

**DON PEDRO HYDROELECTRIC PROJECT
FERC NO. 2299**

FINAL LICENSE APPLICATION

**EXHIBIT H - PLANS AND ABILITY OF APPLICANTS
TO OPERATE THE DON PEDRO HYDROELECTRIC PROJECT**

**APPENDIX H-4
DON PEDRO RECREATION AGENCY REGULATIONS
AND ORDINANCES**

DON PEDRO RECREATION AGENCY
REGULATIONS AND ORDINANCES

**Section I
AUTHORITY AND ENFORCEMENT**

1.1 AUTHORITY:

The Agency will use all applicable laws to carry out its duties including the following specific sections.

1.1.1 §12970 California Water Code

"Water Agency", as used in this part means any public corporation, district, political subdivision, or any other agency or authority now or hereafter organized under the laws of this state which develops, stores, distributes or supplies water.

1.1.2 §12973 California Water Code

The governing body of a water agency may adopt regulations binding upon all persons covering the use of such recreational facilities. Any violation of such regulations is a misdemeanor.

1.1.3 § 830.31 California Penal Code

The following persons are peace officers whose authority extends to any place in the state for the purpose of performing their primary duty or when making an arrest pursuant to Section 836 as to any public offense with respect to which there is immediate danger to person or property, or of the escape of the perpetrator of that offense, or pursuant to Section 8597 or 8598 of the Government Code. These peace officers may carry firearms only if authorized, and under the terms and conditions specified, by their employing agency...

(b) A person designated by a local agency as a park ranger and regularly employed and paid in that capacity if the primary duty of the officer is the protection of park and other property of the agency and the preservation of the peace therein...

1.1.4 §53069.4 (a) (1) California Government Code

The legislative body of a local agency, as the term "local agency" is Defined in Section 54951, may by ordinance make any violation of any ordinance enacted by the local agency subject to an administrative fine or penalty.

1.1.5 §54951 California Government Code

As used in this chapter, "local agency" means a county, city, whether general law or chartered, city and county, town, school district, municipal corporation, district, political subdivision, or any board, commission or agency thereof, or other local public agency.

1.1.6 §54952. California Government Code

As used in this chapter, "legislative body" means:

(a) The governing body of a local agency or any other local body created by state or federal statute.

1.2 ENFORCEMENT:

Violations of applicable laws may result in any or multiples of the following:

1.2.1 Issuance of Warnings

1.2.2 Administrative Citations

1.2.3 Criminal Citations/Notices to Appear

1.2.4 Revocations of use permits

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Amended 5/29/01, 8/31/10, 8/16/11

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- 1.2.5** Evictions from the Recreation Area
- 1.2.6** Personal property towing/impoundment
- 1.2.7** Restitution for damages to and clean-up of the Recreation Area and its facilities
- 1.2.8** Other actions deemed appropriate by the Director to carry out the enforcement of these Regulations and Ordinances

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**Section II:
GENERAL**

2.1 INTERFERING WITH AGENCY EMPLOYEES

- 2.1.1** No person shall interfere with, harass, intimidate or threaten any Agency employee during the course of the employee's duties as charged by the Agency.

2.2 PERMITS

- 2.2.1** No person shall utilize the Recreation Area for any purpose without a valid permit from the Agency, except that permits are not required for authorized activities in dispersed areas accessed by non motorized means.
- 2.2.2** No person shall utilize the Recreation Area without paying all applicable fees for required permits.
- 2.2.3** No person shall utilize the Recreation Area without displaying required permits in the designated location.
- 2.2.4** No person shall refuse to show their permit to Agency personnel upon request.
- 2.2.5** No person shall transfer their permit to another person without prior Agency approval.

2.3 DOMESTIC ANIMALS

- 2.3.1** No person shall bring or possess a domestic animal in the developed facilities of the Recreation Area, unless the animal is specifically a seeing eye, signal or service animal as defined by the Americans with Disabilities Act, under the immediate control of the disabled person.
- 2.3.2** No person shall allow domestic animals to run loose in areas of the Recreation Area where their presence is permitted.
- 2.3.3** No person shall place their domestic animal on a leash more than six (6) feet in length in the Recreation Area where their presence is permitted.
- 2.3.4** No person shall be allowed to bring a dog into the Recreation Area where their presence is permitted without proof of current rabies vaccination or current license.
- 2.3.5** No person shall deposit or leave any domestic animal unattended for any length of time within the Recreation Area.
- 2.3.6** No person shall fail to clean up, seal in a bag, and properly dispose of waste deposited by their domestic animal where the animal's presence is permitted.

2.4 FIRES

- 2.4.1** No person shall build or light a charcoal or other type of fueled fire directly on the ground or outside of an appropriate device designed for this purpose (such as the furnished campsite fire ring).

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- 2.4.2** No person shall use a portable camp stove, barbecue, candle or lantern without clearing away all vegetation and combustible materials around the unit to a minimum of ten (10) foot plus the height of any device used to elevate the stove, candle, lantern etc. (or greater when conditions warrant).
- 2.4.3** No person shall fail to observe any fire safety order issued by any authorized Agency representative.
- 2.4.4** No person shall possess firewood in the dispersed area of the Recreation Area.
- 2.4.5** No person shall build a fire using wood for fuel in the dispersed area of the Recreation Area.
- 2.4.6** No person shall add to a fire any fuel that exceeds in size the length, width or height of the container being used.
- 2.4.7** No person shall leave any fire unattended at any time without complete extinguishment.
- 2.4.8** No person shall leave or dispose of charcoal briquettes, ashes or other burned materials outside of the furnished campsite fire ring or a designated ash disposal receptacle.

2.5 FIREWORKS

- 2.5.1** No person shall possess, discharge, set off, or cause to be discharged, in or into any portion of the Recreation Area any firecrackers, torpedoes, rockets, fireworks, explosives, or similar type substances.

2.6 WEAPONS

- 2.6.1** No person shall discharge in or across the developed facilities of the Recreation Area any weapon, except for Sworn Peace Officers or persons authorized by the Agency in the performance of official duties.
- 2.6.2** No person shall possess any weapon within the developed facilities of the Recreation Area that is not deactivated, except for Sworn Peace Officers or persons authorized by the Agency in the performance of official duties.
- 2.6.3** No person shall use any weapon, except for hunting or fishing purposes in accordance with applicable laws, within the Recreation Area.
- 2.6.4** No person shall possess any weapon in the dispersed facilities that is not deactivated, except for persons hunting in accordance with applicable law, Sworn Peace Officers or persons authorized by the Agency in the performance of official duties.
- 2.6.5** No person may brandish, display or use any object that may be deemed to have the potential of serving as a weapon in any manner that may be deemed threatening or that may raise a level of public concern that such an item may be used as a weapon.

2.7 MINOR CHILDREN

- 2.7.1** No person under the age of eighteen (18) shall camp in the Recreation Area without being accompanied by a parent or legal guardian.
- 2.7.2** No person under the age of eighteen (18) shall be outside of their campsite between the hours of 11:00 p.m. and 5:00 a.m. unless they are accompanied by a parent or legal guardian.

Adopted 8/3/99

Amended 5/29/01, 8/31/10, 8/16/11

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2.8 CONDUCT

PEACE AND QUIET

- 2.8.1** No person shall fail to observe the quiet time hours of 10 p.m. to 7 a.m.
- 2.8.2** No person shall, at any time, use electronic equipment, including but not limited to powered speakers or other machinery within the 5 MPH zone at any launch ramp, in the launch ramp preparation area, in or near any parking or developed camping and day use areas or vessel mooring areas of the Recreation Area at a volume which emits sound beyond the immediate individual camp, picnic site, vehicle, vessel or vessel mooring location. This prohibition does not apply to authorized emergency vessels or when equipment is being operated to request assistance or warn of a hazardous situation.
- 2.8.3** No person shall operate an engine driven electrical generator which emits sound beyond the immediate limit of the campsite or vessel mooring location between the hours of 10 p.m. and 7 a.m.

DISORDERLY CONDUCT

- 2.8.4** No person(s) shall engage in fighting in the Recreation Area.
- 2.8.5** No person shall communicate in such a manner that is threatening, verbally offensive, or derisive.
- 2.8.6** No person shall make statements or actions toward another person that incites or produces imminent lawless action and is likely to incite or produce such action.
- 2.8.7** No person shall urinate or defecate in public.
- 2.8.8** No person over the age of five (5) shall appear, swim, bathe, sunbathe, walk or otherwise be in the Recreation Area in such a manner that the genital/pubic hair area of the body and the breast of any female person at or below the areola is exposed to public view.

2.9 SANITATION

- 2.9.1** No person shall litter or leave refuse of any type within the Recreation Area except in a receptacle or area designated for that purpose.
- 2.9.2** No person shall place or burn litter or refuse in fire rings or barbecues.
- 2.9.3** No person shall import any refuse from outside the Recreation Area and deposit such refuse within the Recreation Area.
- 2.9.4** No person shall place debris, construction materials and refuse including chemicals and containers resulting from the construction, remodeling or maintenance of houseboats, vessels, vehicles and concessionaire facilities in Agency waste receptacles or within the Recreation Area.
- 2.9.5** No person shall remove recyclable materials from Agency waste receptacles or designated Agency recycling containers.
- 2.9.6** No person shall rummage through or remove any items that are placed in or around any refuse or recycling receptacles.

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- 2.9.7** No person shall deposit waste, water, sewage or effluent from vehicles, vessels, wastewater holding tanks, sinks, portable toilets, or any other source into or onto anything other than an appropriate disposal site as designated by the Agency.
- 2.9.8** No person shall deposit human waste in any location other than a restroom facility toilet, portable toilet or appropriate disposal site as designated by the Agency.
- 2.9.9** No person shall fail to cooperate in maintaining restrooms in a neat and sanitary condition.
- 2.9.10** No person shall use restrooms set apart for the opposite gender.

2.10 TRESPASSING

- 2.10.1** No person, vessel or vehicle shall enter any area after posted closure hours or that has been posted by the Agency as closed.
- 2.10.2** No person shall open, drive around a closed gate or through a fence or remove, unlock, destroy or tamper with any door on any building or lock on any gate that has been placed by the Agency.
- 2.10.3** No person shall violate any Agency order posting conditions and limitations for the use of any facility or area, or operation, use, size, type, permissible equipment, beaching, landing, launching, mooring, docking, or berthing of a vessel, boat, vehicle, or any other object.
- 2.10.4** No person shall establish, build, install, leave, tie-up or secure any kind of developed improvement including but not limited to docks, permanent vessel mooring devices, trails, roadways, buildings, etc. within the Recreation Area land or waters.
- 2.10.5** No person shall access Recreation Area land or water from adjacent property by use of a motorized vehicle.
- 2.10.6** No person shall leave a vehicle, trailer or vessel that is inoperable or has expired registration in the Recreation Area.

2.11 VANDALISM

- 2.11.1** No person shall willfully deface, mar, paint, damage, destroy, dismantle, remove, modify, or relocate any developed improvement or natural resource within the Recreation Area.

2.12 SOLICITING/OUTSIDE VENDORS

- 2.12.1** No person shall engage in soliciting, selling, or peddling any goods or services within the Recreation Area.
- 2.12.2** No person shall distribute, throw or deposit any handbills, circulars, pamphlets or advertisements, or affix to any tree, fence or structure any such handbill or advertisement.

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**Section III:
VEHICLES**

3.1 MOTOR VEHICLE OPERATION

- 3.1.1** No person shall drive any vehicle off of designated roadways and parking pads or into any dispersed area of the Recreation Area.
- 3.1.2** No Person shall operate, nor shall an owner permit the operation of, a motor vehicle in a manner likely to cause malicious or unnecessary damage to the land, wildlife, wildlife habitat or vegetative resources.
- 3.1.3** No person shall operate within the Recreation Area any motorized vehicle or other mobility device in violation of applicable laws.
- 3.1.4** No person shall fail to observe posted regulatory traffic signs roadway markings or any other temporary sign installed by the Agency.
- 3.1.5** No person shall operate their vehicle in an unsafe manner.
- 3.1.6** No person shall ride in or upon any trailer in tow, in any truck bed or upon any tailgate, hood, or other external portion of any vehicle not designed to legally carry passengers except when a trailer carrying or designed to carry a vessel is engaged in the immediate launching or retrieval of a vessel.
- 3.1.7** No person shall operate any vehicle without the appropriate driver license or learner permit.
- 3.1.8** No person shall operate any vehicle under the influence of alcohol or other substance which impairs ability to drive.
- 3.1.9** No person shall operate any vehicle with an open container of alcohol in the vehicle.

3.2 PARKING

VEHICLES

- 3.2.1** No person shall park any vehicle in any area posted "No Parking" or in any location other than a designated parking area.
- 3.2.2** No person shall park any vehicle in a signed handicapped parking place without displaying the proper handicapped placard/license on their vehicle.
- 3.2.3** No person shall park any vehicle in a manner to block or obstruct the exit of another vehicle already legally parked.
- 3.2.4** No person shall park any vehicle in a time restricted parking zone for longer than the posted time allowance.

TRAILERS

- 3.2.5** No person shall leave any unattached/unattended boat trailer in any place other than a designated trailer parking area or campsite.
- 3.2.6** No person shall leave any unattached/unattended boat trailer in any designated trailer parking area without a boat trailer parking permit.

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Amended 5/29/01, 8/31/10, 8/16/11

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3.3 OPERATOR PROPELLED DEVICES

- 3.3.1** No person shall ride any operator propelled device within the Recreation Area without proper personal safety equipment as required by applicable law.
- 3.3.2** No person shall ride any operator propelled device in an unsafe or discourteous manner or in a way to potentially cause property damage.
- 3.3.3** No person on any operator propelled device shall fail to observe posted use limitation signs, regulatory traffic signs, roadway markings or any other temporary sign posted by the Agency.

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Section IV
RECREATION AREA USE

4.1 CAMPING AND PICNICKING

- 4.1.1** No person shall camp within the Recreation Area except in designated camping areas.
- 4.1.2** No person shall camp in the dispersed area of the Recreation Area where dispersed area camping is prohibited.
- 4.1.3** No person shall register for any campsite and then allow the overnight campsite occupancy limit of 8 persons per campsite to be exceeded.
- 4.1.4** No person shall occupy a campsite and/or vehicle parking pad other than the one to which they have been registered.
- 4.1.5** No person shall arrive to occupy a campsite for the coming night prior to the 4 p.m. check-in time (unless approved in advance by the Agency) without acquiring the previous night's camping permit.
- 4.1.6** No person shall occupy a campsite past the check out time of 2 p.m. (unless approved in advance by the Agency) if they have not acquired a permit to camp in that site for the coming night.
- 4.1.7** No person shall occupy a campsite for more than 14 consecutive nights between May 1 and September 30 of any given year, or more than 90 consecutive nights between October 1 and April 30 of any given year.
- 4.1.8** No person shall occupy a campsite for a maximum length of time and then for a consecutive stay without observing the defined break in occupancy.
- 4.1.9** No person shall move any Agency provided campsite or picnic site furnishing from one camp or picnic site to another.
- 4.1.10** No person shall picnic in a developed camping area.
- 4.1.11** No person shall leave any campsite furnishings or other personal property unattended for more than 12 hours in any dispersed area.
- 4.1.12** No person shall use the electrical outlets (other than those located in an individual's assigned hook-up or group site) in any restroom or other Agency facility for the purpose of plugging in an extension cord, electric appliance used for food or beverage preparation, and/or other electric device not needed for personal grooming.
- 4.1.13** No person shall leave a hose connected to any water faucet in any camping area or restroom, other than in an individual's assigned hook-up campsite.
- 4.1.14** No person shall set up portable swimming/wading pools within the Recreation Area.

4.2 GROUP USE

- 4.2.1** No person shall exceed a maximum number of 200 persons per group campsite or 100 persons per group picnic site.

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Amended 5/29/01, 8/31/10, 8/16/11

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4.3 DAY USE

- 4.3.1** No person shall exceed the day use hours of 5 a.m. to 10 p.m. without acquiring the appropriate additional day's use permit.
- 4.3.2** No person shall leave any day use furnishings in any dispersed area or other day use facility (such as swimming lagoon, lakeshore or picnic area) overnight (outside of the day use hours).

4.4 NIGHT FISHING

- 4.4.1** No person shall exceed the night fishing use hours of 5 p.m. to 10 a.m. without acquiring the appropriate additional day's use permit.

4.5 AQUATIC AND BOATING

VESSEL REQUIREMENTS AND RESTRICTIONS

- 4.5.1** All vessels that require registration numbers pursuant to applicable laws are required to have a current use permit from the Agency.
- 4.5.2** No person shall bring into the Recreation Area any vessel that is 10 feet or greater in width (during transport on land) other than an Agency permitted houseboat.
- 4.5.3** No person shall leave their vessel (except houseboats) unattended for more than 12 consecutive hours beached, moored, stored, or parked within the Recreation Area outside of an Agency authorized, assigned campsite, mooring or storage facility.
- 4.5.4** No person shall moor their vessel to or hang on with a vessel to any regulatory buoy, lake regulatory sign, hazard buoy, hazard marker, mooring buoy, supporting structures or beacon placed by the Agency or its authorized agents within the Recreation Area.
- 4.5.5** No person shall leave a vessel moored to an Agency or Marina courtesy dock, special use dock or floating restroom facility in excess of a posted maximum time limit.
- 4.5.6** No person shall moor any houseboat, private or rented, to an Agency courtesy dock, floating restroom facility, or to any buoy clearly marked "No Houseboats".
- 4.5.7** No person shall leave, moor, beach, or tie up any houseboat or sleeping capacity vessel on the shoreline of the developed Recreation Area facilities overnight during the time period of April 1 through September 30 of any year.
- 4.5.8** No person shall leave, moor, beach, or tie up any houseboat or sleeping capacity vessel in a manner during the day that creates congestion in a heavy use area (such as the launch ramp).
- 4.5.9** No person shall leave, moor, beach, tie up or secure any vessel in a manner which obstructs the navigation or access to any navigable water by any vessel.
- 4.5.10** No person shall leave, moor, tie up or secure any vessel to, otherwise use, or obstruct access to any Agency special use dock in conflict with a posted authorized reservation time period.

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VESSEL OPERATION

4.5.11 No person shall operate or use any vessel, aquatic vehicle, or manipulate water-skis, aquaplane, or similar device in a reckless or negligent manner so as to endanger the life, limb or property of any person.

4.5.12 655.2 Harbors and Navigation Code

(a) *Every owner, operator, or person in command of any vessel propelled by machinery is guilty of a misdemeanor who uses it, or permits it to be used, at a speed in excess of five miles per hour in any portion of the following areas not otherwise regulated by local rules and regulations:*

(1) *Within 100 feet of any person who is engaged in the act of bathing. A person engaged in the sport of water skiing shall not be considered as engaged in the act of bathing for the purposes of this section.*

(2) *Within 200 feet of any of the following:*

(A) *A beach frequented by bathers.*

(B) *A swimming float, diving platform, or lifeline.*

(C) *A way or landing float to which boats are made fast or which is being used for the embarkation or discharge of passengers.*

(b) *This section does not apply to vessels engaged in direct law enforcement activities which are displaying the lights prescribed by Section 652.5. Those vessels are also exempt from any locally imposed speed regulation adopted pursuant to Section 660.*

4.5.13 No person shall tow any aquaplane behind or alongside a vessel in an area posted "No Ski" by means of authorized regulatory buoys or signs.

4.5.14 HOUSEBOAT RULES

No person who is permitted to place their houseboat on Don Pedro Lake shall fail to follow the rules set forth in the DPRA Houseboat Rules (see appendix A).

4.6 TRAILS

4.6.1 No person shall fail to observe posted trail use regulations or restrictions.

4.6.2 No person shall operate any motorized vehicle on trails except for power driven mobility devices operated by persons with mobility disabilities in accordance with applicable laws.

4.6.3 No person shall block any trail or set up campsite and/or day use furnishings on any trail.

4.6.4 No person shall use trails for the purpose of accessing or trespassing upon adjacent private property.

4.6.5 No person shall create their own trail or cut their own switchbacks or shortcuts.

4.6.6 No bicyclist shall fail to yield to pedestrian, mobility disabled or other non-motorized trail users.

4.6.7 No bicyclist, pedestrian, mobility disabled or other non-motorized trail user shall fail to yield to any equestrian where equestrian trail use is permitted.

4.6.8 No bicyclist shall fail to announce their presence by voice or other audible signal to other trail users prior to passing them.

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**Section V
NATURAL RESOURCES**

5.1 MINING AND PANNING

- 5.1.1** No person shall engage in the act of mining within the Recreation Area.
- 5.1.2** No person shall engage in panning in any developed facility of the Recreation Area.
- 5.1.3** No person shall leave any panning site in the dispersed area of the Recreation Area prior to restoring the area in which the panning took place to its original, natural condition.

5.2 METAL DETECTING

- 5.2.1** No person shall enter the developed facility of the Recreation Area for the purpose of metal detecting.
- 5.2.2** No person shall keep personal property found during the act of metal detecting in the dispersed areas of the Recreation Area without first having abided by the Agency Lost and Found policy.
- 5.2.3** No person shall leave any metal detecting site in the dispersed area of the Recreation Area prior to restoring the area in which the metal detecting took place to its original, natural condition.

5.3 WILDLIFE, PLANTS, SOILS, MINERALS, AND WATER

- 5.3.1** No person shall maliciously, intentionally or negligently molest, hunt, disturb, injure, trap, net, poison, harm, kill, feed, touch, tease or spotlight any wild animal except for persons hunting or fishing in accordance with applicable law.
- 5.3.2** No person shall introduce any non-native wild species or domestic animal into the Recreation Area.
- 5.3.3** No person shall willfully or negligently pick, dig up, cut, mutilate, destroy, injure, disturb, move, molest, burn or carry away any tree, plant or any portion thereof except that which is needed to clear away vegetation or combustible material in compliance with these rules, FIRES section 2.4.2.
- 5.3.4** No person shall disturb the soils (except as otherwise permitted in these regulations and ordinances), archaeological, historical or geological resources within the Recreation Area.
- 5.3.5** No person shall engage in any work or repairs or other activity that would introduce into the waters or soil of the Recreation Area any substance which is or becomes defined as a hazardous waste, hazardous substance, pollutant, or contaminant under any federal, state, or local statute, regulation, rule, or ordinance or amendment thereto, or that would result in the violation of the Porter-Cologne Water Quality Act (Cal. Water Code Sec. 13100 et seq.) or the Clean Water Act (33USC 1251-1376).

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**Section VI
DEFINITIONS**

The following definitions will be used for the purpose of these regulations and ordinances, whether or not they are initially capitalized.

AGENCY:

The Don Pedro Recreation Agency (also referenced DPRA), which is the organization charged with the responsibility for the operation and maintenance of the Recreation Area. The Agency has the jurisdiction to enforce Applicable Laws within the Recreation Area. Agency includes all authorized Agency representatives acting within the scope of their authority.

ANNUAL BOAT PERMIT:

A permit that allows day use, storage or moorage of a boat that does not have sleeping capacity in the Recreation Area and is valid for a calendar year. Required for boats that are stored or moored in the Recreation Area for greater than 15 consecutive days.

ANNUAL LAKESHORE CAMPING PERMIT:

A permit that allows lakeshore camping use of the Recreation Area and is valid for a calendar year.

ANNUAL PW PERMIT:

A permit that allows day use, storage or moorage of a personal watercraft in the Recreation Area and is valid for a calendar year. Required for personal watercraft that are stored or moored in the Recreation Area greater than 15 consecutive days.

ANNUAL SC PERMIT:

A permit that allows day use, storage or moorage of a boat with sleeping capacity in the Recreation Area and is valid for a calendar year. Required for boats with sleeping capacity that are stored or moored in the Recreation Area greater than 15 consecutive days.

ANNUAL SECOND VEHICLE PERMIT:

A permit that allows vehicle day use of the Recreation Area and is valid for a calendar year, sold at a reduced rate when the vehicle's registered owner has already purchased an Annual Vehicle Permit or Annual Senior Citizen Vehicle Permit for another vehicle registered in his/her name.

ANNUAL SENIOR CITIZEN VEHICLE PERMIT:

A permit that allows vehicle day use of the Recreation Area and is valid for a calendar year, sold at a reduced rate for a vehicle whose registered owner is age 62 or over.

ANNUAL VEHICLE PERMIT:

A permit that allows vehicle day use of the Recreation Area and is valid for a calendar year.

APPLICABLE FEES:

All Agency approved Recreation Area permit and use fees.

APPLICABLE LAWS:

All Laws, Codes, Ordinances, Rules, Regulations (including these Regulations and Ordinances) and Standards currently in effect that pertain to or are relevant to the use of and/or the activities that take place within the Don Pedro Recreation Area.

AQUAPLANE:

All forms of water skiing, wakeboarding, barefoot skiing, skiing on skim boards, knee boards or other contrivances, parasailing, ski kiting, or any activity where a person is towed behind or alongside a boat with the exception of a vessel in tow.

BOAT:

Any vessel that is less than 10' in width and requires numbering and registration per State Law.

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BREAK IN OCCUPANCY:

48 hour vacancy time period required before a camper may occupy a given campsite again after occupying that campsite for the maximum number of nights.

BOAT TRAILER PARKING PERMIT:

Permit provided at developed facility for the purpose of leaving an unattended vessel trailer in any designated parking area while camping, houseboating, or otherwise using the Recreation Area. Permit does not cover parking of unattended trailers if owner is not utilizing the Recreation Area facilities at the time the trailer is being left in the designated parking area.

CAMPING:

Overnight use of Recreation Area land other than for the sole activity of fishing. May include but is not limited to erecting a tent or shelter, arranging bedding, or using a parked or standing vehicle for staying overnight.

CAMPSITE:

Area established with Agency provided or user provided furnishings and utilized for the purpose of camping.

DAY USE:

Use of Recreation Area for parking and daytime activities.

DAY USE FURNISHINGS:

All portable structures that are brought in to facilitate day use activities.

DEACTIVATED WEAPON:

A weapon that is rendered temporarily inoperable by being cased, packed away, or stored in such a manner that will prevent ready use.

DESIGNATED PARKING AREA:

Paved or other area established for the purpose of parking vehicles and trailers. May be indicated by signage, proper striping, or obvious applicability for parking (such as for paved campsite parking pads).

DEVELOPED CAMPSITE:

Designated area (by number) that includes some or all of the following: Tent pad, site furnishing pad, and vehicle parking pad.

DEVELOPED FACILITY:

Designated area(s) within the Recreation Area that has been developed with permanent structures for Recreation use and is accessible only by Agency provided roadways.

DEVELOPED IMPROVEMENT:

Any structure or other object constructed or installed within the Recreation Area. Includes but is not limited to regulatory and hazard buoys, buildings, site furnishings, building furnishings, courtesy docks, floating restrooms, roadways, signs and utility connections.

DISPERSED AREA:

Areas within the Recreation Area that are available for recreation use but have no Agency provided roadways.

DOMESTICATED ANIMALS:

Any animal that is referred to as a pet or that has been "tended" by humans, such as, but not limited to cats, dogs, potbellied pigs, rabbits, horses, and cows.

FIREWORKS:

Includes all fireworks described as "Safe and Sane" and all illegal fireworks as described by applicable law.

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GROUND FIRE:

Any fire that is built and ignited directly on the ground outside of an Agency provided fire ring.

HOUSEBOAT:

Private or concessionaire owned vessels that are 10' or greater in width, have sleeping capacity, are limited by a specific number of houseboat permits and are subject to specific Agency Houseboat Rules.

LAKESHORE CAMPING:

Camping in designated dispersed areas.

LEGAL GUARDIAN:

Parent or legal guardian (as defined by law) of a minor or adult over the age of 25 with a note from the minor's parents authorizing that adult to act in their stead.

MINING:

The process of disturbing the soil for the purpose of removing soil, ore, rock or minerals from the Recreation Area other than through the activity of panning.

NIGHT FISHING:

Use of the Recreation Area solely for the activity of fishing at night.

OCCUPANCY:

Authorized utilization of a given facility, location or area.

OPERATOR PROPELLED DEVICE:

Any device that is propelled by the person operating it, such as bicycles, skateboards, roller skates, and in-line skates.

OUTSIDE VENDOR:

Any person or entity that is or will be performing any type of work/duties for hire within the Recreation Area that does not fall within established Concessionaire Contract or other contract with the Agency.

PANNING:

Activity for the purpose of finding gold, accomplished by use of a pan no more than 18" in diameter and no motorized means of excavation.

PERMIT:

Authorization from the Agency to utilize the Recreation Area for a specific activity or purpose.

PERSON:

Any human being of any age.

PERSONAL WATERCRAFT (also PWC, PW):

A boat that is 13' in length or less, propelled by machinery, that is designed to be operated by a person sitting, standing, or kneeling on the vessel, rather than in the conventional manner of sitting or standing inside of the vessel.

PERSONAL SAFETY EQUIPMENT:

Any equipment worn or to be worn by persons engaged in operator propelled device activities - bicycling, skateboarding, roller skating, in line skating, etc. - that may or may not be required by applicable law.

RECREATION AREA:

All lands and water available for recreation use that fall within the Federally Licensed New Don Pedro Project Boundary - FERC License #2299.

REFUSE:

Any material, organic or inorganic, that is deposited or left within the Recreation Area.

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RULES:

Term used to reference regulations, ordinances, and other applicable laws.

SLEEPING CAPACITY (also SC):

Equipped with built-in plumbing.

SPECIAL USE PERMIT:

Permit authorizing a use of the Recreation Area that may temporarily alter its normal operation, require special authorization for activities that would otherwise be prohibited, or exceed the realm of family camping or individual water oriented use.

TOWING/IMPOUNDMENT:

Lawful seizure of specific personal property associated with a failure to comply with applicable laws.

TRAILERS:

Any non-motorized mode of transportation on land to tow behind a vehicle for purpose of transporting living quarters, gear, supplies, vehicles or vessels.

UNATTENDED:

Any personal property that has not been watched, maintained, checked on or operated by the owner or authorized operator within a specific time period established by the Agency.

VEHICLE:

Any mode of motorized transportation for use on land.

VESSEL:

Any mode of motorized or non-motorized transportation for use on water with the exception of floating aircraft.

WEAPON:

Any object having potential to injure or kill, threaten injury or death to any living creature or to damage any public or private property. Includes but is not limited to firearms, archery equipment, gas or spring activated devices, slingshots, knives, laser pointers, traps, nets, vehicles, and vessels.

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§ 4.5.14 - HOUSEBOAT RULES

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1. GENERAL RULES^{*1}

- 1.01. The Primary Purpose for Houseboating on Don Pedro Lake shall be for Recreation.
 - a. Any use of Houseboats found to be contrary to this purpose will not be permitted.
 - b. Houseboats shall not be used as a residence.
 - c. The Houseboat Permit Holder shall not rent, lease or assign Houseboat to others.
- 1.02. No Houseboat shall be in the Recreation Area without a valid Houseboat Permit from the Agency.
 - a. Only the Registered owner(s) of a Houseboat may apply for an Agency Houseboat Permit or for the renewal of an Agency Houseboat Permit.
 1. Individuals with ownership rights to Houseboats with Non-Person Specific Registration will be considered the Registered Owners of that Houseboat.
 2. Official documentation listing all individuals with ownership rights to Houseboats with Non-Person Specific Registration shall be provided to the Agency before a Houseboat Permit will be issued or renewed.
 - b. A Houseboat Permit may not be transferred without the sale or transfer of ownership of the permitted vessel.
- 1.03. Houseboat Permit Holders and Persons using or having charge, care or control of the Houseboat must comply with Applicable Laws.
 - a. The Agency is authorized to inspect each Houseboat at all times for compliance with Applicable Laws.
 - b. Houseboat Permit Holders may be held responsible for the actions of those Persons authorized to use or operate their Houseboat.
- 1.04. Houseboat Permit Holders must sign an Agency approved mooring agreement with the Assigned Concessionaire.
 - a. All applicable requirements listed under section 2 of these Rules shall be met before a Houseboat mooring agreement is signed with a concessionaire.
 - b. Permitted Houseboats left Unattended on Don Pedro Lake for a period of 24 hours or more must be in an assigned slip or moored to an assigned mooring buoy operated / maintained by an Agency approved concessionaire.
 - c. A Houseboat Permit Holder(s) may not change their Assigned Concessionaire without prior Agency approval.
- 1.05. Houseboat Permit Holders must maintain in good standing Applicable Fees due the Agency and the Assigned Concessionaire.
- 1.06. **INSURANCE REQUIREMENT**
Houseboat Permit Holders shall procure and at all times maintain general liability insurance, which will provide coverage for limits of not less than \$300,000.
 - a. Such insurance shall be obtained from an insurer and in a form satisfactory to the Agency.
 - b. The Don Pedro Recreation Agency, the Turlock Irrigation District, the Modesto Irrigation District, and their governing boards shall be named as additional insureds under the Houseboat Permit Holder's insurance policy.
 - c. A certificate of insurance evidencing coverage shall be provided to the Agency when the Houseboat Permit is issued or when it is renewed.
 - d. Coverage shall not be canceled nor materially altered without at least thirty (30) Days written notice to the Agency.

2. HOUSEBOAT PERMITTING PROCEDURES

2.01. HOUSEBOAT PERMIT RESTRICTIONS

- a. Except as otherwise allowed by this section 2.01, a Houseboat Permit Holder and his or her spouse may own an interest in no more than one Houseboat on Don Pedro Lake.

^{*1} Appendix A, which is incorporated into these Rules, defines capitalized terms (other than section and subsection titles) used in these Rules.

Adopted 8/3/99

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1. A current Houseboat Permit Holder and his or her spouse may acquire an interest in a second Houseboat for the purpose of modifying Houseboat size and or quality only, provided that only one Houseboat may be operated on Don Pedro Lake at any time.
 2. A second Houseboat may be moored on Don Pedro Lake while it is for sale, but shall be operated only with permission of the Agency.
 - b. Prior Agency approval is required before the purchase of a second Houseboat with a permit for Don Pedro Lake.
 1. Interests in second Houseboat Permits may be owned for a maximum of two Years from the purchase date when the purpose is for remodeling, repair or New Construction of a Houseboat.
 2. Interests in second Houseboat Permits may be owned for a maximum of one Year only when no remodeling, repair or New Construction of a Houseboat is to take place.
 - c. No Person or Persons who have ever had a Houseboat Permit revoked or have ever been subject to non-renewal of their Houseboat Permit shall be eligible to apply for a Houseboat Permit again.
- 2.02. **HOUSEBOAT PERMIT WAITING LIST.**
- a. The Agency at its discretion may open or close the Waiting List to new applicants.
 - b. Applicants for Houseboat Permits must submit a written request to the Agency to have their names added to the Waiting List.
 - c. No current Houseboat Permit Holder will be placed on or shall remain on the Waiting List.
 - d. Priority on the Waiting List will be ranked in order of the date and time each written request is received by the Agency with the oldest receipt date having the highest priority.
 - e. When a Houseboat Permit is available, the highest applicant on the Waiting List will be offered the Houseboat Permit subject to these Rules:
 1. Applicants will be sent a "Notice of Houseboat Permit Availability" by certified mail to the address listed on the request.
 2. Applicants must accept or decline the offer for a Houseboat Permit in writing received by the Agency within 30 Days after the date of "Notice of Houseboat Permit Availability." If an acceptance is not received within the 30 Day time period, the offer will be deemed declined and the applicant will be removed from the waiting list.
 3. The required "First Year Permit Fee" must be paid to the Agency within five Days of the date of the applicant's acceptance of the permit. Failure to pay the required First Year Permit Fee to the Agency within this five-Day period, for whatever reason, will result in the denial of the Houseboat Permit and removal of the Applicant(s) from the Waiting List.
 4. Failure of the Applicant(s), for whatever reason, to receive a Notice of Houseboat Permit Availability shall not entitle the Applicant(s) to any relief from the Agency's denial of the Houseboat Permit or from removal from the Waiting List.
 - f. Applicant(s) on the Waiting List cannot sell, trade, give, assign, or otherwise transfer their position on the Waiting List to another Person or entity.
 - g. The Houseboat Registration at the time the Houseboat Permit is issued must include all Applicants names as shown on the Waiting List.
- 2.03. **NEW APPLICATIONS**
- Applicant(s) will be issued a new Houseboat Permit upon meeting all of the following requirements:
- a. Applicants must obtain an authorized mooring space from the applicable Marina Concessionaire and shall pay in advance to the Marina Concessionaire monthly mooring fees for three (3) months.
 - b. Applicants must pay the required "First Year Permit Fee" to the Agency.
 - c. Applicants must complete an Application for Houseboat Permit, which meets the approval of the Agency.
 - d. Applicants must submit a current copy of their Houseboat Registration to the Agency.
 - e. Applicants must submit a certificate of insurance evidencing coverage as described in section 1.06 of these Rules and regulations to the Agency.

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- f. Applicants must place their Houseboat on Don Pedro Lake within two Years of issuance of the Houseboat Permit.

2.04. RENEWAL APPLICATIONS

An existing Houseboat Permit will be renewed upon meeting all of the following requirements:

- a. Applicable Fees must be in good standing.
- b. It is the renewal applicant(s) responsibility to pay the Annual Renewal Fee(s), and complete an Application for Houseboat Permit form signed by all registered owner(s), which meets the approval of the Agency, before February 1st of the renewal Year. Failure to receive a renewal reminder or application form does not absolve the renewal applicant from this responsibility.
- c. A current copy of the renewal applicant(s) Houseboat Registration must be on file with the Agency before February 1st of the renewal Year.
- d. A certificate of insurance evidencing coverage as described in section 1.06 of these Rules must be on file with the Agency before February 1st of the renewal Year.
- e. Houseboat Permit Holders that fail to meet all of the requirements of section 2.04.a. through d. before February 1st will be required to pay the Non-discount Annual Renewal Fee.

2.05. CHANGE OF OWNERSHIP

When a Change of Ownership occurs, the following must be done:

- a. The current Houseboat Permit Holder(s) must notify the Agency within fourteen (14) Days of the date of the Change of Ownership and provide the following information:
 1. The type of Change of Ownership that occurred [sale, transfer, change or addition or deletion of name(s)].
 2. The names, addresses and telephone numbers of the new owners or the Persons added or deleted.
 3. A "Permit Release Form" that has been signed by all current Houseboat Permit Holders who are releasing their interest in the Houseboat.
 4. The current Houseboat Permit Holder(s) shall provide the new owner(s) with current copies of these Rules and the D.P.R.A. Rules and Regulations and notify the new owner(s) that they must file a completed Application for Houseboat Permit and pay the required Change of Ownership Fee to the Agency within fourteen (14) Days of the date of the Change of Ownership.
- b. The new owner(s) must file with the Agency a completed Application for Houseboat Permit form and must pay to the Agency, the required Change of Ownership Fee, all within fourteen (14) Days of the date of the Change of Ownership.
- c. The new owner(s) must provide to the Agency a copy of the current Houseboat Registration within fourteen (14) Days of the date of Change of Ownership.
- d. When registration is by United States Coast Guard Documentation the following will be required:
 1. If proof of USCG documentation cannot be secured within fourteen Days, the new owner(s) shall submit a copy of their USCG National Vessel Documentation Center application to the Agency within fourteen Days.
 2. The new owner(s) shall submit a copy of their official USCG Certificate of Documentation to the Agency no later than three months from the date of the Change of Ownership.
- e. The new owner(s) must provide to the Agency a certificate of insurance evidencing coverage as described in section 1.06 of these Rules within fourteen (14) Days of the date of Change of Ownership.

2.06. CHANGE OF ASSIGNED CONCESSIONAIRE

Houseboat Permit Holders wishing to change the authorized mooring location of their Houseboat from one marina concession area to another must make a written request to the Agency identifying the permit Holder's new preferred location. The Agency will maintain a Relocation List of all Houseboat Permit Holder(s) desiring to relocate their Houseboats.

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- a. Relocation applicants will be ranked on the Relocation List in order of the date that their respective written requests were received by the Agency with the oldest requests having the highest priority.
- b. Relocation requests received on the same Day will be ranked in order of the length of time each relocation applicant has held his Houseboat Permit with the most senior Houseboat Permit Holder having the highest priority of the relocation requests received on the same Day.
- c. When a mooring space is available at the marina concession area of choice, the Agency will notify by mail the requesting Houseboat Permit Holder having the highest priority on such list.
- d. The Houseboat Permit Holder will then notify the respective marinas, sign a mooring agreement with the new Assigned Concessionaire and pay the Agency the required Change of Assigned Concessionaire Fee.
- e. Location change will not take place until written notification from the Agency is given to the Houseboat Permit Holder stating the designated relocation date.

3. HOUSEBOAT REPAIR, REPLACEMENT, CONSTRUCTION AND MAINTENANCE

3.01. HOUSEBOAT REMOVAL AND LAUNCH

Houseboat Permit Holder(s) must obtain prior authorization from the Agency to use launch ramps for Houseboat removal and Houseboat launch.

- a. Houseboat Permit Holders shall notify the Agency a minimum of seven Days in advance of the date when a Houseboat is to be removed from Don Pedro Lake for repairs or replacement, except in emergencies.
- b. Houseboat Permit Holders shall notify the Agency and arrange for a pre-launch inspection of their Houseboat a minimum of fourteen Days in advance of the planned launch date.
- c. All Houseboats must pass the Agency inspection prior to launch.
- d. Vendors hired to remove or launch Houseboats shall be subject to Applicable Laws, vendor permit and insurance requirements.
- e. Permitted Houseboats removed from Don Pedro Lake shall re-launch within five Years from the date of their removal.
- f. Permitted Houseboats already removed from Don Pedro Lake shall have a maximum of five Years from the effective date of these Rules to re-launch.

3.02. REPAIR FACILITIES

The Agency has established facilities within the Recreation Area for repair of Houseboats moored on Don Pedro Lake.

- a. Only Houseboats with valid Houseboat Permits are authorized to use the Blue Oaks Houseboat Repair Yard
- b. The Agency Board of Control shall adopt Regulations for operation of the Repair Yard with which all Houseboat Permit Holders must comply.

3.03. REPAIR OR REPLACEMENT REQUIREMENT

The Houseboat Permit Holder shall repair or replace the Houseboat in the event the Houseboat is damaged, destroyed, the motor inoperable, or the Houseboat is removed from the Recreation Area.

- a. All such repairs or replacement shall commence within ninety (90) Days after the Houseboat has been damaged, destroyed, rendered inoperable, or removed from the Recreation Area.
- b. Houseboat Permit Holders will notify the Agency of any intent to construct or acquire a replacement Houseboat.
- c. During repairs and/or replacement all Houseboat Permit owners must maintain in good standing all applicable Agency and Concessionaire fees, including but not limited to, Assigned Concessionaire mooring/buoy fees.
- d. Liability insurance as prescribed by section 1.06 of these Rules shall be maintained on all Houseboats that remain within the Recreation Area during repairs and / or replacement.
- e. With prior approval of the Agency, replacement Houseboats for current Houseboat Permit Holders may be constructed in the Blue Oaks Houseboat Repair Yard prior to removal of the currently owned and permitted Houseboat from the lake.
- f. Houseboats being replaced shall be removed from the Recreation Area and the permit transferred to the replacement Houseboat prior to launch.

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3.04. HAZARDOUS MATERIALS

- a. At no time shall any work or repairs be made on any Houseboat while on the lake that involves the following:
 1. Any work or repair that involves structural alteration or modification without prior Agency approval.
 2. Any work or repair or any by-product of such work or repair that could result in the introduction of any materials into the waters of Don Pedro Lake.
- b. At no time shall any work or repairs be made on, or other activity take place on any Houseboat that would introduce into the waters or soil of the Recreation Area any substance which is or becomes defined as a hazardous waste, hazardous substance, pollutant, or contaminant under any federal, state, or local statute, regulation, rule, or ordinance or amendment thereto, or that would result in the violation of the Porter-Cologne Water Quality Act (Cal. Water Code Sec. 13100 et seq.) or the Clean Water Act (33USC 1251-1376).
- c. Houseboat Permit Holders, their agents, employees, or contractors are required, at their sole cost and expense, to promptly take all actions to remediate the release of any substance prohibited by this section into the Recreation Area and to immediately notify the Agency of any violation of this section. If Houseboat Permit Holders, their agents, employees, or contractors fail to perform the duties required by this section, Agency reserves the right to perform the remediation at Houseboat Permit Holder's cost.
- d. All Houseboat Permit Holders shall be responsible for the proper disposal of hazardous wastes, hazardous substances, pollutants, or contaminants resulting from the operation, repair or maintenance of their Houseboat.
- e. **Battery Disposal:** The Houseboat Permit Holder is responsible for proper disposal and or recycling of their Houseboat's batteries.
 1. A battery drop off area will be provided at each campground for proper disposal and recycling of batteries.
 2. Campground personnel can be contacted for the location of this battery drop-off area.

3.05. USE OF OFF-SITE VENDORS WITHIN THE RECREATION AREA

- a. Agency approved Marina concessionaires hold exclusive rights to provide certain approved services within their assigned concession lease agreement areas.
- b. The hiring of any vendors, contractors or entities other than approved marina concessionaires by Houseboat Permit Holder(s) to perform any work or service within the Recreation Area shall be subject to all applicable Agency regulations, vendor permit and insurance requirements.
- c. Outside vendors shall not be restricted from performing services for any Houseboat Permit Holder when the marina concessionaires are incapable or cannot perform the desired work or service required in a timely manner.

3.06. MAINTENANCE AND CONSTRUCTION STANDARDS

- a. All Houseboats shall be maintained in a good and proper state of repair and shall be aesthetically neat in appearance.
- b. All Houseboat propulsion systems shall be maintained in a safe and operable condition at all times.
- c. All Houseboats shall be kept maintained, painted, stained, coated or other wise protected so as to present a neat and well-kept appearance and to furnish protection against weathering and corrosion.
 1. Colors shall blend with the surroundings.
- d. All Houseboats shall be constructed and maintained in conformance with Applicable Laws.
 1. The Houseboat Permit Holder is responsible for ensuring that all construction standards are met.
- e. All decking and roofs shall be protected from weathering or constructed with a suitable weather proofed material. Carpeting and other deck and roof coverings shall remain firmly attached and kept free of tears, mildew and other forms of deterioration.
- f. A general description of all proposed New Construction must be submitted to the Agency for its approval prior to the start of such work. Routine repair and maintenance of the cabin, roof, deck(s), fascia, pontoons,

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holding tank, connected plumbing and railing alone will not be considered New Construction and will not require submission of such a description.

- g. All newly constructed Houseboats and newly constructed replacement railings shall meet or exceed the following railing requirements:
 - 1. Upper deck - full railing, 36-inch height, 6-inch spaces.
 - 2. Bottom deck - optional, none, full, or partial is acceptable, recommend 36-inch height, 6-inch spaces.
- h. With the exception of those Agency Houseboat construction standards established for New Construction Only those Houseboats on Don Pedro Lake as of the effective date of these Rules which are not in compliance with these construction standards must be corrected and in full compliance prior to first re-entry to the lake after a takeout.

3.07 REQUIRED EQUIPMENT

- a. Houseboats shall carry or be equipped with all equipment required by Applicable Laws.
- b. Houseboats shall be equipped with permanently and properly installed operable navigation and anchor lights.
- c. Houseboats shall display all required numbers, letters, names and stickers in accordance with Applicable Laws.
- d. All Mechanical Compartments used for propulsion of the Houseboat that extend below the water line shall be equipped with an operable bilge pump and an Agency approved bilge absorbent material or filtration system that prevents pollutants from entering the lake when the bilge pump is operated.

3.08. FLOTATION DEVICES

- a. Flotation Devices including Monohull design flotation shall be fitted with transverse and/or longitudinal Watertight bulkheads that provide Compartmentation sufficient to keep the fully loaded vessel afloat with positive stability, with any one main compartment flooded.
- b. When pontoons are used for flotation, no single compartment in a pontoon shall comprise more than 20% of the total available flotation volume.
- c. Flotation Devices shall be constructed of metal, wood that has been covered with fiberglass or other materials as approved by the Agency. Barrels and other containers will not be acceptable as Flotation Devices.
- d. The exterior surfaces of all Flotation Devices shall be Watertight (Watertight hatch covers are permitted when applicable) and thoroughly protected from rust, corrosion, solvents, and weather.
- e. Flotation Devices shall be structurally sound and securely fastened to the main Houseboat structure.
 - 1. The Agency reserves the right to require Houseboat Permit Holders (at their expense) to perform reasonable tests in order to determine the structural condition of questionable Flotation Devices.
 - 2. Those Flotation Devices found to be structurally unsound as a result of such tests shall be promptly replaced or repaired when applicable at permit holder's expense.
- f. All Hatch Covers leading to Storage or Mechanical Compartments in a Houseboat's Flotation Devices shall be at least Weathertight, preferably Watertight and Mechanically Fastened down.
 - 1. Hatch Covers on Mechanical Compartments that are hinged on one side and deemed sufficiently secured by other means (such as heavy weight) may, at the Agency's discretion, be exempted from this Mechanically Fastened requirement.
- g. New Construction only:
The following requirements shall apply to Flotation Devices (including replacement Flotation Devices) constructed after the effective date of these regulations:
 - 1. Flotation Device Storage Compartments may be ventilated but the outlet of the vent must be a minimum of 15" above the deck and will be capped with a 180-degree elbow.
 - 2. Vents for Mechanical Compartments in Flotation Devices shall comply with the Standards and Recommended Practices for Small Craft and any other applicable State or Federal standards.
 - 3. All new hollow Flotation Device compartments that do not contain Storage or Mechanical Compartments shall be fitted with Watertight pressure test fittings.

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4. All new hollow Flotation Device compartments that do not contain Storage or Mechanical Compartments shall be pressure tested prior to their launch and shall be capable of holding positive pressure.
 5. Metal Flotation Devices:
All new Flotation Devices constructed of metal shall meet or exceed the following requirements:
 - ◆ Minimum of ten gauge (1/8 inch) thickness for all mild steel construction.
 - ◆ Minimum of ten gauge (1/8 inch) thickness for all aluminum construction.
 - ◆ Minimum of twelve gauge (3/32 inch) thickness 304 grade stainless steel, or other twelve gauge 300 series stainless steel with characteristics equal to or greater than the characteristics of 304 grade.
 - ◆ All mild steel and aluminum Flotation Devices shall be fitted with appropriate anti-electrolysis "anode" plates or other Agency approved systems that protect against electrolysis.
 6. A plan detailing Flotation Device dimensions, displacement, and boatload capacity shall be submitted to the Agency prior to completion of any new Houseboat construction or Flotation Device reconstruction.
 - h. The minimum lower (main) deck height (excluding swim decks) of all Houseboats when fully loaded shall not be less than 12 inches above the water line.
- 3.09. **SANITARY FACILITIES.**
Each Houseboat's Wastewater system shall be maintained in strict compliance with Applicable Laws.
- a. All Wastewater shall be delivered into on-board holding tanks.
 - b. All Wastewater holding tanks shall be emptied only by pumping into an Agency approved Wastewater system.
 - c. No Wastewater of any type shall at any time be in any way discharged into the lake.
 - d. All Houseboats shall be provided with a toilet facility and Wastewater holding tank.
 - e. The Wastewater holding tank and connected plumbing shall be constructed and maintained in such a manner that the tank can be emptied only by pump-out equipment.
 - f. No drain plugs shall be installed below the bottom of the toilet level.
 - g. Any Houseboat having a sink, shower, washbasin or other facility must provide plumbing so that all Wastewater from these facilities is piped to the holding tank(s).
 - h. Holding tanks may be constructed of stainless steel, mild steel, aluminum, reinforced fiberglass or Wastewater grade reinforced plastic.
 1. All new holding tanks are subject to the New Construction requirements so set forth in section 3.09.k.
 2. Holding tanks shall be painted, coated or otherwise fully protected from rust, corrosion and weathering.
 3. Holding tanks shall be Watertight and free of any leaks.
 4. The Agency reserves the right to require replacement of holding tanks believed to be in a state of deterioration.
 - i. Holding tanks shall have a combined minimum total capacity of 100 gallons.
 - j. Holding Tank Attachments and Fittings:
 1. Openings to pump-outs, vents, clean-outs, etc., must be a minimum of 15" above the lower deck.
 2. Pump-outs for more than one holding tank shall be located together.
 3. All fittings to holding tanks shall be glued, welded or otherwise permanently sealed and attached.
 4. Where attachments and fittings are clamped, a permanent clamp shall be used whenever possible.
 5. Prior Agency authorization is required to use screw clamps on any Wastewater plumbing.

