

RECLAMATION

Managing Water in the West

Inventory of Reclamation Water Surface Storage Studies with Hydropower Components

**Report to Congress Implementing Provisions of
Section 1840 of the Energy Policy Act of 2005
(Public Law 109-58)**



Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Inventory of Reclamation Water Surface Storage Studies with Hydropower Components

Report to Congress Implementing Provisions of Section 1840 of the Energy Policy Act of 2005 (Public Law 109-58)

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Introduction

This report complies with Section 1840 of the Energy Policy Act of 2005¹ requiring the Secretary of the Interior, acting through the Bureau of Reclamation, to develop a report “identifying and describing the status of potential hydropower facilities included in water surface storage studies undertaken by the Secretary for projects that have not been completed or authorized for construction” since 1939.

The report contains no recommendations. However, it does serve as a useful reference tool for understanding the magnitude and scope of historical study activities in specific locations.

Issues, assumptions, and methodology

Reclamation surveyed a significant number of reports for this inventory, many of which included studies of or references to one or more projects. From these reviews, about 500 projects were identified as including hydropower as one of the purposes. These projects “have not been completed or authorized for construction.”

Most of the inventory relates to providing historic data from the reports. However, portions of Section 1840 legislation require updated or current information. This includes Section 1840 (b) (3) (G) on costs and timelines to complete studies (i.e. feasibility reports) and Sections 1840 (b) (4) and 1840 (b) (5) which relate to identification of potential hydroelectric facilities and benefits and costs. This information was not developed because such activities would require project sponsor and stakeholder participation. Sponsors and stakeholders would be directly involved with scoping of any studies and cost sharing of study costs. Also, given the age of many studies, pre-feasibility work would be required to assess the rationale for more detailed feasibility level efforts. These activities could not be accomplished in the 90-day time frame.

¹ Public Law 109-58, Energy Policy Act of 2005. Enacted August 8, 2005. Section 1840 requires a report within 90 days of enactment.

The inventory includes information on factors that may impact construction. The information is provided from the standpoint of what was known at the time of the study, per Section 1840 (b) (3) (I) and what is currently known today (see last column of the inventory, “Current Assessment”). The “Current Assessment” is based on what is readily or commonly known about a project area today. No exhaustive effort was made to develop current information for each study, but in some cases, issues could be easily identified from general knowledge about project areas. The issues that are presented in the "current assessment" are not intended as an argument in support of or against study reinitiation. Table 1 provides a list of categories that were used to characterize issues in the “Current Assessment.”

Table 1: Categories used for current assessment

Category	General explanation
Unknown	No ability to provide information on study because it is not readily available
Water supply issues	This statement was used if the original project was dependent on a water supply that is no longer considered available for development. Factors that could impact water supplies that were the basis of previous studies include: (a) large population growths and current use of water for other purposes; (b) ESA issues may require Reclamation, states, and water districts to commit water supplies to meet new environmental requirements; (c) controversies over water issues have made any new water development impractical; and (d) updated hydrology data raise questions about the availability of water for new developments.
Water management issues	Development of projects with hydropower may not be possible if current system operations preclude generation of power as originally considered.
Preempted by other water resources developments	Includes full or partial development of lands, dams, canals, diversion structures that make further studies of the original project impractical.
Economic issues	Includes projects where key elements of a project may have difficulty meeting tests of economic viability.
Financial issues	Includes projects where potential project sponsors may not be able to repay project obligations.
Environmental issues	Current information indicates ESA or other environmental issues (e.g., Clean Water Act, Comprehensive Environmental Response, Compensation, and Liability Act) may be a significant factor in a project study area.
Cultural and historical resources issues	Current information may indicate that cultural and historic issues may be a significant factor in a project study area.
Legal and institutional issues	Certain studies may experience legal prohibitions on any new study (e.g., water rights or developments in National Parks, Wilderness areas, Wild and Scenic Rivers).
Technical issues	New data (e.g., geologic, engineering, hydrologic) raise questions about previously considered sites.

Study data—for even similar type studies—are at inconsistent levels of detail, depending on the study criteria that were used during the 66-year time frame for this inventory (e.g., environmental data prior to the National Environmental Policy Act were minimally available). Also, the scope of studies varied from very general reconnaissance efforts that evaluated several potential hydropower sites in a river basin to site specific feasibility studies. Therefore, significant study information for the inventory was not readily available (e.g., benefit/cost data, identification of specific project beneficiaries, amount of power production).

The legislation required information on original project study costs, “authorized and expended” (Section 1840 (b) (3) (F)). Historic cost data were difficult to obtain for each study and had the potential for misinterpretation. Cost data were influenced by when reports were prepared, the scope and complexity of studies, the extent of available information, and the level of participation by project sponsors. Therefore, these requested data were not included in the inventory.

Section 1840 (3) (b) references reconnaissance and feasibility reports. Reclamation has used a variety of study names and types since 1939. In this inventory, reconnaissance studies include any study that was not suitable for seeking construction authority (these pre-feasibility studies include Preliminary Findings Reports, Special Studies, and Appraisal Studies).

Section 1840 (b) requires “identifying studies authorized by Congress.” Reclamation conducted many studies using its broad authorities. This inventory was expanded to include studies that were undertaken by Reclamation using its broad authorities, as well as studies with specific authorities.

Table 2 provides the specific language from the Act and a cross-reference between the Act language and data that are presented in the inventory. The Inventory Tables’ organization is explained in Table 3. Inventory Tables (Tables 4 – 21 in this report) provide information on the requested hydropower inventory information. The tables are organized by state and include studies in the 17 Reclamation States and Alaska. The intent of this cross-reference is to ensure that each of the identified projects addresses the legislative language to the extent possible. As can be seen from Table 2, some columns in the inventory address more than one area of the legislative language and vice versa.

Appendix A contains a listing of studies that were considered in this process but did not qualify for inclusion in the inventory, primarily because they did not include hydropower as a project purpose. Appendix B contains a list of other studies from other Federal agencies and other entities (e.g., the Family Farm Alliance, Idaho National Laboratory). This list provides background on potential water surface storage and hydropower studies. Reclamation study sites mentioned in Appendix B were not included in the inventory because these appeared not to involve surface storage studies specified in Section 1840 (b) (1).

While the number of studies that were identified appears exhaustive, the actual inventory may have missed some of the earlier reports and study efforts. Factors, such as the limited availability of older reports and the impracticality of extensively reviewing all correspondence files, made it likely that certain activities/reports were inadvertently missed. Also, some very preliminary study efforts that focused on irrigation purposes may not have documented secondary project purposes (e.g., hydropower). Some of these very preliminary studies were eventually reevaluated in more contemporary and more comprehensive reports. Presumably, these more current study efforts shown in the inventory adequately incorporate these early efforts.

In some cases, there were several reports for the same studies. The inventory presents information from the most current effort if the project being studied remained substantially unchanged.

The inventory excluded consideration of some studies that clearly had no potential for hydropower. These included those studies that were conducted for irrigation system improvements, rural water, the Colorado River Water Quality Improvement Program (salinity program), and Reclamation Wastewater and Groundwater Study and Facilities Act (Title XVI). While the inventory focused on studies that included “water surface storage” (Section 1840 (b) (1)), the inventory may include some studies that had minimal or no water surface storage; rather, such projects relied primarily on large diversion structures and/or conveyance systems for development of hydropower. The 90-day schedule precluded intensive review of each project to thoroughly exclude projects that had no water surface storage.

Section 1840 (b) (3) (A) required that the inventory provide information on the whether studies are “still authorized.” Reclamation has general authority to conduct pre-authorization type studies (e.g. appraisal studies). No further authorization would be required to conduct appraisal studies. Feasibility studies may require further assessment on a study-by-study basis to determine if authority still exists for further evaluations. Such assessments would necessarily take into account the original study feasibility authorization, the original project study purposes and authorizing language, the specific new study effort, requirements of Public Law 89-72 (Section 8) regarding feasibility study authority, and any relationships to an existing Reclamation project that already includes a hydropower purpose.

Inventory

Observations

Many of Reclamation's water resources studies since 1939 were focused on water supply for irrigated agriculture as the primary project purpose. Where appropriate, consideration was given to hydroelectric facilities, but only as a secondary purpose (i.e., power plants often operated only when releases were to be made for irrigation purposes). Given that water usage in the west has been impacted by demographic changes, market conditions, and other developments, many of these multi-purpose projects may no longer be viable because of significant changes to water supplies and demands.

The extent to which previous study efforts prove valuable in any study re-initiation will vary with the age of the original study and the physical, legal, and institutional changes that have taken place in the study area.

Given the level of uncertainty for many studies in this inventory, a significant amount of pre-feasibility activities would be required to assess potential viability of any specific project. All studies must adhere to current policy guidance for water resources development, including new security, dam safety, or other safety requirements. Updating older studies to current standards and guidance (i.e. National Environmental Policy Act, Endangered Species Act, Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies) would be necessary. Appendix C provides a non-inclusive list of legislation as an indication of the types of changes in guidelines since 1939. The impact of these guidelines on any specific re-initiated study is largely unknown. And, given the age of many of these prior studies, such work would be the equivalent of entirely new studies that take into account new hydrology, demands on water resources, and current legal and institutional requirements.

Finally, it would be inappropriate to evaluate and make any relative comparisons between studies. There are just too many differences between study scopes, timeframes, and applicable policies and procedures over the 66-year period of the report.

Cross-walk table showing relationship between inventory and Section 1840 of Energy Policy Act of 2005

Table 2 quotes shows a cross reference between specific requirements in Section 1840 (b), “Report Contents,” and columns in the Inventory Tables. Some requirements are broadly discussed in the report, Issues, Assumptions, and Methodology and are not listed for each study in the inventory.

“SEC. 1840. REPORT IDENTIFYING AND DESCRIBING THE STATUS OF POTENTIAL HYDROPOWER FACILITIES.

(a) REPORT REQUIREMENT.—Not later than 90 days after the date of enactment of this Act, the Secretary of the Interior, acting through the Bureau of Reclamation, shall submit to the Committee on Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a report identifying and describing the status of potential hydropower facilities included in water surface storage studies undertaken by the Secretary for projects that have not been completed or authorized for construction.”

Table 2: Section 1840 requirements and report location

(b) REPORT CONTENTS.—The report shall include the following:	
Section 1840 requirements	Report location
(1) Identification of all surface storage studies authorized by Congress since the enactment of the Reclamation Project Act of 1939 (43 U.S.C. 485 et seq.).	Inventory Tables, <i>Major features / project name</i> column and Appendix 1, <i>Name of study, features, or project</i> column
(2) The purposes of each project included within each study identified under paragraph (1).	Inventory Tables, <i>Project purpose</i> column
(3) The status of each study identified under paragraph (1), including for each study—	Report: <i>Issues, assumptions, and methodology</i>
(A) whether the study is completed or, if not completed, still authorized;	
(B) the level of analyses conducted at the feasibility and reconnaissance levels of review; H. R. 6—550	Inventory Tables, <i>Analysis level</i> column
(C) identifiable environmental impacts of each project included in the study, including to fish and wildlife, water quality, and recreation;	Inventory Tables, <i>Identified potential environmental impacts</i> and <i>Current assessment</i> columns
(D) projected water yield from each such project;	Inventory Tables, <i>Water yield</i> column
(E) beneficiaries of each such project;	Report: <i>Issues, assumptions, and methodology</i>
(F) the amount authorized and expended;	Report: <i>Issues, assumptions, and methodology</i>
(G) projected funding needs and timelines for completing the study (if applicable)	Report: <i>Issues, assumptions, and methodology</i>
(H) anticipated costs of each such project; and	Report: <i>Issues, assumptions, and methodology</i> ; Inventory Tables, <i>Estimated cost, date</i> column
(I) other factors that might interfere with construction of any such project.	Inventory Tables, <i>Other factors that might interfere with construction</i> and <i>Current assessment</i> columns
(4) An identification of potential hydroelectric facilities that might be developed pursuant to each study identified under paragraph (1).	Report: <i>Issues, assumptions, and methodology</i> Historic data provided in <i>Power production and capacity</i> column
(5) Applicable costs and benefits associated with potential hydroelectric production pursuant to each study.	Report: <i>Issues, assumptions, and methodology</i> Benefits are listed in Inventory Tables, <i>Project purposes, Water yield, and Power production and capacity</i> columns. Costs are listed in Inventory Tables, <i>estimated cost, date</i> columns

Inventory Tables of Reclamation studies with hydropower components

The actual inventory of studies containing hydropower as a project purpose is shown in the following Inventory Tables. These tables provide:

- **Study information** (state, name, date, type of study)
- **Study findings** (What Reclamation found at the time of the study)
- **Current assessment** (Current factors affecting additional studies)

Table 3 provides a further explanation of the columns and sections in the Inventory Tables, Tables 4 - 21. There are 18 tables, one for each of the 17 Reclamation States and Alaska. Studies are organized by state and chronological order. “NRA” indicates that information is not readily available.

Table 3: Explanation of table inventory columns

Section	Column	Notes
Study information	State	Projects in more than one state are repeated in each state table.
	Region	Reclamation region: Great Plains (GP), Lower Colorado (LC), Mid-Pacific (MP), Pacific Northwest (PN), and Upper Colorado (UC)
	Study date	If more than one study, inventory provides the most current study.
	Analysis level	Recon – Reconnaissance level study. Note that definitions for analyses levels have changed since 1939 with changing guidance. This provides a basic guide for level of detail on a study.
	Major features	Project name and general features of project if known. RM – river mile.
Study findings	Project purposes	General project purposes. M&I – municipal and industrial
	Water yield	Water yield is in 1,000 acre feet/year unless otherwise noted.
	Power production and capacity	Power production is in GWhr/year unless otherwise noted.
	Estimated cost in millions of dollars (date of cost)	Estimated cost is in millions of dollars unless otherwise noted. Study date shows latest date of cost estimates.
	Identified environmental impacts	Impacts identified in the original study.
	Other factors that might interfere with construction	Impacts identified in the original study.
Current assessment	Current factors affecting further study	General characterization of study using categories defined in table 1.

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Table 4: Arizona—Studies containing hydropower as a project purpose

STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
State	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
AZ	1941	LC	Buttes Dam Project	Feasibility	Buttes Dam Project. Dam, powerplant, canals. Gravity concrete non-overflow 170 feet above river bed elevation w/ crest length of 955 feet and capacity of 247 KAF.	Water supply, flood control, power, and silt removal	247	25 GWh/yr	\$14 M (1941)	NRA	NRA	Legal and institutional issues. Environmental issues.
AZ	1964	LC	Pacific Southwest Water Plan	Recon	Bridge Canyon Dam and Reservoir	River regulation (water supply), Power, recreation, fish & wildlife	NRA (3,710 KAF reservoir capacity)	5,360 GWh/yr 1,500 MW capacity	\$511 M (1964)	NRA	NRA	Legal and institutional Issues.
AZ	1964	LC	Pacific Southwest Water Plan	Recon	Marble Canyon Dam and Reservoir	River regulation (water supply), Power, recreation, fish & wildlife	NRA (363 KAF reservoir capacity)	2,310 GWh/yr 600 MW capacity	\$239 M (1964)	NRA	NRA	Legal and institutional Issues.
AZ	1964	LC	Pacific Southwest Water Plan	Recon	Marble Gorge Dam and Kanab Tunnel and Power Plant	Power	NRA (pipeline discharge 13,000 cfs)	NRA	NRA	NRA	NRA	Legal and institutional Issues.
AZ	1965	LC	Fossil Dam, Powerplant, and Reservoir	Recon	Fossil Dam. 2 dams with powerplant.	Storage, power	NRA	1 GWhr/yr	\$74 M (1965)	NRA	NRA	Unknown
AZ	1976	LC	Orme Dam and Reservoir Draft Environmental Statement	Appraisal	Orme Dam. Dam; appurtenant outlet works; spillway; reservoir; powerplant; transmission lines; road relocations; reversible-flow canal with an in-line pump generation plant.	Regulatory storage (CAP), flood control, power	367	20 MW	\$223 M (1976)	Inundation of riparian habitat, archaeological and historic resources.	Social and economic impacts to Indian population due to relocation.	Unknown

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STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
State	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
AZ, NV	1981	LC	Rifle Range Pumped Storage Project	Appraisal	Rifle Range Dam (concrete decked-rockfill); reservoir; powerhouse; pump-generator units; penstock tunnel.	Power	165.6	3 GWh/yr	\$1,700 M (1981)	NRA	NRA	Unknown
AZ, NV	1988	LC	Spring Canyon Pumped Storage Project	Feasibility	Spring Canyon Dam; 3 dikes; underground powerhouse; outlet works; waterways; 75 miles power transmission line; access tunnels; switchyard.	Peak power	Not applicable	2 GWhr/yr	\$1,570 M (1988)	Could contribute to salinity increases in the Colorado River through salt pickup by seepage returning to Lake Mead; loss of 89 acres of tortoise habitat permanently; temporary impact to 336 acres though no tortoises found during surveys. Bald eagle found in area; 2 petroglyphs and light lithic scatter in area of dike 1; group of 53-88 Desert Bighorn Sheep found earlier in area; decrease in small mammals and birds; fish entrainment. Construction-phase impacts to local communities; recreation, fish and wildlife, environmental interests; decrease in small mammal populations.	NRA	Economic issues. Environmental issues.
AZ, CA	2003	LC	Review of Design and Update of Costs for Low Head Hydropower Assessment - Palo Verde Diversion Dam	Appraisal	Palo Verde Dam; spillway.	Power	NRA	6 MW	\$53 M (2003)	NRA	NRA	Unknown

Table 5: California—Studies containing hydropower as a project purpose

STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
CA	1952	MP	Union Valley Unit, American River Division, CVP	Appraisal	Union Valley Unit, American River Division, CVP Pilot Creek and Union Valley Reservoirs and hydroelectric plants, Brush Creek hydroelectric plant.	Irrigation, M&I, power	NRA	Union Valley Unit total: 156 MW capacity Union Valley powerplant on dam: 27 MW capacity Summerfield: 57 MW capacity Brush Creek: 72 MW capacity	\$99M (1952)	NRA	NRA	Preempted by other water resources developments—Union Valley Reservoir developed by the Sacramento Municipal Utility District.
CA, NV	1955	MP	Walker River Project. Recon Report.	Recon	Walker River Project. Hoyo Canyon Reservoir; Pickle Meadow Reservoir & 2 power plants - Antelope and Midway.	Irrigation, flood control, power	Hoyo: 8 Pickle Meadow : 13	94.7 GWhr/yr 20.5 MW capacity	Hoyo Canyon \$1.5 M (1955). Pickle Meadow plan \$23 M (1955)	NRA	Report identifies plants in the area in 1955.	Unknown
CA, NV	1961	MP	Hope Valley Division, Washoe Project	Appraisal	Hope Valley Reservoir Woodfords and Paynesville Powerplants	Irrigation, flood control, power	NRA	NRA	\$19 M (1961)	NRA	NRA	Economic issues.
CA, OR	1962	MP	Clear Lake Unit, Klamath Project	Recon	Clear Lake Unit, Klamath Project, Gerber Reservoir Enlargement, Boundary Reservoir, Clear Lake Dike	Irrigation	NRA	NRA	\$8.4 M (1962)	NRA	No power generation at Bureau facilities. Power benefits depend on sale of surplus water to existing non-Federal hydropower development downstream.	Economic issues.

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STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
CA	1965	MP	Sespe Creek Project	Feasibility	Sespe Creek Project, Cold Spring and Topatopa Reservoirs	M&I	NRA	Cold Spring Dam: 0.4 MW capacity Topatopa Dam: 9 GWhr/yr 3 to 4 MW capacity	NRA	NRA	Power not economically feasible	Environmental issues — condor nesting area.
CA	1967	MP	Kellogg Unit, Central Valley Project	Feasibility	Kellogg & Herdlyn reservoirs, Kellogg pumping-generating plant	Irrigation, M&I, fish and wildlife, flood control, recreation, water quality, power	NRA	NRA	\$70 M (1967)	NRA	Interim generation potential until storage used for other purposes.	Preempted by other water resources developments— Los Vaqueros Reservoir, an alternative to Kellogg, developed by Contra Costa Water District.
CA	1968	MP	Allen Camp Unit, CVP	Feasibility	Allen Camp Reservoir, Lookout Div. Dam	Irrigation, flood control, recreation, fish and wildlife, power	NRA	0, power generated at downstream plants	\$42.5 M (1968)	NRA	Power benefits depend on sale of irrigation return flow water to existing non-Federal hydropower development downstream.	Considered as a potential onstream surface water storage option in the 2004 Shasta Lake Water Resources Investigation. Not considered further because of limited powerplant size.
CA	1969	MP	Cosumnes River Division, Initial Phase, CVP	Feasibility	Cosumnes River Division, Nashville, Aukum, Irish Hill and Pi-Pi Reservoirs	Irrigation, M&I, recreation, fish and wildlife, flood control, water quality	NRA	NRA	\$174 M (1968)	NRA	Power development potential at Nashville Dam. Not economically feasible	A preliminary appraisal evaluation was made of Nashville on the Cosumnes River and reported on in 1982 for the then Enlarged Shasta Lake Feasibility Study. Legal and institutional issues (potential inclusion of the South and Middle Forks of the Cosumnes in the "National Wild and Scenic River System protection"). Economic issues.
CA	1969	MP	English Ridge Unit, Eel River Division, North Coast Project	Feasibility	English Ridge Reservoir	Irrigation, recreation, fish, flood control	NRA	NRA	\$222 M (1969)	NRA	Power not economically feasible	Environmental issues—North Coast rivers including the Eel are under National Wild and Scenic River System protection. Economic issues. Further 1972 report did not mention power.

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STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
CA	1971	MP	Sonora-Keystone Unit, CVP	Appraisal	Sonora-Keystone Unit, New Phoenix and Brownes Meadow Reservoirs	Irrigation	NRA	NRA	NRA	NRA	Power not economically feasible	Unknown
CA	1972	MP	Lower Trinity River Division, North Coast Project	Recon	Lower Trinity River Division, North Coast Project, various dams depending on alternative.	Water supply for export to the Central Valley, power	NRA	NRA	NRA	NRA	Considerable local opposition.	Legal and institutional issues—North Coast rivers including the Trinity River are under the "National Wild and Scenic River System protection."
CA	1980	MP	West Sacramento Canal Unit, Sacramento River Division, CVP	Recon	West Sacramento Canal Unit, Sacramento River Division, CVP, Sites Reservoir, Oat Creek, and Noonan Reservoirs, and Funks Reservoir Enlargement	Irrigation, power	NRA	NRA	NRA	NRA	Study terminated early from preliminary determination, not economically feasible.	Sites Reservoir is currently under study by Reclamation and California DWR. Issues unknown for other reservoirs.
CA	1982	MP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Bethstein South Fork American River	Power	NRA	47 GWh/yr 14 MW capacity	\$31 M (1982)	Moderate (2) environmental impact rating. River reach is in National Listing of Proposed Natural Rivers.	Build 1 mile of road.	Unknown
CA	1982	MP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Big Bar Mokelumne River	Power	NRA	30.41 GWh/yr 8 WM capacity	\$17.9 M (1982)	Moderate (2) environmental impact rating. Recreation, visual impact on scenic reach.	Relocate existing road.	Unknown
CA	1982	MP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	D'Amico Dam Kern River	Power	NRA	12.65 GWh/yr 5 MW capacity	\$10.5 M (1982)	Moderate (2) environmental impact rating. Kern slender salamander. Rafting.	NRA	Unknown

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ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
CA	1982	MP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Ditch Camp South Fork American River	Power	NRA	4.85 GWh/yr 2 MW capacity	\$12.4 M (1982)	Near proposed research natural area.	Not economically feasible. Build 4 miles of road. May interfere with other proposed developments.	Unknown
CA	1982	MP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Esmerelda South Fork American River	Power	0 (run of the river)	9.56 GWh/yr 5.6MW capacity	\$11.0 M (1982)	Pacific deer winter rangeland.	Not economically feasible. May interfere with other proposed developments.	Unknown
CA	1982	MP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Goodyears Bar North Yuba River	Power	NRA	16.09 GWh/yr 5 MW capacity	\$10.5 M (1982)	Substantial (3) environmental impact rating. Trout fishery in North Yuba River. Visual impact on scenic highway drive. Rafting	Build half mile of new road.	Unknown
CA	1982	MP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Hamster Dam Kern River	Power	NRA	12.24 GWh/yr 5 MW capacity	\$10.7M (1982)	Moderate (2) environmental impact rating. Kern slender salamander. Rafting.	NRA	Unknown
CA	1982	MP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Lamoine Sacramento River	Power	NRA	14.27 GWh/yr 4.1 MW capacity	\$13.1 M (1982)	Moderate (2) environmental impact rating. River reach is on National Listing of Proposed Natural and Free-Flowing Rivers.	NRA	Unknown
CA	1982	MP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Mill Creek Kern River	Power	NRA	10.40 GWh/yr 4 MW capacity	\$10.3 M (1982)	Substantial (3) environmental impact rating. Kern slender salamander. Rafting.	NRA	Unknown

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CA/NV	1983	MP	Watasheamu Division, Washoe Project	Appraisal	Watasheamu, Hope Valley, &/or Comstock Reservoirs on Carson River.	Irrigation, M&I, power, flood control	23	14 GWh/yr 10 MW plant capacity	Watasheamu: \$163-150 M; Hope Valley: \$49 M; Comstock: \$55M (1981)	NRA	NRA	Water supply issues.
CA	1987	MP	Auburn Dam Alternatives Study, CVP	Appraisal	Auburn Dam and Reservoir	M&I, power, flood control, recreation, fishery	0-350	0-607.8 GWh/yr	\$618-1,406 M (1987)	Would inundate 2,800-10,000 acres and 28-48 miles of stream.	NRA	Considered as a potential onstream surface water storage option in the 2004 Shasta Lake Water Resources Investigation. Retained for further review. Also, environmental issues.
CA, AZ	2003	LC	Review of Design and Update of Costs for Low Head Hydropower Assessment - Palo Verde Diversion Dam	Appraisal	Palo Verde Dam; spillway	Power	NRA	6 MW capacity	\$53 M (2003)	NRA	NRA	Unknown
CA	2004	MP	Shasta Lake, Increased Storage, CVP	Appraisal	Shasta Dam and Reservoir (range between 6-foot-raise to dam to 200-foot-raise)	Irrigation, power, fish, M&I, flood control	72-703	11.7 - 2,253.9 GWh/yr	NRA	NRA	NRA	Feasibility study under way.
CA	2005	MP	North of Delta Offstream Storage, Administrative Draft, Initial Alternatives Information	Feasibility	North of Delta Offstream Storage, Sites Reservoir or Newville Reservoir	Irrigation, M&I, fish and wildlife, water quality, power, recreation	NRA	NRA	NRA	NRA	NRA	Feasibility study under way.
CA	2005	MP	Upper San Joaquin River Basin Storage investigation, Initial Alternatives Information Report	Feasibility	Upper San Joaquin River Basin Storage Enlarge Millerton Lake, or Temperance Flat, Fine Gold, or Yokohl Valley Reservoirs	Flood control, fish and wildlife, power	24 - 165	NRA	\$220-1,000 M	Study objectives include contributing to San Joaquin River restoration and improving San Joaquin River water quality, potential impact to regulated species, and potential inundation of aquatic diversity. Would inundate 870 - 5,400 acres.	NRA	Feasibility study under way. Not yet evaluated fully. Some alternatives would have negative generation due to inundation of upstream powerplants or pump-back operation.

