

10. UNITED STATES OF AMERICA (USA)

10.1 Water Resources Management Policies and Actions

In 2006, the U.S. Environmental Protection Agency (EPA) has published its new **Strategic Plan for 2006 - 2011**. Water programmes are addressed in Goal II and parts of Goal IV among the five main goals¹³⁰, including (i) Clean Air and Global Climate Change, (ii) Clean and Safe Water, (iii) Land Preservation and Ecosystems, (iv) Healthy Communities and Ecosystems, and (v) Compliance and Environmental Stewardship.¹³¹

The “Clean and Safe Water” goal defines the improvements that EPA expects to see in the quality of the nation’s drinking water and of surface water over the next 5 years. These goals include improving compliance with drinking water standards, maintaining safe water quality at public beaches, restoring more than 2000 polluted waterbodies, and improving the health of coastal waters.

Three key strategies will drive progress towards these goals:¹³²

- **Core Programmes**
Continue effective implementation of core national water programmes, giving priority to improve water quality monitoring and information management, as well as working with state partners to strengthen water quality standards, improve discharge permits, and reduce pollution from diffuse sources.
- **Water Infrastructure**
Help sustain and secure the network of pipes and treatment facilities that constitute the nation’s water infrastructure through investments in State Revolving Loan funds, pursuit of innovative financing, local adoption of sustainable management practices, and an increased commitment to water efficiency as well as partnerships and technical assistance to enhance the abilities of utilities to plan for, prevent, detect, and respond to security threats.
- **Watershed Restoration and Protection**
Apply a watershed approach to restore polluted water across the country, including developing Total Maximum Daily Loads, implementing clean-up plans on a watershed basis, and promoting innovative, cost-effective practices like water quality trading and watershed permitting to restore and protect water quality.

The Office of Water (OW) of EPA is responsible for implementing the Clean Water Act and Safe Drinking Water Act and other water resources related regulations. Its activities are targeted to prevent pollution and to reduce risk for people and ecosystems in the most cost-effective ways.¹³³

The OW has developed a **Sustainable Wastewater Infrastructure Strategy**, organised around four main themes:¹³⁴

¹³⁰ Extracted from <http://www.epa.gov/water/waterplan/index.html#VI>

¹³¹ Extracted from <http://www.epa.gov/ocfo/plan/plan.htm>

¹³² Extracted from “Clean and Safe Water”, http://www.epa.gov/ocfo/plan/2006/goal_2.pdf, page 34

¹³³ Extracted from the website of the U.S. Environmental Protection Agency,

<http://www.epa.gov/water/programs/owintro.html>

¹³⁴ Extracted from “Clean and Safe Water”, http://www.epa.gov/ocfo/plan/2006/goal_2.pdf, page 48

- Sustainable Management Practices: The OW will work with utilities and associations to promote sustainable management practices and finalise a national strategy in early 2007.
- Water Efficiency: The OW will develop “Water Sense”, a voluntary partnership programme modelled after EPA’s Energy Star programme, to create a consumer market for water-efficient products.
- Full Cost Pricing: The OW will identify the range of approaches used to set rate structures based on full cost pricing, and will develop options sharing with communities.
- A Watershed Approach: The OW work with utilities, watershed organisations, and others to provide tools and information that will promote a watershed approach to infrastructure decisions.

Other actions or programmes related to water resources management

Strategic planning for the Civil Works programme is conducted in the context of overall planning for the US Army Corps of Engineers (the Corps). The overall Corps plan addresses five key areas that span Corps responsibilities: water resources, environment, infrastructure, emergency response and warfighting. In 2004, the Corps adopted a six year strategic plan (fiscal years 2004-2009), which emphasises balanced and collaborative solutions to the nation’s water resources challenges.¹³⁵

One of the goals from the strategic planning from US Army Corps of Engineers Institute for Water Resources (IWR) is to provide sustainable development and integrated management of the nation’s water resources. The Corps will be a facilitator and collaborator in a systems approach to integrated water resources management for the Nation in concert with Native American tribes, Federal, State, and local entities, non-governmental organisations, and the private sector to design shared visions regarding water solutions that better balance economic, environmental, and social objectives.