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- k. **New Construction Only:** In addition to the requirements in 3.09.a. through j., the following requirements shall apply to all new holding tanks constructed or replaced after the effective date of these regulations:
1. All new holding tanks shall have a combined minimum total capacity of 200 gallons.
 2. All new holding tanks shall not exceed a combined maximum total capacity of 600 gallons.
 3. The interior surfaces of all new holding tanks (including replacement tanks) unless constructed of chemically resistant stainless steel, fiberglass or Wastewater grade reinforced plastic shall be sandblasted and lined / coated with a suitable impervious material such as Coal Tar Epoxy or equivalent prior to installation.
 4. Any new or replacement holding tank installed so that it is in contact with lake water shall meet or exceed the following New Construction requirements:
 - ◆ Minimum of twelve gauge (3/32 inch) thickness 304 grade stainless steel or other twelve gauge 300 series stainless steel with characteristics equal to or greater than the characteristics of 304 grade will be permitted for single wall holding tanks.
 - ◆ Holding tanks constructed of other materials shall be a separate tank constructed of chemically resistant materials that is located within an approved outer flotation wall. Such tanks shall be equipped with a Watertight fitting that would permit inspection for leakage between this outer flotation wall and the inner tank.
 5. Center mount holding tanks that are constructed and installed in a manner so that they will ride above the Waterline when the Houseboat is fully loaded may be of single wall mild steel or other approved material construction.

3.10. **SIZE LIMITATIONS.**

- a. The following size limitations shall be in effect for all Houseboats unless an exception or exemption is listed:
1. **Minimum Size:**
 - ◆ 10 feet width, 20 feet length.
 2. **Absolute Maximum Size:**
 - ◆ 22 feet width, 56 feet length (all inclusive).
 - ◆ Out-drives, motor gear, swim decks and all other parts of the Houseboat shall remain within these dimensions whenever the Houseboat is left Unattended and is moored at its assigned mooring location.
 - ◆ With prior Agency approval, bumpers or similar devices attached to the perimeter of the Houseboat for protection purposes only may exceed these dimensions.
 - ◆ With prior Agency approval, Houseboats owned by an Agency approved concessionaire for the purpose of rental to the public may vary from the size limitations in this section.
 3. **Maximum Height:**
 - ◆ The Agency recommends one story with open upper deck.
 - ◆ No enclosed structures shall be permitted to extend beyond 15 feet above the Waterline.
 - ◆ The upper deck may be covered by use of open frame and awning provided that the awning is firmly attached, maintained in good condition, is constructed of flame resistant materials and allows for the passage of wind.
 - ◆ Those Houseboats with existing permanent structures (excluding add-on walk-in storage buildings) that exceed these height limits that were constructed prior to August 13, 1999 shall be exempted from this rule.
- b. Houseboats, which exceed the size limitations under section 3.10.a., may not be reconstructed to exceed those size limitations.

3.11. **HOUSEBOAT TO MOORING BUOY HOOKUP.**

- a. A Primary Mooring (connecting) device between the Houseboat and mooring buoy is required.
1. This Primary Mooring Device when attached between the Houseboat and its mooring buoy shall be of sufficient size and strength to hold the Houseboat no further than thirty-six (36) inches away from its mooring buoy.
 2. The Primary Mooring Device shall conform to all standards established by the Assigned Concessionaire.

Adopted 8/3/99

Amended 5/29/01, 8/31/10, 8/16/11

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- ◆ The Assigned Concessionaire shall provide these standards in writing to all Houseboat Permit Holders assigned to that marina.
 - b. In addition to the Primary Mooring device, a Secondary Safety Mooring Device between the Houseboat and the mooring buoy is also required.
 1. The Secondary Safety Mooring Device shall be of chain, cable or wire rope of sufficient size and strength to hold the Houseboat to the mooring buoy in the event of the failure or disconnection of the Primary Mooring Device.
 2. The Secondary Safety Mooring Device shall conform to all standards established by the Assigned Concessionaire.
 - ◆ The Assigned Concessionaire shall provide these standards in writing to all Houseboat Permit Holders assigned to that marina.
 - c. All Houseboats shall be equipped with the Primary Mooring Device and the Secondary Safety Mooring Device however; those Houseboats, which are moored in slips at a Marina, need not use these devices while moored there.
 - d. The Moccasin Marina Concessionaire shall provide written specifications for "rear tie-up" to Houseboat Permit Holders assigned to mooring buoys at Moccasin whose Houseboats cannot free swing and must be tied end to end.
 1. A minimum of 5/8" poly-propylene or equivalent rope shall be used for all rear tie-ups.
- 3.12. **PRECEDENCE OF STATE AND FEDERAL REQUIREMENTS OVER AGENCY CONSTRUCTION STANDARDS**
- a. While every effort is made to ensure that Agency construction standards are consistent with Applicable Laws, there can be no guarantee that compliance with the Agency construction standards will assure compliance with applicable Federal and State requirements.
 1. The Federal and State requirements, to the extent they are inconsistent with the Agency construction standards, will supersede the Agency standards.
 2. Agency requirements may exceed State and Federal requirements.
 - b. Houseboat Permit Holders should consult the manual of Standards and Recommended Practices for Small Craft published by the American Boat and yacht Council as well as the U.S. Coast Guard and the Tuolumne County Sheriff's Boat Patrol for Federal and State Standards.

4. ENFORCEMENT OF HOUSEBOAT RULES

4.01. ADMINISTRATION.

- a. The Agency may make inspections and take actions to enforce the provisions of these Rules.
- b. The Agency may inspect any Houseboat at any time for the purpose of insuring compliance with Applicable Laws.
 1. Right of Entry: No Houseboat Permit Holder or any other Person using or having charge, care or control of any Houseboat shall fail or neglect, after an authorized Agency representative has identified himself or herself, to promptly permit entry therein by the Agency representative for the purpose of such an inspection.
 2. All Houseboat Permit Holders shall make all Persons using their Houseboat aware of the Agency's right of entry, as specified in this section 4.01.

4.02. COMPLIANCE.

- a. After any order of the Agency or decision of the Houseboat Appeals Board made pursuant to these Rules, no Person to whom any such order or decision is directed shall fail, neglect, or refuse to obey any such order.
- b. If, after any order or decision made pursuant to these Rules, the Person or Persons to whom such order or decision is directed shall fail, neglect or refuse to obey such order or decision, the Agency may institute any appropriate action under Applicable Laws.
- c. The Agency may issue Warnings, assess Non-Compliance Fines, seek restitution if applicable, issue Notice and Orders, Red Tags and any combination thereof and may also revoke or not renew a Houseboat Permit for violations of Applicable Laws.
- d. All Non-Compliance Fines, restitution sought, Notice and Orders and Red Tags will be directed to the designated Houseboat Permit Holder contact Person(s) listed on the completed Application for Houseboat Permit.

Adopted 8/3/99

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4.03. WARNINGS.

The Agency may issue verbal or written Warnings to Houseboat Permit Holders and the Person or Persons using or having charge, care or control of the Houseboat for violations of Applicable Laws. Documented warnings may be used as evidence to support further punitive action against Houseboat Permit Holders.

4.04. NON-COMPLIANCE FINES AND RESTITUTION.

The Agency may assess Non-Compliance Fines against Houseboat Permit Holders and seek restitution if applicable for violations of these Rules. A Non-Compliance Fine and restitution procedure shall be established.

- a. Houseboat Permit Holders will be notified of Non-Compliance Fines and / or applicable restitution in accordance with the Notice and Order procedures set forth in section 4.05.
- b. Failure to pay Non-Compliance Fine(s) and / or applicable restitution pursuant to the conditions set forth in the Notice and Order may result in the assessment of additional Non-Compliance Fines, Red Tag and / or Revocation of the Houseboat Permit.

4.05. NOTICE AND ORDERS.

Whenever the Agency has determined that any Houseboat or Houseboat Permit Holder is in violation of any Applicable Laws, a Notice and Order will be issued to the record Houseboat Permit Holder(s) of the Houseboat under the following circumstances:

- a. Non-Compliance Fines are to be assessed and / or restitution sought (if applicable) against the Houseboat Permit Holder(s).
- b. The Houseboat is to be Red Tagged.
- c. The Houseboat Permit is to be revoked or not renewed.
- d. The Notice and Order shall contain:
 1. The Houseboat Registration identification number and Agency Houseboat Permit number.
 2. A statement that the Agency has found the Houseboat to be in violation of Applicable Laws and a brief and concise description of the conditions found to render the Houseboat in violation of these Applicable Laws.
 3. A statement of the action required to be taken by the Houseboat Permit Holder.
- e. If the Notice and Order is for a Houseboat Permit Revocation or Houseboat Permit Non-Renewal it shall additionally contain:
 1. A statement advising that the Houseboat Permit Holder and any Person having any record title or legal interest in the Houseboat may appeal to the Houseboat Appeals Board, provided the appeal is made in writing as provided in Section 5 of these Rules, and filed with the Director within twenty-one (21) calendar Days of service of such Notice and Order.
 2. A statement advising the Houseboat Permit Holder that failure to appeal will constitute a waiver of all right to a hearing and determination of the matter.
- f. Service of Notice and Orders:
 1. Each Notice and Order shall be served upon the record Houseboat Permit Holder either personally or by certified mail sent to the address indicated for such Houseboat Permit Holder in the Houseboat Permit records of the Agency.
 2. The failure of the Houseboat Permit Holder to receive such notice actually mailed shall not affect the validity of any proceedings taken under this section.
 3. No other Persons are required to be served with the Notice and Order.
 4. Service by certified mail in the manner provided herein shall be effective on the date of mailing.

4.06 RED TAGS, PERMIT REVOCATION AND PERMIT NON-RENEWAL

The Agency may issue Red Tags pursuant to these Rules which:

- a. Immediately revoke or prohibit renewal of a Houseboat Permit or
- b. Immediately prohibit the operation and use of a Houseboat.
- c. A Red Tag immediately revoking a Houseboat Permit, prohibiting renewal of a Houseboat Permit or immediately prohibiting the operation and use of the Houseboat in question may be issued with a Notice and Order under any one of the following circumstances:
 1. The Houseboat Permit Holder has failed to comply with any lawful Agency order or requirement made pursuant to these Rules.

Adopted 8/3/99

Amended 5/29/01, 8/31/10, 8/16/11

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2. The Houseboat is in such condition as to make it immediately dangerous to the life, limb, property or safety of the public or to any Person operating or using the Houseboat.
3. The Houseboat is in such condition as to indicate that its permit holder or Person or Persons using or having charge, care or control of the Houseboat have intentionally, willfully, or negligently failed to maintain the Houseboat Wastewater system in strict compliance with Applicable Laws.
4. The Houseboat Permit Holder or Person or Persons using or having charge, care or control of the Houseboat have intentionally, willfully, or negligently failed to comply with Applicable Laws.
5. Whenever any ordered repair made pursuant to these Rules is not commenced within thirty (30) calendar Days of the order or is not pursued with sufficient diligence to enable the ordered repair to be completed within a reasonable period of time.
6. If pursuant to section 2.03 of these Rules, the applicant's Houseboat is not placed on Don Pedro Lake within two Years of the issuance of the permit.
 - (a) The First Year Permit Fee shall also be forfeited unless a written extension of time is granted by the Agency.
 - (b) If the Houseboat is not placed on Don Pedro Lake at the expiration of any such extension of time, then the permit shall be automatically revoked.
7. If pursuant to section 2.04 of these Rules, the Non-discount Annual Renewal Fee and or a Completed Application for Houseboat Permit are not received within thirty (30) Days of the mailing date of the Agency's delinquency notice to the renewal applicant.
8. If the Houseboat is damaged, destroyed, inoperable or removed from the Recreation Area and the Houseboat Permit owner has not commenced repairs or replacement within ninety (90) Days after the Houseboat was damaged, destroyed, inoperable, or removed.
- d. When possible a Red Tag stating the purpose for the Red Tag shall be posted on the affected Houseboat.
- e. When a Houseboat Permit is revoked all paid Permit Fees shall be forfeited to the Agency and all paid moorage fees shall be forfeited to the assigned Marina Concessionaire.
- f. Upon revocation or the non-renewal of a Houseboat Permit, the Houseboat owner(s) shall remove the Houseboat at their own expense from the Recreation Area within thirty (30) Days of the revocation or non-renewal. If the Houseboat is not removed, the Agency may dispose of the Houseboat pursuant to the Boaters Lien Law, Harbors and Navigation Code Section 500 et seq.

5. APPEAL OF NOTICE AND ORDERS

5.01 HOUSEBOAT APPEALS BOARD.

A Houseboat Appeals Board (sometimes referred to as the "Appeals Board") has been established by resolution of the Board of Directors of the Turlock Irrigation District and the Board of Directors of the Modesto Irrigation District.

- a. The Appeals Board shall consist of two members:
 1. One member who shall be the Chairperson of the Appeals Board shall be appointed by the Board of Directors of the Turlock Irrigation District.
 2. The other member shall be appointed by the Board of Directors of the Modesto Irrigation District.
 3. Each District may designate one or more alternates to act as its representative on the Appeals Board in the absence of the regular member.
- b. The presence of both members of the Appeals Board shall constitute a quorum for the transaction of business.
 1. Less than a quorum may adjourn meetings of the Appeals Board from time to time.
 2. Any action or determination of the Appeals Board requires a unanimous vote of both members.
- c. The Appeals Board shall review the history, evidence, actions and decisions of the Agency regarding Houseboat Permit Holder appeals and determine if the Agency has acted in accordance with Applicable Laws.
- d. The Appeals Board is not empowered to set forth or establish its own conditions or requirements in regards to Houseboat Permit Holder appeals.

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5.02 RIGHT TO APPEAL.

Any Houseboat Permit Holder and any Person having any record title or legal interest in the Houseboat may appeal Notice and Orders issued for the purpose of Houseboat Permit Revocation or Houseboat Permit Non-Renewal by filing at the office of the Director a written appeal in the form specified in Section 5.03.

a. Staying of Permit Revocation and Non-Renewal Orders Pending Appeal:

1. Enforcement of any Houseboat Permit Revocation or Houseboat Permit Non-Renewal order issued under these Rules shall be stayed during the pendency of an appeal there from which is properly and timely filed.
2. Except that unless specifically authorized in writing by the Agency, a Houseboat issued a Red Tag may not be operated or used (other than to be removed from Don Pedro Lake) pending the appeal.

5.03 FORM OF APPEAL.

All appeals must be in writing and contain the following:

- a. A heading in the words: "Before the Houseboat Appeals Board of the Recreation Area".
- b. A caption reading: "Appeal of _____," giving the names of all appellants participating in the appeal.
- c. A brief statement setting forth the legal interest of each of the appellants in the Houseboat involved in the appeal.
- d. A brief statement in ordinary and concise language of the specific order protested, together with all material facts claimed to support the contentions of the appellant.
- e. A brief statement in ordinary and concise language of the relief sought, and the reasons why it is claimed the Agency did not act in accordance with Applicable Laws.
- f. The signatures of all parties names as appellants, and their official mailing address.
- g. The verification (by declaration under penalty of perjury) of at least one appellant as to the truth of the matters stated in the appeal.

5.04. TIME FOR FILING APPEAL.

The appeal shall be filed within twenty-one (21) calendar Days from the date of the service of such order.

5.05 PROCESSING OF APPEAL.

Upon receipt of any appeal filed pursuant to this section:

- a. The Director shall present it at the next regular or special meeting of the Appeals Board.
- b. As soon as practicable after receiving the written appeal, the Appeals Board shall fix a date, time, and place for the hearing of the appeal by the Board.
- c. Written notice of the date, time, and place of the hearing shall be given at least ten (10) calendar Days prior to the date of the hearing to each appellant by the Secretary of the Board either by causing a copy of such notice to be delivered to the appellant personally or by mailing a copy thereof, postage prepaid, addressed to the appellant at his address shown on the appeal.

5.06 EFFECT OF FAILURE TO APPEAL.

- a. Failure of any Person to file an appeal in accordance with the provisions of this Section 5 shall constitute a waiver of his right to a hearing and adjudication of the Notice and Order, or any portion thereof.
- b. The order becomes final upon expiration of the appeal period specified in Section 5.04 above.

5.07 SCOPE OF HEARING ON APPEAL.

Only those matters or issues specifically raised by the appellant shall be considered in the hearing of the appeal.

5.08. CONDUCT OF HEARING.

- a. Hearings need not be conducted according to the technical Rules relating to evidence and witnesses.
- b. Oral evidence shall be taken only on oath or affirmation.
- c. Any relevant evidence shall be admitted if it is the type of evidence on which responsible Persons are accustomed to rely in the conduct of serious affairs regardless of the existence of any common law or statutory rule which might make improper the admission of such evidence over objection in civil actions in courts of competent jurisdiction in this state.
- d. Irrelevant and unduly repetitious evidence shall be excluded.

Adopted 8/3/99

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- e. Each party shall have these rights, among others:
 - 1. To call and examine witnesses on any matter relevant to the issues of the hearing;
 - 2. To introduce documentary and physical evidence;
 - 3. To cross-examine opposing witnesses on any matter relevant to the issues of the hearing;
 - 4. To impeach any witness regardless of which party first called him to testify;
 - 5. To rebut the evidence against him; and
 - 6. To represent himself or to be represented by anyone of his choice who is lawfully permitted to do so.
- 5.09. BASIS FOR APPEALS BOARD DECISIONS
 - a. If the Appeals Board finds that the Agency has acted appropriately and in accordance with Applicable Laws, the Appeals Board shall uphold the Houseboat Permit Revocation or Houseboat Permit Non-Renewal.
 - b. If the Appeals Board finds that the Agency has not acted appropriately and in accordance with Applicable Laws, the Appeals Board shall include the specific reason(s) for this finding in their statement of decision. Only then may the Appeals Board rescind the Houseboat Permit Revocation or Houseboat Permit Non-Renewal.
- 5.10. FORM OF DECISION AND FINALITY OF THE DECISION.
 - a. The decision of the Appeals Board shall be in writing and shall contain findings of fact, a determination of the issues presented and the effective date of the decision.
 - b. A copy of the decision shall be delivered to the appellant personally or mailed to him, postage prepaid, addressed to the address shown on the appeal.
 - c. The decision of the Appeals Board becomes final on the effective date of the decision.

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Agency	The Don Pedro Recreation Agency, which is the organization charged with the responsibility for the operation and maintenance of the Don Pedro Recreation Area. The Agency has the jurisdiction to enforce Applicable Laws within the Recreation Area. Citations/Notices to Appear may be issued by authorized personnel, and / or personal property towed / impounded in accordance with State law for violations of these regulations, ordinances, and laws. The term "Agency" as used in these Rules shall include all authorized Agency representatives acting within the scope of their authority.
American Boat and Yacht Council (ABYC)	A non-profit, public service, membership organization incorporated in 1954 with worldwide membership that is dedicated to boating safety. The ABYC is a recognized authority in the area of technical practices and engineering standards for small vessels. They are the publishers of the manual of "Standards and Recommended Practices for Small Craft".
Annual Renewal Fee	An approved yearly fee required of all Houseboat Permit Holders due and payable to the Agency prior to February 1 st of every calendar Year.
Applicable Fees	First Year Permit Fees, Annual Renewal Fees, Change of Ownership Fees, Change of Assigned Concessionaire Fees, Mooring Fees, use fees including annual permit fees for all vehicles and vessels stored or moored within the Recreation Area, Monthly Blue Oaks Houseboat Repair Yard fees, and other fees that the Agency may adopt from time to time. Not included as Applicable Fees, are charges for personal services, sundries, beverages, fuels and oils, repairs and other miscellaneous supplies.
Applicable Laws	All Laws, Codes, Ordinances, Rules (including these Rules), Regulations and Standards currently in effect that pertain to or are relevant to Houseboat Permit Holders, their guests and all Houseboats that are operated, moored, stored, occupied, maintained or constructed within the Don Pedro Recreation Area. (examples: U.S. Coast Guard Requirements, California Boating Law, Tuolumne County Ordinances and Codes, ABYC Standards and Recommended Practices for Small Craft, the D. P. R. A. Rules and Regulations).
Application for Houseboat Permit	A form requiring proof of current Houseboat Registration and proof of insurance as described in section 1.06 that shall be signed by all Registered Owners of a Houseboat before any renewal, Change of Ownership or issuance of a Houseboat Permit can take place.
Assigned Concessionaire	The Agency authorized marina concessionaire that maintains and operates the mooring facilities for all private permitted Houseboats assigned to their concession area.
Blue Oaks Houseboat Repair Yard	Facilities subject to Applicable Laws established within the Don Pedro Recreation Area for the maintenance, repair or replacement of permitted Don Pedro Lake Houseboats.
Change of Assigned Concessionaire	A change in the authorized concessionaire mooring location of a permitted Houseboat from one marina concession area to another subject to the terms of Section 2.06 of these Rules.
Change of Assigned Concessionaire Fee	An approved fee due and payable to the Agency before any "Change of Assigned Concessionaire" can take place.
Change of Ownership	Any sale, transfer or release of a permitted Houseboat, any deletion, change or addition of any name(s) on a Houseboat Registration or any deletion, change or addition of any Person with rights to ownership of a Houseboat except in the case of death of a spouse when that deceased spouse's name is removed from the permit and permit application.

Adopted 8/3/99

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Change of Ownership Fee	An approved fee due and payable to the Agency that is required when any Change of Ownership takes place.
Coal Tar Epoxy	A two-part coating comprised of a combination of coal-tar and epoxy resin designed to provide protection and waterproofing to steel and other materials.
Compartmentation	Divided into completely separate sections.
Day	Shall mean a calendar day, including Saturdays, Sundays, and holidays.
Director	The Don Pedro Recreation Agency Director.
Don Pedro Lake	All water available for Houseboat operation and use that falls within the Federally licensed New Don Pedro Project Boundary – FERC License #2299.
D.P.R.A. Rules and Regulations	The general Agency rules and regulations that are binding upon all Persons utilizing the Don Pedro Recreation Area.
First Year Permit Fee (New Permit Fee)	An approved fee due and payable to the Agency within 5 Days after the date of applicant(s) acceptance of an available Houseboat Permit.
Flotation Device	Watertight pontoons, floats, the hull or any other device used to keep a Houseboat afloat or aid in its flotation. Motor compartments, holding tanks, fuel tanks, water tanks or any other part of a Houseboat that displace lake water and effect flotation will be considered a Flotation Device and must comply with all applicable Flotation Device requirements.
Houseboat	Private or concessionaire owned vessels that are 10' or greater in width, 20' or greater in length, have sleeping capacity (built in plumbing), limited by a specific number of Houseboat Permits and subject to Applicable Laws.
Houseboat Appeals Board	A Review Board (sometimes referred to as the "Appeals Board") that can be convened in accordance with these rules for the purpose of hearing the appeals of Houseboat Permit Holders (and any person having any record title or legal interest in the Houseboat). (9.01)
Houseboat Permit	Authorization from the Agency to place and utilize a Houseboat within the Recreation Area. Validity of permit is subject to Applicable Laws.
Houseboat Permit Holder(s)	The registered owner(s) of an Agency permitted Houseboat subject to Applicable Laws.
Houseboat Permit Non-Renewal	The non-renewal or non-reissue of a Houseboat Permit pursuant to Applicable Laws.
Houseboat Permit Renewal	The annual renewal or reissue of a Houseboat Permit pursuant to Applicable Laws.
Houseboat Permit Revocation	The withdrawal or cancellation of authorization from the Agency to place and utilize a Houseboat within the Recreation Area pursuant to Applicable Laws.
Houseboat Registration	Official documentation of a Houseboat provided by the California State Department of Motor Vehicles or the United States Coast Guard.
Mechanical Compartment	Any compartment on a Houseboat containing permanently installed mechanically operated, fuel powered, electrical or battery powered devices, appliances and / or batteries.

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Mechanically Fastened	Firmly secured by means of an automatic or manual, external or internal fastening device. (examples: latches, locks, screws, hydraulic openers and closers, etc.)
Monohull	A type of vessel flotation where the line of intersection of the water surface and the vessel at any one of its operating drafts forms a single closed curve.
National Vessel Documentation Center	The Department of the USCG that is responsible for documenting vessels and providing USCG Certificates of Documentation.
New Construction	The replacement of the entire Houseboat or replacement, reconstruction, structural alteration or modification of:the cabin and it's supporting members, (2) the roof, (3) the deck(s), fascia and their supporting members, the pontoons or other Flotation Devices, (5) the holding tank and connected plumbing and, (6) the railing around the upper and lower decks. Routine repair and maintenance of the cabin, roof, deck(s), fascia, pontoons, holding tank(s), connected plumbing and railing alone will not be considered New Construction.
Non-Compliance Fines	Approved penalty fees that may be assessed against Houseboat Permit Holders for violations of the Rules.
Non-discount Annual Renewal Fee	An approved fee, due and payable to the Agency, required of Houseboat Permit Holders that fail to pay the Annual Renewal Fee or submit a Completed Application for Houseboat Permit before February 1st.
Non-Person Specific Registration	Official documentation of a Houseboat provided by the California State Department of Motor Vehicles or the United States Coast Guard that does not specify individual names of Persons such as but not limited to: beneficiary type registration (i.e. family trust, living trust), business owned registration or partnership registration.
Notice and Order	A written notification to Houseboat Permit Holders, in accordance with section 4.05 of these Rules, that informs them of required Non-Compliance Fines, Red Tag issue, Houseboat Permit Revocation or Houseboat Permit Non-Renewal.
Notice of Houseboat Permit Availability	A written notice sent by certified mail to applicants on the waiting list informing them of the availability of a houseboat permit
Permit Release Form	An Agency approved form signed by the Houseboat Permit Holder(s) that relinquishes a Houseboat Permit back to the Agency. Required for any change of ownership.
Person	Any human being of any age
Primary Mooring Device	A primary connecting device that holds the Houseboat to its mooring buoy pursuant to the requirements of Section 3.11 of these Rules.
Recreation Area	All lands and water available for recreation use that fall within the Federally licensed New Don Pedro Project Boundary – FERC License #2299.
Red Tag	A written notice issued by the Agency pursuant to sections 4.05 and 4.06 of these Rules that immediately revokes a Houseboat Permit, prohibits renewal of a Houseboat Permit, or prohibits the operation and use of a Houseboat.
Registered Owners (of a Houseboat)	All registered owner(s) of a Houseboat as listed by either the official records of the California State Department of Motor Vehicles or a valid United States Coast Guard Certificate of Documentation. All individuals with ownership rights to Houseboats registered in Non-Person Specific form will be considered the Registered Owners of that Houseboat.

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Relocation List	A listing maintained by the Agency of Houseboat Permit Holder(s) desiring to relocate the authorized concessionaire mooring location of their Houseboat from one marina concession area to another.
Rules	These Don Pedro Houseboat Rules that are binding upon all privately owned Agency permitted houseboats and when applicable, Agency permitted concessionaire owned houseboats.
Secondary Safety Mooring Device	A secondary connecting device, pursuant to the requirements of Section 3.11 of these Rules, that is of sufficient size and strength to hold the Houseboat to the mooring buoy in the event of the failure or disconnection of the Primary Mooring Device.
Standards and Recommended Practices for Small Craft	A manual published by the American Boat and Yacht Council that provides generally applicable technical practices and engineering standards for small vessels. These standards and practices are voluntary for the general public. Those standards within this manual that are applicable to Houseboats will be required by the Agency. The Agency keeps a current (continuously updated) copy of this manual at its headquarters. This manual is available for Houseboat Permit Holder reference.
Storage Compartments	Any compartment on a Houseboat containing only temporarily stored items and no permanently installed mechanically operated, fuel powered, electrical or battery powered devices, appliances and / or batteries.
Unattended	Any Personal property that has not been watched, maintained, checked on or operated by the owner or authorized operator within a specific time period established by the Agency.
Uniform Building Code	Sections of the Building Code applicable to Houseboat construction as defined by the Tuolumne County Building Department.
USCG Certificate of Documentation	A certificate proving that a vessel has been documented by the United States Coast Guard.
USCG Documentation	A national form of vessel registration administered by the United States Coast Guard available only to vessels of at least 5 net tons that are owned by U.S. citizens. California State law does not require Dept. of Motor Vehicles Registration of vessels that are documented by the U.S. Coast Guard.
Waiting List	A waiting list maintained by the Agency as a basis for awarding any Houseboat Permits that the Agency may make available to applicants.
Warning	A written or verbal notification issued to Houseboat Permit Holders and or the Person or Persons using or Having charge, care or control of the Houseboat for violations of Applicable Laws.
Wastewater	All sewage and non-sewage liquid discharges from a vessel including but not limited to black water (human body wastes, wastes from toilets) and gray water (liquid discharges from sinks, showers, baths etc.). Non-polluting vessel wash down water or non-polluting water discharges necessary for the propulsion or stability of a vessel will not be included in this definition.
Waterline	The line to which the surface of the water comes up to on the Flotation Device(s) of a Houseboat.
Watertight	Constructed to effectively resist the passage of water.
Weathertight	Constructed to provide effective protection against seepage when exposed to rain or spray.
Year	365 calendar Days

Adopted 8/3/99

Amended 5/29/01, 8/31/10, 8/16/11

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**DON PEDRO HYDROELECTRIC PROJECT
FERC NO. 2299**

FINAL LICENSE APPLICATION

**ATTACHMENT A
DISTRICTS' RESPONSE TO COMMENTS ON
DRAFT LICENSE APPLICATION**



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April 2014

Comment Number	Organization	Page (of letter)	Comment (Quote or Paraphrase)	District's Response
ARTA-DLA-01	ARTA	1	Throughout the study phase and repeatedly at the Focus Group Meetings, the need for simultaneous access by multiple groups was stressed.	The Districts' study resulted in identifying a cost-effective option for river-egress which represents a substantial improvement over the current methods and recognizes the physical constraints of the Wards Ferry site. This option is a road/trailer ramp at the river-right location allowing one-way traffic. Two-way traffic is not needed to address the primary problems identified and would greatly increase the cost of construction, and thereby, the per boater fee. The physical site limitations caused by the river on one side and the steep hillside on the other, already near its angle of repose, present very real engineering challenges. If money were no object, these constraints might be able to be sufficiently overcome to allow a two lane road and simultaneous, multi-party egress at every possible water level. The Districts have tried to be mindful of the eventual cost to boaters as the Districts are allowed, and plan, to recover such costs. Consistent with the suggestions of the Stanislaus National Forest and the BLM, the option outlined in the Districts' study provides protective side rails over the entire length, which are incorporated directly into the MSE wall once elevation 830 ft is reached. Standard guardrails are provided above this elevation. The road ramp also includes a turn-around suitable for truck and trailer combination and a 15-ft road clear width above the turn-around to accommodate both vehicle and pedestrian use. There are also provisions for a separate access trail to the river's edge to accommodate other users. The turnaround, located near the old abutment minimizes the need to back-up going either up or down the road. Contrary to this comment, the turn-around is adequate for a combination of truck and trailer vehicle. While the site design would allow only one group of boaters to egress at a time, the speed of egress would be much more rapid than occurs at the present time and solves the public safety issues related to positioning cranes on Wards Ferry Bridge.
ARTA-DLA-02	ARTA	2	The proposed solutions describe a single, 10 foot wide access road.... Such minimal improvements, while feasible, do not address the needs that were identified in the focus groups and are unacceptable solutions.	The Districts assert that classifying a \$1 million expenditure for the benefit of whitewater boaters as "minimal" is unfortunate and uncalled for. The improvements proposed for the Ward's Ferry whitewater boating take-out contained in the FLA strike a balance between costs, boater fee, site challenges, and primary purpose of the site.
ARTA-DLA-03	ARTA	2	We would like to see the site developed to include the following basic elements: <ul style="list-style-type: none"> • Water's edge access for multiple, simultaneous groups. As explained during the focus group meetings and site visits, as many as eight groups utilize the Ward's Ferry take-out at the same time. Multi-lane boat ramps with turnarounds are necessary to meet that level of use. Both sides of the reservoir/river may need to be developed. A single, ten-foot wide dead-end road is inadequate. • Two graded foot trails from the bridge to the reservoir/river. Some of the vehicular demands on the take-out can be reduced and the safety of pedestrians can be increased by providing good foot trails. • Toilet facilities. The current vault toilet is better than nothing, but is a far cry from the toilet facilities that have been built at other recreational sites within the project. We would like the Ward's Ferry site to be brought up to the standards of the other Don Pedro recreation 	Accommodating eight groups at once is completely infeasible at the Ward's Ferry site. Having eight groups running the river all at the exact same time would seem to be an overload for the river, and to be contrary to the wilderness experience desired. To the extent that the "pile-up" is a result of the current methods of egress, the proposed improvements will greatly improve the efficiency of river egress. Reducing vandalism is a role for local law enforcement. Providing cell phone service is not the responsibility of the Districts. For further response, see response to ARTA-DLA-1.

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	American Whitewater	AW-DLA-01	<ul style="list-style-type: none"> Secure parking. It is currently unsafe to leave unattended vehicles at Ward's Ferry. We have had our commercial vehicles stolen and vandalized in the past. Overnight use of the Tuolumne River has been reduced because of the inability to leave a vehicle overnight at Ward's Ferry. There is also inadequate space to park, especially if the site is developed to make it more useable. We would like to see more parking spaces made available and for better security to be provided either on-site or nearby. Reliable communication. Currently, there is limited or no emergency communication available from the take-out. The County Sheriff, BLM, USFS, and other law enforcement agencies do not regularly patrol the area because of the communication shortcomings. Cell phone service is unavailable. We would like the Districts to explore installing a repeater station that would provide better communication options for the take-out. 	<ul style="list-style-type: none"> Conduct monitoring of users and user groups over the life of the license. Accommodate both commercial and private whitewater boaters through the construction of gated boat ramps on both sides of the river that extend down to the low water mark and will withstand the scouring of fluctuating river flow. Boat ramps should be at least 20 feet wide. Provide graded footpaths on both sides of the river that extend down to the low water mark. Construct toilet facilities that are in working condition and are open to the public during the whitewater recreation season. Construct a shower and change room like those offered at other Don Pedro Recreation Area facilities. Provide access to potable water. Construct additional secure parking area at Ward's Ferry Bridge or construct an alternative restroom and parking facility nearby. Ward's Ferry, Deer Creek or Deer Flat and provide shuttle transportation. Construct an unobstructed turn around for boater shuttles at Ward's Ferry Bridge or at alternative parking facility. Erect a radio repeater and/or cell tower for use by law enforcement, managing agencies, DPRRA and individual cell phone. Fund recreation payment agreements to provide resources for a coordinated security patrol and presence by BLM, USFS and DPRRA.
	American Whitewater	AW-DLA-02	Hence AW concurs with the National Park Service analysis of the USRRR-03 survey question, "Would you return at this cfs level?" which identifies 200 cfs as the lowest boatable flow. AW recommends that the FLA should consider flow release at a minimum of 200 cfs for boating on the lower Tuolumne during the April-November paddling season.	The Districts note that 200 cfs and 175 cfs were judged to be equally boatable by an overwhelming majority of participants. More than half of the boaters who participated in the study also reported that 150 cfs was boatable. Under the current FERC-required flows, the minimum flow in 50 percent of the years is 250 cfs from June 1 to September 30. If one considers the paddling season to be April through November, flows over 200 cfs under current conditions already occur 88% of the time in April; 95% in May; 56% in June through September; and 75% in October and November; or 70% of the time over the paddling season.

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BLM-DLA-01	BLM	3	BLM believes the Districts should have included PM&Es in the DLA.	Comment noted.
BLM-DLA-02	BLM	4	Consultation Group Measure: This measure would define a consultation group that would cover the portion of the Project upstream of the Don Pedro Powerhouse.	The Districts have incorporated consultation with agencies into management plans proposed in the FLA.
BLM-DLA-03	BLM	4	Anadromous Fish License Opener Measure: This measure would focus on options for reopening the FERC license in the event that anadromous fish are reintroduced upstream of the Don Pedro Dam.	FERC policy governs license reopen conditions. The Districts do not agree that the recommended anadromous fish opener is justified for the Don Pedro Hydroelectric Project.
BLM-DLA-04	BLM	4	Aquatic Water Resource Plan: We expect to see at least the following addressed in this plan: reservoir fish, western pond turtle, riparian vegetation, water temperature, and water quality.	As described in the FLA, resource studies do not indicate Project effects on the reservoir resources noted by the BLM. Therefore, there is no need for the Aquatic Resource Plan recommended for the reservoir. The Districts have proposed a Vegetation Management Plan for the Don Pedro Project.
BLM-DLA-05	BLM	4	Recreation Facilities Plan: This plan will include at the very minimum Licensee contact, Annual Recreation Coordination Meeting, Review of Recreation Developments, Recreation Survey and Monitoring, General Measures for all Recreational Sites, Vegetation Management in Recreation Sites, Recreation Operation, Maintenance, Administration, and Recreation costs, and Recreation Plan Revision.	The Districts have provided a Draft Recreation Resource Management Plan with the FLA and will continue to consult with the BLM regarding the RRMP.
BLM-DLA-06	BLM	4	BLM wants all campgrounds, access roads, toilet facilities, trails, signs, waste treatment facilities, dispersed toilets, roads, dirt or paved listed and identified on a GIS map, as well as providing the GIS shapefiles per the current FERC guidance that are in or adjacent to the project boundary that are on BLM land.	BLM expects all sites to be up to federal, state, and country codes, and meets all ADA requirements. BLM expects to discuss with Licensee's annual project construction projects, repair, replacement, and maintenance of facilities on BLM lands.
BLM-DLA-07	BLM	5	Fire Management Plan: Licensee's will develop a Fire Management Plan that will include pile burning, campfires, notification and written approval by BLM Authorized Officer and other BLM Fire Staff for all Burn plans, season of use, reporting of all project fires to the BLM, and procedures that the licensee will have to abide by while working on BLM land.	An approach to providing ADA accessible recreation is described in the Draft Recreation Resource Management Plan.
BLM-DLA-08	BLM	5	Terrestrial Invasive Species Management Plan: This plan will cover how the licensee will monitor, report and eradicate terrestrial invasive species of plants on BLM lands.	The Draft Vegetation Management Plan submitted with the FLA discusses noxious weed management on BLM lands.
BLM-DLA-09	BLM	5	Aquatic Invasive Species Management Plan: The scope of this plan will include public education and outreach, monitoring, and actions if they are discovered.	The DPRAs participates in state-wide efforts to limit the spread of aquatic invasive species and provides educational materials regarding recommended boat cleaning and other prevention efforts that lake users can do to reduce the spread of aquatic invasive species. The Districts do not believe an additional Aquatic Invasive Species management plan is necessary at this time. The Districts summarize ongoing activities to monitor for aquatic invasive species in Section 3.5 of the FLA. A report, Potential Distribution of Zebra Mussels (<i>Dreissena polymorpha</i>) and Quagga Mussels (<i>Dreissena bugensis</i>) in California, prepared for CDFW, assessed the threat of these mussels to California water bodies based on the mussels' ability to tolerate a range of temperatures, calcium concentrations, pH, dissolved oxygen, and salinity
BLM-DLA-10	BLM	5		

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BLM-DLA-11	BLM	5	Transportation Plan. BLM has not received any information on project roads that cross BLM land including dirt, gravel, and paved roads need to be identified and a condition and maintenance schedule will need to be developed.	(Cohen 2008). Based on its ambient conditions, Don Pedro Reservoir is not considered to be particularly vulnerable to colonization.
BLM-DLA-12	BLM	5	Large Woody Debris Management Plan: The BLM notices that the Licensees' use a log boom contraption to capture the large woody material and burns it on bare soil during fall and winter months. BLM is concerned that the Licensees' may be burning on the BLM land which requires a burn plan authorized by BLM. BLM desires a condition that allows large woody debris to pass through the dam and pass through La Grange powerhouse so that it moves downstream where there is a deficiency of large woody debris material rather than burning it in place.	Consistent with study schedules approved by FERC through the ILP's study plan determinations, the Districts conducted a study of LWD in the reservoir and downstream of La Grange Dam. These studies demonstrate that LWD collected in the reservoir is not of sufficient size to serve as habitat for the lower Tuolumne River. In addition, the LWD is collected near the upper end of the reservoir in order to limit its being a public safety hazard for recreationists using the reservoir. DPRAs does not believe the burn occurs on BLM lands but will further confirm if this is the case.
BLM-DLA-13	BLM	5	Visual Resource Plan: This plan will discuss the visual resource that have been studied and any future recommendations to remedy visual impacts.	The Visual Quality Study was conducted consistent with the methods in the Study Plan approved by FERC, and the Don Pedro Project has been evaluated for consistency with the BLM's visual objectives. Based on the results of the approved study, the Districts do not agree that there is a need for a Visual Resource Plan at this time.
BLM-DLA-14	BLM	6	In Exhibit E, please provide a higher resolution map clearly identifying the project facilities. Figure 1.0-1 on page 1-2; Figures 3.9-1 on page 3-17, same for Figures 3.9-2, 3.9-3, 3.9-4, and Figure 3.9-5 on page 3-187.	The Districts will review figures in the FLA for clarity. In addition, GIS shapefiles with facilities locations will be provided to the BLM.
BLM-DLA-15	BLM	6	Please provide Exhibit F&G maps and GIS shapefiles per the current FERC guidance	The FLA contains Exhibit F and G, and corresponding shapefiles, consistent with FERC guidelines.
BLM-DLA-16	BLM	6	Facilities and road maintenance: There should be no application of herbicides on BLM lands unless specific stipulations are met. BLM needs to have all roadways used by the Licensees' the public, or other authorized users, identified that are on BLM land that are both within and outside the project boundary.	On BLM lands, herbicides will only be applied in full compliance with BLM standards. The Districts have provided a Draft Vegetation Management Plan with the FLA which addresses procedures for consultation regarding herbicide use and other vegetation management activities on BLM land.
BLM-DLA-17	BLM	6-7	Recreation Area Maintenance: There should be no application of herbicides on BLM lands unless specific stipulations are met, and will be included in the Terrestrial Invasive Species Management Plan. Burro (sic) Blasting may require additional authorizations.	See response to BLM-DLA-16.
BLM-DLA-18	BLM	8	BLM fully expects the Districts to build and maintain a whitewater boating takeout at Wards Ferry.	The Ward's Ferry Bridge is the first means of public access to the Tuolumne River below the designated Wild & Scenic river segment. The major factors limiting the usefulness of the Ward's Ferry site are the physical site constraints. This is not a Project effect. Nevertheless, the Districts are proposing to design and construct improvements at Ward's Ferry to improve public safety during river-egress. Licensees are allowed to recover their costs associated with providing recreation-related facilities. The Districts have proposed a partnership between USFS, BLM, and boaters, and the Districts related to future maintenance to keep boater fees as low as possible.
BLM-DLA-19	BLM	8	Law enforcement needs to be able to communicate outside the canyon at the take-out site. Having higher frequency patrols in the Wards	Neither the DPRAs, nor the Don Pedro Project, nor local law enforcement can prevent vandalism at the Wards Ferry site. There are no fences or facilities that

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			Ferry Takeout Area will be necessary to enforce rules and regulation, protecting facility improvements from vandalism at the site, and providing safety for the users.	can be made completely safe from vandalism. The best approach is for local law enforcement to include the location on their regular patrols. Cell phone coverage is not the Districts' responsibility.
BLM-DLA-20	BLM	9	The number of boaters that are being reported by the USFS over the years has some serious flaws that can be attributed to various reasons: listed in document pp. 9-10.	The Districts note that USFS provided quantitative annual use estimates to the relicensing record. Nationally, participation in all types of kayaking (recreational, sea, and whitewater) has increased since 2010, with the majority of participants engaging in recreational (i.e., not whitewater) kayaking. Participation in whitewater rafting has been steady since 2010 according to the Coleman and Outdoor Foundation (2013)*. See also response to CG-DLA-27. Citation: 2013 Coleman and Outdoor Foundation, 2013 . Special Report on Paddlesports.
BLM-DLA-21	BLM	10	Licensees and agencies need to agree on a take-out design that meets everyone's needs. BLM looks forward in working with the Licensees' and relicensing participants on the Wards Ferry takeout design, and the resource issues that will provide for a safe boating takeout facility, and a safe user experience.	See above responses. The Districts are proposing to design and construct improvements at the Ward's Ferry site as presented in the FLA..
BLM-DLA-22	BLM	10	The Vegetation Management Plan should include the following: Revegetation Guidelines and Criteria, Revegetation Methods, Revegetation Monitoring and Consultation, VELB Management, General Vegetation Management for Facilities, Recreation Sites and Hazard Trees, Annual Consultation and Rare Plant Survey Requirements, and Sensitive Areas Protection including Special-status Plants mitigation.	A draft Vegetation Management Plan has been provided with the FLA.
BLM-DLA-23	BLM	13	BLM agrees with the need to submit a Bald Eagle Management Plan as the licensees have suggested they will do in the FLA. This plan should include the following sections: Nest Surveys, Nest buffers (physical and temporal), Mitigation against disturbances, Annual awareness training, Annual consultation meeting, Reporting, Plan revisions	A draft Bald Eagle Management Plan has been provided with the FLA.
BLM-DLA-24	BLM	13	BLM is concerned with potential and existing disturbances for two endangered plant species: Layne's ragwort and California vervain. Mitigations for impacts such as dispersed recreation near plants, noxious weed occurrences and cattle grazing will be addressed in the Vegetation Management Plan and Recreation Plan for those occurrences on BLM lands	The draft Vegetation Management Plan provided with the FLA covers these items.
BLM-DLA-25	BLM	14	Facility Capacity: Wards Ferry needs substantial improvements to support the current demand, and improved safety on par with other launch site facilities located within the project.	See above responses. The site conditions at Ward's Ferry are completely different than those at other DPR facilities, and the fundamental purpose and use of the Ward's Ferry take-out is different than other DPR recreation sites. These factors lead to a substantially different design, a design also intended to not impose high fees on users.
BLM-DLA-26	BLM	14	User conflicts occur at most take-out facilities and should be looked at as a challenge in the design rather than a reason not to make critical safety improvements	In frequent (i.e., peaky) use by whitewater boaters at Ward's Ferry challenges site design for this location due to the potential for other users to crowd and overwhelm the site. This point has been considered in the current site planning and design.
BLM-DLA-27	BLM	15	The estimate of 695k - 760k is too low, and estimates need to be re-analyzed by an independent engineering company. The Wards Ferry site has old bridge abutments that will be part of the project. These	The Districts have modified the layout and configuration based on comments provided by the relicensing participants. Updated cost estimates are provided in the FLA.

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			abutments were originally built on 1875. The cultural resource reports that would evaluate the significance of the abutments are not complete, so the impacts to the cost of this project are not known.	
BLM-DLA-28	BLM	15	Blue Oak Campground: BLM will ask the licensee to upgrade the sites and facilities that are on the BLM to fully accessible,...BLM also should be provided any permitted uses DPRAs allows on BLM land. Please provide GIS shapefile maps for all structures located on or adjacent to BLM lands that are within the Project Boundary (i.e. Sewage Dump Station).	The Districts will provide the requested information and work with BLM to assess which, if any, public use facilities on BLM land should be upgraded to improve accessibility.
BLM-DLA-29	BLM	15		The Districts will provide the electronic GIS shapefiles to the BLM as requested.
BLM-DLA-30	BLM	15	Trails and trail safety need to be evaluated at Ward's Ferry Bridge.	See responses to Tou Co-Water-DLA-6.
BLM-DLA-31	BLM	16	The BLM disagrees with the evaluation of the toilet at Wards Ferry as being in "good condition" as it is not open year round and blocks public access the river left side.	The vault toilet building does not block pedestrian access to the river left shoreline. The facility condition assessment was intended to assess the physical condition of facilities, not hours or seasons of operation.
BLM-DLA-32	BLM	17	The BLM hopes the Districts will not ignore the inventory above Turnback Creek which is within the APE at the terminus of the Mohican Mine trail terminus. If the Licensee refuses to do this inventory then the BLM needs to meet with the consultants in the field and verify for ourselves that it is too dangerous to inventory.	The Districts have not refused to complete the inventory of the APE above Wards Ferry Bridge, which includes the portion of the APE above and below Turnback Creek. The Districts have agreed to survey this area when water levels are higher, approaching a level of 825 to near the 830 foot mark, when motorized boats can safely travel to the upper end of the APE, to the Turnback Creek area. The Districts contend that it is unsafe to access this area via whitewater rafting and/or hiking in by a steep, rocky trail. As BLM experts acknowledge, completing a cultural resources survey of the area entails a good deal more than simply accessing the area. An adequate cultural resources survey consists of walking pedestrian survey transects spaced no more than 15-20 meters apart. Attempting this level of effort by getting in and out of a raft and/or via a steep, rocky trail is unsafe and beyond a reasonable level of effort. While we appreciate the BLM's proposed alternative access, the Districts still have concerns regarding safely accessing the site.
CDFW-DLA-01	CDFW	pg. 1	The Districts describe how they began construction on the original Don Pedro Project in 1919 and, with subsequent enlargement in 1930, were issued a license by the Federal Power Commission. In the 1950s the Districts sought to further expand their water rights and storage capacity at Don Pedro and undertook a licensing process for a new dam. In 1964 the Commission issued a 50-year license to the Districts for the operation of the "new" Don Pedro (Commission Project No. 2299). CDFW is concerned that the DLA characterizes this much larger new development as beneficial to the aquatic resources of the Tuolumne River.	Section 4.0 of Exhibit E discusses all cumulative effects on the lower Tuolumne River, including a discussion of benefits of cooler water and minimum flows provided under the current license conditions.
CDFW-DLA-02	CDFW	pg. 2	As a general comment, some sections provide comprehensive descriptions and analyses; however, other sections, such as the direct impacts of the Project on Water and Fish and Aquatic Resources, are uneven and incomplete with significant Project effects omitted from the analysis.	Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed. Until these studies are completed, the Districts are unable to fully assess the cumulative effects to these resources, or complete their assessment of the costs and benefits of potential PM&E measures intended to enhance the resources of the lower Tuolumne River.
CDFW-DLA-03	CDFW	pg. 2	Given the voluminous administrative record, the failure to identify: 1) Project impacts on water and fish and aquatic resources; or 2)	Don Pedro Project effects on water resources and fish and aquatic resources have been extensively evaluated in the DLA and FLA and through the many

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			appropriate PM&E measures represents a serious deficiency in the DLA.	studies conducted as part of relicensing. Several important studies involving the resources of the lower Tuolumne River have yet to be completed. Until these studies are completed, the Districts are unable to complete an assessment of the cumulative effects to these resources, or complete their assessment of the costs and benefits of potential PM&E measures intended to enhance the resources of the lower Tuolumne River. One of the critical studies to be performed had to be delayed due to CDFW concerns related to drought conditions.
CDFW-DLA-04	CDFW	pg. 3	...CDFW could not find any discussion of the role Project facilities and operations play in contributing to the impaired water temperatures in this Water Resources section. Instead, the Districts conclude that under existing base case conditions, water temperatures in the "directly affected reach" downstream of the Project meet the Central Valley Region Water Quality Control Board (CVRWQCB) 1998 Basin Plan (Basin Plan) water temperature objective and do not directly affect any designated beneficial uses (page 3-60). The only direct Project impact on water temperature that the DLA acknowledges is the annual stratification of water stored within the Don Pedro Reservoir and the associated ability to release cooler than normal water to the Tuolumne River during the late summer and early fall. This is an extremely narrow interpretation of what constitutes a directly impacted reach, though there is no clear description of how the Districts determined the geographic extent of Project effects within the Environmental Analysis section of the DLA... To assist the Districts as they proceed in this relicensing with assessing water temperature objectives and Project impacts to designated beneficial uses, CDFW is providing the following excerpt from the United States Environmental Protection Agency (EPA) Region 9 October 11, 2011 "Additions to California's 2008-2010 303(d) List."	See Appendix A, "Assessment of Don Pedro Project Operations to Meet EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards".
CDFW-	CDFW	pg. 4	This EPA analysis [EPA 2011, page 21] underlying the 303(d) listing	See the Appendix A, "Assessment of Don Pedro Project Operations to Meet

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CDFW-DLA-06	CDFW	pg. 4-5	As an example of direct Project impacts on water temperature and beneficial uses, please refer to Figure 1, Tuolumne Spring Flow and Temperature... It is clear that under the relatively low base flow release (early 2012 was classified as a Dry Water year type), water temperatures rapidly rose to above the EPA benchmark for Chinook salmon juvenile rearing of 16 degrees Celsius (C). Then when flows released from the Project increased to 2,000 cubic feet per second (cfs) for the three-day study pulse period, water temperatures dramatically dropped and were suitable for juvenile salmon outmigration all the way down to the lower monitoring station, on 3 miles from the mouth of the Tuolumne River... This secondary pulse resulted in similar water temperature improvements at the intermediate monitoring station, though the smaller volume was unable to carry the temperature benefit all the way to the confluence.	See Appendix A, "Assessment of Don Pedro Project Operations to Meet EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards".
CDFW-DLA-07	CDFW	pg. 5	The Districts only acknowledge adverse Project impacts on water temperature in the lower Tuolumne River in the cumulative impacts section 4.3.2. CDFW does not consider Project impacts on water temperature to be solely cumulative but also direct and indirect and appropriate for consideration within an environmental analysis.	Direct impacts of the Don Pedro Hydroelectric Project are limited to the reach between Don Pedro Dam and La Grange Dam. To ignore all the past and present actions affecting the resources of the Tuolumne River, including the introduction of non-native predator species by CDFW, only serves to make finding solutions more difficult and does not positively contribute to identifying viable solutions that attempt to meet all beneficial uses. The entire natural environment of the lower Tuolumne River has been permanently and extensively altered through a host of factors, including in-channel mining of substrates for gold and gravel, levee construction, urban and agricultural encroachment, gravel mining of the floodplain, riparian diversions, agricultural runoff, and the introduction of multiple non-native species that prey on salmonids. However, Don Pedro Reservoir has not contributed to temperature impairment in the lower Tuolumne River. The Don Pedro Project has a cooling effect on river temperatures from May through October when compared to inflow temperatures. Cold water discharges from Don Pedro Reservoir, compared to unimpaired flows, produces a cooling effect to at least RM 34 under base case conditions. See also the appended <i>Assessment of Don Pedro Operations To Meet EPA Region 10 Guidance For Pacific Northwest State and Tribal Temperature Water Quality Standards</i> . In any event, whether the impact is direct, indirect or cumulative is irrelevant as the Districts have modeled temperatures at a level of detail sufficient to analyze impacts no matter how such impacts are categorized.
CDFW-DLA-08	CDFW	pg. 6	By omitting discussion of Project impacts on water quantity and quality in this section, the DLA does a disservice to readers attempting to understand Project effects and develop appropriate mitigation measures. In contrast, several other factors that have a much less direct nexus with Project facilities and operations (e.g. redd superimposition and predation) receive lengthy discussion within the environmental analysis portion of the DLA. CDFW is concerned with the uneven presentation, especially because potential PM&E measures to address impaired water temperature and support beneficial uses are	See Appendix A, "Assessment of Don Pedro Project Operations to Meet EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards".

