Comprehensive Irrigation District Management Plan

Dungeness River Agricultural Water Users Association





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Glossary

The following definitions may be helpful as you read the CIDMP. Definitions related to the ESA were provided by R2 Resource Consultants from their July 2001 HCP for Tacoma Water. R2 Resource Consultants compiled the definitions from Michael Grady of the NOAA Fisheries, Paul Hickey of Tacoma Water, and Tim Romanski of USFWS. ESA-related terms are based on Section 3 (16 U.S.C. § 1532) of the Endangered Species Act. Surface diversion and fish screen definitions are based on definitions from WDFW's Fish Passage Technical Assistance website (www.wa.gov/wdfw/hab/engineer/scrnterm.htm).

Biological Assessment (BA)

Information prepared on major construction activities by, or under the direction of, a federal agency to determine whether a proposed federal action is likely to adversely affect listed or proposed species, or designated or proposed critical habitat.

Biological Opinion (BiOp)

A document stating the opinion of the U.S. Fish and Wildlife Service or National Marine Fisheries Service on whether or not a federal action is likely to jeopardize the continued existence of a listed species, or result in the destruction or adverse modification of critical habitat.

Bypass Channel

Gravity fish screens installed downstream of the diversion headgate usually require a "fish bypass system" to collect fish from in front of the screen and safely transport them back to the stream. The bypass consists of an entrance/flow control section and a fish conveyance channel or pipeline.

Candidate Species

Any species under consideration by the Secretary of either Interior or Commerce for listing as an endangered or threatened species, but not yet the subject of a proposed rule. The respective Services differ with respect to their definitions of Candidate Species. The U.S. Fish and Wildlife Service considers 'Candidate Species' to be those species for which sufficient information on biological vulnerability and threat(s) occurs in their files to support proposals to list them as endangered or threatened species but proposed rules have not been issued (Federal Register 61; No. 49 page 7598). For species under National Marine Fisheries Service jurisdiction, 'Candidate Species' means a species for which concerns remain regarding their status, but for which more information is needed before they can be proposed for listing. There are no substantive protections provided under the Endangered Species Act for candidate species. The designation serves to underscore National Marine Fisheries Service or U.S. Fish and Wildlife Service concern regarding the status of such species, short of listing.

Critical Habitat

The specific area with physical or biological features that are essential to the conservation of the species.

Diversion Intake

A man-made structure or installation for diverting water from a stream, river, or other surface water body for a beneficial purpose.

Intake Channel

A channel, which conveys water from a diversion intake to a fish screen.

Endangered Species

Any species [including subspecies or qualifying distinct population segment] in danger of extinction throughout all or a significant portion of its range [Section 3 (6) of ESA]. An exception to this rule is made for species of the Class Insecta if the Secretary of Interior (for U.S. Fish and Wildlife Service) or Commerce (for the National Marine Fisheries Service) determines the species is a pest whose protection under the provisions of the Endangered Species Act would present an overwhelming and overriding risk to man.

Fish Screen

A fish protection device installed at or near a surface water diversion headgate to prevent entrainment, injury, or death of targeted aquatic species. Fish screens physically preclude fish from entering the diversion and do not rely on avoidance behavior like electrical or sonic fish barrier technology.

Habitat Conservation Plan (HCP)

A conservation plan for a threatened or endangered species, developed in conjunction with the National Marine Fisheries Service or the U.S. Fish and Wildlife Service. It is required for an incidental take permit under Section 10 16 U.S.C. § 1539(a)(2)(A).

Harm

Significant habitat modification or destruction that kills or injures listed wildlife by significantly impairing essential behavior patterns including breeding, feeding and sheltering (50 CFR 17.3).

Headgate

A gated structure that controls the flow of water from the surface water source into a gravity conveyance facility (canal, ditch, pipeline, etc.)

Implementing Agreement (IA)

A bilateral contract that defines the terms of the Habitat Conservation Plan, including conservation, mitigation, monitoring and enforcement. An Implementing Agreement usually accompanies the Habitat Conservation Plan legally binding all signatories to the requirements and responsibilities of the conservation plan and the Section 10 permit.