They will lead in responding to valid demands where have responsibilities in their primary Navigation, Flood Damage Reduction, and Environmental programmes while aiming to foster and implement more integrated and sustainable solutions. They will create a portfolio of projects that achieve integrated solutions in a watershed or geographic region, including navigation and flood damage reduction projects. They will be aware of the impacts of the projects on the objectives of others in the region and will work to find mutually acceptable outcomes. The Corps will recommend funding those projects with the greatest economic and/or environmental benefits.¹³⁶

¹³⁵ Extracted from the website of the US Army Corps of Engineers Institute for Water Resources, <http://www.iwr.usace.army.mil/waterresources/plan/strategicplanning.cfm>

¹³⁶ Extracted from “Civil Works Strategic Plan”, http://www.iwr.usace.army.mil/docs/cw_strat.pdf, page 15

10.2 Environmental Evaluation/SEA in USA

In USA, it is a statutory requirement under the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321-4347)¹³⁷ that federal agencies should integrate environmental values into their decision-making processes by considering environmental impacts (positive and negative) of their major proposed actions and reasonable alternatives to those actions. Major environmental impacts must be considered before any federal actions that likely have significant effect on the environment.

Such major federal actions include:

- New/continuing activities financed, assisted, conducted, or approved by Federal agencies;
- New/revised rules, regulations, plans, policies, or procedures; and
- Legislative proposals.¹³⁸

The NEPA has four primary purposes:

- to declare a national environmental policy;
- to promote efforts to protect the environment;
- to improve national understanding of environmental issues; and
- to establish the Council on Environmental Quality (CEQ), which aims to advise agencies on the environmental decision making process and to oversee and coordinate the development of Federal environmental policy.¹³⁹

There are three classes of action, which determine the level of documentation required in the NEPA process.

Categorical Exclusion (CE): a category of action established by Federal agencies that do not individually or cumulatively have significant effects on the environment.

Environmental Assessment (EA): provides evidence/analysis for determining whether the action will cause significant impacts. When it is determined that there will be no significant impacts as a result of the proposed action, an EA fulfils the agency's compliance with NEPA. If it is determined that there will be significant (positive and/or negative) impacts, an EA facilitates preparation of an Environmental Impact Statement. A Finding of No Significant Impact (FONSI) is prepared after the EA is completed and a determination of no significant impacts has been made. A FONSI is a decision document supporting a determination that an action will not result in significant impacts. The FONSI is often included in the Environmental Assessment, but may be a separate document that includes a summary of the EA.

¹³⁷ More information can be found in this link, <http://ceq.eh.doe.gov/Nepa/regs/nepa/nepaeqia.htm>, originated from the web site of the Council on Environmental Quality

¹³⁸ Extracted from NEPA Informational Guide by the National Marine Fisheries Service Northeast Regional Office, http://www.nero.noaa.gov/prot_res/atgtrp/osm/NEPA%20Overview.pdf, page 1

¹³⁹ Reference has been made to the web site of Minerals Management Services (MMS), a bureau in the U.S. Department of the Interior – the Federal agency that manages the nation's natural gas, oil and other resources on the outer continental shelf, <http://www.mms.gov/eppd/compliance/nepa/index.htm>

Environmental Impact Statement (EIS): To comply with NEPA, federal agencies must prepare a detailed statement known as “Environmental Impact Statement” (EIS) on the environmental impacts of any federal action significantly affecting the quality of the human environment. Before that, a Notice of Intent (NOI) is prepared to announce an agency’s decision for the preparation of an EIS for a particular action and must be published in the Federal Register.¹⁴⁰

NEPA requires that an EIS must include:

- the environmental impacts of the proposed action; unavoidable adverse environmental impacts;
- alternatives including no action;
- the relationship between short term uses of the environment and maintenance of long-term ecological productivity; irreversible and irretrievable commitments of resources; and
- secondary/cumulative effects of implementing the proposed action.

A Draft EIS is firstly prepared to evaluate the impacts of the action and reasonable alternatives. A final EIS is then prepared to respond to comments, including any project changes.

