

## **32. Relationship Between Short-Term Uses and Long-Term Productivity**

### **32.1 Introduction**

The Council on Environmental Quality (CEQ) NEPA regulations (40 CFR 1502.16) require consideration of “the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity”. This consideration involves using all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which humans and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans. This section of the NEPA regulations recognizes that short-term uses and long-term productivity of the environment are linked, and that opportunities that are acted upon have consequences that could have continuing effects well into the future.

In addition, California Public Resources Code §21001(g) indicates that it is the policy of the State to “require governmental agencies at all levels to consider qualitative factors as well as economic and technical factors and long-term benefits and costs, in addition to short-term benefits and costs...”

The Project’s three action alternatives (Alternatives A, B, and C) analyzed in this EIR/EIS would involve construction of new facilities, including a reservoir, dams, recreation areas, roads, a bridge, pumping/generating plants, electrical switchyards, an inlet/outlet structure and tunnel, a spillway and stilling basin, pipelines, a canal connection, a transmission line, and pipeline intake/discharge facilities. Alternatives A, B, and C also include improvements to existing facilities, such as installation of a new pump at an existing pumping plant, road relocations, dredging and expanding an existing reservoir, and modifications to an existing canal and its facilities. In addition, the three alternatives include the demolition of 108 structures<sup>1</sup>, the removal of several existing paved and gravel roads, and the inundation of lands to create a reservoir. The specific impacts of the Project alternatives would vary in type, intensity, and duration according to the activities occurring at any given time. Implementation of the NODOS Project would require tradeoffs between long-term productivity and short-term uses of the environment.

### **32.2 Short-Term and Long-Term Effects of the Alternatives**

The expected impacts on environmental resources as a result of constructing, operating, and maintaining Alternatives A, B, and C were presented in Chapters 6 through 31. The conclusions presented in those chapters were the basis for developing Table 32-1; the table summarizes the short-term<sup>2</sup> and long-term<sup>3</sup> effects of implementing the three alternatives.

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<sup>1</sup> This includes 26 residences, 31 barns, 27 sheds, 4 shops, and 20 other peripheral structures.

<sup>2</sup> For the purposes of this chapter, a short-term effect would occur during Project construction and could last from the time construction ceases to within three to five years after Project construction. A temporary effect would last less than three to four years and typically would occur only during Project construction. As such, temporary effects are included in Table 32-1 in the Short-Term Effects columns.

<sup>3</sup> For the purposes of this chapter, a long-term effect would last longer than five years after the completion of Project construction. In some cases, a long-term effect could be a permanent effect.

To provide a balanced discussion for each environmental resource, Table 32-1 lists the “potentially significant” or “significant” short-term effects (both beneficial and adverse) and the long-term “potentially beneficial” and “beneficial” and “significant unavoidable” adverse effects associated with each environmental resource.

In this chapter, “short-term effects” relate to the “short-term uses of environmental resources”, and “long-term effects” relate to the “maintenance and enhancement of long-term productivity” – in particular, the consistency of the Proposed Project/Proposed Action with long-term economic, social, regional, and local planning objectives.

It should be noted that the relationship between short-term uses and long-term productivity of the Proposed Project/Proposed Action would not be appreciably different between Alternatives A, B, and C, but instead, the effects would result from the implementation of the Proposed Project/Proposed Action itself.

**Table 32-1  
Short-Term and Long-Term Effects of Alternatives A, B, and C by Environmental Resource**

Resource	Short-Term Effects*		Long-Term Effects*	
	Beneficial	Adverse	Beneficial	Adverse
Surface Water Resources	None	None	When compared to Existing Conditions, over the long-term averages, the total annual average CVP deliveries for all hydrologic regions show increases would occur for the three alternatives. Over the long-term averages, Wildlife Refuge Level 2 deliveries would increase in the Sacramento River Hydrologic Region, and would decrease in the San Joaquin River and Tulare Lake hydrologic regions. Over the long-term averages, Wildlife Refuge Level 4 supplies for Alternatives A, B, and C would increase in the Sacramento River, San Joaquin River, and Tulare Lake hydrologic regions.	None

