Recreation Area is provided directly from FAS 467, a bituminous surface county road paralleling the southern boundary of the area.

(10). Concession Area. - Drawing No. 93/7. A concession lease is centrally located within Neosho Park No. III. Concessions include a marina and marina store which provide goods and services for boaters, campers and other users.

b. Future development. - The future development will provide additional facilities for campers and the casual visitor. Additional water supplies and sanitary facilities are proposed. The estimated cost of the future development is shown by Table 15-6.

(1). Camping Area. - Additional camping facilities with tables, fireplaces, and refuse containers are proposed. The entire Neosho Park Recreation Area is intended to be used exclusively for camping.

(2). Sanitary facilities. - A waterborne toilet, with flush toilets and showers are proposed to serve the existing and future camping areas in this recreation area. A waste stabilization pond will be constructed to provide for sewage treatment.

(3). Water supply. - A raw water intake and water treatment plant is proposed to provide water supplies to the camping areas.

(4). Electrical system. - A public utility company is presently supplying electrical power to an existing masonry vault toilet and to the concession facility. Electrical power is also being supplied to the overlook area. A power transmission line parallels FAS 467. Future distribution across FAS 467 will be overhead. Further electrical distribution to proposed facilities will be underground.

(5). Interior roads. - No additional bituminous surfaced roads will be required. A total of 0.6 mile of 12-foot gravel surface road will be required to serve existing and future camping facilities.

(6). Playgrounds and playfields. - Four playgrounds and two playfields will be located in this recreation area. A playground will consist of playground equipment of such a character that it will not compete with the environment of the area. A playfield is a relatively large, mowed, open area of sufficient size to accommodate such group sports as softball, soccer, touch football, or any impromptu field game.

c. Summary tabulation. -

	Camping Units	Vault Toilets	Waterborne Toilets	Water Supply	Boat Ramps
Existing development	27	6	0	2*	3
Future development	60	1	1	32	0
Ultimate development	87	6**	1	32	3

*Two existing wells will be sealed following construction of the proposed water supply facilities.

**One pair of wood vault toilets will be eliminated following construction of the proposed waterborne toilet.

7-10. Canning Creek Cove Recreation Area. - Drawing No. 93/8. This recreation area, located on the southwest shore of the Canning Creek and Neosho River arms of the lake, contains about 107 acres. The area is mostly flat with some gentle slopes along the flanks of the drainage courses.

a. Existing development. - The existing development provides facilities for boaters, fishermen, swimmers, picnickers, campers, and the casual visitor. Sanitary facilities and a potable water supply are provided in the area.

(1). Fee collection container. - One fee collection container, located at the junction of the access road and FAS 467, provides full access control for the entire area.

(2). Boat ramps. - Two boat ramps, one at either end of the area, provides launching convenience for boaters.

(3). Picnic area. - No specific area is set aside, presently, for the exclusive use of picnicking.

(4). Camping area. - The entire area is utilized principally for camping, and user spaces developed as such.

(5). Sanitary facilities. - Three masonry vault toilets and six wood vault toilets provide sanitary facilities for the area. A newly constructed waste stabilization pond and a trailer sanitary dump station also serve the area.

(6). Water supply. - Water supply for this area consists of a raw water intake, a water treatment plant, distribution system, and 10 water fountain-hydrant combinations.

(7). Electrical system. - Electrical power, supplied by a public utility company, is brought overhead to the water treatment plants, the masonry vault toilets, and to the boat ramp security lights.

(8). Interior roads. - Existing interior roads in this recreation area consist of 2.3 miles of 16 foot bituminous surfaced roads and 0.5 mile of 12 foot gravel surface roads.

(9). Access road. - Access to the area is provided by 0.9 mile of 16 foot bituminous surface road from FAS 467.

(10). Swimming beach. - A swimming beach is located near the center of the area.

b. Future development. - The future development will provide additional facilities for campers and the casual visitor. Additional sanitary facilities and water supplies are proposed. The estimated cost of the future development is shown by Table 15-7.

(1). Picnic area. - No separate user spaces have been developed exclusively for picnicking.

(2). Camping area. - Additional camping facilities with tables, fireplaces, and refuse containers are proposed. The entire Canning Creek Cove Recreation Area is intended to be used exclusively for camping.

(3). Sanitary facilities. - A waterborne toilet, with flush toilets and showers, is proposed to serve the existing and future camping areas. Sewage will be treated in the existing waste stabilization pond.

(4). Water supply. - A raw water intake and a water treatment plant are presently located in the area. Ten additional water supply points are provided adjacent to future camping facilities.

(5). Electrical system. - A public utility company is presently supplying electricity to the water treatment plant, the masonry vault toilets, and the boat ramp security lights, by way of an overhead transmission line. Future electrical distribution will be underground.

(6). Interior roads. - No additional bituminous surfaced roads will be required, however, a total of 0.4 mile of 12 foot gravel surface road will be required to serve existing and future camping facilities.

(7) Playgrounds and playfields. - Four playgrounds and one playfield will be located in this area. A playground will consist of playground equipment of such a character that it will not compete with the environment of the area. A playfield is a relatively large, mowed, open area of sufficient size to accommodate such group sports as softball, soccer, touch football, or any impromptu field game.

c. Summary tabulation. -

	Camping Units	Vault Toilets	Waterborne Toilets	Water Supply	Boat Ramps
Existing development	40	6	0	15	2
Future development	24	0	1	7	0
Ultimate development	64	6	1	22	2

7-11. Schedule of development. - Future development will be dependent upon the availability of funds and the willingness of a non-federal entity to share in the cost of construction and maintenance of any new or expanded recreation areas.

7-12. Cost estimates. - Tables 15-1 through 15-7 show estimates of future development costs for the individual recreation areas based on 1975 prices. For all future recreational development at Council Grove Lake, the cost estimates total to $951,000.

5-08. Relocations. - Road and cemetery relocations were not factors in the design of the public-use areas. Relocations for construction of the lake involved county roads, a state highway, telephone and electric lines, and municipal water supply facilities for the city of Council Grove. These relocations have had no adverse affect to the quality of the lake environment or to development of public-use recreation areas.

5-09. Borrow and spoil areas. - All borrow and spoil areas were located below the conservation pool, except the channel excavation immediately below the outlet works and the spillway excavation adjacent to the right abutment of the dam. Any borrow areas required to construct the proposed facilities will be located outside of the public use areas. All topsoil shall be salvaged, replaced and the areas turfed so they will be returned to their natural state as soon as possible.

5-10. Water quality. - The water quality of Council Grove Lake is discussed in paragraph 4-05. In general, the water quality of the lake is considered good for a potable public water supply, requiring only standard or routine clarification and treatment.

5-11. State sanitation zone. - The Kansas State Board of Health administers a sanitation zone around Council Grove Lake. This zone, as well as sanitation zones for other federal reservoirs in the State of Kansas, was established by State Statute effective January 1, 1970. State Statutes also provide sanitation zone regulations within the zone.

These regulations fix minimim standards for water supply, sewage disposal and refuse disposal facilities to be provided upon certain lots and tracts of land within sanitation zones, establish procedures to be followed by owners in preparing and submitting the required sanitation plans; establish procedures for hearing of appeals by aggrieved property owners from decisions of lake sanitation officers; prescribe the records and reports to be kept by lake sanitation officers, and establish the criteria to be used in granting hardship exceptions.

These regulations shall not apply to lots located in subdivisions platted and approved by the board of county commissioners prior to August 1, 1965, that are used as building sites for single family residences; to public lands owned by the state or federal government; to land within the corporate limits of any city; to lots containing more than three acres, exclusive of streets and roads, that are used as building sites for single family dwellings; to land used solely for agricultural purposes; or to land subject to regulation by legally adopted county sanitation codes that provide for the control of subsurface disposal of sewage; on-lot water wells and the storage, collection and disposal of refuse.

5-12. Adaptability of outlet works and other project structures for public use. - The outlet area containing the stilling basin and outlet channel below the dam is an important and heavily used public-use area at Council Grove Lake. Other project structures available for public use are the overlook shelter and access roads.

5-13. Pre-project exploitation of mineral and timber resources. - Virtually all the marketable timber had been cleared from the conservation pool area prior to the acquisition of the land for the project. Some minimal quarrying operations had been carried on prior to project development. Oil and gas, though produced within the general region, were apparently not produced within the present limits of the project.

5-14. Anticipated attendance and demand for specific types of facilities. - The percentage of different types of activities for the Tulsa District, taken from Technical Report No. 2, Plan Formulation and Evaluation Studies - Recreation: Estimating Initial Recreation Use, Sacramento District, dated October 1969, is shown in Table 5-1.

TABLE 5-1

RECREATION USE SUMMARY

Activity	Council Grove Estimate (percent)	Tulsa District Surveys (percent)
Vehicle w/boat trailer	11	11
Vehicle w/house trailer	2	2
Fishing	28	37
Picnicking	10	13
Camping	7	10
Swimming	9	16
Water skiing	9	4
Pleasure boating	3	4
Sightseeing	35	35
Hiking and nature trails	-	-[a]

[a] No estimates are available for the number of people that have used the existing hiking trails in the Tulsa District. It is anticipated that the largest percentage of people using these facilities would come from those engaged in other activities such as picnicking and camping.

5-15. Application of public law 89-72. - All major future recreational development will be subject to cost sharing by a nonfederal entity under the provisions of Public Law 89-72, except where development is needed to meet urgent sanitation needs. A limited amount of development to upgrade existing recreational areas to a level where user fees will offset O&M costs may be provided in some instances.