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CDFW-DLA-09	CDFW	pg. 6	Even though the Districts' construction and operation of both Don Pedro Projects was one of the most significant impacts on Tuolumne River anadromous fish distribution in the past 100 years, the Project's role in the decline of anadromous fish populations is never directly mentioned. Given the stated purpose of Exhibit E, this is a significant oversight and needs to be addressed.	The Districts' FLA fully discusses the direct impacts of the Proposed Action, as well as cumulative effects of all actions in the lower Tuolumne River.
CDFW-DLA-10	CDFW	pg. 6-7	Surveys conducted by James Houk (CDFW, retired) at the Don Pedro Reservoir from 1998 through 2003 found that Sacramento sucker, green sunfish, and common carp were all part of the fisheries composition of the lake during that period (see Houk, 2002 and 2003). ... In general, CDFW concurs with the DLA conclusions that the Black Bass and Salmonid populations in Don Pedro Reservoir are in good condition and that the reservoir provides a variety of angling opportunities. The reservoir fluctuation levels during the bass nesting season under current operations are typically stable enough to ensure acceptable levels of survival for the warm water fish populations. In contrast, the cold water species within the reservoir depend on consistent hatchery stocking to persist.	A reference to species identified by Houk has been added to the FLA.
CDFW-DLA-11	CDFW	pg. 7	Because the bottleneck hypotheses are based on limited data and modeling tools that lack peer review, the disproportionate emphasis is not warranted. The corresponding section of Exhibit E in the FLA should emphasize documented impacts (direct and indirect) of continued Project operations on the fish species within the lower Tuolumne River as well as proposed measures to address these impacts.	The Districts have conducted, and continue to conduct comprehensive analysis of available information for the lower Tuolumne River. Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed. Until these studies are completed, the Districts are unable to complete the assessment of the cumulative effects to these resources, or complete their assessment of the costs and benefits of potential PM&E measures intended to enhance the resources of the lower Tuolumne River.
CDFW-DLA-12	CDFW	pg. 7	The DLA sites an average estimate of 44% redd superimposition and 20% egg mortality within the study area between RM 48.8 to RM 51.6 (page 3-82). This presentation implies a fairly significant impact; however, the support for this statement comes from a 1992 report prepared for the Districts by EA Engineering (Districts 1992a), as well as McBain & Trush's Habitat Restoration Plan for the Lower Tuolumne River Corridor prepared in 2000. CDFW has already noted in a letter filed with the Commission that the 1992 study conclusions rely on data collected in 1988 and 1989 from a total of 5 riffles, representing an extremely dated and small sample.	CDFW made no prior comments upon the validity of the intensive 1992 redd superimposition studies when they were summarized in the PAD and made no study requests for a new redd superimposition study. The TID/MID (1992) superimposition studies summarized in the PAD and Synthesis Study (W&AR-05) included redd excavation results confirming disruption of the egg pocket area results in high rates of egg mortality. Emergence trapping was used to estimate the cited egg mortality estimates. The 2012 Redd Mapping Study (W&AR-08) documented observations of apparent redd superimposition, but was not designed to provide additional mortality estimates.
CDFW-DLA-13	CDFW	pg. 8	In the interest of a balanced analysis the FLA should address other potential limiting factors for this life stage, such as elevated water temperature and loss of access to spawning habitat in the upper Tuolumne River Watershed.	The Districts have conducted a comprehensive suite of studies, including W&AR-06 and W&AR-10 that fully review available literature. CDFW improperly dismisses a large body of evidence.
CDFW-DLA-14	CDFW	pg. 8	The District's study found a much smaller effect than past superimposition reports: "during the 2012/2013 sampling season, a measurable degree of redd superimposition was identified in 15.2 percent (99 of 653 total) of Chinook salmon redds" (page 3-85). This revised and better documented estimate should be the starting point for future discussions of redd superimposition.	The 2012/2013 redd mapping surveys were not designed specifically as a redd superimposition study, but were intended to verify that redd superimposition was or was not occurring at current escapement levels. The TRCh model does not rely upon the historical superimposition study results as the basis for its redd superimposition estimates. Instead, redd superimposition is based upon egg pocket area estimates, spawning gravel preferences and a random

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CDFW-DLA-15	CDFW	pg. 8	<p>It is worth noting that while approximately 15% of redd superimposition occurred, this result says nothing about what percentage of mortality, if any, occurred for those eggs contained within redds where superimposition took place. It is important to further note that nothing definitive regarding actual egg mortality can be concluded from redd superimposition studies conducted to date other than that redd superimposition is not a substantially occurring event in the lower Tuolumne River.</p>	<p>probability of redd placement within suitable areas.</p> <p>CDFW made no prior comments upon the validity of the intensive 1992 redd superimposition studies when they were summarized in the PAD and made no study requests for a new redd superimposition study. The TID/MID (1992) superimposition studies summarized in the PAD and Synthesis Study (W&AR-05) included redd excavation results confirming that disruption of the egg pocket area results in high rates of egg mortality. Emergence trapping was used to estimate the cited egg mortality estimates. The 2012 Rredd Mapping Study (W&AR-08) documented observations of apparent redd superimposition, but was not designed to provide additional mortality estimates.</p>
CDFW-DLA-16	CDFW	pg. 9	<p>In contrast to the prominently featured (though inconclusive) issue of redd superimposition, only one sentence summarizes three different analyses of flow impacts on Chinook spawning habitat and briefly refers to Table 3.5-10, without any further discussion (page 3-85). This presentation minimizes both the amount and weight of information available regarding the relationship of flow and Chinook spawning habitat in the Tuolumne River.</p>	<p>The interrelationship of flows with Spawning habitat are well explored as part of the IFIM study (Stillwater Sciences 2013) and are addressed in the cumulative impacts section.</p>
CDFW-DLA-17	CDFW	pg. 9	<p>Options to mitigate the impacts of the Project on instream flow timing, volume and temperature during the spawning and incubation life stage should be addressed in the FLA. At a minimum, potential changes in Project facilities (e.g. water temperature control devices) and operations (e.g. flows that increase the amount of suitable and accessible spawning habitat) should be thoroughly analyzed.</p>	<p>Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed. Until these studies are completed, the Districts are unable to complete an assessment of the cumulative effects to these resources, or complete their assessment of the costs and benefits of potential PM&E measures intended to enhance the resources of the lower Tuolumne River.</p>
CDFW-DLA-18	CDFW	pg. 10	<p>While both studies found predatory fish species inhabiting the lower Tuolumne River, the linkage to Project facilities and operations is not clearly addressed. CDFW has already filed numerous comments on the limitations of the 2012 predation study, particularly the poorly supported extrapolation from data collected under low flow/high temperature conditions to generalized estimates of predation impacts, regardless of Project operations.</p>	<p>There is no linkage to predator species being present in the lower Tuolumne River and Don Pedro Project operations. Since introduced by CDFW, these species have spread throughout the San Joaquin and Sacramento River basins. The results of the 2012 predation study indicated that predation of juvenile salmon on the lower Tuolumne River is a significant cause of mortality to juvenile salmon. CDFW's comments on the draft report were addressed in the final Predation Report. The Districts, as directed by FERC, consulted with CDFW, USFWS, NOAA Fisheries, and other relicensing participants to design a follow-up predation study to be conducted in 2014. The study plan filed with FERC in September 2013 was approved in October 2013, with an added requirement that the Districts must provide a 30 day review period of the draft study report. The Districts have requested a one year extension to conduct the study in 2015 due to permitting and unprecedented drought conditions.</p>
CDFW-DLA-19	CDFW	pg. 10	<p>CDFW reiterates the fundamental concern that to gain a more precise understanding of predator-prey interactions research must encompass the full range of hydrologic conditions.</p>	<p>The 2012 Predation Study was completed in accordance with the FERC-approved study plan. The report confirms that the poor survival of smolts on the Tuolumne River as repeatedly seen in the RST results is likely a function of predation by bass species. The additional predation study design developed in collaboration with relicensing participants, including CDFW, and approved by FERC in October 2013, provides for multiple sampling events. Instream flows would be expected to vary over the course of the study. The Districts have requested a one year extension to conduct the study in 2015 due to permitting and unprecedented drought conditions in 2014. Hydrology in 2015 cannot be predicted, and any new data collected to improve understanding of the</p>

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CDFW-DLA-20	CDFW	pg. 10	The study plan states that variation in flow and temperature affects the composition and distribution of both predatory fish and juvenile salmon. This begs the question of whether future Project license conditions can be designed to reduce predation-related mortality of out-migrant salmon.	influence of predation on outmigrant rearing and migration success would be beneficial. We look forward to CDFW support for the studies it indicates are needed.
CDFW-DLA-21	CDFW	pg. 11	Besides this one study that collected few predators and observed a predation rate of zero, the other Tuolumne River predation studies have been conducted under low flow and warm water temperature conditions (Districts 1992b and 2013c). While the low flow/warm water sampling constrain improved capture rates of predatory species, it did not significantly advance the understanding of predator-prey relationships under a full range of flow and temperature conditions.	See responses to comment CDFW-DLA-18 and CDFW-DLA-19. Additionally, largemouth bass, smallmouth bass, and striped bass are not native to the Tuolumne River. Management of these species, and their impacts to native species such as juvenile Chinook salmon, should not be attributed to Project effects, nor should their presence in the lower Tuolumne River. CDFW introduced these non-native species and is now attempting to use the Districts water in the Don Pedro Reservoir to try to redistribute these predator species during the smolt outmigration. CDFW should be proposing other policy proposals for predator reduction.
CDFW-DLA-22	CDFW	pg. 12	We highlight this finding here as it does not appear in the December 2013 Report's Discussion and Findings Section, which simply noted that tagging results showed overlap in predator and smolt habitat use at all three flows (Districts 2013c, p. 6-12).	The 2012 predation study built upon the knowledge from previous investigations, and is the most comprehensive study of predation conducted in the lower Tuolumne River to date. Analyses of survival between the Waterford and Grayson RSTs, and CWT mark-recapture studies conducted over a larger range of hydrology, have provided information to understand flow-survival relationships and context for interpretation of results from predation investigations.
CDFW-DLA-23	CDFW	pg. 12	CDFW also notes that the December 2013 Report's Discussion and Findings Section repeats an assumption from an early version of the report that, based on differences in rotary screw trap (RST) data, "it is plausible that the overwhelming majority of Chinook salmon mortality in most years could be attributed to predation" (Districts 2013c, p. 6-12). CDFW has mentioned this previously at meetings, but again takes this opportunity to reiterate that the loss of fish between RST locations cannot automatically be attributed to predation.	The statement in the 2013 report is based on estimation of losses between the RSTs relative to independent estimation of losses between the Waterford and Grayson RSTs. It was estimated that the majority of losses between the RSTs during 2012 could be explained by the observed predation rates and predator abundance.
CDFW-DLA-24	CDFW	pg. 13	Given the drought situation in 2014, CDFW does not anticipate supplemental information regarding project effects on predator-prey relationships being filed in the near future.	The Districts have requested, and FERC has granted an extension on the second year Predation Study (to be implemented in 2015).
CDFW-DLA-25	CDFW	pg. 13	While consumption by a predatory species could be the fate of many juvenile salmon, the purpose of the DLA is to inform readers how the Project contributes to this outcome and how potential PM&E measures could address this issue.	Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed. Until these studies are completed, the Districts are unable to fully assess the cumulative effects to these resources, or complete their assessment of the costs and benefits of potential PM&E measures intended to enhance the resources of the lower Tuolumne River.
CDFW-DLA-26	CDFW	pg. 13	Project manipulation of spring flows prevents encroachment onto the floodplain with the frequency and duration that would occur if the Project were not in place. This is a direct consequence of the capacity of the Don Pedro Project, which allows the Districts to capture and	Although the Districts recognize that irrigation water uses of Don Pedro Reservoir limits the amounts of unimpeded flows that may provide floodplain inundation and water temperature benefits suggested in the comment, use of pre-Project conditions as an environmental baseline is inappropriate in FERC's

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CDFW-DLA-27	CDFW	pg. 14	reshape 116% of the annual runoff in the Tuolumne River watershed (Natural Heritage Institute 2003). As the Districts note in the General Description of the Tuolumne River Basin and Don Pedro Project section of Exhibit E, runoff in the foothills coincides with the rainy season (December through March), while runoff from the upper basin occurs during snow melt (April to July) (page 3-3). As indicated by the flows of the registered at the U.S. Geological Survey (USGS) gages on the major tributaries flowing into the Project (1.2776900, 1.1278400, 1.1282000) From 1975 through 2012, the months of May and June consistently had some of the highest mean monthly flows of the year, reflecting the contribution of snowmelt (DLA, Exhibit E, pages 3-23 through 3-25). Based on the USGS gage data, the monthly inflow into the Project during May and June is between 3,400 and 3,600 cfs; however, the mean monthly outflow to the lower Tuolumne River below La Grange in May and June is between 1,900 and 1,400 cfs. This mean monthly reduction of between 1,500 to 2,200 cfs translates into significantly reduced floodplain inundation during the rearing and outmigration life stage. By reducing floodplain inundation, Project operations reduce the ability of juvenile salmon to evade predators and undergo accelerated growth via access to higher quality food sources.	environmental analysis. The Districts have characterized the Cumulative Effects of irrigation, municipal and industrial water uses in the lower Tuolumne River. Food resources within in-channel habitats of the Tuolumne River as well as Chinook salmon health assessments summarized in the Synthesis Study (W&AR-05) do not indicate poor growth conditions outside of flood control releases periods associated with floodplain inundation. Because of the high flows necessary to maintain floodplain inundation, combined with Pulse Flow Study (Stillwater Sciences 2012) observations of low water temperatures within both in-channel and overbank habitats, the Districts disagree with the assertion that floodplain inundation on the Tuolumne River will result in accelerated growth of juvenile Chinook salmon. TRCH modeling results summarized in the Chinook salmon population model study (W&AR-06) indicate that reduced water temperatures associated with extended flood control releases generally results in lower growth rates and later emigration by Chinook salmon smolts. CDFW's hypotheses expressed here are simply not supported by Tuolumne River data.
CDFW-DLA-28	CDFW	pg. 14	Finally, in addition to reducing floodplain inundation frequency and duration, Project storage of spring flood flows also contributes to higher water temperatures during the out migration time frame.	Extensive monitoring data summarized as part of the Synthesis Study (W&AR-05) as well as modeling results suggest that water temperatures remain suitable for Chinook salmon smolt emigration during the overwhelming majority of the emigration period.
CDFW-DLA-29	CDFW	pg. 14	As noted previously in the water resources section, this increase in temperature increases predator activity and physiological stress on young salmon.	While the Districts agree that the majority of salmonid predators in the Tuolumne River are warm-water adapted species, extensive monitoring data summarized as part of the Synthesis Study (W&AR-05) as well as modeling results suggest that the majority of Chinook salmon smolts emigrate from the Tuolumne River at water temperatures well below those considered stressful. Striped bass have been observed throughout the full reach of the lower Tuolumne River at a large range in water temperatures.
CDFW-DLA-30	CDFW	pg. 14	The Districts conclude that this section with a brief acknowledgement that the Pulse Flow Study (Stillwater 2012) showed both increased rearing habitat with increased floodplain inundation and that spring pulse flows during April and May improve out-migrant survival, there is no corresponding proposal to provide PM&E measures to increase floodplain rearing habitat or improve out migrant survival. Again, the omission of both Project effects and appropriate mitigation is a reoccurring flaw in the DLA and should be addressed in the FLA.	In addition to the Districts' review of the USFWS/CDFW/NMFS Draft "Limiting Factor" analysis (Mesick et al 2008), subsequent analyses presented in the Synthesis Study (W&AR-06) and Chinook population model study (W&AR-10) do not support a conclusion that juvenile rearing habitat is limiting Chinook salmon smolt production or that increases in floodplain rearing opportunities will result in measurable population benefits. Furthermore, consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed, including an updated floodplain habitat study as well as predation assessments. Until these studies are completed, the Districts are unable to fully assess the cumulative effects to these resources, or complete their assessment of the costs and benefits of potential PM&E measures intended to enhance the resources of the lower Tuolumne River.
<i>Districts' Response to Comments on DLA April 2014</i>			CDFW considers the existing scientific literature on factors impacting Chinook salmon populations to support the significant role of both	The Districts do not dispute the results of Central Valley floodplain rearing studies on other rivers and have reviewed this information in the Synthesis
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CDFW-DLA-31	CDFW	pg. 15	CDFW reiterates its recommendation that a formal peer review be conducted of the underlying model assumptions and structure.	Study (WA&R-05) as well as including floodplain rearing for juvenile salmonids in the TRCh (W&AR-06) and TROM (W&AR-10) model development. Because of differing opinions on the role and functionality of floodplain habitats for salmonid rearing in the Tuolumne, these models were specifically designed to allow for testing of the relative sensitivity of floodplain and in-channel habitat availability. All results suggest that while high flows may confer outmigration survival benefits as well as extending cool water conditions into May and early June of years with extended flood control releases, Chinook salmon smolt production is relatively insensitive to floodplain habitat availability in the Tuolumne River. Direct comparisons of the floodplain conditions on the Tuolumne River with other rivers are not supportable due to the vast differences in floodplain development, gravel mining, and urban development.
CDFW-DLA-32	CDFW	pg. 15	The characterization that this modeling effort is the product of "substantial involvement of interested parties in accordance with a Workshop Consultation Process used to obtain critical input at key model development stages" (DLA, page 3-81), fails to convey the lack of consensus on model structure, not to mention absence of a concurrence with preliminary findings.	Peer review of the TRCh and TROM models was not recommended or included in the December 2011 FERC Study Plan Determination. However, the modeling approach and model structure was described to stakeholders in detail during a series of public workshops, and a graphical user interface and training in use of the models was provided.
CDFW-DLA-33	CDFW	pg. 16	Even as a place holder, three sentences to sum up Project impacts and proposed environmental measures on a project receiving over a dozen formal comment letters from CDFW alone since 2011 does not represent a good faith effort on the part of the Districts.	The Districts appreciate the participation of CDFW and other relicensing participants in the 5 Workshops associated with the TRCh and TROM model development. Because of comments related to "flow" and "temperature" as limiting factors made well in advance of study completion, substantial effort has been applied to modify the models to consider movement and growth on the basis of temperature and flow. Nevertheless, the Districts are unaware of any specific comments related to lack of consensus on model structure referenced in this CDFW comment.
CDFW-DLA-34	CDFW	pg. 17	The Socioeconomic report conclusion that, "any changes in the Project operations which reduce historical water supplies will have important effects on the many uses of Project water" (page 9-1), does not appear to acknowledge the existing precipitation and water supply variability within the Tuolumne River watershed.	Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed. Until these studies are completed, the Districts are unable to fully assess the cumulative effects to these resources, or complete their assessment of the costs and benefits of potential PM&E measures intended to enhance the resources of the lower Tuolumne River.
CDFW-DLA-35	CDFW	pg. 17	Respective agricultural revenues appear to be affected by commodity prices as well as water supply, weather, and other factors. Specifically, based on CDFW's analysis of the crop report data provided by Stanislaus and Merced counties, between 2000 and 2010, annual variation in total agricultural revenue ranged from a 6% decrease to a 32% increase. Individual variation among different crops was far greater than this. ... CDFW recommends that any future interpretation of socioeconomic impacts of new operational scenarios include comparisons across different water year types to begin to represent the actual range of effects from changes to the Project.	The Socioeconomic study utilizes the existing long record of historical water supply presented in W&AR-02 which includes high flow years and drought years, it is accurate to state the Don Pedro Project allows for a high degree of reliability in water deliveries to M&I users and agriculture.

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CDFW-DLA-36	CDFW	pg. 17-18	<p>The Southern Delta Water Quality (SED) looked at the impacts of requiring releases of 20%, 40%, and 60% of the unimpaired flow regime in the three main San Joaquin River tributaries during the February through June timeframe. The SED relied on some of the same modeling tools, namely the Statewide Agricultural Model (SWAP) and Impact Analysis for Planning (IMPLAN), to perform the socioeconomic analysis. For parties interested in predicted consequences of potential changes in operational scenarios, these analyses are informative. CDFW provided comments on the SED in March 2013 and, given the similarities in modeling tools, reiterates some of the comments, below:</p> <ul style="list-style-type: none"> With a stepwise modeling approach it is important to remember there is increasing uncertainty with each successive model, both because they build on each other, and because they increasingly incorporate more moving parts. The agricultural production and revenue model is subject to considerable uncertainties, especially since agriculture can be (and regularly is) subject to significant external factors outside the model. IMPLAN, is a regional economic model that allows users to quickly develop economic evaluations using simplistic assumptions. For example, the model assumes fixed factors of production and assumes that producers (e.g. farmers) are unable to adjust in any way to changing water supply, prices, or other inputs. As a result, IMPLAN overstates ripple effects on the regional economy from changes in agricultural revenue (e.g. the fertilizer company, the farm laborer, and all the items they buy at local businesses, as well as the local sales taxes they pay, etc.) IMPLAN modeling results are most relevant to the short term. In the long term, which could be as short as five years, farmers adapt, employ new technologies, and shift crops in ways that dampen the impacts. 	<p>The comments provided are not specific to the Districts' analysis completed for W&AR-15. However, in the Updated Study Report filed with the FLA, the Districts have added additional information to section 5.1.5, Model Limitations [of SWAP]. Also, please note that the IMPLAN fix-factors limitation is called out in section 6.2.5, Limitation of I-O Models.</p>
CDFW-DLA-37	CDFW	pg. 18-19	<p>The Districts put responsibility for direct impacts on the water and aquatic resources of the lower Tuolumne River squarely on another Districts' facility, namely La Grange.... CDFW considers the ability of Don Pedro Reservoir to capture and store for subsequent diversion or release as required by the Commission, close to two million acre feet (AF) of the Tuolumne River, a very substantial and direct Project impact. From CDFW's perspective, the quantity and quality of winter in the lower Tuolumne River below La Grange Dam is under the <i>direct control</i> of the Don Pedro Project.</p>	<p>The action being considered by FERC is the issuance of a new license to the Districts to continue generation of hydropower at Don Pedro. Absent hydropower generation, the Don Pedro Project would be operated in essentially the same manner as it is presently.</p>
CDFW-DLA-38	CDFW	pg. 19	<p>The "no changes" approach to LGP serves to reinforce CDFW's concern regarding the Districts' failure to identify Don Pedro Project impacts (direct, indirect, or cumulative) or develop any appropriate PM&E measures for water and for fish and aquatic resources. CDFW recommends the Don Pedro FLA clearly articulate which of the District's hydroelectric projects on the lower Tuolumne River will address ongoing impacts to water and fish and aquatic resources, because currently neither one is proposing to do so.</p>	<p>Comment noted. Section 4.0 of Exhibit E of the FLA discusses all the major factors contributing to cumulative effects on fish and aquatic resources of the lower Tuolumne River.</p>

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CDFW-DLA-39	CDFW	pg. 20	CDFW urges the Districts to take advantage of the expertise and recommendations provided by not only CDFW but also our fellow state and federal resource agencies to produce an FLA that fulfills the requirements of 19 CFR Section 5, 18(b).	The Districts have completed 17 workshops regarding relicensing studies in addition to the required ILP meetings, and appreciate the participation of CDFW and other state and federal agencies during the ILP process. The Districts actively sought out input and involvement of all interested parties, and have either incorporated comments provided or explained the rationale for not doing so.
CDFW-DLA-40	CDFW	pg. 21	The current Project license was originally structured to provide flows and habitat supporting Chinook salmon production that averaged 40,000 fish returning to spawn. This goal was based upon the best information available at that time. Unfortunately, the current trend of the Chinook salmon does not reflect anything like the desired condition envisioned by the Commission when issuing the license in 1964. Instead, the fall-run Chinook salmon production escapement trend has been significantly downward as illustrated in Figure 4 (reproduced from Marston 2007).	Although methodological issues have been previously identified that show the underlying historical baseline population estimates for the AFRP "doubling goal" and other population targets have unquantifiable bias and uncertainty, in order to fully review CDFW's comments and analysis, the Districts are requesting additional information from CDFW, as outlined in the appended information request (Appendix B). The data and analyses supporting all assertions made by relicensing participants must be available to all parties, including the underlying data and methods of analysis. Absent such transparency, these assertions should be given little, if any, weight in the record.
CDFW-DLA-41	CDFW	pg. 27	CDFW recommends that in the FLA the Districts not only acknowledge Project effects (direct, indirect, and cumulative) on this "master" variable but develop appropriate PM&E measures.	Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed. Until these studies are completed, the Districts are unable to fully assess the cumulative effects to these resources, or complete their assessment of the costs and benefits of potential PM&E measures intended to enhance the resources of the lower Tuolumne River.
CDFW-DLA-42	CDFW	pg. 27	A project impact assessment that is missing from the DLA concerns blocked access to historic anadromous fish habitat. CDFW, pursuant to Fish and Game Code Section 5930, has determined that the La Grange and New Don Pedro Dam complex, in there present condition, is impeding upstream migration of salmon and steelhead. To offset this production loss, the Districts should consider how naturally produced salmon and steelhead populations can be augmented with hatchery production from a new hatchery located in the lower Tuolumne River. The Districts would fund the construction, and CDFW operation, of a hatchery with production goals to be determined during the relicensing process.	The Don Pedro Project is not a barrier to any anadromous fish population. The current conditions on the lower Tuolumne River are the baseline for comparisons of alternatives. The Districts are willing to discuss with CDFW the feasibility of a new hatchery, if such discussions take place within a comprehensive framework, as an enhancement measure for fall-run Chinook salmon.
CDFW-DLA-43	CDFW	pg. 27	New license conditions addressing Project impacts to water quality and quantity have yet to be proposed, much less finalized. This is a serious omission.	Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed. Until these studies are completed, the Districts are unable to fully assess the cumulative effects to these resources, or complete their assessment of the costs and benefits of potential PM&E measures intended to enhance the resources of the lower Tuolumne River.
CDFW-DLA-44	CDFW	pg. 27	CDFW looks forward to working with other relicensing parties to develop appropriate water and aquatic resource PM&E measures prior to submission of the FLA.	Comment noted. We appreciate CDFW's intent to collaborate with all relicensing participants, including the licensees.
CDFW-DLA-37	CDFW	pg. 18-19	The Districts put responsibility for direct impacts on the water and aquatic resources of the lower Tuolumne River squarely on another Districts facility, namely La Grange.... CDFW considers the ability of Don Pedro Reservoir to capture and store for subsequent diversion or	The action being considered by FERC is the issuance of a new license to the Districts to continue generation of hydropower at Don Pedro. Absent hydropower generation, the Don Pedro Project would be operated in essentially the same manner as it is presently.

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			release as required by the Commission, close to tow two million acre feet (AF) of the Tuolumne River, a very substantial and direct Project impact. From CDFW's perspective, the quantity and quality of winter in the lower Tuolumne River below La Grange Dam is under the <i>direct</i> control of the Don Pedro Project.	
CG-DLA-01	Conversation Groups (CG)	1	We disagree with the Districts' omission of PM&Es from the DLA. We recommend PM&E measures the Districts should consider in preparing the FLA, but focus our comments on whether there is adequate information in the DLA and USR to support findings regarding the extent and significance of project effects on beneficial uses.	Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed. Until these studies are completed, the Districts are unable to fully assess the cumulative effects to these resources, or complete their assessment of the costs and benefits of potential PM&E measures intended to enhance the resources of the lower Tuolumne River.
CG-DLA-02	CG	2	Pursuant to 18 C.F.R. § 5.15(F), we also request that the Districts provide, or that the Office of Energy Project (OEP) directs the Districts to provide, additional information prior to filing the FLA so that the application provides an adequate basis for OEP's environmental analysis (see 18 C.F.R. § 38.03) and development and study of alternatives. There is good cause for the additional information requests. As stated above, the Districts' DLA and USR Meeting Summary make findings that we dispute.	Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed. Until these studies are completed, the Districts are unable to fully assess the cumulative effects to these resources, or complete their assessment of the costs and benefits of potential PM&E measures intended to enhance the resources of the lower Tuolumne River.
CG-DLA-03	CG	2	Additional information is needed to evaluate project effects on beneficial uses of the Tuolumne River.	See Appendix A, "Assessment of Don Pedro Project Operations to Meet EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards".
CG-DLA-04	CG	3	The Districts should propose modifications to the Technical Advisory Committee process protocols to make it an effective forum for resolving technical disputes.	The Districts are willing to discuss the TAC process protocols.
CG-DLA-05	CG	3	Additional information is needed to evaluate and mitigate project effects on groundwater storage: More information is needed to understand project effects on groundwater hydrology. The FLA should provide updated groundwater data that includes 2008 to present. It should use existing information to quantify the extent of groundwater overdraft, including any variations by location. If the FLA finds instream flow improvements at the project may reduce groundwater recharge, it should evaluate measures to mitigate that impact. Such measures may include construction of recharge facilities, reduction of groundwater pumping within the Districts, and management of out-of-District groundwater pumping."	The Socioeconomic Study quantifies the value of the Don Pedro Project to the local and regional economy under baseline conditions. Socioeconomic models were also developed which will aid the assessment of effects on the local and regional economy resulting from changes to those baseline conditions. Similar requests for consideration of alternatives dealing with non-hydropower purposes of the project have already been addressed by FERC in its SD2. To the extent these requests for "additional analysis" are a request to study "other measures that could offset reductions in water deliveries" or reducing irrigation, FERC has already addressed the relevance of such measures to the Don Pedro Project relicensing when it stated in the SD2 that "...alternatives that address the consumptive use of water in the Tuolumne River through construction of new structures or methods designed to alter or reduce consumptive use of water... are alternative mitigation strategies that could not replace the Don Pedro hydroelectric project. As such, these recommended alternatives do not satisfy the NEPA purpose and scope for the proposed action and are not reasonable alternatives for the NEPA analysis.
CG-DLA-06	CG	4	Additional information is needed to evaluate and mitigate project effects on fall-run Chinook Salmon.	This request for "additional information" gathering is a new study request that does not meet the requirements of the ILP, the CGs requests for additional information are addressed in the Districts' response to comments on the USR, filed with FERC on March 28, 2014.
CG-DLA-07	CG	4	Salmon studies needed to develop PM&Es are incomplete.	Agreed. Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of

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CG-DLA-08	CG	5	Additional information is needed to support the DLA's finding that project effects on spawning habitat are limiting potential increases in the population of Tuolumne River Salmon...the data in the DLA and U R indicate that project effects on spawning habitat are also limiting escapement...First, the project appears to limit flows suitable for spawning (to 70-80% of max WUA)...Second, the project affects the availability of suitable spawning gravel.	Contrary to the CG's comment, flows that provide 70-80% of maximum available habitat in drier water years are not expected to limit populations. In fact, 80% of maximum WUA is typically considered high. And although the quality of certain riffles for spawning has been noted as poor, and previous (or planned) restoration projects include gravel augmentation, up to 1,371,000 sq-ft of suitable spawning habitat is currently available for Chinook salmon at 225 cfs. The maximum run sizes (under the current FERC flow schedule) would range from approximately 48,000 to 60,000 salmon (well above current populations), based on the average redd size estimates from the Tuolumne River and available spawning gravel.
CG-DLA-09	CG	7	Additional information is needed to support the Districts' finding that project effects on rearing habitat are not limiting the success of outmigration.	Both modeling sensitivity analyses conducted as part of the Chinook salmon population model (W&AR-06) study, as well as examination of seining density data in years of low flow following high escapements do not indicate density dependence upon subsequent smolt emigration. Because the referenced Mesick and Marison (2007) limiting factor analysis was never finalized and relies upon preliminary regression analyses of Stanislaus River RST Passage, CG conclusions regarding juvenile rearing habitat limitations for Chinook salmon or linkages to Project operations are unsupported.
CG-DLA-10	CG	9	The FLA should consider flow increases to improve juvenile rearing habitat. Such flow improvements could include flows to improve juvenile rearing in-channel and to improve the regularity, frequency, and duration of floodplain inundation. The FLA should consider flow pulses in February and March to stimulate downstream migration of juvenile Chinook in the fry and parr life stages to diversify the life history strategies of Tuolumne River Chinook. The FLA should consider flow pulses in April and May in order to stimulate outmigration of Chinook in the smolt stage. For all flow pulses, the FLA should consider both long pulses (or simply higher base flows) and short term pulses to stimulate short-term outmigration events.	Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed. Until these studies are completed, the Districts are unable to fully assess the cumulative effects to these resources, or complete their assessment of the costs and benefits of potential PM&E measures intended to enhance the resources of the lower Tuolumne River.
CG-DLA-11	CG	9		The CG appears to be proposing an adaptive management approach to obtain the additional information identified in its comment letter. Relying on "adaptive management" to address inadequate information is not an appropriate license condition and would result in complete uncertainty in what such a license condition might eventually entail. Having undefined, research-oriented conditions in a FERC license puts the licensee in the untenable position of having to determine whether or not to accept the new license when the cost and feasibility of the license conditions are not discernible. The appropriate time to develop sufficient information to inform the development of appropriate license conditions is during the pre-filing process. Adaptive management is intended to be an open-ended, undefined process of experimentation. Adaptive management is employed when there has already been substantial effort to narrow the field of options and to test a limited number of well-developed alternatives to choose one that would be best adapted to the specific project and

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CG-DLA-12	CG	9	In addition, the FLA should consider measures that would complete the channel restoration projects that were previously recommended by the TAC, or alternative projects that are identified in collaboration with resource agencies and Conservation Groups	Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed. Until these studies are completed, the Districts are unable to fully assess the cumulative effects to these resources, or complete their assessment of the costs and benefits of potential PM&E measures intended to enhance the resources of the lower Tuolumne River.
CG-DLA-13	CG	9	The DLA Does Not Contain adequate information to Support a Finding that Predation is a Limiting Factor that Can Be Successfully Addressed with Non-Flow Measures.	The Districts recognize that the introduction of non-native predatory fish species by CDFW and private parties in the past is not controllable through the use of pulse flows. Although the Districts have proposed the evaluation and implementation of various non-flow measures in the past, few of these have been implemented at a scale that would allow for evaluation of population level benefits upon Tuolumne River salmonids.
CG-DLA-15	CG	13	The DLA and Supporting Documents Do Not Accurately characterize the Overall condition of O. mykiss in the Lower Tuolumne River.	We disagree. The DLA and supporting documents compose the best and most recent information available on the condition of O. mykiss in the lower Tuolumne River, including data from long-term field sampling, population modeling, and habitat studies. As noted in numerous submittals and discussed in the Synthesis Study (W&AR-05), O. mykiss presence in the lower Tuolumne River prior to 1996 was practically non-existent with no more than three fish observed in summer snorkel surveys between 1987 and 1995 and much larger numbers documented since the implementation of increased summertime minimum flow requirements since 1996. Although physiological condition assessments cannot be performed on Tuolumne River O. mykiss due to ESA restrictions upon sampling, the increases in relative abundance and evidence of increased downstream habitat use since 1996 are a clear indication of improved conditions for O. mykiss.
CG-DLA-16	CG	14	The DLA Documents Poor conditions for O. mykiss In-River Rearing in the Lower Tuolumne River.	Although the DLA identifies several habitat conditions that may be limiting to the in-river rearing life stage, the DLA also provides evidence that the resident O. mykiss population in the lower Tuolumne River is healthy and self-sustaining. (See response to CG-DLA-15, above.)
CG-DLA-17	CG	16	The O' mykiss Population Model Study Report (W&AR-10), see Fig. 5.1-2, 5.1-3, 5.1-4, takes the number from 2008-2011 snorkel surveys (cited above) and uses them to calibrate the model. The snorkel survey found very low numbers of O mykiss in dry years 2008 and 2009, slightly higher numbers in average water year 2010, and an order of magnitude greater numbers observed in wet year 2011. However, the Population Model predicts only a quarter of the fish that were observed in wet year 2011.	The comment indicates a misunderstanding of the use of the snorkel survey information as calibration data instead of validation data as it was used in the TROn model development (USR W&AR-10). Model calibration relied upon adjustments of growth rates and background mortality parameters to match the observed size and age structure documented in the Scale Collection Study (W&AR-20). The TROn model report provides a discussion on the use of the snorkel survey population estimates, and the limitations of comparing single year model results to snorkel survey counts made under high flow conditions during 2011.
CG-DLA-18	CG	17	The Districts acknowledge that current operation of the project their d fault proposed action limits thermally available habitat for both juvenile and adult O. mykiss, and limits availability of desired depth and velocity of adult O. mykiss.	The comment regarding thermally suitable habitat is consistent with the salmonid synthesis study (W&AR-05) findings that the project contributes to cumulative effects on thermal conditions downstream, but does not necessarily "limit" them. TROn model sensitivity testing and analysis of juvenile productivity as well as year-over-year adult replacement ratio estimates are reduced during dry water year type flow schedules in the base case hydrology. Although the second portion of the comment regarding depth and velocity

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CG-DLA-19	CG	17	<p>However, the Yoshiyama Memo suggests that juveniles should be managed preferentially over adults:</p> <p>Adult 0. mykiss that occur in the Tuolumne River during summer and early fall are presumably resident rainbow trout and are not listed (protected). Hence, flow-related efforts to accommodate those adults should be subordinate to any flow measures needed to protect juvenile 0. mykiss. Those juveniles may include individuals of the anadromous (steelhead) life-history type and, furthermore, represent the future spawning stock that potentially may produce anadromous individuals.</p> <p>Yoshiyama Memo, pp. 4-5. We do not believe this is justified biologically, legally, or as policy. There is competing evidence in the record that recommends against such an approach.</p>	appears to relate to PHABSIM model results, no statements were made in the USR or DLA regarding adult habitat limitations on the basis of depth and velocity.
CG-DLA-20	CG	18	<p>Considering the thermal benefits of flows 300 cfs to all life stages and the physical habitat benefits to adult 0. mykiss choosing a flow requirement of 150 cfs over 300 cfs to achieve a seven percent increase in modeled habitat for juveniles, based on a juveniles-first rational, is not warranted.</p>	<p>The Districts are not aware of the specific “competing evidence in the record” that CDFW refers to. The Yoshiyama memo is simply referring to a strategy that should enhance ESA-listed steelhead populations. The Districts will be requesting the specific “evidence” CDFW refers to looks forward to reviewing and commenting on the information. In any event, that the Districts are not advocating a particular flow management policy specific to juvenile vs. adult <i>O. mykiss</i> at this time.</p>
CG-DLA-21	CG	18	<p>In the interim, we do not believe that the thermal targets suggested by the Yoshiyama Memo are adequate:</p> <p>Water temperatures of 64.5-68°F appear to represent an adequate target-range for practicable flow management in maintaining steelhead-rainbow trout (<i>O. mykiss</i>) during the warmer seasons. Those temperatures are not optimal, but they are not expected to be so highly stressful to the trout as to cause substantial mortalities and significantly impair population viability.</p> <p>Yoshiyama Memo, p. 4.</p> <p>If adopted as management criteria, these targets would maintain the current degraded condition of the lower Tuolumne 0. mykiss fishery. In 2005, the Conservation Groups called for increased summer flows to support both resident and anadromous 0. mykiss. See Motion to Intervene ¶ 44-49. The current constriction of thermally suitable summer habitat in the lower Tuolumne, down to one to four miles in half of all water years, will not allow the Tuolumne River to reach the critical mass sufficient to support a consistent 0. mykiss fishery.</p>	<p>Using the results of prior IFIM studies conducted by USFWS and CDFW, the Yoshiyama and Moyle (2012) memorandum reference to these studies does, however, illustrate a tradeoff in WUA and suitable temperatures for over-summering juveniles vs. adult <i>O. mykiss</i>. TROM modeling results that integrate more recent PHABSIM modeling results with bioenergetic and potential water temperature mortality effects suggest that juvenile <i>O. mykiss</i> production as well as adult replacement increases with increases above the 50 cfs minimum flows associated with Critical WY conditions. Because specific flow schedules and their timing were not requested for evaluation, the Districts do not agree with the WUA based comparisons of habitat conditions at 150 cfs and 300 cfs in the comment. However, CDFW does not make it clear why such an approach is not warranted.</p>
CG-DLA-22	CG	18	<p>The Causes of an Anadromous Life-History of Tuolumne River 0. mykiss are Not Well Understood.</p>	<p>The Districts acknowledge various theories regarding factors that influence expression of anadromy in <i>O. mykiss</i>. While both “proximate” (physiological mechanisms) and “ultimate” (natural selection) factors may influence this expression in individual <i>O. mykiss</i>, the prevailing scientific evidence indicates</p>

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CG-DLA-23	CG		Recommendations: The FLA should include measures to stabilize and increase the <i>O. mykiss</i> population in the lower Tuolumne River. Whether this may reduce the likelihood of anadromy is a second order question. Low flows prior to 1996 certainly did not increase the steelhead population. <i>O. mykiss</i> juveniles that survive oversummering in the Tuolumne River are 100% more likely to adopt an anadromous life history than <i>O. mykiss</i> juveniles that do not survive oversummering.	that downstream factors are far more important than river factors in influencing smolt-to-adult survival. Because Project operations have no plausible linkage to conditions affecting this portion of Central Valley steelhead life history, the primary focus of information reviews and population modeling conducted as part of relicensing has been for the freshwater residency period in the Tuolumne River itself. The TROM model was developed in accordance with the approved study plan to examine in-river conditions affecting <i>O. mykiss</i> production, only. Separate from these analyses, the TROM report also includes discussion of several in-river "factors" contributing to <i>O. mykiss</i> residency and anadromy including water temperatures, food availability, and the balance of risks versus benefits of life history selection such as poor Delta survival.
CG-DLA-24	CG	20	The data reported in the DLA indicate that oversummering conditions are the primary limiting factor for <i>O. mykiss</i> in the lower Tuolumne River. The FLA should evaluate increasing summer flows to 300 cfs in all years. The water cost of increased summer flow could be mitigated in significant part by completion of the Infiltration Galley/Turlock Area Drinking Water Project at Geer Road (River Mile 26).	Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed. Until these studies are completed, the Districts are unable to fully assess the cumulative effects to these resources, or complete their assessment of the costs and benefits of potential PM&E measures intended to enhance the resources of the lower Tuolumne River.
CG-DLA-25	CG	20	The FLA should propose measures to improve the physical habitat conditions in each of these categories.	Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed. Until these studies are completed, the Districts are unable to fully assess the cumulative effects to these resources, or complete their assessment of the costs and benefits of potential PM&E measures intended to enhance the resources of the lower Tuolumne River.
CG-DLA-26	CG	20	Additional Information is Needed to Evaluate and Mitigate Project Effects on Whitewater Recreation.	The DLA does not acknowledge that the hydroelectric project has unavoidable adverse effects on whitewater recreation, rather the DLA states "[t]he Project's creation of a flatwater recreation resource may be considered by whitewater enthusiasts as an unavoidable adverse effect" (DLA Exhibit E 3.9.4, page 3-200). Nor does the DLA state that "these unavoidable effects are offset by the benefits to whitewater recreation upstream." Regardless of these misrepresentations in the Conservation Groups' comment letter, it is true that the Districts propose improvements to the Wards Ferry Bridge whitewater take-out location. While the Ward's Ferry take-out is not a "project facility" and the Districts are not proposing that it become one, The Ward's Ferry Bridge happens to be the first road access at the end of a whitewater boating trip and the Don Pedro Project has no particular relationship to the ongoing whitewater boating on the Tuolumne River except for the Project Boundary extending to and above the bridge crossing. The Ward's Ferry site is not a recreational facility in the same sense as the Districts' facilities on the reservoir. These

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CG-DLA-27	CG	21	The DLA Does Not Estimate Future Demand for Whitewater Recreation.	developed sites are designed for day use and longer stays by the public users of these project lands and waters. It is notable that visitors to the Don Pedro Reservoir recreation sites pay substantial use fees that support site maintenance and improvements. Wards Ferry is a remote river-access site. The whitewater wilderness trip is over at this point and the purpose and use of the site is specifically not to stay there for any length of time . It is a terminus, not a destination for recreationists to use the site for recreation.
CG-DLA-28	CG	21	The DLA Considers Improvements to the Whitewater Not to Other Related Take-Out Facilities.	A review of the literature cited by the Conservation Groups (CDBW 2009) reveals that the noted projected use increase is for all non-motorized boating activities taken together; whitewater boating is not projected separately from other types of non-motorized boating. Other statistics in the same report indicate that whitewater kayaks make-up 10 percent of all kayak types in California (page ES-3) and that annual commercial whitewater rafting participation numbers through 2006 on six Central Valley Region Rivers (including the Tuolumne) vary from year-to-year, with the highest participation occurring in 1990, 1995, 1998, and 2000 on the various reported reaches (page D-17). The Districts also note that Conservation Groups opine that use will increase if the take-out site is improved without providing any evidence to support the opinion. The Districts believe whitewater boating use is driven by flows and the nature of the whitewater resource, not the condition of take-out (or put-in) locations. CITATION: California Department of Boating and Waterways. 2009. Non-Motorized Boating in California. Sacramento, CA.
CG-DLA-29	CG	24	The DLA: Does Not Resolve the Lowest Boatable Flow.	The DLA does not identify lack of safe, efficient take-out facilities as a limiting factor on whitewater recreation. This hypothesis has been asserted by others without any supporting information. It is an unsubstantiated opinion. Regarding improvements to the Wards Ferry Bridge take-out location, see the response to Toul Co-Water-DLA-4,5,6 and CG-DLA-26.
CG-DLA-31	CG	33	The FLA Should Propose Measures to Mitigate the Direct and Cumulative Effects of Project Operations for AU Purposes.	Final site design for the proposed Ward's Ferry Bridge whitewater boating take-out will include necessary safety improvements for vehicle ingress/egress to and whitewater boater use of the site. Alterations within the County road right-of-way will be coordinated with the County.
CG-DLA-32	CG	35	The DLA Does Not Include Sufficient Information Regarding Other In-Basin Actions to-Evaluate the Project's Cumulative Effects.	The CGs have made several claims regarding the degree of analysis of cumulative effects required under NEPA, and the requirement to "mitigate" such effects. The Districts respond to these claims in Appendix C to this response to DLA comments.
CG-DLA-33	CG	39	The Final License Application Should Describe the Specific Basis for And Findings of Consistency with Comprehensive Plans.	The Districts have included a review of qualified Comprehensive Plans in Section 6.0 of Exhibit E of the FLA.
FERC-DLA-01	FERC	pg. 2	Pursuant to section 5.22 of the Commission's regulations, the Commission may find that the Final License Application (FLA) is not ready for environmental analysis until the results of all studies are filed. These studies shall be completed and filed either with the final license application or consistent with the schedule outlined in the draft license application or any Commission- approved schedule change .	Section 1.0 of Exhibit E in this FLA provides a detailed schedule for completing the remaining in progress studies, assessing alternatives, developing FM&Es, and amending necessary exhibits.
FERC-	FERC	pg. 2	We expect that the FLA will provide, by resource area, any proposed	The Districts have provided Draft Management Plans for terrestrial, recreation,

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DLA-02			new environmental measures, including but not limited to, changes in project design or operations, and to address the environmental effects of your proposed PM&E measures, as required by section 5.18(b)(5)(ii)(c) of the Commission regulations.	and cultural resources where studies have been completed.
FERC-DLA-03	FERC	pg. 2	For the resource areas with incomplete studies the FLA must include a detailed schedule for completing the studies and for proposing environmental protection or enhancement measures, or changes in project design or operations as mitigation, and to address the environmental effects of the proposed measures.	A schedule is provided in Section 1.0 of Exhibit E.
FERC-DLA-04	FERC	Appendix A pg. 1	Please ensure that all acronyms and abbreviations are defined in the FLA.	The Districts have included a comprehensive acronym list at the beginning of each Exhibit.
FERC-DLA-05	FERC	Appendix A pg. 1	We expect that the FLA will include results of temperature model runs using the EPA (2003) criteria over the range of water year classifications determined by the California State Water Board's San Joaquin Basin Water Supply Index and the California Water Resources Department April 1 San Joaquin Valley unimpaired runoff forecast. In addition, the results of the temperature model runs using EPA (2003) criteria should be used as input to the W&AR-6, Chinook Salmon Population Model and in the W&AR-10, O. mykiss Population Study for all salmonid life stages included in the models.	See Appendix A, "Assessment of Don Pedro Project Operations to Meet EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards".
FERC-DLA-06	FERC	Appendix A pg. 1	In pre-filing meetings, the resource agencies have suggested that increased flows in February and March would improve out-migrant success for juvenile Chinook that leave the Tuolumne River as fry. In section 3.5.4.1.2 you say that increased flows could improve out-migrant survival of juvenile Chinook salmon smolts in April and May but you do not address fry. We expect the FLA to provide a detailed analysis of increased flows in February and March to improve survival of juvenile Chinook that leave the Tuolumne River as fry.	Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed. Until these studies are completed, the Districts are unable to fully assess the cumulative effects to these resources, or complete their assessment of the costs and benefits of potential PM&E measures intended to enhance the resources of the lower Tuolumne River.
FERC-DLA-07	FERC	Appendix A pg. 2	The plan included in the FLA should include details sufficient for understanding how nests would be protected and access would be restricted, and descriptions of how employees would be trained. Methodologies and sources of training materials should be thoroughly cited.	Details of the proposed measures are included in the Draft Bald Eagle Management Plan submitted with the FLA.
FERC-DLA-08	FERC	Appendix A pg. 2	The management plan included in the FLA contains details sufficient for understanding how the bat roost would be protected.	Proposed measures for protecting the pallid bat roost are incorporated in the draft RRMP submitted with the FLA.
FERC-DLA-09	FERC	Appendix A pg. 2	Therefore, the proposed Vegetation Management Plan included in the FLA should minimally include the following information: 1) all proposed BMPs, including citations; 2) adequate descriptions of the proposed chemical and mechanical methods for controlling noxious weeds, including frequency and timing; and 3) a complete list of the proposed measures to protect state- and federally-listed plants, including a discussion of how each species would be protected by the measures, relative to project effects. This information is necessary for our environmental analysis on the proposed measures and management plans included in the FLA.	These details are included in the Draft Vegetation Management Plan submitted with the FLA.
NMFSb-DLA-01	NMFS	Pg. 1	NMFS' notes the complete absence of any PM&E measures related to aquatic habitat, flow and temperature regimes, and channel conditions	Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the