**Table 32-1  
Short-Term and Long-Term Effects of Alternatives A, B, and C by Environmental Resource**

Resource	Short-Term Effects*		Long-Term Effects*	
	Beneficial	Adverse	Beneficial	Adverse
			<p>When compared to Existing Conditions, over the Dry and Critical water years averages, the total annual average CVP deliveries for all hydrologic regions show increases would occur for the three alternatives. Over the Dry and Critical water years averages, annual Wildlife Refuge Level 2 deliveries would increase in the Sacramento River Hydrologic Region, and would decrease in the San Joaquin River and Tulare Lake hydrologic regions. Over the Dry and Critical water years averages, Wildlife Refuge Level 4 supplies for the Alternatives A, B, and C would increase in the Sacramento River, San Joaquin River, and Tulare Lake hydrologic regions.</p>	None
			<p>When compared to the No Project/No Action Alternative, over the long-term averages, the total annual CVP deliveries for all hydrologic regions show that increases would occur for the three alternatives. Over the long-term averages, Wildlife Refuge Level 2 deliveries would increase in only the Sacramento River Hydrologic Region for the three alternatives. Over the long-term averages, Wildlife Refuge Level 4 supplies for the Alternatives A, B, and C would be the same, when compared to the No Project/No Action Alternative.</p>	None
			<p>When compared to the No Project/No Action Alternative, over the Dry and Critical water years averages, the total annual CVP deliveries for all hydrologic regions show increases would occur for the three alternatives. Over the Dry and Critical water years averages, annual Wildlife Refuge Level 2 deliveries would increase in only the Sacramento River Hydrologic Region. Over the Dry and Critical water years averages, Wildlife Refuge Level 4 supplies for the Alternatives A, B, and C would be the same.</p>	None

**PRELIMINARY – SUBJECT TO CHANGE**

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Resource	Short-Term Effects*		Long-Term Effects*	
	Beneficial	Adverse	Beneficial	Adverse
			<p>When compared to Existing Conditions, over the long-term averages, total annual SWP deliveries to all hydrologic regions show an increase would occur for the three alternatives.</p> <p>When compared to Existing Conditions, over the Dry and Critical water years averages, total SWP deliveries for all hydrologic regions show an increase would occur for the three alternatives.</p> <p>When compared to the No Project/No Action Alternative, over the long-term averages, total annual SWP deliveries for all hydrologic regions show an increase would occur for the three alternatives.</p> <p>When compared to the No Project/No Action Alternative, over the Dry and Critical water years averages, the total annual SWP deliveries to all hydrologic regions show an increase would occur for the three alternatives.</p>	<p>None</p> <p>None</p> <p>None</p> <p>None</p>
Surface Water Quality	None	None	None	None
Fluvial Geomorphology and Riparian Habitat	None	None	<p>Suspended sediment that could deposit in spawning gravel, agricultural fields, navigable water, and in weirs and bypasses would be reduced in the Secondary Study Area.</p> <p>A slight increase in bank erosion and meander rates would occur in the Secondary Study Area, resulting in more benefits to riparian vegetation, fish, and wildlife because of a slight increase in floodplain rejuvenation.</p> <p>Flow would be reduced downstream of the intakes in the Sacramento River, which would reduce the mobility of the bedload in the channel. This may have a slight aggradational effect to the channel downstream of each intake because bedload derived from bank erosion and tributaries would continue to move into the area. This would be beneficial to salmon spawning gravel riffle habitat.</p>	<p>None</p> <p>None</p> <p>None</p>

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Short-Term and Long-Term Effects of Alternatives A, B, and C by Environmental Resource**

Resource	Short-Term Effects*		Long-Term Effects*	
	Beneficial	Adverse	Beneficial	Adverse
Flood Control and Management	None	None	The magnitude of peak flow on Funks and Stone Corral creeks would decrease downstream of the dams.	None
Groundwater Resources	None	None	None	None
Groundwater Quality	None	None	The increase in surface water supply reliability in the Extended Study Area could reduce groundwater extraction rates, allowing groundwater recharge to improve groundwater quality.  Surface water seepage and percolation from the Sites Reservoir, Holthouse Reservoir, Terminal Regulating Reservoir, and the forebay at Delevan Pipeline Intake Facilities could benefit shallow groundwater quality.	None
Aquatic Biological Resources	None	None	Beneficial effects would occur to coldwater fish species and warmwater fish species.  Beneficial effects would occur to winter-run and spring-run Chinook salmon in the Sacramento River.  Beneficial effects would occur to Pacific lamprey and river lamprey in the American River.  Beneficial effects would occur to striped bass and American shad in the American River.  The establishment of the Ecosystem Enhancement Fund as an endowment to provide long-term funding for aquatic habitat restoration actions on the Sacramento River and its tributaries would result in beneficial effects to anadromous salmonids and sturgeon.	None  None  None  None
Botanical Resources	None	None	None	Impact on a vegetation community would occur from Holthouse Reservoir Complex.
	None	None	None	Impact on an alkaline wetland would occur from Holthouse Reservoir Complex.