VIII - FACILITY LOAD AND OTHER DESIGN CRITERIA

8-01. Siting. - The general siting criteria developed for this project was used as a guide in planning the additional public use facilities. Under certain exceptional conditions, some variance from these criteria was found to be appropriate.

Structures which may be constructed at the conservation pool (1274.0) or above are as follows:

Boat ramps
Swimming beaches

At the five year excedence (1284.0) or above, the following structures may be located:

Roads
Parking areas and turnarounds
Picnic shelters
Picnic units
Camping units
Playfields
Playgrounds
Nature trails

Facilities that may be located at the ten year excedence (1289.0) or above are:

Water supply
Vault toilets

Structures and facilities that are large and/or possess the potential of polluting the environment must be constructed at elevations which are not frequently inundated. These structures are:

Waterborne toilets
Water treatment plants

Stabilization or sewage oxidation ponds may not be constructed at any point within the flood pool.

The above criteria pertain only to those areas which adjoin the lake; these do not apply to the Outlet Recreation Area since it is not generally affected by the fluctuations of the levels of the lake.

Generally, the character of each site, the existing facilities, and the natural features were appraised. Only the most adaptable terrain and soils were used for the siting of the additional facilities. Additional structure sites were selected after consideration of the above factors and pertinent elevations.

8-02. Water system. -

a. Richey Cove (North and South) Recreation Area. - The recently constructed raw water intake and water treatment plant will serve the existing and future water supply requirements of the area.

b. Outlet Recreation Area. - The water supply to the picnic area located on the south side of the outlet channel will serve existing and future water supply requirements for this area. Future water supply for the area located north of the outlet channel will be provided from the Council Grove water treatment plant or from the Resident Office.

c. Neosho Park Recreation Area. - A raw water intake and water treatment plant will supply water for the existing and future development in this area.

d. Canning Creek Cove Recreation Area. - The recently constructed raw water intake and water treatment plant will serve the existing and future water supply requirements of the area.

8-03. Sewage system. - Sewage from vault toilets will be processed into waste stabilization ponds on the project. A service contract is issued to a private contractor for the pumping and cleaning of these toilets. The sanitary facilities in the waterborne toilet units will be directed into waste stabilization ponds.

8-04. Roads. - With the exception of the Outlet Area located north of the outlet channel, the existing bituminous interior roads will serve both existing and future development. In the Outlet Area, where it is recommended the existing gravel road receive bituminous surfacing; 0.3 mile of new 16-foot bituminous surface road will be constructed. Inasmuch as the existing gravel surface road has a 16-foot top, the bituminous surface applied thereto will be 16 feet in width. A total of 1.2 miles of gravel 12-foot minor access roads are necessitated by the development of new camp sites.

8-05. Parking areas. - Parking for 12 vehicles will be provided at one picnic area in Richey Cove (North) Recreation Area and at all waterborne toilet sites on the project. Parking areas for 12 vehicles each have been provided to serve playgrounds at four locations in the Canning Creek Cove Area and three locations in the Neosho Park Area. The materials used in the construction and maintenance of the projects asphalt roads are equally applicable to the parking areas adjoining these roads. The treatment of the subbase of the parking area is the same as the adjoining roadway.

8-06. Boat ramps. - According to the facilities required to support anticipated attendance, as outlined in Section II of this report, an optimum number of 14 boat ramps should be required at Council Grove Lake to serve the maximum future visitation. At the present time, there are eight boat ramps serving the public use areas, as follows:

Richey Cove (North and South)	3
Dam Site	0
Outlet Area	0
Neosho Park	3
Canning Creek Cove	2
	8

A boat ramp located in the Outlet Area cannot be considered as serving any purpose. The terrain of the Dam Site Area does not lend itself to the construction of boat ramps. Construction of additional boat ramps in the remaining areas would be redundant. Therefore, the construction of additional boat ramps will not be proposed.

8-07. Dock, piers, and mooring facilities. - Courtesy docks are proposed at all boat ramps except in the concession area.

8-08. Picnic units. - A typical picnic unit includes a table, a pedestal fireplace, and one refuse container for every two sites. Individual picnic shelters will be provided for each picnic unit in the picnic area located south of the outlet channel in the Outlet Recreation Area.

8-09. Camping units. - A typical camping unit will include a pull-out space, a picnic table, a pedestal fireplace and a refuse container. Units are to be adjusted to fit the terrain and cause a minimum amount of disturbance to forest and other vegetative cover.

8-10. Swimming beaches. - No additional swimming beaches are proposed for future development. The existing swimming areas should be outlined with buoys "International Orange" in color, with a cable passing through each buoy and with the cable also supported by flotation material, and in accordance with recommendations of the American Red Cross. The buoys should be visible to a swimmer at a distance of not less than 100 feet. Additionally, a minimum of two warning buoys to boaters per area, or warning buoys spaced at 200-foot intervals, whichever results in the greater number, should be provided. Warning buoys should be parallel to and 300 feet (desirable), 100 feet (minimum) beyond the buoyed safety area.

8-11. Sanitary facilities. - Additional sanitary facilities will be provided in the individual recreation areas, as follows:

Richey Cove (South) - 2 waterborne toilets
Outlet Area - 1 masonry vault toilet and 2 pairs wood vault toilets
Neosho Park - 1 waterborne toilet
Canning Creek Cove - 1 waterborne toilet

Waterborne toilets will be equipped with hot water, shower fixtures, lavatories, and toilet fixtures for both sides (men-women).

8-12. Overlook structure. - The overlook structure, with a parking area, for Council Grove Lake was constructed with other project administration structures. A waterborne toilet facility and a water supply are located in the immediate area of the overlook structure. The overlook complex is located on the right abutment access road.

8-13. Playgrounds and playfields. - Playgrounds will be associated with the various recreation areas. Playfields will also be located in the various recreation areas. These are to be open fields, maintained in a mowed condition, to be used for active field sports such as softball, football, etc.

8-14. Bridges, storm drainage structures other than for roads, etc. - No such structures will be required to serve the planned future development at Council Grove Lake.

8-15. Electrical distribution and security lighting. - Electrical powerlines will be placed underground wherever practical, except where to do so would do extensive damage to the natural setting of the area. Security lighting will be provided at all boat ramps, toilet facilities, and other areas where security is considered necessary.

8-16. Trails. - Nature trails are recommended in the low-density recreation area immediately north of Richey Cove (North) and in the Outlet Recreation Area. Trails are to be established in the field, graded and stabilized where necessary.

8-17. Site improvement. - Grading of future improvements will be held to a minimum in order that as much natural cover as possible will be preserved, however, sufficient grading will be accomplished to properly drain surface water away from the facilities. Future facilities will be placed to take advantage of existing trees and shrubs. The trees and shrubs to be added for shade or forestation will be in accordance with the Forestry and Vegetation Management Plan developed by the Kansas State Forester. Where natural features such as weathered rock out-croppings or scenic views exist, they will be preserved inasmuch as is possible.

8-18. Signs. - All future traffic control signs will be selected and placed as directed in the "Manual on Uniform Traffic Control for Streets and Highways." Future designation and information signs will be selected and placed as directed in the SWD Sign Manual.

8-19. Interpretive devices. - Interpretive and educational devices will be used in the proposed visitor center, and along the nature trails as needed.

8-20. Navigation aids. - Navigation aids will include buoys placed near swimming beaches, boat ramps, the concession area, and the spillway structure. These will be placed to restrict boats from some areas or to control boating activities within a designated area.

8-21. Waste disposal. - Refuse containers with closers, such as those used at the present time, will be placed as shown on the drawings. Each future camping and picnic unit will be provided a refuse container. Refuse collection is performed as necessary by a private contractor.

8-22. Visitor safety controls and convenience features.- Included in visitor safety controls and convenience features are the following:

Structural facilities for the convenience of the handicapped and elderly.
In lieu of steps, ramps will be used.
Hand safety rails.
Fencing around waste stabilization ponds and outlet work.
Grading of roads and picnic and camp units.
Siting and grading of other facilities.
Signing and reflector coatings.
Small boats navigation aids.
Swimming beach protective buoys.

Such controls and convenience features will be utilized in future development.

8-23. Facilities for the elderly. - Recreational facilities for the elderly, such as shuffleboard and horseshoe pits, have not been included as part of the future development. If the need for these facilities develops, they will be included in future Master Plan updating.

IX - SPECIAL PROBLEMS

9-01. Natural resources. - Although normal conservation measures must be practiced in order to preserve the natural resources of the Council Grove Lake area, no special conservation practices are anticipated. The existing natural resources will be interpreted through the establishment of nature trails and the establishment of a visitor center.

The Morris County Conservation District has planted grasses and other plant materials at various locations on the project. These materials originated at the Soil Conservation Service Plant Materials Center at Manhattan, Kansas. They were furnished on an experimental basis in order to determine the types of plant materials best adapted for erosion control, wildlife food and cover, and beautification.

9-02. Fish and wildlife resources. - Fish and wildlife conservation and management on the Council Grove Lake project area are conducted by the Kansas Forestry, Fish and Game Commission. Commission management areas are shown on Drawing No. 93/9, Land Use Allocations, as operations wildlife management. Public use, in the form of hunting and fishing, in all areas in the Council Grove Lake project area, will require a state hunting or fishing license. Seasons and bag limits are determined by the Commission.