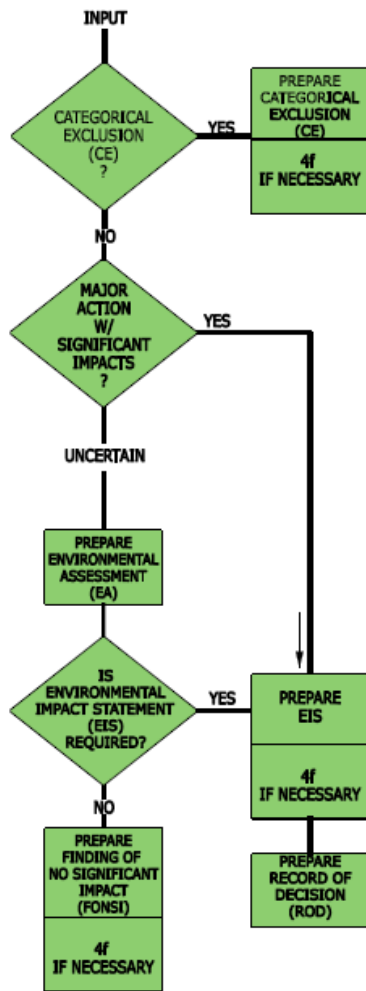
Following the Final EIS, a Record of Decision (ROD) is prepared for the following functions: (i) state the final decision; (ii) identify alternatives considered and specify those that are environmental preferable; (iii) state whether all practicable mitigation measures were adopted, and if not, explain why; and (iv) commit to a monitoring and enforcement programme to insure implementation of mitigation measures.¹⁴¹

The overall process for NEPA and EIS are presented in **Exhibit US-1**.

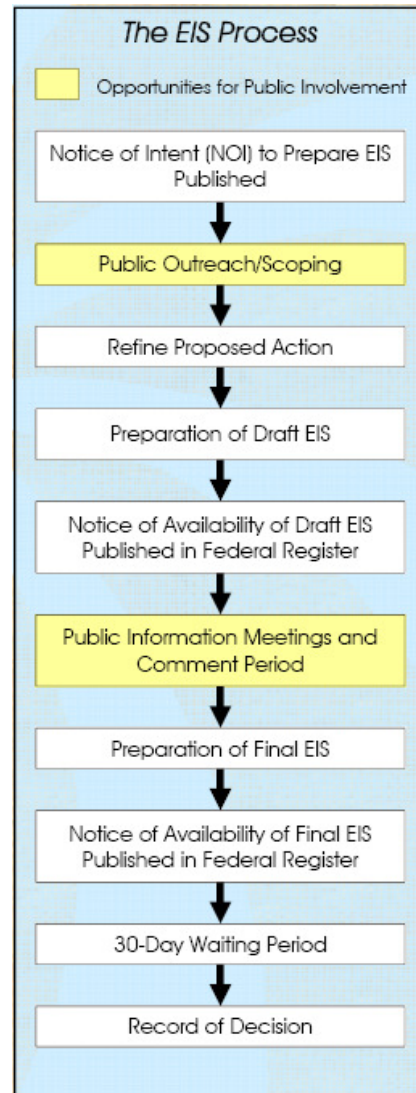
¹⁴⁰ Extracted from NEPA Informational Guide by the National marine Fisheries Service Northeast Regional Office, http://www.nero.noaa.gov/prot_res/atgtrp/osm/NEPA%20Overview.pdf

¹⁴¹ Extracted from NEPA Informational Guide by the National Marine Fisheries Service Northeast Regional Office, http://www.nero.noaa.gov/prot_res/atgtrp/osm/NEPA%20Overview.pdf

Exhibit US-1 Process flow chart for the overall process of NEPA and EIS



Overall process for NEPA ¹⁴²



Overall process for EIS ¹⁴³

¹⁴² Extracted from the “Western Federal Lands Highway Division Project Development Process Flow Chart” by the Department of Transportation, USA, http://www.wfl.fhwa.dot.gov/design/process/pdf/process_flowchart.pdf, page 7

¹⁴³ Extracted from a fact sheet regarding NEPA/EIS by the National Oceanic and Atmospheric Administration (NOAA) – an agency of the US Department of Commerce, http://www.nmfs.noaa.gov/pr/pdfs/health/nepa_eis_facts.pdf

10.3 Environmental Evaluation/SEA on Water Resources Management in USA

For any policy, plan or programme that related to water resources management also follows the requirements of NEPA as such an environmental evaluation should be carried out and involves the preparation of CE, EA or EIS depending on the impact significance.