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NMFSb-DLA-02	NMFS	Pg. 2	<p>in the lower Tuolumne River. This is despite the obvious, appreciable Project effects and influences: 1) It completely terminates the upstream supply of coarse sediment and large wood by entrainment in Don Pedro Reservoir; 2) It fundamentally alters the frequency, magnitude, and timing of the natural hydrograph (see figures below); 3) It directly, indirectly, and cumulatively impacts water temperatures in the lower river. Therefore, it is astonishing that PM&E measures related to flow, water temperature, sediment, wood, and/or aquatic habitat were not identified as resource areas warranting PM&E proposals in the DLA (with additional details on the measures expected to be provided in the Final License Application).</p>	<p>lower Tuolumne River have yet to be completed. Until these studies are completed, the Districts are unable to fully assess the cumulative effects to these resources, or complete their assessment of the costs and benefits of potential PM&E measures intended to enhance the resources of the lower Tuolumne River.</p>
NMFSb-DLA-03	NMFS	Pg. 2	<p>While the Districts commit to using these tools to analyze to “evaluate a range of alternative operational scenarios” (p. 5-3), they do not propose to use these tools to develop measures intended to mitigate for the Project’s impacts to aquatic habitat and their physical processes and inputs (e.g., water, sediment, and wood) that are prerequisite for proper function and condition.</p>	<p>NMFS is correct, the Districts did develop these tools in order to analyze potential PM&E measures. Until comments on the DLA, no agency has proposed any measures. The Districts look forward to continued consultation with agencies to develop potential model scenario runs. A summary of additional analyses requested by relicensing participants is included in Section 6.0 of the FLA, and the Districts look forward to continued consultation with agencies on these proposed analyses.</p>
NMFSb-DLA-04	NMFS	Pg. 2-3	<p>FERC should not issue a Notice of Project Ready for Environmental Analysis and go forward with its National Environmental Policy Act (NEPA) review, or its Endangered Species Act (ESA) or Magnuson Stevens Fishery Conservation and Management Act (MSA) consultations without a complete Project evaluation and ILP information record. A solid and complete body of information should be assembled, made available and reviewed by ILP participants before FERC determines the Project is ready for environmental analysis.</p> <p>Although the “base case” may represent current Project operations and therefore represent what a “no action” alternative under NEPA might be, this does not mean it can be assumed, without analysis, that the existing Project facilities and operations exert no effects at the present time; the effects of the baseline must be evaluated and, if no effects on a resource are demonstrated, then can it be assumed there are no effects of the “no action” alternative. It also does not mean that, if the “base case” were to become the chosen alternative for a new license, these ongoing effects would not require measures to protect, mitigate, or enhance affected resources, especially with respect to water quantity.</p>	<p>Agreed. In addition, the record before FERC must provide supporting information for all recommended PM&E measures and must show a reasonable connection between a project’s effects and any measure proposed to address such effect.</p>
NMFSb-DLA-05	NMFS	Pg. 3	<p>NMFS does not agree with the Districts’ assessment of the Project’s effects on beneficial uses, especially regarding the Project’s effects on cold water salmonid habitat in the lower Tuolumne River. To claim that the Don Pedro Project only has a direct effect on water temperatures, exerted only in the short reach from Don Pedro Dam to La Grange, is untenable. The regulations of the Council on Environmental Quality for conducting a NEPA review refer to environmental impacts that may be: “(1) direct; (2) indirect; (3) cumulative.” “Indirect effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.</p>	<p>The referenced CEQ regulations are completely in accord with the Districts identification of direct, indirect, and cumulative effects as discussed in the FLA.</p>

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NMFSb-DLA-06	NMFS	Pg. 4	The Project's effects on ESA-listed Central Valley steelhead or its critical habitat will be also be considered and evaluated during ESA consultation, according to the regulations (50 CFR § 402), including the relevant effect and action area definitions: "Action area means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." "Effects of the action refers to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline." (50 CFR § 402.02).	The action being considered by FERC is the issuance of a new license to the Districts to continue generation of hydropower at Don Pedro. Absent hydropower generation, the Don Pedro Project would be operated in essentially the same manner as it is presently.
NMFSb-DLA-07	NMFS	Pg. 4-5	With regard to temperature impairment in the lower Tuolumne River, we refer the Licensees and the Commission to Exhibit DFG-4, filed September 11, 2009, in the Administrative Law Judge (ALJ) Proceeding (FERC Project Nos. 2299-065 and 2299-053); this document is the direct testimony of Dr. Andrew Gordus, a Water Quality Biologist with the California Department of Fish and Wildlife (formerly Department of Fish and Game), and describes how elevated water temperatures in the lower Tuolumne River during critical life stages of the California Central Valley fall-run Chinook salmon (<i>Oncorhynchus tshawytscha</i>) and the California Central Valley steelhead (<i>O. mykiss</i>) are a significant factor in their declines. The testimony presents a summary, based on nine years (1998 through 2006) of in-stream temperature measurements, of the total number of weeks of temperature impairment for anadromous Chinook salmon and Central Valley steelhead using the Tuolumne River. Its Table 1 summary indicates that river temperatures for adult Chinook salmon migration were impaired in 53 of 72 weeks (74%); for Chinook spawning were impaired in 63 of 99 weeks (64%); for Chinook smoltification were impaired in 74 of 126 weeks (59%); and for Central Valley steelhead summer rearing were impaired in 65 of 126 weeks (52%). This information, along with additional temperature information filed in this ILP, clearly suggests the untenable position of the Licensees regarding the Project's effects on downstream thermal water quality conditions.	Comment noted. Additional analysis of water quality in the lower Tuolumne River is added to Section 3.4 and 4.0 of the FLA.
NMFSb-DLA-08	NMFS	Pg. 5	The presence and operation of the Project's Don Pedro Reservoir completely interrupts sediment and LWD flow continuity from upstream to downstream areas; these interruptions are the reason little LWD is currently found in the lower Tuolumne River. Given adequate supplies from upstream, LWD of all sizes would be stored in overbank areas of the lower river as flows recede from the floodplain, and also in log jams within the channel. These accumulations of LWD in the depositional lower Tuolumne River have been severely curtailed as a result of the Project, and the resulting effects include degraded aquatic habitat complexity, including for anadromous fishes. The Project's hydrological effects (decreased frequency, magnitude and inundation of overbank areas) also contribute to the lack of LWD and the degraded habitat complexity in the Tuolumne River, and are discussed further below.	Comment noted. The W&AR-12 study notes that an unknown amount of LWD would accumulate on the floodplain and may contribute to jams if it passed Don Pedro Reservoir and La Grange Reservoir. However, it was also noted that few pieces were sufficiently large relative to the river to have channel forming effects downstream. The overwhelming majority of the LWD would pass through the lower river and end up in the Delta.

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NMFSb-DLA-09	NMFS	Pg. 6	<p>Page 3-78: "The distributions of native and non-native fishes are influenced by water temperature and velocity, which vary by location, season, and in response to flow." Comment: The discussion that follows this statement de-emphasizes the influence of river temperatures on this distribution. We note that the abundances of non-native, warm water species are also greatly influenced by current, baseline river temperatures, regardless of which entity first introduced these species, or how they were introduced.</p> <p>Under low flows there can be no overbank habitat available to avoid predators. The text above suggests that under higher flows there may be pools with high predation risk, and that have no adjacent floodplain habitat available to avoid predation. The text suggests the 2014 Predation Study will further investigate the predation risk in the larger pools where predation may remain high even under higher flows. It is unclear how the results of such study can be fairly interpreted without examining the reach-wide, overall predation risk in greater detail as a function of flow – including in pools with adjacent floodplain habitats and in pools that lack adjacent floodplain habitats. We also note that a defensible Predation Study design must consider factors such as river temperatures and turbidities in the areas investigated, which can be expected to vary with flow (but not always in a linear way, or uniformly within pools and floodplains). River temperatures would be expected to influence the abundances of warm water predators and their consumption rates, and turbidities could affect predation success. If the results of a defensible Predation Study suggest or confirm that predation on juvenile salmonids is likely due under existing Project operations, the information should be used to develop PM&E measures for the Project to reduce the predation effects. Since the predation effects are currently under ongoing investigation (the 2014 Predation Study results are not yet available) the Commission should not press forward to its NEPA analysis until the information is obtained, reviewed, and discussed in detail.</p>	<p>The Districts agree that predation is a significant issue related to the survival of fall-run Chinook smolts. While it may be unimportant which entity first introduced non-native predators as sportfish, to assert that it now falls to the Districts to "fix" the problem by using the water resource it has developed at great expense to try to "redistribute" non-native predators introduced by others goes against any rational notion what is appropriate or justifiable.</p>
NMFSb-DLA-10	NMFS	Pg. 6-7	<p>Anadromous salmonids in the Tuolumne River have adapted to the natural hydrograph typical of watersheds in the Sierra Nevada, which includes a pronounced snowmelt peak followed by flow recession in the spring - hydrologic conditions that would have frequently inundated overbank floodplain areas. Therefore, it is expected that juvenile salmonids are more successful in completing the out-migration portion of their lifecycle under years with higher spring flows, which more closely resemble a natural hydrograph. The major environmental effects of the Don Pedro Project include the reduction in magnitude, frequency, and duration of winter and spring flows in the lower Tuolumne River.</p>	<p>NMFS states that the "major environmental effects of the Don Pedro Project include the reduction in magnitude, frequency, and duration of winter and spring flows in the lower Tuolumne River." NMFS is comparing the current operations of the Don Pedro Project to a "without dam" or "pre-project" condition. Under FERC policy and regulations, as upheld by the courts, such a comparison to pre-project conditions is not useful for consideration of potential PM&E measures and relies on speculation. Many conditions of the Tuolumne River are different now than pre-European settlement, including the extensive destruction of the river's physical habitat and floodplain encroachment due to gravel and gold mining and urban development. The introduction of non-native predator species has completely changed the survival probability of fall-run Chinook smolts. Not every year was a wet year historically, and numerous periods of droughts and low flows occurred. Under unimpaired flow conditions, temperatures along the entire mainstem of the Tuolumne River were unsuitable for <i>O.mkyiss</i> and oversummering salmon. Selective comparisons to pre-project conditions are not useful for the development of</p>
NMFSb-DLA-11a	NMFS	Pg. 11	<p>Anadromous salmonids in the Tuolumne River have adapted to the natural hydrograph typical of watersheds in the Sierra Nevada, which includes a pronounced snowmelt peak followed by flow recession in the spring - hydrologic conditions that would have frequently inundated overbank floodplain areas. Therefore, it is expected that juvenile salmonids are more successful in completing the out-migration portion of their lifecycle under years with higher spring flows, which more closely resemble a natural hydrograph. The major environmental effects of the Don Pedro Project include the reduction in magnitude, frequency, and duration of winter and spring flows in the lower Tuolumne River.</p>	<p>Page 25</p>

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NMFSb-DLA-11b	NMFS	Pg. 11	Despite the clear alterations illustrated above, the poor condition of salmonid habitat and population condition in the lower Tuolumne River, and the obvious linkages between the two, the Licensees propose no measures in the DLA to mitigate for the strongly Project-influenced hydrologic alterations. There are no proposed measures for mitigating for the snowmelt peak flow reductions or the truncation of spring recession flows. NMFS hopes the Districts will include new environmental measures in the Final License Application that enhance flow conditions to promote greater juvenile anadromous fish survival during fry rearing and smolt outmigration.	Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed. Until these studies are completed, the Districts are unable to fully assess the cumulative effects to these resources, or complete their assessment of the costs and benefits of potential PM&E measures intended to enhance the resources of the lower Tuolumne River.
NMFSb-DLA-12	NMFS	Pg. 11	Chinook salmon redd dewatering was observed below the La Grange Dam on November 4, 2008 by CFDW personnel. The dewatering of up to seven redds was described in a memo dated August 19, 2009 from CDFW, which NMFS filed with FERC on June 10, 2011 as part of Enclosure H. The August 19, 2009 memo also states that stranding had been observed in the vicinity of La Grange Dam and powerhouse in years prior to 2008 and fish rescues had to be performed. As such, the dismissal of stranding of fish and/or dewatering of redds in the lower Tuolumne River as negligible is inappropriate and contrary to observations as recent as 2008.	Resource agencies have raised this concern previously. They refer to a single instance in 40 years of operations where the La Grange powerhouse experienced a forced outage, and limited flows downstream occurred. The record before FERC fully covers this instance. The Districts immediately made changes to the sluice gate system which prevents this from occurring again. At NMFS request the Districts analyzed USGS gage records to examine the occurrence of rapid changes in stage below La Grange powerhouse. The results, filed with NMFS and FERC, showed that using 15-minute USGS data, the river stage change is less than four inches up or down 99.9 percent of the time.
NMFSb-DLA-13	NMFS	Pg. 12	It is surprising that the Districts have not proposed any new environmental measures in the DLA to mitigate for these Project effects. NMFS is looking forward to the Districts including new environmental measures in the Final License Application which will increase the frequency and duration of overbank areas which are currently negatively affecting salmonids and other species.	Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed. Until these studies are completed, the Districts are unable to fully assess the cumulative effects to these resources, or complete their assessment of the costs and benefits of potential PM&E measures intended to enhance the resources of the lower Tuolumne River.
NMFSb-DLA-14	NMFS	Pg. 12	NMFS disagrees with several aspects of the discussion of the Chinook Salmon Population Model, the <i>O. mykiss</i> Population Model, and the studies and literature that pertains to their development, application and preliminary conclusions. We have also noted during this ILP the repeated objections and comments of the California Department of Fish and Wildlife to the assumptions, modeling, and preliminary conclusions of the Districts.	The Districts have followed a detailed consultation process for development of the W&AR-06 and -10 models and are not aware of the "repeated objections" referred to by NMFS.
NMFSb-DLA-15	NMFS	Pg. 12	NMFS recommends FERC staff discuss with the Districts and ILP participants the action of obtaining independent (outside) expert review of the Chinook salmon and <i>O. mykiss</i> models, and supporting information.	FERC previously addressed this request in the December 2011 Study Plan Determination, which states that "establishment of a scientific review panel and any associated cost is not necessary, as participation by experienced biologists from NMFS, FWS, CDFG, the Conservation Groups, and Commission staff would ensure a rigorous scientific review To the extent that this is a request for a study modification, the request should have been accompanied by a description of its conformance with the ILP regulations. Because this request does not conform to ILP regulations, it should not be accepted.
NMFSb-DLA-16	NMFS	Pg. 12	With expert assistance, improved model designs could be achieved, and then implemented. The reviews would be considered by FERC and others when license terms and conditions are contemplated and	The Districts held five separate Workshops on model development and provided extensive materials for review prior to the Workshops, then provided 30 to 45 days for comment after each Workshop. The Districts requested the

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NMFSb-DLA-17	NMFS	Pg. 13	Please see NMFS' comments (filed February 26, 2014) on the Districts' Updated Study Report filed in this ILP, including about the results of Study W&AR-10, Oncorhynchus mykiss Population Study (Enclosure A, p. 7-13), and the Memorandum of Yoshiyana and Moyle (2012) (Enclosure A, pp. 14-22). We will not repeat those comments here.	advice of resource agencies at each Workshop. It is disappointing that NMFS chooses how to criticize the process and results. The Districts have made the models fully available for agency review and comment, as well as having conducted a detailed consultation process during development of the model. We are not aware of exactly what parts of either model NMFS find objections to.
NMFSb-DLA-18	NMFS	Pg. 13/14	As stated above, the current lack of significant LWD in the lower Tuolumne River is a result of project operations, indicates the existing baseline condition, and does not reflect the natural state of the river. The DLA contains no Project actions or PM&E measures to mitigate Project effects or enhance LWD conditions. The Districts should include such PM&E measures in the Final License Application, to mitigate for these negative effects and enhance conditions for anadromous salmonids and other species.	Comments were addressed in the Districts' response to USR comments, filed with FERC on March 28, 2014.
NMFSb-DLA-19	NMFS	Pg. 14	As stated above, the operations of the Project, including reservoir operations and in stream flow releases to meet FERC requirements are the major drivers of water temperatures in lower Tuolumne River. The Districts have the ability to lower water temperatures in the summer months by releasing more water from Don Pedro Reservoir above what is needed for agricultural diversions at La Grange Dam. NMFS is looking forward to Districts' including new environmental measures in the Final License Application which will extend the length of river that is thermally suitable for O. mykiss rearing.	There are numerous aspects of the lower Tuolumne river that do "not reflect the natural state of the river." The extent of LWD in the reservoir and lower Tuolumne River was extensively studied.
NMFSb-DLA-20	NMFS	Pg. 14	Page 4-7: "Therefore, Don Pedro operations contribute to cumulative effects in the lower Tuolumne River by storing water which is then scheduled for release; however, under base line conditions, the direct effects to resources in the lower Tuolumne River are due to the diversion of water from the river at La Grange Dam, and not the operations of Don Pedro Project. From 1971 to 2012, the average annual water diversion at La Grange Dam to the Districts canals has been approximately 900,000 AF." Comment: The statement above does not consider the indirect effects of the Don Pedro Project on downstream hydrology. The regulations of the Council on Environmental Quality for conducting a NEPA review refer to environmental impacts that may be "(1) direct; (2) indirect; (3) cumulative."	Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed. Until these studies are completed, the Districts are unable to fully assess the cumulative effects to these resources, or complete their assessment of the costs and benefits of potential PM&E measures intended to enhance the resources of the lower Tuolumne River.
NMFSb-DLA-21	NMFS	Pg. 16	The design (e.g. depth) and operation of the Project's intake to the New Don Pedro Powerhouse, and operation of the Don Pedro Reservoir directly affect the temperature of the water released to the lower Tuolumne River. Therefore, the operation of the Don Pedro project directly affects water quantity and quality in the lower river (as well as indirectly and cumulatively, in areas farther downstream of the	The specific action being considered by FERC is the issuance of a new license to the Districts to continue generation of hydropower at Don Pedro. Absent hydropower generation, the Don Pedro Project would be operated in essentially the same manner as it is presently. To the extend that NMFS comment is a comparison of Project operations to pre-project conditions, please see response to NMFSb-DLA- 11a

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NMFSb-DLA-22	NMFS	pg. 16	NMFS disagrees that the Don Pedro Project has had a positive effect (cumulative, direct or otherwise) on flows in the lower Tuolumne River. Flows in the lower Tuolumne are highly altered from the natural hydrograph that native salmonids have adapted to over millennia in the Tuolumne River basin. Please see our comments above in response to DLA p.3-88, concerning the Project's influence on downstream hydrologic conditions. These include reference to Exhibit NMF-4, filed September 11, 2009, in the ALJ Proceeding (FERC Project Nos. 2299-065 and 2299-053); this document describes the vast alterations of the lower Tuolumne River flow regime since the completion of the Don Pedro Project in 1971, and also graphically demonstrates these changes. The graphics plots overlay the average unimpaired flows at La Grange, the regulated flows at La Grange, and the Don Pedro Project licensee required (Article 37) minimum flows, so the changes can be clearly evaluated.	NMFS is again referring to its prior statement that the "major environmental effects of the Don Pedro Project include the reduction in magnitude, frequency, and duration of winter and spring flows in the lower Tuolumne River." NMFS is comparing the current operations of the Don Pedro Project to a "without dam" or "pre-project" condition. Under FERC policy and regulations, as upheld by the courts, such a comparison to pre-project conditions is not useful for consideration of potential PM&E measures and relies on speculation. Many conditions of the Tuolumne River are different now than pre-European settlement, including the extensive destruction of the river's physical habitat and floodplain encroachment due to gravel and gold mining and urban development. The introduction of non-native predator species has completely changed the survival probability of fall-run Chinook smolts.
NMFSb-DLA-24	NMFS	pg. 17	In the seventeen water years (WY) analyzed (1997 to 2013) the historical record at La Grange gage indicates there were 379 days with flow in excess of 5,000 and the computed unimpaired record indicates there would have been 1,122 days of flow in excess of 5,000 cfs if not for the cumulative effects of river regulation. This represents a decrease of 743 days (slightly more than 2 years) that exceeded 5,000 cfs under historical conditions since 1997 (post-FERC amendment to flows) than what would have occurred under the unimpaired, or about a 66% decrease from unimpaired to observed. Furthermore, in the computed unimpaired period at La Grange from WY 1997 to 2013 every water year had at least 112 days with flow in excess of 5,000 cfs (WY 998 had the most with 137 days above 5,000 cfs), but in the observed historical record 9 out of the 17 years analyzed had zero days of flow in excess of 5,000 cfs. Clearly a more robust, unbiased analysis of the Project's impacts to the high flow regime of the Tuolumne River is warranted. NMFS noted that a more robust high flow analysis would include far more than a simple discussion of the frequency of flows in excess of 5,000 cfs.	See response to NMFSb-DLA-22.
NMFSb-DLA-25	NMFS	pg. 17	Page 4-72: "These changes in hydrology have had both immediate impacts on habitat conditions for salmonids and other native aquatic organisms as well as introduced piscivore species (e. g., depth, velocity, water temperature) and longer-term impacts on aquatic habitat characteristics due to changes in flow magnitude and timing, flow frequency, sediment supply, transport, and channel morphology. Comment: "In general NMFS agrees with the above statement as it pertains to the direct effects of the Don Pedro Project, which are large in scale and negatively influence the status of anadromous fish populations in the Tuolumne and San Joaquin River basins. As discussed above, indirect and cumulative effects also occur, and are not discountable. NMFS is disappointed to find no new environmental measures in the DLA to mitigate these many negative effects of the Don Pedro Project.	See response to NMFSb-DLA-22. Also please see the Appendix C discussion regarding cumulative effects analyses. The referenced discussion on page 4-72 is not a discussion of Don Pedro Hydroelectric Project effects. The ACOE acquired 340,000 AF of flood control storage in Don Pedro Reservoir and issued a Flood Control Manual for guiding flood control operations. To the extent NMFS is suggesting changes in flood control operations, the ACOE will need to be consulted. To the extent NMFS has any specific suggestions on PM&E measures to be evaluated, the Districts have offered to run any scenario relicensing participants request.

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NMFSb-DLA-26	NMFS	pg. 18	In the DLA, the Licensees misrepresent the dynamics of LWD transport and deposition within lower-gradient, valley-bottom rivers, such as the lower Tuolumne River. Lower-gradient rivers tend to be sinuous with extensive meander bends and often bifurcate into multiple channels with large mid-channel bars and islands. LWD in these lower gradient rivers that is transported by fluvial mechanisms into the reaches often deposits at channel bends, mid-channel bars and islands, and overbank surfaces, including floodplains.	The commenter stated, as a prelude to the comment in the column to the left that " <i>The DLA repeatedly states that entrapment of wood in Don Pedro Reservoir has minimal impact on channel form and aquatic habitat in the lower Tuolumne River because 'it appears that the majority of it would pass through the lower river during high flows if it were not trapped in the reservoir.' This statement is unfounded and is not based on anything other than the observation that the length of wood found in Don Pedro Reservoir is less than the channel bankfull width of the lower river.</i> " The commenter is incorrect in stating that this conclusion is unfounded. The W&AR-12 report assessed the contribution of LWD in forming habitat in the Lower Tuolumne River based on comparisons of LWD and instream habitat data that were collected in the field. Page 5-9 of the W&AR-12 report states "The majority of the LWD observed during the survey was completely or partially out of the wetted channel, deposited by previous high flows, and provided minimal habitat value for O. mykiss. Approximately 62 pieces (31%) of the LWD observed were in 12 accumulations of two to eight pieces. At least seven of these accumulations were made up of between five and eight pieces of wood. One of the accumulations was a cluster of four key pieces. The relatively small size of the wood in the accumulations limited their influence on habitat forming processes. In response to the comment in the column to the left, the W&AR-12 study did not "misrepresent" the dynamics of LWD transport and deposition within lower-gradient, valley bottom rivers. Not all rivers, especially those in a highly managed condition, like the lower Tuolumne River, fit the classic form referenced by the commenter. The lower Tuolumne River, within the W&AR-12 study reach, does have some sinuous meanders, but also has reaches confined by bedrock, cliffs, levees, and other resistant geomorphic features that inhibit meandering. The W&AR-12 report stated that the majority of the LWD surveyed was completely or partially out of the wetted channel, which infers deposition. The study also stated that an unknown amount of LWD, if it was not trapped behind Don Pedro Reservoir, would deposit as single pieces, add to existing wood accumulations, or initiate small jams. However, based on peer-reviewed literature, there is a well established relationship between LWD piece size, transport and deposition tendencies, and channel width, so the width of the Tuolumne River relative to the size of LWD is highly relevant.
NMFSb-DLA-27	NMFS	pg. 19	See NMFS' comments above to Page 3-88 regarding stranding/red dredging in the lower Tuolumne River.	See corresponding response
NMFSb-DLA-28	NMFS	pg. 19	See NMFS' comments above to Page 4-74 regarding the District's claims that historically LWD would not have deposited in the lower 52 miles of the Tuolumne River. The only way LWD from the upper watershed would not have provided structure and habitat in the lower river would be if it ubiquitously transported the entire length (52 miles) in one flow event, without ever depositing in the reach for a period of time. Historically, the majority of LWD would not have simply transported the entire 52 miles given the opportunities for its deposition in the lower gradient reaches, on channel bars and islands, meander bends, and on the floodplains that are often accessed during higher flows of the magnitude required to mobilize larger pieces of LWD in the first place.	See corresponding response.

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NMFSb-DLA-29	NMFS	pg. 19	Please see our comments above in response to DLA p. 3-60, concerning the Project's influence on downstream thermal conditions.	See corresponding response.
NMFSb-DLA-30	NMFS	pg. 20	Please see our comments above in response to DLA p. 3-60, concerning the Project's influence on downstream thermal conditions.	Comment regarding p. 4-79 of DLA noted.
NMFSb-DLA-31	NMFS	pg.21	Even if one were to accept that increased numbers and densities of juvenile O. mykiss have occurred since 1996, the baseline condition of the O. mykiss population in the lower Tuolumne River prior to 1996 was very poor. Thus, any relative comparisons should be qualified by the poor 1996 baseline condition. We believe the current overall population numbers of O. mykiss remain low, but agree they would improve under higher flows that improve thermal (and other) downstream conditions, and also from improved LWD and substrate conditions.	All comparisons are relative. There are no recognized populations goals for <i>O. mykiss</i> on the Tuolumne River established by resource agencies. NMFS seems to endorse a policy that "more is better".
NMFS-DLA-01	NMFS	1-6	The increased smolt productivity generally reflects increased smolt survival during emigration at higher flows. As discussed in the Synthesis Study (W&AR-05), these results are generally consistent with historical information showing increased juvenile passage at the Grayson (RM 5.2) RST in years with larger flood control releases as well as observations of increased spawning escapement 3 years later." The modeling results are consistent with the interim measures proposed by the resource agencies during the 2009 Administrative Law Judge proceeding, which were based largely on the historical information noted above. NMFS is interested in implementation experiments under adaptive management, accompanied by monitoring capable of discerning the outcomes of that experimentation and that is used to re-adjust the action(s).	As noted in the responses to USR comments, relying on "adaptive management" to address inadequate information is not an appropriate license condition and would result in complete uncertainty in what such a license condition might eventually entail. The appropriate time to develop sufficient information to inform the development of appropriate license conditions is during the pre-filing process. Although environmental flow releases suggested in the 2009 Administrative Law Judge proceedings are unlikely to provide sufficient data within the ILP timeline to adequately inform license conditions, the Districts have suggested they are willing to engage NMFS in discussions intended to develop a study plan for the Tuolumne River relying on field experimentation to be submitted jointly to FERC for approval that would be completed prior to NMFS' development of a Biological Opinion and prior to FERC's issuance of its Ready for Environmental Analysis ("REA").
NMFS-DLA-02	NMFS	1-6	In closing, NMFS disagrees with what seems to be a persistent notion (in the near absence of experimental support) that little or nothing can be done to benefit Central Valley steelhead, in the Tuolumne River and elsewhere. We suggest modeling and field experimentation (with adaptive management) to better understand how Tuolumne River management actions could improve its Central Valley steelhead, and we note the nexus between most of these actions and the Don Pedro Hydroelectric Project and related La Grange Dam and Hydroelectric Project	While the Districts do not assert that little or nothing can be done to benefit Central Valley steelhead, the prevailing scientific evidence indicates that downstream factors are far more important than river factors in influencing smolt-to-adult survival and driving the selection of anadromous vs. resident life history (see March 28, 2014 Response to USR Comments, [III] Districts' Response to Technical Study Comments, [1] Comments on the Yoshiyama and Moyle Memorandum). Because Project operations have no plausible linkage to conditions affecting this portion of Central Valley steelhead life history, the primary focus of information reviews and population modeling conducted as part of relicensing has been for the freshwater residency period in the Tuolumne River itself.
NMFS-DLA-03	NMFS	1-6	FERC should not move to formal NEPA analysis or ESA consultation until all ILP participants' concerns with this study have been addressed.	Comment noted.
RHH-DLA-01	Restore Hetch Hetchy	pg.2	Given the importance of the upstream operations, the cumulative impacts associated with those operations should be accounted for fully-both positive and negative- and alternatives to mitigate negative impacts considered.	Hetch Hetchy operations are not a part of the Don Pedro Hydroelectric Project.
RHH-DLA-02	Restore Hetch Hetchy	pg.2	The current DLA is inadequate because it attempts to define the Project purpose in an impermissibly narrow manner that would foreclose consideration of reasonable alternatives.	The Proposed Action is consideration of a new license for the Don Pedro Hydroelectric Project.

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RHH-DLA-03	Restore Hatch Hetchy	pg.2	The DLA skirts over the negative environmental impacts associated with the Hatch Hetchy System's operations while trumpeting its positive impacts. The DLA fails to propose any reasonable alternatives.	Neither the Districts nor FERC are required to analyze alternatives for the Hatch Hetchy System's operations, which are owned and operated by CCSF.
RHH-DLA-04	Restore Hatch Hetchy	pg.3	The DLA now identifies four purposes served by the Project, one of which is to provide a water bank to CCSF consistent with the requirements of the Raker Act and agreements with CCSF. This newly defined project purpose is impermissibly narrow. Defining the project purpose as fulfilling the Districts' current contractual obligations with CCSF artificially truncates the NEPA analysis. It leaves no room for the consideration of reasonable alternatives. And such alternatives exist.	The Districts are only responsible for operations of the Don Pedro Project. Further, the Proposed Action is continuation of hydropower generation at the Don Pedro Project.
RHH-DLA-05	Restore Hatch Hetchy	pg.4	CCSF's decision that the water banking arrangement was the most financially advantageous option at the time should not curtail the Commission's environmental analysis now. It is possible that the analysis will show that the current arrangement will continue to be preferable going forward. That possibility, however, does not eliminate the need to examine reasonable alternatives. The purpose of NEPA is to test whether a preferable alternative exists.	The Districts are not obligated to analyze alternatives to the CCSF system.
RHH-DLA-06	Restore Hatch Hetchy	pg.4	The DLA's description of the cumulative impacts associated with the Hatch Hetchy System and fails short of the detailed description required by section 5.18(b)(2) because it fails to adequately qualify or quantify the Hatch Hetchy System's impacts.	See the Appendix C discussion on the scope of NEPA consideration of cumulative effects.
RHH-DLA-07	Restore Hatch Hetchy	pg.5	The DLA fails to adequately address the cumulative impacts of hydropower production by omitting CCSF's upstream hydropower production from its water balance model.	RHH had previously comments on the ISR as it does here. FERC addressed the scope of the Operations Model in its May 2013 Determination on Requests for New Studies and Study Modifications.
RHH-DLA-08	Restore Hatch Hetchy	pg.6	The DLA's discussion of compliance with license articles is incomplete because it fails to discuss compliance with the FERC approved water banking arrangement with CCSF.	The Districts are in full compliance with all existing license terms and conditions.
RHH-DLA-09	Restore Hatch Hetchy	pg.7	The DLA should be revised to reflect the correct size of the water bank. Section 1.1 of Appendix B-4 states that the water bank can hold up to 570,000 acre-feet. The amount can actually be up to 740,000 acre-feet at the end of the snow melt season. Therefore, the final application should be revised accordingly.	The maximum amount allowed in the waterbank account is 570,000 AF/year round, except that the account may increase by up to 170,000 AF during the times when encroachment into flood control space is allowed and encroachment occurs. Because such encroachment is intermittent and temporary CCSF does not consider the 170,000 AF to be dependable yield for water supply.
SWRCB-DLA-01	SWRCB	Cover Letter	State Water Board staff requests that the Commission outline how the study report consultation process will occur for each pending study or a delay in the deadline for submittal of the FLA until after the USR consultation process is complete for each required study.	A detailed schedule has been provided in Section 1.0 of Exhibit E.
SWRCB-DLA-02	SWRCB	3	Don Pedro Reservoir is the largest impoundment of water on the Tuolumne River. It has greatly altered the natural hydrograph of the Tuolumne River and is a major contributor to elevated summer water temperatures. A discussion of the temperature impairments facing the Tuolumne River, and how the Project influences those impairments will be required in the water quality certification application when submitted to the State Water Board.	The Districts agree that the natural hydrograph of the Tuolumne River has been altered. The entire natural environment of the lower Tuolumne River has been permanently and extensively altered through a host of factors, including in-channel mining of substrates for gold and gravel, levee construction, urban and agricultural encroachment, gravel mining of the floodplain, riparian diversions, agricultural runoff, and the introduction of multiple non-native species that prey on salmonids. However, Don Pedro Reservoir has not contributed to temperature impairment in the lower Tuolumne River. The Don Pedro Project

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Toul Co-Water-DLA-01	TCWA	2	It is recommended that the shoulders of the roadway be paved as the road approaches the bridge from both the north and south. In some cases, for safety purposes, parking stops may be appropriate.	has a cooling effect on river temperatures from May through October when compared to inflow temperatures. Cold water discharges from Don Pedro Reservoir compared to unimpaired flows, produces a cooling effect to at least RM 34 under base case conditions. See also the appended <i>Assessment of Don Pedro Operations To Meet EPA Region 10 Guidance For Pacific Northwest State and Tribal Temperature Water Quality Standards</i>
Toul Co-Water-DLA-02	TCWA	2	The current whitewater boat takeout practice of parking a truck on the Wards Ferry Road bridge and using a crane type apparatus to lift the boats to the bridge deck is unsafe due to the bridge being reduced to one lane. A more traditional takeout method is needed-construct a boat ramp on the north side of the bridge down to the river.	Final site design for the proposed Wards Ferry Bridge whitewater boating take-out will include safety improvements for vehicle ingress/egress to and whitewater boater use of the site. Alterations within the County road right-of-way are the responsibility of the County.
Toul Co-Water-DLA-03	TCWA	2	This walking path should be improved to accommodate fishermen and other recreationalists such as kayakers needing a safe pathway to carry out their boats.	The Districts propose to make improvements for whitewater boater egress on river right (i.e., north side) immediately upstream of the Wards Ferry Bridge as described in the FLA.
Toul Co-Water-DLA-04	TCWA	2	the County would like to explore coordinated public safety patrol requirements	The Districts' proposed improvements on river right will improve access and safe use for whitewater boater egress. Whitewater boaters and other recreationists may chose to continue to use river left (i.e., south side) at this location. The Districts do not propose to relocate the vault toilet because the existing configuration readily accommodates pedestrian access to the shoreline trail, and re-locating the toilet would eliminate parking at whatever location is chosen.
Toul Co-Water-DLA-05	TCWA	2	a law enforcement communications solution be researched and implemented. This may entail locating and installing a radio tower and repeaters.	As FERC has consistently stated, licensees are not responsible for law enforcement or public safety services on project lands and waters, let alone on lands adjacent to licensed projects. Local law enforcement should include the location on their regular patrols.
Toul Co-Water-DLA-06	TCWA	2	The current Don Pedro FERC relicensing process is a prime opportunity to remedy the current takeout site's myriad problems.	Radio communication coverage is not the Districts' responsibility, nor is any other public safety service.
USFS-DLA-01	USFS	1	• we request that FERC designate the Stanislaus National Forest as a cooperating agency for the environmental review and relicensing	The Districts are proposing to make improvements for whitewater boater egress at the Wards Ferry Bridge. The proposed improvements are a river-right access road/ramp extending upstream from the bridge. While it is the best option among those studied, the site of the proposed improvements has a number of challenging physical and geotechnical engineering challenges. The Districts' study resulted in a preferred method of river egress being an access road/trailer ramp at the river-right location allowing one-way traffic. Two-way traffic is not needed to address the identified safety problems and greatly increases costs, and thereby boater fees. Consistent with the Stanislaus National Forest and the BLM's suggestions, the option outlined in the Districts' study provides protective side rails over the entire length of road. The road/ramp has been modified to increase the turn-around suitable for truck and trailer combination. There are also provisions for a separate access trail to the river's edge to accommodate other users.. While the site design would allow only one group of boaters to egress at a time, the speed of egress would be much more rapid than occurs at the present time. The river-right access also solves the public safety issues related to positioning cranes on Ward's Ferry Bridge.
<i>Districts' Response to Comments on DLA April 2014</i>				The comment is a request to FERC. The USFS comments on the USR study meeting have been addressed in the Districts' Response to Comments on the
<i>Final License Application Don Pedro Hydroelectric Project</i>				Modesto Irrigation District/Turlock Irrigation District Joint Comments on Draft SED - Appendix G

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USFWS-DLA-01	USFWS	2	process performed for each project along the Tuolumne River or Lake Don Pedro.	USR, filed with FERC on March 28, 2014.
USFWS-DLA-02	USFWS	15	The Service recommends that the District's coordinate with the Service regarding their responsibilities under the BECEPA and MBTA for the bald eagle to address potential Project effects.	The District's welcome input from the USFWS regarding their responsibilities under the BECEPA and MBTA. A Draft Bald Eagle Management Plan is provided with the Final License Application.
USFWS-DLA-03	USFWS	15	IFIM - June 2012 Final Report for the Lower Tuolumne River Instream Flow Studies: Pulse Flow Study Report and the April 2013 Final Report for the Lower Tuolumne River Instream Flow Study . . .The results of the two final reports, along with the upcoming results of the floodplain hydraulic assessment study, should be integrated to evaluate the overall habitat requirements for anadromous salmonids in the Tuolumne River.	The aquatic resources and cumulative effects assessment in the FLA integrates the results of the PHABSIM assessment, the Pulse Flow (overbank) assessment, and the prior floodplain hydraulic assessment, as well as other relicensing studies. . . Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed. Until these studies are completed, the Districts are unable to complete the assessment of the cumulative effects to these resources, or complete their assessment of the costs and benefits of potential PM&E measures intended to enhance the resources of the lower Tuolumne River.
USFWS-DLA-04	USFWS	15	Based on our review of the two final reports, we would propose the following flow requirements justification for the Service's flow recommendations is contained in Enclosures 6 and 7) to support anadromous salmonids in the Tuolumne River:	The Districts appreciate the USFWS proposal. The Districts will evaluate the USFWS proposal and others once all studies are complete. Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed.
USFWS-DLA-05	USFWS	15	Base flows to improve the quantity, suitability, and consistency (including thermal conditions) of the aquatic habitat for all stages of steelhead; Year-round minimum flow of 275 cfs, during all water year (WY) types. In addition, release the greater of the year-round minimum flow (275 cfs) or the flow required to maintain stream water temperatures of 18°C or less from the LaGrange Powerhouse (RM 52) downstream to Robert's Ferry Bridge (RM 40) or 60% of unimpaired flows whichever is greater.	The Districts appreciate the USFWS flow proposal. Please see response to USFWS-DLA-03 above. Also, please see the appended <i>Assessment of Don Pedro Operations To Meet EPA Region 10 Guidance For Pacific Northwest State and Tribal Temperature Water Quality Standards</i> .
USFWS-DLA-06	USFWS	15	Fall flows to improve the migration habitat, including thermal conditions, for adult fall-run Chinook salmon and steelhead, and thereby promote successful immigration: During all WY types, from September 1 through October 31, release the greater of the 275 cfs minimum base flow, or the flow required to maintain stream water temperatures of 18°C or less from the LaGrange Powerhouse (RM 52) to the San Joaquin River confluence (RM 0). In addition, release a flow of 1,200 cfs for 10 days in mid-October, with the timing of release coordinated with releases from the Merced and Stanislaus Rivers, and the San Joaquin Restoration Program.	The Districts appreciate the USFWS flow proposal. Please see response to USFWS-DLA-03 above. Also, please see the appended <i>Assessment of Don Pedro Operations To Meet EPA Region 10 Guidance For Pacific Northwest State and Tribal Temperature Water Quality Standards</i> .
USFWS-DLA-07	USFWS	15	Spawning flows to improve the habitat (including thermal conditions) for spawning, egg incubation, and alevin stages of fall-run Chinook salmon and steelhead: During all WY types, from October 15 through February 15, release the greater of the 275 cfs minimum base flow, the 1,200 cfs mid-October immigration flow, or the flow requires to maintain stream water temperatures of 13°C or less from the LaGrange Powerhouse (RM 52) to Robert's Ferry Bridge (RM40).	We appreciate the USFWS proposal. The Districts will evaluate the USFWS proposal and others once all studies are complete. Consistent with study

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USFWS-DLA-08	USFWS	15	growth, and development (rearing) of juvenile fall-run Chinook salmon and steelhead: Release 3,000 cfs between February 1 and March 15, with the frequency and duration of the releases defined by WY type as follows: Critical and Dry WYs: A single, 2-day release in late February. Below Normal and Above Normal WYs: A single, 14-day continuous release, or two continuous 7-day releases, one in February and one in March; Wet WY: Releases in any multiples of continuous 7-day releases adding to 21 days.	schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed.
USFWS-DLA-09	USFWS	15	Spring flow releases to improve the migration habitat for adult steelhead, inundate floodplain habitats, and improve thermal conditions to promote rearing and downstream migrations of juvenile fall-run Chinook salmon and steelhead smolts: Critical and Dry WYs: From March 20 through April 20, release the greater of the 275 cfs minimum base flow or the flow required to maintain stream water temperatures of 15°C or less from the LaGrange Powerhouse (RM 52) to the San Joaquin River confluence (RM 0). Below Normal WY: From March 20 through April 30, release the greater of the 275 cfs minimum base flow or the flow required to maintain stream water temperatures of 15°C or less from the LaGrange Powerhouse (RM 52) to the San Joaquin River confluence (RM 0). Above Normal and Wet WYs: From March 20 through May 15, release the greater of the 275 cfs minimum base flow or the flow required to maintain stream water temperatures of 15°C or less from the LaGrange Powerhouse (RM 52) to the San Joaquin River confluence (RM 0).	We appreciate the USFWS proposal. The Districts will evaluate the USFWS proposal and others once all studies are complete. Consistent with study schedules approved by FERC through the ILP's study plan determinations, several important studies involving the resources of the lower Tuolumne River have yet to be completed. Also, please see the appended <i>Assessment of Don Pedro Operations To Meet EPA Region 10 Guidance For Pacific Northwest State and Tribal Temperature Water Quality Standards</i> .
USFWS-DLA-10	USFWS	17	The Study fails to meet the stated purpose to determine the instream flows necessary to maximize fall-run Chinook salmon and O. mykiss production and survival throughout their various life stages. Smoltification and the survival of juvenile migrants are highly dependent on water temperatures in the lower Tuolumne River (Mesick 2012) and fall pulse flows are needed to minimize straying by migrating adults (Marston et al. 2012). Neither of these life history stages was considered in the Study. Flows needed to meet USEPA (2003) water temperature targets for smoltification and outmigrant survival in the river below Modesto as well as adult attraction (Marston et al. 2012) should be assessed.	The USFWS repeats their previous comment on the draft instream flow report from 2013. Pursuant to the requirements of the FERC Order and FERC-approved study plan, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #1) of the Final Report, dated April 26, 2013. The effective habitat analysis for O. mykiss will be completed, per the FERC-approved study plan, and filed by August 2014. The instream flow study is one of several study investigations that are relevant to determining instream flows for salmon and O. mykiss.
			The one-dimension (1-D) methodology is not robust and can lead to errors in interpretation. Additionally, the Service is concerned that the one-flow velocity calibration also leads to errors in interpretation. For example, the O. mykiss Adult Depth and Velocity Criteria listed in Appendix E are lower than our understanding of optimal depth and velocities in rivers of similar size (e.g., Yuba River) (USFWS 2010a, USFWS 2010b, USFWS 2010b); the O. mykiss spawning velocity and depth curves described in Appendix E are lower than the Service's understanding of habitat use collected (USFWSa); and the HSC developed for the O. mykiss fry and juveniles are much lower than what is acceptable to the Service. A more accurate methodology would be provided by the HSC developed by the Service for the Yuba River (USFWS 2010a and 2010b) or an equivalent source.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #6) of the Final Report, dated April 26, 2013. Habitat suitability criteria were developed collaboratively (and generally with consensus) through a series of workshops with USFWS and other agencies and NGOs, per the FERC-approved study plan. The hydraulic model was similarly reviewed and calibrated, and its use endorsed by the involved resource agencies.

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USFWS-DLA-11	USFWS	Sec. 2.4 Calibration in Flows pg. 8	The range of flows used in this study is inadequate, because it does not consider a wider range of flows similar to the pattern of the natural hydrograph. The Service recommends a higher range be used (i.e., 300 cfs, 400 cfs, 600 cfs, 1,000 cfs, 1,500 cfs, 2,000 cfs, and 5,000 cfs). This range would give a better idea of how fish respond to higher flows similar to the magnitude of the natural hydrograph.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #7) of the Final Report, dated April 26, 2013. All flow ranges for the study complied with the FERC-approved study plan and were established with consensus of other resource agencies.
USFWS-DLA-12	USFWS	Sec. 2.5 Hydraulic Data Collection pg. 9	However, the results of the IFM and Pulse Flow studies should be integrated to include consideration of inundation of the floodplain to allow for maximum production and survival of salmonids.	The instream flow studies were separated into an in-channel 1-D PHABSIM study , which evaluated flow from 50-1,200 cfs, and a 2-D PHABSIM pulse flow study, which evaluated spring pulse flows between 1,000 and 5,000 cfs and fall pulse flows of up to 1,500 cfs, as specified in the FERC Order. The two studies address somewhat different questions, and the results are included in the FLA in Section 3.5.4.
USFWS-DLA-13	USFWS	Sec. 2.6 Substrate and Cover Data pg. 10 and 11	Sec. 2.6 The use of the modified Wentworth Scale for substrate is acceptable, but the cover categories utilized are not acceptable.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #9) of the Final Report, dated April 26, 2013.
USFWS-DLA-14	USFWS	Table 9 Hydraulic Calibration Results pg.13	Table 9 should give Beta values for Log-Log transects, so that it can be evaluated whether they fall within the FWS standard range of 2.0 to 4.5. Beta values exceeding 4.5 typically indicate that downstream hydraulic control was missed during data collection. In addition, velocity adjustment factor (V AF) values should be given for the full range of simulation flows, so that it can be evaluated whether the VAF values meet the FWS standard of the range of 0.2 to 5.0, and the standard of V AFs increasing with increasing flow.	The hydraulic calibrations were reviewed during a Hydraulic Review Workshop with the agencies on November 28, 2012. Notes from this meeting were included in the Final Instream Flow Study Report, dated April 26, 2013, in Appendix C. The log-log Beta ranged between 1.7 and 3.8. The VAFs were generally within a range of 0.2-5.0 over the range of simulation flows. Participants in the meeting agreed that, with stated modifications, the hydraulic model was be suitably calibrated for use in the analysis, and no further evaluation of its acceptability was necessary.
USFWS-DLA-15	USFWS	Sec. 2.8 Habitat Time Series pg. 14	It is not appropriate to limit the upper range to 1,200 cfs because it takes away the ability to measure and analyze the contribution of the floodplain to salmonid and spiltsail production and breeding. The range should be extended up to at least 2,000 cfs, to allow for an analysis of the amount of habitat that might be gained at these higher flows. In this regard, we note that the existing data are sufficient to simulate up to 1,690 cfs (2.5 times 677 cfs, the lowest of the high calibration flows). All four of the proposed methods are unreliable, indicating that either a habitat time series should not be done, or that a habitat time series cannot be done with the available data.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #10) of the Final Report, dated April 26, 2013. Standard approaches were applied to calculating WUA.
USFWS-DLA-16	USFWS	Sec. 2.9 Effective Habitat pg. 15	A standard approach to calculating weighted useable area (WUA) should be used in conjunction with the “effective” WUA analysis utilized in this study. This is because standard methodologies are well understood and would provide validation (or rejection) of the effective WUA analysis.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #11) of the Final Report, dated April 26, 2013.
USFWS-DLA-17	USFWS	Sec. 2.9 Effective Habitat pg. 15	In order to determine in stream flows necessary to maximize Chinook salmon and O. mykiss production and survival throughout their various life stages, the final study must include an assessment of the flows needed to provide temperatures that support these species. The final study should include an assessment of the flows needed to meet	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #12) of the Final Report, dated April 26,

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USFWS-DLA-18	USFWS		the EPA temperature criteria (2003) for each life stage of Chinook salmon and <i>O. mykiss</i> .	2013. Temperature criteria are included in the salmon and <i>O. mykiss</i> models, and effective habitat analysis for <i>O. mykiss</i> will be completed, per the FERC-approved study plan, and filed by August 2014.
USFWS-DLA-19	USFWS	Sec. 2.10 Habitat Suitability Criteria Pg. 15	The Service does not support the use of the site-specific curves developed as ordered by the FERC. In its May 12, 2010, Order, the FERC adopted its staff recommendations that "[i]n order to obtain and utilize the most up-to-date information and validate existing data, the Districts should conduct the field work necessary to develop specific HSC curves for the project." (Ordering Paragraph B, adopting staff recommendations in Paragraph 37). The Districts have not followed the Service's recommendation from our November 5, 2009 Instream Flow and Water Temperature Study Plans letter commenting on the draft study plan. The Service repeats its recommendation that the Districts use the steelhead curves developed for the Lower American River or from the Lower Yuba River (USFWS 2003, USFWS 2010a).	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #3) of the Final Report, dated April 26, 2013. Site-specific curves are widely accepted as preferable criteria to use in such studies, and the appropriateness of the criteria for the Tuolumne River was reviewed in a series of collaborative workshops with agency and NGO participation.
USFWS-DLA-20	USFWS	Sec. 2.10.1 Existing Habitat Suitability Criteria Pg. 15	The Service does not support the way the HSC were developed as presented in Table 12. While the spawning criteria for Chinook salmon are acceptable, cover should be included for all the additional categories, along with adjacent velocities for the juvenile and adult Chinook and <i>O. mykiss</i> .	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #15) of the Final Report, dated April 26, 2013.
USFWS-DLA-21	USFWS	Sec. 2.10.1 Site- specific Habitat Suitability Criteria Pg. 16	The approach for collecting HSC for the Chinook salmon and <i>O. mykiss</i> adult and juvenile life stages lacks certain aspects that are important. For example, data should have been collected at a different set and range of flows. While we agree with using 2,000 cfs as the maximum flow, the low and mid-range flows should have been higher. The Service recommends a minimum flow of at least 250 cfs, one mid-flow of at least 800 cfs, an additional mid-flow, and a 2,000 cfs maximum flow.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #16) of the Final Report, dated April 26, 2013.
USFWS-DLA-22	USFWS	Sec. 2.10.2.1 Habitat suitability Criteria Site Selection Pg. 17	However, areas that have the potential to be inundated must be included in this study in order to develop flows that will maximize fall-run Chinook salmon and <i>O. mykiss</i> production and survival throughout their various life stages. The study excluded any dry areas and areas of potential inundation. It is essential that higher flows are included in the study, because the floodplain and habitat subject to potential inundation are very likely to improve and expand the amount of habitat, cover and food that would result in a healthier and more robust Chinook salmon and <i>O. mykiss</i> population.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #18) of the Final Report, dated April 26, 2013.
		Sec. 2.10.2.2 Direct observatio n and Field measure ments pg. 23	However, as noted previously, collection of cover data should have been completed. Without cover data, any HSC developed will not be satisfactory.	