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Table 6: Colorado—Studies containing hydropower as a project purpose

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CO	1943	UC	Echo Park Power Project (appendices available only)	NRA	Echo Dam and powerplant	NRA	NRA	472 GWh/yr to 1,020 GWh/yr 65 MW to 164.7MW capacity	NRA	NRA	NRA	Environmental issues—site inside Dinosaur National Park.
CO	1948	GP	Blue - South Platte Project, Colorado, Project Planning Report No. 7-8a and Appendix F - Power	Recon	Grant Dam and Powerplant on South Platte River.	Power, irrigation, municipal	NRA	130 GW/yr 20 MW capacity	NRA	NRA	Construction of this feature was contingent on construction of Reclamation's Two Forks Project and attendant west slope/east slope diversion tunnel (18.4 miles) and other features.	Environmental issues—Platte River.
CO	1950	UC	Colorado River Storage Project Whitewater Unit	Recon	Colorado River Storage Project Whitewater Unit Bridgeport Dam, powerplant	Irrigation, power	NRA	NRA	NRA	NRA	NRA	Preempted by other water resources developments—Dominguez Project.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Bald Mountain Dam and Powerplant on Bear Creek	Power	NRA	11 GWh/yr 3.3 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Beaver Reservoir and Powerplant on Cache La Poudre River	Power, irrigation	NRA	10 GWh/yr 2.4 MW capacity	NRA	NRA	NRA	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Bennett Creek Dam and Powerplant on Cache La Poudre River	Power	NRA	147 GWh/yr 23.8 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Big Hill Dam and Powerplant on Clear Creek	Power	NRA	75 GWh/yr 18.6 MW capacity	NRA	NRA	NRA	Environmental issues—Platte River.

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CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Bison Dam and Powerplant on Tarryall Creek	Power	NRA	6 GWh/yr 1.4 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Black Mountain Dam and Powerplant on Cache La Poudre River	Power, irrigation	NRA	6 GWh/yr 2 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Buck Gulch Dam and Powerplant on St. Vrain River	Power	NRA	62 GWh/yr 20.2 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Canyon Dam and Powerplant on Cache La Poudre River	Power, irrigation	NRA	117 GWh/yr 19.8 MW capacity	NRA	NRA	NRA	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Cascade Dam and Powerplant on Cache La Poudre River	Power	NRA	46 GWh/yr 15.1MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Central City Dam and Powerplant on Clear Creek	Power	NRA	5 GWh/yr 3. 2 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Cone Mountain Dam and Powerplant on Clear Creek	Power	NRA	12 GWh/yr 4.3 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Cony Creek Diversion Dam and Powerplant on St. Vrain River	Power	NRA	10 GWh/yr 3.3 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Cottonwood Dam and Powerplant on Clear Creek	Power	NRA	7 GWh/yr 3.9 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Crossons Dam and Powerplant on South Platte River.	Power	NRA	195 GWh/yr 26 MW capacity	NRA	NRA	NRA	Environmental issues-Platte River.

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CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Divide Dam and Powerplant on St. Vrain River	Power	NRA	12 GW/hr 2.6 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues-Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Eldora Diversion Dam and Powerplant on Boulder Creek	Power	NRA	17 GWh/yr 8 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Elk Diversion Dam and Powerplant on Clear Creek	Power	NRA	41 GW/year 13 MW capacity	NRA	NRA	NRA	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Elkhorn Dam and Powerplant on Cache La Poudre River	Power	NRA	168 GWh/yr 27.4 MW capacity	NRA	NRA	NRA	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Empire Dam and Powerplant on Clear Creek	Power	NRA	87 GWh/yr 28.5 MW capacity	NRA	NRA	NRA	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Fall River Dam and Powerplant on Big Thompson River	Power	NRA	10 GW/hr 2 MW capacity	NRA	NRA	Site was classified as "fair" in the report.	Environmental issues-Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Geneva Park Dam and Powerplant on Geneva Creek	Power	NRA	7 GWh/yr 2.2 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Idledale Diversion Dam and Powerplant on Bear Creek	Power	NRA	11 GWh/yr 3.4 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Insmont Powerplant on South Platte River.	Power	NRA	105 GWh/yr 2 MW capacity	NRA	NRA	NRA	Environmental issues-Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Miramonte Dam and Powerplant on Boulder Creek	Power	NRA	60 GWh/yr 10.6 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—Platte River.

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CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Moraine Dam and Powerplant on Big Thompson River	Power	NRA	17 GWh/yr 3.4 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Morrison Diversion Dam and Powerplant on Bear Creek	Power	NRA	8 GWh/yr 2.6 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Narrows Dam and Powerplant on South Platte River.	Power, irrigation	NRA	22 GWh/yr 8 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Nederland Reservoir No. 1 Dam and Powerplant on Boulder Creek	Power	NRA	23 GWh/yr 6.2 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Nederland Reservoir No. 2 Dam and Powerplant on Boulder Creek	Power	NRA	11 GWh/yr 2.6 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Phillips Diversion Dam and Powerplant on Clear Creek	Power	NRA	5 GWh/yr 1.7 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Pingree Dam and Powerplant on Cache La Poudre River	Power, irrigation	NRA	8 GWh/yr 3.4 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues-Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Prairie Reservoir/Canyon Powerplant on Cache La Poudre River	Power	NRA	117 GWh/yr 19.8 MW capacity	NRA	NRA	NRA	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Resort Creek Diversion Dam and Powerplant on South Platte River.	Power	NRA	249 GWh/yr 52 MW capacity	NRA	NRA	NRA	Environmental issues-Platte River.

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CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Shawnee Dam and Powerplant on South Platte River.	Power	NRA	76 GWh/yr 11.4 MW capacity	NRA	NRA	NRA	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Sherwood Dam and Powerplant on Boulder Creek	Power	NRA	8 GWh/yr 3 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues-Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Signal Dam and Powerplant on South Platte River.	Power	NRA	26 GWh/yr 8.5 MW capacity	NRA	NRA	NRA	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Silver Plume Dam and Powerplant on Clear Creek	Power	NRA	15 GWh/yr 4.7 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Singleton Dam and Powerplant on South Platte River.	Power, irrigation	NRA	137 GWh/yr 19 MW capacity	NRA	NRA	NRA	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Smity Mountain Dam and Powerplant on St. Vrain River	Power	NRA	68 GWh/yr 13.2 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues-Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Tarryall Diversion Dams and Powerplant on South Platte River.	Power	NRA	19 GWh/yr 5.3 MW capacity	NRA	NRA	NRA	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Trail Creek Dam and Powerplant on Cache La Poudre River	Power, irrigation	NRA	11 GWh/yr 2.7 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues-Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Turkshand Dam and Powerplant on South Platte River.	Power	NRA	45 GWh/yr 7.2 MW capacity	NRA	NRA	NRA	Environmental issues—Platte River.

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CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Two Forks Dam and Powerplant on South Platte River.	Power	NRA	220 GWh/yr 116 MW capacity	NRA	NRA	NRA	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Wondervu Dam and Powerplant on Boulder Creek	Power	NRA	28 GWh/yr 6.7 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—Platte River.
CO	1951	GP	Power: Resources, Requirements, and Supply	Recon	Woodpecker Dam and Powerplant on Clear Creek	Power	NRA	5 GWh/yr 1.7 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River.
CO	1952	UC	White - Yampa - Diversion Project, Colorado, Reconnaissance Report	Recon	White-Yampa Diversion Project. Dams, tunnels, powerplants	Irrigation, power	406	394 GWh/yr	\$62 M (1952)	NRA	NRA	Environmental issues. Economic issues.
CO	1953	GP	Sangre De Cristo Power Project, Colorado - General Plan and DC-1's	Recon	Sangre De Cristo Power Project, Grape Creek Dam Powerplant, Wellsville Powerplant, Badger Powerplant, and Cannon City Powerplant on Grape Creek (one project with four powerplants).	Power	NRA	526.1 GWh/yr 176.7 MW capacity (for four plants)	\$153.5 M (1953) (for four plants)	NRA	NRA	Unknown
CO	1954	UC	Cliffs-Divide Project, Gore Power Unit	Recon	Cliffs-Divide Project, Diversion dam and powerplant	Power	578 maximum	104 GWh/yr 20 MW capacity	\$10.4 M (1954)	NRA	NRA	Environmental issues.

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CO	1955	UC	San Luis Valley Project, Supplemental Report on Rio Grande and Weminuche Pass Divisions	Feasibility	Wagon Wheel Gap Dam & Reservoir, potential powerplant. Design allowed for addition of power in the future.	Irrigation, recreation, fish and wildlife, flood control, and potential for future powerplant	440	25 to 50 MW capacity	\$22 M (1955)	NRA	NRA	Water supply issues.
CO	1956	UC	O'Neal Park Project, Reconnaissance Report	Recon	Perry Draw Dam and Reservoir; Piedra Diversion Dam; Wiminuche Dam and Reservoir; First Box Dam, Reservoir, & Powerplant; Dudley Tunnel, powerplant	Irrigation, power	9	31 GWh/yr	\$8 M (1956)	NRA	NRA	Preempted by other water resource development.
CO, WY	1957	UC	Yampa - White Project, Flattops Unit Division	Recon	Yampa - White Project, Flattops Unit Division Bear, Dunkley, California Park, Juniper, Savery Reservoir enlargement, Trappers Lake, Thornburgh, Bearwallow, Rio Blanco, Reservoirs, Upper & Lower Bearwallow powerplants.	M&I, power	128	221.3 GWh/yr	\$176 M (1957)	NRA	Rifle, Valley, and De Beque, CO and the potential oil-shale industry. Cannot be justified until large-scale oil shale development in the Rifle-De Beque area becomes imminent.	Economic and financial issues—contingent on oil shale development. Environmental issues.
CO	1959	GP	Report on the South Platte River. Basin, CO, WY, NE	Recon	Cook Mountain Diversion Dam and Powerplant on St. Vrain River	Power	NRA	64 GWh/yr 21 MW capacity	NRA	NRA	Project deemed infeasible.	Environmental issues—Platte River.
CO	1959	GP	Report on the South Platte River. Basin, CO, WY, NE	Recon	Gordon Diversion Dam and Powerplant	Power	NRA	7.8 GWh/yr	NRA	NRA	Project deemed infeasible.	Environmental issues—Platte River.

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CO	1959	GP	Report on the South Platte River. Basin, CO, WY, NE	Recon	Kittredge Diversion Dam and Powerplant	Power	NRA (38.5 AF storage)	12.9 GWh/yr 2.5 MW capacity	NRA	NRA	Project deemed infeasible.	Environmental issues—Platte River.
CO	1959	GP	Report on the South Platte River. Basin, CO, WY, NE	Recon	Saxon Diversion Dam and Powerplant	Power	NRA (77,200 AF storage)	58.9 GWh/yr 15 MW capacity	NRA	NRA	Project deemed infeasible because it would require two reservoirs, one powerplant, and downstream re-regulation.	Environmental issues—Platte River.
CO	1959	GP	Report on the South Platte River. Basin, CO, WY, NE	Recon	Wheelman Diversion Dam and Powerplant	Power	NRA	5.4 GWh/yr	NRA	NRA	NRA	Environmental issues—Platte River.
CO	1962	GP	Reconnaissance Report; Cache La Poudre; South Platte River. Basin	Recon	Poverty Flat Dam and Powerplant on Cache La Poudre River	Power, irrigation	Re-regulation	8.9 GWh/yr	NRA	NRA	NRA	Environmental issues-Platte River.
CO, WY	1963	UC	Juniper Project	Recon	Juniper Dam, Reservoir & Powerplant; Artesia Dam & Reservoir	Irrigation; power; recreation	469	96 GWh/yr 30 MW capacity	\$145.6 M (1963)	NRA	NRA	Environmental issues—Yampa River.
CO	1966	GP	Concluding Report, Cache La Poudre Unit, Long Peak Division, MRBP	Uncompleted Feasibility	Idylwilde Dam and Powerplant, Cache La Poudre Powerplant, and Grey Mountain Dam on Cache La Poudre River	Power, M&I	NRA	NRA	NRA	NRA	1963 Recon Report on the Cache La Poudre Unit provided a potentially viable plan. In 1963 uncompleted feasibility report found an alternative at almost one-third of the cost of Idylwilde water (Colorado Big Thompson), and the study was therefore concluded.	Environmental issues—Platte River. Preempted by other water resources developments (Reclamation's Colorado-Big Thompson Project).

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CO	1971	UC	Bluestone Project - Potential Project Extension	Project studied at feasibility level; power studies at recon level	Bluestone Project . Project extension included a dam, reservoir & powerplant on the Colorado River	M&I and power	M&I = 73	134.560 GWh/yr	\$65 M (1969)	NRA		Economic and financial issues—contingent on oil shale development.
CO	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Americus Arkansas River	Power	0 (run of the river)	3.53 GWh/yr 0.57 MW capacity	\$8.6 M (1982)	Moderate (2) social impact rating. Fish hatchery below Buena Vista. Rafting.	Not economically feasible.	Water supply issues. Environmental issues—downstream water quality.
CO	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Canyon Colorado River	Power	0 (run of the river)	34.19 GWh/yr 7 MW capacity	\$30.4 M (1982)	Rafting, visual (scenic reach).	Not economically feasible.	Environmental issues. Economic issues.
CO	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	De Beque Colorado River	Power	NRA	31.47 GWh/yr 4.4 MW capacity	\$16.1 M (1982)	River reach is Value Class II Stream—High Priority Fishing Resource.	1 mile of new road. Not economically feasible.	Environmental issues.
CO	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Elephant Rock Arkansas River	Power	0 (run of the river)	3.15 GWh/yr 0.51 MW	\$7.1 M (1982)	Moderate (2) social impact rating. Fish hatchery below Buena Vista. Rafting.	Not economically feasible.	Water supply issues. Environmental issues—downstream water quality.
CO	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Garfield Colorado River	Power	NRA	25.94 GWh/yr 3.6 MW	\$19.7 M (1982)	NRA	Plans for extensive residential development directly upstream. Not economically feasible.	Environmental issues. Economic issues.

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CO	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Glenwood Canyon Colorado River	Power	NRA	11.71 GWh/yr 2 MW capacity	\$8.0 M (1982)	Moderate (2) environmental impact rating. Substantial (3) social impact rating. Impacts on commercial rafting, tourism, highway, trails, and fishing.	NRA	Environmental issues.
CO	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Gore Canyon Colorado River	Power	NRA	34.19 GWh/yr 7 MW capacity	\$25.1 M (1982)	Rafting, visual (scenic reach).	Build 1 mile of road.	Environmental issues. Economic issues.
CO	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Grand Valley Colorado River	Power	NRA	29.02 GWh/yr 4 MW capacity	\$15.5 M (1982)	River reach is Value Class II Stream—High Priority Fishing Resource.	NRA	Environmental issues.
CO	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Mount Harris Yampa River	Power	0 (run of the river)	1.29 GWh/yr 0.15 MW capacity	\$4.0 M (1982)	NRA	Head limited by railroad tracks. Not economically feasible.	Environmental issues. Economic issues.
CO	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Pagosa Junction San Juan	Power	0 (run of the river)	11.33 GWh/yr 2.3 MW capacity	\$27.0 (1982)	Cemetery, railroad grade, bridge to relocate.	Not economically feasible.	Environmental issues. Economic issues.
CO	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Radium Colorado River	Power	NRA	30.46 GWh/yr 6 MW capacity	\$17.1 M (1982)	Recreation, sport fishing, visual (scenic reach)	NRA	Environmental issues.

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STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
CO	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Sheephorn Blue River	Power	0 (run of the river)	12.49 GWh/yr 2 MW capacity	\$21.2 M (1982)	Currently private fishing reserve.	Not economically feasible.	Environmental issues. Economic issues.
CO	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	South Canyon Colorado River	Power	NRA	18.38 GWh/yr 2.4 MW capacity	\$10.1 M (1982)	Moderate (2) environmental impact rating. Rafting, fishing.	NRA	Environmental issues.
CO	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Storm King Colorado River	Power	NRA	24.50 GWh/yr 3.2 MW capacity	\$9.9 M (1982)	Moderate (2) environmental impact rating. Rafting, fishing.	Waste treatment plant upstream. Along a canyon highway, no access road.	Environmental issues.
CO	1984	UC	Dominguez Reservoir Project	Feasibility	Dominguez Dam & powerplant	M&I; power; irrigation; recreation	9 alternatives ranging from 45 to 891	67 - 252 GWh/yr 300 MW -1,000 MW capacity	\$510 M (1983)	Fish; wildlife; water quality; cultural resources	Proposed location on the Gunnison River is environmentally sensitive.	Environmental issues. Economic and financial issues—lack of market for water and power.
CO	NRA	GP	No formal report identified	NRA	Greenleaf Diversion Dam and Powerplant	NRA	NRA	NRA	NRA	NRA	NRA	Unknown
CO	NRA	GP	No formal report identified	NRA	Hackett Dam and Powerplant	Power	NRA	NRA	NRA	NRA	NRA	Unknown
CO	NRA	GP	No formal report identified	NRA	Livermore Dam and Powerplant on Cache La Poudre River	Power, irrigation	NRA	NRA	NRA	NRA	NRA	Environmental issues—Platte River.
CO	NRA	GP	No formal report identified	NRA	McGregor Dam and Powerplant on Fall River (Big Thompson Tributary)	NRA	NRA	NRA	NRA	NRA	NRA	Environmental issues—Platte River.

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ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
CO	NRA	GP	No formal report identified	NRA	Northrup Dam and Powerplant	Power	NRA	NRA	NRA	NRA	NRA	Unknown
CO	NRA	GP	No formal report identified	Recon	Pendergrass Dam and Powerplant, Mt. Moriah Dam and Powerplant, Cache La Poudre Powerplant, Hague Powerplant, Mummy Powerplant, Hewlett Powerplant, and Milton Seaman Dam, Sheep Creek Diversion Dam and Powerplant, and Powerplant on Cache La Poudre River.	Power	NRA	Hague 61 GWh/yr Mummy 105 GWh/yr others NRA	NRA	NRA	Report not found but record documents indicate that these are features of the Cache La Poudre Unit which was found to be infeasible in 1966.	Environmental issues—Platte River.
CO	NRA	GP	No formal report identified	NRA	Russel Gulch Dam and Powerplant	Power	NRA	NRA	NRA	NRA	NRA	Environmental issues-Platte River.

Table 7: Idaho—Studies containing hydropower as a project purpose

STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
ID, WA	1949	PN	Asotin Project, Middle Snake River	NRA	Asotin Project, Middle Snake River (RM 146.8)	Power	NRA	1,070 GWh/yr	\$28 M (1949)	NRA	NRA	Environmental issues—Snake River.
ID	1949	PN	Bruneau Project, Snake River	NRA	Bruneau Project, Snake River Dam	Irrigation and power generation	NRA (2 MAF reservoir)	940 GWh/yr	NRA	NRA	NRA	Environmental issues—Snake River.
ID	1949	PN	Cabinet Gorge Reservoir, Clark Fork	NRA	Cabinet Gorge Reservoir, Clark Fork (est. RM 149.9)	Power generation	NRA	NRA	NRA	NRA	NRA	May be preempted by other water resources developments— probably on same reach of Clark Fork River, MT-ID (e.g., existing private Cabinet Gorge Dam at RM 149.9, completed in 1953).
ID	1949	PN	Kooskia High Dam Project	NRA	Kooskia Dam and Reservoir, Clearwater River (RM 57.6) Concrete gravity 595 feet high; 1,400 foot crest.	Flood control, navigation, and power	NRA (3.1 MAF storage)	440 MW capacity	NRA	NRA	NRA	Environmental issues. Cultural and historical resources issues—Lewis and Clark Trail.
ID	1949	PN	Lower Lemhi Project, Salmon and Lemhi Rivers	NRA	Lower Lemhi Project, Salmon and Lemhi Rivers	Irrigation and power generation	NRA	NRA	NRA	NRA	NRA	Environmental issues. Water supply issues.
ID	1949	PN	Nez Perce Project, Snake River	NRA	Nez Perce Project, Snake River (est. RM 182)	Power	NRA	NRA	NRA	NRA	NRA	Environmental issues—Snake River.

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STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
ID	1949	PN	Priest Lake Reservoir, Priest River	NRA	Priest Lake Reservoir, Priest River (mouth at Pend Oreille RM 95.2)	Power	NRA	NRA	NRA	NRA	NRA	Environmental issues. Water supply issues.
ID	1949	PN	Wolf Creek Reservoir, Selway River (about RM 126)	NRA	Wolf Creek Reservoir, Selway River (about RM 126) Dam 286 feet high; 700-foot crest; 66 KAF capacity.	Power	NRA	45.7 MW capacity	NRA	NRA		Environmental issues.
ID	1961	PN	Eagle Rock Power Project, Snake River	Recon	Eagle Rock Power Project, Snake River (about RM 707, seven miles downstream from American Falls Dam) Earthfill dam (1,500-foot-long crest, 45 feet high) and powerplant	Power	NRA	143 GWh/yr	\$17 M (1959)	NRA	Development exists within the proposed reservoir's inundation zone.	Environmental issues—Snake River. Cultural issues.
ID	1961	PN	Mesa Falls Project	Recon	Mesa Falls Project, Henrys Fork (est. RM 67) [Henrys Fork mouth at Snake RM 832.4] Diversion dam (240-foot-long crest, 240 feet high) and powerplant	Power	NRA (Maximum powerplant discharge of 990 cfs)	102 GWh/yr	\$6 M (1959)	NRA	NRA	Water supply issues. Environmental issues.

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STUDY INFORMATION					STUDY FINDINGS							CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
ID	1961	PN	Thousand Springs Dam and Reservoir, Snake River	Recon	Thousand Springs Dam and Reservoir, Snake River (RM 584.3) Earthfill dam (2,850-foot-long crest, 205 feet high) and powerplant	Power, irrigation, and flood control	NRA (Maximum powerplant discharge of 20,000 cfs; 400 KAF of active space in the reservoir)	466 GWh/yr	\$69 M (1959)	Adverse effects to trout fishery.	Significant development exists within the proposed reservoir's inundation zone, including two Idaho Power Company hydroelectric projects.	Environmental issues—Snake River.
ID	1961	PN	Twin Springs Dam and Reservoir, Boise River	Recon	Twin Springs Dam and Reservoir, Boise River (RM 97.3, the confluence of Middle Fork and North Forks) Rockfill dam (1,200-foot-long crest, 470 feet high)	Flood control, irrigation, power generation, fish and wildlife, pollution abatement, and recreation	NRA 410 KAF reservoir	190 GWh/yr	\$30 M (1959)	Detrimental effect on fish and wildlife.	NRA	Environmental issues. Water supply issues. Cultural and historical resources issues.
ID	1961	PN	Upper Owyhee Project, Owyhee River	Feasibility	Upper Owyhee Project, Duncan Ferry Dam and Reservoir, Owyhee River (est. RM 125) Earthfill dam (218 feet high) and powerplant	Irrigation, power generation, and flood control	NRA 1,000 KAF reservoir	75 GWh/yr	\$20 M (1959)	NRA	NRA	Water supply issues. Environmental issues.
ID	1961	PN	Warm River Dam and Reservoir	Recon	Warm River Dam and Reservoir at confluence of Henry's Fork (RM 56.0) (mouth at Snake RM 832.4) Rockfill dam (1,600-foot-long crest, 265 feet high) and powerplant	Local flood control and power generation	NRA (Maximum powerplant discharge of 4,300 cfs)	163 GWh/yr	\$23 M (1959)	Adverse effects on the stream's carrying capacity for fish and on big game, waterfowl, and fur animal habitat.	Development and recreational sites exist within the proposed reservoir's inundation zone.	Water supply issues. Environmental issues.