Incidental Take

The take of a federally listed animal species that is incidental to, and not the purpose of, carrying out an otherwise lawful activity conducted by a federal agency or applicant (Section 10; 16 U.S.C 1539(a)(1)(B).

Incidental Take Permit (ITP)

A permit issued pursuant to Section 10; 16 U.S.C. § 1539 (a)(1)(B) by either the U.S. Fish and Wildlife Service or the National Marine Fisheries Service that exempts a permittee from the take prohibition of Section 9 of the ESA if the taking of a listed species is incidental to otherwise lawful activities, and in accordance with an agreed upon and signed Habitat Conservation Plan that demonstrates the impacts of such taking will be minimized and mitigated and that the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild (16 U.S.C. § 1539(a)(2)(B).

Jeopardize

To engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the continued existence and the recovery of a listed species in the wild by reducing the reproduction, numbers or distribution of that species.

Section 4

The section of the Endangered Species Act (16 U.S.C. § 1533) that outlines procedures for (1) identifying and listing threatened and endangered species, (2) identifying, designating and revising critical habitat, (3) developing and revising recovery plans and (4) monitoring species removed from the list of threatened and endangered species.

Section 7

The section of the Endangered Species Act (16 U.S.C. § 1536) that outlines procedures for interagency cooperation to conserve federally listed species and critical habitat.

Section 9

The section of the Endangered Species Act (16 U.S.C. § 1538) that prohibits taking endangered fish and wildlife as well as most threatened fish and wildlife species. Additional prohibitions include import or export of endangered species or products made from endangered species, interstate or foreign commerce in listed species or their products, and possession of unlawfully taken endangered species.

Section 10

The section of the Endangered Species Act (16 U.S.C. § 1539) that provides exceptions to the section 9 prohibitions. This section includes provisions for permitting incidental take and the generation of habitat conservation planning.

Species

Any subspecies of fish, wildlife or plants, and any distinct population segment of any species or vertebrate fish or wildlife that interbreeds when mature [Section 3; (16 U.S.C. § 1532) (15)].

Species of Concern

Species whose conservation standing is of concern to either the U.S. Fish and Wildlife Service or the National Marine Fisheries Service, but for which status information is incomplete.

Take

To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect endangered [Section 3; (16 U.S.C. § 1532) (18)] or threatened species [Federal Regulations 50 CFR 17.31(a)], or to attempt to engage in any such conduct.

Threatened Species

Any species likely to become endangered within the foreseeable future throughout all or a significant portion of its range [Section 3; (16 U.S.C. § 1532) (19)].

Acronyms

ACOE	United States Army Corps of Engineers
AFW	Agriculture, Fish, and Wildlife
BFW	Bankfull Width
B-IBI	Benthic Index of Biological Integrity
BMP	Best Management Practice
BPA	Bonneville Power Administration
CCD	Clallam-Cline-Dungeness Irrigation Districts
CFS	Cubic Feet per Second
CIDMP	Comprehensive Irrigation District Management Plan
CWA	Clean Water Act
CWCP	Comprehensive Water Conservation Program (for the WUA)
DNS	Designation of Non-Significance
DOH	Washington State Department of Health
DQ	Dungeness - Quilcene
DRMT	Dungeness River Management Team
DRRWG	Dungeness River Restoration Work Group
DWUA	Dungeness River Agricultural Water Users Association
Ecology	Washington State Department of Ecology
EES	Economic and Engineering Services
EIS	Environmental Impact Statement
ESA	Endangered Species Act
ESU	Evolutionary Significant Unit
FEIS	Final Environmental Impact Statement
FC	Fecal Coliform
HCP	Habitat Conservation Plan
Health	Washington State Dept of Health
HPA	Hydraulic Project Approval
IA	Implementing Agreement
IFIM	Instream Flow Incremental Methodology
ML	Milliliter
MOU	Memorandum of Understanding
MWG	Montgomery Water Group
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Units
PDO	Pacific Decadal Oscillation
PHS	Priority Habitats and Species
RM	River Mile
RRB	Railroad Bridge
SASSI	Salmon and Steelhead Stock Inventory
SEPA	State Environmental Policy Act
TAG	Technical Advisory Group