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USFWS-DLA-23	USFWS	Sec. 2.10.2.3 Data Analysis pg. 23	The Service agrees with the size ranges assigned to the various life stages, but the categories used for cover are not appropriate (see discussion under Section 3.1.2).	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #19) of the Final Report, dated April 26, 2013.
USFWS-DLA-24	USFWS	Sec. 3.1.2 Site-specific Habitat Suitability Criteria Development and Validation Pg. 26	However, additional flows should have been included in the HSC data collection process. As mentioned previously, the Service is in agreement with the 2,000 cfs maximum flow. However, for the low and mid-range flows, we recommend that higher and additional flows be used, with the low flow being at least 250 cfs.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #21) of the Final Report, dated April 26, 2013.
USFWS-DLA-25	USFWS	Sec. 3.1.2 Site-specific Habitat Suitability Criteria Development and Validation Pg. 26	The Service has recommended that cover be used to validate HSC for Chinook salmon and O. mykiss fry and juveniles. This is because cover is crucial to the accurate development of juvenile HSC. A full range of meaningful cover variables should be included in the validation process.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #22) of the Final Report, dated April 26, 2013.
USFWS-DLA-26	USFWS	Sec. 3.1.2 Site-specific Habitat Suitability Criteria Development and Validation Pg. 26	The Service does not support the decision to use the depth and mean column velocity curves that were selected, because cover was not included in the analysis, floodplain use was not measured, use at higher flows was not measured; and they appear to be biased toward lower flows. The "Tuo Moo" curve for the Chinook fry depth and the "Tuo Env" curve for the Chinook fry show that higher flows are most likely desirable for optimal habitat.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #23) of the Final Report, dated April 26, 2013.
USFWS-DLA-27	USFWS	Figure 6 pg. 32	The Service does not support the use of the cover categories shown in Figure 6. We recommend use of the cover categories utilized by the Service (USFWS 2005).	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #24) of the Final Report, dated April 26, 2013.
USFWS-DLA-28	USFWS	Figures 7-9 and 10, 12-17, 19 Pages 33-35, 37-41	The HSC do not reflect the most recent understanding of habitat use by Chinook salmon and O. mykiss.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #25) of the Final Report, dated April 26, 2013.

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Comment Number	Organization	Page (of letter)	Comment (Quote or Paragraph)	District's Response
USFWS-DLA-29	USFWS	Figures 11 and 18, pages 36 and 42	The Service substrate data presented in these figures are appropriate, but the results presented in Figure 18 are not consistent with our understanding of Chinook salmon spawning preference. The Service has found that the size classes of 1-3 inch and 2-4 inch size substrate are optimal for Chinook salmon spawning.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #27) of the Final Report, dated April 26, 2013.
USFWS-DLA-30	USFWS	Sec. 3.1.3 Adjacent Velocity Pg. 45	We recommend that Service data be included in the process.	Comment noted. The USFWS has been an active participant in the IFIM Study Plan comment and review process in 2009, as well as numerous workshops in the conduct of the IFIM Study beginning in 2010, and Service data were included for discussion during the workshops.
USFWS-DLA-31	USFWS	Sec. 3.2 Weighted Usable Area Pg.45	The Service does not support the WUA results from the PHABSIM analysis for any life stage for Chinook salmon and O. mykiss. It is the Service's opinion that there is a strong bias towards lower flows in each case. The collection of criteria data at very low flows and the lack of data collected at higher flows has resulted in the WUA values that were selected. The Districts should review and utilize the WUA values for the Chinook adults and juveniles and the O. mykiss juveniles as presented in the Service reports	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #29) of the Final Report, dated April 26, 2013. Data were collected over a wide range of flows (including high flows), as documented in the reports.
USFWS-DLA-32	USFWS	Sec. 5 Reference s pages 60-62	The August 19, 2008, Flow-Overbank Inundation Relationship for Potential Fall-Run Chinook Salmon and Steelhead/Rainbow Trout Juvenile Outmigration Habitat in the Tuolumne River (USFWS 2008) was not included as a reference, but it is an important and relevant reference that should be utilized. The majority of the instream flow references are out-of-date and do not represent the state of the science. The Service recommends utilizing recent literature on instream flow methodology, such as those in the FWS Standards.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #30) of the Final Report, dated April 26, 2013. The number, type, and location of all sampled habitat units were agreed to by the agencies, including several USFWS representatives at the time.
USFWS-DLA-33	USFWS	Appendix B-1	The habitat types to be sampled are appropriate; however, more units per habitat type should be sampled and doubling the number of units is appropriate. The proposed habitat units appear acceptable; however, the backup units should also be included and additional transects as recommended by the Service should be added.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #33) of the Final Report, dated April 26, 2013. Data were collected over a wide range of flows (including high flows), as documented in the reports.
USFWS-DLA-34	USFWS	Appendix C - Study Background Field Efforts	It was inappropriate to conduct the HSC surveys at such low flow (i.e., 100 cfs, 350 cfs) and then analyze the HSC data at the high flow of 2,000 cfs. It would have been more appropriate to collect the HSC data at 300 cfs, 400 cfs, 600 cfs, 1,000 cfs, 1,500 cfs, 2,000 cfs, and 5,000 cfs, which would be consistent with the July 16, 2009, Commission Order while allowing for interpretation of floodplain effects.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #35) of the Final Report, dated April 26, 2013.
USFWS-DLA-35	USFWS	Appendix C - Methods, Substrate and Cover Data	The substrate data that were used in the PHABSIM model are appropriate; however, the Service does not agree with the cover type categories used in the PHABSIM part of this study.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #36) of the Final Report, dated April 26, 2013.
USFWS-DLA-36	USFWS	Appendix C -	The range of flows used in the study was inappropriate, considering the potential the river has for higher flows. The Service's flow	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #37) of the Final Report, dated April 26, 2013.

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Comment Number	Organization	Page (of letter)	Comment (Quote or Paragraph)	District's Response
USFWS-DLA -37	USFWS	PHABSI M Model Calibration	recommendations for instream flow monitoring are 300 cfs, 400 cfs, 600 cfs, 1,000 cfs, 1,500 cfs, 2,000 cfs, and 5,000 cfs.	Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #37) of the Final Report, dated April 26, 2013. All of the calibration flows were agreed to by agency representatives, and were part of the FERC-approved study plan.
USFWS-DLA -38	USFWS	Appendix D - Habitat Suitability Criteria	Serious consideration should be given to reviewing and utilizing the HSC for 0. mykiss and fall-run Chinook salmon developed by the Service	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #38) of the Final Report, dated April 26, 2013. Service HSC were considered by the agency and NGO group during the HSC workshops, as documented in the reports.
USFWS-DLA -39	USFWS	Appendix D - Existing Habitat Suitability Criteria Data	The cover data collected as part of this study should be used without collapsing the categories.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #39) of the Final Report, dated April 26, 2013.
USFWS-DLA -40	USFWS	Appendix D - Existing Habitat Suitability Criteria Data	With regard to the depth and velocity criteria for fall-run Chinook salmon, these criteria are too low. In order to develop adequate HSC data, a full range of flows, substrate characteristics, and cover must be used. The output for depth criteria does not appear to be consistent with our current understanding of habitat use by Chinook salmon.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #40) of the Final Report, dated April 26, 2013.
USFWS-DLA -41	USFWS	Appendix D - Chinook Salmon Juvenile Depth and Velocity Criteria	The Service does not support the use of the criteria developed for the juvenile Chinook salmon. The depth and velocity criteria do not represent the full range of floodplain inundation flows that would support juvenile salmonid production and survival, and appear biased toward lower flows. Cover is the primary component in developing accurate HSC values for juvenile fall-run Chinook. Although cover type and amount are important considerations for juvenile salmonid survival, they were not given adequate consideration in the HSC. The combination of depth, velocity (including adjacent velocity values) and cover are crucial to developing accurate HSC for juvenile Chinook salmon. As stated previously, the reports for the studies conducted by the Service should be reviewed and the existing Service-developed criteria should be utilized.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #41) of the Final Report, dated April 26, 2013.
USFWS-DLA -42	USFWS	Appendix E - O. mykiss	Existing criteria developed by the Service should be reviewed and utilized.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #42) of the Final Report, dated April 26, 2013.

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Comment Number	Organization	Page (of letter)	Comment (Quote or Paraphrase)	District's Response
USFWS-DLA-43	USFWS	Adults	Although the Service supports the use of a variety of curves from various studies; in this case, the HSC for O. mykiss (steelhead) developed by the Service should be utilized. The adult O. mykiss criteria that are presented in the Final Report appear to be biased toward lower velocities and depths. Higher flows need to be considered and analyzed, because higher flows may allow for higher amounts of food that can be utilized by the adult O. mykiss. In addition, the HSC should include cover, which is crucial for the adult fish.	28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #45) of the Final Report, dated April 26, 2013.
USFWS-DLA-44	USFWS	Appendix E - O. mykiss Adults	The data appear to show a bias toward lower flows, depths, and velocities, which is not consistent with the results in other studies conducted by the Service (USFWS 2010a).	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #46) of the Final Report, dated April 26, 2013.
USFWS-DLA-45	USFWS	Appendix E - O. mykiss Spawning	The Service's HSC should be utilized in this study, as the Service's criteria data for O. mykiss fry have been collected in a number of robust studies in rivers and creeks in the Central Valley	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #47) of the Final Report, dated April 26, 2013.
USFWS-DLA-46	USFWS	Appendix E - O. mykiss Fry	A proper and accurate HSC for O. mykiss juveniles should utilize depth, velocity (including adjacent velocity) and cover.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #48) of the Final Report, dated April 26, 2013.
USFWS-DLA-47	USFWS	Appendix E - Chinook Salmon Fry	However, it would be best to consider the primary use of the criteria developed by the Service.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #49) of the Final Report, dated April 26, 2013.
USFWS-DLA-48	USFWS	Appendix F - O. mykiss Fry	The Service is not supportive of the criteria. The depth and velocity data are severely biased toward lower flows and velocities.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #50) of the Final Report, dated April 26, 2013.
USFWS-DLA-49	USFWS	Appendix F - O. mykiss Adults	The velocity and depth criteria that are presented in this report are inadequate as they do not consider higher flows. Review of the reports published by the Service, NMFS, California Department of Fish and Wildlife and other agencies and stakeholders is recommended.	A variety of sources provided by the agencies and other stakeholders were considered in development of the HSC, including data collected at high flows. Additionally, high flow site-specific data from the Tuolumne River was included. Concurrence with these criteria among most of the agencies and stakeholders was achieved during the HSC workshops.

Comment Number	Organization	Page (of letter)	Comment (Quote or Paraphrase)	District's Response
USFWS-DLA -50	USFWS	Sec. 2.1.3 Topographic and Bathymetry Surveys at Study Sites pg. 5	Aerial LiDAR data, which has a typical vertical accuracy of plus or minus 0.5 feet, is not sufficiently accurate for purposes of simulating microhabitat, where topographic data with a vertical accuracy of 0.1 feet is required, per FWS Standards.	As described in the approved study plan (Lower Tuolumne River Instream Flow Studies Final Study Plan, Stillwater Sciences, 2009) the objectives of the pulse flow study are to characterize microhabitat conditions of total habitat usability and segmentation for the Lower Tuolumne River during flood conditions by developing habitat vs. flow relationships. As such, the use of the existing 2005 LiDAR and bathymetry was appropriate.
USFWS-DLA -51	USFWS	Sec. 2.2.1 Model Development pg. 7	The polygons used to assign roughness should also have accounted for roughness due to vegetation.	The Districts acknowledge that detailed development of all parameters used to build and run the 2D hydraulic and habitat models can improve model reliability, but assert that certain data limitations and necessary assumptions exist and are acceptable when conducting complex hydraulic and habitat assessment to the level of precision needed for resource management decision-making.
USFWS-DLA -52	USFWS	Sec. 2.2.2 Model Calibration and Development pg. 7	In cases where there was an eddy of non-uniform flow at the downstream boundary, as mentioned in the last sentence on this page, an artificial downstream extension should have been added to the model; this would have resulted in better predictions of velocities at the original downstream boundary location.	The Districts acknowledge that grid extension is an accepted practice to create suitable hydraulic conditions at the 2D model downstream boundary. Grid extension was tested during the pulse flow study at the Riffle 5A study site for 3,000 cfs and 5,000 cfs predictions where the downstream eddy condition occurred. The testing indicated that employing a grid extension of 5 channel widths required an increase in the water surface slope that negatively impacted the predicted vs. observed water surface elevation relationship at the downstream boundary and led to poor total water mass-balance. Conversely, forcing the downstream velocity vector conserved mass-balance and resulted in a more reliable predicted vs. observed water surface elevation relationship.
USFWS-DLA -53	USFWS	Sec. 2.2.3 Fish Habitat Availability pg. 8	Additional simulation flows, such as from 1,000 to 5,000 cfs by 250 cfs increments, are needed to adequately quantify flow-habitat relationships. As described in our comments on the IFIM Final Report, we cover and adjacent velocity should also be used to simulate habitat for anadromous salmonid fry and juveniles.	Although cover and adjacent velocity were not listed as habitat criteria to be used in the Pulse Flow Study portion of the approved study plan for overbank flows in excess of 1,200 cfs, these analyses have been included in the I-D IFIM study (Stillwater Sciences 2013). The approved study plan for the ongoing floodplain study (W&AR-21) also does not include analysis of cover and adjacent velocity and it is unclear how this would be feasibly accomplished across a 52 mile study reach.
USFWS-DLA -54	USFWS	Sec. 2.2.3.1 Habitat Suitability Criteria for Juvenile Salmonids pg. 8	As described in our comments on the IFIM Final Report, cover and adjacent velocity criteria, and the depth and velocity criteria from USFWS 2010b, should also be used to simulate habitat for anadromous salmonid fry and juveniles.	Cover and adjacent velocity were not listed as habitat criteria to be used in the approved study plan.
USFWS-DLA -55	USFWS	Sec. 2.2.3.2 Habitat Suitability Criteria for Predator Fish Species	The assumption that all velocities are suitable for striped bass appears unreasonable; a Delphi analysis should be used to develop velocity criteria for this species.	Comment noted. However, a Delphi analysis (development of Category I consensus curves) is not necessary since existing HSC for striped bass are available. The Districts will apply the HSC included in the I-D PHABSIM study (Pacific lamprey, Sacramento splittail, and non-native predatory fish habitat assessment: Final I-D PHABSIM habitat suitability criteria) as part of the ongoing floodplain study (W&AR-21). These HSC were circulated as draft on October 30, 2013, and the revised HSC were included in Updated Study Report, filed on January 6, 2014. USFWS provided comments on the striped bass HSC on November 21, 2013, and in the Services supplemental USR

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Comment Number	Organization	Page (of letter)	Comment (Quote or Paraphrase)	District's Response
USFWS-DLA-56	USFWS	Fig. 9	Was it assumed that the suitability stayed at 1.0 for all depths greater than those shown in the table?	comments, filed on March 27, 2014. Habitat suitability for predator species was assumed to be 1.0 at depths greater than those listed in Table 2-5 of the Pulse Flow Study report.
USFWS-DLA-57	USFWS	Table 2-5 pg. 9	LIDAR data that was actually water surface elevations of standing water at the time of data collection should have been removed from the topographic data set, and topographic data should be collected for these areas using RTK GPS or total station. Polygons of substrate and cover should be mapped in to get more accurate velocity simulations.	The Districts acknowledge that detailed development of all parameters used to build and run the 2D hydraulic and habitat models can improve model reliability, but assert that certain limitations and assumptions exist and are acceptable when conducting complex hydraulic and habitat assessment to the level of precision needed for resource management decision-making. The approved study plan indicates the existing 2005 topographic surface would be utilized for the pulse flow study with limited elevation spot checks for accuracy. Based on the limited elevation spot checks the 2005 topographic surface was found to be acceptable for development of microhabitat flow verses total floodplain habitat relationships.
USFWS-DLA-58	USFWS	Sec. 3.1 2D Hydraulic Model Calibration pg. 11	The report overstates the adverse predation risk that Sacramento pikeminnow pose to anadromous salmonids. Pikeminnow predation is only a concern around artificial structures (Brown and Moyle 1981). If the goal of the analysis is to evaluate the degree to which predators reduce available microhabitat for anadromous salmonid juveniles, this should be evaluated for both in-channel areas, as part of the IFIM study, and floodplain areas, in the Pulse Flow study; and quantitative estimates of the remaining juvenile habitat weighted useable area, as a function of flow, should be presented for the entire range of Tuolumne River flows in the two studies (50 to 5,000 cfs).	Comment noted. Although the report provides usable habitat area estimates for several predatory fish species known to inhabit the Tuolumne River, the Predation Study (W&AR-07) provides a more complete assessment of the relative predation rates observed in 2012.
USFWS-DLA-59	USFWS	Sec. 3.2 Fish Habitat Suitability Analyses pg. 12		Analysis of publicly available digital elevation models from USGS indicates that the slope of the Tuolumne River floodplain ranges from near 0.1% from near La Grange Dam downstream to RM 30, 0.03% from RM30 downstream to RM10, and 0.01% between RM10 and the San Joaquin River confluence. By comparison, the valley slope along the Yolo Bypass referenced in floodplain studies such as Summer et al (2001) is on the order of 0.01%. Because upwards of 40 miles of the Tuolumne River at gradients two to ten times higher than the Yolo Bypass, water residence times and water temperatures on the Tuolumne River do not differ to the degree that has been observed in published floodplain rearing studies. Pulse Flow Study (Stillwater Sciences 2012) observations suggest that low water temperatures occur within both in-channel and overbank habitats during flood control releases such as in 2011. For this reason, as well as the relatively high quality food resources for salmonid rearing in the Tuolumne River summarized in the Synthesis Study (W&AR-05), the Districts disagree with the benefits attributed to floodplain rearing along the Tuolumne River that has been inferred from studies of lowland flood bypasses.
USFWS-USR-47	USFWS	Sec. 4.1.1 Comparisons with USFWS (2008) GIS Analysis pg. 17	The pulse flow study does not present any evidence to support the assertion that over-bank habitats along the Tuolumne River do not provide the same relative benefits as other river floodplain habitats studied in lowland portions of the Central Valley.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #2) of the Final Report, dated April 26, 2013. The analyses for lamprey and spottail have been completed and the USFWS has commented on the draft report. The final report is included in the
Districts' Response to Comments on DLA April 2014		16	Despite this recommendation, habitat suitability for these species was not addressed in the Final report, although existing habitat suitability relationships for these species are available from the Service.	Page 42
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Comment Number	Organization	Page (of letter)	Comment (Quote or Paraphrase)	District's Response
USFWS-USR-48	USFWS	16	Floodplain inundation is so important to early life stages of native riverine fishes that not integrating the results of the IFIM and Pulse Flow reports is inconsistent with conducting a study "to determine instream flows necessary to maximize fall-run Chinook salmon on <i>O. mykiss</i> production and survival throughout their various life stages" as required in the Commission Order, or to determine Project effects on the Sacramento splittail as recommended by Commission staff in the Study Plan Determination.	FLA. As discussed in the Synthesis Study (W&AR-05), a number of factors beyond flow affect salmonid production from the Tuolumne River. Although the results of the IFIM and Pulse flow studies were used in the subsequent development of the Chinook salmon population model (W&AR-06) as well as the <i>O. mykiss</i> population model (W&AR-10), it is unclear from the comment what "integration of results" is required as part of the 2013 IFIM Study. Consistent with the May 2010 FERC approval of the IFIM Study Plan, the selected methodologies are considered sufficient as a means of determining "instream" flows necessary to "maximize fall-run Chinook salmon and <i>O. mykiss</i> production and survival throughout their various life stages". It should be noted that the instream flow in-channel assessment and pulse flow (overbank) assessment were designed to answer different questions. In addition, a spatial habitat assessment was conducted in accordance with the December 2011 FERC Study Determination.
USFWS-USR-49	USFWS		This comment is about the Instream Flow Study and the Pulse Flow Study. These comments are in the USFWS letter's DLA comment section, and the USR did not include either of these studies. Therefore, SW would like to address these comments in the DLA.	A substantially similar comment was received from the USFWS in response to the draft IFIM Study report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #3) of the Final Report, dated April 26, 2013. Cover included 10 categories (recorded in the field as percent cover); however, initial analyses identified no discernible relationships for HSC preference using all 110 categories. In order to increase sample size and provide more meaningful results, cover types were grouped into four categories. A sensitivity analysis was also completed "In order to evaluate the effect of the cover parameter on the WUA results, the model was run both with and without cover for Chinook fry. The results presented in the Instream Flow Final Report Appendix H (Figure H-3) suggest that cover has a relatively small influence in the magnitude of WUA, and no influence on the WUA versus flow relationship." Therefore, the flow model results were not greatly altered by the inclusion of cover, and is not anticipated to change with the inclusion of alternate cover categories; the WUA curve shape and peaks remained the same, even though the magnitude of the curves varied. <i>See also the response to USFWS April 8, 2013 comment No 4 in Appendix K of the Instream Flow Report, dated April 26, 2013.</i>
USFWS-USR-50	USFWS		This comment is about the Instream Flow Study and the Pulse Flow Study. These comments are in the USFWS letter's DLA comment section, and the USR did not include either of these studies. Therefore, SW would like to address these comments in the DLA.	The USFWS repeats their previous comment on the draft report. Pursuant to the requirements of the FERC Order, the Lower Tuolumne River Instream Flow Study Draft Report was circulated for a 30-day review period (February 28 – April 1, 2013). The USFWS provided comments on April 8, 2013, which were addressed in Appendix K (reply #4 and #5) of the Final Report, dated April 26, 2013.

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| Appendix A | Assessment of Don Pedro Project Operations to Meet EPA Region 10
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**ATTACHMENT A
DISTRICTS' RESPONSE TO COMMENTS ON
DRAFT LICENSE APPLICATION**

**APPENDIX A
ASSESSMENT OF DON PEDRO PROJECT OPERATIONS TO MEET EPA
REGION 10 GUIDANCE FOR PACIFIC NORTHWEST STATE AND
TRIBAL TEMPERATURE WATER QUALITY STANDARDS**

1.0

INTRODUCTION

On November 26, 2013, Turlock Irrigation District (“TID”) and Modesto Irrigation District (“MID”) (collectively, the “Districts”) filed with the Federal Energy Regulatory Commission (FERC) and relicensing participants the Draft License Application (“DLA”) for the Don Pedro Hydroelectric Project (“Project”). With the Districts’ submittal of their Final License Application (“FLA”), FERC, as the “action agency”, will consider whether, and under what conditions, to issue a new license to permit the Districts to continue hydropower generation at the Don Pedro Project. In comments provided on the DLA, both the State Water Resource Control Board (“SWRCB”) and FERC requested the Districts evaluate the effects of the Don Pedro Project on temperatures in the lower Tuolumne River.

Water temperatures in the lower Tuolumne River below the La Grange Project are the result of a number of factors. These factors include, but are not limited to, hydrology, climate, daily temperatures, meteorological conditions, Hetch Hetchy Project outflows and diversions, Don Pedro outflows, water diversions at La Grange Dam, modifications to river geometry affecting time of travel, loss of riparian shading, urban and agricultural floodplain encroachment, groundwater accretion, irrigation return flows, riparian diversions, and Dry Creek inflows.

The effect of hydropower operations at the Don Pedro Project on the temperature regime of the lower Tuolumne River has been evaluated as part of the relicensing process and is examined in the FLA. In summary, the operation and maintenance of the hydropower facilities do not affect the temperature regime of the lower Tuolumne River. Flow releases from the Don Pedro Project are made to satisfy the primary purposes and needs of water supply and flood control, and to meet the minimum flow requirements of the current FERC license. Hydropower generation is scheduled as a consequence of these other water uses. As explained in Exhibit B of the FLA, the daily releases from Don Pedro Reservoir would remain virtually unchanged if there were no hydropower operations at the Don Pedro Project.

1.1 Description of Existing Temperature Regime

The most direct manner of assessing the effect of the Don Pedro Project on water temperatures is by comparing reservoir inflow and outflow temperatures. As demonstrated in the FLA, the primary effect of the Don Pedro Project on Tuolumne River temperatures is to provide an overall cooling effect from the beginning of May to the end of October with maximum cooling effect being a reduction in river temperatures of up to 10 to 12°C in mid-summer. On the other hand, the Don Pedro Project tends to have a slight warming effect on river temperatures from the beginning of November to the end of April, when outflow temperatures are relatively constant at 10°C and reservoir inflow temperatures can range from 3°C to 10°C (Figure 1-1).

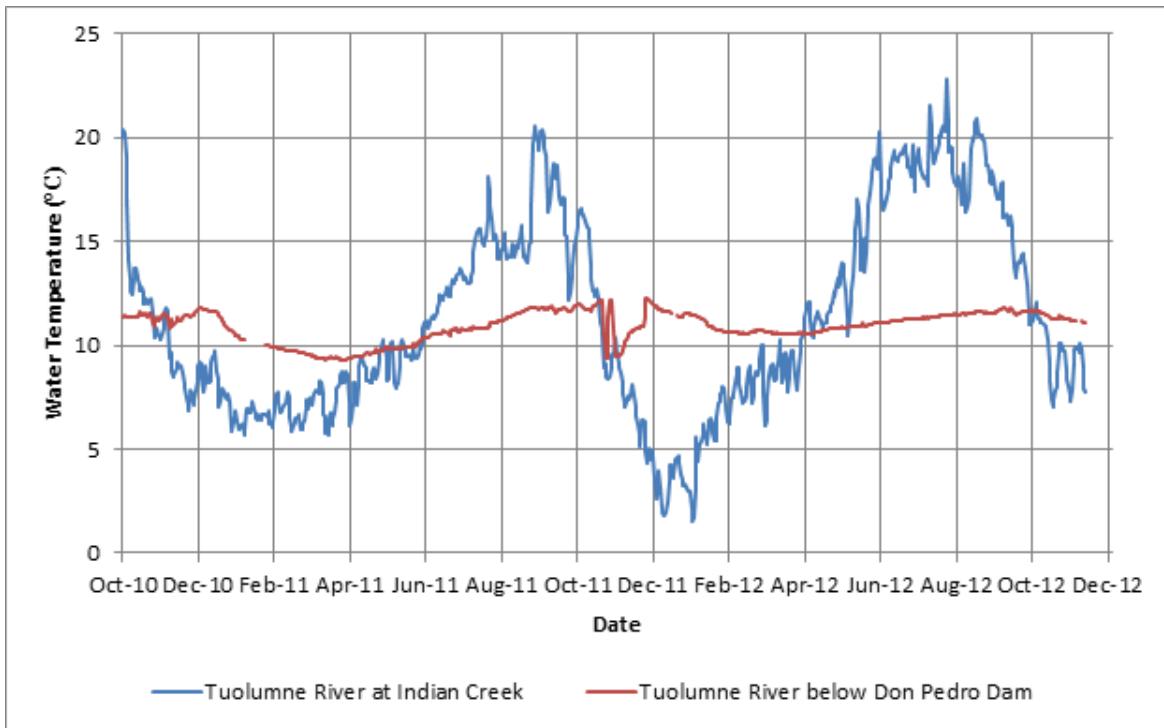


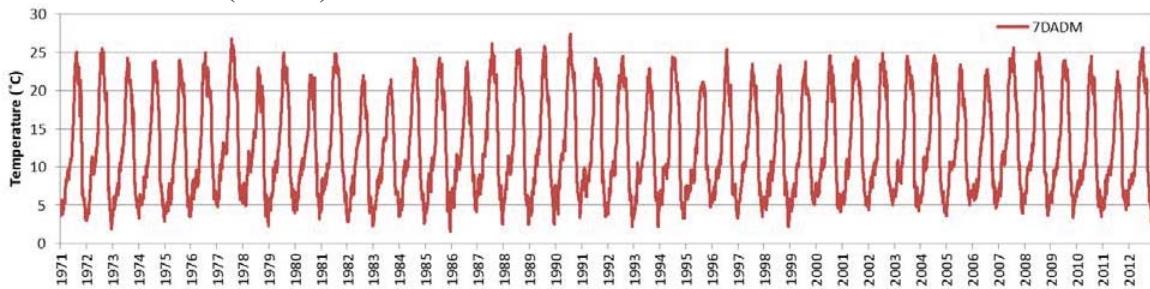
Figure 1-1. Don Pedro Reservoir average daily inflow and outflow temperature as recorded by thermologgers on the Tuolumne River from October 2010 to November 2012.

To provide context for assessing the temperature regime of the Tuolumne River, the Districts retained Watercourse Engineering to develop a “without dams” temperature model for the entire Tuolumne River extending from its headwaters to its confluence with the San Joaquin River. Model results are discussed in the FLA.

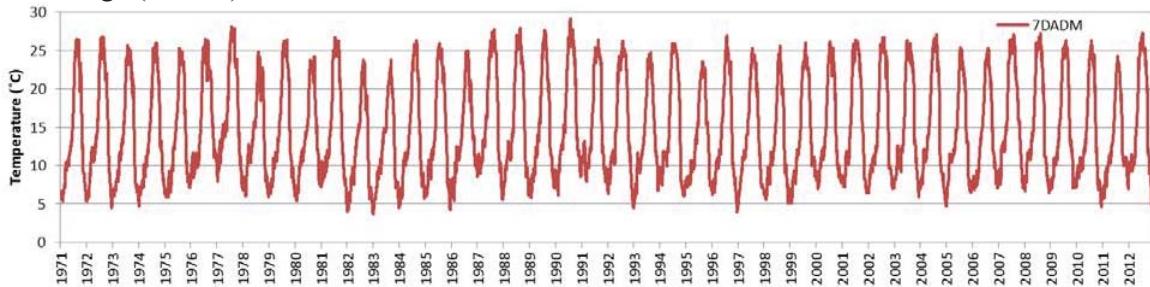
Figure 1-2 shown below summarizes the resulting “without dams” temperature regime of the Tuolumne River. These plots show that under “without dams” conditions, river temperatures have reached equilibrium with local meteorological conditions in the summer months by RM 88, several miles above Don Pedro Reservoir. The “without dams” model also shows that 7DADM temperatures would exceed 25°C at the La Grange gage location and in the remainder of the lower Tuolumne River each summer.

The temperature plots shown in Figures 1-3 through 1-6 also indicate that upstream of approximately RM 34, which is the primary salmon spawning reach, the “with dams” (Base Case) water temperatures are slightly warmer in winter and cooler in the summer compared to the “without dams” conditions. Below RM 34, summer temperatures under the “with dams” (Base Case) conditions are slightly (2-4°C) warmer than “without dams”, primarily as a result of the Base Case minimum summer flow during dry years being 50 or 75 cfs.

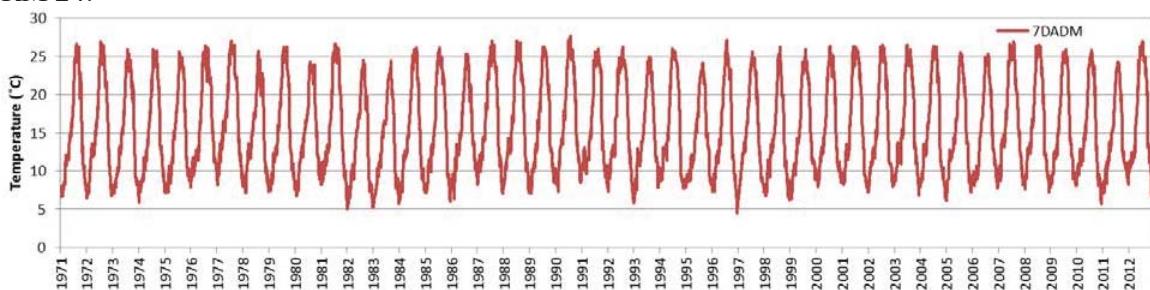
Above Don Pedro (RM 88):



La Grange (RM 52):



RM 24:



RM 1:

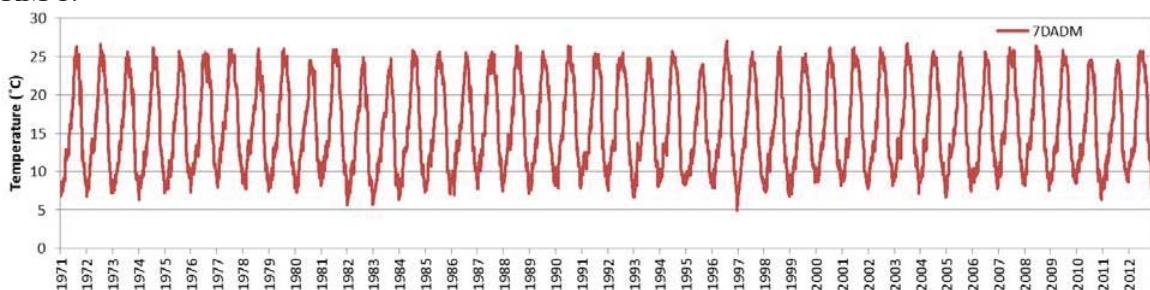


Figure 1-2. Simulated “without dams” temperature regime of the Tuolumne River at locations between RM 88 (above Don Pedro Reservoir) and RM 1 at San Joaquin River confluence.

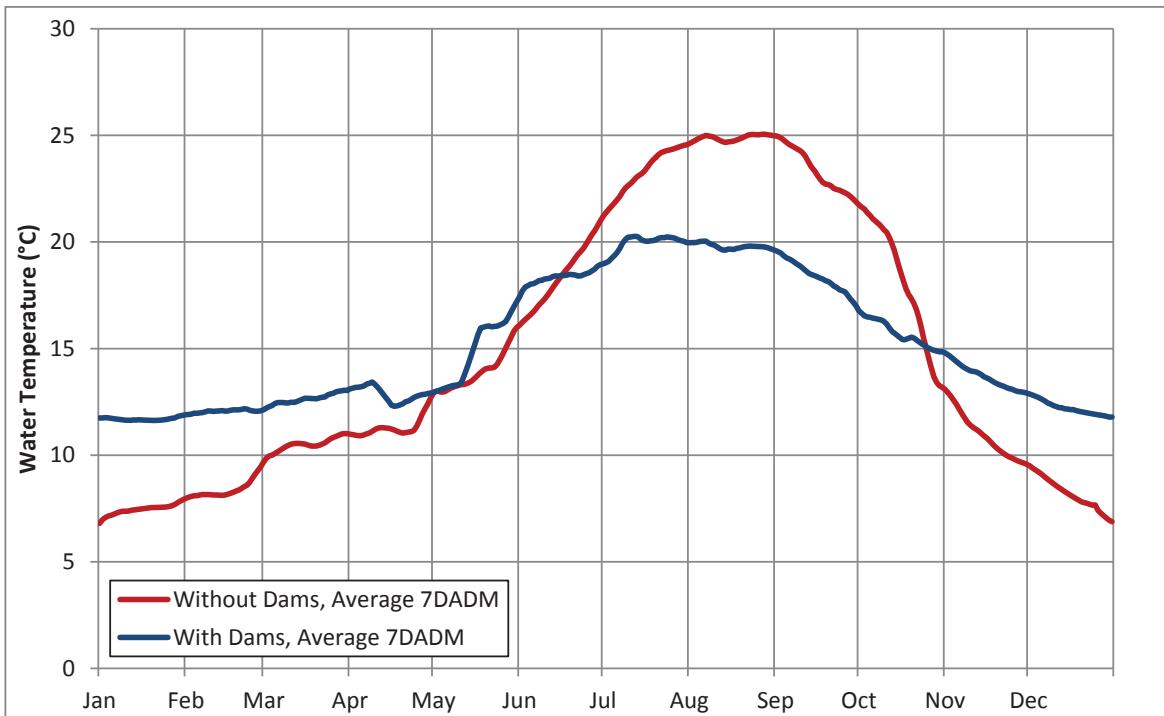


Figure 1-3. Temperature regime of the lower Tuolumne River at RM 46 under “Base Case” and “Without Dams” conditions.

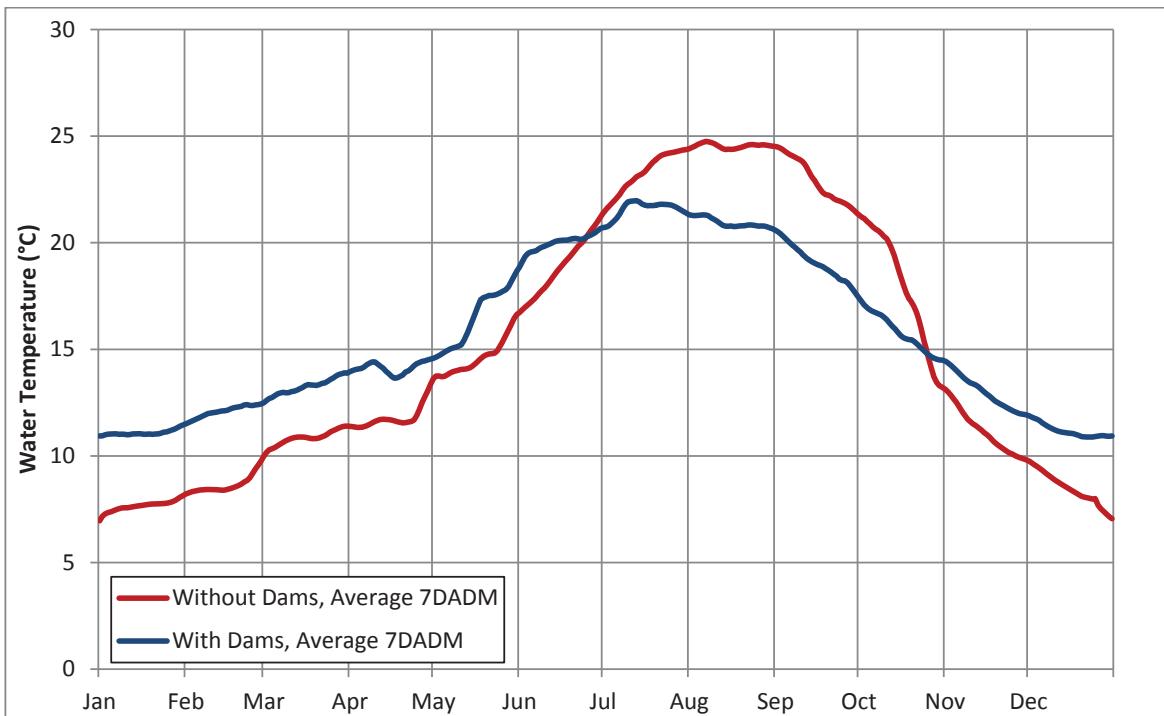


Figure 1-4. Temperature regime of the lower Tuolumne River at RM 40 under “Base Case” and “Without Dams” conditions.

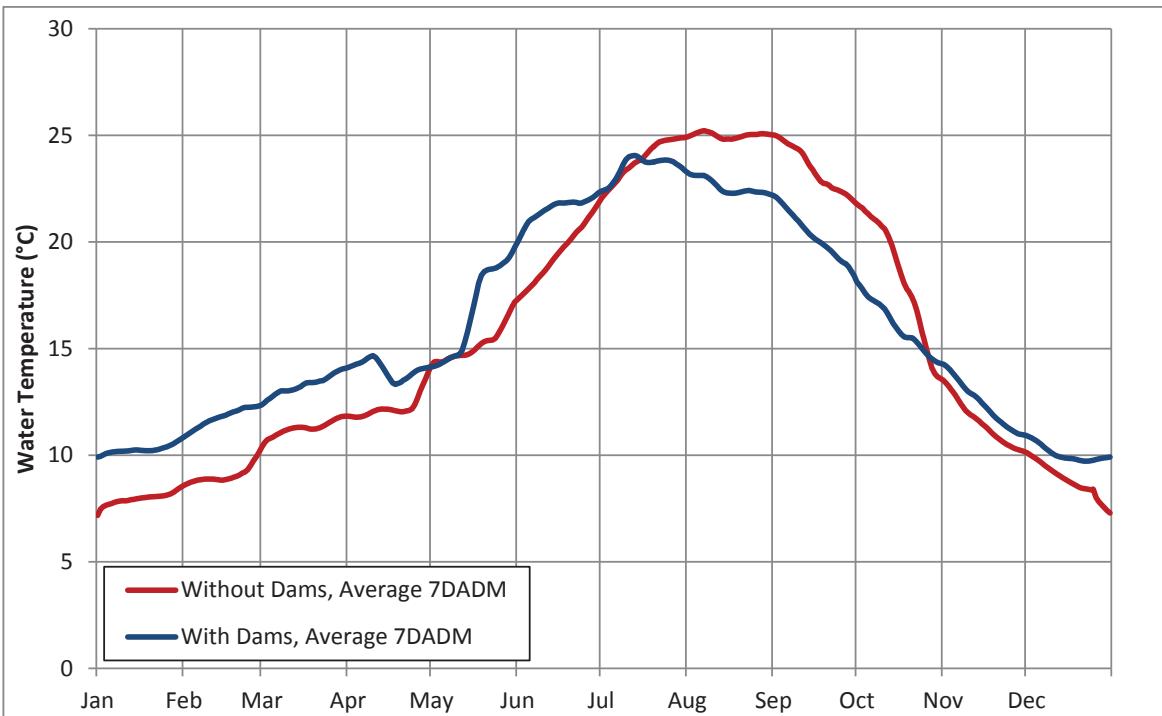


Figure 1-5. Temperature regime of the lower Tuolumne River at RM 34 under “Base Case” and “Without Dams” conditions.

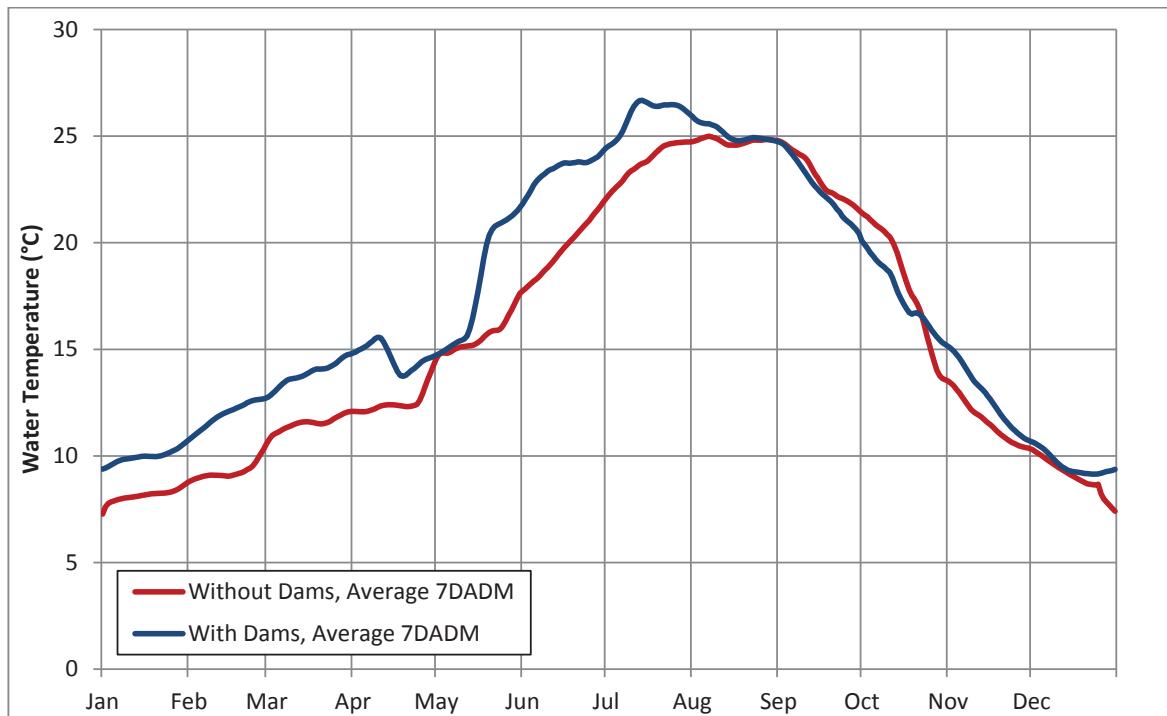


Figure 1-6. Temperature regime of the lower Tuolumne River at RM 24 under “Base Case” and “Without Dams” conditions.

1.2 Agency Request for Additional Information

As mentioned above, in response to the Districts' November 26, 2013 DLA, both the SWRCB and FERC staff requested that the Districts evaluate the Don Pedro Project's effects on temperatures in the lower Tuolumne River. Specifically, both parties requested evaluations of the Don Pedro Project's contribution to temperature impairment in the lower Tuolumne River. The SWRCB's temperature impairment finding, summarized below in Section 2.0, was based on applying to the Tuolumne River certain temperature guidelines for salmonids' life stages developed in a report by the Pacific Northwest Region of the US Environmental Protection Agency (EPA 2003).

In the March 4, 2014, letter providing comments to the DLA, FERC states on page 1 of Appendix A:

In the Director's December 22, 2011 Study Plan Determination on the Districts proposed Temperature Criteria Assessment Study, (not recommended), we stated that we would use the temperature criteria in EPA (2003) for our evaluation of project effects on salmonids. We also said that we would use temperature criteria developed from salmonids in the lower Tuolumne River if available. The DLA did not include model results and analyses of project effects on salmonids or effects of proposed changes in project operations for protection of salmonids using the EPA (2003) criteria. We expect that the FLA will include results of temperature model runs using the EPA (2003) criteria over the range of water year classifications determined by the California State Water Board's San Joaquin Basin Water Supply Index and the California Water Resources Department April 1 San Joaquin Valley unimpaired runoff forecast. In addition, the results of the temperature model runs using EPA (2003) criteria should be used as input to the W&AR-6, Chinook Salmon Population Model and in the W&AR-10, O. mykiss Population Study for all salmonid life stages included in the models.

Similarly, the SWRCB in its March 3, 2014, letter providing comments on the DLA requested information on the potential contribution of the Don Pedro Project to temperature impairment in the lower Tuolumne River and how the current minimum flow requirements could be altered to mitigate the impairment. Specifically, the SWRCB letter states on page 3 of Attachment A:

A brief analysis of temperature in the lower Tuolumne River is included in Section 4.0: Cumulative Effects of The Proposed Action. Section 4.0 gives an overview of how flows in the lower Tuolumne River may affect temperature but there is only a brief mention of the impairment and no analysis of how the Project may be contributing to that impairment. Any application for water quality certification needs to contain this information. State Water Board staff also believes that clearly understanding the Project's effects on temperature and how it relates to the impairment is necessary in order to properly inform protection, mitigation and enhancement (PM&E) measures. Therefore, State Water Board staff requests that the Districts include this information in their FLA.

To assist the Districts in accomplishing this effort, State Water Board staff has included the Final 2008 California 303(d)/303(b) Integrated Report Supporting Information

(Supporting Information) for the Tuolumne River temperature listing in Attachment B. This document outlines the information and criteria that was used to support the listing of the Tuolumne River as temperature impaired. The FLA should discuss how minimum instream flows controlled by the Districts' operation of the Project affect the temperature in the lower Tuolumne River and how such operations relate to the impairment listing. The FLA should also discuss how minimum instream flows can be altered to address the impairment.

During the relicensing process, the Districts worked closely with relicensing participants to develop a set of five Tuolumne River-specific quantitative models to establish the Base Case conditions and enable the evaluation of alternative Don Pedro Project operations scenarios. These models include the Tuolumne River Operations Model (Operations Model), Don Pedro Reservoir 3-D Temperature Model, Lower Tuolumne River Temperature Model, Fall-run Chinook Population Model and *O.mykiss* Population Model. The models are designed to be used in combination to evaluate alternative Don Pedro operation scenarios and the effects of such alternatives. Since the Operations Model also includes the water supply operations of CCSF's Hetch Hetchy water system, the effects of alternative scenarios to CCSF's water supply to the Bay Area can also be evaluated. This suite of models was used to perform the evaluations requested by SWRCB and FERC staff.

The analysis of the flows needed to meet the EPA 2003 temperature guidelines on the Tuolumne River is a complex undertaking. For example, the Don Pedro Reservoir temperature model has demonstrated that as reservoir water levels approach and fall below elevation 650 ft (+/-), the temperature of outflows may rise and can reach upwards of 18°C, and potentially higher under summertime air temperatures, as outflow temperatures approach inflow temperatures at very low reservoir levels. While this has happened very infrequently during the initial license term (the reservoir has been lower than elevation 650 ft only two percent of the time), potentially higher minimum flows in the future would result in this occurring more frequently. At low reservoir levels, the stability of the cold water pool can break down as reservoir volume shrinks. Adding to this complexity, for the analysis to properly reflect reality, Project operations personnel would have to be able to estimate the flows needed to meet the desired downstream river temperatures based on forecasted local meteorological conditions, and do so *in advance of* exceeding the required temperature some 50 miles downstream. Therefore, as described in the following sections, the analysis proceeds by first establishing specific times and locations where the EPA 2003 temperature guidelines apply (Section 2.0), then developing operational rules to meet these temperatures, and then delivering flows from system storage based on these operational rules so as not to exceed the required temperature (Section 3.0).

In Section 4.0 of the report, the results of the analysis are summarized for the period of record (1971 – 2012), and the operational implications of trying to meet the EPA temperature benchmarks are discussed.

2.0

EPA DECISION ON 2008-2010 SECTION 303(D) LIST OF IMPAIRED WATERS

On November 12, 2010, EPA approved the California State Water Resource Control Board's 2008-2010 Section 303(d) List of Impaired Waters and disapproved the omission of several water bodies and associated pollutants that meet federal listing requirements. On October 11, 2011, EPA issued its final decision regarding the waters EPA added to the State's 303(d) list (EPA 2011). Included in Enclosure 2 to that decision, EPA determined that the Tuolumne River from Don Pedro Reservoir to the San Joaquin River has "water quality-limited segments still requiring TMDLs for temperature pursuant to CWA, sec. 303(d) and 40 CFR 130.7(b)". EPA identified four temperature "benchmarks" for the Tuolumne River:

Tuolumne River, Lower (Don Pedro Reservoir to San Joaquin River)

In this segment, the Chinook salmon adult migration period occurs from river mile 3.4 (Shiloh Bridge) to river mile 52 (LaGrange Powerhouse) and Sep1-Oct31 (Julian weeks 36-43). Stream temperatures were monitored at river miles: 3.4, 12, 16, 16.3, 19, 21, 23.6, 26, 31, 32, 33, 35, 36.5, 36.7, 38, 39.5, 42.6, 42.9, 43.2, 43.4, 45, 45.5, 45.7, 47.5, 48.8, 49, 49.7, 50.5, 50.8, 51.6 and 52 from 1991 to 2007. Eighty three of 145 yearly maximum 7DADM values exceeded the 18°C benchmark.