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**Table 32-1  
Short-Term and Long-Term Effects of Alternatives A, B, and C by Environmental Resource**

Resource	Short-Term Effects*		Long-Term Effects*	
	Beneficial	Adverse	Beneficial	Adverse
	None	None	None	Impact on CNPS List 1B and State- or Federally listed plant species would occur at Sites Reservoir and Dams.
	None	None	None	Impact on CNPS List 4 plant species at Sites Reservoir and Dams.
	None	None	None	Impact on special-status plant species would occur from Holthouse Reservoir Complex.
Terrestrial Biological Resources	None	Loss of golden eagle territories and potential loss of nests would occur from Sites Reservoir and Dams and Recreation Areas	Beneficial effects on wildlife habitat and special-status wildlife species would occur from improved storage conditions and reduced water level fluctuations at Trinity Lake, Shasta Lake, Lake Oroville, and Folsom Lake.  A potentially beneficial effect on many avian species, including the bald eagle, would result from the filling of Sites Reservoir by creating lacustrine habitat.	Loss of golden eagle territories and potential loss of nests from Sites Reservoir and Dams and Recreation Areas.
Wetlands and Waters of the U.S.	None	None	None	None
Geology, Minerals, Soils, and Paleontology	None	None	None	None
Faults and Seismicity	None	None	None	None
Cultural Resources	None	None	None	Substantial adverse change in the significance of a historical resource of the built environment as defined in §15064.5 from several Project facilities, if they are eligible for CRHR or NRHP listing.

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**Table 32-1  
Short-Term and Long-Term Effects of Alternatives A, B, and C by Environmental Resource**

Resource	Short-Term Effects*		Long-Term Effects*	
	Beneficial	Adverse	Beneficial	Adverse
			None	Impacts to some categories of Traditional Cultural Properties would occur from disturbance during Project construction, operation, and maintenance.
Indian Trust Assets	None	None	None	None
Land Use	None	<p>The inundation of Antelope Valley would eliminate the town of Sites</p> <p>Convert Prime Farmland and Unique Farmland at certain Project facility locations to non-agricultural use</p> <p>Conflict with existing Agricultural Preserve zoning in Colusa County and land zoned Foothill Agricultural/ Forestry Zone in Glenn County to non-agricultural use</p> <p>Conflict with Williamson Act contracts for parcels where several Project facilities would be located</p>	<p>None</p> <p>None</p> <p>None</p>	<p>The inundation of Antelope Valley would eliminate the town of Sites.</p> <p>Convert Prime Farmland and Unique Farmland at certain Project facility locations to non-agricultural use.</p> <p>Conflict with existing Agricultural Preserve zoning in Colusa County and land zoned Foothill Agricultural/ Forestry Zone in Glenn County to a non-agricultural use.</p> <p>Conflict with Williamson Act contracts for parcels where several Project facilities would be located.</p>
Recreation Resources	None	None	Available recreational opportunities and recreational days would increase at San Luis Reservoir, Trinity Lake, Shasta Lake, Lake Oroville, and Folsom Lake.	None
Socioeconomics	None	None	None	None

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Resource	Short-Term Effects*		Long-Term Effects*	
	Beneficial	Adverse	Beneficial	Adverse
Environmental Justice	Increase employment opportunities for minorities whom have the appropriate construction, operation, or maintenance skillset for the Project	None	Increase employment opportunities for minorities whom have the appropriate construction, operation, or maintenance skillset for the Project.  Increase recreational opportunities in Glenn and Colusa counties for minority and low-income populations.	None  None
Air Quality	None	Generate emissions during Project construction of PM <sub>10</sub> , NO <sub>x</sub> , and ROG that could conflict with an applicable Air Quality Plan, contribute substantially to an air quality violation, and/or result in a cumulatively considerable net increase of nonattainment pollutants	None	None
Climate Change and Greenhouse Gas Emissions	None	None	None	GHG emissions would result during the nine-year Project construction period.