TAT	Technical Advisory Team (of the CIDMP)
TMDL	Total Maximum Daily Load
Tribe	Jamestown S'Klallam Tribe
USBR	United States Bureau of Reclamation
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Service
WDFW	Washington State Department of Fish and Wildlife
WSDA	Washington State Department of Agriculture
WSU	Washington State University
WUA	Weighted Usable Area

Executive Summary

A Comprehensive Irrigation District Management Plan (CIDMP) has been developed for an area located in Clallam County, Washington. This Plan has been developed by the Dungeness River Agricultural Water Users Association (DWUA). The project has been funded by a combination of grant funds administered by three Washington State agencies: the Departments of Agriculture, Ecology, and Fish and Wildlife (WDFW). These grant funds originated with the U.S. Department of Agriculture; U.S. Fish and Wildlife Service (USFWS); and the State's Centennial Clean Water Fund.

The DWUA is an association representing seven public and private irrigation organizations that divert water from the Dungeness River. The DWUA held extensive discussions with both the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) regarding proposed issuance of Incidental Take Permits (ITPs) under section 10 of the ESA. This document constitutes DWUA's ITP proposed application and its proposed Habitat Conservation Plan (HCP) in accordance with the Services' ESA Section 10 regulations. While DWUA has in good faith pursued ESA assurances through the CIDMP process, DWUA believes its ongoing activities fully comply with all laws, and nothing in this document is intended to suggest otherwise.

As a pilot project, the CIDMP has been experimental in nature. The original intent was to develop binding agreements between the DWUA and state and federal regulatory agencies that would identify actions to be carried out by DWUA and corresponding assurances from the agencies regarding compliance with the Endangered Species Act and Clean Water Act. At the time this plan was finalized, suitable assurances had not been agreed to. Therefore, this plan provides a record of the actions contemplated under the pilot process.

DWUA will strive to carry out those actions listed in this plan as part of its ongoing efforts to contribute to collaborative management of water resources of the Dungeness River Basin. However, DWUA is not obligated to carry out these actions under current law or agreements. Its ability to implement this plan is largely controlled by access to funding from outside sources.

The CIDMP Process

This is a pilot project under an innovative planning process developed for irrigation activities in Washington State. The CIDMP process was developed at the statewide level by a working group within the framework of the Agriculture, Fish and Water (AFW) process. The purposes and process for developing a CIDMP are described in *Guidelines for Preparation of Comprehensive Irrigation District Management Plans*, produced by the Washington State Conservation Commission in May 2001.

The CIDMP process is a voluntary, incentive-based approach that provides a framework for irrigation entities to meet requirements under the Endangered Species Act (ESA) and Clean Water Act (CWA) while continuing to supply water to meet irrigation needs. This effort, in conjunction with actions by other parties in a watershed, can lead to higher stream flows during dry periods, enhanced water quality conditions, and improved prospects for recovery of listed

species. In return, state and federal agencies with responsibility for implementation of the ESA and the CWA are requested to provide assurances with respect to continued operation of irrigation activities.

Project Status and Next Steps

The CIDMP presented herein documents the results of the CIDMP process including:

- Identification of proposed covered species and covered lands
- Inventory of irrigation facilities and operations by DWUA members.
- Assessment of existing impacts on habitat and water quality.
- Consideration of a range of alternatives to avoid, minimize or mitigate these impacts.
- Identification of a specific list of proposed actions and a schedule for implementation.
- Identification of potential funding sources.
- Monitoring and adaptive management elements.

These steps have been completed with the assistance of a Technical Advisory Team (TAT) consisting of representatives from local, state and federal agencies, the Jamestown S'Klallam Tribe, and others. The TAT met approximately once a month for from October 2002 to October 2003 to provide input and guidance during development of the draft CIDMP.

Irrigation Facilities

The seven irrigation districts and companies that comprise DWUA were first organized in the 1890s and early 1900s. They have five diversion points on the Dungeness River, as well as one diversion point on McDonnell Creek. Water from these sources is used to irrigate approximately 5,800 acres farmed by private landowners. The irrigation system is critical to local agricultural activities because this area is located in the "rain shadow" of the Olympic Mountains and receives less than 20 inches of rain per year. Total water diverted for irrigation has declined substantially in recent years through a combination of management techniques, capital improvements, and gradual reduction in irrigated acreage.