The Chinook salmon spawning period occurs from river mile 26 (Fox Grove) to river mile 52 (LaGrange Powerhouse) and Oct1-Dec15 (Julian weeks 40-50). Stream temperatures were monitored at river miles: 26, 31, 32, 33, 35, 36.5, 36.7, 38, 39.5, 42.6, 42.9, 43.2, 43.4, 45, 45.5, 45.7, 47.5, 48.8, 49, 49.7, 50.5, 50.8, 51.6 and 52 from 1996 to 2007. One hundred and two of 118 yearly maximum 7DADM values exceeded the 13°C benchmark.

The Chinook salmon smoltification and juvenile rearing period occurs from river mile 3 (Grayson Rotary Screw Trap) to river mile 52 (LaGrange Powerhouse) and Mar15-Jun15 (Julian weeks 11-24). Stream temperatures were monitored at river miles: 3, 3.4, 12, 16, 16.3, 19, 21, 23.6, 26, 31, 32, 33, 35, 36.5, 36.7, 38, 39.5, 42.6, 42.9, 43.2, 43.4, 45, 45.5, 45.7, 47.5, 48.8, 49, 49.7, 50.5, 50.8, 51.6 and 52 from 1997 to 2008. Seventy-five of 137 yearly maximum 7DADM values exceeded the 16°C benchmark.

The Steelhead trout summer rearing period occurs from river mile 42.6 (Riffle K1) to river mile 52 (LaGrange Powerhouse) and Jun15-Sep15 (Julian weeks 24-37). Stream temperatures were monitored at river miles: 42.6, 42.9, 43.2, 43.4, 45, 45.5, 45.7, 47.5, 48.8, 49, 49.7, 50.5, 50.8, 51.6 and 52 from 1998 to 2007. Twenty-six of 78 yearly maximum 7DADM values exceeded the 18°C benchmark.

SWRCB and FERC have requested an analysis of flows and temperatures in the lower Tuolumne River to determine if there are operational measures that could be implemented at Don Pedro to achieve the stated temperature benchmark values for each of the listed life stages during the life history timing periods noted. The Districts utilized the life stage temperature benchmarks identified below at the EPA-selected locations in the river. The purpose of the Districts' analyses

described herein is to estimate the amount of flow necessary to achieve the temperature benchmark¹ at the locations and within the time periods specified for the Tuolumne River, as follows:

- Chinook salmon adult migration (Sept 1 – Oct 31): 7DADM of 18°C at RM 3.4
- Chinook salmon spawning (Oct 1 – Dec 15): 7DADM of 13°C at RM 26
- Chinook salmon smoltification and juvenile rearing (Mar 15 – June 15): 7DADM of 16°C at RM 3
- *O. mykiss* summer rearing (June 15 – Sept 15): 7DADM of 18°C at RM 42.6

¹ For purposes of this analysis, a “benchmark” is a temperature threshold at a specific location for a defined period of time for a specific life stage of anadromous salmonids as identified by EPA in its 303(d) listing of temperature impairment for the Tuolumne River below Don Pedro Dam.

3.0

DESCRIPTION OF ANALYTICAL METHODS

The basis of the EPA's impairment ruling was a matrix of temperature "benchmarks" established for the Central Valley portion of the Tuolumne River, based on water temperature guidelines provided in EPA (2003) for salmonids in the Pacific Northwest. It is apparent from a plain reading of EPA (2003) that the report was intended to suggest temperature guidelines and not criteria or standards. Although it is not precisely clear what the term "benchmark" is intended to denote, for purposes of this analysis the benchmark temperature is assumed to be a threshold (i.e. not-to-exceed) benchmark. Prior communications with resource agencies have indicated that this is consistent with their interpretation; that is, above the specified temperature significant harm will occur to the particular life stage. Use of the benchmark temperatures identified previously in Section 2 of this report does not signify that the Districts agree that EPA (2003) temperature guidelines developed for the Pacific Northwest should be used as threshold values on the Tuolumne River or elsewhere in California's Central Valley.

3.1. Modeling Approach

Using the suite of models developed for the Don Pedro Hydroelectric Project relicensing, a modeling approach was developed whereby all the consumptive use and water supply purposes of the Don Pedro, La Grange, and CCSF's Hetch Hetchy projects were eliminated in order to maximize the amount of water available to meet the temperature benchmarks.². In order to develop an operations scenario that is driven by compliance with the temperature "benchmarks", it is necessary to develop a practical and realistic decision tool that could be put into actual use by an operator working in real-time. In order to compute the flow required to meet each temperature benchmark, the Districts relied on information reasonably available to a real-time operator. Therefore, specific flow-temperature relationships were developed to assist operator decision making, and to recognize from the outset that perfect operator foresight and instant operator response cannot be assumed.

As a starting point, Don Pedro outflow temperatures are assumed to be equal to their seasonal average as computed by the reservoir temperature model (W&AR-03), shown in Figure 3-1. This outflow temperature regime has been documented by actual observation; and for reservoir levels above approximately 650 feet, the temperature regime is mimicked well by the Base Case reservoir model. The Don Pedro Reservoir has two outlets which convey water below Don Pedro Dam, one at elevation 535 ft and one at elevation 350 ft; however, field measurements show there is normally little difference in temperatures between the two intakes, this at most being 1 to 3°C. This small difference in temperature between the two intakes quickly disappears once water is released from Don Pedro Reservoir due to the dominant effect local meteorological conditions have on the river's temperature regime.

² Flood management operations required by the US Army Corps of Engineers' Flood Control Manual were retained in the modeling effort.

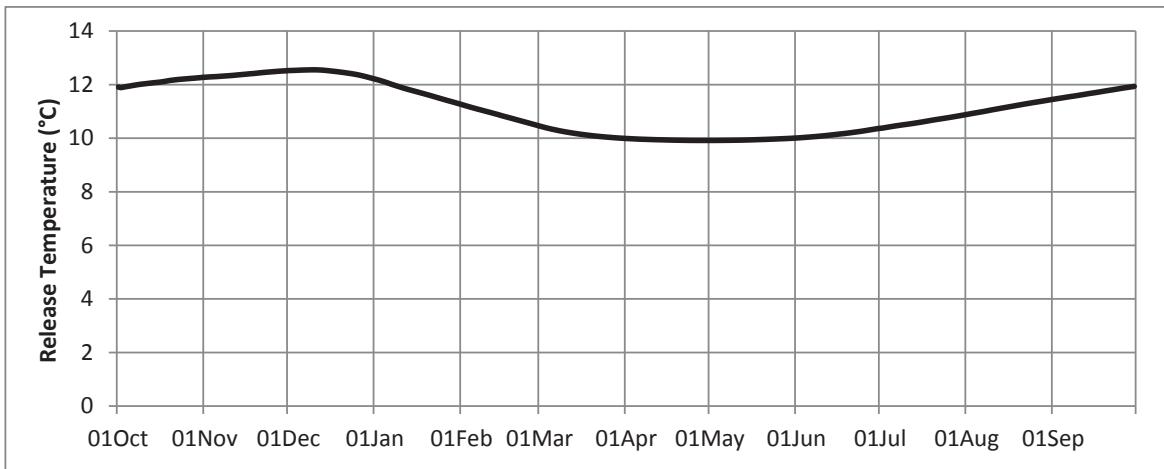


Figure 3-1. Average Don Pedro Reservoir release temperatures, Base Case results, 1971 to 2012.

The Districts' Tuolumne River temperature model is not reactive or iterative; that is, it will not assume that the entire Project operations can change hour-to-hour based on changing river temperature and meteorological conditions. It would be unrealistic to assume a real system could operate in this fashion, with no other constraints (e.g., ramp rates or public safety). The purpose of the model is to establish the quantity of water needed to meet a benchmark temperature, such that the computed flow will always result in a temperature very close to the benchmark. It also needs to be acknowledged that no model is a perfect representation of actual conditions, calibration accuracy carries uncertainty, and that all devices used to measure temperature are imprecise (see W&AR-16 Intensive Water Temperature Survey Report in the FLA). The assessment approach employed herein uses only the amount of water the model predicted as necessary and does not discharge excess water as a "buffer" against these uncertainties. On the practical side, an operator may never be able to do better than the model in meeting temperature benchmarks in the lower half of the river reach because:

- 7DADM is a multi-day average of instantaneous results;
- travel times to the confluence are always more than several hours and often more than one day, making it impossible to reactively manage flow to modify the daily maximum temperature;
- accretion rates and accretion temperatures cannot be precisely estimated; and
- Dry Creek flow rates and temperatures can fluctuate widely over short periods of time, are not controlled in any way by the Districts, and can play a significant role in river temperatures below RM 16.

Nevertheless, the models employed in this analysis provide a reasonable portrayal of flows necessary to attempt to achieve the temperature benchmarks. The EPA temperature benchmarks are in effect for approximately 275 days of each year. For the remaining 90 days of the year, it was assumed that the current FERC-required minimum flows were applicable. While all consumptive uses of water by the Districts and CCSF were eliminated, flood control operations remained in effect.

3.2. Development of Analytical Tools for Flow-Temperature Analysis

The temperature benchmarks used herein are defined under the EPA temperature impairment listing as rolling seven-day averages of the daily maxima (7DADM). The 7DADM temperature at a given location in a stream will be dependent on many factors, but will be highly sensitive to air temperature and flow rate. Other prominent factors can be degree of direct solar insolation, substrate type, and stream width/depth ratio. For purposes of this analysis, the maximum daily air temperature was used because it is a readily available daily forecasted value (that is, available for use by an operator), and it should have a strong relationship to the daily maximum water temperature.

Direct use of recorded data was not feasible for the current assessment because some of the temperature benchmarks are at locations that have no associated thermologgers. The in-situ data collected from 2011, 2012, and 2013 show that diurnal temperatures (i.e., maximum temperatures) along the lower Tuolumne River can vary considerably from one location to the next even over short distances, apparently due to site-specific factors (e.g. groundwater accretion, Special Run Pools, riparian diversions).

The Base Case operations model does not include a full range of meteorological conditions combined with the full range of possible flow conditions, as the Base Case operations are driven by current operational parameters and specific FERC-license requirements. To develop an operational scenario driven by temperature benchmarks, it was necessary to go well outside the Base Case operational rules. A matrix of conditions was developed to establish the basis for this temperature benchmark modeling effort. A set of eleven steady flow rates was developed to follow the pattern of sensitivity of stream temperature to flow, which generally follows an exponential distribution (100; 175; 250; 350; 500; 750; 1,100; 1,500; 2,000; 3,000; and 9,000 cfs). An additional set of meteorological conditions was used to understand the relationship between daily maximum air temperature and daily maximum stream temperature. The meteorological conditions were “cool”, “average”, and “warm” and were computed by using the 10th percentile, median, and 90th percentile, respectively, of the 42-year period-of-record values for a given hour for the whole year (Figure 3-2). The 42 years of hourly data were derived from the Meteorological Data Set developed for the Base Case temperature models, described in Attachment D of the W&AR-03 Study Report.

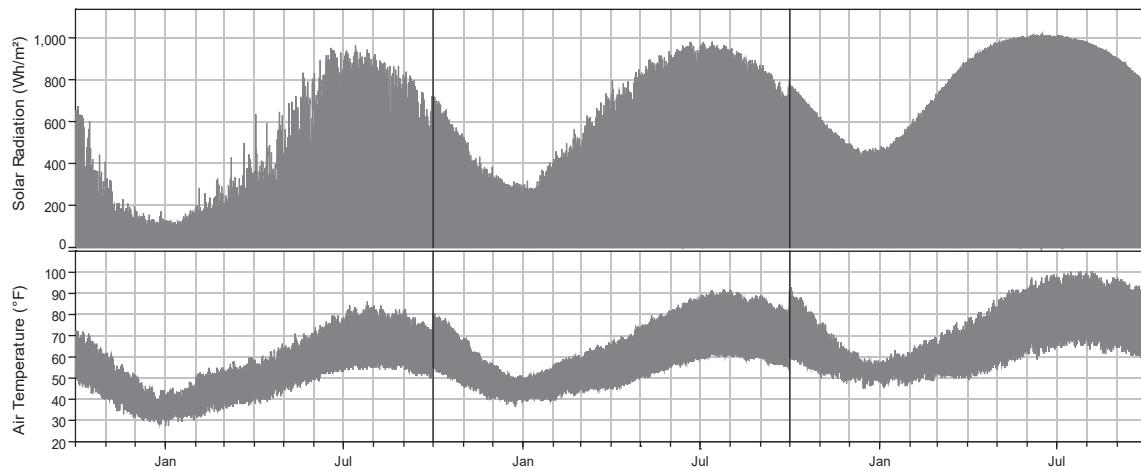


Figure 3-2. Cool, average, and warm meteorological conditions from left to right.

For each of the eleven selected steady flow rates, a linear regression was made to estimate 7DADM stream temperature given the daily maximum air temperature, as shown in Figure 3-3.

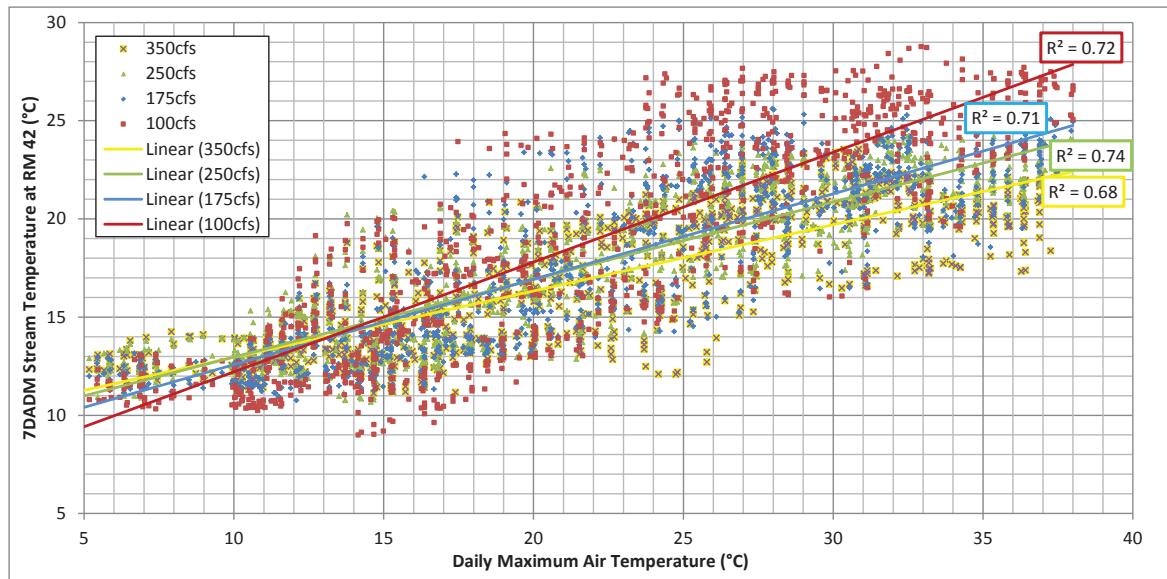


Figure 3-3. 7DADM as a function of daily maximum air temperature, linear regressions.

For a given daily maximum air temperature, 7DADM stream temperatures can be derived from the linear regressions for each of the eleven flow rates, as shown in the example of Figure 3-4.

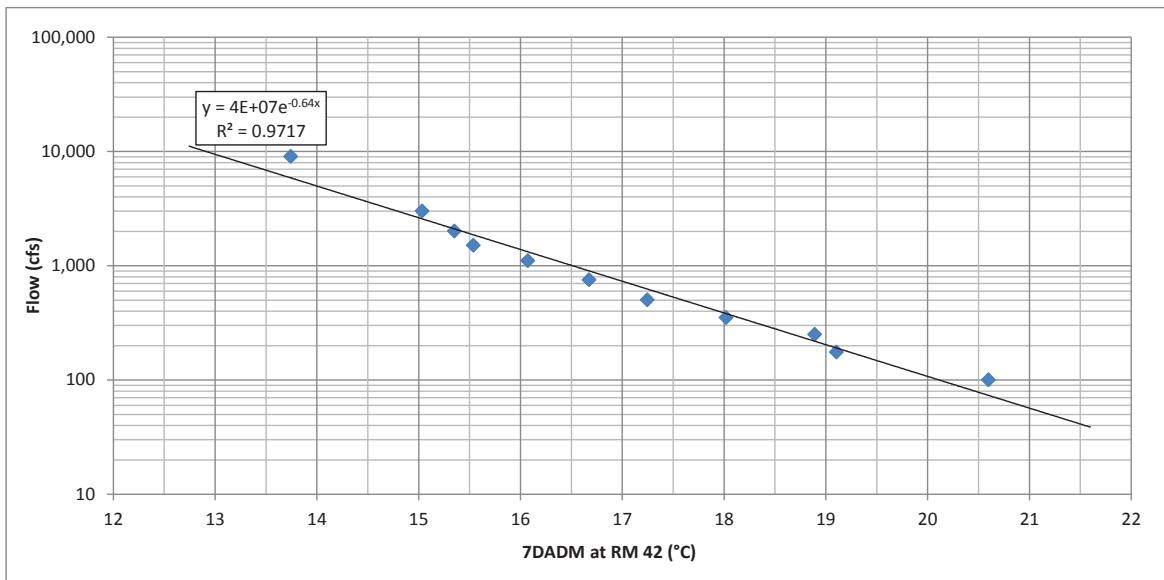


Figure 3.4. Flow as a function of 7DADM temperature at RM 42 when daily maximum air temperature is 25°C (77°F).

Again holding the daily maximum air temperature constant, an exponential function can be estimated that will allow computation of flow given a desired 7DADM temperature. This process was repeated for every daily maximum air temperature observed in the period of record, for the EPA's four different locations and 7DADM temperature benchmarks.

When the flows computed to attain a specific maximum water temperature are run through the Operations Model, 3-D Reservoir Temperature model, and River Temperature model, the 7DADM temperature benchmarks are achieved by the computed flow most of the time, as shown in Figure 3-5, assuming the quantity of flow needed is available from Don Pedro or CCSF's Hetch Hetchy Project.

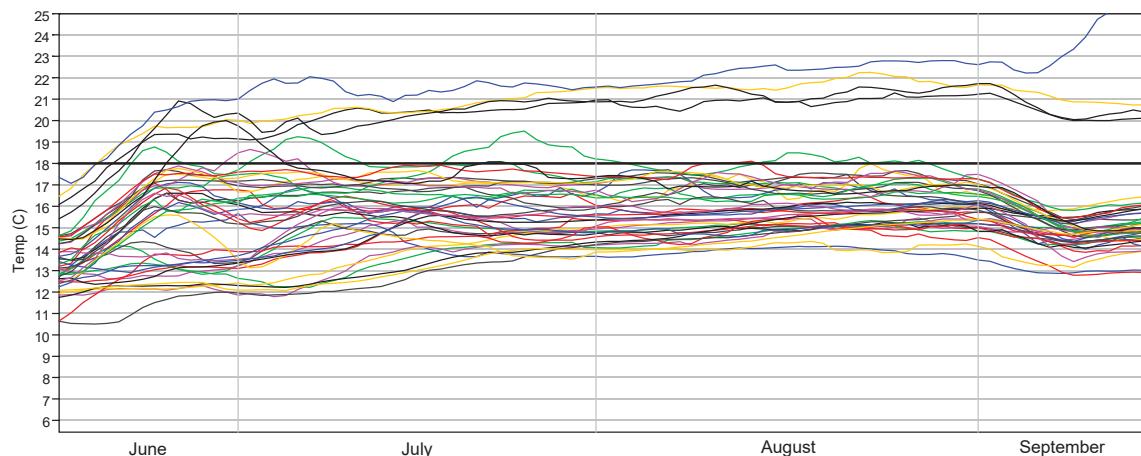


Figure 3-5. Temperature benchmark simulation for 7DADM of 18°C at RM 42.6 from June 15th to September 15th, 42 annual traces (WY 1971-2012).

The averaging of the seven maximum daily values helps to smooth out sudden changes in maximum daily temperatures that are observed in the 7DADM time series. There are several years that consistently fail to meet the temperature benchmarks because in these years, mostly sequential dry years, reservoir outflow temperatures are approaching or are already higher than the temperature benchmark. When low reservoir levels occur during summer periods, the thermal stratification necessary to maintain the cold water pool breaks down and warmer water occurs through the entire water column.

Because meeting the benchmark often requires a significant amount of flow to be released, the full Operations Model scenario must be run to ensure there is adequate water available for release to meet the required temperature benchmark flows. In addition, the reservoir temperature model needs to be run to determine if outflow temperatures may be increasing due to low reservoir elevations. Using the Operations Model in conjunction with the reservoir and river temperature models demonstrated that the flows required to meet the temperature benchmark(s) can, in some cases, result in Don Pedro Reservoir being drawn down to a level where the outflow temperatures are already greater than the benchmark. At that point, no amount of water release would meet the benchmark temperature.

As discussed above, this analytical approach does not iterate flow trials until a solution is found because that approach cannot be achieved in real-time over 50 miles of river through hour-to-hour adjustments to reservoir operations. The approach employed provides a reasonable estimate of the flow rate needed to reach the given benchmark in the Tuolumne River. The methods used approximate the level of foresight and knowledge that an operator could reasonably be expected to have available to implement a temperature driven operational scenario for the Tuolumne River.

3.3 Analytical Approach to Salmonid Model Simulations

In its March 4, 2013 comment letter on the DLA, FERC staff also requested that the results of the Operations Model and reservoir and river temperature models used to evaluate the EPA benchmark temperatures be input to the Tuolumne River Chinook salmon (TRCh) and *O. mykiss* (TROm) population models. To provide input data to the salmonid models, flow and water temperature time series were developed to try to meet the four seasonal EPA 7DADM temperature benchmarks, with water temperatures at other times of year reflecting the current minimum flow schedule under the existing FERC license requirements. Using estimates of spawning timing, population composition (age, sex ratio), and spawner fecundity, juvenile salmonid productivity metrics as well as estimates of year-over-year adult *O. mykiss* replacement were calculated using the validated models.

During the development of the Districts' two salmonid population models, some relicensing participants also recommended that the model use the EPA temperature benchmarks as model parameters for temperature thresholds, implying that once these temperature thresholds were exceeded, then mortality occurred. Instead, the Districts relied upon the underlying literature review sources actually used by EPA (2003), other information sources, and river-specific empirical data to inform processes affected by water temperature, including growth bioenergetics, movement, mortality and smoltification. Use of a single temperature metric such as the EPA benchmarks is not useful for modeling purposes because it does not consider different responses over a *range* of temperatures, which more realistically reflect actual biological responses to temperature variations in the Tuolumne River. For example, if the October 1 to December 15 EPA benchmark temperature of 13°C is exceeded by 0.5°, what is the biological response? The implication of the EPA benchmark temperature, since exceeding it might be considered a "violation" of a water quality benchmark, is that any exceedance has severe biological consequences, otherwise, of what utility is the benchmark. The Districts rejected the recommendation to employ the EPA benchmark temperatures in their salmonid models specifically because the particular thresholds were not well associated with biological responses or life history outcomes that could be readily represented in the models and extensive empirical monitoring data specific to the Tuolumne River disprove their applicability as a "threshold" value.

4.0 ANALYSIS RESULTS

4.1 Water Temperatures

After several test runs of just the Operations and river temperature models, it became apparent that large release volumes would frequently be required to meet the EPA temperature benchmarks. Therefore, as a starting point to attempt to meet the temperature benchmarks, the Districts began the analysis conservatively by assuming that *all* the water available in the Tuolumne River, *all* Don Pedro storage and operations, and *all* of CCSF's Hetch Hetchy Project storage and operations would be available to meet the benchmarks. Therefore, all the storage available in the Tuolumne River reservoirs was operated with the single goal of attempting to meet the EPA benchmarks, once any ACOE flood control requirements were met. Applying this operational scenario, Figure 4-1 presents the number of days that the temperature benchmarks for each salmonid life stage were met at the selected locations and the corresponding flow releases to meet the benchmarks.

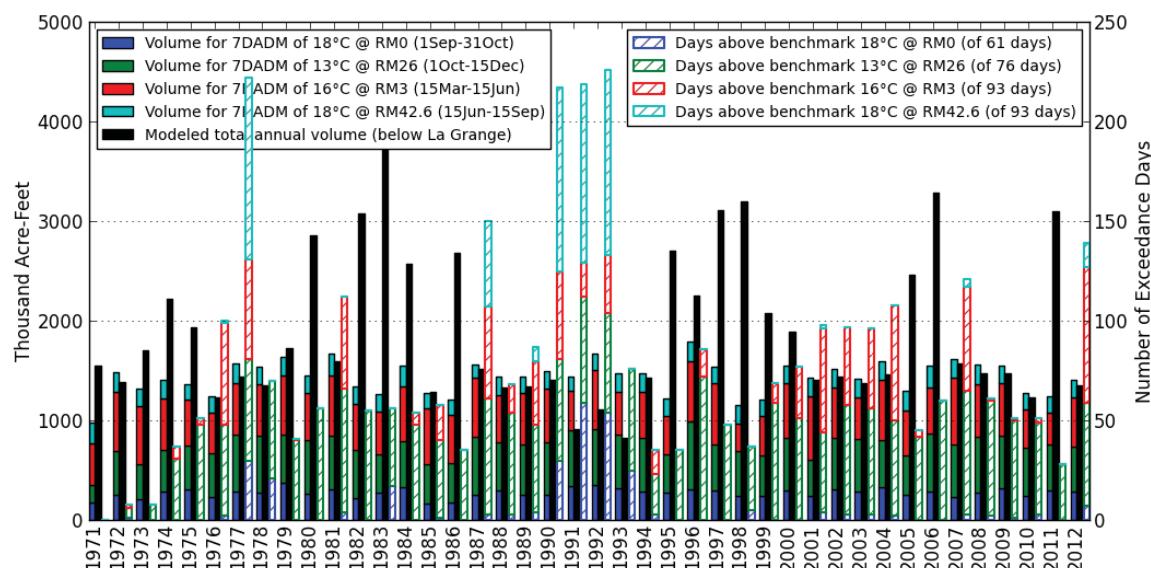


Figure 4-1. Flows required to meet EPA benchmark temperatures in each water year of the 1971 to 2012 period. Also shown are number of days when benchmark temperatures are exceeded in each year (see right y-axis).

Applying the operational scenario where the Districts receive no water for irrigation for all 42 years, where the City of Modesto receives no Project water for M&I purposes for 42 years, and where CCSF and its Bay Area customers receive no water from the Hetch Hetchy system for 42 years, all of the EPA benchmark temperatures for salmon and *O.mykiss* were not met in any year of the 42-year period, with the exception of 1971³. Therefore, even when eliminating all consumptive uses of Tuolumne River water, the EPA benchmark temperatures are exceeded in 98 percent of the years.

³ The benchmarks could be met in 1971, the first year of modeling, because all reservoirs were assumed to be full at the start of the model.

In half of the 42 years, at least two of the four benchmark temperatures are not met; in nine of the 42 years, three of the benchmarks are unmet; and in four of the years, none of the benchmarks are met. As mentioned above, the EPA temperature benchmarks encompass a period of 275 days in each year. The number of days when the temperature benchmarks are unmet vary from less than 10 days (in three of the years), to over 50 days in 30 of the years, to over 100 days in ten of the years. During sequential dry year periods, meeting the EPA benchmarks become increasingly difficult because as the reservoir level is lowered, the reservoir outflow temperature begins to increase, requiring even more flow to try to meet the temperature benchmark, which in turn lowers the reservoir faster, leading to even higher outflow temperatures. Figure 4-2 shows the resulting 42 year sequence of reservoir levels and outflow temperatures from the Operations Model. During the 1990 to 1993 time frame, the Don Pedro Reservoir goes completely dry, and in nine of the 42 years (>20 percent of the time), the reservoir drops below dead pool. Significantly, during the 1976-1977 and 1987-1992 drought periods, the Don Pedro and all the Hetch Hetchy reservoirs go dry, even with no water being available for consumptive use purposes.

The amount of water associated with operating the system to try to meet each of the individual EPA benchmarks is shown in Figure 4-3; however, use of these quantities still does not result in actually meeting the EPA benchmarks. At least one benchmark is unmet in 41 of 42 years, and there are more than 50 days of unmet temperature benchmarks in 70 percent of the years. The average annual water volume dedicated to trying to meet the benchmarks is just slightly less than 1.5 million acre-feet per year; the median unimpaired flow of the Tuolumne River at La Grange is 1.8 million acre-feet.

For purposes of comparison, the Districts also evaluated the EPA benchmark temperatures under the Base Case Operations Model and the “without dams”/unimpaired flow model. Table 4-1 presents the results of these model runs. In none of the 42 years did the “without dams”/unimpaired flow model meet the EPA temperature benchmarks. In almost half of the years, the Districts/CCSF Base Case fared better in meeting the EPA benchmarks than the “without dams” model.

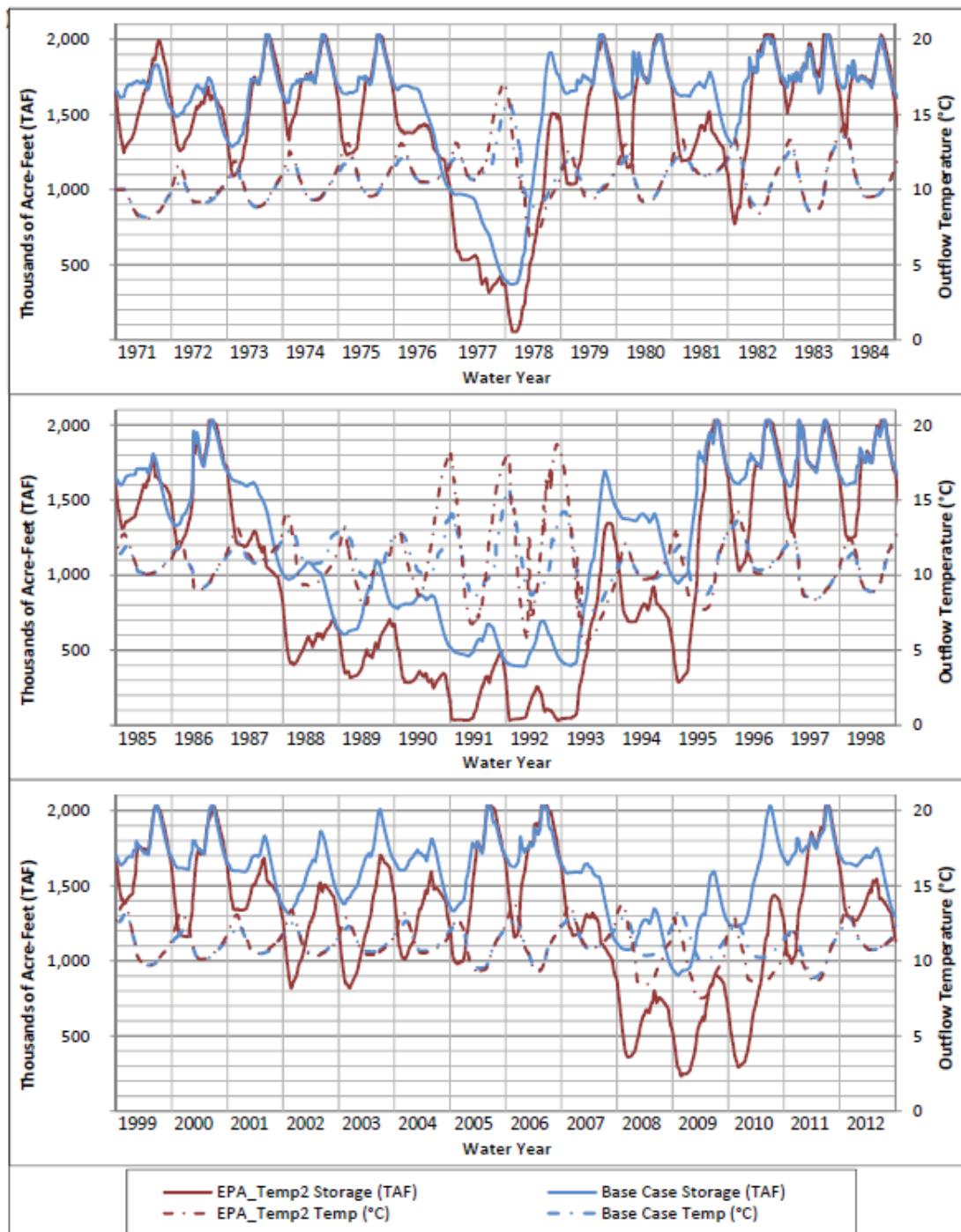


Figure 4-2. Output of the simulated reservoir operations scenario over the 42-year time series intended to meet the EPA benchmark temperatures, illustrating Don Pedro Reservoir storage and outflow temperatures.

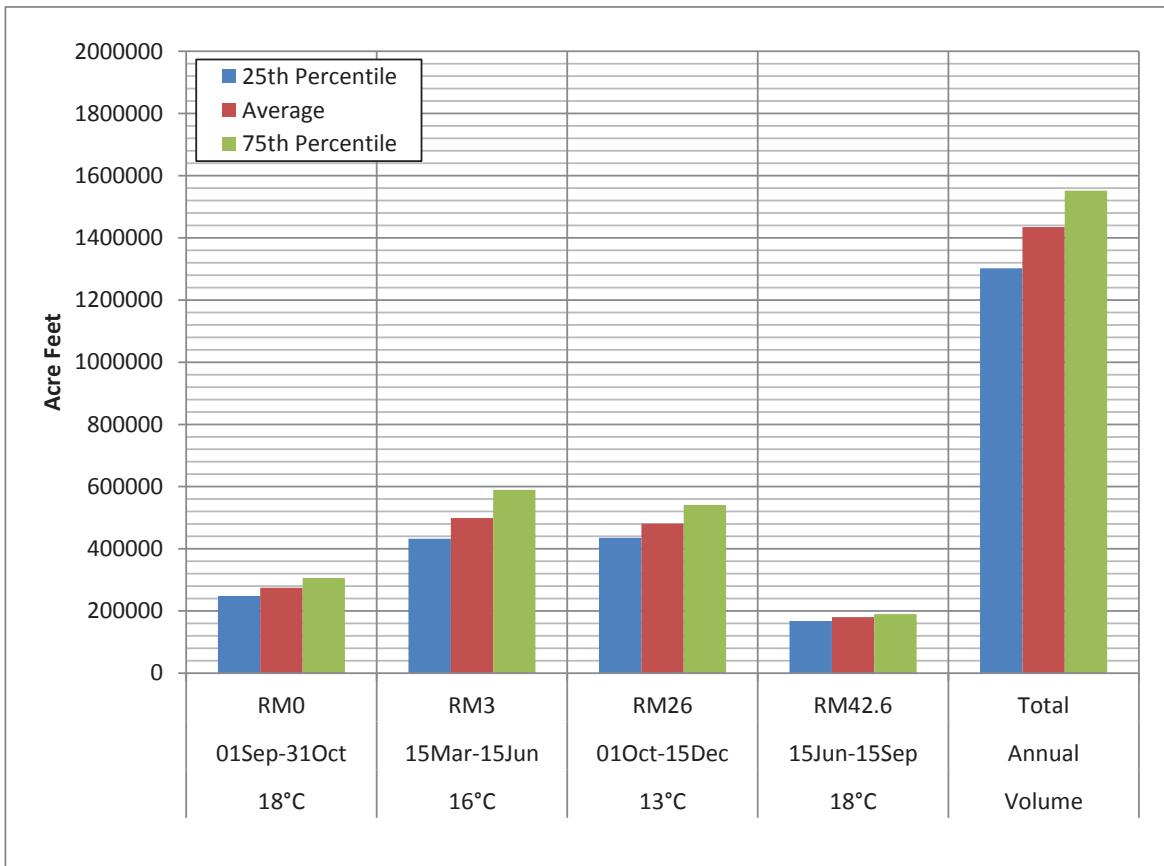


Figure 4-3. Average, 25th percentile and 75th percentile of water volume used to try to meet each of the four EPA benchmark temperatures in the 42-year period of record. On average, almost 1.5 million AF of water is dedicated to trying to attain the benchmark temperature.

Table 4-1. Number of days for each of four EPA benchmarks when temperature benchmark is exceeded under Base Case, "without dams"/unimpaired flow case, and case where consumptive use purposes are eliminated and river system is operated only for temperature purposes.

Districts' Response to DLA Comments
April 2014

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*Final License Application
Don Pedro Hydroelectric Project*

4.2 Salmonid Model Results

Using the validated Chinook salmon and *O. mykiss* population models, juvenile and adult productivity metrics were evaluated for the EPA benchmarks scenario reflecting seasonal variations of the flows released to try to meet the identified EPA benchmarks (275 days/yr) or the existing minimum FERC-required flow requirements (remaining 90 days/yr) over the simulation period (1971–2012).

4.2.1 Chinook Salmon Productivity Comparisons

Figure 4-4 provides the results of the model runs for fall-run Chinook salmon smolt productivity for the EPA benchmarks scenario and the Base Case scenario. Also shown in the figure are the modeled estimates of the annual discharge volume at the La Grange gage (USGS 11289650) for the simulation period. For Chinook salmon, the increased flows that occur under the EPA benchmarks scenario relative to the Base Case scenario generally result in increased smolt productivity, with the largest relative increases occurring in below normal water years and dry water years.

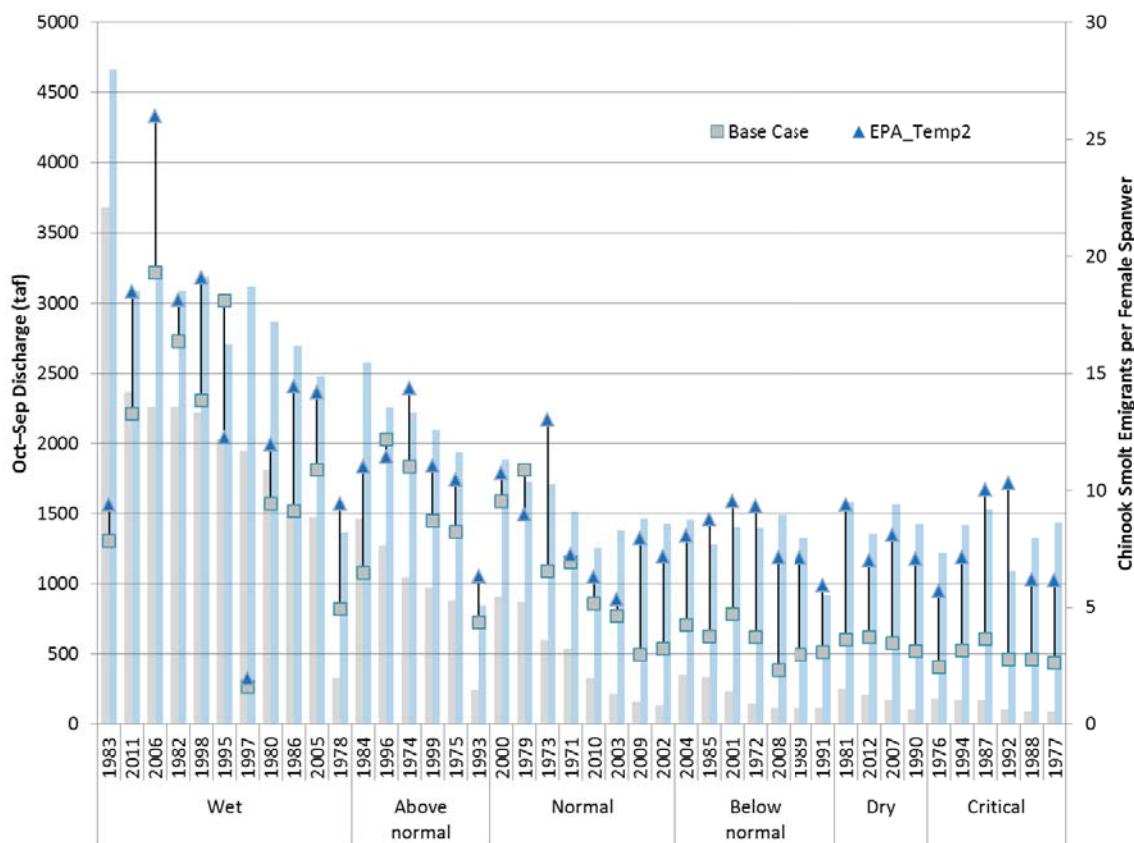


Figure 4-4. Modeled Chinook salmon smolt productivity comparisons for the EPA benchmarks scenario and Base Case scenario (1971–2012) sorted by annual discharge volume at La Grange and water year. [Note: Districts' population model does not incorporate EPA benchmark temperatures.]

Figure 4-5 shows Chinook smolt productivity as a function of annual flow. Because the TRCh model encodes a linear relationship of smolt survival with flow, it is not unexpected that the largest smolt productivity gains are shown for drier water years with otherwise low springtime flows. However, even without consideration of the feasibility of providing discharges necessary to meet the identified EPA benchmarks in the face of other Tuolumne River water demands, it is apparent that the EPA benchmarks scenario uses significantly greater amounts of water than the Base Case to achieve similar benefits to smolt productivity. For example, Figure 4-5 shows that under Base Case rules for flow requirements, a water year with approximately 1 million AF of water at the La Grange gage produces about eight smolts per female spawner. Using the EPA benchmarks, it takes approximately 1.45 million AF of water to produce eight smolts per spawner. Preliminary TRCh model scenario runs by the Districts have indicated that increases in smolt productivity can be accomplished using much less water than is represented by the EPA benchmarks scenario.

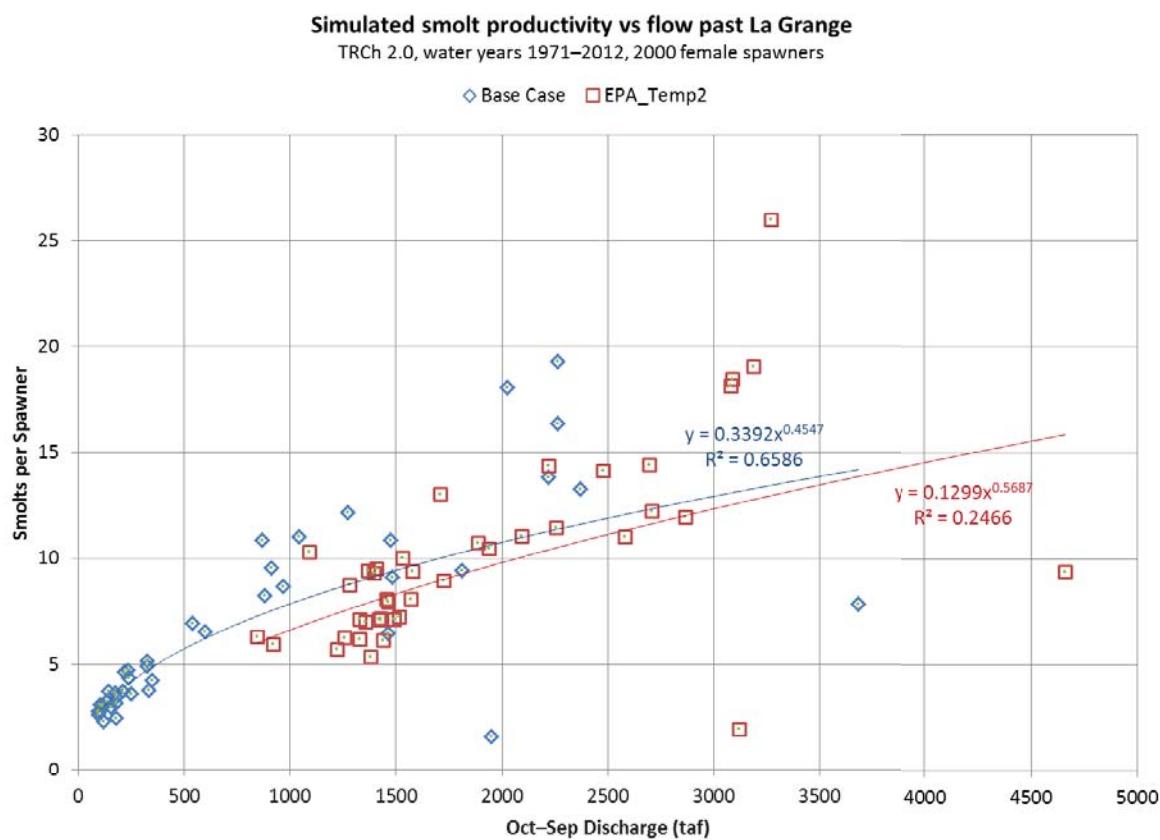


Figure 4-5. Modeled Chinook salmon smolt productivity versus annual flow at La Grange resulting from operations scenario developed to meet EPA benchmark temperatures. [Note: Districts' population model does not incorporate EPA benchmark temperatures.]

4.2.2 Juvenile *O. mykiss* productivity and adult replacement comparisons

Figures 4-6 and 4-7 provides the results of the model runs for juvenile *O. mykiss* productivity and adult replacement metrics for the EPA benchmarks scenario and Base Case scenario. Also shown in the figure are the modeled estimates of the annual discharge volume at the La Grange gage (USGS 11289650) for the simulation period. For *O. mykiss*, increased summertime flows under the EPA benchmarks scenario relative to Base Case operations results in increased juvenile productivity and adult replacement, with the largest relative increases occurring in Below Normal and drier water year types.

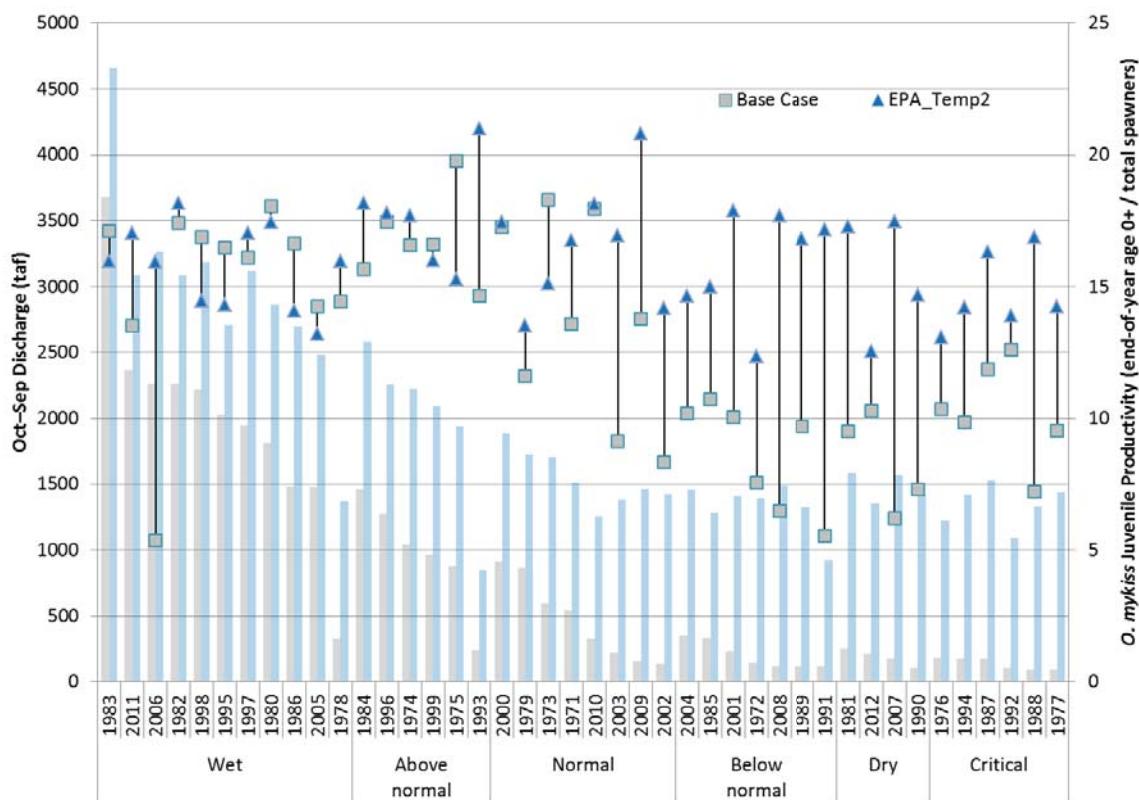


Figure 4-6. Modeled juvenile *O. mykiss* productivity comparisons for the EPA 2003 benchmarks and Base Case scenarios (1971–2012) sorted by annual discharge volume at La Grange and water year. [Note: Districts' population model does not incorporate EPA benchmark temperatures.]

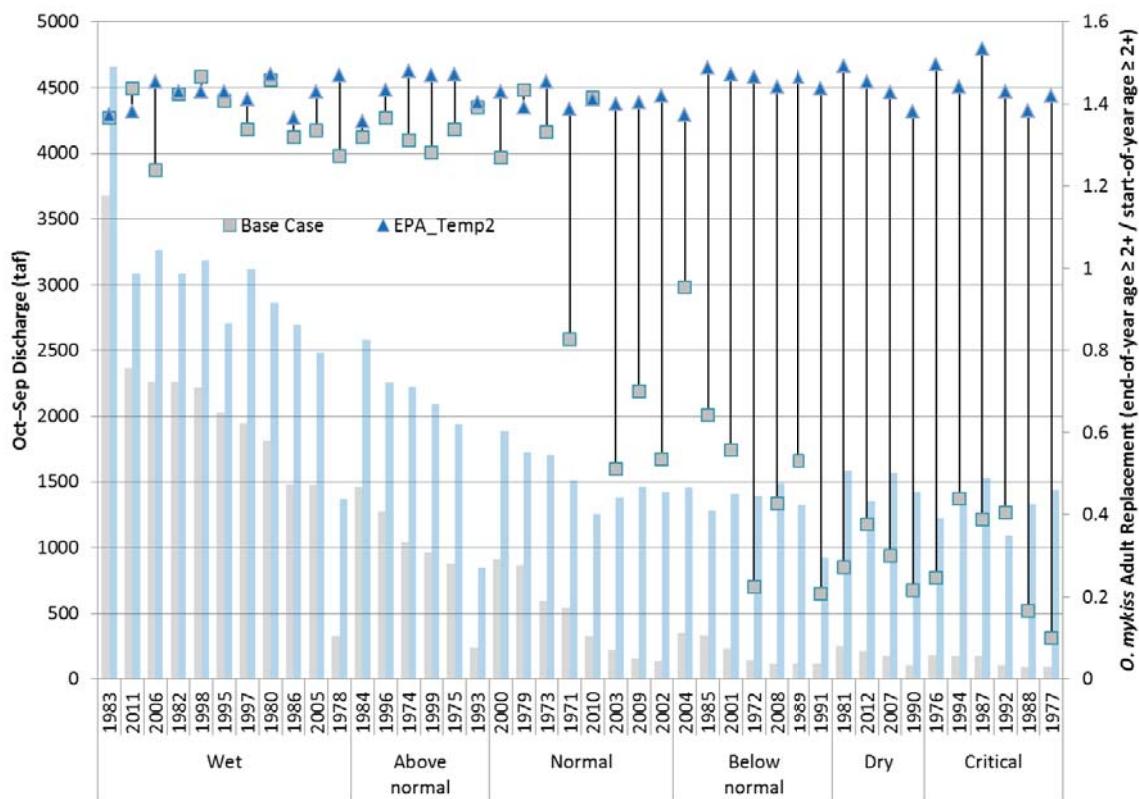


Figure 4-7. Modeled adult *O. mykiss* replacement ratio comparisons for the EPA 2003 benchmarks and Base Case scenarios (1971–2012) sorted by annual discharge volume at La Grange and water year. [Note: Districts' population model does not incorporate EPA benchmark temperatures.]