PRELIMINARY – SUBJECT TO CHANGE

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Resource	Short-Term Effects*		Long-Term Effects*	
	Beneficial	Adverse	Beneficial	Adverse
			<p>Operation of the proposed Project facilities (without consideration of pumpback operations) would require additional energy beyond what would be generated. However, the way the facilities would be operated and integrated into the California electricity market would actually result in annual reductions in GHG emissions.</p> <p>Maintenance of proposed Project facilities would generate emissions. Because increases in GHG emissions associated with construction of the proposed Project would be more than offset by reductions in GHG emissions from operation, there would be no long-term increase over the net-zero threshold. Over the life of the proposed Project, Alternative A would be likely to substantially reduce GHG emissions.</p>	None
			<p>Proposed Project operation would result in a net increase in the amount of energy needed annually to operate the SWP. However, given the scale of additional emissions that the proposed Project would add to DWR's total GHG emissions, no additional actions or commitments would be required. The proposed Project would not adversely affect DWR's ability to achieve the GHG emissions reduction goals set forth in the GGERP and would not conflict with any of the specific action GHG emissions reduction measures set forth in the GGERP.</p>	None

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Short-Term and Long-Term Effects of Alternatives A, B, and C by Environmental Resource**

Resource	Short-Term Effects*		Long-Term Effects*	
	Beneficial	Adverse	Beneficial	Adverse
			None	Implementation of the proposed Project would result in an increase in CVP electricity use. This additional demand would be served by energy generated at CVP hydroelectric facilities that emit no GHGs, and therefore, would result in no GHG emissions. However, the small increase in electricity usage to operate the CVP with the proposed Project would result in a corresponding reduction in the supply of GHG-emissions-free electricity available to sell to California electricity users. This reduction in hydroelectric energy available for sale could result in a potential indirect effect of the proposed Project. These emissions could contribute to a cumulatively considerable effect, when compared to Existing Conditions and the No Project/No Action Alternative.

**Table 32-1  
Short-Term and Long-Term Effects of Alternatives A, B, and C by Environmental Resource**

Resource	Short-Term Effects*		Long-Term Effects*	
	Beneficial	Adverse	Beneficial	Adverse
			None	Research indicates that the surfaces of some reservoirs may be emitting or absorbing GHGs. Based on these studies of emissions from open water systems and considering the zero emissions factor typically assigned to hydroelectric power generation, emissions associated with the proposed Project's open water surfaces and tailraces would likely be a less-than-significant impact, when compared to Existing Conditions and the No Project/No Action Alternative.
Navigation, Transportation, and Traffic	None	None	None	None
Noise	None	None	None	None
Public Health and Environmental Hazards	None	None	None	None
Public Services and Utilities	None	None	Project operation would possibly reduce reliance on groundwater in the Extended Study Area in locations where water is provided by the CVP or SWP; with increased water supply reliability to CVP and SWP water contractors, shortages in deliveries may decrease.	None

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Resource	Short-Term Effects*		Long-Term Effects*	
	Beneficial	Adverse	Beneficial	Adverse
	None	None	Increased water supply reliability could potentially result in a reduction in the future need for construction and operation of additional water treatment and distribution facilities by shifting from more costly options (including high cost recycling and desalination) to the less expensive option of maintaining and operating the existing water treatment and conveyance systems that are already in use.	None
Visual Resources	None	None	A potential beneficial effect to overall visual resources within the wildlife refuges in the Extended Study Area would result because a stable water supply would support existing wetland habitat.	None
	None	None	A potential beneficial effect to visual resources within the Secondary Study Area from increased storage within the reservoirs that would result in a general increase and stabilization in flows within rivers and creeks within the Secondary Study Area.	None
	None	None	Increased flows throughout the Sacramento River region.	None
	None	None	A beneficial effect to visual resources from the operation and maintenance of the proposed Recreation Areas, which would offer new recreation opportunities in scenic lakeside and island settings consistent with the Colusa County General Plan, and create viewing opportunities during Above Normal and Wet years that do not currently exist.	None
	None	None	None	The South Bridge and the Terminal Regulating Reservoir would result in adverse effects to a scenic vista.

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Resource	Short-Term Effects*		Long-Term Effects*	
	Beneficial	Adverse	Beneficial	Adverse
	None	None	None	Sites Reservoir Inundation Area, the Road Relocations and South Bridge, and Terminal Regulating Reservoir would result in effects to the existing visual character or quality of the site and its surroundings.
	None	None	None	The Sites Reservoir Inundation Area would introduce a new source of light or glare that would adversely affect day or nighttime views in the area.
Power Production and Energy	None	None	None	None

\*This table lists the “potentially significant” or “significant” short-term effects (both beneficial and adverse) associated with each environmental resource, and the long-term “potentially beneficial”, “beneficial”, and “significant unavoidable” effects (i.e., impacts that would remain significant after the implementation of mitigation measures).

### 32.3 Conclusion

In conclusion, the long-term benefits of the improved operational flexibility of the State’s water system, as a result of implementing the Project (any of the three action alternatives, A, B, or C) would outweigh the short-term and long-term adverse effects on the individual resources evaluated in this EIR/EIS.