The focus of this CIDMP is on diversion, conveyance, and tailwater return flows as well as associated operations conducted by DWUA and its members. The irrigation facilities include diversion structures, fish screens, canals and laterals located on covered DWUA lands. This CIDMP does not address on-farm activities performed by landowners or farm operators and such non-irrigation activities do not constitute "covered activities" for purposes of the ITPs.

Species Proposed for Coverage Under CIDMP/HCP

For purposes of this CIDMP/HCP, DWUA proposed 13 species for coverage under the ITP. These species include both currently-listed species such as Puget Sound Chinook salmon, Hood Canal chum salmon, bull trout the Western Toad, and the Bald Eagle, and other non-listed species that use similar habitat such as coho salmon, steelhead, coastal cutthroat trout. Under the terms of the proposed plan, non-listed species would be automatically added to the ITPs in the future should they become listed under the ESA.

Habitat Effects

The CIDMP summarizes known information with respect to effects of the irrigation districts' facilities and operations on seven distinct habitat types. Habitat types include the Dungeness River mainstem; Dungeness River side channels; tributaries to the Dungeness River; independent streams in the area; saltwater habitat in Dungeness Bay; wetlands; and upland habitat. The effects analysis addresses a range of distinct facilities and activities involving water diversion and use; interaction of physical structures with the Dungeness River and McDonnell Creek; operation and maintenance activities; tailwater discharges; and water quality considerations.

Water Quality Effects

In addition, this document addresses water quality effects of the irrigation works. Primary considerations include use of herbicides to control nuisance vegetation, effects of other ditch maintenance activities, and potential temperature impacts. In addition, irrigation ditches in the region receive stormwater runoff from developed lands, as well as inflows from shallow groundwater affected by local septic systems and other inputs. The water quality discussion in this document focuses on impacts from DWUA irrigation facilities, conveyance, and tailwater discharges, rather than farming or activities on urban and suburban lands.

The primary water quality concern in the Dungeness area is the presence of bacteria that have resulted in shellfish closures associated with the saltwater environment of Dungeness Bay. Bacteria likely enter local freshwater bodies from septic systems, animal waste on farms and suburban lands, and wildlife and are then conveyed to the bay. DWUA operations in and of themselves do not cause loading of bacteria. However, because irrigation canals intercept runoff and ground water, they convey bacteria to the bay. Ecology prepared a fecal coliform Total Maximum Daily Load (TMDL) for the Dungeness River in 2002, as well as a TMDL for Dungeness Bay in 2004. DWUA has participated in a local working group led by Clallam County to define an action plan for improving water quality in Dungeness Bay.

Proposed Actions and Implementation Schedule

Working with the Technical Advisory Team, DWUA has identified a set of habitat conservation measures¹ to avoid, minimize, and mitigate impacts of irrigation activity on habitat. These habitat conservation measures were to be carried out subject to the terms and conditions discussed in this plan, the ITP and the Implementing Agreement (IA). In addition, DWUA has defined a separate set of water quality actions. The water quality actions are not related to the proposed ITP. The habitat conservation measures and water quality actions are listed in Tables ES-1 and ES-2. They are discussed at length in CIDMP Section 6.

The most significant habitat conservation measure identified in both Tables ES-1 and ES-2 is the proposed reduction in diversions from the Dungeness River (Habitat Conservation Measure HCM-1; and Water Quality Action WQ-1). Reducing diversions could provide benefits for both aquatic habitat and water quality. This action could be achieved by a combination of capital

¹ As used in this plan, the term "conservation measures" refers to a broad range of activities that benefit habitat. They are not limited to water conservation actions that improve the efficiency of water use.

improvements (primarily conversion of open ditches to pipelines), offstream storage, and operational and management actions. The approach used is to match allowable diversions to flow levels in the Dungeness River over the irrigation system. These flow levels fluctuate widely from season to season and from year to year. Whenever flows decline, diversions were to be reduced. Flows in the Dungeness River are measured by a gage operated by the U.S. Geological Survey (USGS) and located at River Mile 11.8. This gage is located upstream of all irrigation diversions.