Figures 4-8 and 4-9 show juvenile *O. mykiss* productivity and adult replacement as a function of annual flow past La Grange. The apparent gains in *O. mykiss* productivity metrics relate directly to lower summertime temperatures under the EPA benchmarks scenario compared to the Base Case. In examining potential *O. mykiss* responses to increased extent of rearing habitat with suitable summertime rearing habitat under the Base Case, an annual flow past the La Grange gage of approximately 800 TAF results in an estimated 16 juvenile *O. mykiss* per spawner at the end of the simulation year on September 31st (Figure 4-8). Adult replacement ratios at an annual flow of 800 TAF were in excess of 1.2 (Figure 4-9). Interestingly, however, the large increases in annual flow necessary to meet the EPA benchmarks do not result in further increases in either juvenile productivity (Figure 4-8) or adult replacement (Figure 4-9). Preliminary runs by the Districts have shown comparable *O. mykiss* productivity can be achieved at annual discharge levels far below those corresponding to the EPA benchmarks.

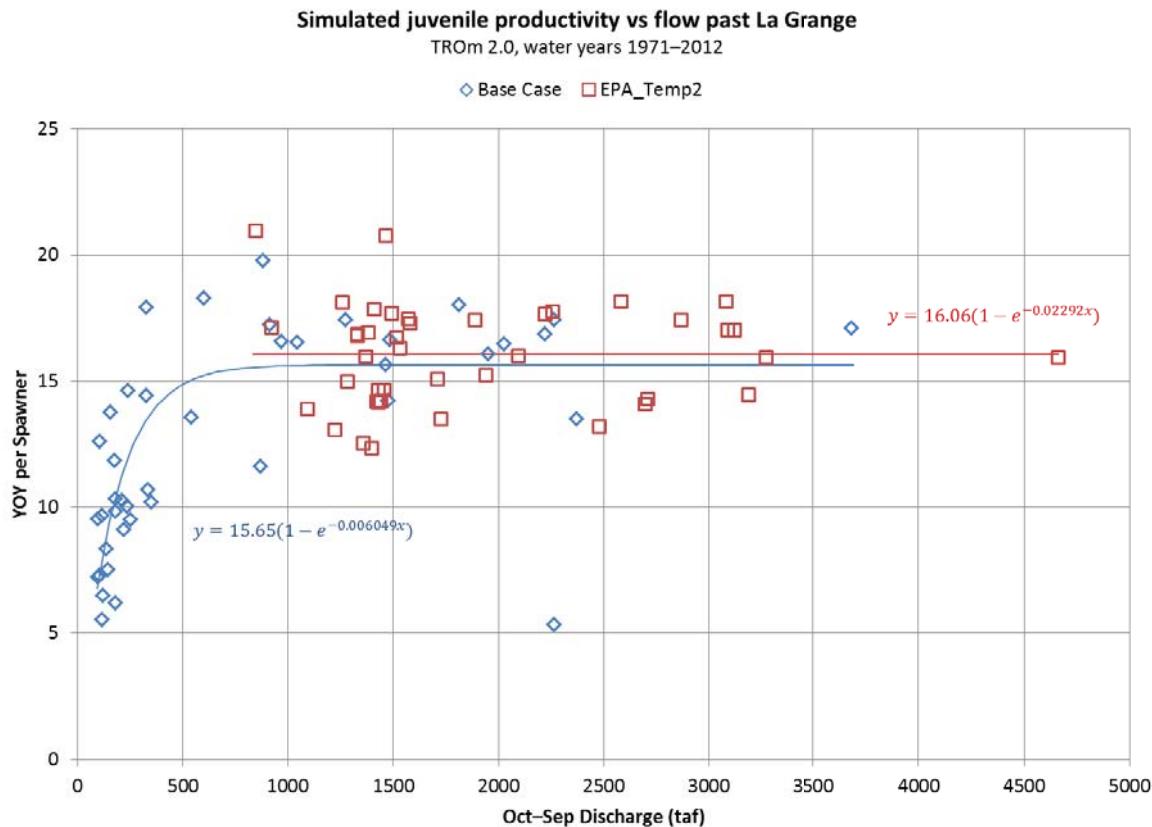


Figure 4-8. Modeled juvenile *O. mykiss* productivity versus annual flow at La Grange resulting from operations scenario developed to meet EPA benchmark temperatures. [Note: Districts' population model does not incorporate EPA benchmark temperatures.]

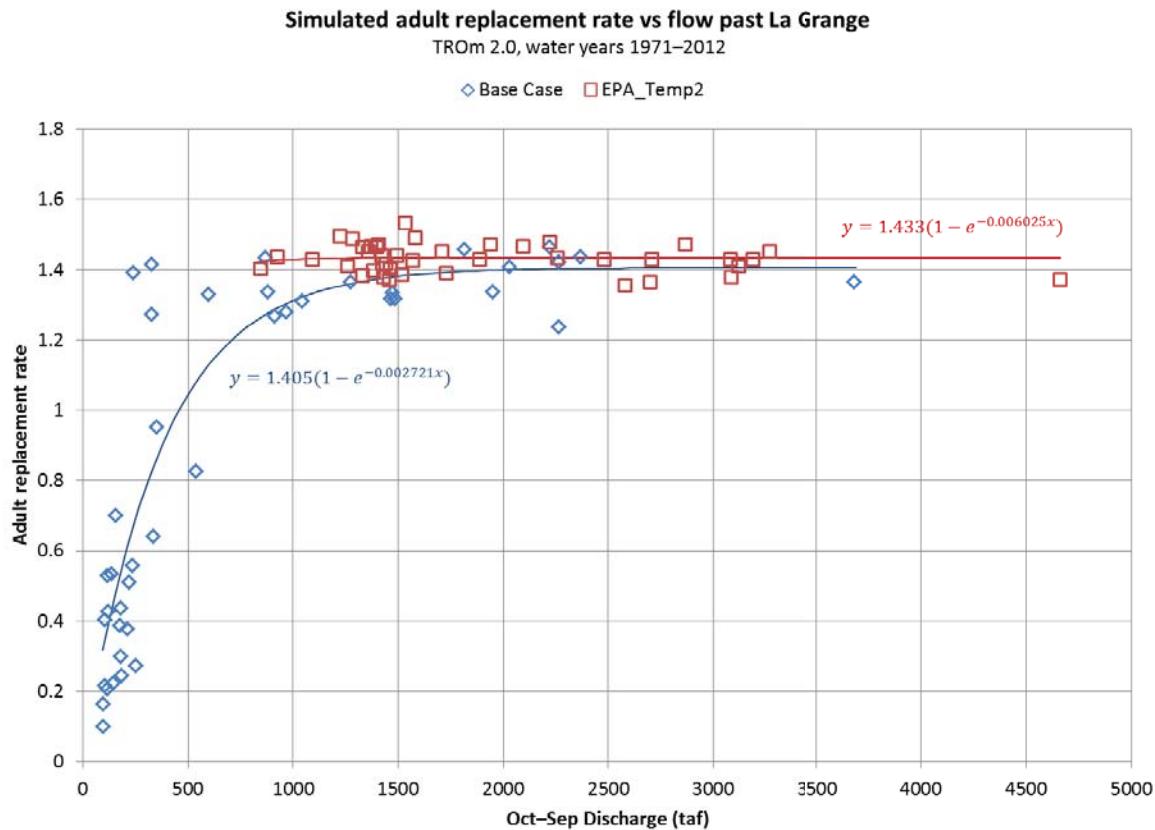


Figure 4-9. Modeled adult *O. mykiss* replacement ratio versus annual flow at La Grange resulting from operations scenario developed to meet EPA benchmark temperatures. [Note: Districts' population model does not incorporate EPA benchmark temperatures.]

5.0 DISCUSSION

At the request of FERC and SWRCB staff, the Districts performed model runs to examine what changes in the Don Pedro Hydroelectric Project's minimum flows would be needed to meet the temperature "benchmarks" established by EPA in its ruling and subsequent final decision on SWRCB's 2008-2010 Section 303(d) List of Impaired Waters. The Districts evaluation of what type of operational scenario might be required at the Don Pedro Project to meet the EPA benchmark temperatures applied the scenario wherein all consumptive use purposes of the Tuolumne River watershed, including CCSF's Hetch Hetchy Project, were completely eliminated, and the reservoirs were managed for water temperature purposes. The analysis demonstrated that, even with all consumptive uses being eliminated, the EPA benchmark temperatures were exceeded in 41 of 42 years. Further, the EPA's benchmark temperatures were exceeded for more than 50 days in 70 percent of the years. The Districts also applied their "without dams" temperature model to examine if unimpaired flows would attain the EPA benchmark temperatures. In every year of the "without dams" simulation (42 of 42 years), at least one of the EPA benchmark temperatures was exceeded under unimpaired flow conditions, and there were never any fewer than 100 days of non-attainment in any year. From this perspective, meeting EPA temperature benchmarks fared better under current operations than under unimpaired flow conditions.

Interpreting EPA's benchmark temperatures as "thresholds" above which significant biological harm occurs, one would be forced to conclude that historical and existing thermal conditions on the Tuolumne River have been, and continue to be, unsuitable for salmonids. However, common sense indicates otherwise, as there is and has been a fall-run Chinook salmon population on the Tuolumne River, and empirical data show that the *O. mykiss* population is increasing. The Districts' salmonid population models developed for the Don Pedro relicensing reflect thermal and biological realities, using established bioenergetics principles and approaches that predict biological responses over a range of temperatures, providing a more realistic basis for assessing temperature management needs on the lower Tuolumne River. Under the EPA benchmarks, it is unclear what biological outcomes are to be assumed to occur since the benchmark temperatures are routinely exceeded under the scenarios analyzed.

Although the Districts remain unclear regarding the EPA's definition of a temperature "benchmark", the analyses performed for this evaluation indicate that any reasonable possibility of satisfying the EPA benchmarks as "thresholds" must reconsider not only the temperature component of the benchmarks, but the location and time period over which the benchmarks are achieved. The analyses presented above suggest the need for all parties to engage in open dialogue on the appropriate application and interpretation of the EPA "benchmarks".

6.0

LITERATURE CITED

USEPA. 2011, October 11. USEPA's final approval letter and enclosure for California's 2010 303(d) List (http://www.swrcb.ca.gov/rwqcb5/water_issues/tmdl/impaired_waters_list/index.shtml)

ATTACHMENT A
DISTRICTS' RESPONSE TO COMMENTS ON
DRAFT LICENSE APPLICATION

APPENDIX B
REQUEST FOR ADDITIONAL INFORMATION REGARDING CDFW
COMMENTS ON DRAFT LICENSE APPLICATION



April 21, 2014

Jeffrey R. Single, Ph.D.
Regional Manager, Central Region
California Department of Fish and Wildlife
1234 East Shaw Avenue
Fresno California 93710

Re: Don Pedro Hydroelectric Project, FERC No. 2299
Request for Additional Information

Dear Mr. Single,

The California Department of Fish and Wildlife (CDFW) has introduced into the Don Pedro Project relicensing record information to advance the position that spring flows in the Tuolumne River are highly correlated with Chinook salmon recruitment. Per the CDFW letter dated August 31, 2012 regarding comments on the Districts' Salmonid Population Information Integration and Synthesis Study Plan-W&AR-05 (CDFW 2012), four figures (Figures 3 through 6, Appendix A) were presented to support CDFW's opinion that impaired instream flows are related to the decline of the Tuolumne River fall-run Chinook salmon population. Further, on February 26, 2014, CDFW provided comments in response to the District's Draft License Application (DLA) where a subset of these figures (Figures 3 and 5, Appendix A) were again cited to support this position (CDFW 2014).

These four figures were originally presented in a 2008 paper by C. Mesick and other authors (Mesick et al. 2008). To appraise the significance of the relationships represented in Figures 3 to 6, the Districts have attempted to:

- 1) Reproduce the original analysis illustrated by the four figures with the original data points and the statistical methods used in Mesick et al. (2008).
- 2) Perform additional analyses utilizing the original data points in the figures and alternative statistical methods.
- 3) Reproduce all original data that resulted from complex calculations (e.g., annual recruitment numbers in the figures) by applying the same calculation procedures to the intermediary data employed to obtain the original data in the figures.

Unfortunately, attempts to achieve points 1 and 2 have been hindered by the fact that Mesick et al. (2008) does not include appendices or tables reporting the original data points used in Figures 3 to 6, nor does it refer to documents containing appendices or tables with the required information.

Attempts to achieve point 3 have been equally hindered because Mesick et al. (2008) only provides a vague description of the procedure, and no appendices or tables reporting the intermediary data and steps used to obtain the annual estimates of recruitment in Figures 3, 4 and 6.

Additionally, for the critical step of deconstructing the annual escapement estimates into estimates of single cohorts using a combination of age analyses of scale samples from 1981 to 2002 and length-frequency data from 1981 to 2005 from adult fish collected in the Tuolumne River, Mesick et al. (2008) refers to the 2007 paper by C. Mesick and other authors cited below:

Mesick, C.F. Marston, D. and T. Heyne. 2007. Provisional Draft: San Joaquin River East-side Tributary Fall-run Chinook Salmon Age Cohort Reconstruction.

Despite our attempts to locate this document, we have not been able to do so. Therefore, we respectfully submit this request for information detailed below.

Specific Data Needs

In order to independently appraise the relationships represented in Figures 3 to 6 in accordance with the three methodological steps indicated above, we formally request the following information:

- The original values of the data points for both the dependent (y-axis) and independent (x-axis) variables in the four attached figures. Each data point value should display all decimal places that are significant to the analysis represented in the particular figure, with a label indicating the year associated with the data point. Preferably, the data should be presented in an electronic file format (e.g., Excel, comma separated text file, etc.). These original data include:
 - a) Tuolumne River annual natural fall-run Chinook salmon recruitment estimates (y-axis) and average La Grange flows from February 1 through June 15 (x-axis) during the 1980-1990 and the 1997-2004 periods (Figure 3).
 - b) Tuolumne River annual fall-run Chinook salmon recruitment estimates (y-axis) and average Vernalis flows from March 1 through June 15 (x-axis) from 1980 to 2003 (Figure 4).
 - c) The estimated number of smolt-sized Chinook salmon juvenile (with Fork Length > 70 mm) passing the Grayson rotary screw trap (y-axis) and the average La Grange flows from March 1 through June 15 (x-axis) from 1998 to 2005 (Figure 5).
 - d) The estimated number of smolt-sized Chinook salmon juvenile (with Fork Length > 70 mm) passing the Grayson rotary screw trap (x-axis) and the estimated number of adult recruits in the Tuolumne River (y-axis) from 1998 to 2003 (Figure 6).

- The intermediary data employed to obtain the original fall-run Chinook salmon recruitment estimates in Figures 3, 4 and 6. Each data point value should display all decimal places that are significant to the particular analytical step. Preferably, the data should be presented in an electronic file format (e.g., Excel, comma separated text file, etc.). These intermediary data include, but are not limited to, the following list:
 - e) GrandTab in-river spawners escapement estimates for the Tuolumne River for the period 1980-2005.
 - f) The number of adipose fin clip carcasses (fresh and decayed) observed during the CDFW annual escapement surveys for 1980-2005.
 - g) The number of fresh and decayed carcasses examined for tags during the CDFW annual escapement survey for 1980-2005.
 - h) The numbers of unmarked fish released each year by the Feather, Nimbus, Mokelumne, and Merced hatcheries (from CDFW annual hatchery reports) from 1978 to 2005.
 - i) CWT recovery information (e.g., hatchery, release date, release site, brood year, numbers released with and without mark) from the CWTs recovered in the Tuolumne River during the escapement surveys.
 - j) Age analyses of scale samples of Chinook salmon collected in the Tuolumne River from 1981 to 2002 (e.g., Age and fish length).
 - k) Length-frequency data from 1981 to 2005 from adult fish collected in the Tuolumne River (during escapement surveys).
 - l) The Sport Harvest and the Troll Harvest fractions of the Central Valley Index for the years 1980 through 2005. The Central Valley Index (CVI) of harvest is available from the Pacific Fishery Management Council.
- Copy of the papers detailing the complete methodology used in the calculation of fall-run Chinook salmon recruitment estimates in Figures 3, 4 and 6. In particular, the Districts are interested in the paper originally cited in Mesick et al. (2008) detailing the step of deconstructing the annual escapement estimates into estimates of single cohorts:
 - m) Mesick, C.F. Marston, D. and T. Heyne. 2007. Provisional Draft: San Joaquin River East-side Tributary Fall-run Chinook Salmon Age Cohort Reconstruction

Jeffrey R. Single, Ph.D.

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- Any other final document describing the age cohort reconstruction procedure leading to the recruitment values plotted in Figures 3, 4 and 6 (Appendix A)

The Districts respectfully request that the aforementioned information identified above be made available in support of the Don Pedro Hydroelectric Project's FERC relicensing process. If any of the documents requested exist in both electronic and physical form, please provide the electronic form. If any document existing in electronic form exists in multiple formats, please provide a copy in each format.

We are requesting that these documents be made available within 30 days of the date of this letter, or May 19th. Once the documents are compiled, we ask that you please call or email Mr. Steven Boyd at the Turlock Irrigation Districts (contact information below) with an estimate of photocopying costs. The Districts may elect to review the materials in your office to determine which documents should be copied.

Thank you for your attention on this matter.

Sincerely,



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Greg Dias
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P.O. Box 4060
Modesto, CA 95352
(209) 526-7566
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References

California Department of Fish and Wildlife (CDFW). 2012. Comment Letter on Turlock Irrigation District and Modesto Irrigation District Salmonid Population Information Integration and Synthesis Study Plan, Don Pedro Hydroelectric Project (No. 2299-075), Tuolumne River, California. Submitted to Kimberly Bose and Messrs. Nees and Dias. Letter dated August 31, 2012.

CDFW. 2014. Comment Letter in response to Draft License Application Don Pedro Hydroelectric Project. Federal Energy Regulatory Commission No. 2299-075. Submitted to Kimberly Bose from Jeffrey Single via electronic submission. Letter dated February 26, 2014.

Mesick, C., McLain, J., Marston, D and T. Heyne 2008. Provisional Draft: Limiting Factor Analyses and Recommended Studies for Fall-run Chinook Salmon and Rainbow Trout in the Tuolumne River. August 13, 2008, 91 pp.

Appendix A

Figures 3-6 as cited in Mesick et al. 2008 (Mesick, C., McLain, J., Marston, D and T. Heyne 2008. Provisional Draft: Limiting Factor Analyses and Recommended Studies for Fall-run Chinook Salmon and Rainbow Trout in the Tuolumne River. August 13, 2008, 91 pp.)

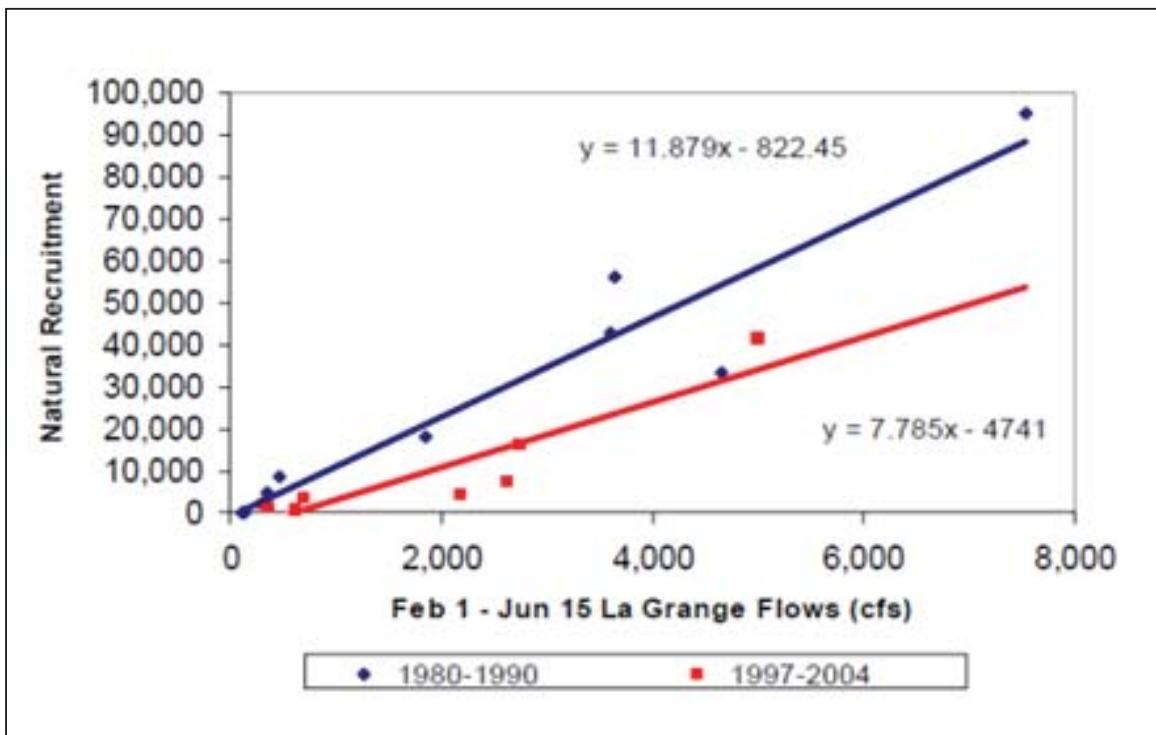


Figure 3. Tuolumne River natural fall-run Chinook salmon recruitment plotted with mean flow in the San Joaquin River at Vernalis during February 1 through June 15 during two periods: 1980 to 1990 (pre-FSA) and from 1997 to 2004 (post-FSA). Recruitment is the number of adults in the escapement and ocean harvest (including shaker mortality) that belong to individual cohorts of same-aged fish (Mesick et al. 2007). Estimates were excluded for which spawner abundance was less than 650 Age 3 equivalent fish to minimize the effect of spawner abundance on the relationship between flow and recruitment.

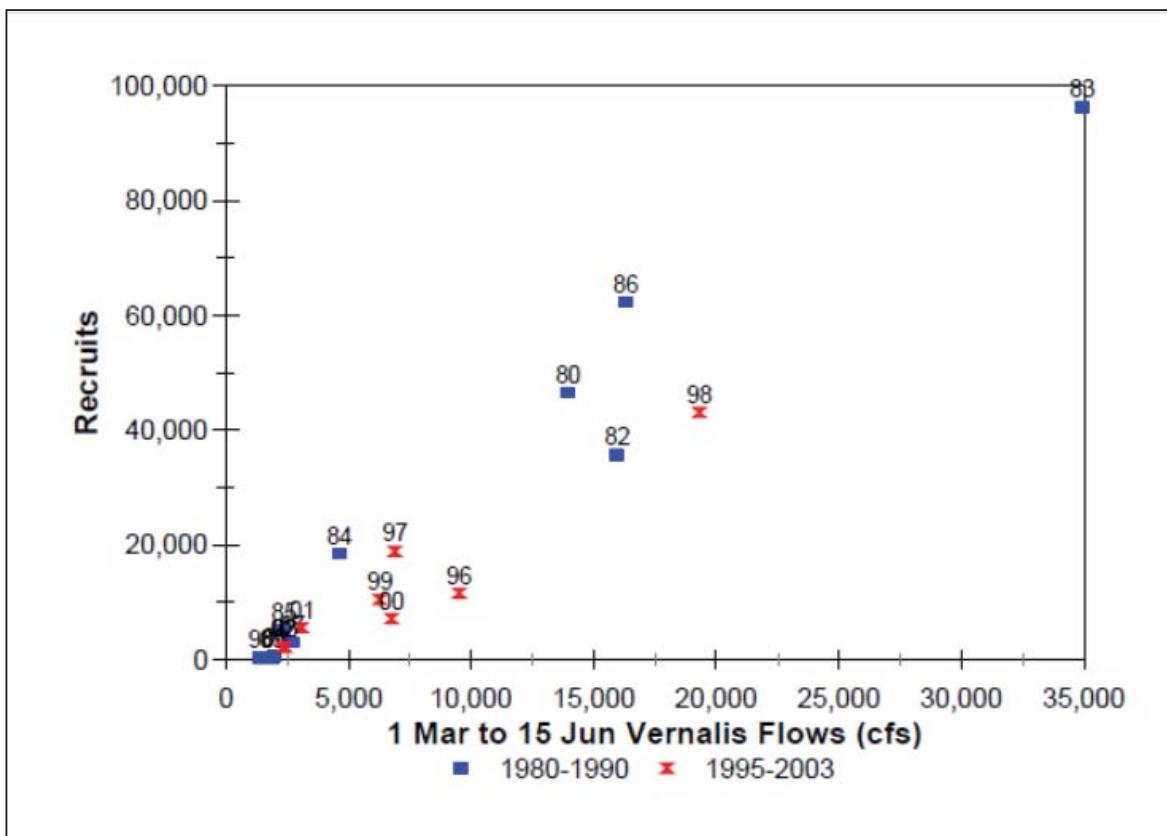


Figure 4. Number of fall-run Chinook salmon recruits to the Tuolumne River plotted with flows in the San Joaquin River at Vernalis from March 1 to June 15 from 1980 to 2003. This analysis excludes recruitment estimates that were affected by a low number of spawners (< 500 Age 3 equivalent fish) to better illustrate the relationship with flow. The recruitment estimates are labeled according to the year when the fish outmigrated as smolts.

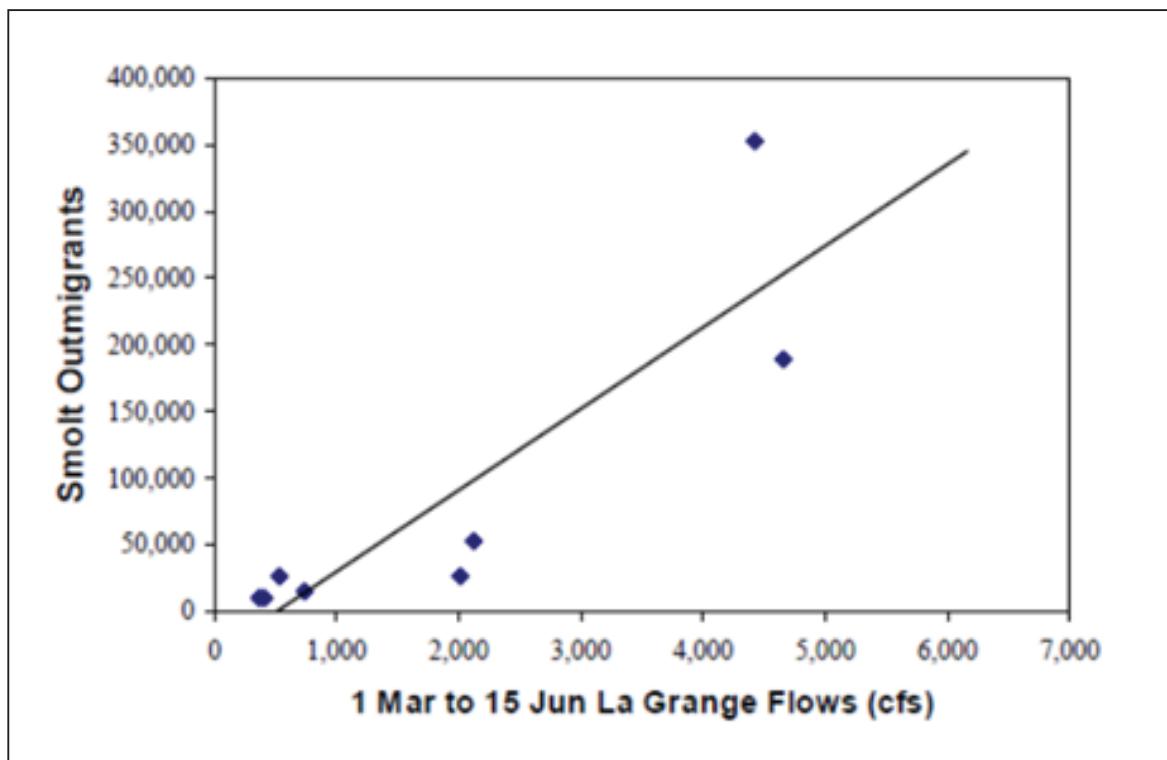


Figure 5. The number of smolt-sized Chinook salmon outmigrants ($FL > 70$ mm) passing the Grayson rotary screw trap site (RM 5) plotted with flows at La Grange between March 1 and June 15 in the Tuolumne River from 1998 to 2005. The regression model has an adj-R² of 0.73 and a probability level of 0.0004.

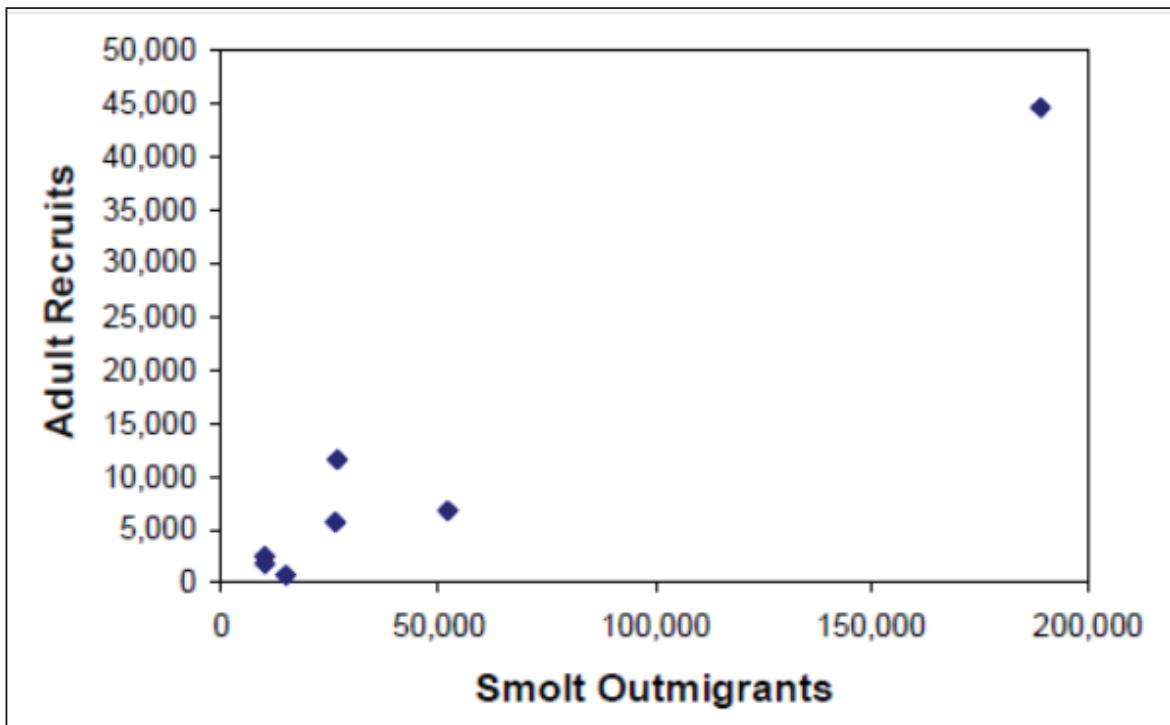


Figure 6. The number of smolt-sized Chinook salmon outmigrants (FL > 70 mm) measured at the Grayson rotary screw trap site (RM 5) regressed with the number of adult recruits in the Tuolumne River from 1998 to 2003. The regression model has an adj-R² of 0.95 and a probability level of 0.0001.

ATTACHMENT A
DISTRICTS' RESPONSE TO COMMENTS ON
DRAFT LICENSE APPLICATION

APPENDIX C
RESPONSE TO CONSERVATION GROUPS' COMMENTS REGARDING
CUMULATIVE EFFECTS ANALYSIS

I. CONTRARY TO THE CONSERVATION GROUPS’ ARGUMENTS, THE DISTRICTS ARE NOT REQUIRED TO ENGAGE IN SPECULATIVE ANALYSIS, OR DO THE IMPRACTICAL BY INCLUDING DETAILED CONSIDERATION OF UNKNOWN CUMULATIVE EFFECTS IN THE FINAL LICENSE APPLICATION.

The National Environmental Policy Act (“NEPA”)¹ does not require an agency to “engage in speculative analysis” or “do the impractical, if not enough information is available to permit meaningful consideration.” (*N. Plains Res. Council v. Surface Transp. Bd.* (“*N. PlainsTranscon. Pipe Line Co., LLC*, 143 FERC ¶ 61132 (May 16, 2013), at P 60, n. 84 (quoting *N. Plains*, 668 F.3d at 1078) (internal quotation omitted) (“NEPA does not require an agency to engage in speculative analysis or do the impractical, if not enough information is available to permit meaningful consideration.”).) Thus, although a relicense application must contain information that FERC “may determine is necessary for compliance” with NEPA,² including the identification of cumulatively affected resources,³ applicants are not obligated to engage in speculative analysis or do the impractical where there is not enough information available to permit meaningful consideration.

A. The Districts Cannot be Required to Include Detailed Analysis of the Proposed Action’s Cumulative Effects on Fish Passage Above La Grange Dam in the Final License Application.

The Conservation Groups (“CGs”) recommend that in light of FERC’s determination that it has jurisdiction over the La Grange Project, the Final License Application (“FLA”) should, “[a]t minimum, use existing information to identify potential alternatives for addressing the project’s cumulative impacts on fish passage.”⁴ Further, the CGs suggest that the Districts should now be required to undertake upstream fish passage studies at the Don Pedro Project.⁵

However, FERC has simply determined that the Districts must file a license (or exemption) application for the La Grange Project.⁶ Thus, it remains to be seen whether FERC will ultimately issue a license for the La Grange Project, and, if so, whether the Districts will accept the issued license. Because FERC’s authority to impose mitigation measures only extends to licensed projects, unless and until FERC issues a license for the La Grange Project, and the Districts accept the issued license, FERC cannot require the Districts to implement measures to mitigate the adverse effects, if any, of the La Grange Project. The Districts cannot be required to speculate as to whether FERC will ultimately license the La Grange Project, and, if so, whether it will require fish passage. (*N. Plains*, 668 F.3d at 1078.) Further, in order to meaningfully consider the cumulative effects of continued generation of hydroelectric power at

¹ 42 U.S.C. §§ 4321, *et seq.*

² 18 C.F.R. § 380.3(a)(2).

³ 18 C.F.R. § 5.18(b)(2).

⁴ *Conservation Groups’ Comments on Draft License Application and Updated Study Report*, Project No. 2299-075, February 24, 2014 (referred to below as “CGs’ Comments”), at pp. 35-36. The CGs’ Comments were jointly submitted by ten conservation groups: the Tuolumne River Trust, American Rivers, American Whitewater, California Sportfishing Protection Alliance, California Trout, Friends of the River, Golden West Women Flyfishers, Central Sierra Environmental Resource Center, Northern Council Federation of Flyfishers, and Trout Unlimited. See *id.* at pp. 43-46.

⁵ *Id.* at pp. 35-36.

⁶ *Turlock Irrigation District and Modesto Irrigation District*, 141 FERC ¶ 62,211, at P 45 (2012).

the Don Pedro Project (“Proposed Action”)⁷ on fish passage above La Grange dam, the Districts would, at a minimum, need certain information that is not currently available, e.g., the nature and extent of any future fish passage requirements. (*Id.*)

In addition, contrary to the CGs’ arguments, the basis for the Director of the Office of Energy Project’s (“OEP”) decision not to require fish passage studies for the Don Pedro Project remains valid because fish passage above La Grange dam is not “reasonably certain to occur in the near future.”⁸ More specifically, the Director of OEP’s decision was based on: (1) the fact that La Grange dam is the terminal barrier to upstream fish passage on the Tuolumne River; and, (2) the fact that there had been no showing “that fish passage above La Grange dam would be reasonably certain to occur in the near future.”⁹ However, FERC may not ultimately issue a license for the La Grange Project, or FERC may issue a license for the La Grange Project but not require fish passage, or the Districts’ may prevail on their appeal of FERC’s determination that it has jurisdiction over the La Grange Project in the D.C. Circuit Court of Appeal, and/or the Districts may not accept any license that is issued. Thus, FERC cannot consider fish passage above La Grange dam to be “reasonably certain to occur” unless and until it issues a license for the La Grange Project that contains fish passage requirements, the Court of Appeal affirms FERC’s assertion of jurisdiction over the La Grange Project, and the Districts accept the issued license. Therefore, the Director of OEP’s rationale remains valid, and thus, the Districts cannot be required to conduct fish passage studies for inclusion in the FLA.

B. The Districts Cannot be Required to Engage in Multiple Levels of Speculative Analysis Regarding Potential Cumulative Effects of Project and Non-Project Operations that May Result from the State Water Resource Control Board’s Contemplated Amendments to the 2006 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary.

The CGs recommend that the cumulative effects analysis in the FLA include detailed consideration of the State Water Resources Control Board’s (“State Water Board”) contemplated amendments to the 2006 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (“Bay-Delta Plan”), which would establish new flow objectives on the Lower San Joaquin River (“LSJR”) and its three eastside tributaries, the Stanislaus, Tuolumne, and Merced rivers, and new southern Delta water quality (“SDWQ”) objectives.¹⁰ More specifically, the CGs recommend,

The FLA should use existing information to consider how project operations would be modified in response to a requirement that the Tuolumne River release between 30% and 60% of February – June unimpaired flow measured at the La Grange Gauge. It should

⁷ The proposed action being considered by FERC in this relicensing proceeding is whether, and under what conditions, to authorize the Districts to continue generating hydroelectric power at the Don Pedro Project.

⁸ OEP, “Study Plan Determination for the Don Pedro Hydroelectric Project,” eLibrary Accession No. 20111222-3041, December 22, 2011, at p. 74.

⁹ *Id.*

¹⁰ CGs’ Comments, *supra* note 4, at pp. 37-38; See Public Draft of Substitute Environmental Document in Support of Potential Changes to the Water Quality Control Plan for the San Francisco Bay-Sacramento/San Joaquin Delta Estuary: San Joaquin River Flows and Southern Delta Water Quality (referred to below as “Draft SED”), Executive Summary, available at http://www.swrcb.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/2012_sed/docs/2012_exec_sum.pdf, at p. ES-1.

consider that this requirement may be modified in multiple sequential dry year scenarios. It should also consider whether changes at the project would likely be made in coordination with changes at in-basin non-project facilities, e.g., CCSF's Hetch-Hetchy system. It should consider how alternative operating scenarios to comply with higher instream flows would change the project's cumulative effects on water resources, aquatic resources, geomorphology, and socioeconomics.¹¹

The CGs' recommendation that the cumulative effects analysis in the FLA consider how project operations for both the Don Pedro Project and "in-basin non-project facilities," such as "CCSF's Hetch-Hetchy system," might be modified in "response to a requirement that the Tuolumne River release between 30% and 60% of February – June unimpaired flow," and further, consider cumulative effects that may result from such potential modifications to project and non-project operations, over such a broad geographic scope, potentially extending as far as "upstream on the Tuolumne River to Hetch Hetchy and extending downstream to San Francisco Bay,"¹² would have the Districts engage in speculative analysis of extremely limited, if any, practical utility for at least three reasons.

1. The Current Status of Environmental Review for the State Water Board's Contemplated Amendments to the Bay-Delta Plan, and the Further Proceedings that would be Needed in Order to Implement New LSJR Flow Objectives, Preclude Meaningful Consideration of the Cumulative Effects of New Unimpaired Flow Requirements on the Tuolumne River.

The Draft SED evaluates five alternatives for LSJR flows during the February-June time frame, a Preferred LSJR Alternative, a No Project Alternative (LSJR Alternative 1), and three other alternatives (LSJR Alternatives 2, 3, and 4).¹³ The Draft SED explains that LSJR Alternative 1, the No Project Alternative, aims to present baseline conditions by assuming the continuation of existing requirements into the foreseeable future.¹⁴ The Preferred LSJR

¹¹ CGs' Comments, *supra* note 4, at p. 38.

¹² *Scoping Document 2 Don Pedro Hydroelectric Project*, Project No. 2299-075, Federal Energy Regulatory Commission, Office of Hydropower Licensing, Washington, DC, July 2011 (referred to below as "Scoping Document 2"), at p. 34.

¹³ Draft SED, *supra* note 10, at pp. ES-2, ES-11.

¹⁴ *Id.* at p. ES-13 (citing 14 CCR § 15126.6(e)(1) and (3)(A).) As the Draft SED explains, the No Project Alternative "conditions include full compliance with all flow and water quality objectives in the 2006-Bay-Delta Plan as implemented through Water D-1641 and the [National Marine Fisheries Service Biological Opinion] (which is included in the baseline . . . SJR flow and SDWQ conditions differ between the No Project Alternative and baseline. Specifically, relative to flow, the [Vernalis Adaptive Management Plan or VAMP] flows were being implemented under baseline conditions, but VAMP ended in 2011, after the baseline was established. Accordingly, under the No Project Alternative, flow requirements at Vernalis would be those required under D-1641, which are generally higher than those required previously under VAMP."). *Id.* at pp. ES-13, ES-14. See also San Joaquin Tributaries Authority, "Substantive Comments on the Draft Substitute Environmental Document" (Mar. 29, 2013), available at http://www.waterboards.ca.gov/waterrights/water_issues/programs/hearings/baydelta_pdsed/docs/comments032913/valerie_kincaid.pdf, at pp. 46-48 (explaining that the inappropriate inclusion of VAMP flows in the baseline results in the Draft SED falsely minimizing project impacts, and that the exclusion of Stanislaus River instream flows skews the analysis to reflect false impacts to aquatic resources).

Alternative, if adopted, would establish February-June flow requirements of 35 percent unimpaired flow for the Stanislaus, Tuolumne, and Merced Rivers.¹⁵ LSJR Alternative 2 would require minimum 14-day running average unimpaired flows of 20 percent from the rivers during the same period.¹⁶ LSJR Alternative 3 would require unimpaired flows of 40 percent, and LSJR Alternative 4 would require unimpaired flows of 60 percent.¹⁷ Notably, because the Draft SED analyzes the effects of a range of flows from 20 to 60 percent of unimpaired flow, the State Water Board “could select an alternative percent of unimpaired flow within this range.”¹⁸ Thus, in addition to the percentages of unimpaired flow, *i.e.*, 20, 35, 40, and 60 percent, that are identified in the Draft SED, the State Water Board may ultimately adopt a different percentage of unimpaired flow between 20 and 60 percent for February-June flow requirements on the Stanislaus, Tuolumne, and Merced Rivers.

Moreover, the State Water Board plans to release a “revised draft Substitute Environmental Document (SED) for Phase 1 of the update to the Bay-Delta Water Quality Control Plan in April 2014.”¹⁹ However, the release may be delayed “due to the increased work effort to deal with drought issues.”²⁰ In any event, the current Draft SED will be superseded by a revised version.

Therefore, the CGs’ recommendation that the cumulative effects analysis in the FLA include detailed consideration of an indeterminate number of potential flow scenarios, and consider how each of the flow scenarios may be modified in dry years, and further, anticipate how Don Pedro Project and non-project operations might be changed to accommodate such flow scenarios, and then analyze the cumulative effects of such operational changes, would require the Districts to engage in several levels of speculative analysis of little, if any, practical utility. (*N. Plains*, 668 F.3d at 1078.) More importantly, because the Draft SED will be superseded by a revised version, the Districts simply do not have the information available to permit meaningful consideration. (*Id.*)

Additionally, another practical consideration militates against analysis of the cumulative effects of the State Water Board’s potential amendments to the Bay-Delta Plan at this time; following the State Water Board’s release of a revised version of the Draft SED and eventual, formal adoption of the SED and new LSJR flow objectives, extensive, further proceedings would still be required before any new LSJR flow objectives could be implemented. The contemplated amendments to the Bay-Delta Plan do “not affect the water rights of anyone either within or outside the Delta. Any changes to water rights that may be needed to implement the plan will be considered in future proceedings.”²¹ As explained in the Draft SED,

[t]o develop precise requirements for implementation of the provisions described above, LSJR Alternatives 2, 3, and 4 call for establishing an implementation workgroup consisting of persons with expertise in fisheries management, unimpaired flows, and

¹⁵ Draft SED, *supra* note 10, at p. ES-2.

¹⁶ *Id.* at p. ES-14.

¹⁷ *Id.*

¹⁸ *Id.* at p. ES-3. See also *id.* at p. ES-12 (explaining that the range of unimpaired flows of between 20 and 60 percent “were selected as alternatives to capture the range of potential flow alternatives that the State Water Board may implement.”).

¹⁹ See State Water Board’s website, Bay-Delta Program & Delta Watermaster Portals, Announcements, available at http://www.swrcb.ca.gov/water_issues/programs/delta.shtml.

²⁰ *Id.*

²¹ Draft SED, *supra* note 10, at pp. ES-1, ES-2.

operations on the Stanislaus, Tuolumne, and Merced Rivers to develop recommendations for such measures that would best achieve the February-June requirements while minimizing water supply costs. The recommendations would be included in an implementation plan submitted to the Executive Director of the State Water Board for approval within a specified period. The implementation plan would then be considered in State Water Board water right proceedings, Federal Energy Regulatory Commission licensing proceedings, or during other implementation actions to achieve the February-June flows.²²

Thus, following the State Water Board's release of a revised version of the Draft SED, eventual, formal adoption of the SED and new LSJR flow objectives, and possible administrative and court review of the State Water Board's determinations, *e.g.*, a court may stay any attempt to implement the objectives pending the outcome of a legal challenge, extensive, further proceedings would still be required before any new LSJR flow objectives could be implemented. NEPA does not require consideration of other projects so far removed in time "that the interrelationship, if any, between them is unknown and speculative."²³ (*Natural Res. Defense Council, Inc. v. Callaway*, 524 F.2d 79, 90 (2nd Cir. 1975).)

Although, as the Conservation Groups point out, the State Water Board may prescribe instream flows for the Tuolumne River in any water quality certification that it issues for the Proposed Action under Clean Water Act section 401, Title 33 United States Code ("U.S.C.") section 1341,²⁴ the imposition of any such flow requirements would occur in an entirely distinct regulatory setting, *i.e.*, as part of FERC's relicensing proceeding. While it may be foreseeable that the State Water Board will condition certification on instream flow releases that it believes are needed to help achieve tributary flow objectives that may ultimately be adopted in the Bay-Delta Plan,²⁵ unless and until the State Water Board imposes such requirements under its 401 certification authority, and such requirements are affirmed in any administrative review or State court challenge of the State Water Board's final decision, it would be inappropriate and unlawful to require the Districts to speculate as to what such flow requirements may be, and the nature and extent of the cumulative effects that might result from such flows.

²² *Id.* at p. ES-12.

²³ See also *Mooreforce, Inc. v. U.S. Dep't of Transp.*, 243 F. Supp. 2d 425, 441 (M.D.N.C. 2003) (citing 40 C.F.R. § 1508.23; *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n.20 (1976)) (internal quotation omitted) (stating, "a proposal exists at that stage in development of an action when an agency ... has a goal and is actively preparing to make a decision on one or more alternative means of accomplishing that goal and the effects can be meaningfully evaluated. Projects that are not imminent are not considered proposals, and therefore, do not require an analysis of cumulative impacts.").

²⁴ CGs' Comments, *supra* note 4, at p. 38.

²⁵ *Id.* (opining, "[i]t is reasonably foreseeable that the State Water Board will condition certification on instream flow releases that are needed to help achieve tributary flow objectives adopted in the Bay-Delta Plan.").

2. Any Future Analysis of the Cumulative Effects of the Proposed Action that Might Result from Potential, New Unimpaired Flow Requirements on the Tuolumne River Must be Limited to Effects Downstream of the Don Pedro Project and Within the Tuolumne River.

Even if the practical and procedural obstacles detailed above could be surmounted in a reasonable time frame, *e.g.*, by a comprehensive, multi-party settlement providing for implementation of new LSJR water quality objectives, the CGs' recommendation would still, to a great extent, be impracticable. It is not possible to meaningfully consider the cumulative effects, if any, of the Proposed Action that might result in certain geographic areas from new unimpaired flow requirements on the Tuolumne River. More specifically, FERC has broadly defined the geographic scope of its cumulative effects analysis for water resources, aquatic resources, and socioeconomics as "extending upstream on the Tuolumne River to Hetch Hetchy and extending downstream to San Francisco Bay," and "tentatively determined a cumulative geographic scope for anadromous fish and [essential fish habitat] that includes the Tuolumne River basin downstream to the confluence with the San Joaquin River, and through the Sacramento-San Joaquin Delta to [the] San Francisco Bay."²⁶ But the geographic scope of the Districts' analysis of the Proposed Action's cumulative effects, assuming new LSJR objectives on the Tuolumne River, cannot extend upstream of the Don Pedro Project. As the Draft SED explains, "physical environmental effects upstream of the three rim dams and respective reservoirs are not expected under the LSJR alternatives. . . ."²⁷ Therefore, these upstream reaches were not included in the modeling or analysis for the Draft SED.²⁸ Accordingly, it would be inappropriate to require the Districts to undertake analysis that the State Water Board has determined to be irrelevant and unnecessary.

Similarly, the geographic scope of the Districts' analysis of the Proposed Action's cumulative effects, assuming new LSJR objectives on the Tuolumne River, cannot extend downstream beyond the Tuolumne River. As explained in more detail below, because the Proposed Action's contribution, if any, to cumulative effects in the highly complex and dynamic environments of the San Joaquin River basin, Sacramento-San Joaquin Delta, and the San Francisco Bay has not been quantified, and cannot be isolated from the effects of other contributing actions, it would be inappropriate to require the Districts to speculate as to the nature and extent of such cumulative effects. (*N. Plains*, 668 F.3d at 1078.)

3. It is Not Possible to Analyze the Cumulative Effects of the Proposed Action that Might Result from Potential, New Unimpaired Flow Requirements on the Tuolumne River Until Outstanding FERC Ordered Studies Have Been Completed.

Even if the practical and procedural obstacles detailed above in Section I(B)(1) were surmounted in a reasonable time frame, and the geographical scope of the Districts' analysis of

²⁶ *Scoping Document 2*, *supra* note 12, at p. 34 (wherein FERC broadly defined the geographic scope of its cumulative effects analysis for water resources, aquatic resources, and socioeconomics "as extending upstream on the Tuolumne River to Hetch Hetchy and extending downstream to San Francisco Bay." By contrast, for geomorphology, FERC explained, "at this time we define the geographic scope as extending upstream of the Tuolumne and San Joaquin Rivers." FERC also "tentatively determined a cumulative geographic scope for anadromous fish and [essential fish habitat] that includes the Tuolumne River basin downstream to the confluence with the San Joaquin River, and through the Sacramento-San Joaquin Delta to San Francisco Bay.").

²⁷ Draft SED, *supra* note 10, at p. 5-56.

²⁸ *Id.* at p. 5-55.

the Proposed Action’s cumulative effects, assuming new LSJR objectives, was limited to the stretch of the Tuolumne River below the project, such effects could not be comprehensively analyzed until five important studies involving the river are completed, *i.e.*, Lower Tuolumne River Predation Study using a mark-recapture approach, Fall-run Chinook Salmon Otolith Study, Lower Tuolumne River Floodplain Hydraulic Assessment, Non-Native Predator IFIM Assessment, and *O. Mykiss* Swim Tunnel Study. Until these studies are completed, the Districts are unable to comprehensively analyze the cumulative effects of the Proposed Action that might result from new LSJR objectives on the Tuolumne River, or develop and propose appropriate protection, enhancement and mitigation (“PM&E”) measures.²⁹

C. The Districts Cannot be Required to Engage in Speculative Analysis Regarding Potential Cumulative Effects of Project Operations that May Result from Exports Under the Bay Delta Conservation Plan.

The CGs recommend that the cumulative effects analysis in the FLA include detailed consideration of an undefined “suite of reasonable Delta export operations . . . on their own or combined” with operation of exports under the Bay Delta Conservation Plan (“BDCP”) north Delta diversion scenarios.³⁰

The CGs’ recommendation would have the Districts engage in speculative analysis of extremely limited, if any, practical utility given the current status of environmental review for the BDCP and the State Water Board’s contemplated amendments to the Bay-Delta Plan.³¹ The Draft Environmental Impact Report / Environmental Impact Statement for the Bay Delta Conservation Plan (“BDCP Draft EIR/EIS”) analyzes 15 action alternatives.³² The action alternatives are “variations of conservation plans that differ primarily in the location, design, *conveyance capacity*, and rules that would determine the *operation of the conveyance facilities* implemented under [BDCP Conservation Measure 1 or CM1].”³³ As the BDCP Draft EIR/EIS explains,

²⁹ See e.g., Letter from Vince Yearick, Director, Division of Hydropower Licensing, Office of Energy Projects, Federal Energy Regulatory Commission, to Steve Boyd, Director of Water Resources, Turlock Irrigation District, and Greg Dias, Project Manager, Modesto Irrigation District, Project No. 2299-075, March 5, 2014, at p. 2 (granting 1-year extension to complete *W&AR-7--Predation Study* after determining that “[t]he results of the predation study are necessary for the Commission’s environmental analysis of project effects and evaluation of potential protection, mitigation, and enhancement measures for the new license.”).