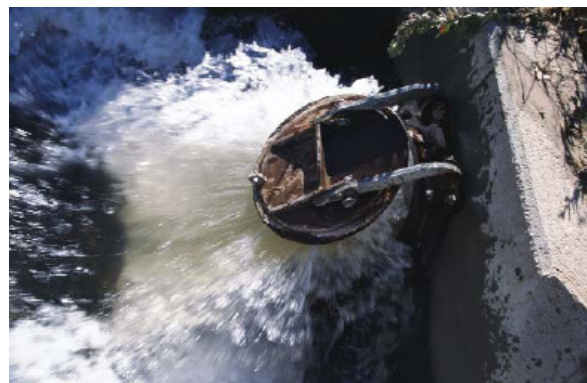
All details can be referred to the Section 10.2.

A summary table for the water resources management policies and actions and SEA status in USA is presented in **Exhibit US-2**.

Exhibit US-2 Summary of Water Resources Management (WRM) Policies and Actions and SEA Status in USA	
(a) WRM policies and actions	
WRM Policies and Actions	Policies: <ul style="list-style-type: none"> • Strategic Plan for 2006 - 2011 Actions: <ul style="list-style-type: none"> • Sustainable Wastewater Infrastructure Strategy • Strategic planning for the Civil Works programme
Guidance/Legislations in WRM	N/A
(b) Environmental Evaluations / SEA Status in WRM Policies Actions	
Type of Assessment	Environmental Impact Statement
Requirement Mechanisms	Statutory
Legislation for Environmental Evaluation / SEA	National Environmental Policy Act (NEPA)
Applications	Policies, Plans and Programmes



Source: "Platte River Recovery Implementation Programme"¹⁴⁴



Source: "Clean and Safe Water"¹⁴⁵

¹⁴⁴ Extracted from "Platte River Recovery Implementation Programme", <http://www.platteriver.org/library/FEIS/Summary/summary.pdf>, cover page

¹⁴⁵ Extracted from "Clean and Safe Water", http://www.epa.gov/ocfo/plan/2006/goal_2.pdf, page 48

10.4 Analysis and Conclusions

WRM Policies

The U.S. Environmental Protection Agency (EPA) has published "Strategic Plan for 2006-2011", one of the main goals is "Clean and Safe Water". This goal shows the determination of EPA on improvements in the quality of the nation's drinking water and of surface waters over the next 5 years. Several strategies are implied to achieve the goal, like (i) Core Programmes, which includes giving priority to improve water quality monitoring and information management; (ii) Water Infrastructure that helps sustaining and securing the network of pipes and treatment facilities; and (iii) Watershed Restoration and Protection, which applies a watershed approach to restore polluted waters across the country. A special team named the Office of Water (OW) in EPA is responsible for implementing the Clean Water Act and Safe Drinking Water Act and other water resources related regulations and for helping to achieve the abovementioned goals.

In Hong Kong, the scope of water resources need to be managed is restrained to the two main sources of water – rainfall from natural catchment and supply from Guangdong. It is Water Supplies Department's (WSD) scope of work to cover the whole process from the collection of natural yield from rainfall, the reception of raw water from Guangdong to the provision of a supply with a quality of accepted international standards to the users' taps. WSD also supplies sea water for flushing purposes to over 80% of the population. For protection against flooding, sewage collection, treatment and disposal, it is under Drainage Services Department's (DSD) jurisdiction.

For the sustainable development of Hong Kong, WSD has initiated a *Total Water Management programme* comprising key elements of new water resources, water reclamation, water conservation and water resources protection and management was initiated for better utilization of the different water resources.

EE/SEA

For SEA/EE requirements in USA, consideration on the environmental impacts for any WRM related PPP is required during the decision making process. Details of the requirements are stated in the NEPA. According to the NEPA, there are generally three types of EE with regard to the impact significance, namely,

- Categorical Exclusions (CE) – refers to those do not involve significant social, economic or environmental impacts.
- Environmental Assessment (EA) – it is prepared when the environmental impact are not clear to define.
- Environmental Impact Statement (EIS) – it is prepared for any major federal action that may significantly affect the environment. And EIS is regarded as the SEA-type assessment in USA.