9-03. Historical and archeological resources. - Historical and archeological sites are discussed in Section IV of this plan. Of the seventeen known archeological sites, five are inundated, seven are in the flood control pool and five are above the flood control pool. One site, located on Munkers Creek is listed in the National Register or Historic Places due to a distinctive Middle Archaic occupation which represents a heretofore unknown cultural group now designated as the Munkers Creek Phase. Studies are underway for the preservation of this site. Other sites have been tested and their artifacts recorded. There are no other historic sites on government property which are listed in the National Register. The town of Council Grove, Kansas, south of the dam site, contains many historical points of interest. With the development of thyproposed visitor center, presentation and interpretation of historical and archeological resources in and around the Council Grove Lake region for the public will be enhanced.

9-04. Fee system and collection. - All recreation areas at Council Grove Lake have been designed for the collection of user fees with controlled, limited access, and fee collection stations. Fees will be charged in these areas depending on the improvements. Current policy will determine the implementation of the fee program.

X - PROJECT RESOURCE MANAGEMENT

10-01. Operational concepts and policies. - The land and water use allocations, discussed in paragraph 7-01, is to insure the best operation and management of the project which is compatible with the use and conservation of its resources. The project will be operated with this concept as the major objective. During subsequent re-evaluations of project operation and management, and further updating of this Master Plan, this concept will govern the planning process. The project will be managed so that local labor under contract will be used whenever possible to accomplish the more routine operations, such as refuse collection and sewage collection and disposal.

10-02. Staffing and organization. - A park manager, appointed by the District Engineer and under the supervision of the Resident Engineer at John Redmond Lake, is responsible for all operation and maintenance of the project. The following will be considered a minimum staff required to manage the project efficiently when future development is accomplished:

Title	No.
Park manager	1
Chief, construction and maintenance	1
Construction and maintenance laborers	2
Chief park ranger	1
Park ranger	1
General laborers	3

The number of personnel required to perform operational and maintenance functions could vary with seasons and operational conditions.

10-03. Administration and maintenance. - Maintenance facilities and equipment for the project are located at the storage and shop area at the present administration and maintenance building. The shop is designed for the inspection and maintenance of all vehicles and equipment used in the maintenance and operation of the project. The project office is located in the administration and maintenance building. An addition to this building will become a visitor center for the public interpretation of the project's resources.

10-04. Law enforcement. - Park rangers can issue citations to persons violating the provisions contained in Sections 234 of the Flood Control Act of 1970 (Public Law 91-611) and policy established in ER 190-2-4. The citation directs the appearance of the violator before a U.S. Magistrate and may require the payment of a fine. The enforcement of civil and criminal law is the responsibility of law enforcement

officials of Federal, State and local governmental agencies. The Kansas Forestry, Fish and Game Commission will enforce the fish, wildlife, and boating laws applicable to the project. Close coordination is maintained between the park manager and these law enforcement officials, and advance plans are made with them for a joint plan of action to control pollution, vandalism, and visitor harassment, and to enforce boating regulations and fish and wildlife laws.

10-05. Safety. - The safety of the general public is considered a pertinent responsibility of personnel engaged in park management. All employees of the government in park management will be trained in the pprinciples of first aid, especially in resuscitation, and fire fighting.

10-06. Concession activities. - Commercial boat docks, general store and boat storage building, facilities for rental boats and motors, and related improvements and services are established in the concession area, as shown on Drawing No. 93/7. The concession lease is awarded to the offeror who proposed to provide the most satisfactory facilities and services determined necessary for the project, and who is deterimined to be the most financially qualified to provide the facilities.

10-07. Visitor interpretation and education. - Visitor interpretation and education will be centered on the purposes of the project, how it works, and interesting aspects of some of the natural and historical features of the area. Such interpretive and educational means will include the provision of a visitor center addition to the administration building, marked nature trails, a sign program, and printed educational materials.

XI - FOREST MANAGEMENT

11-01. Forest and vegetation management plan. - An outdoor recreational forest and vegetation management plan was approved in April, 1969, for Council Grove Lake by the Corps of Engineers for the public use areas. The management plan is designed to be used as a guide for the establishment and maintenance of plants for outdoor recreational uses on Council Grove Lake.

The plan was prepared by the Kansas State Forester, Kansas State University, for implementation by his own forces, under contract with the United States Department of Agriculture, Forest Service, Region Two, for the United States Army Corps of Engineers, Tulsa District.

11-02. Scope of the plan. - The plan describes the characteristics of the various types of vegetation found around the lake. The recreational value of various species of plants and particular problems that may occur in their management is discussed in detail.

Wildlife management principles are described in the plan. Native wildlife species and plants that provide food are discussed.

The predominant soil types found in the area are described in the plan. Emphasis is placed on those characteristics which influence the selection of the plants to be planted.

A climatic study is included in the management plan. It also covers management principles involved in establishing and maintaining trees, shrubs and grasses for multiple use benefits.

Vegetation management prescriptions are presented for all public use areas. The work to be accomplished by the Kansas State Forester is presented in individual project work plans. The individual plans include specific recommendations and estimated costs of the materials to be planted and the necessary cultural practices to be followed.

XII - FIRE PROTECTION

12-01. Cooperative agreements. - Although no written or formal agreements exist, every effort is made to prevent grass and woodland fires on government lands and to cooperate with local organizations and ranchers to control fires which may start on project lands or on lands adjacent to the project. Government regulations require the leasee not burn a leased area, and they agree to suppress any fires that may be started.

12-02. Training. - A training program for field personnel has been established. This program covers methods of fire prevention, safety, characteristics and behavior, methods of attack, use of hand tools, and use of power equipment. The park manager, with the assistance of qualified personnel, is responsible for all training.

12-03. Equipment. - Each Corps vehicle carries fire tools at all times, with additional tools available at the project maintenance building. Power, and other equipment, specifically, designed for fire suppression is stored at the project maintenance building area. All tools and equipment are checked and serviced at regular intervals to insure serviceability.

12-04. Suppression and prevention. - A public information program has been implemented to aid in the detection and reporting of fire. Use of bulletins, signs, and other means gains the support of the general public, and provides information on how and where to report fires. The park manager is responsible for the organization of firefighting crews, assuring every employee has a specific duty during a fire. All leases and contracts for use of project lands contain fire prevention and suppression clauses.

XIII - FISH AND WILDLIFE MANAGEMENT

13-01. Management responsibility. - Fish and wildlife management at Council Grove Lake is the principal responsibility of the Kansas Forestry, Fish and Game Commission. Also, involved in fish and wildlife management is the U.S. Bureau of Sport Fisheries and Wildlife. The same agencies have participated in planning studies research, and the formulation of a management plan for the fish and wildlife resources at the lake. The function of the Corps on matters pertaining to fish and wildlife management has been principally that of cooperation with the agencies charged with management of these resources.

13-02. Management lands. - The land and water areas shown on Drawing No. 93/9 and marked as Operations: Wildlife Management, have been licensed to the Kansas Forestry, Fish and Game Commission. These lands and water comprise approximately 3,220.14 acres.

XIV - PROJECT SAFETY

14-01. General policy. - Project safety is the responsibility of the park manager, and encompasses two elements: the visiting public and the project employees. As part of this responsibility, the park manager is required to identify common recurring hazards or unsafe conditions in each major construction phase or area of their operations. Such areas will include construction, maintenance, public use areas, visitor protection, and equipment operations. Once hazardous situations have been identified, the park manager will indicate the precautionary actions to be taken to prevent, reduce, or control such hazards. These actions will be coordinated with the District, and will become an item of interest on safety surveys and inspections.

TABLE 15-1

SUMMARY OF ESTIMATED COSTS

FUTURE PUBLIC-USE DEVELOPMENT
(Based on January 1975 prices)

Cost Acct. No.	Item	Unit	Unit Cost	Quantity	Cost
014	RECREATION FACILITIES				
	Interior roads, etc.				
	Bituminous surface parking areas	S.Y.	$ 5	5,632	$ 26,810
	Gravel surface parking areas	S.Y.	3	667	2,000
	16' bituminous surface road	Mile	75,000	0.3	22,500
	16' gravel surface road	Mile	40,000	1.2	48,000
	Gravel turnarounds	S.Y.	3	220	660
	Water system				
	Raw water intake	Each	5,000	1	5,000
	Water treatment plant	Each	25,000	1	25,000
	Fountain-hydrant combination	Each	400	66	26,400
	Distribution system	L.F.	3	18,680	56,040
	Electrical system				
	U.G. distribution system	L.F.	1.25	10,116	12,645
	Courtesy lights	Each	200	12	2,400
	Sanitary system				
	Waterborne toilets	M-W pair	25,000	4	100,000
	Masonry vault toilets	M-W pair	20,000	2	40,000
	Wood vault toilets	M-W pair	4,000	1	4,000
	Change house	M-W pair	4,000	1	4,000
	Gravity sewer lines	L.F.	4	1,360	5,440
	Force mains	L.F.	5	2,600	13,000
	Lift stations	Each	5,000	1	5,000
	Stabilization ponds	Each	23,000	3	69,000
	Trailer dump stations	Each	3,000	4	12,000

Cost Acct. No.	Item	Unit	Unit Cost	Quantity	Cost
	Recreation facilities				
	Camper spaces	Each	350	122	$ 42,700
	Picnic tables, concrete	Each	350	142	49,700
	Refuse containers	Each	120	133	15,960
	Pedestal fireplaces	Each	110	136	14,960
	Nature trails	L.F.	0.50	11,000	5,550
	Playgrounds	Each	5,000	9	45,000
	Playfields	Each	1,000	3	3,000
	Individual picnic shelters	Each	3,800	6	22,800
	Subtotal				$679,565
	Contingencies, 12%+				80,935
	TOTAL, RECREATION FACILITIES				$760,500
030	ENGINEERING AND DESIGN				114,300
031	SUPERVISION AND ADMINISTRATION				76,200
	TOTAL COST				$951,000

TABLE 15-2
RICHEY COVE (NORTH) RECREATION AREA
FUTURE DEVELOPMENT
COST ESTIMATES

	Unit	Unit Cost*	Quantity	Cost*
Interior roads, etc.				
Bituminous surface parking areas	S.Y.	$ 5	1,167	$ 5,835
Water system				
Fountain - hydrant comb.	Each	400	3	1,200
Distribution system	L.F.	3	280	840
Recreational facilities				
Picnic tables, concrete	Each	350	12	4,200
Refuse containers	Each	120	8	960
Pedestal fireplaces	Each	110	12	1,320
Nature trails	L.F.	0.50	8,600	4,300
Playgrounds	Each	5,000	1	5,000
Subtotal				$23,655
Contingencies, 12%±				2,845
TOTAL				$26,500

*Based on January 1975 prices.