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ID	1966	PN	Transmountain Diversion of Salmon River to Boise River	Recon	Transmountain Diversion of Salmon River to Boise River [from within Sawtooth NRA or Frank Church Wilderness Area to South Fork Boise River] Multiple plans, each including dams, storage reservoirs, tunnels, pumping plants, and powerplants.	Irrigation and power	NRA	NRA	NRA	NRA	NRA	Environmental issues— Salmon River. Legal issues. Water supply issues.
ID, OR	1968	PN	Appaloosa-Low Mountain Sheep, Middle Snake River	Recon	Appaloosa-Low Mountain Sheep, Middle Snake River (Low Mt. Sheep at RM 192.5; Appaloosa at RM 197.6) Thin arch concrete dam (1,730-foot-long crest, 600 feet high), reregulating dam (855-foot-long crest, 255 feet high), powerplant, and aeration plant	Power, flood control, and recreation	NRA (Powerplant discharge of 36,000 cfs; 2,413 KAF reservoir)	5,400 GWh/yr	\$429 M (1968)	Proposal would destroy spawning areas for fall chinook, spring chinook, and steelhead and would adversely affect resident fisheries, deer, and upland-game birds.	NRA	Environmental issues— Snake River.

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ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
ID, OR	1968	PN	High Mountain Sheep, Middle Snake River	Recon	High Mountain Sheep, Middle Snake River (High Mt. Sheep at RM 189.1; China Gardens at RM 172.5) Thin arch concrete dam (1,675-foot-long crest, 665 feet high, 3,600,000-acre-foot reservoir), powerplant. And China Gardens dam (1,325-foot-long crest, 195 feet high), powerplant, and aeration plant.	Power, flood control, and recreation	(Powerplant discharge of 32,000 cfs)	With China Gardens: 6,900 GWh/yr; without China Gardens: 6,100 GWh/yr	With China Gardens: \$503 M (1968) without China Gardens: \$279M (1968)	All salmon and steelhead runs of the Middle Snake, Salmon, and Imnaha Rivers, with unavoidable losses to these fisheries; adverse effects to resident fisheries, deer, and upland-game birds.	NRA	Environmental issues—Snake River. Cultural and historical resources issues.
ID, OR	1968	PN	Pleasant Valley-Low Mountain Sheep, Middle Snake River	Recon	Pleasant Valley-Low Mountain Sheep, Middle Snake River (RM 213) Thin arch concrete dam (1,250-foot-long crest, 505 feet high, 1,051,000-acre-foot reservoir), powerplant, reregulating dam, and reregulating powerplant	Power, flood control, and recreation	NRA	5,200 GWh/yr	\$401 M (1968)	Would destroy spawning areas for fall chinook, spring chinook, and steelhead; resident fisheries, deer, and upland-game birds.	NRA	Environmental issues—Snake River.

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ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
ID	1969, 1991	PN	Teton Basin Project, Lower Teton Division, Idaho, Definite Plan Report (1969); Teton Dam Reappraisal Working Document (1991)	Definite Plan Report	Teton dam with powerplant (1991—various alternatives). (RM 19.9)	Supplemental irrigation, power, flood control, recreation, fish and wildlife	NRA	78.4 GWh/yr	Rockfill dam: \$215 M Concrete RCC \$339 million (1991)	"Fishing in the 17 mile reach was once considered one of the finest in Idaho and contained a self-sustaining population of cutthroat trout." "Excellent trout habitat." "Mitigation requirements for reconstruction of the dam would be based on the habitat as it existed before the original construction." (1991)	Geo-technical engineering considerations, cost benefit ratios, environmental concerns. (1991)	Environmental issues. Economic issues. Water supply issues. Technical issues—geo-technical engineering considerations.
ID	1977	PN	Garden Valley - Scriver Creek Complex, Payette River	Recon	Garden Valley - Scriver Creek Complex, Payette River (tunnel from North Fork RM 18 to Middle Fork RM 8) Diversion dam and tunnel to dam, reservoir and powerplant; lower powerplant; dam, reservoir, and powerplant; reregulating dam, reservoir, and powerplant. Alternatives included Scriver Creek Unit on the North Fork Payette River	Irrigation, power generation, flood control, and recreation	NRA	Garden Valley: 534 GWh/yr Scriver Creek Unit: 636 GWh/yr	Garden Valley: \$535 M (1977) Scriver Creek Unit: \$145 M (1977)	Detrimental effect on fish and wildlife resources .	NRA	Water supply issues. Environmental issues—world-class whitewater area.
ID	1977	PN	Twin Falls Low Line Canal Power Drop, Snake River	Pre-appraisal	Twin Falls Low Line Canal Power Drop, Snake River Headworks and powerplant	NRA	NRA	29 GWh/yr	\$10 M (1977)	NRA	NRA	Environmental issues. Water supply issues

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ID	1977	PN	Upper Snake River Project, Lynn Crandall Dam, Reservoir, and Powerplant, Snake River	Appraisal	Upper Snake River Project, Lynn Crandall Dam, Reservoir, and Powerplant, Snake River (about RM 898) [renamed from Burns Creek Project] Reregulating dam and powerplant (reregulating for Palisades Dam releases)	Power	NRA	1,139 GWh/yr (includes generation from proposed enlargement at Palisades Powerplant)	\$383.5 M (1977)	Flagged for concerns with environmental acceptability. Opposed by fisheries and environmental groups in southeastern Idaho.	NRA	Environmental issues.
ID	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Alpha Power Project, NF Payette River (south of Cascade, about North Fork RM 31). Concrete gravity dam (105-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 595 cfs)	4.6 GWh/yr	\$5 M (1981)	Moderate impacts to important fishery habitat; minor impacts to water quality. The river has a good population of wild rainbow trout and a reservoir would impair trout habitat.	NRA	Environmental issues—Snake River.
ID	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Auger Falls Power Project, Snake River (north of Twin Falls, RM 607.1). Concrete gravity dam (340-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 6,300 cfs)	225.5 GWh/yr 30 MW	\$30 M (1981)	Moderate (2) environmental impact rating. Stream preservation; important fishery habitat including sturgeon.; estuarine and wetland areas; important wildlife habitat; water quality.	Homeowners may oppose from an aesthetic standpoint. Citizens may oppose loss of scenic whitewater reach.	Environmental issues—Snake River.
ID	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Caribou Bear River	Power	NRA	26.85 GWh/yr 4.7 MW capacity	24.6 M (1982)	Farmland, land and river habitat, cultural resources, water quality. River is Value Class III—Substantial Fishery Resource.	Road bridge, railroad bed, railway line impacted. Not economically feasible.	Environmental issues. Economic issues.

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ID	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Dry Buck Power Project, Payette River (2 miles downstream from Banks, about RM 70). Concrete gravity dam (210-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 4,300 cfs)	58.3 GWh/yr 13.1 MW capacity	\$18 M (1981)	Stream preservation; wetland areas; fishery habitat; water quality. Scenic Highway 55 borders river; recreation (kayakers and floaters).	NRA	Environmental and recreational issues.
ID	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Gardena Power Project, Payette River (about RM 67). 36-foot high concrete ogee (190-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 3,900 cfs)	51.2 GWh/yr 18.6 MW capacity	\$18 M (1981)	Stream preservation; estuarine and wetland areas; important wildlife and fishery habitat; water quality. Scenic highway borders the site. May be some objections from river-runners.	NRA	Environmental issues. Water supply issues.
ID	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Kanaka Rapids Power Project, Snake River (6 miles north of Buhl, RM 591.8). Earthfill dam (980-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 9,840 cfs)	161 GWh/yr 25.5 MW capacity	\$32 M (1981)	Moderate impacts to stream preservation; moderate impacts to important fishery habitat; minor impacts to water quality. Site is one of the last free-flowing whitewater reaches on the Snake River; dam could affect sturgeon population.	NRA	Water supply issues. Environmental issues—Snake River.
ID	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Lufkin Bottom Power Project, Snake River (about RM 865). Concrete gravity dam (1,000-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 6,300 cfs)	181.88 GWh/yr 30 MW capacity	\$52 M (1982)	Substantial (3) environmental impact rating. Within a reach identified by USFWS as the highest ranked Unique Wildlife Ecosystem in Idaho. Cutthroat trout habitat, Bald Eagle nests, Peregrine Falcon, and Grizzly Bear. 8 miles of canyon habitat inundated. Stream preservation; endangered species; park and recreation lands; wilderness, primitive, and natural areas; estuarine and wetland areas; natural beauty areas; to important wildlife and fishery habitat; water quality.	Precludes other development (Burns Creek).	Environmental issues—Snake River.

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ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
ID	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Porter Creek Power Project, Payette River (2.5 miles north of Horseshoe Bend, RM 61.2). Concrete gravity dam (370-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 2,600 cfs)	27 GWh/yr 4.3 MW capacity	\$13 M (1981)	Stream preservation; estuarine and wetland areas; important wildlife habitat; important wildlife and fishery habitat; water quality. Visual impact on scenic highway. Kayakers.	NRA	Environmental issues—Snake River.
ID	1982	UC	Thomas Fork Project	Recon	Thomas Fork Project Dam, powerplant	Irrigation, power, fish and wildlife, flood control	15.468	1.21 GWh/yr	\$14 M (1982)	NRA	NRA	Economic issues.
ID	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Tripod Peak Power Project, NF Payette River (2 miles north of Smiths Ferry, about North Fork RM 17). Concrete gravity dam (130-foot-long crest) with powerplant	Power	0 (run of river). Powerplant discharge of 920 cfs.	8.3 GWh/yr 13 MW capacity	\$6 M (1981)	Moderate impacts to important fishery habitat; minor impacts to water quality. The river has a good population of wild rainbow trout, a reservoir would impair trout habitat.	NRA	Environmental issues — Snake River. Water supply issues.
ID	1985	PN	Cove Bench Irrigation, Weiser River	Appraisal	Cove Bench Irrigation, Weiser River (Plan 6 of 6 tied to proposed Galloway dam upstream at RM 13.7, a Corps project) Concrete flume and powerplant	Irrigation and power generation	NRA	11.1 GWh/yr	\$52.5 M (1984)	NRA	NRA	Environmental issues—Snake River.
ID	1997	PN	Snake River Project, Mountain Home Division, Guffey Dam Reservoir, and Powerplant, Snake River	Feasibility	Snake River Project, Mountain Home Division, Guffey Dam Reservoir and Powerplant, Snake River	Irrigation, power generation, recreation, fish and wildlife, and flood control	NRA (332 KAF reservoir)	613 GWh/yr	\$104 M (1977)	Requires necessary water exchanges and resolution of the anadromous fish conflict	NRA	Environmental issues—Snake River. Water supply issues. May be preempted by other water resources developments.

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Table 8: Kansas—Studies containing hydropower as a project purpose

STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
KS	1951	GP	Power: Resources, Requirements, and Supply	Recon	Edwardsville Dam and Powerplant on Kansas River	Power	0 (run of river)	85 GWh/yr 25 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues – Depending on the location of the project, potential ESA issue (Topeka shiner).
KS	1951	GP	Power: Resources, Requirements, and Supply	Recon	Eudora Dam and Powerplant on Kansas River	Power	0 (run of river)	90 GWh/yr 25 MW capacity	NRA	The 1993 "U.S. Hydropower Assessment for Kansas" (INEL/DOE) indicates significant environmental problems for Eudora.	Site classified as "poor" in the report.	Environmental issues – Depending on the location of the project, potential ESA issue (Topeka shiner).
KS	1951	GP	Power: Resources, Requirements, and Supply	Recon	Lecompton Dam and Powerplant on Kansas River	Power	0 (run of river)	60 GWh/yr 15 MW capacity	NRA	The 1993 "U.S. Hydropower Assessment for Kansas" (INEL/DOE) indicates significant environmental problems for Lecompton.	Site classified as "poor" in the report.	Environmental issues – Depending on the location of the project, potential ESA issue (Topeka shiner).
KS	1951	GP	Power: Resources, Requirements, and Supply	Recon	Melvorn Dam and Powerplant on Maris des Cygnes River	Power, irrigation	NRA	3.9 GWh/yr 1.2 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Preempted by other water resources developments. Corps constructed Melvorn Dam and Reservoir on the Maris des Cygnes River.
KS	1951	GP	Power: Resources, Requirements, and Supply	Recon	St. Joseph Dam and Powerplant on Missouri River	Power	NRA	634 GWh/yr 80 MW capacity	NRA	NRA	Site classified as "poor" in the report. Report indicated this project would conflict with flood control and navigation.	Environmental issues – Depending on the location of the project, potential ESA issue (pallid sturgeon, piping plover, and interior least tern).
KS	1951	GP	Power: Resources, Requirements, and Supply	Recon	Tecumseh Dam and Powerplant on Kansas River	Power	0 (run of river)	54 GWh/yr 15 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues – Depending on the location of the project, potential ESA issue (Topeka shiner).
KS	1951	GP	Power: Resources, Requirements, and Supply	Recon	Topeka Dam and Powerplant on Kansas River	Power	0 (run of river)	78 MWh/year 20 kW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues – Depending on the location of the project, potential ESA issue (Topeka shiner).

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KS	1951	GP	Power: Resources, Requirements, and Supply	Recon	Weston Dam and Powerplant on Missouri River	Power	NRA	638 GWh/yr 80MW capacity	NRA	NRA	Site classified as "poor" in the report. Report indicated this project would conflict with flood control and navigation.	Environmental issues – Depending on the location of the project, potential ESA issue (pallid sturgeon, piping plover, and interior least tern).
KS	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Edwardsville Kansas River	Power	0 (run of the river)	42.46 GWh/yr 7.5 MW capacity	28.1 M (1982)	Water quality (inundating refuse at multiple dump sites).	Need railroad grade crossing, one-half mile of road.	Unknown
KS	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Lecompton Kansas River	Power	0 (run of the river)	14.10 GWh/yr 1.9 MW capacity	21.3 M (1982)	NRA	Need railroad grade crossing, one-half mile of road. Not economically feasible.	Unknown
KS	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Tecumseh Kansas River	Power	0 (run of the river)	8.02 GWh/yr 1.1 MW capacity	13.6 M (1982)	Water quality (inundating refuse at multiple dump sites).	Not economically feasible.	Environmental issues – Depending on the location of the project, potential ESA issue (Topeka shiner).

Table 9: Montana—Studies containing hydropower as a project purpose

STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
MT	1942	GP	Reconnaissance Report on Helena Valley - Morony Dam 1942	Recon	Portage Dam and Powerplant - Helena-Great Falls Division on Missouri River near Great Falls, Montana between Rainbow and Ryan Dams (Northwest Energy Company). 88 foot high gravity concrete dam - reservoir area is confined to the channel section of the Missouri River.	Power	0 (run of river)	20 MW capacity	\$3 M (1942)	NRA	NRA	Unknown
MT	1949	GP	Lower Marias Unit, Definite Plan Report: Volume I - General Plan Appendix	DPR	Shelby Dam and Powerplant on Marias River	Agriculture, power	NRA (estimated storage for reservoir is 617 KAF)	75.8 GWh/yr 16 MW capacity	\$14 M (1939)	NRA	High construction costs, difficulty of canal construction from reservoir. Site classified as "poor" in the report.	Unknown
MT	1950	GP	Water Supply and Hydropower Operation Studies: Upper Marias Unit (Plans I, II, and III with and without St. Mary [sic] and Milk Rivers."	Recon	Babb Dam and Powerplant	Power	Ranging from 375 KAF 443KAF capacity	103.2 to 121.2GWh/yr 12 -14 MW capacity	NRA	NRA	NRA	Cultural and historical resources issues - Blackfeet Indian Reservation
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Bee Hive No. 1 Dam and Powerplant on Stillwater River	Power, irrigation	NRA	89.3 GWh/yr 20 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown

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MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Broadwater Diversion Dam and Powerplant on Clarks Fork River	Power, irrigation	NRA	6.1 GWh/yr 1.8 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Buffalo Rapids Diversion Dam and Powerplant on Yellowstone River	Power	NRA	218.6 GWh/yr 30 MW capacity	NRA	NRA	NRA	Unknown
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Cold Springs Dam and Powerplant on Boulder River	Power, irrigation	NRA	6.9 GWh/yr 1.3 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Divide Dam and Powerplant on Big Hole River	Power	NRA	21.6 GWh/yr 5.5 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Unknown
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	East Boulder Dam and Powerplant on East Boulder River	Power, irrigation	NRA	5.2 GWh/yr 1.5 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Legal and institutional issues — Absaroka-Beartooth Wilderness.
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	East Rosebud Dam and Powerplant on East Rosebud Creek	Power, irrigation	NRA (estimated storage for reservoir is 27 KAF)	4.1 GWh/yr 1MW capacity	\$1.6 M (1942)	Lake would inundate popular summer resort.	Site classified as "poor" in the report.	Legal and institutional issues—Absaroka-Beartooth Wilderness Area.
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Ennis Dam and Powerplant on Madison River	Power, irrigation	NRA	283.2 GWh/yr 58 MW capacity	NRA	NRA	NRA	Preempted by other water resources developments.
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Gallatin No 1 Dam and Powerplant on Gallatin River	Power, irrigation	NRA	51.1 GWh/yr 11 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown

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MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Gallatin No 2 Dam and Powerplant on Gallatin River	Power	NRA	15.9 GWh/yr 3.5 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Unknown
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Gallatin No 3 Dam and Powerplant on Gallatin River	Power	NRA	15.9 GWh/yr 3.5 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Unknown
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Hardy Dam, Powerplant, and Reservoir on the Missouri River	Power	0 (run of river)	134.3 GWh/yr 19 MW capacity	\$10 M (1942)	NRA	Costly relocation of railroad and highway.	Unknown
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Hippe Dam and Powerplant on Madison River	Power	NRA	18.8 GWh/yr 3 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Unknown
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Iliad Dam and Powerplant on Missouri River	Power	NRA	509.1 GWh/yr 107 MW capacity	NRA	NRA	NRA	Unknown
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Little Bighorn No. 1 Dam and Powerplant on the Little Bighorn	Power, irrigation	NRA	9.7 GWh/yr 2 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Lombard Dam and Powerplant on the Missouri River	Power	NRA	180.5 GWh/yr 25 MW capacity	\$15 M (1982)	NRA	NRA	Unknown
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Lower Boulder Dam and Powerplant on the Boulder River	Power, irrigation	NRA	43 GWh/yr 10 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Lower Canyon Dam and Powerplant on Yellowstone River	Power, irrigation	NRA	389.7 GWh/yr 80 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Unknown

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MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Lower Shields Dam and Powerplant on the Shields River	Power	NRA	7.3 GWh/yr 1.5 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	McLeod Dam and Powerplant on Boulder River	Power, irrigation	NRA	35.9 GWh/yr 7.5 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Moorhead Dam and Powerplant on Powder River	Power, irrigation	NRA	29.2 GWh/yr 8 MW capacity	NRA	NRA	NRA	Unknown
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Natural Bridge Dam and Powerplant on Boulder River	Power, irrigation	NRA	59.9 GWh/yr 25 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Legal and institutional issues - Absaroka-Beartooth Wilderness.
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Paris Dam and Powerplant on South Fork of North Fork Sun River	Power, irrigation	NRA	10.1 GWh/yr 1.8 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Rockwood No. 4A Dam and Powerplant on Tongue River	Power	NRA	23.7 GWh/yr 5 MkW capacity	NRA	NRA	NRA	Unknown
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Sand Ford Dam and Powerplant on East Rosebud Creek	Power	NRA (estimated storage for reservoir is about 37.4 KAF)	5 GWh/yr 1.2 MW capacity	\$0.9 M (1942)	NRA	Site classified as "poor" in the report.	Unknown

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MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Sioux Charley Dam and Powerplant on Stillwater River	Power	NRA (estimated storage for reservoir is 23 KAF)	11.8 GWh/yr 3.5 MW capacity	\$2.5 M (1942)	NRA	Site classified as "poor" in the report.	Legal and institutional issues—Absaroka-Beartooth Wilderness Area.
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Spanish Creek Dam and Powerplant on Gallatin River	Power, irrigation	NRA	84.8 GWh/yr 15 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Squaw Creek Dam and Powerplant on Madison River	Power	NRA	55.6 GWh/yr 9.5 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Unknown
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Truly Dam and Powerplant on Smith River	Power	NRA	7.9 GWh/yr 1.3 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Ulm Dam and Powerplant on the Missouri River	Power	NRA	64.5 GWh/yr 8.5 MW capacity	\$15.5 M (1982)	NRA	Site classified as "poor" in the report.	Unknown
MT	1951	GP	Power: Resources, Requirements, and Supply	Recon	Upper Sun Butte Dam and Powerplant on North Fork Sun River	Power, irrigation	NRA	23.5 GWh/yr 6 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Legal and institutional issues — Bob Marshall Wilderness.

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MT	1958, 1972	GP	Lyon Diversion Dam and Lyon Powerplant 1957; Appraisal Report on Re-examination of Missouri-Yellowstone Tributaries	Recon	Lyon Diversion Dam and Powerplant on Madison River	Power	0 (run of river)	18 MW capacity	\$7 M (1957)	Fish passage	NRA	Technical issues—May be technically infeasible after 1959 earthquake at original dam site.
MT	1959	PN	Eddy Project, Clark Fork River	Recon	Eddy Project, Clark Fork River (RM 215) Earth and rockfill dam (55 feet high,) and powerplant	Power	NRA 160 KAF reservoir	90 MW capacity	\$82 M (1957)	NRA	Would inundate two small villages and several miles of railway, highway, transmission lines, and an oil line.	Environmental issues—Clark Fork River.
MT	1959	PN	Knowles Dam, Lower Flathead, Flathead River (RM 2.7)	Recon	Knowles Dam, Lower Flathead, Flathead River (RM 2.7). Earthfill and concrete gravity dam (2,050-foot-long crest, 266 feet high) and powerplant	Power and flood control	NRA 3,080 KAF reservoir	1,323 GWh/yr onsite; 1,200 GWh/yr downstream	\$235 M (1958)	NRA	Would inundate 45,600 acres of land, including 367 buildings, 70+ miles of power lines and telephone lines, and the residences of 1,284 persons [1959].	Environmental issues.
MT	1959	PN	Quinn Springs Dam and Powerplant, Clark Fork River	Recon	Quinn Springs Dam and Powerplant, Clark Fork River (RM 251, six miles upstream from Flathead R.) Concrete gravity dam (1,150-foot-long crest, 200 feet high) and powerplant	Power	NRA 135 KAF reservoir	54 MW capacity	\$52 M (1957)	NRA	NRA	Environmental issues—Clark Fork River.

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MT	1959	PN	Superior Dam and Powerplant, Clark Fork River	Recon	Superior Dam and Powerplant, Clark Fork River (RM 281, four miles downstream from Superior) Concrete gravity dam (1,025-foot-long crest, 50 feet high) and powerplant	Power	NRA 17.5 KAF reservoir	18 MW capacity	\$15 M (1957)	Important fishery habitat.	NRA	Environmental issues—Clark Fork River.
MT	1961	PN	McNamara Dam Reservoir, and Powerplant, Blackfoot River	Appraisal	McNamara Dam Reservoir, and Powerplant, Blackfoot River (RM 13.5) [Blackfoot R. mouth at Clark Fork RM 364.6] Earth and rockfill dam (750-foot-long crest, 133 feet high) and powerplant	Reregulation dam, power	NRA 41.500 KAF reservoir	82 GWh/yr	\$18 M (1960)	Economics	Dependent on proposed Ninemile dam upstream at RM 22.	Environmental issues—Clark Fork River. May be preempted by other water resources developments—private Milltown Hill Dam at Clark Fork RM 364.4 being decommissioned.
MT	1963	GP	Joint Report (Bureau of Reclamation and Corps) on Water and related Land Resources development for Missouri River, Fort Peck to vicinity of Fort Benton, Montana	Recon	Alternatives: Bearpaw Dam and Powerplant, Carter Dam and Powerplant, Heller Bend Dam and Powerplant, Illiad Dam and Powerplant, Rocky Point Dam and Powerplant, Virgelle Dam and Powerplant, Cow Creek Dam and Powerplant, and Fort Benton Dam and Powerplant on the Missouri River.	Power, flood control, recreation, fish and wildlife	NRA	Bearpaw: 268.8 GWh/yr 40 MW capacity; Carter: 374.3 GWh/yr 60 MW capacity; Heller Bend: 1533 GWh/yr; Illiad: 880 GWh/yr; Rocky Point: 350 GWh/yr 50 MW capacity; Virgelle: 460 GWh/yr; Cow Creek: 0.55 - 1.48 GWh/yr; Fort Benton: 688 GWh/yr	Bearpaw, Carter NRA Heller Bend: \$237 M Illiad: \$144 M Rocky Point: \$68-140 M Virgelle: \$125 M Cow Creek \$100.5 to \$217 M Fort Benton \$114 M (1963)	NRA	Bearpaw: dropped. Carter: questionable foundation. Heller Bend NRA. Illiad: would inundate communities of Loma and Virgelle. Rocky Point: no further study was recommended. Virgelle: NRA. Cow Creek: NRA. Fort Benton: NRA.	Legal and institutional issues—Upper Missouri Wild and Scenic River and Missouri Breaks National Monument area or adjacent to the CMR National Wildlife Refuge.