Apparently, the SEA/EE system in USA is considered to be fairly comprehensive.

At present, there are both statutory and non-statutory systems for PPP projects in Hong

Kong. While the statutory requirements govern primarily large scale development projects (i.e. over 20 ha of area or population over 100,000), the administrative counterpart has been applied to land use planning, transportation and sectoral PPP. It may be a logical next step to consider:

- Combining the administrative requirements into the statutory system; and
- Providing further specific SEA requirements under the category of water resources management

In our opinion, USA's categorisation of PPP proposals based on environmental impact significance may be a merit which Hong Kong's SEA/EE system can adopt or learn from.

10.5 Examples of Water Resources Management Policies / Actions or their Environmental Evaluation/SEA

Example US-1 Final Environmental Impact Statement (EIS) for the Jackson County Lake Project ¹⁴⁶	
Type of Study	SEA (required statutorily under the NEPA)
Description of Study ¹⁴⁷	<p>This EIS analyses the potential environmental effects of a proposed dam and reservoir project in Jackson County, Kentucky. The purposes of the project include:</p> <ul style="list-style-type: none"> ● Providing adequate water supplies for the projected residential, commercial, and industrial needs of Jackson County, and part of one or more neighboring countries over the next 50 years; and ● Providing lake-based recreational opportunities to meet the present and future needs of the residents of Jackson County and surrounding areas.
Summary of Alternatives ¹⁴⁸	<p>Options considered in the study include:</p> <ul style="list-style-type: none"> ● No Action ● War Fork and Steer Fork, with sustainable yield of 1.3 Mass (lb/day) (mgd) of untreated water ● War Fork and Steer Fork, with sustainable yield of 2.2 mgd of untreated water ● Wood Creek Lake Pipelink ● Lock 14 Pipeline, which consists of the construction of a 20.5-mile pipeline from a new intake at Lock 14 of the Kentucky River <p>Note: Exhibit US-3 shows the location of War Fork and Steer Fork.</p>
Scope of Assessment/ Study ¹⁴⁹	<p>The evaluation parameters considered in the study include:</p> <ul style="list-style-type: none"> ● Geology/Soils ● Surface and groundwater resources/quantity and quality ● Air quality ● Biological resources ● Noise ● Chemical reaction ● Cultural resources ● Land use ● Transportation ● Waste management ● Human health and safety ● Socioeconomics ● Environmental justice ● Aesthetics
Environmental Measures ¹⁵⁰	<p>Environmental measures proposed in the study include:</p> <ul style="list-style-type: none"> ● Limitation on construction time and area ● Limitation on the amount of time that soil is exposed without revegetation, so as to minimise the size of disturbed areas ● Regular monitoring of reservoir water quality for drinking and public health

¹⁴⁶ Details of the report can be found at <http://www.usda.gov/rus/water/ees/feis-jc.htm>

¹⁴⁷ Extracted from Section 1 of the report, <http://www.usda.gov/rus/water/ees/pdf/deis-sect1.pdf>, page 1, 2

¹⁴⁸ Extracted from the Executive Summary of the report, <http://www.usda.gov/rus/water/ees/pdf/FEIS-Intro.pdf>, page 8-12

¹⁴⁹ Extracted from Section 3 (Part 1 and 2) of the report, <http://www.usda.gov/rus/water/ees/pdf/FEIS-Sect3.pdf> & <http://www.usda.gov/rus/water/ees/pdf/FEIS-Sect3-2.pdf>

¹⁵⁰ Extracted from Section 5 of the report, <http://www.usda.gov/rus/water/ees/pdf/FEIS-Sect5.pdf>, page 5-2 - 5-5