TABLE 15-3
RICHEY COVE (SOUTH) RECREATION AREA
FUTURE DEVELOPMENT
COST ESTIMATES

	Unit	Unit Cost*	Quantity	Cost
Interior roads, etc.				
16' gravel surface road	Mile	$40,000	0.2	$ 8,000
Bituminous surface parking areas	S.Y.	5	1,361	6,805
Water system				
Fountain-hydrant comb.	Each	400	15	6,000
Distribution system	L.F.	3	2,320	6,960
Electrical system				
U.G. distribution system	L.F.	1.25	1,000	1,250
Courtesy lights	Each	200	3	600
Sanitary system				
Waterborne toilets	Each	25,000	2	50,000
Gravity sewer lines	L.F.	4	300	1,200
Trailer dump stations	Each	3,000	2	6,000
Stabilization ponds	Each	23,000	2	46,000
Recreational facilities				
Camper space	Each	350	30	10,500
Picnic tables, concrete	Each	350	30	10,500
Refuse containers	Each	120	30	3,600
Pedestal fireplaces	Each	110	30	3,300
Playgrounds	Each	5,000	3	15,000
Subtotal				$175,715
Contingencies, 12%+				21,285
TOTAL				$197,000

*Based on January 1975 prices.

TABLE 15-4
DAM SITE RECREATION AREA
FUTURE DEVELOPMENT
COST ESTIMATES

	Unit	Unit Cost*	Quantity	Cost*
Electrical system				
U.G. distribution system	L.F.	$ 1.25	1,360	$ 1,700
Courtesy lights	Each	200	1	200
Recreation facilities				
Picnic tables, concrete	Each	350	3	1,050
Refuse containers	Each	120	4	480
Pedestal fireplaces	Each	110	4	440
Playgrounds	Each	5,000	1	5,000
Subtotal				$ 8,870
Contingencies, 12%+				1,130
TOTAL				$10,000

*Based on January 1975 prices.

TABLE 15-5
OUTLET RECREATION AREA
FUTURE DEVELOPMENT
COST ESTIMATES

	Unit	Unit Cost*	Quantity	Cost
Interior roads, etc.				
16' bituminous surface road	Mile	$75,000	0.3	$22,500
Bituminous surface parking areas	S.Y.	5	889	4,445
Water system				
Fountain-hydrant combination	Each	400	9	3,600
Distribution system	L.F.	3	4,320	12,960
Electrical system				
U.G. distribution system	L.F.	1.25	2,020	2,525
Courtesy lights	Each	200	2	400
Sanitary system				
Masonry vault toilets	M-W Pair	20,000	1	20,000
Trailer Dump Stations	Each	3,000	1	3,000
Wood vault toilets	M-W Pair	4,000	1	4,000
Recreation facilities				
Camper space	Each	350	8	2,800
Picnic tables, concrete	Each	350	14	4,900
Refuse containers	Each	120	14	1,680
Pedestal fireplaces	Each	110	14	1,540
Nature trails	L.F.	0.50	2,500	1,250
Individual picnic shelters	Each	3,800	6	22,800
Subtotal				$108,400
Contingencies, 12%+				12,600
TOTAL				$121,000

*Based on January 1975 prices.

TABLE 15-6
NEOSHO PARK RECREATION AREA
FUTURE DEVELOPMENT
COST ESTIMATES

	Unit	Unit Cost*	Quantity	Cost*
Interior roads, etc.				
16' gravel surface road	Mile	$40,000	0.7	$28,000
Bituminous surface parking areas	S.Y.	5	1,278	6,390
Gravel turnarounds	S.Y.	3	220	660
Water system				
Raw water intake	Each	5,000	1	5,000
Water treatment plant	Each	25,000	1	25,000
Fountain-hydrant combination	Each	400	32	12,800
Distribution system	L.F.	3	10,780	32,340
Electrical system				
U.G. distribution system	L.F.	1.25	5,096	6,370
Courtesy lights	Each	200	4	800
Sanitary system				
Waterborne toilets	Each	25,000	1	25,000
Masonry vault toilets	M-W Pair	20,000	1	20,000
Gravity sewer lines	L.F.	4	840	3,360
Trailer dump stations	Each	3,000	1	3,000
Stabilization ponds	Each	23,000	1	23,000
Recreation facilities				
Camper space	Each	350	60	21,000
Picnic tables, concrete	Each	350	59	20,650
Refuse containers	Each	120	53	6,360
Pedestal fireplaces	Each	110	52	5,720
Playfields	Each	1,000	2	2,000
Playgrounds	Each	5,000	2	10,000
Subtotal				$257,450
Contingencies, 12%±				30,550
TOTAL				$288,000

*Based on January 1975 prices.

TABLE 15-7
CANNING CREEK COVE RECREATION AREA
FUTURE DEVELOPMENT
COST ESTIMATES

	Unit	Unit Cost*	Quantity	Cost*
Interior roads, etc.				
16' gravel surface road	Mile	$40,000	0.3	$12,000
Bituminous surface parking areas	S.Y.	5	667	3,335
Gravel surface parking areas	S.Y.	3	667	2,000
Water system				
Fountain-hydrant combination	Each	400	7	2,800
Distribution system	L.F.	3	980	2,940
Electrical system				
U.G. distribution system	L.F.	1.25	640	800
Courtesy lights	Each	200	2	400
Sanitary system				
Waterborne toilets	Each	25,000	1	25,000
Lift stations	Each	5,000	1	5,000
Force main	L.F.	5	2,600	13,000
Gravity sewer lines	L.F.	4	220	880
Change houses	M-W Pair	4,000	1	4,000
Recreation facilities				
Camper space	Each	350	24	8,400
Picnic tables, concrete	Each	350	24	8,400
Refuse containers	Each	120	24	2,880
Pedestal fireplaces	Each	110	24	2,640
Playfields	Each	1,000	1	1,000
Playgrounds	Each	5,000	2	10,000
Subtotal				$105,475
Contingencies, 12%+				12,525
TOTAL				$118,000

*Based on January 1975 prices.