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MT	1963	GP	Report on Yellowstone Division, Montana-North Dakota	Recon	Allenspur Dam and Powerplant - Yellowstone Division, P-SMBP on the Yellowstone River	Power, irrigation, flood control	NRA	679.3 GWh/yr 250 MW capacity	\$128 M (1961)	Inundates 33 miles of valuable fishing stream. Montana Department of Fish and Game and U.S. Fish and Wildlife Service oppose any site above Laurel on the mainstream.	Growth by City of Livingston would encroach on reservoir area.	Unknown
MT	1963	GP	Missouri River Basin Project Northeast Montana Division Power Studies	Recon	Bainville Dam and Powerplant on Missouri River	Power	Inflows based on releases from Corps' Fort Peck Dam	118.97 GWh/yr	NRA	NRA	NRA	Environmental issues—pallid sturgeon habitat. Water supply issues.
MT	1963	GP	Missouri River Basin Project Northeast Montana Division Power Studies	Recon	Brockton Dam and Powerplant on Missouri River	Power	Inflows based on releases from Corps' Fort Peck Dam	192.15 GWh/yr	NRA	NRA	NRA	Environmental issues—pallid sturgeon habitat. Water supply issues.
MT	1963	GP	Report on Yellowstone Division, Montana-North Dakota	Recon	Lissa Dam and Powerplant, Yellowstone Division, Pick Sloam Missouri Basin Program on the Yellowstone River	Power, irrigation, flood control	NRA (1,100 to 1,600 KAF storage)	67-85 MW capacity	\$101-108 M (1963)	NRA	Costly acquisition for rights of way.	Unknown
MT	1963	GP	Missouri River Basin Project Northeast Montana Division Power Studies	Recon	Little Porcupine Creek Dam and Powerplant on Missouri River	Power	Inflows based on releases from Corps' Fort Peck Dam	136.35 GWh/yr	NRA	NRA	NRA	Environmental issues—pallid sturgeon habitat. Water supply issues.
MT	1963	GP	Report on Yellowstone Division, Montana-North Dakota	Recon	Mission Dam and Powerplant - Yellowstone Division, Pick Sloam Missouri Basin Program (Yellowstone River)	Power, irrigation, flood control	NRA (890 storage)	263 GWh/yr 50 MW capacity	\$12,278 (1943)	Loss of fishing in reservoir area.	Could require 20 miles of railroad and interstate highway relocation.	Unknown

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MT	1963	GP	Data for Preliminary Designs and Feasibility Estimates, Reichle Dam	NRA	Reichle Dam and Reservoir on the Big Hole River	NRA	600	68.5 GWh/yr 10.3 MW capacity	Project cost w/powerplant \$7.1 M (1958)	NRA	Deemed "currently infeasible" but the plan would provide for possible future generation by installing 4 penstocks.	Unknown
MT	1963	GP	Report on Yellowstone Division, Montana-North Dakota	Recon	Wanigan Dam, Powerplant, and Reservoir on the Yellowstone River	Power, flood control, Irrigation	NRA (1.320 MAF storage)	200 MW capacity	\$127 M (1963)	May contribute to fishery and agriculture losses within reservoir. Montana Department of Fish and Game and U.S. Fish and Wildlife Service, oppose any site above Laurel on the mainstream.	None	Unknown
MT	1963	GP	Missouri River Basin Project Northeast Montana Division Power Studies	Recon	Wolf Point Dam and Powerplant on Missouri River	Power	Inflows based on releases from Corps' Fort Peck Dam	196.33 GWh/yr	NRA	NRA	NRA	Environmental issues—pallid sturgeon habitat. Water supply issues
MT	1963	GP	Report on Yellowstone Division, Montana-North Dakota, Missouri River Basin Project	Recon	Yankee Jim Dam and Powerplant on Yellowstone River	Power, irrigation	NRA (360 KAF storage)	205GWh/yr 50 MW capacity	NRA	NRA	NRA	Unknown
MT	1970, 1971	GP	Status Report on Fort Benton Unit	Feasibility	Fort Benton Dam, Afterbay Dam Powerplant, and Reservoir on Missouri River	Agriculture (future), power, flood control, fish and wildlife, recreation	NRA (estimated storage for reservoir is 880 KAF)	760.30 GWh/yr	\$218 M (Oct 1967)	Would impact proposed National Wilderness Waterway (now Wild & Scenic River area), wildlife using river bottom areas, and Lewis and Clark Trail area.	NRA	Legal and institutional issues—Upper Missouri Wild and Scenic River.

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MT	1972	GP	Appraisal Report on Re-examination of Missouri-Yellowstone Tributaries	Appraisal	Fishtrap Dam and Reservoir on Big Hole River	Power, irrigation	NRA (100 KAF storage) - Fishtrap	16 GWh/yr 2.5 MW capacity	\$1 M (1972)	NRA	None of the units found to be feasible.	Unknown
MT	1972	GP	Appraisal Report on Re-examination of Missouri-Yellowstone Tributaries	Appraisal	Glen Dam and Powerplant	Power, irrigation	NRA (533 KAF storage)	74.1 GWh/yr 14 MW capacity	\$6.1 M (1972)	NRA	None of the units found to be feasible.	Unknown
MT	1972	GP	Appraisal Report on Re-examination of Missouri-Yellowstone Tributaries	Appraisal	Titan Dam and Powerplant	Power, irrigation	NRA (200 KAF storage)	38.6 GWh/yr 6 MW capacity	\$5.5 M (1972)	NRA	None of the units found to be feasible.	Unknown
MT	1977	PN	Ninemile Prairie Dam, Reservoir and Powerplant, Blackfoot River	Appraisal	Ninemile Prairie Dam, Reservoir and Powerplant, Blackfoot River (RM 22) [Blackfoot R. mouth at Clark Fork RM 364.6] Dam and powerplant	NRA	NRA (1,620 KAF reservoir)	254 GWh/yr	\$153 M (1977)	Flagged for concerns with environmental acceptability	NRA	Environmental issues—Clark Fork River. May be preempted by other water resources developments—private Milltown Hill Dam at Clark Fork RM 364.4 being decommissioned.
MT	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Alberton Power Project, Clark Fork River (about RM 318, downstream from Petty Creek). Concrete gravity dam (360-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 7,640 cfs)	74.71 GWh/yr 16.5 MW capacity	\$28 M (1981)	Moderate (2) environmental impact rating. Park and recreation lands; natural beauty areas; stream preservation; important fishery habitat; water quality. Perhaps local opposition.	NRA	Environmental issues—Clark Fork River.

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MT	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Cold Creek Power Project, Clark Fork River (about RM 274). Concrete gravity dam (300-foot-long crest) with powerplant	Power	NRA (Powerplant discharge of 9,000 cfs)	89.59 GWh/yr 19.5 MW capacity	\$31 M (1981)	Moderate (2) environmental impact rating. Park and recreation lands; stream preservation; water quality. Locals may feel it may disrupt natural setting and river recreation.	NRA	Environmental issues—Clark Fork River.
MT	1982	PN	Hungry Horse Project, Concluding Report, Hungry Horse Powerplant Enlargement and Re-Regulating Reservoir.	Appraisal	Hungry Horse Project, Concluding Report, Hungry Horse Powerplant Enlargement and Reregulating Reservoir [SF Flathead RM 5.2]. New powerplant at outlet works of existing dam; reregulating reservoir, increase of peaking power, decrease in off-peak.	Power, flood control	NRA	951 GWh/yr	NRA		Net loss of annual power output if recommended fish flows used but increased peaking power.	Environmental issues.
MT	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Little Porcupine Missouri River	Power	NRA	60.05 GWh/yr 10.8 MW capacity	\$43.2 M (1982)	Partially on Ft. Peck Indian Reservation. May be culturally significant sites.	NRA	Environmental issues—pallid sturgeon.
MT	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Lombard Missouri River	Power	NRA	19.20 GWh/yr 2.3 MW capacity	14.8 M (1982)	Bald eagles. Temporary noise from construction may reduce bird and mammal activity.	NRA	Unknown

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STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
MT	1982	GP	Fort Benton Reformulation Study - Concluding Report	Recon/appraisal	Low Carter, Fort Benton, Blackhorse Lake, Morony, Belt Creek, High/Low, Highwood, High Carter, Floweree, and Carter Ferry on the Missouri River	Power, fish and wildlife, recreation	NRA	406-689 GWh/yr	\$160-580 M (1981)	Loss of deer habitat in bottomlands, goose nesting islands, fish spawning sites, fur bearers habitat, upland game bird habitat and bald eagle winter habitat, "white water" river stretch below Morony dam. Potential impact to Upper Missouri Wild and Scenic River.	Possible impacts to existing Montana Power Dams and Powerplants. Some alternatives eliminated due to insufficient economic return.	Legal and institutional issues—Depending on location, Upper Missouri Wild and Scenic River.
MT	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Lower Thompson Falls Power Project, Clark Fork River (RM 206, two miles downstream from private Thompson Falls Dam). Controlled concrete weir (330-foot-long crest) with powerplant.	Power	0 (run of river). (Powerplant discharge of 16,200 cfs)	73.23 GWh/yr 10.5 MW capacity	\$34 M (1981)	Minor impacts to natural beauty areas; minor impacts to water quality. Might affect falls upstream.	Dam height limits. Disrupt energy generation at existing upstream 39 MW plant.	Environmental issues—Clark Fork River. May be preempted by other water resources developments.
MT	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Sentinel Missouri River	Power	0 (run of the river)	20.83 GWh/yr 2.4 MW capacity	\$12.9 M (1982)	NRA	May be some local opposition due to existing system of dams and powerplants.	Legal and institutional issues—If this is below Ft. Benton, Missouri's Wild and Scenic segment.
MT	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Seven Mile Rapids Power Project, Clark Fork River (about RM 261, 16 miles upstream from mouth of Flathead River). Concrete gravity dam (300-foot-long crest) with powerplant.	Power	0 (run of river). (Powerplant discharge of 8,680 cfs)	147.68 GWh/yr 30 MW capacity	\$33 M (1981)	Natural beauty areas; stream preservation; water quality. Moderate (2) environmental impact rating. Locals may feel it may disrupt natural setting and river recreation.	NRA	Environmental issues—Clark Fork River.

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STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
MT	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Superior Power Project, Clark Fork River (about RM 291, about six miles upstream from Superior). Gravity dam.	Power	0 (run of river). (Powerplant discharge of 6,400 cfs)	156.29GWh/yr 30 MW capacity	\$34 M (1981)	Stream preservation; fishery habitat; park and recreation lands; natural beauty areas; water quality. 5 residences and a fishing spot.	NRA	Environmental issues—Clark Fork River.
MT	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Swan Lake Power Project, Swan River (about RM 6, upstream from town of Bigfork); tributary to Flathead Lake. Controlled concrete weir (300-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 360 cfs)	1.6 GWh/yr 0.18 MW capacity	\$6 M (1981)	Stream preservation; important fishery habitat; natural beauty areas; wilderness, primitive, and natural areas; wildlife habitat; water quality. Rainbow trout fishery. Migrating fish.	Not economically feasible.	Environmental issues—Flathead River basin.
MT	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Tepee Power Project, Kootenai River (about RM 175, two miles downstream from mouth of Yaak River). Controlled concrete dam (425-foot-long crest) with powerplant.	Power	0 (run of river). (Powerplant discharge of 15,000 cfs)	134.9 GWh/yr 27 MW capacity	\$44 M (1981)	Moderate (2) environmental impact rating. Stream preservation; natural beauty areas; water quality.	The project may experience opposition including legal action due to local sentiment against another dam on the Kootenai River.	Environmental issues. May be Preempted by other developments. Water supply issues.
MT	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Ulm Missouri River	Power	NRA	19.49 GWh/yr 2.2 MW capacity	\$15.6 M (1982)	Moderate (2) social impact rating. Many waterfront properties.	NRA	Unknown

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STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
MT	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Weeksville Power Project, Clark Fork River [est. RM 229, eight miles downstream from town of Weeksville]. Controlled concrete weir (330-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 13,000 cfs)	231.58 GWh/yr 30 MW capacity	\$29 M (1981)	Moderate (2) environmental impact rating. Moderate impacts to important fishery habitat; minor impacts to stream preservation; minor impacts to estuarine and wetland areas; minor impacts to water quality.	NRA	Environmental issues—Clark Fork River. Possible water supply issues
MT	1997	PN	Sloan Bridge Dam and Powerplant, Flathead River	Appraisal	Sloan Bridge Dam and Powerplant, Flathead River (est. RM 44) Dam and powerplant	NRA	NRA (512 KAF reservoir)	876 GWh/yr	\$378 M (1977)	Flagged for concerns with environmental acceptability.	NRA	Water supply issues. Environmental issues.
MT	1997	PN	Smoky Range Dam and Powerplant, North Fork Flathead River	Appraisal	Smoky Range Dam and Powerplant, North Fork Flathead River (RM 166.0) Dam and powerplant	NRA	NRA (1,650 KAF reservoir)	710 GWh/yr	\$269 M (1977)	Flagged for concerns with environmental acceptability.	NRA	Environmental issues.
MT	1997	PN	Spruce Park Dam and Powerplant, Middle Fork Flathead River	Appraisal	Spruce Park Dam and Powerplant, Middle Fork Flathead River (RM 50.0) Dam, powerplant, and tunnel	NRA	NRA (400 KAF reservoir)	570 GWh/yr	\$461 M (1977)	Flagged for concerns with environmental acceptability.	NRA	Environmental issues.

Table 10: Nebraska—Studies containing hydropower as a project purpose

STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
NE	1951	GP	Power: Resources, Requirements and Supply	Recon	Ash Creek Dam and Powerplant on Dismal River (Loup Basin)	Power, irrigation	NRA	10.5 GWh/yr 2MW capacity	NRA	NRA	NRA	Unknown
NE	1951	GP	Power: Resources, Requirements and Supply	Recon	Ashton Dam and Powerplant on Middle Loup River	Power, irrigation	NRA	17.2 GWh/yr 2.3 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues – Piping plover critical habitat.
NE	1951	GP	Power: Resources, Requirements and Supply	Recon	Austin Dam and Powerplant on Middle Loup River	Power, irrigation	NRA	8.6 GWh/yr 1.9 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues – Depending on the location of the project, potential ESA issue (piping plover and least tern).
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Bartlett Dam and Powerplant on Missouri River	Power	NRA	552 GWh/yr 70 MW capacity	NRA	NRA	Site classified as "poor" in the report. The report also indicated project would conflict with flood control and navigation.	Environmental issues – Depending on the location of the project, potential ESA issues (pallid sturgeon, interior least tern and piping plover).
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Bison Dam and Powerplant olo Creek	Power	NRA	3.5 GWh/yr 3.6 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River.
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Cairo Dam and Powerplant on Grand Island Canal	Power, irrigation	NRA	4.8 GWh/yr 1.6 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River.
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Campbells Point Dam and Powerplant on Missouri River	Power	NRA	394 GWh/yr 50 MW capacity	NRA	NRA	Site classified as "poor" in the report. The report also indicated project would conflict with flood control and navigation.	Environmental issues – Depending on the location of the project, potential ESA issues (pallid sturgeon, interior least tern, and piping plover).

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STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Crookston Dam and Powerplant on Niobrara River	Power, irrigation	NRA	21.7 GWh/yr 4.5 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Water supply issues. Legal and institutional issues— six miles upstream of Niobrara National Scenic River. Environmental issues— Potential ESA issues (piping plover and interior least tern)
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Cushing Dam and Powerplant on North Loup River	Power, irrigation	NRA	19.2 GWh/yr 6 MW capacity	NRA	NRA	NRA	Environmental issues – North Loup River is a tributary of the Platte River., potential ESA issues (pallid sturgeon and piping plover).
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Eli Dam and Powerplant on the Niobrara River	Power	NRA	14.6 GWh/yr 4 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Water supply issues. Legal and institutional issues—upstream of Niobrara National Scenic River. Environmental issues— Potential ESA issues (piping plover and interior least tern)
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Georgetown Dam and Powerplant on Dismal River on Loup River Basin	Power, irrigation	NRA	7.7 GWh/yr 1.9 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Unknown
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Kilgore Dam and Powerplant on Niobrara River	Power	NRA	18.7 GWh/yr 4.6 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Water supply issues. Legal and institutional issues—upstream of Niobrara National Scenic River. Environmental issues— Potential ESA issues (piping plover and interior least tern)
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Lees Park Dam and Powerplant on Middle Loup River	Power, irrigation	NRA	29.2 GWh/yr 6.2 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues – Depending on the location of the project, potential ESA issue (piping plover and least tern)
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Long Pine Dam and Powerplant on Long Pine Creek	Power, irrigation	NRA	45.6 GWh/yr 21 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Legal and institutional Issues—Instream flow appropriation to protect 30 miles of trout habitat.

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ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Macy Dam and Powerplant on Missouri River	Power	NRA	407 GWh/yr 50 MW capacity	NRA	NRA	Site classified as "poor" in the report. Project would conflict with flood control and navigation.	Environmental issues – Depending on the location of the project, potential ESA issues (pallid sturgeon, interior least tern, and piping plover).
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Maple Creek Dam and Powerplant on Maple Creek	Power, irrigation	NRA	21.9 GWh/yr 5.3 MW capacity	NRA	NRA	NRA	Preempted by other water resource developments. Environmental issues—Platte River.
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Maskell Dam and Powerplant on Missouri River	Power	NRA	399 GWh/yr 50 MW capacity	NRA	NRA	Site classified as "poor" in the report. Report indicated this project would conflict with flood control and navigation.	Environmental issues – Depending on the location of the project, potential ESA issues (pallid sturgeon, interior least tern, and piping plover).
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Mondamin Dam and Powerplant on Missouri River	Power	NRA	435 GWh/yr 55 MW capacity	NRA	NRA	Site classified as "poor" in the report. Report indicated this project would conflict with flood control and navigation.	Environmental issues – Depending on the location of the project, potential ESA issues (pallid sturgeon, interior least tern, and piping plover).
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Mullen Dam and Powerplant on Middle Loup River	Power, irrigation	NRA	5.4 GWh/yr 1.1 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Preempted by other water resources developments. Lower Loup Natural Resource District is currently studying this potential project.
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Nickerson Dam and Powerplant on Maple Creek. Site in eastern Nebraska, north of Lincoln.	Power, irrigation	NRA	23.2 GWh/yr 5.6 MW capacity	NRA	NRA	NRA	Preempted by other water resource developments. Environmental issues—Platte River.
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Niobrara Dam and Powerplant on Niobrara River	Power, irrigation	NRA	78 GWh/yr 17.8 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—potential ESA issues (piping plover and least tern).

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ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Northport Diversion Dam and Powerplant on Tri-State Canal (North Platte River.)	Power	NRA	49 GWh/yr 10 MW capacity	NRA	NRA	NRA	Environmental issues—Platte River.
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Omaha Dam and Powerplant on Missouri River	Power	NRA	563 GWh/yr 70 MW capacity	NRA	NRA	Site classified as "poor" in the report. Project would conflict with flood control and navigation.	Environmental issues— Depending on the location of the project, potential ESA issues (pallid sturgeon, interior least tern, and piping plover).
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Otter Creek Dam and Powerplant on Niobrara River	Power, irrigation	NRA	66.4 GWh/yr 12 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Legal and institutional issues - Niobrara Wild and Scenic River.
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Peru Dam and Powerplant on Missouri River	Power	NRA	558 GWh/yr 70 MW capacity	NRA	NRA	Site classified as "poor" in the report. Project would conflict with flood control and navigation.	Environmental issues— Depending on the location of the project, potential ESA issues (pallid sturgeon, interior least tern, and piping plover).
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Phoenix Dam and Powerplant on Niobrara River	Power, irrigation	NRA	48.5 GWh/yr 9.4 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues— potential ESA issues (piping plover and interior least tern).
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Pleasant Hill Dam and Powerplant on North Loup River using releases from Willow Park Reservoir.	Power, irrigation	NRA	17 GWh/yr 2.6 MW capacity	NRA	NRA	NRA	Environmental issues—North Loup River is a tributary to the Platte River., potential ESA issues (pallid sturgeon and piping plover).
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Plum Creek Dam and Powerplant on Plum Creek	Power, irrigation	NRA	31 GWh/yr 24 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—Platte River.
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Redbird Dam and Powerplant on Niobrara River	Power, irrigation	NRA	57.6 GWh/yr 12.6 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues— potential ESA issues (piping plover and least tern).

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NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Reservoir No 1 and Powerplant on Niobrara River	Power, irrigation	NRA	9.2 GWh/yr 2.4 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Water supply issues. Legal and institutional issues—upstream of Niobrara National Scenic River. Environmental issues – Potential ESA issues (piping plover and interior least tern)
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Reservoir No 2 and Powerplant on Niobrara River	Power, irrigation	NRA	12.9 GWh/yr 2.6 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Water supply issues. Legal and institutional issues—Upstream of Niobrara National Scenic River. Environmental issues – Potential ESA issues (piping plover and interior least tern)
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Reservoir No 3 and Powerplant on Niobrara River	Power, irrigation	NRA	12.6 GWh/yr 3.2 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Water supply issues. Legal and institutional issues— upstream of Niobrara National Scenic River. Environmental issues— Potential ESA issues (piping plover and interior least tern)
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Reservoir No 4 and Powerplant on Niobrara River	Power, irrigation	NRA	15.5 GWh/yr 4 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Water supply issues. Legal and institutional issues— upstream of Niobrara National Scenic River. Environmental issues— Potential ESA issues (piping plover and interior least tern)
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Reservoir No 5 and Powerplant on Niobrara River	Power, irrigation	NRA	27.6 GWh/yr 5.4 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Legal and institutional issues – Niobrara National Scenic River.
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Reservoir No 6 and Powerplant on Snake River (Niobrara Basin)	Power, irrigation	NRA	8.8 GWh/yr 2.25 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Preempted by other water resource developments – Merritt Dam.

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STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Riverdale Dam and Powerplant on Wood River (Platte River Basin)	Power, irrigation	NRA	9 GWh/yr 6.8 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River.
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Rockville Dam and Powerplant on Middle Loup River	Power, irrigation	NRA	5.2 GWh/yr 3.1 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues— Depending on the location of the project, potential ESA issue (piping plover and interior least tern).
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Rosedale Dam and Powerplant on Clearwater Creek (Elkhorn River Basin)	Power, irrigation	NRA	1.9 GWh/yr 1 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River.
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Rulo Dam and Powerplant on Missouri River	Power	NRA	563 GWh/yr 70 MW capacity	NRA	NRA	Site classified as "poor" in the report. Project would conflict with flood control and navigation.	Environmental issues— Depending on the location of the project, potential ESA issues (pallid sturgeon, interior least tern, and piping plover).
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Sioux City Dam and Powerplant on Missouri River	Power	NRA	403 GWh/yr 50 MW capacity	NRA	NRA	Site classified as "poor" in the report. Project would conflict with flood control and navigation.	Environmental issues— Depending on the location of the project, potential ESA issues (pallid sturgeon, interior least tern, and piping plover).
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Sparks Dam and Powerplant on Niobrara River	Power, irrigation	NRA	21GWh/yr 5.4 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Legal and institutional issues—Niobrara Wild and Scenic River.
NE	1951	GP	Power: Resources, Requirements, and Supply	Recon	Thacher Dam and Powerplant on Niobrara River	Power, irrigation	NRA	26.5 GWh/yr 6.7 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Legal and institutional issues—Niobrara Wild and Scenic River.

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Table 11: Nevada—Studies containing hydropower as a project purpose

STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
NV, UT	1946	LC	Virgin River Sub basin of the Colorado River Basin, Project Planning Report No. 3-8b.01-0; Preliminary Draft (includes Hurricane Project)	Recon	Virgin Plant; Bench Lake Plant; Warner Valley Plant. Construction of storage dam and reservoir at Virgin City site on the Virgin River, and powerplants.	Irrigation-water storage, power, flood control, and silt control.	NRA	Virgin Plant: 14.4 GWh/yr Bench Lake Plant: 5.5 GWh/yr Warner Valley Plant: 17 GWh/yr	\$17 M(1946)	NRA	NRA	Unknown
NV, CA	1961	MP	Hope Valley Division, Washoe Project	Appraisal	Hope Valley Reservoir Woodfords and Paynesville Powerplants	Irrigation, flood control, power	NRA	NRA	\$19 M (1961)	NRA	NRA	Economic issues.
NV	1980	MP	Western States Inventory of Low-Head Hydroelectric Sites	Recon	Lawton Dam on Truckee River	Power	NRA	4.1 MW capacity	NRA	Range from "minor" to "serious" consequences	NRA	Water supply issues.
NV, AZ	1981	LC	Rifle Range Pumped Storage Project	Appraisal	Rifle Range Dam (concrete decked-rockfill); reservoir; powerhouse; pump-generator units; penstock tunnel	Power	165.6	3 GWh/yr	\$1,700 M (1981)	NRA	NRA	Unknown

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STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
NV, AZ	1988	LC	Spring Canyon Pumped Storage Project	Feasibility	Spring Canyon Dam; 3 dikes; underground powerhouse; outlet works; waterways; 75 miles power transmission line; access tunnels; switchyard.	Peak power	Not applicable	2 GWhr/yr	\$1,570 M (1988)	Could contribute to salinity increases in the Colorado River through salt pickup by seepage returning to Lake Mead; loss of 89 acres of tortoise habitat permanently; temporary impact to 336 acres though no tortoises found during surveys. Bald eagle found in area; 2 petroglyphs and light lithic scatter in area of dike 1; group of 53-88 Desert Bighorn Sheep found earlier in area; decrease in small mammals and birds; fish entrainment. Construction-phase impacts to local communities; recreation, fish and wildlife, environmental interests; decrease in small mammal populations.	NRA	Economic and environmental issues.

Table 12: New Mexico—Studies containing hydropower as a project purpose

STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
NM	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Archuleta San Juan River	Power	0 (run of the river)	21.48 GWh/yr 4.1 MW capacity	\$18.6 M (1982)	Moderate (2) environmental impact rating. Inundate recreation sites, only good trout fishing in northern New Mexico.	Flow regulated by Navajo Dam. Not economically feasible.	Environmental issues. Economic issues.
NM	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Cudai San Juan River	Power	0 (run of the river)	44.17 GWh/yr 9 MW capacity	\$36.8 M (1982)	On Navajo Indian Reservation.	Build 5.5 miles of road. Not economically feasible.	Environmental issues. Economic issues.
NM	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Mancos River San Juan River	Power	0 (run of the river)	60.61 GWh/yr 12 MW capacity	43.4 M (1982)	Moderate (2) environmental impact rating. On Navajo Indian Reservation.	Upgrade 5 miles of road.	Environmental issues. Economic issues.
NM	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Red Wash San Juan River	Power	0 (run of the river)	35.39 GWh/yr 6.7 MW capacity	40.0 M (1982)	On Navajo Indian Reservation.	Upgrade 3 miles of road. Not economically feasible.	Environmental issues. Economic issues.