Example US-1 Final Environmental Impact Statement (EIS) for the Jackson County Lake Project¹⁴⁶	
	<p>purposes</p> <ul style="list-style-type: none"> ● Installation of a multi-level intake structure to allow mixing of released water from different depths of the reservoir ● Preparation and implementation of a non-point source pollutant control plan for the upstream watershed of the final reservoir site ● Restrict clearing of the project area to winter months, when bats are hibernating in caves and not using tree trunks ● Retain a buffer strip of trees of maximum width possible between construction zones and adjacent recreational uses during construction ● Outflow from the dam could be taken from multiple depths within the reservoir and be aerated to increase dissolved oxygen content ● Survey the chosen route of the water main for cultural resources and avoid construction through any located sites ● Allow any agricultural land in the project area to lie fallow for one to two years prior impoundment of the reservoir ● Ensure proper closure and removal of existing residential septic systems ● Improve the standard of local roads to act as alternate routes for increased volumes of traffic during construction ● Detour traffic onto local roads around the construction zones; suspend construction during peak traffic hours on selected roads; publicise alternate transportation routes in tourism literature and public outreach in Jackson County and the surrounding region ● Construct replacement roads or road segments prior to the completion of reservoir impoundment ● Develop spill prevention and control plans for those areas in which chemicals or products of petroleum, oil and lubricant would be stored or handled. ● Increase the chance for the public to involve in decision making process
Outcome of Study¹⁵¹	<p>Among the options, after comparing project costs, user rates impacts, and future growth prospects of Jackson County and the surrounding region, and evaluating other relevant information with regard to the reasonable alternatives considered in the EIS, the option “War Fork and Steer Fork, 3.5 mgd dam and reservoir” has been chosen as the preferred alternative.</p>

¹⁵¹ Extracted from the Executive Summary of the report, <http://www.usda.gov/rus/water/ees/pdf/FEIS-Intro.pdf>, page xiii

Example US-2 Platte River Recovery Implementation Programme Final Environmental Impact Statement¹⁵²	
Type of Study	SEA (required statutorily under the NEPA)
Description of Study	<p>This Programme will</p> <ul style="list-style-type: none"> ● Assist in the conservation and recovery of the target species in the Basin and thereby provide Endangered Species Act (ESA) regulatory compliance for effects to the target species river habitats from existing and certain new water-related activities that deplete water from the Platte River upstream of the Loup River confluence ● Provide a means to ensure that future water uses in the Basin do not undermine the habitat and species benefits and thereby are in compliance with ESA ● Help prevent the need to list more species under the ESA
Summary of Alternatives¹⁵³	<p>The alternatives considered in the study include:</p> <ul style="list-style-type: none"> ● No Action Alternative (i.e. Present condition) ● Governance Committee Alternative This option consists of two components: (1) land habitat component protects, restores, and maintains at least 10,000 acres of habitat in the Central Platte Habitat Area (2) water component improves occurrence of species and annual pulse flow targets by an average of 130 to 150 kaf annually. ● Full Water Leasing Alternative This option provides 10,000 acres of Central Platte Habitat Area under Programme management and improves achievement of species and annual pulse flow targets by 137 kaf on an average annual basis. ● Wet Meadow Alternative This option provides 17,053 acres of Central Platte Habitat Area under Programme management and improves achievement of species and annual pulse flow targets by 116 kaf on an average annual basis. ● Water Emphasis Alternative This option provides 7,475 acres of Central Platte Habitat Area under Programme management and improves achievement of species and annual pulse flow targets by 184 kaf on an average annual basis.
Scope of Assessment/ Study¹⁵⁴	<p>The evaluation parameters considered in the study include:</p> <ul style="list-style-type: none"> ● Water Resources ● River Geomorphology ● Water Quality ● Central Platte River Terrestrial Vegetation Communities and Land Use Types ● Habitat (Wetlands; Designated Critical Habitat;) ● Species (Whooping Crane; Sandhill Crane; Interior Least Tern and Piping Plover; Pallid Sturgeon; Other Federally Listed Species, Candidate Species; State Listed and Species of Special Concern) ● Fishery (North Platte Fisheries; Lake McConaughy Fishery) ● Hydropower ● Recreation ● Economy (Agricultural Economics; Regional Economics)

¹⁵² Detailed of the report of Example 2 can be found at <http://www.platteriver.org/library/index.htm#platte>