The reduction in diversions was to be phased in over a 20-year period. At the end of the phase in period, DWUA diversions from the Dungeness River would be limited to a maximum of 80 cubic feet per second (cfs) whenever flows at the USGS gage exceed 620 cfs, such as during the spring snowmelt period. As flows measured at the USGS gage fall below 550 cfs in the river during summer months, diversions would be limited to 50 cfs or less. Under extremely dry conditions, diversions would be limited to as little as 25 cfs through the end of irrigation season in mid–September. Lower levels were identified for stockwatering use outside irrigation season. These diversion limitations are well below historic diversions as allowed under the DWUA's water rights. They are also less than the diversions allowed under a path breaking Memorandum of Understanding with the Department of Ecology signed in 1998.

Besides HCM-1 and WQ-1, the other proposed conservation measures address a range of effects. Some conservation measures could be implemented immediately or represent a continuing commitment to carry out policies and procedures that have been put in place by DWUA in recent years. Other actions would be carried out over a period of time, as discussed in Section 8 of this CIDMP.

The CIDMP identifies monitoring and adaptive management approaches. These provisions will allow for adjustments in coming decades, as changes occur in the region and as new information and technology becomes available.

Table ES-1			
Habitat Conservation Measures			
No.	District/ Company	Measure	Can be funded by DWUA Members alone? ¹
HCM-1	All	Reduce diversions from Dungeness River per goals in Tables 6-3 to 6-10. This will be done mainly through pipelining and other actions in the DWUA Water Conservation Plan. Additional actions such as water leasing, voluntary reductions in usage and/or construction of storage capacity can also be used to reduce diversions for purposes of HCM-1.	No
HCM-2	Agnew	Modify headgate on Agnew District's diversion facilities on the Dungeness River. ²	Yes
HCM-3	Independent	Modify culvert on Independent District's bypass channel associated with diversion facilities on Dungeness River.	Yes
HCM-4	Highland	Modify headgate on Highland District's diversion facilities on the Dungeness River.	Yes
HCM-5	Agnew	Improve McDonnell Creek downstream fish passage by realigning fish bypass pipeline. ²	Yes
HCM-6	Agnew	Inspect McDonnell Creek fish ladder daily and remove debris.	Yes
HCM-7	All	Carry out Yakima Screen Shop Recommendations for diversion facilities from the 2001 report.	No
HCM-8	All	Establish new agency notification and redd protection procedures related to working in-water.	Yes
HCM-9	All	Steam clean or pressure wash all heavy equipment before entering the Dungeness River. Also perform visual inspection to verify no major fluid leaks are present. (Same as WQ-2)	Yes
HCM-10	All	Establish a 100-foot buffer away from waters for refueling heavy equipment, mowers, etc. (Same as WQ-3)	Yes
HCM-11	All	Create a formal spill response plan, including requiring spill containment equipment under certain conditions. (Same as WQ-4).	Yes
HCM-12	All	Continue to contract with WDFW for fish screen maintenance to ensure proper maintenance.	Yes
HCM-13	All	The DWUA will not intentionally dewater intake and bypass channels.	Yes

(1) For more information on funding of actions, see Section 8.

(2) This project involves the Agnew District head gate. It is separate from a potential DFW project to replace the shared DFW/Agnew intake gate and relocate the fish screen.

Table ES-2			
Water Quality Actions			
No.	District/ Company	Action	Can be funded by DWUA Members alone? ¹
WQ -1	All	Improve water quality by converting open ditches to closed pipes (closely related to HCM-1 and DWUA Water Conservation Plan).	No
WQ-2	All	Steam clean or pressure wash all heavy equipment before entering the Dungeness River. Also perform visual inspection to verify no major fluid leaks are present. (Same as HCM-9)	Yes
WQ-3	All	Establish a 100-foot buffer away from waters for refueling heavy equipment, mowers, etc. (Same as HCM-10)	Yes
WQ-4	All	Create a formal spill response plan, including requiring spill containment equipment under certain conditions. (Same as HCM-11).	Yes
WQ -5	All	Continue integrated pest management plan including responsible use of herbicide in a manner that protects water quality.	Yes
WQ -6	All	Strive to perform ditch maintenance during the non- irrigation season, when ditches are less likely to be watered or contain less water.	Yes
WQ -7	All	Continue to publicize and monitor compliance of DWUA Policy #19 stating it is illegal to apply herbicides not approved for aquatic use to the irrigation system.	Yes
WQ -8	All	Continue to require (and monitor compliance) that water users owned distribution systems are comprised of closed pipe. (DWUA Policy #22) Also continue the cost share program for installing this pipe.	Yes
WQ -9	All	Continue to publicize and monitor compliance of DWUA Policy #18a stating it is illegal to introduce any pollutant, including animal waste, to the irrigation system.	Yes
WQ -10	All	Continue to publicize and monitor compliance of DWUA Policy #18b stating it is illegal to direct stormwater drainage into the irrigation system.	Yes
WQ -11	All	Continue to work with other organizations on clean water programs relevant to irrigation activities.	Yes