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Table 13: North Dakota—Studies containing hydropower as a project purpose

STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
ND	1951	GP	Power: Resources, Requirements, and Supply	Recon	Elkhorn Dam and Powerplant on Little Missouri River	Power, irrigation	NRA	33.9 GWh/yr 9 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
ND	1951	GP	Power: Resources, Requirements, and Supply	Recon	Mandan Dam and Powerplant on Missouri River	Power, irrigation	NRA	474 GWh/yr 100 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—ESA species piping plover and pallid sturgeon. Significant riverside development since original report was completed.
ND	1951	GP	Power: Resources, Requirements, and Supply	Recon	Marmarth Dam and Powerplant on Little Missouri River	Power, irrigation	NRA	6.8 GWh/yr 1.5 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
ND	1951	GP	Power: Resources, Requirements, and Supply	Recon	Medora Dam and Powerplant on Little Missouri River	Power	NRA	19.9 GWh/yr 3.5 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
ND	1951	GP	Power: Resources, Regulations, and Supply	Recon	Ranger Dam and Powerplant on Little Missouri River	Power, irrigation	NRA	12.1 GWh/yr 2.5 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
ND	1960	GP	Tabulation Showing Evolution of Missouri River Basin Project and Comparison of Original and Current (1958) Plans. May 20, 1960 Memorandum	Feasibility	Crosby Powerplant (Canal Drop) - Missouri-Souris Division	Power, irrigation	NRA	71.6 MW capacity	NRA	NRA	Eliminated by Garrison Diversion Unit.	Unknown

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STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
ND	1960	GP	Tabulation Showing Evolution of Missouri River Basin Project and Comparison of Original and Current (1958) Plans. May 20, 1960 Memorandum	Feasibility	Deslacs Powerplant (Canal Drop) - Missouri-Souris Division	Power, irrigation	NRA	66.7 MW capacity	NRA	NRA	Eliminated by Garrison Diversion Unit.	Unknown

Table 14: Oklahoma—Studies containing hydropower as a project purpose

STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
OK	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Fairfax Arkansas River	Power	0 (run of the river)	42.22 GWh/yr 9 MW capacity	\$45.8 M (1982)	On boundary of Osage Indian Reservation. Agriculture, oil and gas potential. Fisheries. Value Class I Highest Valued Fishery Resource.	Not economically feasible. May flood M&I, irrigation wells. Flow may change from potential powerplant upstream on Kaw Dam.	Unknown
OK	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Lone Elm Verdigris River (River empties into Arkansas River just north of Muskogee.)	Power	0 (run of the river)	26.84 GWh/yr 12 MW capacity	\$26.5 M (1982)	Fishery. Value Class I—Highest Valued Fishery Resource. Visual (transmission line).	Not economically feasible.	Unknown
OK	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Oologah Verdigris River	Power	0 (run of the river)	7.95 GWh/yr 1.9 MW capacity	\$10.5 M (1982)	Fishery. Value Class I—Highest Valued Fishery Resource. Visual (transmission line).	Not economically feasible. Need to study effect of operations on Corps' Oologah Dam.	Unknown
OK	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Spiro Poteau River	Power	0 (run of the river)	2.60 GWh/yr 0.55 MW capacity	\$9.6 M (1982)	Value Class I—Highest Valued Fishery Resource. Agriculture, riparian habitat, more flooding. Upstream from strip mining.	Not economically feasible.	Unknown
OK, TX	1989	GP	Red River Basin, Arkansas, Texas, Louisiana, and Oklahoma Interagency Comprehensive Technical Report	Appraisal	Gainesville project on Red River	Multipurpose, power.	NRA	NRA	NRA	NRA	NRA	Unknown

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STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
OK, TX	1989	GP	Red River Basin, Arkansas, Texas, Louisiana, and Oklahoma Interagency Comprehensive Technical Report	Appraisal	Garretts Bluff project on Red River	Multipurpose, power.	NRA	NRA	NRA	NRA	Unknown	Unknown
OK, TX	1989	GP	Kiamichi Hydropower Study; Red and Arkansas River Basins	Appraisal	Kiamichi Hydropower Study; Red and Arkansas River Basins 19 runs of river hydropower sites, 30 hydropower and water storage sites	Power, irrigation	NRA	NRA	NRA	None assessed but study summary concluded extensive analysis needed.	Found no economically feasible sites.	Unknown
OK, TX	1989	GP	Red River Basin, Arkansas, Texas, Louisiana, and Oklahoma Interagency Comprehensive Technical Report	Appraisal	Spanish Fort project on Red River	Multipurpose, power.	NRA	NRA	NRA	NRA	NRA	Unknown

Table 15: Oregon—Studies containing hydropower as a project purpose

STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
State	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
OR	1953	PN	Rogue River Project, Cascade Gorge Unit, Union Peak Division, Rogue River	Feasibility	Rogue River Project, Cascade Gorge Unit, Union Peak Division. (RM 161) [Corps' Lost Creek Dam at RM 162.0]Rogue River Dam (311-foot-long crest), diversion dam (19-foot-long crest, 31 feet high) and powerplant	Power	NRA (Maximum powerplant discharge of 1,134 cfs)	13.3 GWh/yr	\$12.5 M (1953)	NRA	NRA	Environmental issues. Water supply issues.
OR, ID	1968	PN	Appaloosa-Low Mountain Sheep, Middle Snake River	Recon	Appaloosa-Low Mountain Sheep, Middle Snake River (Low Mt. Sheep at RM 192.5; Appaloosa at RM 197.6) Thin arch concrete dam (1,730-foot-long crest, 600 feet high), reregulating dam (855-foot-long crest, 255 feet high), powerplant, and aeration plant	Power, flood control, and recreation	NRA (Powerplant discharge of 36,000 cfs, 2,413 KAF reservoir)	5,400 GWh/yr	\$429 M (1968)	Proposal would destroy spawning areas for fall chinook, spring chinook, and steelhead and would adversely affect resident fisheries, deer, and upland-game birds.	NRA	Environmental issues—Snake River.

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STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
State	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
OR, ID	1968	PN	High Mountain Sheep, Middle Snake River	Recon	High Mountain Sheep, Middle Snake River (High Mt. Sheep at RM 189.1; China Gardens at RM 172.5) Thin arch concrete dam (1,675-foot-long crest, 665 feet high), powerplant. And China Gardens dam (1,325-foot-long crest, 195 feet high), powerplant, and aeration plant.	Power, flood control, and recreation	NRA (Powerplant discharge of 32,000 cfs, 3,600 KAF reservoir)	With China Gardens: 6,900 GWh/yr; without China Gardens 6,100 GWh/yr	With China Gardens: \$503 M (1968) without China Gardens: \$279M (1968)	All salmon and steelhead runs of the Middle Snake, Salmon, and Imnaha Rivers, with unavoidable losses to these fisheries; adverse effects would occur to resident fisheries, deer, and upland-game birds.	NRA	Environmental issues—Snake River. Cultural and historical resources issues.
OR, ID	1968	PN	Pleasant Valley-Low Mountain Sheep, Middle Snake River	Recon	Pleasant Valley-Low Mountain Sheep, Middle Snake River (RM 213) Thin arch concrete dam (1,250-foot-long crest, 505 feet high.), powerplant, reregulating dam, and reregulating powerplant	Power, flood control, and recreation	NRA (1,051 KAF reservoir)	5,200 GWh/yr	\$401 M (1968)	Would destroy spawning areas for fall chinook, spring chinook, and steelhead; resident fisheries, deer, and upland-game birds.	NRA	Environmental issues—Snake River.
OR	1977	PN	Three Forks Dam and Powerplant, Owyhee River	Appraisal	Three Forks Dam and Powerplant, Owyhee River (RM 157.2)	NRA	NRA (1,000 KAF reservoir)	115 GWh/yr	\$71 M (1977)	Flagged for concerns with environmental acceptability.	NRA	Water supply issues
OR	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Black Canyon Power Project, Willamette River (about RM 2 on North Fork of Middle Fork near Westfir). Concrete gravity dam (750-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 2,400 cfs)	28.63 GWh/yr 4.3 MW capacity	\$21 M (1981)	Park and recreation lands; stream preservation; fishery habitat; water quality. River use is mainly fishing. On U.S. Forest Service land; along a highway with potential scenic designation	NRA	Environmental issues—Willamette River. Water supply issues.

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STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
State	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
OR	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Chalk Creek Power Project, Willamette River (about RM 13 on North Fork of Middle Fork near Westfir). Concrete gravity dam (150-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 400 cfs)	5.24 GWh/yr 0.85 MW capacity	\$7 M (1981)	Park and recreation lands; stream preservation; fishery habitat; water quality. On U.S. Forest Service land; along a highway with potential scenic designation.	Not economically feasible.	Environmental issues—Willamette River. Water supply issues.
OR	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Hamner Creek Power Project, Willamette River (about RM 12 of North Fork of Middle Fork, near Westfir). Concrete gravity dam (300-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 840 cfs)	18.91 GWh/yr 19 MW capacity	\$14 M (1981)	Park and recreation lands; stream preservation; fishery habitat; water quality. U.S. Forest Service land; along a highway with potential scenic designation.	Not economically feasible.	Environmental issues—Willamette River. Water supply issues.
OR	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Lower Opal City Power Project, Crooked River (about RM 7.5). Concrete gravity dam (115-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 2,000 cfs)	61.3 GWh/yr 9.5 MW capacity	\$14 M (1981)	Moderate (2) environmental impact rating. Nationwide Inventory of Natural and Free-flowing Rivers. Stream preservation; natural beauty areas; fishery habitat; water quality.	Currently under power withdrawal. Bureau of Land Management proposed that power withdrawal be revoked.	Environmental issues—fish and wildlife. Water supply issues.
OR	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Lower Smock Prairie Power Project, White River (about RM 16) [tributary to lower Deschutes River]. Concrete gravity dam (290-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 285 cfs)	9.29 GWh/yr 9 MW capacity	\$9 M (1981)	Natural beauty areas; stream preservation; wilderness, primitive and natural areas; important fishery habitat; water quality. Downstream at Tygh Valley Falls barrier to threatened and endangered steelhead and salmon.	Not economically feasible.	Environmental issues.

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STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
State	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
OR	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	New Bull Run Power Project, Bull Run River (about RM 3) [Bull Run R. mouth at Sandy River RM 18.5; Sandy R. mouth at Columbia RM 120.]. Concrete gravity dam (170-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 550 cfs)	9.75 GWh/yr 2.4 MW capacity	\$9.5 M (1981)	Stream preservation; natural beauty areas; minor water quality. Closed watershed: No fishing allowed.	Not economically feasible.	Environmental issues—Columbia River Basin. Private (Pacific Gas and Electric) hydropower dams upstream are being decommissioned for threatened and endangered species habitat improvement (instream flows and water quality).
OR	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Upper Opal City Power Project, Crooked River (about RM 8.5). Concrete gravity dam (240-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 285 cfs)	9.29 GWh/yr 9.5 MW capacity	\$8.5 M (1982)	Moderate (2) environmental impact rating. Natural beauty areas; stream preservation; wilderness, primitive and natural areas; important fishery habitat. Nationwide Inventory of Natural and Free-flowing Rivers. Tygh Valley Falls downstream barrier to threatened and endangered steelhead and salmon.	Currently under power withdrawal. Bureau of Land Management proposed that power withdrawal be revoked. Not economically feasible.	Environmental issues—Columbia River Basin.
OR	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Upper Smock Prairie Power Project, White River (about RM 17) [tributary to lower Deschutes River] Concrete gravity dam (240-foot-long crest) with powerplant	Power	0 (run of the river) (Powerplant discharge of 285 cfs)	9.29 GWh/yr 1.3 MW capacity	\$8.5 M (1982)	Natural beauty areas; stream preservation; wilderness, primitive and natural areas; important fishery habitat. Tygh Valley Falls downstream barrier to threatened and endangered steelhead and salmon.	NRA	Environmental issues—Columbia River Basin.
OR	1987	MP	Upper Klamath Offstream Storage Study, Klamath Project	Appraisal	Upper Klamath Offstream Storage Study, Klamath Project Long, Round, and Aspen Lakes	Power, irrigation, recreation, fish and wildlife, water quality	NRA	NRA	Several reservoirs considered in 2003—costs updated	NRA	NRA	Economic issues. Aspen and Round Lakes have been excluded from a recent assessment.
OR	1991	PN	Big Rock Creek Project, Siletz River	Recon	Big Rock Creek Project, Siletz River (mouth at Pacific Ocean) Dam and powerplant	M&I water, fisheries, and power generation	NRA (31 KAF reservoir)	26 GWh/yr	\$61 M (1991)	NRA	NRA	Environmental issues—anadromous fish.

Table 16: South Dakota—Studies containing hydropower as a project purpose

STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
SD	1951	GP	Power: Resources, Requirements, and Supply	Recon	Little White Dam and Powerplant on Little White River	Power, irrigation	NRA	5.1 GWh/yr 1 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
SD	1951	GP	Power: Resources, Requirements, and Supply	Recon	Weta Dam and Powerplant on White River	Power, irrigation	NRA	6.6 GWh/yr 1.2MW capacity	NRA	NRA	NRA	Unknown
SD	1965	GP	Report on Oahe Unit - James Division	Feasibility	Miller Powerplant (Canal Drop) - James Division, Oahe Unit	Power, irrigation	NRA	141.5 MW capacity	NRA	NRA	No local interest in additional Oahe Unit studies. Canal-drop powerplants were not economical in the unit.	Unknown

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Table 17: Texas —Studies containing hydropower as a project purpose

STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
TX	1945	GP	Rio Grande Basin Colorado - New Mexico - Texas	Recon	Martin Canyon Dam and Powerplant on Rio Grande River	Power, irrigation, flood control	NRA (2 MAF storage)	Total for Martin, Palafox, and Falcone (built) was 330GWhr/yr (80 MW capacity)	NRA	Minimum reservoir pools for fish and wildlife.	Negotiations with Mexico on treaty.	Preempted by other water resources developments—Falcon Dam.
TX	1945	GP	Rio Grande Basin Colorado - New Mexico - Texas	Recon	Palafox Dam and Powerplant on Rio Grande River	Power, irrigation, flood control	NRA (3 MAF storage)	Total for Martin, Palafox, and Falcone (built) was 330GWhr/yr (80 MW capacity)	NRA	Minimum reservoir pools for fish and wildlife	Negotiations with Mexico on treaty.	Preempted by other water resources developments—Falcon Dam.
TX	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Democrat Crossing Navasota River	Power	0 (run of the river)	0.61 GWh/yr 0.20 MW capacity	\$6.5 M (1982)	Class III—Substantial Fishery Resource. May inundate lands with oil, gas, coal, agricultural potential.	Not economically feasible.	Unknown
TX	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Garrett's Bluff Red River	Power	0 (run of the river)	40.13 GWh/yr 6 MW capacity	\$36.8 M (1982)	Substantial (3) social impact (depends on dam height and inundation area). Minor water quality changes.	Build 1 mile of road.	Unknown
TX	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Indian Lake Trinity River	Power	0 (run of the river)	5.55 GWh/yr 0.88 MW capacity	\$8.6 M (1982)	Value Class I—Highest Valued Fishery Resource. Riparian habitat.	Not economically feasible.	Unknown
TX	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Threemile Creek Brazos River	Power	0 (run of the river)	58.21 GWh/yr 12 MW capacity	\$27.3 M (1982)	Value Class III—Substantial Fishery Resource in affected reach and Value Class I—Highest Valued Fishery Resource 8 miles downstream.	NRA	Unknown

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STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
TX	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Valliant Reservoir Red River	Power	0 (run of the river)	22.46 GWh/yr 3 MW capacity	\$20.1 M (1982)	Minor water quality changes.	NRA	Unknown
TX	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Wade Reservoir Red River	Power	0 (run of the river)	76.46 GWh/yr 19.5 MW capacity	\$95.6 M (1982)	Substantial social impacts (homes and farmland).	Build 5 miles of road. Not economically feasible.	Unknown
TX, OK	1989	GP	Red River Basin, Arkansas, Texas, Louisiana, and Oklahoma Interagency Comprehensive Technical Report	Appraisal	Gainesville project on Red River	Multipurpose, power.	NRA	NRA	NRA	NRA	NRA	Unknown
TX, OK	1989	GP	Red River Basin, Arkansas, Texas, Louisiana, and Oklahoma Interagency Comprehensive Technical Report	Appraisal	Garretts Bluff project on Red River	Multipurpose, power.	NRA	NRA	NRA	NRA	NRA	Unknown
TX, OK	1989	GP	Kiamichi Hydropower Study; Red and Arkansas River Basins	Appraisal	Kiamichi Hydropower Study; Red and Arkansas River Basins 19 runs of river hydropower sites, 30 hydropower and water storage sites	Power, irrigation	NRA	NRA	NRA	None assessed but study summary concluded extensive analysis needed.	1989 report found no economically feasible sites.	Unknown
TX, OK	1989	GP	Red River Basin, Arkansas, Texas, Louisiana, and Oklahoma Interagency Comprehensive Technical Report	Appraisal	Spanish Fort project on Red River	Multipurpose, power.	NRA	NRA	NRA	NRA	NRA	Unknown

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STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
TX	NRA	GP	No formal report identified	NRA	Allair Dam, Powerplant, and Reservoir; Colorado River Project; Colorado River	NRA	NRA	NRA	NRA	NRA	Records indicated that development not economically feasible, Future studies not recommended.	Unknown
TX	NRA	GP	No formal report identified	NRA	Bee Mountain Dam, Powerplant, and Reservoir; Texas Basins Project; Brazos River Unit, Brazos Division; Brazos River	NRA	NRA	NRA	NRA	NRA	Records indicated that development not economically feasible, Future studies not recommended.	Unknown

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Table 18: Utah—Studies containing hydropower as a project purpose

STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
UT, NV	1946	LC	Virgin River Sub basin of the Colorado River Basin, Project Planning Report No. 3-8b.01-0; Preliminary Draft (includes Hurricane Project)	Recon	Virgin Plant; Bench Lake Plant; Warner Valley Plant. Construction of storage dam and reservoir at Virgin City site on the Virgin River, and powerplants.	Irrigation-water storage, power, flood control, and silt control.	NRA	Virgin Plant: 14.4 GWh/yr Bench Lake Plant: 5.5 GWh/yr Warner Valley Plant: 17 GWh/yr	\$17 M (1946)	NRA	NRA	Unknown
UT	1964	UC	Pumped Storage Investigations, Preliminary Reconnaissance Report	Recon	Utah Lake, Sixth Water and Green Bush projects. Reversible pumped turbines, pumped storage, hydro for peaking power.	Power	0	Utah Lake: 200 - 375 MW capacity Sixth Water: 90 MW capacity Green Basin: 200 MW capacity	Utah Lake: \$51.9 M to \$85.1 M Sixth Water: \$23.6 M Greens Basin: \$47.1 M (1964)	NRA	NRA	Economic and financial issues—lack of market demand.
UT	1969	UC	Gray Canyon Project	Recon	Gray Canyon Dam, Power and Pumping Plant and Reservoir; Last Chance Dam & Reservoir; Floy Wash, Salt Wash and Whipsaw dams and reservoirs; Book Cliffs Aqueduct and Rattlesnake Power Project.	Irrigation; power; recreation	Annual yield NRA. 1.95 MAF of useful capacity if fully developed. Reservoir size is 4.15 MAF.	80 MW capacity	\$561 M (1966)	NRA	NRA	Technical issues. Environmental issues.
UT	1969	UC	San Juan Investigation, Mexican Hat Project	Recon	Mexican Hat Project dams would provide water for large steam-electric powerplant.	Water quality, power, M&I, recreation,	658.1	60 MW capacity	\$45.8 M (1969)	NRA	NRA	Environmental issues. Water supply issues.

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STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
UT	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Dead Horse Colorado River	Power	0 (run of the river)	160.30 GWh/yr 30 MW capacity	\$37.5 M (1982)	Substantial (3) environmental and substantial (3) social impact ratings. Visual impacts (near Canyonlands National Park. Visible from Deadhorse State Park overlook). Value Class I—Highest Value Fishery Resource. Colorado squawfish, humpback chub, razorback sucker.	NRA	Environmental issues.
UT	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Horse Thief Colorado River	Power	0 (run of the river)	58.06 GWh/year 9 MW capacity	\$28.8 M (1982)	Substantial (3) environmental and social impact ratings. Visual impacts (near Canyonlands National Park. Visible from Deadhorse State Park overlook). Value Class I—Highest Value Fishery Resource. Colorado squawfish, humpback chub, razorback sucker.	NRA	Environmental issues.
UT	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Mat Martin Colorado River	Power	NRA	66.28 GWh/yr 10.5 MW capacity	\$20.9 M (1982)	Substantial (3) environmental impact rating. Value Class I—Highest Value Fishery Resource. Colorado squawfish, humpback chub, razorback sucker.	NRA	Environmental issues.
UT	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Nine Mile Green River	Power	0 (run of the river)	54.20 GWh/yr 10.5 MW capacity	29.0 M (1982)	Substantial (3) environmental and moderate (2) social impact ratings. Visual (unmarred vista). Value Class I—Highest Value Fishery Resource. Colorado squawfish, humpback chub, razorback sucker.	NRA	Environmental issues.
UT	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Sand Knolls Green River	Power	0 (run of the river)	155.46 GWh/yr 30 MW capacity	\$35.1 M (1982)	Wilderness area. Value Class I—Highest Value Fishery Resource. Colorado squawfish, humpback chub, razorback sucker.	Upgrade 5 miles of jeep trail road.	Environmental issues.

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ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
UT	1982	UC	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Slickhorn San Juan River	Power	0 (run of the river)	65.65 GWh/yr 15 MW capacity	\$40.8 M (1982)	Substantial (3) environmental and moderate (2) social impact ratings.	7 miles of road needed.	Environmental issues.

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Table 19: Washington—Studies containing hydropower as a project purpose

STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
WA, ID	1949	PN	Asotin Project, Middle Snake River	NRA	Asotin Project, Middle Snake River (RM 146.8)	Power	NRA	1,070 GWh/yr	\$28 M (1949)	NRA	NRA	Environmental issues—Snake River.
WA	1974	PN	Columbia North Side Project, White Salmon Division, White Salmon River	Appraisal	Columbia North Side Project, White Salmon Division, White Salmon River [mouth at Columbia RM 168.3] Wallace diversion dam, feeder line, Husum dam (2,750-foot-long crest, 216 feet high), Mountain Brook dam (3,400-foot-long crest, 186 feet high), and pumped-storage powerplant	Irrigation, power generation, flood control, industrial water, and recreation	NRA (Maximum powerplant discharge of 3,467 cfs)	1.44 GWh/yr	\$309 M (1972)	Water quality and fisheries.	NRA	Environmental issues—Columbia River Basin (Removal of Condit Dam (RM 3) to restore fish passage in progress).
WA	1981	PN	Yakima Project, WA, Formulation Working Document, Cle Elum and Tieton Powerplants,	Recon	Yakima Project, Cle Elum Add powerplants to existing Cle Elum Dam switchyard; transmission lines. Dam at Cle Elum RM 8.2 [Cle Elum R. mouth at Yakima RM 185.6]	Power	NRA	0.49 GWh/yr. 18 MW capacity	\$20.6 M (1980)	Minor negative effects.	NRA	Water supply issues. Environmental issues.

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ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
WA	1981	PN	Yakima Project, WA, Formulation Working Document, Cle Elum and Tieton Powerplants,	Recon	Yakima Project, Tieton Add powerplants to existing Tieton Dams; switchyard; transmission lines. Dam at Tieton RM 21.3 [Tieton R. mouth at Naches RM 17.5; Naches R. mouth at Yakima RM 116.3]	Power, flood control, fish and wildlife	NRA	552 GWh/yr 19 MW capacity	\$18.4 M (1980)	Significant wildlife enhancement along canal, minor negative effects elsewhere	NRA	Water supply issues. Environmental issues.
WA	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Brush Creek Power Project, Wind River (about RM 2) [Wind R. mouth at Columbia River RM 144.5]. Concrete gravity dam (320-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 1,560 cfs)	33.69 GWh/yr 6.8 MW capacity	\$21 M (1981)	Substantial (3) environmental impact rating. Salmon runs up Wind River. Wild Trout Stream. Stream preservation; fishery habitat; estuarine and wetland area; natural beauty areas; wildlife habitat; water quality. Project would probably be required to accommodate current salmon runs up Wind River. U.S. Fish and Wildlife hatchery upstream; river designated a "Wild Trout Stream" by State.	NRA	Environmental issues—Columbia River Basin.
WA	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	McLaughlin Falls Power Project, Okanogan River (about RM 48) [Okanogan R. mouth at Columbia RM 533.5]. Concrete gravity dam (410-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 1,280 cfs)	12.8 GWh/yr 1.7 MW capacity	\$14 M (1981)	Impact scenic falls, white water. Rafting. Possible archaeological sites. Bureau of Land Management attempted to acquire land for a park [in 1979]. Considerable recreational use by [river-runners]. Site is exceptionally scenic. Washington State University has done archaeological digs on left abutment and in proposed pool area; would like to do extensive excavation. Residents object to inconvenience. Petroglyphs would be inundated by the reservoir.	3 miles of new access road. Could aggravate flooding. Not economically feasible.	Environmental issues—Columbia River Basin. Cultural and historical resources issues.