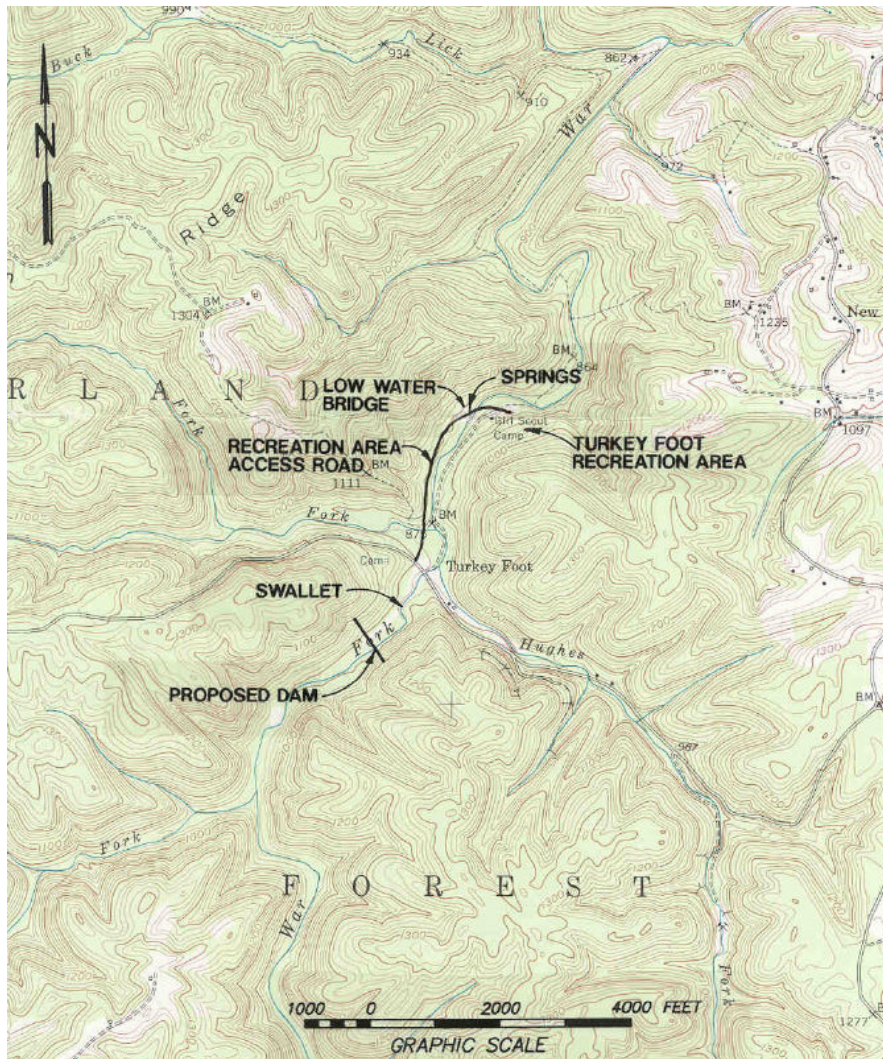
¹⁵³ Extracted from Chapter 3 of the report, <http://www.platteriver.org/library/FEIS/Volume1/Chapter3.pdf>, page 3-23, 3-24, 3-26

¹⁵⁴ Extracted from the Executive Summary of the report, <http://www.platteriver.org/library/FEIS/Summary/summary.pdf>, page 5-21

Example US-2 Platte River Recovery Implementation Programme Final Environmental Impact Statement ¹⁵²	
	<ul style="list-style-type: none"> ● Social (Social Analysis) ● Cultural Resources ● Indian Trust Assets
Environmental Measures	There are no environmental measures mentioned in this report.
Outcome of Study¹⁵⁵	The Programme aims to improve both riverflows and land habitat in the Central Platte Habitat Area to increase the availability of habitat used by the target species. However, there is no solution to whether the present condition or the alternatives is adopted. Some alternatives (Governance Committee Alternative, Full Water Leasing Alternative, Wet Meadow Alternative and Water Emphasis Alternative) are considered in this study with the strategy to focus on the Programme actions which ultimately benefit the three target bird species (whooping crane, piping plover, and interior least tern) in the Central Platte Habitat Area.

¹⁵⁵ Extracted from the Executive Summary of the report,
<http://www.platteriver.org/library/FEIS/Summary/summary.pdf>, S69

Exhibit US-3 Location of War Fork and Steer Fork for Example US-1¹⁵⁶



¹⁵⁶ Extracted from Appendix P "Report of Site Reconnaissance for the Proposal War Fork and Steer Fork Dam Site", page P-8