(1) For more information on funding of actions, see Section 8.

Funding Needs and Sources

An estimate of costs to implement actions in the CIDMP is provided in Table ES-3. The estimated cost totals \$15.8 million. However, it may not be necessary to incur all costs since some projects can be substituted for each other within HCM-1 (e.g., specific pipelining projects vs. storage). The largest cost of \$9 million will be for phased implementation of the Comprehensive Water Conservation Plan (MWG 1999). This action is the primary element needed to achieve the diversion reductions listed as Habitat Conservation Measure HCM-1 in Table ES-1. A second major cost (\$3.4 million) is for a proposed storage project to reduce diversions during the most critical flow period of August 15 to September 15. The third largest cost (\$3 million) is for capital improvements to diversion structures. The remaining categories total \$1 million for other activities addressed in this CIDMP.

Table ES-3 Estimated Costs for Implementation of CIDMP			
Item	Estimated Cost		
Water conservation actions (pipelining of ditches and other infrastructure improvements to reduce water usage)	\$9,000,000		
Storage reservoir (Atterberry) to reduce diversions in August and September	\$3,400,000		
Major construction projects to improve diversion outtakes for fish habitat enhancement	\$3,000,000		
Small construction projects to improve diversion outtakes for fish habitat enhancement	\$300,000		
Training and equipment to improve operational practices related to channel maintenance to reduce potential habitat impacts	\$100,000		
Total	\$16,400,000		

Costs shown are preliminary estimates except water conservation costs from Comprehensive Water Conservation Plan (MWG, 1999). All costs are in 2003 dollars.

It is anticipated that a combination of funding sources could be used to fund the overall package of actions described in this CIDMP. DWUA has traditionally funded its water conservation and other projects through grant funding, and plans to continue with this approach as the main vehicle for funding project actions. DWUA has a long history of securing grants and funding sources, and currently has grants secured in the amount of \$500,000 for the next stage in an ongoing series of water conservation projects. Potential funding sources identified to date include:

- Washington State Referendum 38
- Conservation District Funds for Irrigation Efficiency
- Conservation District Funds for Water Quality
- Washington State Centennial Clean Water Fund
- Washington State Salmon Recovery Fund
- Fisheries Restoration and Irrigation Mitigation Act funding
- Direct appropriations from the Washington State Legislature
- Direct or indirect appropriations from U.S. Congress
- Federal or State funds provided indirectly through Jamestown S'Klallam Tribe

- In-kind services or equipment from Clallam County
- Local bonds issued by DWUA members

Since DWUA is not able to fund all of the planned actions through its own resources, the IA was to contain contingencies in the event that full funding cannot be obtained. These contingencies include termination or suspension of the ITPs in the event permit conditions are not met. Again, however, DWUA has been successful in obtaining funding for water quality, water conservation, and other key capital projects in the past, and will take all possible steps to secure funding for CIDMP implementation.

Summary

This pilot CIDMP process provides a significant and innovative opportunity to enhance management of fish habitat and water quality issues related to agricultural irrigation in Washington State and on the West Coast. At the time this plan was finalized, suitable assurances had not been agreed to. Therefore, DWUA is not obligated to carry out the actions described in this plan. However, DWUA remains committed to working with agencies and stakeholders to improve habitat and water quality in the Sequim-Dungeness area. DWUA intends to continue seeking funding to carry out actions presented in this plan.