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WA	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Mud Mountain No. 2 Power Project, White River (about RM 27) [mouth of White River at Puyallup River RM 10.4; Puyallup enters east side of Puget Sound at Tacoma]. Concrete gravity dam (375-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 1,370 cfs)	31.09 GWh/yr 4.6 MW capacity	\$11 M (1981)	Moderate (2) environmental impact rating. Stream preservation; natural beauty areas; fishery habitat. Inundation of part of a scenic canyon. Mud Mountain Dam upstream [RM 29.6] has already significantly impacted the area.	NRA	Environmental issues—Puget Sound.
WA	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	New Husum Power Project, White Salmon River (est. RM 8) [White Salmon R. mouth at Columbia River RM 168.3]. Earthfill dam	Power	NRA (Powerplant discharge of 880 cfs)	28.61 GWh/yr 4.2 MW capacity	\$19 M (1981)	Substantial (3) environmental and moderate (2) social impact ratings. Stream preservation; natural beauty areas; fishery habitat; estuarine and wetland area; wildlife habitat; water quality. Social impact, inundation of about 47 acres of prime riverfront property.	NRA	Environmental issues—Columbia River Basin (Removal of Condit Dam (RM 3) to restore fish passage in progress).
WA	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	New Robe Power Project, Stillaguamish River (about RM 36) [Stillaguamish mouth on east side of Puget Sound, north of Everett]. Concrete gravity diversion dam and powerplant.	Power	0 (run of river). (Powerplant discharge of 900 cfs)	24.24 GWh/yr 3.8 MW capacity	\$9 M (1981)	Substantial (3) environmental impact rating. Historical sites; stream preservation; wilderness, primitive, and natural areas; natural beauty areas; fishery habitat; wildlife habitat; water quality. National Park Service classifies [1982] reach is "Natural and Free-Flowing". Project would use the historic 1892 Monte Cristo Railroad tunnel as part of the conveyance system. Salmon spawn upstream.	NRA	Environmental issues—Puget Sound. Legal and institutional issues.

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WA	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Oroville Power Project, Similkameen River (estimate RM 2) [Similkameen R. mouth at Okanogan RM 74.1; Okanogan R. mouth at Columbia RM 533.5]. Concrete gravity dam (110-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 1,520 cfs)	23.48 GWh/yr 4.4 MW capacity	\$12 M (1981)	Stream preservation; natural beauty areas; fishery habitat; water quality. Moderate (2) environmental and moderate (2) social impact ratings.	NRA	Environmental issues—Columbia River Basin.
WA	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Pinnacle Peak Power Project, White River (est. RM 24.5); White R. mouth at Puyallup RM 10.4; Puyallup flows into east side of Puget Sound at Tacoma). Concrete dam (200-foot-long crest) with powerplant.	Power	0 (run of river). (Powerplant discharge of 1,380 cfs)	33.13 GWh/yr 4.9 MW capacity	\$12 M (1981)	Moderate (2) social impact rating. Stream preservation; natural beauty areas; fishery habitat; water quality. Petroglyphs, cave dwellings, other archaeological sites. Highest Value Fishery Resource. Boaters.	NRA	Environmental issues—Puget Sound. May be preempted by other water resources developments.
WA	1982	PN	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Warnick Power Project, Nooksack River (about mainstem/North Fork RM 50) [Nooksack R. flows into eastern Puget Sound, north of Bellingham]. Concrete gravity dam (225-foot-long crest) with powerplant	Power	0 (run of river). (Powerplant discharge of 1,940 cfs)	43.68 GWh/yr 8.3 MW capacity	\$25 M (1981)	Substantial (3) environmental and moderate (2) social impact ratings. Stream preservation; wilderness, primitive, and natural areas; natural beauty areas; fishery habitat; park and recreation lands; estuarine and wetland areas; wildlife habitat; endangered species; water quality. Listed by Whatcom County Shoreline Management as a natural area [1982]. Anadromous fish runs and Indian netting take place at the mouth of the river. Both could be adversely affected by the project.	NRA	Environmental issues—Puget Sound

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WA	1985	PN	Horsetail Dam, Dikes, and Powerplant, Little Naches River	Pre-appraisal	Horsetail Dam, Dikes, and Powerplant, Little Naches River (about RM 46) [Naches River mouth at Yakima RM 116.3] Roller-compacted concrete gravity dam (1,300-foot-long crest, 385 feet high) and powerplant	Irrigation, power generation, and fisheries	NRA (183 KAF reservoir)	8 MW capacity	NRA	NRA	Development would inundate several historical and archeological sites, including portions of the Naches Trail.	Environmental issues. Water supply issues
WA	1994	PN	Skokomish Tribal Council, Cushman Dam No. 2 Powerplant, Skokomish River	Appraisal	Skokomish Tribal Council, Cushman Dam No. 2 Powerplant, Skokomish River (RM 17)	Power	NRA (Maximum powerplant discharge of 3,000 cfs)	69.1 GWh/yr	\$27 M (1994)	Improve flows and water quality for anadromous fish, provide power for Tribe	River bypass during construction	Water supply issues.

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Table 20: Wyoming—Studies containing hydropower as a project purpose

STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
WY	1942	GP	Reconnaissance Report on Clarks Fork River, Montana and Wyoming	Recon	Bald Ridge Dam and Powerplant on Clarks Fork River	Power	0 (run of river)	166.5 GWh/yr 30 MW capacity	\$7.4 M (1942)	Would probably cause major adverse impacts on fish and wildlife values with little opportunity to mitigate. Would dewater nearly 2 miles of Clarks Fork River in Beartooth Mountains.	NRA	Legal and institutional issues — Clarks Fork of the Yellowstone Wild and Scenic River.
WY	1942	GP	Reconnaissance Report on Clarks Fork River, Montana and Wyoming	Recon	Hunter Mountain Dam and Powerplant on Clarks Fork River	Power	NRA (150 KAF storage)	71 GWh/yr 12 MW capacity	\$8.3 M (1942)	Unit would probably cause major adverse impacts on fish and wildlife values with little opportunity to mitigate. Would dewater nearly 2 miles of Clarks Fork River in Beartooth Mountains.	NRA	Legal and Institutional issues - Clarks Fork of the Yellowstone Wild and Scenic River.
WY	1942	GP	Reconnaissance Report on Clarks Fork River, Montana and Wyoming	Recon	Sunlight Dam and Powerplant on Sunlight Creek	Power	NRA (40 KAF storage)	109.5 GWh/yr 20 MW capacity	\$3.4 M (1942)	Unit would probably cause major adverse impacts on fish and wildlife values w/little opportunity to mitigate. Would dewater nearly two miles of Sunlight Creek in Beartooth Mountains. Dam would not be on Wild and Scenic River but powerplant would be.	NRA	Legal and institutional issues —Clarks Fork Wild and Scenic River.
WY	1942	GP	Reconnaissance Report on Clarks Fork River, Montana and Wyoming	Recon	Thief Creek Dam and Powerplant on Clarks Fork River	Power	NRA (130 KAF storage)	350 GWh/yr 60 MW capacity	\$14.2 M (1942)	Unit would probably cause major adverse impacts on fish and wildlife values with little opportunity to mitigate. Would dewater nearly 2 miles of Clarks Fork River in Beartooth Mountains.	NRA	Legal and Institutional issues —Clarks Fork of the Yellowstone Wild and Scenic River.
WY	1943	GP	Survey Report on Tongue River Basin, Montana and Wyoming	Recon	South Fork Dam and Powerplant (Tongue Division, Sheridan Unit) on the Tongue River	Power, irrigation	NRA (25 KAF storage)	55 GWh/yr 25 MW capacity	\$2 M (1943)	Totally contained within Big Horn National Forest.	Relocate 2 miles of road. No power market foreseen.	Unknown
WY	1950	GP	Power Potential, Powder Division, Supporting Data Volume 278	Recon	Hole-in-the-Wall Reservoir and Powerplant on Powder River	Power, irrigation	NRA	7.27 GWh/yr 3 MW capacity	\$8.2 M (1950)	NRA	NRA	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Bates Creek Plant Dam and Powerplant on Bates Creek	Power, irrigation	NRA	6 GWh/yr 2.4 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River. Legal and institutional issues —North Platte River. Supreme Court Decree.

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WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Bennett Peak Dam and Powerplant on North Platte River.	Power, irrigation	NRA	69 GWh/yr 15.3 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Bessemer Bend Dam and Powerplant on North Platte River.	Power, irrigation	NRA	72 GWh/yr 14 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Big Goose No. 1 and Big Goose No. 2 Dams and Powerplants on Big Goose Creek	Power, irrigation	NRA	Big Goose No. 1: 7.7 GWh/yr 2 MW capacity; Big Goose No. 2: 50.3 GWh/yr 15 MW capacity	NRA	NRA	1982 report concluded that reservoir sites on Big and Little Goose drainage basins would have excessive construction costs. Big Goose No. 1 was "poor."	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Bull Creek Dam and Powerplant on Clear Creek	Power, irrigation	NRA	15.3 GWh/yr 7.5 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Camp Comfort Dam and Powerplant on Clear Creek	Power	NRA	5.1 GWh/yr 2 MW capacity	\$8 M (1950)	NRA	Site classified as "poor" in report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Canyon Creek Dam and Powerplant on Tensleep Creek	Power	NRA	26.1 GWh/yr 5 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Cody Dam and Powerplant on Shoshone River	Power, irrigation	NRA	24.30 GWh/yr 11 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Cottonwood Dam and Powerplant on Cottonwood Creek	Power, irrigation	NRA	4 GWh/yr 1.7 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.

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WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Crowheart Dam and Powerplant on Wind River	Power, irrigation	NRA	58.5 GWh/yr 13 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Deep Lake Dam and Powerplant on Little Rock Creek	Power	NRA	21.3 GWh/yr 2.5 MW capacity	NRA	NRA	NRA	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Deer Creek No. 1 Dam and Powerplant on Deer Creek	Power, irrigation	NRA	8 GWh/yr 3.4 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Deer Creek No. 2 Dam and Powerplant on Deer Creek	Power, irrigation	NRA	6 GWh/yr 2.6 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Deer Creek No. 3 Dam and Powerplant on Deer Creek	Power, irrigation	NRA	6 GWh/yr 2.6 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Deer Creek No. 4 Dam and Powerplant on Deer Creek	Power, irrigation	NRA	8 GWh/yr 3.1 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Dodge Canyon Dam and Powerplant on Laramie River	Power	NRA	20 GWh/yr 7.5 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Douglas Creek Plant Dam and Powerplant on Douglas Creek	Power, irrigation	NRA	2 GWh/yr 1 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.

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WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Douglas Dam and Powerplant on North Platte River.	Power	NRA	70 GWh/yr 8 MW capacity	NRA	Would inundate City of Douglas, Wyoming	Site classified as "poor" in report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Du Noir Dam and Powerplant on Wind River	Power	NRA	25.7 GWh/yr 5 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Encampment Powerplant on Encampment River	Power	NRA	16 GWh/yr 4 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Fort McKinney Weir and Powerplant on Clear Creek	Power	NRA	7.7 GWh/yr 3 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Fort Steele Dam and Powerplant on North Platte River.	Power, irrigation	NRA	32 GWh/yr 13 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	French Creek Plant Dam and Powerplant on French Creek	Power, irrigation	NRA	14 GWh/yr 3.2 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Granite Lake Dam and Powerplant on Clarks Fork River	Power	NRA	31.8 GWh/yr 7 MW capacity	NRA	NRA	NRA	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Graves Lake Dam and Powerplant on South Fork Little Wind River	Power, irrigation	NRA	3.3 GWh/yr 1.7 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown

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WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Greybull Valley Dam and Powerplant on Greybull River	Power, irrigation	NRA	22.3 GWh/yr 9 MW capacity	NRA	NRA	A 1994 report found the project to be "not feasible." The 1951 report classified site as "fair."	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Hidden Lake Powerplant on Torrey Creek with regulation by Ross Lake Reservoir.	Power	0 (run of river)	3.7 GWh/yr 1.2 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Hog Park Dam and Powerplant on Encampment River	Power, irrigation	NRA	64 GWh/yr 15 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Preempted by other water resources development—City of Cheyenne, WY constructed a 'Hog Park Reservoir' on the Encampment River.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Horseshoe Dam and Powerplant on Horseshoe Creek (North Platte River.)	Power, irrigation	NRA	10 GWh/yr 4 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Jack Creek Plant Dam and Powerplant on North Platte River.	Power, irrigation	NRA	64 GWh/yr 26 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Keystone Dam and Powerplant on Douglas Creek	Power, irrigation	NRA	4 GWh/yr 1.5 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Lake Solitude Dam and Powerplant on Paintrock Creek	Power, irrigation	NRA	3.4 GWh/yr 1.1 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown

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WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Laramie No. 1 Dam and Powerplant on Laramie River three miles east of Glendevey, Colorado.	Power	NRA	5 GWh/yr 2.4 MW capacity	NRA	NRA	Site was classified as "poor" in the report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Laramie No. 2 Dam and Powerplant on Laramie River	Power	NRA	24 GWh/yr 10MW capacity	NRA	Would inundate roads and ranches.	Site classified as "poor" in report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Laramie No. 3 Dam and Powerplant on Laramie River near Uva, Wyoming	Power	NRA	3 GWh/yr 1.4 MW capacity	NRA	NRA	Site classified as "poor" in report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Laramie No. 4 Dam and Powerplant on Laramie River 6 miles east of Fort Laramie, Wyoming.	Power	NRA	8 GWh/yr 3.4 MW capacity	NRA	NRA	Site classified as "poor" in report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Leigh Creek Dam and Powerplant on Tensleep Creek	Power	NRA	39.5 GWh/yr 7.5 MW capacity	NRA	NRA	NRA	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Lewiston Dam and Powerplant on Sweetwater River	Power, irrigation	NRA	35 GWh/yr 5 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Little Bighorn No. 2 Dam and Powerplant on the Little Bighorn	Power	0 (run of river)	32.3 GWh/yr 7.5 MW capacity	NRA	NRA	NRA	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Little Laramie No. 1 Dam and Powerplant on Little Laramie River	Power, irrigation	NRA	7 GWh/yr 2.7 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.

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ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Little Laramie No. 2 Dam and Powerplant on Little Laramie River	Power, irrigation	NRA	5 GWh/yr 2 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree..
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Little Popo Agie No. 2 Dam and Powerplant on the Little Popo Agie River	Power	NRA	18.3 GWh/yr 5 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Lower Boxelder Dam and Powerplant on Boxelder Creek	Power, irrigation	NRA	3 GWh/yr 1 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Lower Canyon Dam and Powerplant on Shell Creek	Power, irrigation	NRA	24.3 GWh/yr 4.5 MW capacity	NRA	NRA	NRA	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Lower La Bonte Dam and Powerplant on La Bonte Creek	Power, irrigation	NRA	4 GWh/yr 1.5 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues—Platte River. Legal and institutional issues—North Platte River. Supreme Court Decree..
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Medicine Lodge Powerplant on Medicine Lodge Creek	Power	NRA	6.7 GWh/yr 1.1 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Middle Fork Dam and Powerplant on Powder River	Power, irrigation	NRA	7.3 GWh/yr 3 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Middle Popo Agie No. 1 Dam and Powerplant on Middle Popo Agie River	Power	NRA	31.4 GWh/yr 9.5 MW capacity	NRA	NRA	NRA	Unknown

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WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Middle Popo Agie No. 2 Dam and Powerplant on Middle Popo Agie River	Power	NRA	19.2 GWh/yr 5.5 MW capacity	NRA	NRA	NRA	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Middle Popo Agie No. 3 Dam and Powerplant on Middle Popo Agie River	Power	NRA	16.5 GWh/yr 4.5 MW capacity	NRA	NRA	NRA	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Needle Mountain Dam and Powerplant on South Fork Shoshone River	Power, irrigation	NRA	57.1 GWh/yr 10 MW capacity	NRA	Would be close to Washakie Wilderness Area.	Site classified as "poor" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	North Fork Little Wind No. 4 Dam and Powerplant on North Fork Little Wind River with regulation from Raft Lake Reservoir.	Power	NRA	16.4 GWh/yr 4.5 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	North Fork Wind River Dam and Powerplant on North Fork Wind River	Power	NRA	13.7 GWh/yr 1.9 MW capacity	NRA	NRA	Site classified as "poor" in report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	North Popo Agie No. 2 Dam and Powerplant on North Fork Popo Agie River	Power	NRA	6.9 GWh/yr 2 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	North Popo Agie No. 3 Dam and Powerplant on North Fork Popo Agie River	Power	NRA	8.3 GWh/yr 2.5 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown

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WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Paintrock No. 1 and Paintrock No. 2 Dams and Powerplants on Paintrock Creek with storage regulation by Lily Lake Reservoir .	Power	NRA	Paintrock No. 1: 18.4 GWh/yr 6 MW capacity Paintrock No. 2: 53.9 GWh/yr 18 MW capacity	NRA	NRA	NRA	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Parkview Hill Dam and Powerplant on North Platte River.	Power	NRA	89 GWh/yr 20 MW capacity	NRA	NRA	Site classified as "fair" in report.	Environmental issues — Platte River. Legal and institutional issues — North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Pedro Mountain Dam and Powerplant on North Platte River.	Power	NRA	81 GWh/yr 18 MW capacity	NRA	NRA	NRA	Environmental issues — Platte River. Legal and institutional issues — North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Piney Creek Dam and Powerplant on Piney Creek	Power	NRA	38 GWh/yr 20 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Poison Spider Dam and Powerplant on North Platte River.	Power	NRA	12 GWh/yr 1.4 MW capacity	NRA	NRA	NRA	Environmental issues — Platte River. Legal and institutional issues — North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Pumpkin Christler Dam and Powerplant on Powder River	Power, irrigation	NRA	9 GWh/yr 2 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Raft Lake Dam and Powerplant on North Fork Little Wind River	Power, irrigation	NRA	8 GWh/yr 3.5 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Sanford Dam and Powerplant on North Fork Popo Agie River	Power	NRA	4.9 GWh/yr 2.5 MW capacity	NRA	NRA	Site classified as "poor" in report.	Unknown

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WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Shell Reservoir and Powerplant on Shell Creek	Power, irrigation	NRA	11.3 GWh/yr 2.5 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Smith No.2 Dam and Powerplant on Powder River	Power, irrigation	NRA	3.4 GWh/yr 1.5 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Sorel Dam and Powerplant on Sorel Creek	Power, irrigation	NRA	7.4 GWh/yr 1.4 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	South Fork Little Wind No. 2 Dam and Powerplant on South Fork Little Wind River with flow regulation from Graves Lake Reservoir.	Power	NRA	4.5 GWh/yr 1.3 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	South Fork Little Wind No. 3 Dam and Powerplant on South Fork Little Wind River with flow regulation from Graves Lake Reservoir.	Power	NRA	8.1 GWh/yr 2.5 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	South Fork Little Wind No. 4 Dam and Powerplant on South Fork Little Wind River with flow regulation from Graves Lake Reservoir.	Power	NRA	9.4 GWh/yr 2.5 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Unknown

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WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	South Fork Little Wind No. 5 Dam and Powerplant on South Fork Little Wind River with flow regulation from Graves Lake Reservoir.	Power	NRA	30.7 GWh/yr 8.5 MW capacity	NRA	NRA	NRA	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Sweetwater No. 1 Dam and Powerplant on Sweetwater River	Power, irrigation	NRA	8 GWh/yr 3.5 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues — Platte River. Legal and institutional issues — North Platte River Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Sweetwater No. 2 Dam and Powerplant on Sweetwater River	Power, irrigation	NRA	9 GWh/yr 3.8 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues — Platte River. Legal and institutional issues — North Platte River Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Sweetwater No. 3 Dam and Powerplant on Sweetwater River	Power, irrigation	NRA	23 GWh/yr 9.5 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues — Platte River. Legal and institutional issues — North Platte River Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Sweetwater No. 4 Dam and Powerplant on Sweetwater River	Power, irrigation	NRA	7 GWh/yr 3 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues — Platte River. Legal and institutional issues — North Platte River Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Sweetwater No. 5 Dam and Powerplant on Sweetwater River	Power, irrigation	NRA	21 GWh/yr 9 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues — Platte River. Legal and institutional issues — North Platte River Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Sweetwater No. 6 Dam and Powerplant on Sweetwater River	Power, irrigation	NRA	17 GWh/yr 7 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues — Platte River. Legal and institutional issues — North Platte River Supreme Court Decree.

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WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Sybilie Creek Dam and Powerplant (Blue Grass Powerplant) on Laramie River	Power	NRA	43 GWh/yr 17MW capacity	NRA	NRA	Site classified as "fair" in the report.	Environmental issues — Platte River. Legal and institutional issues — North Platte River Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Taylor Dam and Powerplant on Crazy Woman Creek	Power, irrigation	NRA	33.8 GWh/yr 10 MW capacity	NRA	NRA	Site classified as "fair" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Tensleep Upper Canyon Dam and Powerplant on Tensleep Creek	Power	NRA	36 GWh/yr 6 MW capacity	NRA	NRA	NRA	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Upper Boxelder Dam and Powerplant on Boxelder Creek	Power, irrigation	NRA	3 GWh/yr 1 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues — Platte River. Legal and institutional issues — North Platte River Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Upper Canyon Dam and Powerplant on Shell Creek	Power, irrigation	NRA	41.8 GWh/yr 6.5 MW capacity	NRA	NRA	NRA	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Upper Glendo Dam and Powerplant on North Platte River.	Power, irrigation	NRA	35 GWh/yr 4 MW capacity	NRA	NRA	NRA	May be preempted by other water resources developments. Report envisioned dam and powerplant to be located about 15 miles above the proposed Glendo Dam (which has since been constructed). Environmental issues—Platte River. Legal and institutional issues — North Platte River. Supreme Court Decree.
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Upper La Bonte Dam and Powerplant on La Bonte Creek	Power, irrigation	NRA	2 GWh/yr 1 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Environmental issues — Platte River. Legal and institutional issues — North Platte River. Supreme Court Decree.

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WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	West Tensleep Dam and Powerplant on West Tensleep Creek with storage regulation from West Tensleep Reservoir.	Power	NRA	5.1 GWh/yr 1.4 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
WY	1951	GP	Power: Resources, Requirements, and Supply	Recon	Wiggins Fork Dam and Powerplant on Wiggins Fork	Power, irrigation	NRA	11.5 GWh/yr 2 MW capacity	NRA	NRA	Site classified as "poor" in the report.	Unknown
WY	1957	GP	Report on the North Platte River. Basin - CO, WY, NE	Recon	Fort Stambaugh Dam, Powerplant, and Reservoir	Power	NRA (47 KAF storage)	3.9 MW capacity	NRA	NRA	NRA	Environmental issues - Platte River.; Legal and institutional issues - North Platte River. Supreme Court Decree.
WY, CO	1957	UC	Yampa - White Project, Flattops Unit Division	Recon	Yampa - White Project, Flattops Unit Division enlargement and power plants (alternatives: Bear, Dunkley, California Park, Juniper, Savery Reservoir enlargement, Trappers Lake, Thornburgh, Bearwallow, Rio Blanco, Reservoirs, Upper & Lower Bearwallow).	M&I, power	128	221.3 GWh/yr	\$176 M (1957)	NRA	Rifle, Valley, and De Beque, CO and the potential oil-shale industry. Cannot be justified until large-scale oil shale development in the Rifle-De Beque area becomes imminent.	Economic issues—contingent on oil shale development Environmental issues.
WY	1960	GP	Tabulation Showing Evolution of Missouri River Basin Project and Comparison of Original and Current (1958) Plans. May 20, 1960 Memorandum,	Feasibility	Kane Dam and Powerplant - Lower Bighorn Division. - one high dam (Yellowtail) replaces two low dams.	Power	NRA (750 AF storage)	139.3 GWh/yr 30 MW capacity	\$12 M (1944)	NRA	NRA	Preempted by other water resources developments. Combined with Yellowtail which has been constructed

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WY	1961	PN	Elbow Dam, Reservoir, and Powerplant, Greys River	Recon	Elbow Dam, Reservoir, and Powerplant, Greys River (RM 26) [Greys R. mouth at Snake RM 920] Earthfill dam (2,000-foot-long crest, 345 feet high) and powerplant	Irrigation, power generation, and flood control	NRA (Powerplant discharge of 3,030 cfs, 406 KAF reservoir)	49 GWh/yr	\$30.5 M (1959)	Recreation, fish, and wildlife.	Existing development within proposed inundation zone.	Environmental issues—fishery. Legal and institutional issues—Wild and Scenic River Economic issues.
WY	1961	PN	Granite Creek Dam, Reservoir, and Powerplant, Hoback River	Recon	Granite Creek Dam, Reservoir, and Powerplant, Hoback River (RM 19) [Hoback R. mouth at Snake RM 933] Earthfill dam (1,350-foot-long crest, 325 feet high) and powerplant	Power generation, irrigation, and flood control	NRA (Maximum powerplant discharge of 4,580 cfs)	55 GWh/yr	\$29 M (1959)	Recreation, fish, and wildlife.	Development exists within the proposed reservoir's inundation zone.	Environmental issues. Water supply issues.
WY, CO	1963	UC	Juniper Project	Recon	Juniper Dam, Reservoir & Powerplant; Artesia Dam & Reservoir	Irrigation; power; recreation	469	96 GWh/yr 30 MW capacity	\$145.6 M (1963)	NRA	NRA	Environmental issues—Yampa River.
WY	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Cody Shoshone River	Power	0 (run of the river)	34.69 GWh/yr 6.7 MW capacity	\$22.0 M (1982)	Moderate (2) environmental impact rating. Visual impacts (scenic area).	Build 1 mile of road.	Unknown
WY	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Iron Creek Shoshone River	Power	0 (run of the river)	37.73 GWh/yr 7.2 MW capacity	\$26.7 M (1982)	Fish passage. Construction impact on small town.	Shoshone Irrigation District considering developing project at this site.	Unknown

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WY	1982	GP	Low-Head Hydroelectric Sites in the Western States, Tudor Engineering Company	Appraisal	Trotters Station Shoshone River	Power	0 (run of the river)	37.73 GWh/yr 7.2 MW capacity	\$26.7 M (1982)	River is bordered by private land.	NRA	Unknown
WY	1997	PN	Snake-Narrows Project, Alpine Dam and Powerplant, Snake River	Feasibility	Snake-Narrows Project, Alpine Dam and Powerplant, Snake River (about RM 912). Earthfill dam (1,300-foot-long crest, 440 feet high) with powerplant	Irrigation, power generation, and flood control	NRA (Powerplant discharge of 16,000 cfs, 1,078 KAF reservoir)	789 GWh/yr	\$287 M (1977)	Adverse effects on recreation, fish, and wildlife.	Development exists within the proposed reservoir's inundation zone.	Environmental issues-Snake River.
WY	NRA	GP	No formal report identified	NRA	Dull Knife Dam and Powerplant	NRA	NRA	NRA	NRA	NRA	NRA	Unknown
WY	NRA	GP	No formal report identified	NRA	Iron Creek Dam, Powerplant, and Reservoir; P-SMBP Saratoga Division; Encampment River	NRA	NRA	NRA	NRA	NRA	NRA	Unknown
WY	NRA	GP	No formal report identified	NRA	Reeder Draw Dam Powerplant and Reservoir	NRA	NRA	NRA	NRA	NRA	NRA	Unknown
WY	NRA	GP	No formal report identified	NRA	White Swan Dam and Powerplant; P-SMBP Saratoga Division; Douglas Creek	NRA	NRA	NRA	NRA	NRA	NRA	Unknown

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Table 21: Alaska—Studies containing hydropower as a project purpose

STUDY INFORMATION						STUDY FINDINGS						CURRENT ASSESSMENT
ST	Date	R	Study	Analysis level	Project names / Major features	Project purpose and benefits	Water yield (1,000 acre feet/year [KAF])	Power capacity and production	Estimated cost in millions of dollars (date of cost)	Identified environmental impacts	Other factors that might interfere with construction	Current Factors Affecting Further Study
AK	1952	PN	Reconnaissance Report of the Potential development of Water Resources in the Territory of Alaska	Recon	Susitna Hydroelectric Project [a/k/a Devil Canyon Project], Susitna River Site No. 3. 525 feet high, crest 1,000 feet long.	Power	NRA (1,000 KAF capacity)	2,600 GWhr/yr	NRA	NRA	NRA	Economic issues. Environmental issues. Financial issues.
AK	1952	PN	Reconnaissance Report of the Potential development of Water Resources in the Territory of Alaska	Recon	Susitna Hydroelectric Project, Susitna River Site No. 1. 575 feet high; 1,200 foot crest.	Power	NRA (9,000 KAF capacity)	2,000 GWhr/yr	NRA	NRA	NRA	Economic issues. Environmental issues. Financial issues.
AK	1952	PN	Reconnaissance Report of the Potential development of Water Resources in the Territory of Alaska	Recon	Susitna Hydroelectric Project, Susitna River Site No. 2. 245 feet high.	Power	NRA (1,000 KAF capacity)	2,000 GWhr/yr	NRA	NRA	NRA	Economic issues. Environmental issues. Financial issues.
AK	1960	PN	Water Resources Activities in the U.S.; Water Resources of Alaska	Recon	Devil Canyon Project [essentially successor to Susitna Hydroelectric project]	Power	NRA	500 MW capacity	NRA	NRA	NRA	Economic issues. Environmental issues. Financial issues.
AK	1960	PN	Water Resources Activities in the U.S.; Water Resources of Alaska	Recon	Lake Dorothy Project [Taku River; serves City and Borough of Juneau]	Power	NRA	140 GWh/yr	\$15.6 M (1955)	NRA	NRA	May be preempted by other water resources developments—application for license filed by Lake Dorothy Hydro, Inc. [FERC P-12379 000].