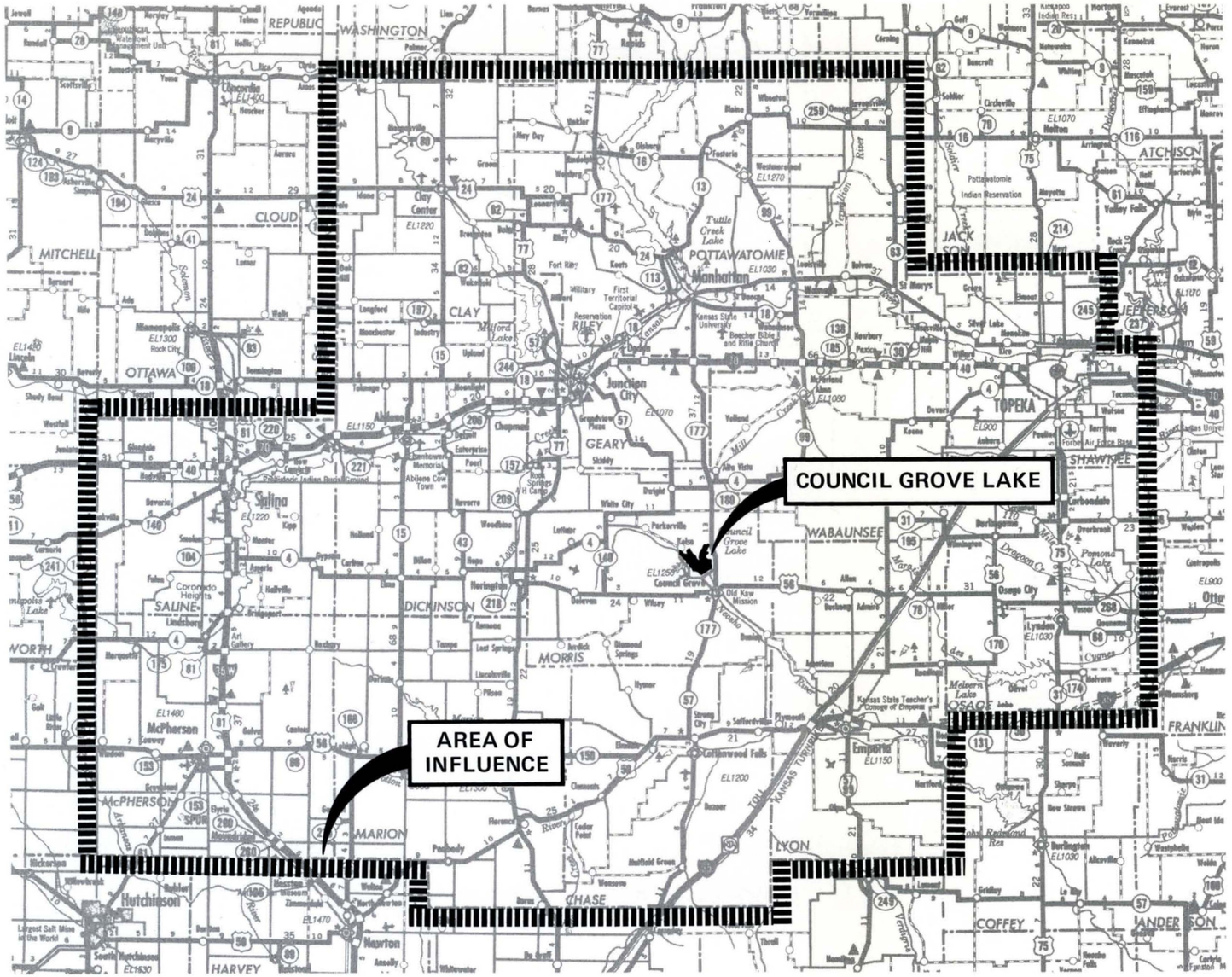
XVI - CONCLUSIONS

16-01. Conclusions. - The plan of ultimate development, as presented herein, prescribes for full utilization to the best advantage of government owned lands suitable for public use. The wildlife areas will preserve and help insure the continuous existence of wildlife in this area. The plan is flexible to allow for development as needed, and for future additions and adjustments.

XVII - RECOMMENDATIONS

17-01. Recommendations. - I recommend the updated Master Plan for Council Grove Lake, Grand (Neosho) River, Kansas, be approved as presented herein.

Anthony A. Smith
Colonel, CE
District Engineer



DRAWING INDEX

TITLE	DRAWING NO.
Project Location and Area of Influence	CB590-2B-93/1
Council Grove Lake Area	CB590-2B-93/2
Richey Cove (North) Recreation Area	CB590-2B-93/3
Richey Cove (South) Recreation Area	CB590-2B-93/4
Dam Site and Outlet Recreation Areas	CB590-2B-93/5
Neosho Park Recreation Area	CB590-2B-93/6
Neosho Park Concession Area	CB590-2B-93/7
Canning Creek Cove Recreation Area	CB590-2B-93/8
Land Use Allocations	CB590-2B-93/9

SIGNATURES AFFIXED BELOW INDICATE OFFICIAL RECOMMENDATION AND APPROVAL OF ALL DRAWINGS IN THIS SET AS INDEXED ON THIS SHEET

RECOMMENDED: CHIEF, PLANNING BRANCH

APPROVAL RECOMMENDED: CHIEF, ENGINEERING DIVISION

CORPS OF ENGINEERS CONTRACTING OFFICER

WILSON & COMPANY
ARCHITECTS - ENGINEERS
SALINA, KANSAS

U.S. ARMY ENGINEER DISTRICT, TULSA
CORPS OF ENGINEERS
TULSA, OKLAHOMA

DESIGNED BY: R.B.R.

DRAWN BY: D.E.V.

CHECKED BY: R.B.R.

GRAND (NEOSHO) RIVER, KANSAS

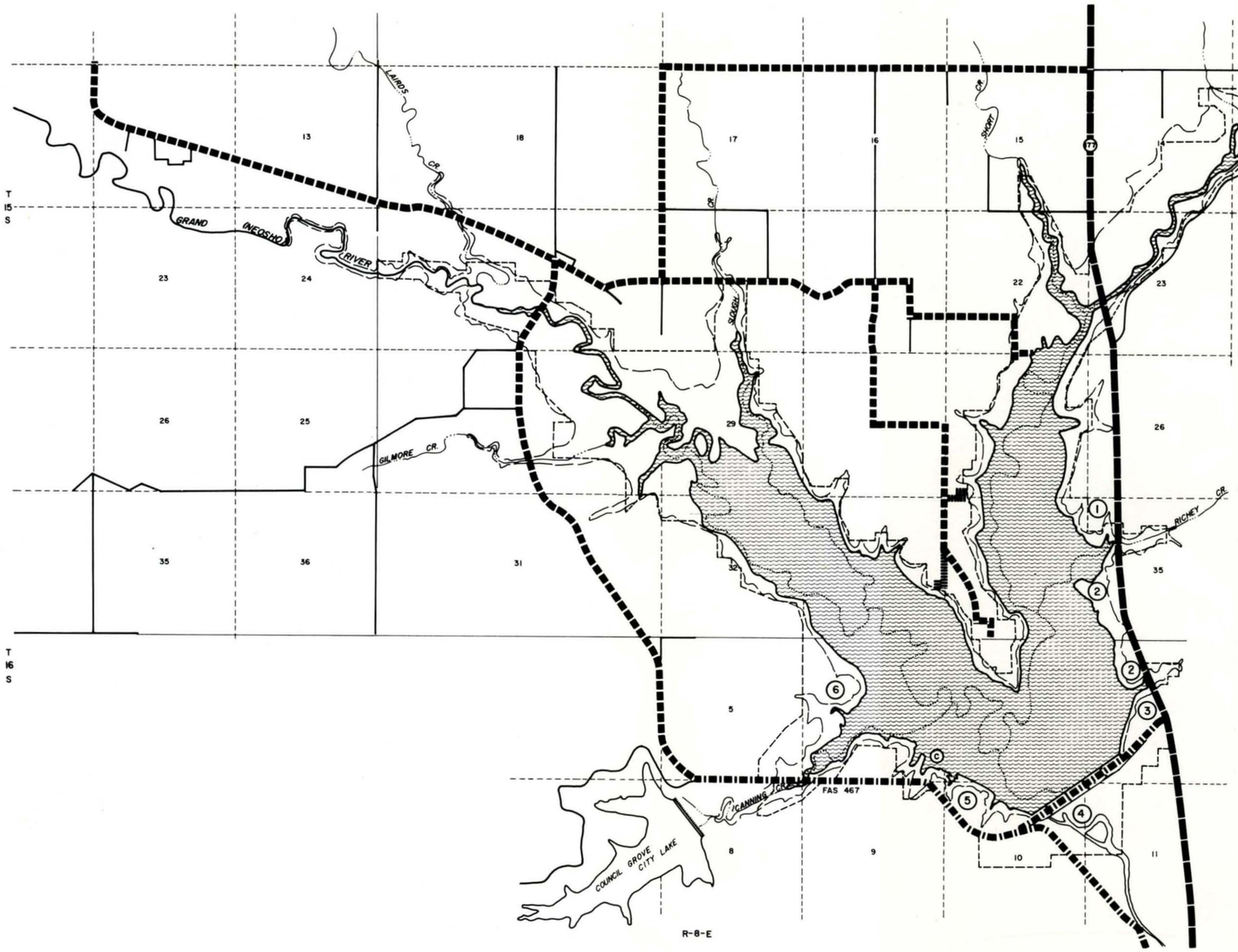
COUNCIL GROVE LAKE

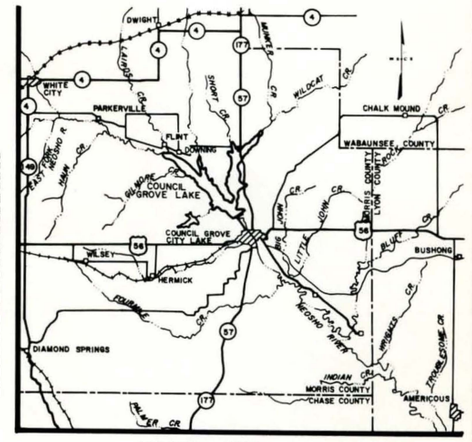
Project Location and Area of Influence

SUBMITTED: PLANNING SECTION

DATE: JULY 1975

DRAWING NO: CB590-2B-93/1





W-E-N-C-E

0 2000 4000 6000 8000
SCALE IN FEET

LEGEND

RESERVOIR DATA

CONSERVATION POOL EL. 1274.0'

FLOOD-CONTROL POOL EL. 1289.0'

5,340 ACRES AT FLOOD-CONTROL POOL
3,280 ACRES AT CONSERVATION POOL
37 MILES OF SHORE LINE AT EL. 1270.0 (APPROX.)

FEDERAL AND STATE HIGHWAYS
MAJOR CIRCULATION AND ACCESS ROADS, PAVED
MAJOR CIRCULATION AND ACCESS ROADS, GRAVEL
ADDITIONAL ACCESS ACQUISITION

PUBLIC USE AREAS

NO.	NAME
1.	RICHEY COVE (NORTH)
2.	RICHEY COVE (SOUTH)
3.	DAM SITE AREA
4.	OUTLET AREA
5.	NEOSHO PARK (C)
6.	CANNING CREEK COVE

NOTE:
(C) CONCESSION FACILITIES AVAILABLE.