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Appendix 1: Reclamation studies that did not conform to Section 1840 requirements

These studies were evaluated but did not conform to the requirements of the Energy Policy Act of 2005, Section 1840. Note that studies in two or more states are listed in each state.

Table 1: Arizona—Studies that did not conform to Section 1840 requirements

State	Study date	Region	Name of Study
AZ	1939	LC	Greer Dam Site, Geologic Considerations of Dam Sites on the Little Colorado, September 1939
AZ	1939	LC	Hay Hollow Dam Site, Geologic Considerations of Dam Sites on the Little Colorado, September 1939
AZ	1939	LC	Holbrook Dam Site, Geologic Considerations of Dam Sites on the Little Colorado, September 1939
AZ	1939	LC	Indian Hill Dam Site, Geologic Considerations of Dam Sites on the Little Colorado, September 1939
AZ	1939	LC	Lone Pine Dam and Reservoir, Geologic Considerations of Dam Sites on the Little Colorado, September 1939
AZ	1939	LC	Old Salado Dam Site, Geologic Considerations of Dam Sites on the Little Colorado, September 1939
AZ	1939	LC	Silver Creek Area (for dam sites), Geologic Considerations of Dam Sites on the Little Colorado, September 1939
AZ	1940	LC	Watson Lake Dam, Reconnaissance Report on Chino Valley Irr. Dist
AZ	1941	LC	Cottonwood Creek Dam Site, Geology of Cottonwood Creek Dam Site, March 1941 Little Colorado River Basin Investigation, Arizona
AZ	1941	LC	Forks Dam, Geology of Forks Dam Site, March 1941 Little Colorado River Basin Investigations, Arizona
AZ	1941	LC	Holbrook Diversion Dam, Geology of Holbrook Diversion Dam Site, March 1941 Little Colorado River Basin Investigations, Arizona
AZ	1941	LC	Leroux Dam and Reservoir, Geology of Leroux Damsite, March 1941 Little Colorado River Basin Investigations, Arizona
AZ	1941	LC	Little Colorado River Basin Investigations, Arizona Shum Wa, Dam Site - Silver Creek
AZ	1941	LC	Shum Way Dam and Reservoir, Geology of Shum Way Damsite, March 1941
AZ	1947	LC	Wildcat Dam and Reservoir Winslow Project Reconnaissance, Geology of the Willow Creek and Wildcat Dam Sites, Boulder City, Nevada, April 1947
AZ	1947	LC	Willow Creek Dam and Reservoir Winslow Project Reconnaissance, Geology of the Willow Creek and Wildcat Dam Sites, Boulder City, Nevada, April 1947
AZ	1949	LC	Coconino Dam and Reservoir
AZ	1963	LC	Black Creek Dam and Reservoir
AZ	1963	LC	Black River, Springerville, St. John's Project
AZ	1963	LC	Box Canyon Dam and Powerplant
AZ	1963	LC	Burro Creek Reservoir
AZ	1963	LC	Colorado River Phoenix Diversion Project
AZ	1963	LC	Crosby Crossing Dam and Reservoir
AZ	1963	LC	Volunteer Canyon
AZ, NV	1963-1964	LC	1963-1964 Lake Mead Survey
AZ	1967	LC	Hooker Dam and Reservoir
AZ	1970	LC	Charleston Dam and Reservoir
AZ	1970	LC	Nogales Dam and Reservoir Inflow Design Flood Study, San Pedro-Santa Cruz Project, Phoenix Development Office, Feb. 1970
AZ	1971	LC	Alma Dam and Reservoir Upper Gila River Project Study Regional Geology.

Appendix 1: Inventory of Reclamation Water Surface Studies with Hydropower Components:
 Report to Congress Implementing Provisions of Section 1840 of the Energy Policy Act of 2005 (P.L. 109-58)

State	Study date	Region	Name of Study
AZ	1971	LC	Camelsback Dam and Reservoir Upper Gila River Project Study Regional Geology
AZ	1971	LC	Reserve Dam and Reservoir Upper Gila River Project Study Regional Geology
AZ	1974	LC	Chino Valley Unit Appraisal Report; Western US Water Plan
AZ, NM	1974	LC	Upper Gila River Project
AZ, UT	1975	UC	Paria-San Rafael Project
AZ	1977	LC	Wilkins Dam and Reservoir (part of the larger Mogollon Mesa Project), Mogollon Mesa Project Concluding Report, December 1977
AZ	1978	LC	Buttes Alternatives: Reconnaissance Report for Florence Dam and Reservoir
AZ	1979	LC	Mogollon Mesa Project, Arizona
AZ	1979	LC	Tangle Creek Dam and Reservoir Preliminary Engineering Data Central Arizona Water Control Study July, 1979
AZ	1983	LC	Middle Gila River Study
AZ	1984	LC	Cliff Dam and Reservoir
AZ	1982-1984	LC	Central Arizona Project, Regulatory Storage Division, Plan 6
AZ, NM	1987	LC	Upper Gila Water Supply Study, Special Report on Alternatives
AZ, NV	1992 - 1995	LC	Lower Virgin River Project
AZ, CA, NV	1993	LC	Lower Colorado Regulatory Storage Study, 1993 did not include Mexico. The 1992 study of the same name did include Mexico.
AZ	1994,1995	LC	Lower Colorado River Storage; Gila Gravity Main Canal Reservoir; Alternative No. 1
AZ	1994,1995	LC	Lower Colorado River Storage; Yuma Mesa Regulating Reservoir; Alternative No. 4
AZ, NV	2004-2005	LC	Hoover Dam Water Supply Study Reconnaissance Report on Treated Water Supply for Hoover Dam

Table 2: California—Studies that did not conform to Section 1840 requirements

State	Study date	Region	Name of Study
CA	1940	MP	Kings River Project
CA	1952	MP	Pajaro River Basin Project
CA	1952	MP	Pine Flat Power Unit, Kings River Division, CVP
CA	1953	MP	Clikapudi Unit, Sacramento River Division, CVP
CA	1953	MP	Palo Cedro Unit, Sacramento River Division, CVP
CA	1954	MP	Hollister Project (Hollister Subarea, San Felipe Division, CVP)
CA, OR	1955	MP	Klamath Project Extensions
CA	1955	MP	San Luis Obispo County basin
CA	1955	MP	San Luis Unit, West San Joaquin Division, CVP
CA	1955	MP	Santa Ynez River basin
CA	1956	MP	Folsom North Unit, American River Division, CVP
CA	1957	MP	Cachuma Project (Extensions)
CA	1957	MP	Trinity River Division, CVP
CA	1958	MP	Auburn Unit, American River Division, CVP
CA	1958	MP	Calleguas Project
CA	1959	MP	Nashville Unit, East Side Division, CVP
CA	1960	MP	Auburn Unit, American River Division, CVP
CA, OR	1960	MP	Butte Division, Klamath Project
CA	1960	MP	Folsom South Unit, American River Division, CVP
CA	1960	MP	Placerville Ridge Unit, American River Division, CVP
CA	1960	MP	Yolo-Zamora Unit, Sacramento River Division, CVP
CA	1961/1966	MP	Forest Hill Divide & Folsom-Malby Areas, Auburn-Folsom South Unit, American River Division, CVP
CA	1961	MP	Malby Area, Auburn-Folsom South Unit, CVP
CA, OR	1961	MP	Stronghold Unit, Tule Lake Division, Klamath Project
CA	1962	MP	Clear Creek South Unit, Trinity Division, CVP
CA, OR	1962	MP	Clear Lake Unit, Klamath Project
CA	1962	MP	Nashville Unit, Cosumnes River Division, CVP
CA	1963	MP	Auburn -Folsom South Unit, American River Division, CVP
CA	1964	MP	Cache Creek Basin, CVP
CA	1964	MP	Round Valley Unit, Eel River Division, CVP
CA	1964	MP	San Felipe Division, CVP
CA, NV	1964	MP	Walker River Project
CA	1965	LC	Inland Basins Projects Mojave River Basin
CA	1965	MP	Pleasant Oak Unit, American River Division, CVP
CA	1966	MP	Georgetown Divide Unit, American River Division, CVP
CA	1966	MP	Kellogg Unit, Delta Division, CVP
CA	1967	MP	West Sacramento Canal Unit, Sacramento River Division , CVP
CA	1968	MP	East Side Division, Initial Phase, CVP
CA	1968	MP	Ventura River Project Extension
CA	1969	MP	Lompoc Project
CA	1971	MP	Montezuma Hills Unit, Delta Division, CVP
CA	1971	MP	Upper Klamath River Basin
CA	1972	MP	Eel River Division, North Coast Project

Appendix 1: Inventory of Reclamation Water Surface Studies with Hydropower Components:
 Report to Congress Implementing Provisions of Section 1840 of the Energy Policy Act of 2005 (P.L. 109-58)

State	Study date	Region	Name of Study
CA	1972	MP	English Ridge Unit, Eel River Division, North Coast Project (study did not mention power)
CA	1972	MP	Lower Klamath River Division, North Coast Project (study did not mention power)
CA	1972	MP	Upper Lost River Division, Klamath Project
CA	1973	MP	Paskenta-Newville Unit, Sacramento River Division, CVP
CA	1973	MP	Santa Maria-Sisquoc Area, Central California Coastal Project
CA	1974	MP	Peripheral Canal Unit, Delta Division, CVP
CA	1975	MP	Foresthill Divide Area, Auburn-Folsom South Unit, American River Division, CVP
CA	1976	LC	Morongo-Yucca Upper Coachella Valley
CA	1978	MP	Cottonwood Creek Project (for Corps)
CA	1980	MP	Solano County water Project
CA	1981	MP	Mid-Valley canal, East Side Division, CVP
CA	1981	MP	Red Bluff Diversion Dam Powerplant, Sacramento Division, CVP
CA	1983	LC	Santa Margarita Project Economic and Financial Analysis
CA	1984	LC	Santa Margarita Project, San Diego County, CA
CA	1990	MP	Cachuma Project (Bradbury Dam Enlargement)
CA, AZ, NV	1992, 1993	LC	Lower Colorado Regulatory Storage Study, 1993 did not include Mexico. The 1992 study of the same name did include Mexico.
CA	1994,1995	LC	Lower Colorado River Storage, Ferguson Wash Dam; Option 1
CA	1994,1995	LC	Lower Colorado River Storage: AAC West Dam and Reservoir; Alternative No. 3
CA	1994,1995	LC	Lower Colorado River Storage; AAC East Dam and Reservoir; Alternative No. 2
CA	1994,1995	LC	Lower Colorado River Storage; Ferguson Wash Dam; Option 2
CA	2005	MP	Los Vaqueros Expansion Investigation
CA	2005	LC	Salton Sea Restoration Phase 1 Feasibility

Table 3: Colorado—Studies that did not conform to Section 1840 requirements

State	Study date	Region	Name of Study
CO	1947	UC	Minnesota Project
CO	1951	UC	Gunnison River Project Reconnaissance Report
CO	1954	UC	Clifts Divide Project
CO	1957	UC	Yampa-White Project - Wessels, Hayden Mesa, Great Northern, Craig, Meeker Divisions
CO	Pre-1960	GP	Sherwood Dam and others / Boulder Creek
CO	1963	UC	Parshall Project Status Report
CO	1964	GP	Trinidad Project
CO	1967	UC	Battlement Mesa Project
CO	1968	UC	Yellow Jack Project Feasibility Report
CO, UT	1969	UC	San Juan Investigations, Utah and Colorado
CO, KS	1969	GP	Upper Arkansas River Basin
CO	1973	UC	Grand Mesa Project (Concluding Report)
CO	1973	GP	North Side Collection System
CO	1975	UC	Basalt Project
CO	1976	UC	Yellow Jacket Project Progress Report
CO	1977	UC	Fruitland Mesa Project
CO, WY	1977	UC	Savery-Pot Hook Project
CO, UT, WY	1980	UC	Upper Colorado Resource Study Concluding Report
CO	1981	UC	Lay Creek Study Area
CO	1982	UC	San Miguel Project
CO	1982	UC	West Divide Concluding Report
CO	1989	UC	Upper Gunnison - Uncompahgre Basin Phase I Feasibility Study, Final Report

Table 4: Idaho—Studies that did not conform to Section 1840 requirements

State	Study date	Region	Name of Study
ID	1946	PN	Payette Heights Project, Report on General Reconnaissance Study
ID	1948	PN	Cambridge Bench Project, Columbia River Basin, Pine and Rush Creeks
ID	1948	PN	Hornet Creek Project, A Supplemental to the Columbia Basin Report
ID	1949	PN	Council Project, A Supplement to the Columbia River Basin Report, Project Planning Report
ID	1950	UC	Malad Valley Project
ID	1952	PN	Rathdrum Prairie Project, Eastern Division, Reconnaissance Report
ID	1954	PN	Rathdrum Prairie Project, Prairie Division, Report of the Regional Director and Substantiating Materials
ID	1955	PN	North Bench Project, Wrap Up Report
ID	1956	UC	East Cache Project
ID	1956	PN	Medicine Lodge Project, Wrap Up Report
ID	1956	PN	Upper Big Wood River Project, Special Report, Supplemental Irrigation Using Ground Water
ID	1959	PN	Red Prairie Project, Reconnaissance Report
ID, MT	1960	PN	Kootenai River Project, Reconnaissance Report
ID, WY	1964	PN	Alta Project Reconnaissance Report, Idaho, Wyoming
ID	1964	PN	Challis Project, Report of the Regional Director
ID, WA	1964	PN	Pend Oreille River Basin, Reconnaissance Report
ID	1964	PN	Snake River Project, Garden Valley Irrigation District, Montour Unit, Wrap Up Report
ID, UT	1965	UC	Bear River Project
ID, WY	1970	PN	Upper Snake River Project, Salmon Falls Division, Reevaluation Statement
ID	1972	PN	Rathdrum Prairie Project, Prairie Division, East Greenacres Unit, Definite Plan Report
ID, WY	1979	PN	Upper Snake River Project, Definite Plan Report, Salmon Falls Division
ID, WY	1980	PN	Upper Snake River Project, Salmon Falls Division, Working Draft, detailed planning document separate from the EIS
ID, WY	1986	PN	Minidoka Project, North Side Pumping Division Extension Planning Report and Draft Environmental Statement
ID, WY	1990	PN	Upper Snake River Basin Storage Optimization Study, Information Update
ID, WY	1996	PN	Upper Snake River Basin Storage Optimization Study, Idaho, Minimum Streamflow Study, Preliminary Report, Snake River below Jackson Lake, Wyoming

Table 5: Kansas—Studies that did not conform to Section 1840 requirements

State	Study date	Region	Name of Study
KS, OK	1950	GP	Corbin Dam and Reservoir
KS	1953	GP	Chanute Project
KS	1953	GP	Neosho Project
KS	1953	GP	Silverdale Dam and Reservoir
KS	1958	GP	Cheney Division, Wichita Project
KS, CO	1969	GP	Upper Arkansas River Basin
NE, KS	Pre-1971	GP	Blue Division Pick-Sloan Missouri Basin Program (Units: Sunbeam, Little Blue)
NE, KS	Pre-1974	GP	Kanaska Division Pick-Sloan Missouri Basin Program (Units: Almena, Oberlin, Nelson Buck)
OK, KS	Pre-1998	GP	Copan Project (OSWP)

Table 6: Montana—Studies that did not conform to Section 1840 requirements

State	Study date	Region	Name of Study
MT	1937	GP	Milk Division Pick-Sloan Missouri Basin Program (Units: Saco Divide)
MT, ND, SD, WY	1938 1973	GP	Little Missouri Division Pick-Sloan Missouri Basin Program (Units: Alzada Mill Iron (Mill Iron Dam))
MT	1942	GP	Yellowstone Division Pick-Sloan Missouri Basin Program (McLeod Dam, East Boulder Dam, Lower Boulder Dam)
MT	1944	GP	Missouri River Pumping Division (Units: Bonanza)
MT	1951	PN	Kalispell Project, Report of the Regional Director and Substantiating Materials
MT	Pre-1953	GP	Yellowstone Division Pick-Sloan Missouri Basin Program (Units: Marsh, Helay, Seven Sisters, Stipek, Crackerbox, Elm Coulee, Seven Mile-Sitting Bull)
MT, ND	Pre-1953	GP	Missouri-Souris Division Pick-Sloan Missouri Basin Program (Units: Jamestown, Crosby-Mohall, Missouri Diversion Unit (Missouri Diversion Dam), Garrison Diversion Unit)
MT	1957	GP	Milligan Dam and Reservoir
MT	1957	GP	Whitehall Diversion Dam
MT	Pre-1963	GP	Northeast Montana Division Pick-Sloan Missouri Basin Program (Units: Calais, Farmer Creek, Redwater, Wapiti, Fort Charles, Diamond Ranch, Poplar)
MT	1964	GP	Kennison Dam and Reservoir
MT	1965	GP	Sun-Teton Division Pick-Sloan Missouri Basin Program (Units: Sun-Teton)
MT	Pre-1966	GP	Lower Musselshell, Unit Musselshell Division Pick-Sloan Missouri Basin Program (Flatwillow Dam)
MT	1966	GP	Castle Reef Dam and Reservoir
MT	1966	GP	Lowry Dam and Reservoir
MT	Pre-1972	GP	Judith Division Pick-Sloan Missouri Basin Program (Units: Hobson, Ross Fork, Lewistown, Danves)
MT	Pre-1972	GP	Helena-Great Falls Division Pick-Sloan Missouri Basin Program (Units: Dearborn-Crown Butte (Bean Lake Dam, Dearborn Dam, Auchard Dam, Bird Tail Dam, Sullivan Dam), Cascade, Chestnut Valley, Newlan, Ulm)
MT	Pre-1972	GP	Lower Bighorn Division, Pick Sloan Missouri Basin Program (Units: Benteen Flat, Dunmore, Wyola, Hardin)
MT, WY	Pe-1972	GP	Powder Division Pick-Sloan Missouri Basin Program (Units: Deep Creek, Lower Powder, Baking Powder, Bay Horse, Bloom, Broadus, Butte Creek, Canal Dutch Gulch, East Mizpah, Flood Creek, Garr, Kelsey, Larney, Little Powder, Lower Powderville, Middle Powderville, Mizpah, Mud Buttes, Pilgim, Pintail, Reynolds, Snow Creek, Three Bar, Upper Mud Buttes, Upper Powderville, Lower Powder Pumping, Moorhead, Buffalo (WY), French Creek, (WY), Ucross (WY), Box Elder (WY), Kaycee (WY))
MT	1982	GP	Buffalo Creek Dam and Reservoir
MT, WY	Pre-1985	GP	Tongue Division Pick-Sloan Missouri Basin Program (Units: Sheridan (South Fork Dam))
MT	1985	GP	Lake Creek
MT	1994	GP	Lonesome Lake
MT		GP	Three Forks Division Pick-Sloan Missouri Basin Program (Units: Cameron Bench, Jefferson-Whitehall, West Bench, Clarkston, Gallatin, Madison)

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State	Study date	Region	Name of Study
MT		GP	Corson Dikes and Reservoir
MT		GP	Lower Sun Butte Dam and Reservoir

Table 7: Nebraska—Studies that did not conform to Section 1840 requirements

State	Study date	Region	Name of Study
NE, SD	Pre-1963	GP	White Division Pick-Sloan Missouri Basin Program (Units: Pine Ridge (Slim Butte Dam))
NE	1967	GP	Beaver Crossing Dam and Reservoir
NE, KS	Pre-1971	GP	Blue Division Pick-Sloan Missouri Basin Program (Units: Sunbeam, Little Blue)
NE	Pre-1971	GP	Tri-County Division Pick-Sloan Missouri Basin Program (Units: Ft. Kearney)
NE	1971	GP	Angus Dam and Reservoir
NE, KS	Pre-1974	GP	Kanaska Division Pick-Sloan Missouri Basin Program (Units: Almena, Oberlin, Nelson Buck)
NE	1979	GP	Norden Dam and Reservoir
NE	1981	GP	Nemaha Division Pick-Sloan Missouri Basin Program
NE	1981	GP	Lower Niobrara Division Pick-Sloan Missouri Basin Program (Units: O'Neill)
NE	1995	GP	Sandhills Division Pick-Sloan Missouri Basin Program
NE		GP	Dorchester Diversion Dam
NE		GP	Gilead Diversion Dam
NE		GP	Lake Winters Creek
NE		GP	Interstate Division North Platte Project
NE		GP	Lower Lake Alice Dam

Table 8: Nevada—Studies that did not conform to Section 1840 requirements

State	Study date	Region	Name of Study
NV	1952	MP	Humboldt Project
NV	1954	MP	Washoe Project
NV	1959	LC	Report on Reconnaissance Investigations; Eldorado Valley Project, Nevada
NV	1963	LC	Report on Southern Nevada Water Supply Project, Nevada
NV, CA	1964	MP	Walker River Project
NV	1965	LC	Report on Additional Water Supply, Boulder City, Nevada
NV	1970	LC	Moapa Valley Pumping Project; White Narrows Dam and Canal
NV	1971	LC	Moapa Valley Pumping Project; Warm Springs Dam and Reservoir
NV	1975	MP	Dodge Flat, Pyramid Lake Indian Reservation Irrigation Project
NV, UT	1979	LC	LaVerkin Springs Water Utilization Study for the Harry Allen/Warner Valley Energy System
NV, AZ	1992 - 1995	LC	Lower Virgin River Project
NV, AZ, CA	1992, 1993	LC	Lower Colorado Regulatory Storage Study, 1993, did not include Mexico. The 1992 study of the same name did include Mexico.
NV, AZ	2004-2005	LC	Hoover Dam Water Supply Study, Reconnaissance Report on Treated Water Supply for Hoover Dam

Table 9: New Mexico—Studies that did not conform to Section 1840 requirements

State	Study date	Region	Name of Study
NM	1948	UC	Vermejo Project
NM	1961	UC	Mimbres Closed Basin
NM	1970	UC	Canjilon Project
NM	1970	UC	San Juan - Chama Project, Taos Unit
NM	1971	UC	Los Encinos Project
NM	1972	UC	San Juan - Chama Project, Llano Unit
NM	1974	UC	Mora Project, Wrap-up Report
NM, AZ	1974	LC	Upper Gila River Project
NM	1981	LC	Telegraph Dam and Reservoir, Proposed Concrete Telegraph Dam (an Alternate to the Hooker Dam), August, 1981
NM, AZ	1987	LC	Upper Gila Water Supply Study, Special Report on Alternatives