LEGEND: SEE DRAWING NO. CB 590-2B-93/3

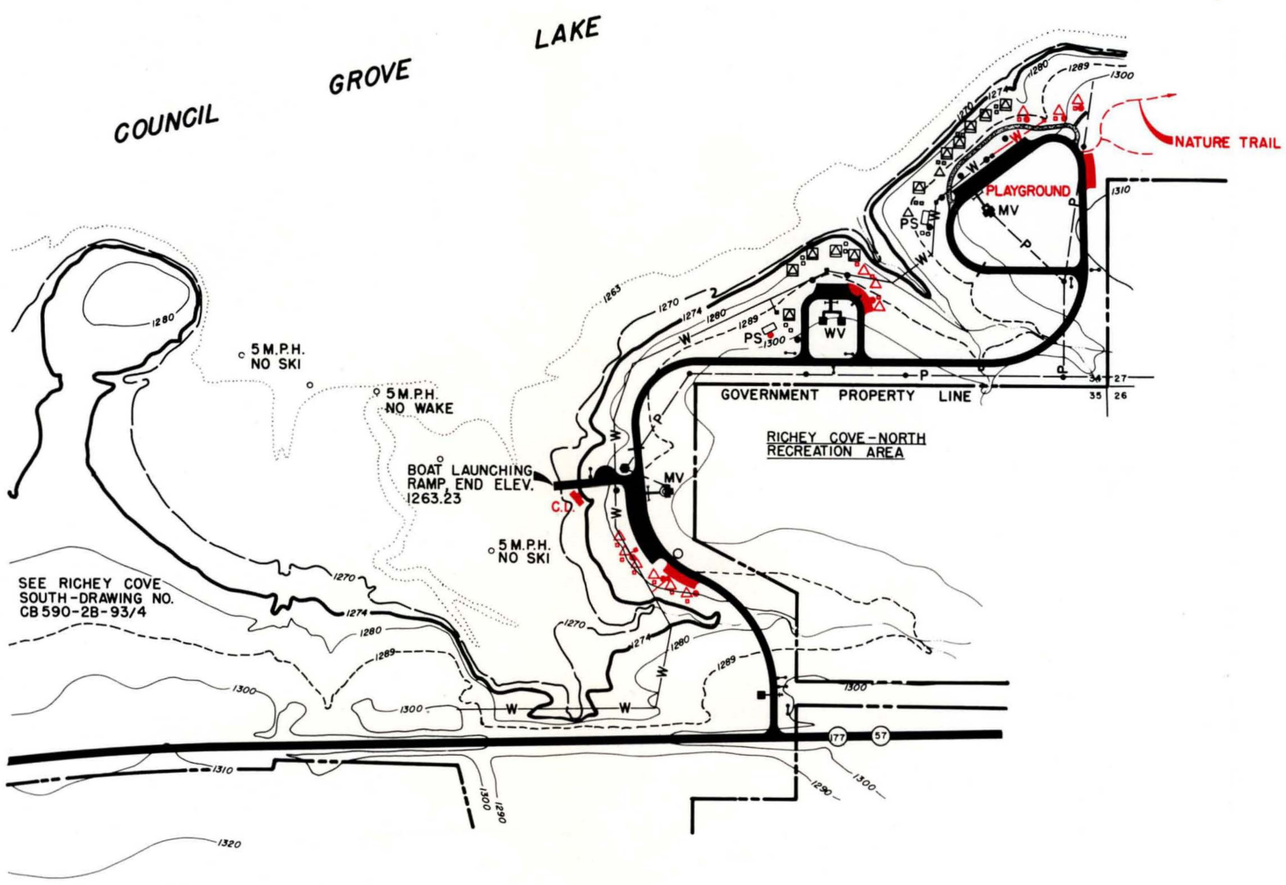
ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE AREA

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1975

CB590-2B-93/2



LEGEND

	EXISTING	FUTURE
ROADS		
PAVED		
GRAVEL		
WATER SYSTEM		
WATER SUPPLY	•	•
WATER LINE	W	W
WELL (HAND PUMP)		
WELL WITH SHELTER (HAND PUMP)		(U.G. TANK)
WATER STAND PIPE		
POWER		
OVERHEAD POWER	P	
UNDERGROUND POWER		P
COURTESY LIGHT	●	●
SANITARY FACILITIES		
WOOD VAULT TOILET	WV	WV
MASONRY VAULT TOILET	MV	MV
WATER-BORNE TOILET	WBT	WBT
WATER TREATMENT PLANT	WTP	WTP
SEWAGE DUMP STATION		
WASTE STABILIZATION POND		
SEWER LINE	S	S
FORCE MAIN W/LIFT STATION	LS FM	LS FM
PICNIC TABLE	△	△
PICNIC TABLE WITH SHELTER		
GROUP PICNIC SHELTER	PS	PS
TABLE WITH CAMP PAD	▲	▲
TABLE WITH SHELTER AND CAMP PAD		
FIREPLACE		
REFUSE CONTAINER	●	●
SIGN		
TRAFFIC COUNTER		
FEE COLLECTION POINT	○	○
BUOY OR FLOATING MARKER	5M.P.H.	5M.P.H.
BOAT RAMP PAVED OR CONCRETE RAMP AND PARKING		
BOAT RAMP PAVED OR CONCRETE RAMP GRAVEL PARKING		
AMPHITHEATER		
SWIMMING BEACH		
FOOD SERVICE TABLE	◇	◇
COURTESY DOCK		C.D.

LEGEND SEE DRAWING NO. CB 590-2B-93/3

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

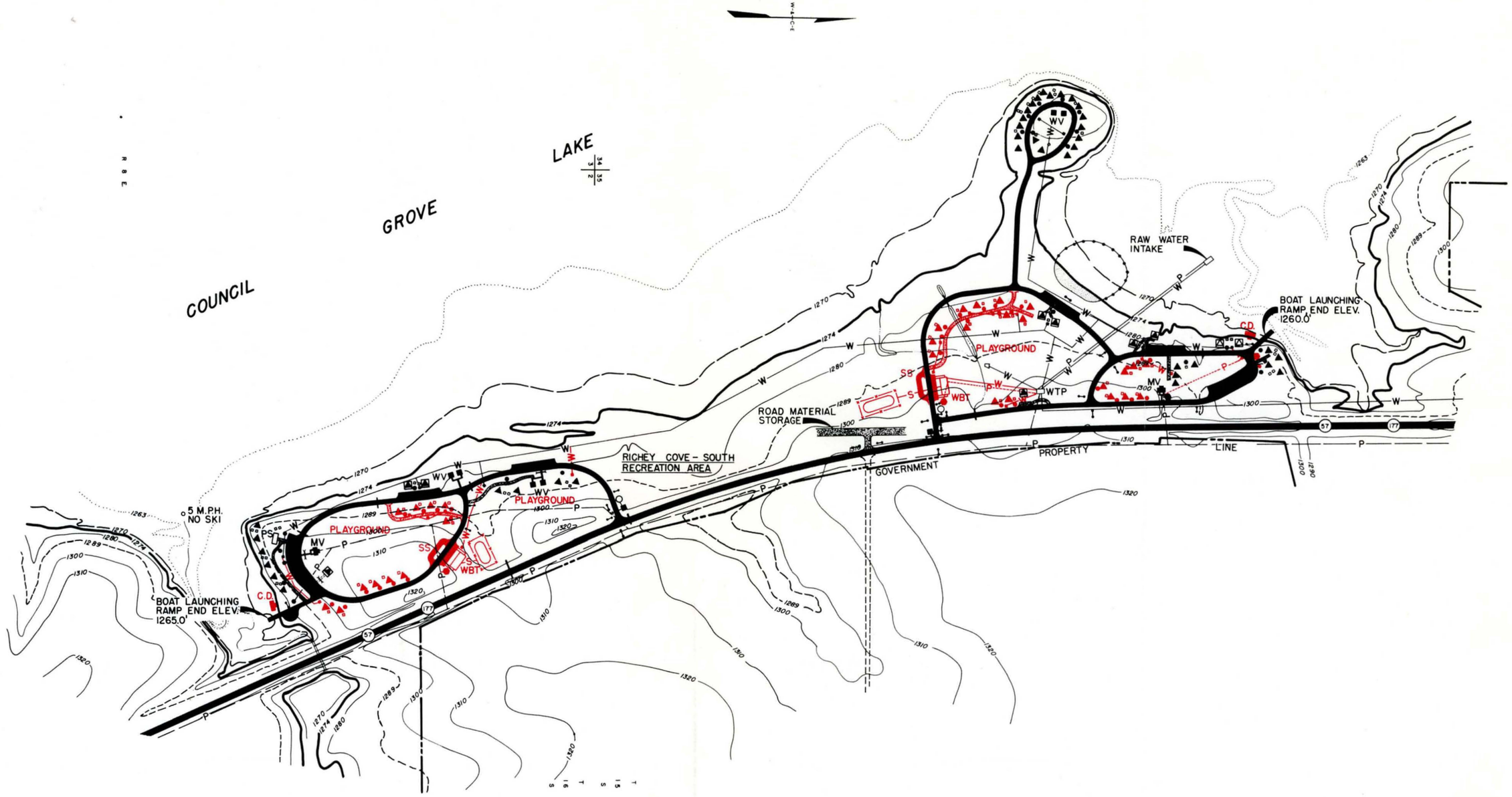
RICHEY COVE-NORTH-RECREATION AREA

SCALE OF FEET

200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1975

CB590-2B-93/3



LEGEND: SEE DRAWING NO. CB 590-2B-93/3

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

RICHEY COVE-SOUTH-RECREATION AREA

SCALE OF FEET

200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1975

CB590-2B-93/4

COUNCIL GROVE LAKE

PLAYGROUND

DAM SITE RECREATION AREA

PLAYFIELD

CONVERT EXISTING CAMPING TO PICNICKING SITES

TOP OF DAM ELEVATION 1321.0'

TO COUNCIL GROVE 1.5 MILES

GATE TOWER

ATV AREA

OUTLET RECREATION AREA

NATURE TRAIL

WALK TO FISHING PLATFORM

ACCESS ROAD

OUTLET CHANNEL

PICNIC AREA

FLOW

GRAND (NEOSHO) RIVER

GOVERNMENT PROPERTY LINE

T 16 S

LEGEND: SEE DRAWING NO. CB 590-28-93/3

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE

GRAND (NEOSHO) RIVER, KANSAS

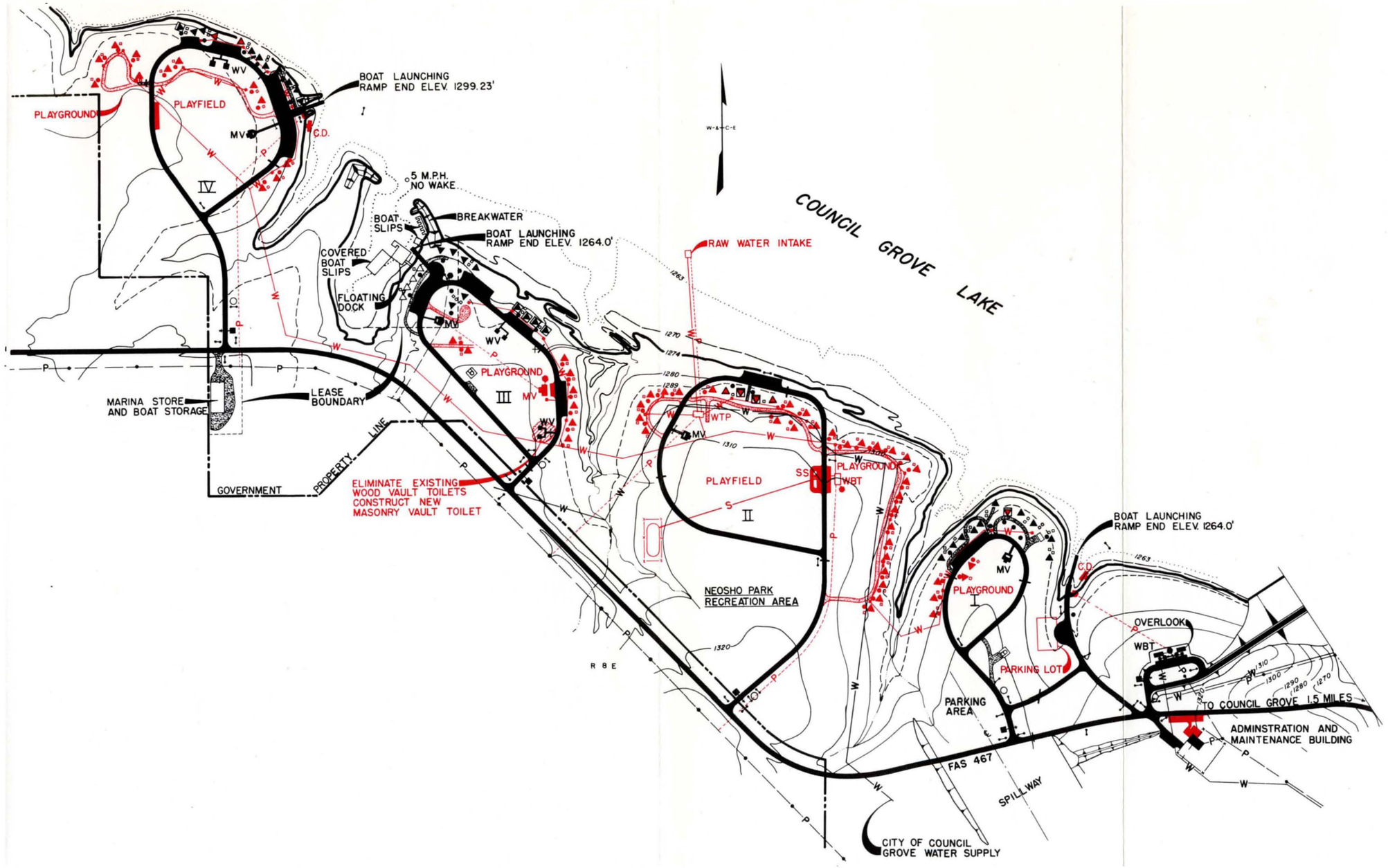
OUTLET AND DAM SITE RECREATION AREAS

SCALE OF FEET

200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1975

CB590-28-93/5



LEGEND: SEE DRAWING NO. CB 590-2B-93/3

ARKANSAS RIVER WATERSHED

GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE

GRAND (NEOSHO) RIVER, KANSAS

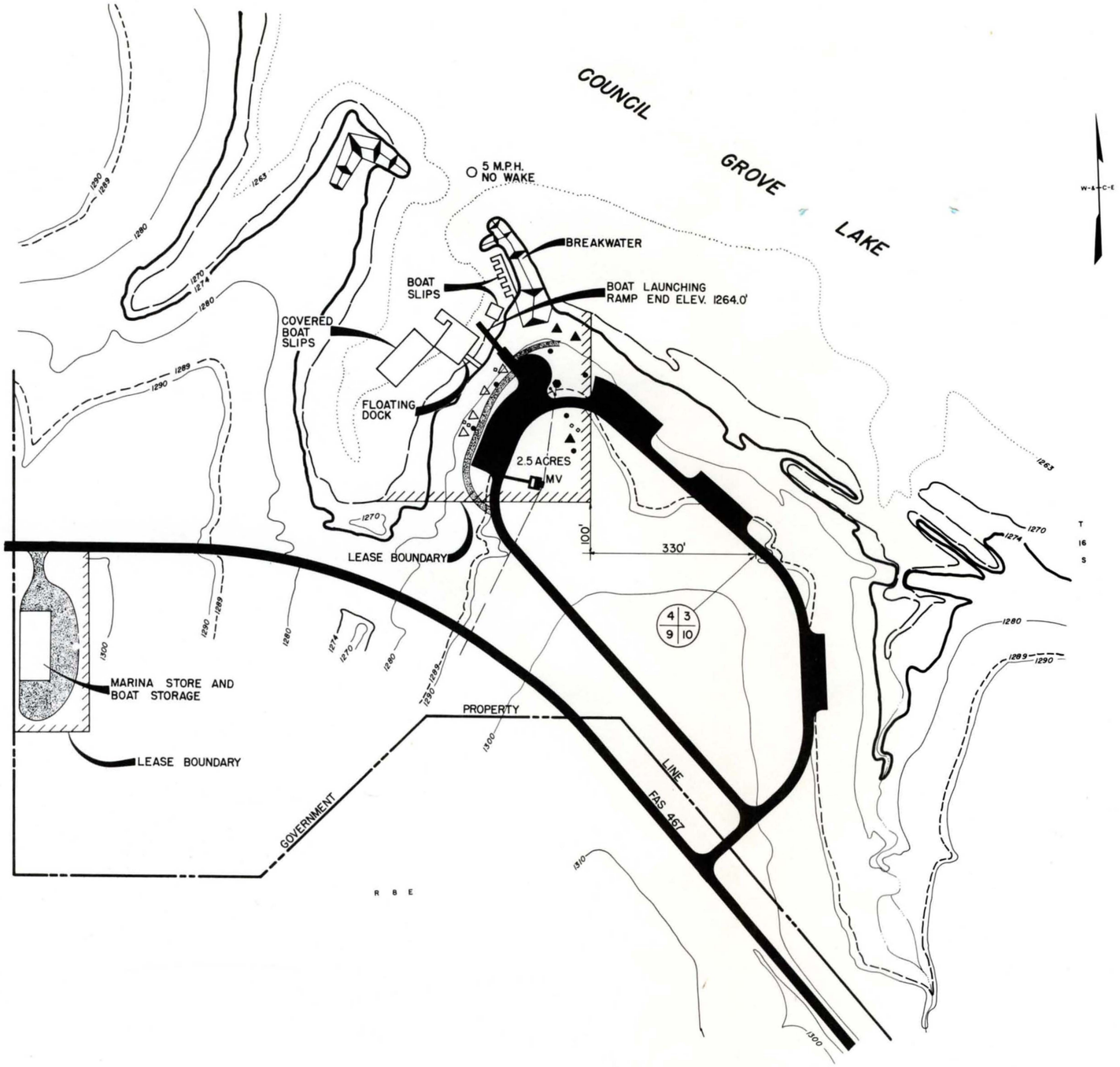
NEOSHO PARK RECREATION AREA

SCALE OF FEET

200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1975

CB590-2B-93/6



LEGEND: SEE DRAWING NO. CB 590-2B-93/3

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

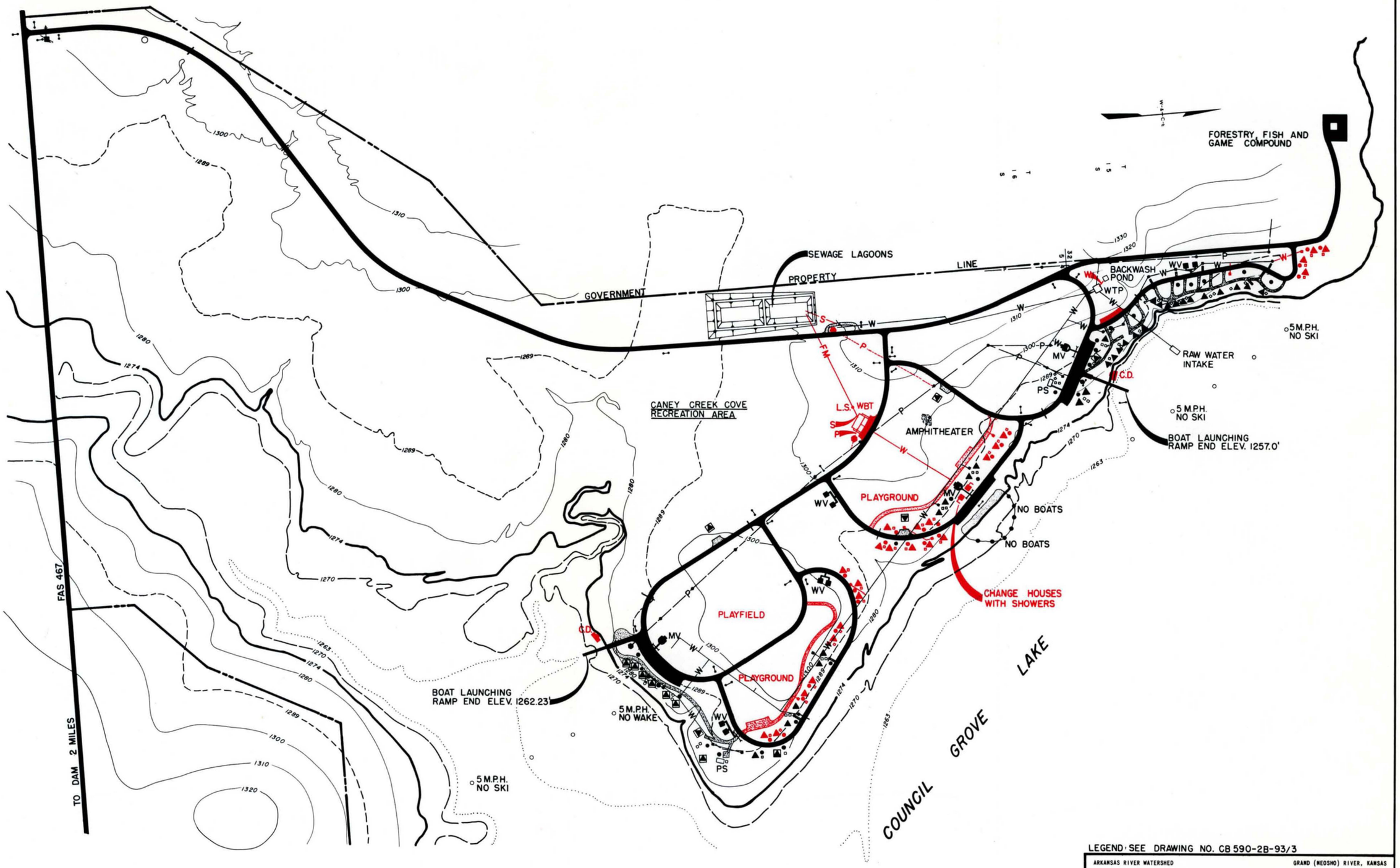
NEOSHO PARK CONCESSION AREA

SCALE OF FEET

100 0 100 200

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1975

CB590-2B-93/7



LEGEND: SEE DRAWING NO. CB 590-2B-93/3

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

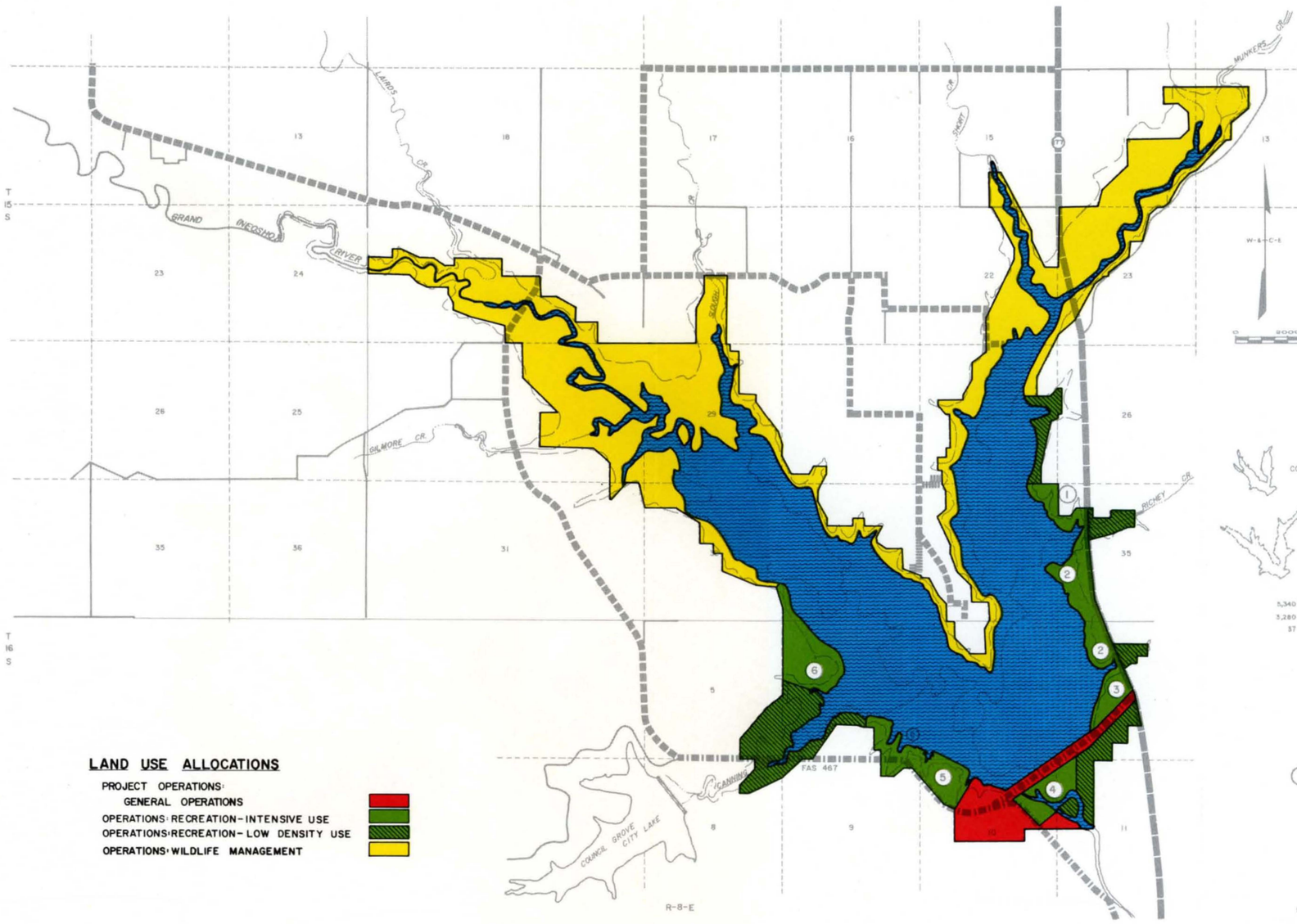