Table 10: North Dakota—Studies that did not conform to Section 1840 requirements

State	Study date	Region	Name of Study
ND, MT, SD, WY	1938 1973	GP	Little Missouri Division Pick-Sloan Missouri Basin Program (Units: Alzada Mill Iron (Mill Iron Dam))
ND, SD	Pre-1951	GP	Grand Division Pick-Sloan Missouri Basin Program (Units: Bowman-Haley)
MT, ND	Pre-1953	GP	Missouri-Souris Division Pick-Sloan Missouri Basin Program (Units: Jamestown, Crosby-Mohall, Missouri Diversion Unit (Missouri Diversion Dam), Garrison Diversion Unit)
ND	Pre-1971	GP	North Dakota Pumping Division Pick-Sloan Missouri Basin Program (Units: Painted Woods, Winona, Horsehead Flats)
ND	1982	GP	Apple Creek Project
ND	Pre-1987	GP	Glover Dam

Table 11: Oklahoma—Studies that did not conform to Section 1840 requirements

State	Study date	Region	Name of Study
OK	1940	GP	Fort Supply Pumping Project
OK	1943	GP	Mountain View Dam and Reservoir
OK	1947	GP	Englewood Dam and Reservoir
OK, KS	1950	GP	Corbin Dam and Reservoir
OK	1954	GP	Union Dam and Reservoir
OK	1959	GP	Waurika Project
OK	1962	GP	Canton Project
OK	1970	GP	Retrop Project
OK	1970	GP	Temple Dam and Reservoir
OK	1971	GP	Hydro Dam and Reservoir
OK	1972	GP	Courtney Dam and Reservoir
OK	1972	GP	Weatherford Dam and Reservoir
OK	1973	GP	Mangum Dam and Reservoir
OK	1973	GP	Verden Dam and Reservoir
OK	1979	GP	Navina Dam and Reservoir
OK	1985	GP	East Central Oklahoma Water Supply Study
OK	1985	GP	Northwest Oklahoma Water Supply Study
OK	1989	GP	Southeast Oklahoma Water Supply Study
OK	1962	GP	Buck Creek Dam and Reservoir
OK	1966	GP	Boswell Dam and Reservoir
OK	Pre-1998	GP	Ada Dam and Reservoir (Oklahoma State Water Plan – OSWP)
OK	Pre-1998	GP	Boise City Dam and Reservoir (OSWP)
OK	Pre-1998	GP	Brazil Dam and Reservoir
OK	Pre-1998	GP	Candy Dam and Reservoir (OSWP)
OK	Pre-1998	GP	Caney Mountain Dam and Reservoir (OSWP)
OK	Pre-1998	GP	Centerpoint Dam and Reservoir (OSWP)
OK	Pre-1998	GP	Cestos Dam and Reservoir (OSWP)
OK	Pre-1998	GP	Chickasaw Dam and Reservoir (OSWP)
OK	Pre-1998	GP	Clearbrook Dam and Reservoir (OSWP)
OK	Pre-1998	GP	Crescent Dam and Reservoir (OSWP)
OK, KS	Pre-1998	GP	Copan Project (OSWP)

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State	Study date	Region	Name of Study
OK	Pre-1998	GP	Durant Dam and Reservoir (OSWP)
OK	Pre-1998	GP	Eldon Dam and Reservoir(OSWP)
OK	Pre-1998	GP	Finley Dam and Reservoir(OSWP)
OK	Pre-1998	GP	Goodwell Dam and Reservoir(OSWP)
OK	Pre-1998	GP	Hennessey Dam and Reservoir (OSWP)
OK	Pre-1998	GP	Kellond Dam and Reservoir (OSWP)
OK	Pre-1964	GP	Mangum Project
OK	Pre-1998	GP	Okarche Dam and Reservoir (OSWP)
OK	Pre-1998	GP	Peggs Dam and Reservoir (OSWP)
OK	Pre-1998	GP	Picket Dam and Reservoir (OSWP)
OK	Pre-1998	GP	Renfrow Dam and Reservoir(OSWP)
OK	Pre-1998	GP	Sand Project (OSWP)
OK	Pre-1998	GP	Sasakwa Dam and Reservoir (OSWP)
OK	Pre-1998	GP	Shidler Project (OSWP)
OK	Pre-1998	GP	Shiloh Dam and Reservoir (OSWP)
OK	Pre-1998	GP	Sid Dam and Powerplant (OSWP)
OK	Pre-1998	GP	Skiatook Project (OSWP)
OK	Pre-1998	GP	Stillwater Project (OSWP)
OK	Pre-1998	GP	Tahlequah Dam and Reservoir (OSWP)
OK	Pre-1998	GP	Taloga Dam and Reservoir (OSWP)
OK	Pre-1998	GP	Wash Hudson Dam and Reservoir (OSWP)
OK	Pre-1998	GP	Wellston Dam and Reservoir (OSWP)
OK	Pre-1998	GP	Welty Project (OSWP)
OK		GP	Chelsea Project
OK		GP	Lake Murray and Lake Murray Dam
OK		GP	Spavinaw Dam and Reservoir
OK		GP	Speermore Dam and Reservoir
OK		GP	Tulsa Project

Table 12: Oregon—Studies that did not conform to Section 1840 requirements

State	Study date	Region	Name of Study
OR	1946	PN	Upper Burnt River Project, Burnt River
OR	1948	PN	Canby Project Planning Report, A Supplement to the Columbia River Basin Project
OR	1948	PN	Pauline Project, Interim Report
OR	1948	PN	West Long Tom Project, Interim Report
OR	1949	PN	Harney County Project, Reconnaissance Report
OR	1951	PN	Crooked River Project, Post Reservoir, Report of the Regional Director and Substantiating Materials
OR	1951	PN	Deschutes Project, By-Pass Channel, Reconnaissance Report
OR	1951	PN	Goose Lake Project, Report of the Regional Director and Substantiating Materials
OR	1951	MP	Hanks Marsh Unit, Klamath Project
OR	1952	PN	Willamette Valley Storage Utilization Project, Chehalem Area, Reconnaissance Report
OR	1953	PN	Willamette Valley Storage Utilization Project, Coburg Area, Reconnaissance Report
OR	1953	PN	Willamette Valley Storage Utilization Project, East Long Tom Area, Reconnaissance Report
OR	1953	PN	Willamette Valley Storage Utilization Project, Hopewell Area , Reconnaissance Report
OR	1955	PN	Deschutes Project, Benham Falls Dam, Supplemental Storage, Report of the Regional Director and Substantiating Materials
OR, CA	1955	MP	Klamath Project Extensions
OR, WA	1955	PN	Milton-Freewater Project, Lower Division
OR	1957	PN	East Long Tom Project, Proposed Report of the Regional Director
OR	1957	PN	Hopewell Project, Report of the Regional Director
OR	1957	PN	Molalla Project, Reconnaissance Report
OR	Circa 1958	PN	Umpqua River Project, Yoncalla Division, Elk Creek Basin
OR, WA	1959	PN	McNary Project, Proposal Report of the Regional Director
OR	1959	PN	Pendleton Project, Special Report
OR, CA	1960	MP	Butte Division, Klamath Project
OR	1960	PN	Cottage Grove Project, Wrap-up Report
OR	1960	PN	Post Project, Wrap Up Report
OR	1960	PN	Umpqua River Project, Roseberg Division, Reconnaissance Report
OR, CA	1961	MP	Stronghold Unit, Tule Lake Division, Klamath Project
OR	1961	PN	Umpqua River Project, Oakland Division, Reconnaissance Report
OR, CA	1962	MP	Clear Lake Unit, Klamath Project
OR	1962	PN	John Day Project, Willow Creek Reconnaissance data for Corps of Engineers
OR	1963	PN	Umatilla Project, South Division, Birch Creek Diversion Unit, Proposal Report of the Regional Director for Official Review Only Subject to Revision
OR	1964	PN	Umpqua River Project, Olalla Division, Reevaluation Statement
OR	1966	PN	Willamette River Project, Calapooia Division, Summary Report and Substantiating Materials on Lands, Water Supply
OR	1966	PN	Willamette River Project, Red Prairie Division, Summary Report
OR	1967	PN	Willamette River Project, Summary Report
OR	1968	PN	Willow Creek Project, Water Supply

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State	Study date	Region	Name of Study
OR	1970	PN	Rogue River Basin Project, Merlin Division, Reevaluation Statements, Report of the Regional Director [Sexton Dam]
OR	1971	PN	Burnt River Project, Dark Canyon Division, Burnt River
OR	1971	PN	Rogue River Basin Project, Illinois Valley Division, Summary Concluding Statement
OR, WA	1971	PN	Walla Walla Project, Milton-Freewater Division, OR, and Marcus Whitman Division, WA, Proposed Feasibility Report
OR	1973	PN	Upper Owyhee Project, Jordan Valley Division, Concluding Report
OR	1974	PN	Columbia South Side Project, Concluding Report
OR	1974	PN	Rogue River Basin Project, Evans Valley Division, Concluding Report
OR	1974	PN	The Dalles Project, An Engineering Plan to Provide Additional Irrigation Water to The Dalles Irrigation District, Special Report
OR	1974	PN	White River Basin Project, Appraisal Report
OR	1975	PN	Willamette River Project, Carlton Division, Alternative Plans
OR	1976	PN	Warm Springs Indian Reservation, An Engineering Plan for Irrigation of the Tenino Bench and Dry Creek Areas, Special Report
OR	1976	PN	Willamette River Project, Carlton Division, Special Report
OR	1980	PN	Rogue River Basin Project, Medford Division, Planning Aid Document
OR	1981	PN	Grand Ronde River Basin Appraisal Report
OR	1981	PN	Lower Deschutes River Basin, Appraisal Report
OR	1983		Tualatin Project, Second Phase, Planning Report/Draft Environmental Statement, May 1983 [Gaston and Mount Richmond dams]
OR	1985	PN	Upper John Day Project, Planning Report Concluding the Study for the Upper John Day Project
OR	1991	PN	Northern Douglas County Cooperative Water Resources Study Status Report and Environmental Analysis
OR	1996	PN	Carlton Lake Restoration Study, Economic and Environmental Report
OR	1996	PN	Tumalo Irrigation and Streamflow Enhancement, Central Oregon Irrigation System Conservation Feasibility Study
OR	1997	PN	Moore's Hollow Dam and Reservoir Project, Information Report [Upper Snake River Salmon Migration Study]
OR	1997	PN	Owyhee Project Storage Optimization Study, Information Report
OR	1997	PN	Upper Deschutes River Basin Water Conservation Study, Special Report

Table 13: South Dakota—Studies that did not conform to Section 1840 requirements

State	Study date	Region	Name of Study
SD, MT, ND, WY	1938 1973	GP	Little Missouri Division Pick-Sloan Missouri Basin Program (Units: Alzada Mill Iron (Mill Iron Dam))
SD	Pre-1950	GP	Moreau Division Pick-Sloan Missouri Basin Program (Units: Bixby, Moreau River)
SD, ND	Pre-1951	GP	Grand Division Pick-Sloan Missouri Basin Program (Units: Bowman-Haley)
SD	1955	GP	Conde Pumping Plant
SD	1958	GP	Bad Division Pick-Sloan Missouri Basin Program
SD, NE	Pre-1963	GP	White Division Pick-Sloan Missouri Basin Program (Units: Pine Ridge (Slim Butte Dam))
SD	1967	GP	Slip Up Creek Dam, Reservoir, and Pumping Plant
SD	1968	GP	Big Sioux Pumping Plant
SD	1968	GP	Pollock Pumping Plant and Canal
SD	Pre-1985	GP	South Dakota Pumping Division Pick-Sloan Missouri Basin Program (Units: Pollock-Herreid, Grass Rope, Lake Andes-Wagner, CENDAK)
SD	Pre-1980	GP	James Division Pick-Sloan Missouri Basin Program (Units: Aberdeen, Castlewood-Estelline Area, Sioux Falls, Campbell Canal Diversion Schemes)

Table 14: Texas —Studies that did not conform to Section 1840 requirements

State	Study date	Region	Name of Study
TX	1952	GP	San Saba Dam and Reservoir
TX	1962	GP	Voith Dam and Reservoir
TX	1963	GP	Cotulla Dam and Reservoir
TX	1963	GP	Fowlerton Dam and Reservoir
TX	1965	GP	Cuero Project
TX	Pre-1971	GP	Coastal Division Texas Basins Project (Units: Baffin Bay, Sinton, Winter Garden)
TX	1977	GP	San Antonio-Guadalupe Division Texas Basins Project
TX	Pre-1980	GP	Cloptin Crossing Dam and Reservoir
TX	Pre-1980	GP	Lockhart Dam and Reservoir
TX	1984	GP	Umbarger Dam/Buffalo Lake
TX	1986	GP	Shaws Bend Dam and Reservoir; Colorado Costal Plains Project; Colorado River
TX	1987	GP	San Jacinto Project
TX	Pre-1987	GP	Cleveland Dam and Reservoir
TX	1991	GP	Texas Big Sandy Project
TX		GP	Confluence Dam and Reservoir
TX		GP	Tenaha Dam and Reservoir
TX		GP	Zavala Dam and Reservoir

Table 15: Utah—Studies that did not conform to Section 1840 requirements

State	Study date	Region	Name of Study
UT	1942	UC	Blue Bench Project
UT	1946	LC	Bluff Dam on the San Juan River
UT	1946	LC	Coconino Dam on the Little Colorado River
UT	1953	UC	Gooseberry Project (also known as the Narrows Project and Price River Project)
UT	1954	UC	East Cache Project
UT, WY	1954	UC	Henry Fork Reconnaissance Report
UT	1956	UC	Little Bear Project
UT	1959	UC	Pack Creek Project
UT, WY	1961	UC	Woodruff-Cokeville Project, Utah and Wyoming Feasibility Report
UT	1964	UC	Price and San Pitch River Basin
UT, ID	1965	UC	Bear River Project
UT, CO	1969	UC	San Juan Investigations, Utah and Colorado
UT	1973	UC	West Box Elder County Appraisal Report
UT, AZ	1975	UC	Paria-San Rafael Project
UT	1976	UC	South Cache Project
UT	1978-1997	UC	Central Utah Project (several studies of non-built projects) Uintah Unit, 1978 Ute Indian Unit, 1980 UPALCO Unit, 1981 Uintah Unit Replacement, 1997
UT, NV	1979	LC	LaVerkin Springs Water Utilization Study for the Harry Allen/Warner Valley Energy System
UT, CO, WY	1980	UC	Upper Colorado Resource Study Concluding Report
UT	2005	UC	Snyderville Basin Water Supply Study

Table 16: Washington—Studies that did not conform to Section 1840 requirements

State	Study date	Region	Name of Study
WA	1944	PN	Green-Puyallup Project, Auburn Unit, Planning Project Report
WA	1950	PN	Cowlitz River Basin Project, Reconnaissance Report
WA	1950	PN	Hartline Project, Reconnaissance Report, Report of the Regional Director
WA	1950	PN	Lewis River Basin, Reconnaissance Report
WA	1951	PN	Sequim Project, Report of the Regional Director and Substantiating Materials
WA	1954	PN	Yelm Project, Reconnaissance Report
WA	1955	PN	Chief Joseph Dam Project, Foster Creek Division, Brewster Flat Unit, Definite Plan Report
WA, OR	1955	PN	Milton-Freewater Project, Lower Division
WA	1956	PN	Chief Joseph Dam Project, Moses Coulee, Upper and Lower Areas, Reconnaissance Report
WA	1957	PN	Dayton Project, Report of the Regional Director
WA	1958	PN	Chief Joseph Dam Project, St. Andrews-Sagebrush Flats Division, Proposed Reconnaissance Report
WA	1959	PN	Chief Joseph Dam Project, Shoreline Pumping Division, Alameda Unit, Report of the Regional Director
WA, OR	1959	PN	McNary Project, Proposal Report of the Regional Director
WA	1961	PN	Chief Joseph Dam Project, Methow Division, Reconnaissance Report
WA	1962	PN	Lower Horse Heaven Project, Reconnaissance Report
WA	1963	PN	Chehalis River Project, Adna Division, Concluding Report
WA, ID	1964	PN	Pend Oreille River Basin, Reconnaissance Report
WA	1964	PN	Willapa Project, Proposed Report of the Regional Director
WA	1965	PN	Upper Chehalis River Basin, Reconnaissance Report
WA	1966	PN	A'chote Project, Washington
WA	1966	PN	Eureka Flat Project, Le Grow Diversion, Status Report
WA	1966	PN	Wynoochee Project (Authorized COE Project), Report of the Regional Director
WA	1968	PN	Columbia Basin Project, East High Investigations
WA	1970	PN	Columbia Basin Project, Sulphur Lake Study
WA, OR	1971	PN	Walla Walla Project, Milton-Freewater Division, OR, and Marcus Whitman Division, WA, Proposed Feasibility Report
WA	1973	PN	Central Washington Project Concluding Report
WA	1974	PN	Spokane Indian Reservation, Environmental Statement, Draft, Assessment Irrigation Development of the Little Falls and Bull Pasture Areas
WA, OR	1976	PN	Walla Walla Project, Touchet Division, Definite Plan Report
WA	1979	PN	Chief Joseph Dam Project, Colville Indian Reservation, Appraisal Report
WA	1984	PN	Yakima River Basin Water Enhancement Program (YRBWEP), planning, Damsite and Structure Review Team Report
WA	1984	PN	YRBWEP, Swauk Creek Dam, Lake Cle Elum Tunnel, Lake Cle Elum Pumping Plant, Preliminary Report
WA	1984	PN	YRBWEP, Wymer, Design Request Data for "Stage 1 Estimates" of Wymer Dam and Dike and Wymer Pumping Plant
WA	1987	PN	YRBWEP, Planning, Cabin Creek Damsite Investigation, Engineering Status Report
WA	2001	PN	Columbia Basin Project, East Canals, East Low Canal, Warden Coulee Reregulating Reservoir, Interim Report
WA	2004	PN	Columbia Basin Project, South Columbia Basin I.D., Re-regulating Reservoirs Study, South Columbia Basin Irrigation District

Table 17: Wyoming—Studies that did not conform to Section 1840 requirements

State	Study date	Region	Name of Study
WY	1950	GP	Horton Dam and Reservoir
WY, UT	1954	UC	Henry Fork Reconnaissance Report
WY	1955	UC	Opal Project, Wyoming, Reconnaissance Report
WY	1961	UC	Effect of New Industrial Developments on Potential Opam Reclamation Project, Wyoming
WY	1961	UC	La Barge Project
WY, UT	1961	UC	Woodruff-Cokeville Project, Utah and Wyoming Feasibility Report
WY	1962	GP	Arvada Dam and Reservoir
WY	Pre-1965	GP	Bighorn Basin Division Pick-Sloan Missouri Basin Program (Greybull Flat)
WY	1965	GP	Polecat Bench Area
WY	1965	PN	Upper Star Valley Project, Upper Snake River Project, Upper Star Valley Division, Report of the Regional Director
WY, CO	1977	UC	Savery-Pot Hook Project
WY	1980	UC	Sublette Project Investigations
WY, UT, CO	1980	UC	Upper Colorado Resource Study Concluding Report
MT, WY	Pre-1985	GP	Tongue Division Pick-Sloan Missouri Basin Program (Units: Sheridan(South Fork Dam))
WY		GP	Wind Division Pick-Sloan Missouri Basin Program (Units: North Crowheart, South Crowheart, Winchester)
WY		GP	Sahara Diversion Dam and Canal
WY		GP	Boxelder Dam and Reservoir

Appendix 2: Other studies, reports, and hydropower surveys

Following is a listing of other studies that provide background on potential water resources developments in the seventeen western states. For the most part, many of these studies do not involve surface storage studies but focus on improvements at existing sites. Studies at existing sites may be considered under Section 1834 of the Energy Policy Act of 2005. Studies in Appendix B were prepared by Reclamation, other federal agencies, or public interest groups.

Reclamation studies

Assessment of small hydroelectric development at existing facilities, United States Bureau of Reclamation, April, 1980, 'Public Law 95-482 . . . included specific funds for this study ...'. Identified existing sites in Reclamation for small hydropower development.

Report on assessment of small hydroelectric development at existing facilities, United States Department of the Interior. Water and Power Resources Service, 1980. An assessment of the potential of small hydroelectric additions at Reclamation's existing facilities.

Small Hydro Reconnaissance Studies: Western States, 1981. A study of the three low head hydropower projects with the best benefit-cost ratios. None of these was built by Reclamation.

Head Augmentation for Low-Head Hydropower—A Feasibility Study, United States. Bureau of Reclamation 1981. No data on specific sites – essentially a research study.

Other Federal studies

A Resource Survey of Low-head Hydroelectric Potential, Idaho Water Resources Institute, 1979, This project funded by the United States Department of Energy. Water resources development—Northwest, Pacific.

National hydroelectric power resources study, Ft. Belvoir, Va.: U.S. Army Corps of Engineers, Institute for Water Resources; Washington, D.C.: For sale by the Supt. of Docs., U.S. G.P.O., 1983. A study to evaluate the potential for additional hydroelectric power and to prepare a plan for future development.

Idaho National Engineering and Environmental Laboratory, 1998. U.S. Hydropower Resource Assessment Final Report. Lockheed Martin Idaho Technologies Company, Idaho Falls, Idaho 83415. Prepared for the U.S. Department of Energy. This report presents the culmination of U.S. Department of Energy's efforts to produce a more definitive assessment of undeveloped hydropower resources within the United States.

Other non-federal studies

Family Farm Alliance Survey of Projects - The Family Farm Alliance provided a CD to Reclamation that contained water supply enhancement study data received from their western U.S. survey. The primary purpose of the study was to identify new water supplies for agricultural use. Hydropower was not addressed by the study. Further analyses of the data would be necessary to (a) determine if hydropower potential existed for the projects that are listed in the data base, and (b) assess relationships between the data base and previous Reclamation studies. (Western Water Supply Initiative, West-Wide Water Supply Enhancement Study Database Survey Results and Mapping Program, April 11, 2005.)

State Resource Assessment Reports. The resource assessment has been completed for 49 states (no report was generated for Delaware because of scarce resources). The completed work has identified 5,677 sites in the United States with undeveloped capacity of about 30,000 MW. (Idaho National Laboratory, <<http://hydropower.inl.gov/resourceassessment/states.shtml>>. accessed September 26, 2005.)

Appendix 3: Selected list of relevant legislation since 1939

Date	Law
1939	<p>Reclamation Project Act of 1939 (Act of August 4 1939, ch. 418, 53 stat. 1187) Water projects are authorized for multiple purposes, including power, municipal and industrial water supply, navigation, and flood control. Public Power preference established. Permitted Reclamation to plan and build projects for additional purposes, e.g., municipal water supply, hydroelectric, recreation — these in turn added benefits to the benefit/cost ratio formulae. Sec. 9(c): In electricity sales “preference shall be given to municipalities and other public corporations or agencies; and also to cooperative and other nonprofit organizations financed in whole or in part. . . [under] the Rural Electrification Act of 1936. . .” Interpretation of Secs. 9(c), 9(d), and 9(e) states that available revenues beyond repayment of power costs may be applied to irrigation repayment. The 40-year limit in Section 9(c) is only on the length of contracts not on the repayment period.</p>
1944	<p>Flood Control Act of 1944 [16 U.S.C. 460d (and various sections of Titles 33 and 43 U.S.C); P.L. 78-534, December 22, 1944; 58 Stat. 887] Authorized projects on the basis of river basin planning (e.g., Pick-Sloan Missouri Basin Program)</p>
1958	<p>Amend Fish and Wildlife Coordination Act of 1934 72 Stat. 563; and P.L. 89-72, 79 Stat. 216 as amended Required coordination with FWS and with state agencies whenever water was impounded, diverted, or channelized.</p>
1963	<p>Clean Air Act (42 USC 7401-7661; P.L. 95-95) as amended</p>
1964	<p>Wilderness Act of 1964 (16 U.S.C. 1131-1136, 78 Stat. 890) — Public Law 88-577 The Act provides criteria for determining suitability and establishes restrictions on activities that can be undertaken in a designated area.</p>
1965	<p>Federal Water Project Recreation Act of 1965 (P.L. 89-72, 79 Stat. 213) Up to 50 percent of the separable construction costs for recreation and fish and wildlife enhancement are deemed non-reimbursable. Reimbursable costs for these purposes are to be repaid with interest over 50 years.</p>
1966	<p>National Historic Preservation Act (Public Law 89-665; 16 U.S.C. 470 et seq.) as amended</p>
1968	<p>Wild and Scenic Rivers Act (16 USC 1271-1287) — Public Law 90-542, approved October 2, 1968 (82 Stat. 906) establishes a National Wild and Scenic Rivers System and prescribes the methods and standards through which additional rivers may be identified and added to the system.</p>
1969	<p>National Environmental Policy Act of 1969 (NEPA); 42 U.S.C. 4321-4347 NEPA is the basic national charter for protection of the environment. It establishes policy, sets goals, and provides means for carrying out the policy.</p>
1972	<p>Federal Water Pollution Control Act (Clean Water Act) 33 U.S.C. §§ 1251-1387, October 18, 1972, as amended 1973-1983, 1987, 1988, 1990-1992, 1994, 1995, and 1996.</p>
1973	<p>The Endangered Species Act (ESA); 7 U.S.C. 136; 16 U.S.C. 460 et seq.</p>
1974	<p>The Safe Drinking Water Act (SDWA); 42 U.S.C. s/s 300f et seq.</p>
1976	<p>The Resource Conservation and Recovery Act (RCRA); 42 U.S.C. s/s 321 et seq</p>
1980	<p>Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) 42 U.S.C. s/s 9601 et seq.</p>