CANNING CREEK COVE RECREATION AREA

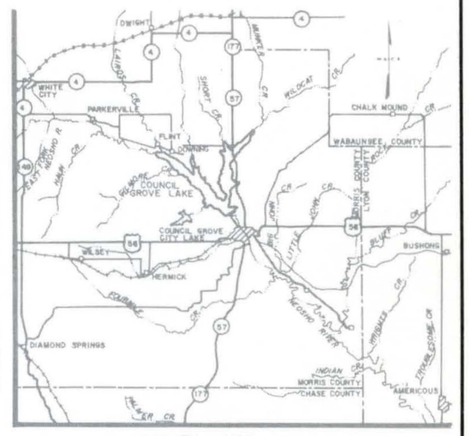
SCALE OF FEET

200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1975

CB590-2B-93/8





VICINITY MAP

0 2000 4000 8000 12000
SCALE IN FEET

LAND USE ALLOCATIONS

PROJECT OPERATIONS:
GENERAL OPERATIONS
OPERATIONS: RECREATION - INTENSIVE USE
OPERATIONS: RECREATION - LOW DENSITY USE
OPERATIONS: WILDLIFE MANAGEMENT

LEGEND

RESERVOIR DATA

CONSERVATION POOL EL. 1274.0'

FLOOD-CONTROL POOL EL. 1289.0'

5,340 ACRES AT FLOOD-CONTROL POOL
3,280 ACRES AT CONSERVATION POOL
57 MILES OF SHORE LINE AT EL. 1270.0 (APPROX.)

FEDERAL AND STATE HIGHWAYS
MAJOR CIRCULATION AND ACCESS ROADS, PAVED
MAJOR CIRCULATION AND ACCESS ROADS, GRAVEL
ADDITIONAL ACCESS ACQUISITION

PUBLIC USE AREAS

NO.	NAME
1.	RICHEY COVE (NORTH)
2.	RICHEY COVE (SOUTH)
3.	DAM SITE AREA
4.	OUTLET AREA
5.	NEOSHO PARK (C)
6.	CANNING CREEK COVE

NOTE:
(C) CONCESSION FACILITIES AVAILABLE.

LEGEND: SEE DRAWING NO. CB 590-2B-93/3

ARKANSAS RIVER WATERSHED — GRAND (NEOSHO) RIVER, KANSAS

COUNCIL GROVE LAKE
GRAND (NEOSHO) RIVER, KANSAS

LAND USE ALLOCATIONS

[redacted]

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1975

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