³⁰ CGs’ Comment, *supra* note 4, at p. 39 (wherein the CGs recommend “[t]he FLA should use existing information to consider project operations in the context of a suite of reasonable Delta export operations, including South Delta export reductions or cessation in the February through June period, on their own or combined with operation of exports under BDCP (north Delta diversion scenarios.”).

³¹ See Draft SED, *supra* note 10, at p. ES-1.

³² Draft Environmental Impact Report/Environmental Impact Statement Bay Delta Conservation Plan, Section 3.1 (referred to below as “BDCP Draft EIR/EIS”), available at http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDC_P_EIR-EIS_Chapter_3 - Description_of_Alternatives.sflb.ashx, at p. 3-2.

³³ *Id.* (italics added). See also BDCP Draft EIR/EIS, Appendix 3A, Identification of Water Conveyance Alternatives, Conservation Measure 1, available at http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/Public_Draft_BDC_P_EIR-EIS_Appendix_3A - Identification_of_Water_Conveyance_Alternatives_Conservation_Measure_1.sflb.ashx,

at p. 3A-2 (explaining that Conservation Measure 1 “consists of water conveyance facilities

[T]he alternatives range from the proposed construction of one [3,000 cubic feet per second or cfs] intake to five such intake facilities, representing a range of north Delta conveyance capacities from 3,000 cfs to 15,000 cfs. The operational rules also include varying requirements for Delta outflow and river flows in the south Delta. The range of alternatives also include different amounts and types of habitat restoration and enhancement proposed under [Conservation Measure 2] through [Conservation Measure 11]. One alternative includes 40,000 fewer acres of tidal habitat restoration compared to the other alternatives. Another includes 10,000 more acres of seasonally inundated floodplain restoration and 20 more miles of channel margin enhancement compared to the other alternatives.³⁴

Thus, the 15 action alternatives represent a range of north Delta conveyance capacities from 3,000 cfs to 15,000 cfs.³⁵ In fact, the 15 action alternatives include facilities with 4 different diversion and conveyance capacities, i.e., 3,000, 6,000, 9,000, and 15,000 cfs.³⁶

Further, as noted, the 15 action alternatives include varying requirements for Delta outflow and river flows in the south Delta.³⁷ There are several sets of rules that govern Delta outflow, including the minimum monthly outflows specified in D-1641 for each month, which often depend on the water year type, i.e., runoff conditions.³⁸ These flows objectives were established to protect beneficial uses of Delta water for fish habitat.³⁹ As explained, “the State Water Board has recently explored additional operational rules that would require Delta outflow to be a specified percentage of monthly unimpaired flow.”⁴⁰ Accordingly, although most of the BDCP alternatives include the D-1641 rules, “BDCP Alternative 8 includes a monthly outflow/unimpaired flow percentage of 55% from January through June.”⁴¹

components combined with water conveyance operational components.”). More specifically, Conservation Measure 1 includes: “[a] range of conveyance alignment alternatives to convey water from the Sacramento River to existing [State Water Project or SWP] and [Central Valley Project or CVP] pumping plants located in the south Delta,” and “[a] range of conveyance water supply operations alternatives related to the timing and capacity of water diversions from the Sacramento River and/or from existing SWP and CVP pumping plants in the south Delta.” *Id.*

³⁴ BDCP Draft EIR/EIS, Section 3.1, *supra* note 32, at p. 3-2 (italics added).

³⁵ *Id.*

³⁶ *Id.* at p. 3-8.

³⁷ *Id.* at p. 3-2.

³⁸ *Id.* at p. 3-33. See *In the Matter of Implementation of Water Quality Objectives for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary; A Petition to Change Points of Diversion in the Southern Delta; and a Petition to Change Places of Use and Purposes of Use of the Central Valley Project*, dated March 15, 1999, 1999 WL 33582265 (Cal.St.Wat.Res.Bd.) (denying reconsideration of Water Right Decision 1641 (D-1641) and amending D-1641).

³⁹ BDCP Draft EIR/EIS, Section 3.1, *supra* note 32, at p. 3-33.

⁴⁰ *Id.*

⁴¹ *Id.* at p. 3-33 (stating, “[a]ll the BDCP alternatives include these same D-1641 rules.”); compare *id.* at p. 3-34 (referencing potential new State Water Board rule that would “require Delta outflow to be a specified percentage of monthly unimpaired flow,” and explaining, “[b]ecause this possible Delta outflow rule would limit the total water diverted to storage or

Notably, when the BDCP Draft EIR/EIS was released, on December 9, 2013, the federal lead agencies did not identify a preferred alternative for the purposes of NEPA.⁴² By contrast, the Department of Water Resources (“DWR”), the lead agency under the California Environmental Quality Act (“CEQA”) and project applicant for the BDCP, has identified Alternative 4 as the preferred alternative for purposes of CEQA.⁴³ However, the BDCP Draft EIR/EIS clarifies,

[I]dentification of Alternative 4 as the preferred CEQA alternative is tentative only, and is subject to change as DWR and the CEQA responsible agencies, as well as the NEPA Lead Agencies, receive and consider public and agency input on this EIR/EIS. It is therefore possible that the final version of the BDCP may differ from Alternative 4 as described herein, either because Alternative 4 itself was refined, because another alternative was determined to be preferable, or because the Lead Agencies, in response to input, developed a new alternative with some features from some existing alternatives and other features from other existing alternatives.⁴⁴

The public review and comment period for the BDCP Draft EIR/EIS is December 13, 2013 through June 13, 2014 (including a 60-day extension of the comment period).⁴⁵

Therefore, the CGs’ recommendation that the cumulative effects analysis in the FLA include consideration of an undefined “suite of reasonable Delta export operations . . . on their own or combined” with operation of exports under the BDCP north Delta diversion scenarios would require the Districts to analyze 15 action alternatives – all of which are subject to change as a result of further refinements and/or input received on the BDCP Draft EIR/EIS – that represent a range of north Delta conveyance capacities from 3,000 cfs to 15,000 cfs and variations in assumptions about LSJR flow objectives, as established by D-1641, which, as noted, may be amended by the State Water Board.⁴⁶ Even if there was sufficient information available to permit meaningful consideration of the range of alternatives presented by the BDCP Draft EIR/EIS and the underlying assumptions upon which they rely, NEPA does not require such precision. *Idaho Power Co.*, 110 FERC ¶ 61,242, at P 30 (2005) (explaining, “the Conservation Groups charge that the cumulative impacts analysis is too general, apparently because it does not explain in detail how each action alternative would interact with each factor contributing to cumulative impacts. NEPA does not require such precision. As noted above,

exported, higher outflows might be expected in many months. BDCP Alternative 8 includes a monthly outflow/unimpaired flow percentage of 55% from January through June.”).

⁴² *Id.* at p. 3-3.

⁴³ *Id.*

⁴⁴ *Id.* at p. 3-4.

⁴⁵ Bay Delta Conservation Plan website, *available at* <http://baydeltaconservationplan.com/PublicReview.aspx>.

⁴⁶ Notably, at least one of the CGs, the California Sportfishing Protection Alliance (“CSPA”), publicly opposes the BDCP, and further, has recommended a “Better Solution,” that it describes as “a series of formal analyses . . . necessary to providing [sic] the information and framework that would allow solutions to materialize.” California Sportfishing Protection Alliance website, No Bay Delta Conservation Plan Campaign, *available at* <http://calsport.org/news/no-bdcpcampaign/>. Thus, although CSPA does not support *any* of the 15 action alternatives analyzed by the BDCP Draft EIR/EIS, it nevertheless requests that the Districts comprehensively analyze *all* of them, by explaining how each alternative would interact with the Don Pedro Project in contributing to cumulative effects.

NEPA requires only a reasonably thorough discussion of the significant aspects of the probable environmental consequences. We believe that standard has been met.”) (italics added).

D. The Districts Cannot be Required to Engage in Speculative Analysis Regarding Cumulative Effects to Tuolumne River Salmon and Steelhead from Head of Old River Barrier and Other Potential, Future Barriers Downstream on the San Joaquin River.

The CGs recommend that “the FLA should evaluate the benefits to Tuolumne River salmon and steelhead of the placement of various barriers in South Delta channels,” such as “an engineered fish protection structure at the head of Old River, and potentially at other points downstream on the San Joaquin [River].”⁴⁷

The Head of Old River (“HOR”) barrier is part of the South Delta Temporary Barriers Project, which was initiated as a test project in 1991 and extended for five years in 1996, and again for seven years in 2001.⁴⁸ The project consists of four rock barriers across South Delta channels.⁴⁹ Of the four rock barriers, the HOR barrier serves as a fish barrier and has been in place most years since 1963 between September 15 and November 30.⁵⁰ It was also installed in the spring between April 15 and May 30 of 1992, 1994, 1996, 1997, 2000, 2001, 2002, 2003, and 2004, and 2007 (high San Joaquin River flows prohibited installation in 1993, 1995, 1998, 1999, 2005, and 2006).⁵¹ In 2008, a court order designed to protect Delta smelt prohibited the installation of the spring HOR barrier pending fishery agency actions or further order of the court.⁵²

In short, because the HOR barrier is not currently installed, and it is unclear whether it will be installed again, how it might be operated in the future, and if it even benefits salmonid survival through the Delta,⁵³ it would be inappropriate and unlawful to require the Districts to speculate as to how these issues may ultimately be resolved. (*N. Plains*, 668 F.3d at 1078.)

Similarly, as it is unknown whether other fish barriers downstream on the San Joaquin River will be installed, and, if so, where such barriers might be located, the Districts cannot be required to speculate as to how these issues may ultimately be resolved, and, what, if any, relevant cumulative effects might result. (*Id.*)

E. The Districts Cannot be Required to Engage in Speculative Analysis Regarding Potential Cumulative Effects of Restoration Flows to be Released Under the San Joaquin River Restoration Program.

The CGs contend that the Draft License Application (“DLA”) does not include adequate information to determine how operation of Friant Dam in accordance with the San Joaquin River

⁴⁷ CGs’ Comments, *supra* note 4, at pp. 13, 39.

⁴⁸ Temporary Barriers Project Information, California Department of Water Resources Bay-Delta website, available at http://baydeltaoffice.water.ca.gov/sdb/tbp/web_pg/tempbar.cfm.

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² *Id.*

⁵³ Temporary Barriers Operating Schedule, California Department of Water Resources Bay-Delta website, available at [http://baydeltaoffice.water.ca.gov/sdb/tbp/web_pg/tempbsch.cfm#\(xvii\)](http://baydeltaoffice.water.ca.gov/sdb/tbp/web_pg/tempbsch.cfm#(xvii)) (explaining, “[t]he 2013 spring Head of Old River Rock Barrier was not installed due to uncertainty about the benefits of installing the barrier to salmonid survival through the Delta.”).

Restoration Program (“SJRRP”) “affects the project’s cumulative effects on salmon and steelhead” in the Tuolumne river, *e.g.*, “increased releases from Friant Dam in February and March will provide additional cold water to the San Joaquin River, including the reach downstream of the confluence with the Tuolumne River. This may improve success of rearing and outmigration of juvenile salmon and steelhead from the Tuolumne River.”⁵⁴ Thus, the CGs recommend that the “FLA should include alternatives that consider various flow releases from Friant Dam and varying water temperature impacts, and should consider potential measures that would create benefits for Tuolumne River salmon and steelhead from increased Friant releases.”⁵⁵

Although restoration flows contemplated under the SJRRP may, as the CGs suggest, eventually improve rearing and outmigration conditions for juvenile salmon and steelhead from the Tuolumne River, there is currently too much uncertainty surrounding the implementation of the flows to meaningfully analyze the potential, relevant cumulative effects that may result. More specifically, it is unclear when full restoration flows will commence. As explained in more detail in the DLA, the SJRRP is a direct result of a settlement reached in September 2006 to provide sufficient fish habitat in the San Joaquin River below Friant Dam.⁵⁶ The settlement identifies ten “Phase 1 Improvements,” which are described as “the highest priority improvements,” such as the creation of a bypass channel around Mendota Pool, modifications in channel capacity to ensure conveyance of the higher flows through various reaches of the river, and modifications to ensure fish passage and prevent entrainment.⁵⁷ The SJRR Settlement Agreement provides,

In recommending a date for commencement of the Restoration Flows, the Restoration Administrator shall consider the state of completion [of Phase 1 improvements]; provided, however, that the full Restoration Flows shall commence on a date certain no later than January 1, 2014. *If, for any reason, full Restoration Flows are not released in any year beginning January 1, 2014, the Secretary shall release as much of the Restoration Flows as possible*, in consultation with the Restoration Administrator, in light of then existing channel capacity and without delaying completion of the Phase 1 improvements.⁵⁸

Thus, the release of full restoration flows is contingent upon the completion of Phase 1 improvements. For example, the completion of the Mendota Pool Bypass will “allow for releases above 1,300 cfs.”⁵⁹ Similarly, the size of restoration flows cannot be increased over

⁵⁴ CGs’ Comments, *supra* note 4, at pp. 36-37.

⁵⁵ *Id.* at p. 36-37.

⁵⁶ Draft License Application, eLibrary no. 20131126-5015 (Nov. 26, 2013) (referred to below as “DLA”), Exhibit E, at p. 4-44.

⁵⁷ Notice of Lodgment of Stipulation of Settlement, *NRDC, et al., v. Kirk Rodgers, et al.*, Case No.CIV S-88-1658 LKK/GGH (E.D.Cal. September 13, 2006), Attachment 1 (referred to below as “SJRR Settlement Agreement”), at p. 8, ¶ 11(a).

⁵⁸ SJRR Settlement Agreement, *supra* note 57, at pp. 15-16, ¶ 13(h)(i) (italics added).

⁵⁹ Third Party Working Draft, Framework for Implementation, San Joaquin River Restoration Program, June 19, 2012, available at http://www.restoresjr.net/program_library/02_Program_Docs/20120619_SJRRP_Framework_for_ImplDRAFT.pdf (referred to below as “SJRRP Framework for Implementation”), at p. 10 (explaining that the completion of the Mendota Pool Bypass would reduce the need for trap and haul and “allow for releases above 1,300 cfs.”).

2,000 cfs unless and until critical levees along the San Joaquin River are stabilized and repaired, and site-specific channel capacity projects are completed.⁶⁰ Moreover, another factor limiting the size of restoration flows is seepage; unless and until seepage mitigation measures are successfully implemented for increased flows, “[c]hannel capacities must meet the most restrictive of seepage constraints.”⁶¹ There are currently no restoration flows since the SJRR Settlement Agreement flow schedule only calls for riparian demand in a critical low water year type on the San Joaquin River.⁶² But, as explained above, operational constraints, such as conveyance capacity and downstream seepage concerns, “may restrict the release of Restoration Flows during non-critical low Restoration Year Types.”⁶³

However, the construction schedule for Phase 1 improvements to address, among other things, conveyance capacity, has been significantly delayed and it appears likely that the schedule will be further extended. The SJRR Settlement Agreement includes a schedule for construction of Phase 1 improvements which provides that all such improvements will be completed by December 2013.⁶⁴ But the completion of the “highest priority channel and

⁶⁰ *Id.* at p. 39 (italics added) (explaining that in addition to the completion of the Eastside Bypass and Reach 2B levees, the “site-specific projects must be completed to gain any increase in channel capacity, as those reaches are the bottlenecks. The Agencies identified channel capacity projects to increase flows to 2,000 cfs as part of the core program. *The agencies may delay projects for higher flows to later dates.*”). This is a significant limitation as the SJRR Settlement Agreement calls for Friant releases of as much as 4,000 cfs from April 16th through April 30th in normal-wet and wet year types, and releases of 2,500 cfs from April 1st through April 15th in a normal-dry year type. SJRR Settlement Agreement, *supra* note 52, Exhibit B. *See also* Technical Memorandum: Channel Capacity Report 2014 Restoration Year, San Joaquin River Restoration Program, January 2014, available at http://restoresjr.net/program_library/02-Program_Docs/2014/Channel_Capacity_Report_Final - 2014 Accessible.pdf (referred to below as “2014 Channel Capacity Report”), at p. 7 (explaining, “[t]hroughout Settlement implementation, the maximum downstream extent and rate of Restoration Flows to be released would be limited to then-existing channel capacities. As channel or structure modifications are completed with additional environmental compliance, Restoration Flow releases would be correspondingly increased in accordance with then-existing channel capacities and with the release schedule.”).

⁶¹ SJRRP Framework for Implementation, *supra* note 59, at p. 35 (italics added) (explaining that as of June 19, 2012, “seepage constraints would limit flows upstream of Mendota Pool to 2,100 cfs in Reach 2A. Seepage constraints vary by season and by hydrology below Sack Dam. The constraints limit flows between 0 and 140 cfs in the Eastside Bypass, between Sand Slough Control Structure and the Mariposa Bypass Bifurcation Structure.”).

⁶² 2014 Restoration Allocation and Default Flow Schedule, San Joaquin River Restoration Program, Bureau of Reclamation, January 21, 2014, available at http://restoresjr.net/program_library/02-Program_Docs/20140121_SJRRP_Restoration_Allocation_20140121.pdf, at p. 5 (explaining, “[s]ince the Restoration Year Type is Critical Low, the default schedule is simply the riparian demand from the Exhibit B in the Settlement.”).

⁶³ *Id.* (stating, “[o]perating criteria such, [sic] as channel conveyance capacity, ramping rate constraints, scheduled maintenance, and downstream seepage concerns, may restrict the release of Restoration Flows during non-critical low Restoration Year Types. At this time, channel capacity does not constrain restoration releases from Friant Dam because there are no restoration releases.”).

⁶⁴ SJRR Settlement Agreement, *supra* note 57, at Exhibit C.

structural improvement projects are unavoidably behind schedule.”⁶⁵ For example, in June 2012 a revised schedule provided for completion of the Mendota Pool Bypass by 2020, seven years later than initially planned.⁶⁶

In addition to technical obstacles, such as seepage management, the completion of Phase 1 improvements and associated mitigation measures has also been delayed by lack of funding.⁶⁷ In short, because the release of full restoration flows is contingent upon completion of Phase 1 improvements and associated mitigation measures, and the completion of these projects has been delayed by technical obstacles and lack of adequate funding, it is unclear when full restoration flows will begin. The Districts cannot be required to speculate as to how the multitude of highly complex issues surrounding the delayed completion of Phase 1 improvements and associated mitigation projects will eventually be resolved, what portion of restoration flows will be released prior to that time, and what, if any, relevant cumulative effects may result. (*N. Plains*, 668 F.3d at p. 1078.)

F. The Districts Cannot be Required to Engage in Multiple Levels of Speculative Analysis Regarding Potential Cumulative Effects of Project Operations that May Result from the State Water Board’s Contemplated Amendment to the Bay-Delta Plan and Eventual Adoption of Unimpaired Flow Objectives for the Merced River.

The CGs assert that “[t]he FLA should use existing information to consider how Don Pedro Project operations would be modified or coordinated in response to a requirement that the licensee of the Merced River Project release between 30% and 60% of February – June unimpaired flow into the lower Merced River as measured at the Shaffer Bridge Gauge. It also should consider that this requirement may be modified in multiple sequential dry year scenarios.”⁶⁸ The CGs’ Comments reference both the State Water Board’s contemplated amendments to the Bay-Delta Plan, which, as explained above, would establish new flow objectives on the Lower San Joaquin River (“LSJR”) and its three eastside tributaries, the Stanislaus, Tuolumne, and Merced rivers, and the fact that the Merced Irrigation District is currently applying to have the Merced River Hydroelectric Project (Project No. 2179) relicensed

⁶⁵ SJRRP Framework for Implementation, *supra* note 59, at p. 2; see also San Joaquin River Restoration Program Floodplain Management Association Presentation, January 17, 2013, available at http://www.floodplain.org/files/San_Joaquin_Restoration_Jan_2013.pdf, at p. 12 (stating, “[s]ome actions required by the Settlement are unavoidably behind schedule.”).

⁶⁶ SJRRP Framework for Implementation, *supra* note 59, at p. 10.

⁶⁷ *San Joaquin River Restoration Hits Snags*, Capital Public Radio, Amy Quinton, December 30, 2013, available at <http://www.capradio.org/articles/2013/12/30/san-joaquin-river-restoration-hits-snags/> (reporting, “Alicia Forsythe, Program Manager for the restoration program, says many of the delays were unavoidable. The recession hit just as the project was beginning. Water seepage stalled projects. The land is sinking in an area where a new fish screen is needed. ‘The settlement assumed that those projects would begin immediately, that there would be willing access from all landowners. That basically everything would fall perfectly in line for these projects,’ says Forsythe. ‘We find that that’s just not reality.’ The problems and delays have escalated costs. The program’s original estimate was between \$250 million to \$800 million. Now Forsythe says it’s closer to a billion. *She says the schedule for the projects will be revised again, based on priority and what she calls more realistic funding.*”); see also 2014 Channel Capacity Report, *supra* note 60, at p. 6 (stating, “[t]he SJRRP will continue to limit Restoration Flows to levels that do not result in material adverse impacts due to groundwater seepage, which may be more limiting than levee seepage and stability.”).

⁶⁸ CGs’ Comments, *supra* note 4, at p. 39.

by FERC.⁶⁹ Thus, the CGs appear to contend that since the Merced River Hydroelectric Project may ultimately be required to release between 30% and 60% of February – June unimpaired flow into the lower Merced River, either as a result of the State Water Board’s amendments to the Bay-Delta Plan, or under the State Water Board’s 401 certification authority in the relicensing proceeding, the FLA should analyze how Don Pedro Project operations may be modified in consideration of such flows, and the relevant, cumulative effects that may result.

The CGs’ recommendation that the FLA analyze how these potential, future flow requirements, if applied on the Merced River, might impact Don Pedro Project operations, and, in turn, might result in relevant cumulative effects, suffers from the same weakness as their similar recommendation regarding potential application of the same flow requirements on the Tuolumne River. In short, the CGs’ recommendation that the cumulative effects analysis in the FLA include detailed consideration of an indeterminate number of potential flow scenarios on the Merced River, and consider how each of the flow scenarios may be modified in dry years, and further, anticipate how Don Pedro Project operations might be changed to accommodate such flow scenarios, and then analyze the potential cumulative effects of such operational changes, would require the Districts to engage in several levels of speculative analysis of little, if any, practical utility. (*N. Plains*, 668 F.3d at 1078.) More importantly, as noted, because the Draft SED will be superseded by a revised version, the Districts simply do not have the information available to permit meaningful consideration. (*Id.*)

In addition, after the State Water Board’s release of a revised version of the Draft SED, eventual, formal adoption of the SED and new LSJR flow objectives, and possible administrative and court review of the State Water Board’s determinations, e.g., a court may stay any attempt to implement the objectives pending the outcome of a legal challenge, extensive, further proceedings would still be required before any new LSJR flow objectives could be implemented. As noted, NEPA does not require consideration of other projects so far removed in time “that the interrelationship, if any, between them is unknown and speculative.” (*Natural Res. Defense Council, Inc.*, 524 F.2d at 90.)

Lastly, although the Merced River Hydroelectric Project is currently being considered for relicensing, the State Water Board has not yet issued a 401 water quality certification for the project. In fact, the licensee, the Merced Irrigation District, has not yet requested 401 water quality certification.⁷⁰ Unless and until the State Water Board imposes specific flow

⁶⁹ *Id.* See also DLA, *supra* note 56, Exhibit E, at pp. 4-33, 4-34 (explaining, that the “New Exchequer Dam and its downstream counterpart, McSwain Dam (RM 56.0), are the primary components of the Merced River Development Project, which is owned by the Merced [Irrigation District] and licensed by FERC.”). See Public Website for Relicensing of Merced Irrigation District’s Merced River Hydroelectric Project, FERC Project No. 2179, available at http://www.eurekasw.com/mid/default.aspx?Paged=Next&p_StartTimeUTC=20140123T173001Z&View=%7b6402BB0B%2dCFBB%2d4EAF%2d89C5%2dA84D1100239D%7d.

⁷⁰ See *Notice of Application Accepted for Filing, Soliciting Motions to Intervene and Protests, Ready for Environmental Analysis, and Soliciting Comments, Recommendations, Preliminary Terms and Conditions, and Preliminary Fishway Prescriptions*, elibrary No. 20140324-3026, March 24, 2014. The Merced Irrigation District has 60 days from issuance of the Notice of Acceptance and Ready for Environmental Analysis (“REA”) for the Merced River Hydroelectric Project to file an application for 401 water quality certification. 18 CFR § 5.23(b). See also Merced Irrigation District Public Relicensing Website, Event Calendar, available at <http://www.eurekasw.com/MID/Lists/Event%20Calendar/DispForm.aspx?ID=229&Source=http%3A%2F%2Fwww%2Eeurekasw%2Ecom%2Fmid%2Fdefault%2Easpx%3FPaged%3DNext%26p%5FStartTimeUTC%3D20140123T173001Z%26View%3D%257b6402BB0B%252dCFBB%252d4EAF%252d89C5%252dA84D1100239D%257d> (indicating the licensee will submit its request for 401 water quality certification to the State Water Board on May 23, 2014).

requirements on the Merced River under its 401 certification authority, and such certification has withstood administrative and judicial review, it would be inappropriate and unlawful to require the Districts to speculate as to what such flow requirements may be, and the nature and extent of the cumulative effects that might result from such flows.

II. CONTRARY TO THE CONSERVATION GROUPS’ ARGUMENTS, THE DISTRICTS CANNOT BE REQUIRED TO EXHAUSTIVELY ANALYZE UNKNOWN CUMULATIVE EFFECTS, OR TO DEVELOP AND PROPOSE ALTERNATIVES TO MITIGATE SUCH EFFECTS.

FERC cannot require the Districts to exhaustively analyze the potential cumulative effects of the Proposed Action, or to develop and propose alternatives to mitigate such effects where, as here: the nature and extent of the cumulative effects are unknown; it is impossible to isolate the effects of particular actions; FERC cannot require the Districts to analyze the potential cumulative effects of speculative alternatives; FERC does not have jurisdiction over other actions that may significantly contribute to the effects; and, the record does not support such further analysis or mitigation measures.

A. The Districts Cannot be Required to Exhaustively Analyze Cumulative Effects, or to Develop and Propose Alternatives to Mitigate Such Effects, Where Not Enough Information is Available to Permit Meaningful Consideration.

The CGs assert that the FLA should propose measures to mitigate the cumulative effects of “Project Operations.”⁷¹ Further, the CGs contend that the DLA’s discussion of certain cumulative effects is insufficient to enable FERC “to fully consider the project’s cumulative effects or reasonable alternatives to mitigate those effects.”⁷² In support of this contention, the CGs cite authority for the unexceptionable propositions that FERC is statutorily required “to give full consideration to alternative plans even where it has no authority to command the alternative,”⁷³ and that federal regulations require the NEPA document “[i]nclude reasonable alternatives not within the jurisdiction of the lead agency.”⁷⁴

However, notwithstanding FERC’s statutory obligations to consider reasonable alternatives outside of its jurisdiction, as the United States Supreme Court has admonished, “the concept of [NEPA] alternatives must be bounded by some notion of feasibility.” (*Vermont Yankee Nuclear Power Corp. v. Natural Res. Def. Council, Inc.* (“*Vermont Yankee*”)) 435 U.S. 519, 551 (1978).) As the Court instructed in *Vermont Yankee*,

There is reason for concluding that NEPA was not meant to require detailed discussion of the environmental effects of alternatives put forward in comments when these effects cannot be readily ascertained and the alternatives are deemed only remote and speculative possibilities, in view of basic changes required in statutes and policies of other agencies—making them available, if at all, only after protracted debate and litigation not meaningfully

⁷¹ CGs’ Comments, *supra* note 4, at p. 33.

⁷² *Id.* (citations omitted).

⁷³ *Id.* (internal quotations omitted) (citing *Scenic Hudson v. FPC*, 354 F.2d 608, 617-618 (2nd Cir. 1965); *Green Island Power Auth. v. FERC*, 577 F.3d 148, 167 (2nd Cir. 2009)).

⁷⁴ *Id.* (internal quotations omitted) (citing 40 C.F.R. § 1502.4).

compatible with the time-frame of the needs to which the underlying proposal is addressed.⁷⁵

Further, as other federal courts have clarified, a rule of reason governs both which alternatives an agency must discuss, and the extent to which it must discuss them. (*Natural Res. Def. Council, Inc. v. Hodel*, 865 F.2d 288, 294-95 (D.C. Cir. 1988) (citation omitted) (internal quotation omitted).) Thus, agencies are not required to consider alternatives that are speculative. (*Id.* (citation omitted) (internal quotation omitted); see also *Independence Pipeline Co.*, 91 FERC ¶ 61,102, at 61,332 (2000) (italics added) (finding that “the possibility of turnback capacity is *too speculative to be considered a viable alternative*.”).

Accordingly, contrary to the CGs’ argument, FERC is not required to exhaustively consider the potential cumulative effects referenced in the CGs’ comments, nor must it consider alternatives to mitigate such effects, because, as thoroughly explained above in Section I, there is not enough information available to permit meaningful consideration of the other actions that may potentially contribute to such effects. (See *Idaho Power Co.*, 110 FERC ¶ 61,345, at P 80 (citation omitted) (explaining that FERC’s “discussion of environmental alternatives [in NEPA documents] need not be exhaustive and need only provide sufficient information to permit a reasoned choice of alternatives.”); *id.* (citing *Vermont Yankee*, 435 U.S. at 551-52 (further explaining that “under NEPA, the range of alternatives that must be discussed in an environmental analysis is a matter within an agency’s discretion.”)). Although the FLA provides detailed discussion of the other actions that may contribute to the specific cumulative effects referenced in the CGs’ comments, the FLA does not include speculative analysis of potential alternatives, nor propose mitigation measures to reduce such effects, because there is simply not enough information available to permit meaningful consideration. Given the respective status of each of the referenced actions, as explained above, the Districts cannot be required “to engage in speculative analysis or do the impractical.” (*N. Plains*, 668 F.3d at 1078.)

B. The Districts Cannot be Required to Exhaustively Analyze Cumulative Effects, or to Develop and Propose Alternatives to Mitigate Such Effects, Where it is Impossible to Isolate the Effects of Multiple, Contributing Actions.

The Districts cannot be required to exhaustively analyze the cumulative effects referenced in the CGs’ comments, or to develop and propose measures to mitigate such effects in the FLA, because, as a practical matter, it is impossible to meaningfully attribute effects in the complex and dynamic environments of the lower Tuolumne River, San Joaquin River basin, Delta, [and San Francisco Bay] to specific actions.⁷⁶ As the DLA states,

The effects of the Project are attenuated with increasing distance downstream in the Tuolumne River and into the San Joaquin River basin and Delta. With increased distance downstream of the Project, the number and complexity of . . . past, current, and future actions make it exceedingly difficult, if not impossible, to meaningfully isolate specific effects of the numerous individual

⁷⁵ *Vermont Yankee*, 435 U.S. at 551 (citations omitted) (internal quotation omitted) (italics added). See also *Lehigh Portland Cement Co.*, 24 FERC ¶ 61,165, at 61,379 (1983) (italics added) (explaining that in *Vermont Yankee* “the Supreme Court held that the content of alternatives to a proposed action is not self-defining. Rather, to make the impact statement something more than an exercise in boundless rambling, *the concept of alternatives must be bounded by some notion of feasibility, reasonableness, and common sense . . .*”).

⁷⁶ DLA, *supra* note 56, Exhibit E, at p. 3-5.

actions, including the Proposed Action, on the resources of concern.⁷⁷

The Council for Environmental Quality (“CEQ”) recognizes that in order to analyze cumulative effects it is necessary to isolate the effects of multiple, contributing actions.

Initially, the analyst will usually determine *the separate effects* of past actions, present actions, the proposed action (and reasonable alternatives), and other future actions. *Once each group of effects is determined, cumulative effects can be calculated.*⁷⁸

Similarly, CEQ instructs that in order to analyze the incremental contribution of alternatives it is necessary to isolate the effects which are attributable to specific actions.

The separation of effects into those attributable to the proposed action or a reasonable alternative versus those attributable to past and future actions also allows the analyst to determine the incremental contribution of each alternative.⁷⁹

Thus, because it is impossible to isolate the effects of the Proposed Action from the effects of other actions that may contribute to cumulative effects downstream in the Tuolumne River and into the San Joaquin River basin, Delta, and the San Francisco Bay, at present, it is neither possible to quantify the cumulative effects of all of the potentially relevant actions, nor determine the incremental contributions of the indeterminate array of potential alternatives.

C. The Districts Cannot be Required to Analyze the Potential Cumulative Effects of Alternatives.

The CGs contend that the FLA should analyze the cumulative effects of the Don Pedro Project under alternative operating scenarios taking into consideration potential “changes at in-basin non-project facilities,” such as the Hetch Hetchy system, the Merced River Hydroelectric Project (Project No. 2179), Friant Dam, and the myriad north Delta diversion scenarios identified in the Draft Environmental Impact Report / Environmental Impact Statement for the Bay Delta Conservation Plan.⁸⁰ However, Federal agencies, such as FERC, are not required to analyze the cumulative effects of alternatives. (*Soda Mountain Wilderness Council v. Norton* (E.D. Cal. 2006) 424 F. Supp. 2d 1241, 1267 (concluding, “the cases do not appear to require a cumulative impacts discussion for each alternative.”). Given that FERC is not required to analyze the cumulative effects of alternatives under NEPA, and that to do so here would require the agency to impermissibly speculate regarding the nature and extent of such effects, FERC cannot require the Districts to analyze the potential cumulative effects of an indeterminate array of alternatives involving possible operational changes to multiple “non-project” facilities.

⁷⁷ *Id.*

⁷⁸ *Considering Cumulative Effects Under the National Environmental Policy Act*, Council on Environmental Quality, Office of NEPA Policy and Compliance, January 16, 1997, available at http://energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-CEQ-ConsidCumulEffects.pdf (referred to below as “Considering Cumulative Effects”), at p. 42 (italics added).

⁷⁹ *Id.* at p. 43.

⁸⁰ CGs’ Comments, *supra* note 4, at pp. 36-39; BDCP Draft EIR/EIS, *supra* note 32, at p. 3-8 (identifying 15 action alternatives which include facilities with 4 different diversion and conveyance capacities, *i.e.*, 3,000, 6,000, 9,000, and 15,000 cfs).

D. The Districts Cannot be Required to Exhaustively Analyze Cumulative Effects, or to Develop and Propose Alternatives to Mitigate Such Effects, Because FERC Does Not Have Jurisdiction Over Other Actions that May Significantly Contribute to the Effects.

The Districts cannot be required to exhaustively analyze cumulative effects, or develop and propose alternatives to mitigate such effects, because FERC does not have jurisdiction over other actions that may significantly contribute to such effects, and thus, FERC would have no reasonable basis for determining that any measures it required of the licensee would have any meaningful benefit to the resources of concern. FERC precedent does not support the imposition of measures to mitigate cumulative effects where, as here, FERC does not have jurisdiction over other actions that may significantly contribute to the effects, and the extent to which FERC required mitigation could achieve meaningful reductions, if any, is unknown. Although FERC evaluates cumulative effects on a case-by-case basis,⁸¹ historically, in complex and dynamic environments involving multiple actions, FERC has generally only ordered mitigation of cumulative effects where it has had jurisdiction over the other actions which significantly contribute to the effects, such as situations involving multiple hydropower projects on a river, and thus, has been able to allocate mitigation responsibility with reasonable assurance that the reduction of a specific effect could be achieved. See e.g. *Allegheny*, 51 FERC ¶ 61,268, at 61,852 (wherein FERC required multiple hydropower projects on the Ohio River to address cumulative effects by implementing mitigation measures designed to maintain certain dissolved oxygen concentrations in the river, explaining “[t]he scope of monitoring and remediation responsibilities of each licensee whose project is located at a good to moderate aerating dam was based on a reasoned analysis of the location and aeration capabilities of each dam. . . . The Commission imposed these measures because they are required to adequately mitigate the adverse water quality impacts of the projects, so the projects may be licensed to produce needed energy.”)

By contrast, with the exception of the La Grange Project, over which FERC has recently asserted jurisdiction,⁸² FERC does not have jurisdiction over any of the other actions referenced by the CGs in their comments that may significantly contribute to cumulative effects. Thus, because FERC would be unable to allocate mitigation responsibility amongst potential contributing actions outside of its jurisdiction, and over such a broad geographic scope, which encompasses the highly complex and dynamic environments of the Tuolumne River, San Joaquin River basin, Sacramento-San Joaquin Delta, and the San Francisco Bay,⁸³ FERC would have no reasonable assurance that mitigation measures imposed on the Proposed Action, measures that may potentially cost a great deal and result in severe socioeconomic impacts,

⁸¹ *Allegheny Electric Cooperative (“Allegheny”)*, 51 FERC ¶ 61,268, at 61,832 (1990) (citing a Commission report prepared for the U.S. House of Representatives Energy and Commerce Chairman, wherein the Commission explained that “[t]he Commission believes that it would be inappropriate to generically specify what procedural steps should be used to evaluate cumulative environmental impacts. The specific circumstances of each basin or group of projects should determine the procedural steps needed to evaluate cumulative impacts. The Commission should therefore retain the flexibility to use the procedures it believes will most efficiently and effectively resolve the cumulative impact issues in individual situations.”).

⁸² As explained above in Section I(a), because FERC’s authority to impose mitigation measures only extends to licensed projects, unless and until FERC issues a license for the La Grange Project that requires fish passage, and the D.C. Circuit Court of Appeal affirms FERC’s assertion of jurisdiction over the project, and the Districts accept an issued license, FERC cannot require the Districts to implement measures to mitigate the adverse effects, if any, of the La Grange Project.

⁸³ *Scoping Document 2*, *supra* note 12, at p. 34.

would have any meaningful benefit to the resources of concern. Given FERC’s inability to control other actions with potentially significant and relevant environmental effects, a decision to order the Districts to mitigate the cumulative effects referenced in the CGs’ comments would not “be based on reasoned judgment,”⁸⁴ but instead, would untenably rely on FERC’s “sheer speculation” regarding the effectiveness of such measures.⁸⁵

E. The Districts Cannot be Required to Develop and Propose Alternatives to Mitigate Specific Cumulative Effects Because There is No Evidence in the Record to Support Such a Finding or Conclusion.

FERC must base all of its decisions, including the imposition of mitigation measures, on substantial evidence in the record. See e.g., *Pac. Gas & Elec. Co. v. FERC*, 373 F.3d 1315, 1319 (D.C. Cir. 2004) (citations omitted) (internal quotation omitted) (explaining, “FERC must be able to demonstrate that it has made a reasoned decision based upon substantial evidence in the record. We also must ensure that FERC articulate[s] a satisfactory explanation for its action including a rational connection between the facts found and the choice made.”); 16 U.S.C. § 825l (italics added) (“[t]he finding of the Commission as to the facts, *if supported by substantial evidence*, shall be conclusive”); *Centralia*, 213 F. 3d at 750 (holding that FERC must support the imposition of mitigation measures and studies with substantial evidence, and must show, in the “required statutory balancing of power and non-power values,” that a fishery recommendation is “reasonably related” to the goal of enhancing the fishery). In short, FERC cannot require the Districts to develop and propose measures to mitigate specific cumulative effects, as the CGs recommend, because: (1) there is no evidence in the record that quantifies the Proposed Action’s contribution, if any, to such effects; and, (2) there is no evidence in the record that establishes that specific mitigation measures are “reasonably related” to reduction of the effects. (*Centralia*, 213 F. 3d at 750.)

III. CONTRARY TO THE CONSERVATION GROUPS’ ARGUMENTS, ALL FLOW-RELATED EFFECTS OF THE PROPOSED ACTION DOWNSTREAM OF THE LA GRANGE PROJECT ARE CUMULATIVE, NOT DIRECT, EFFECTS.

Contrary to the CGs’ argument, and as explained in the DLA, all flow-related effects of the Don Pedro Project downstream of the La Grange Project are cumulative, not direct, effects because water is diverted from the Tuolumne River at La Grange dam year round to meet the Districts’ irrigation, municipal and industrial (“M&I”) demands.⁸⁶ The CGs assert that the Don Pedro Project has flow-related, direct effects downstream of La Grange dam, and, in particular, contend that “at minimum,” flow-related effects during the non-irrigation season, when there are “little or no diversions” from La Grange dam, “are direct effects of the project.”⁸⁷ In support of their contention, the CGs cite to a determination by the Director of OEP in response to comments on Merced Irrigation District’s Initial Study Report (“ISR”) for the Merced River Hydroelectric

⁸⁴ *Allegheny*, 51 FERC ¶ 61,268, at 61,852 (noting that measures designed to mitigate cumulative effects “must be based on reasoned judgment”).

⁸⁵ *City of Centralia v. FERC* (“*Centralia*”), 213 F. 3d 742, at 749 (D.C. Cir. 2000) (italics added) (explaining, “FERC’s conclusion is based on *sheer speculation*. Therefore, it cannot be said that there is substantial evidence justifying a study.”).

⁸⁶ See e.g., DLA, *supra* note 56, at p.4-1 (explaining, “[t]he lower Tuolumne River below La Grange Dam is directly affected by the operations of La Grange Dam, the Districts’ non-project diversion dam used to divert water into the Districts two irrigation canals. Therefore all flow-related effects of the Don Pedro Project downstream of the La Grange Diversion Dam are, by definition, cumulative effects.”); see also *id.* at pp. 4-6, 4-7.

⁸⁷ CGs’ Comments, *supra* note 4, at p. 34 (italics omitted).

Project (P-2179).⁸⁸ Notably, in the OEP Revisions to the Merced ISR, the Director of OEP stated,

Staff performed a preliminary analysis of [Merced Irrigation District's] *Water Balance/Operations Model Study* and the *Water Temperature Model Study* and reviewed existing information. Regarding potential project effects in the lower Merced River, downstream of [Merced Irrigation District's] Crocker-Huffman diversion dam, staff found that early season project releases from the project's New Exchequer dam have a direct impact on water temperatures. . . . Regarding downstream flows, review of existing information and preliminary staff analysis suggests that, during the non-irrigation season, the magnitude and duration of releases from New Exchequer dam have a direct effect upon flows in the 23-mile downstream reach, *however, during the irrigation season, non-jurisdictional water withdrawals limit the available water supply for instream flow needs, and thus during this time, flows are not directly affected by the project.*⁸⁹

The Director of OEP further explained,

Regarding downstream water quantity, existing hydrology data, and information in the Pre-Application Document (PAD) suggests that during the non-irrigation season (approximately November – February) *when little or no diversions from Crocker-Huffman are occurring*, the magnitude and duration of releases from New Exchequer dam have a direct effect upon flow-related habitat conditions in the lower Merced River. . . . Existing information indicates that during the irrigation season, non-jurisdictional withdrawals account for up to 52% of the average annual unimpaired discharge from the watershed, limiting the available water supply for instream flow needs. *Therefore, direct hydropower effects are seasonally dependent.*⁹⁰

Thus, the Director of OEP appears to have determined, at least on a preliminary basis, that because diversions at Crocker-Huffman dam are “seasonally dependent,” insofar as “little or no” water is diverted during the non-irrigation season, from approximately November through February, flow-related effects below Crocker-Huffman dam during this period are direct effects of the New Exchequer dam located upstream on the Merced River.⁹¹ The CGs rely upon this

⁸⁸ *Id.* (citing *Revisions to Study Plan*, Office of Energy Projects, Federal Energy Regulatory Commission, eLibrary no. 20110401-3042 (April 1, 2011) (referred to below as “OEP Revisions to the Merced ISR”), Appendix B, at pp. 2, 5).

⁸⁹ OEP Revisions to the Merced ISR, *supra* note 88, at p. 2 (italics added).

⁹⁰ *Id.*, Appendix B, at p. 5 (italics added).

⁹¹ *Id.*, Appendix B, at pp. 2, 5. See also *Comments on Licensee Initial Study Report Merced River Hydroelectric Project No. 2179-042*, eLibrary Accession No. 20101115-5115, January 30, 2011, at p. 10 (wherein Merced River Conservation Committee, Trout Unlimited, California Sportfishing Protection Alliance, Golden West Women Flyfishers, Northern California Council Federation of Flyfishers, American Rivers, and Friends of the River stated that Merced Irrigation District's Water/Balance Operations Model “confirms that there are no agricultural diversions in the lower Merced River [during the period of November through February, and further explained that] “[i]n many cases, depending on the weather, no agricultural diversions are made in the lower Merced River in most or all of March.”).

determination as “precedent on point” for FERC “finding that [Don Pedro] project releases during times when there are little or no diversions from [La Grange dam] are direct effects of the project.”⁹²

A. OEP’s Determination that During the Non-Irrigation Season All Flow-Related Effects Downstream of Crocker-Huffman Dam Are Direct Effects of New Exchequer Dam Wrongly Disregards Other Past and Present Actions that Cumulatively Contribute to the Flow-Related Effects.

OEP’s determination that during the non-irrigation season all flow-related effects below Crocker-Huffman dam are direct effects of the New Exchequer Project wrongly disregards other past and present actions that cumulatively contribute to the flow-related effects. Direct effects “are *caused by* the action and occur at the same time and place,” (40 C.F.R. § 1508.8(a) (italics added) By contrast, cumulative effects or cumulative impacts⁹³ are defined as “the impact on the environment which results from the incremental impact of the action when *added to other past, present, and reasonably foreseeable future actions* regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” (40 C.F.R. § 1508.7 (italics added) In the Merced River, there are many other past and present actions that cumulatively contribute to flow-related effects downstream of Crocker-Huffman dam, such as changes in channel morphology and sediment due to mining and operation of Lake McClure by the United States Army Corps of Engineers (“USACE”) for flood control.⁹⁴ These other past and present actions – such as legacy effects of mining and flood control operations at Lake McClure – contribute to flow-related effects downstream of Crocker-Huffman dam. The effects of these other past and present actions should properly be considered with the additional, incremental effects of the magnitude and duration of releases from New Exchequer dam in order to understand the cumulative impacts on the resources of concern. (40 C.F.R. § 1508.7) Instead, OEP wrongly concluded that during the non-irrigation season, when “little or no” diversions occur at Crocker-Huffman dam, all flow-related effects in the Merced River below Crocker-Huffman dam are direct effects of, or caused by, the New Exchequer dam. But this conclusion disregards the contributions of other past and present actions on flow-related effects below Crocker-Huffman dam, and, in so doing, improperly designates releases from the New Exchequer dam during non-irrigation periods as direct, instead of cumulative, effects.

B. There Are Many Other Past and Present Actions that Contribute to Flow-Related Effects on the Tuolumne River Downstream of the La Grange Dam in Addition to Effects of the Proposed Action.

Similar to the Merced River, many other past and present actions contribute to flow-related effects on the Tuolumne River downstream of the La Grange dam in addition to effects resulting from the Proposed Action, that is, effects resulting from continued hydroelectric generation at the Don Pedro Project. For example, flood control operations at the Don Pedro Project in compliance with USACE flood management guidelines “consist of both pre-releases in anticipation of high runoff and releases during periods of high runoff. Both of these release scenarios occur to balance reservoir levels, forecasted runoff, and downstream flows.”⁹⁵ Further,

⁹² CGs’ Comments, *supra* note 4, at p. 34 (internal quotation omitted).

⁹³ 40 C.F.R. § 1508.8 (noting that “[e]ffects and impacts as used in these regulations are synonymous.”).

⁹⁴ *Application for New License – Existing Dam, Merced River Hydroelectric Project*, eLibrary Accession No: 20120227-5055, February 2012, Volume II, Exhibit E, at pp. E3-25, E3-26, E3-27.

⁹⁵ DLA, *supra* note 56, Exhibit E, at p. 4-7.

“water elevations and water velocities in the lower Tuolumne River during high flows are affected by past and present in-channel and overbank mining, levee development, agricultural development on the floodplain, and urban development, particularly in Modesto.”⁹⁶ Therefore, other past and present actions that contribute to flow-related effects in the Tuolumne River below La Grange dam, such as effects of mining and flood control operations at the Don Pedro Project, should properly be considered with the additional, incremental effects of the magnitude and duration of releases attributable to the Proposed Action in order to understand the cumulative impacts on the resources of concern. (40 C.F.R. § 1508.7) Moreover, diversion of water at La Grange dam for the Districts’ irrigation and M&I uses should properly be understood as additional, contributing actions to flow-related cumulative effects in the Tuolumne River below La Grange dam, not, as the CGs argue, the decisive factor in determining what is, and what is not, a direct effect of the Proposed Action.⁹⁷ Accordingly, as many other past and present actions contribute to flow-related effects in the Tuolumne River below La Grange dam, including effects of mining, flood control operations at the Don Pedro Project, and diversions at La Grange for the Districts’ irrigation and M&I uses, the Proposed Action’s additional, incremental contribution to such effects are cumulative, not direct, effects.

C. Contrary to the Conservation Groups’ Contentions, the Operations of Crocker-Huffman Dam and La Grange Dam Do Not Present Functionally Identical Situations.

Even if OEP’s rationale for distinguishing between the flow-related effects of releases from the New Exchequer Project on the Merced River below Crocker-Huffman dam based upon seasonally dependent diversions at Crocker-Huffman was sound and defensible – which, as shown, it is not – any analogy to the Proposed Action would still be unavailing. Contrary to the CGs’ argument, seasonally dependent diversion of water for irrigation at Crocker-Huffman dam does not present “a functionally identical situation” to the operation of the La Grange Project⁹⁸ because, as noted, the Districts divert water at the La Grange dam for irrigation *and* M&I demands, and therefore, diversions at La Grange are not seasonally dependent and occur year round. As noted, in the Merced River Hydroelectric Project relicensing proceeding, FERC Staff analyzed data from, among other sources, Merced Irrigation District’s Water Balance/Operations Model Study, Water Temperature Model Study, and its Pre-Application Document to understand the quantity and frequency of diversions from the Merced River at Crocker-Huffman dam. By contrast, here, the CGs present no evidence in support of their assertion that diversions at La Grange dam are “functionally identical” to diversions at Crocker-Huffman.⁹⁹ In fact, United States Geological Survey (“USGS”) data from gages at the Modesto Irrigation District (“MID”) and Turlock Irrigation District (“TID”) canals, which is readily available to the public through

⁹⁶ *Id.* See e.g., *id.* at p. 4-16 (explaining, “[d]ecades of dredge mining in the main channel of the Tuolumne River resulted in the excavation of channel and floodplain sediments and has left a legacy of significant Tuolumne River channel modifications and dredger tailing deposits between RM 50.5 and 38.0.”); *id.* at p. 4-17 (“[t]he past in-channel mining has resulted in the replacement of the river channel with a series of large ponds/pools, referred to as Special-Run Pools (SRPs).”).

⁹⁷ CGs’ Comments, *supra* note 4, at p. 34 (italics in original) (stating, “[w]e nonetheless argue here that *at minimum* there is precedent on point that [sic] finding that project releases during times when there are ‘little or no diversions’ from the intervening diversion dam are direct effects of the [Don Pedro Project].”).

⁹⁸ *Id.* at p. 33 (italics added) (stating, “Conservation Groups have disputed the direct effects of project operations in a *functionally identical situation* in the relicensing of the Merced River Project . . . ”).

⁹⁹ *Id.*

the USGS website, demonstrate significant differences between the operations of the two dams.¹⁰⁰ More specifically, the historical data from these gages shows that with very limited, infrequent and intermittent exceptions, water is diverted year round at the La Grange dam by MID and/or TID. Accordingly, because there is no annual, routine period when little or no diversions occur at La Grange dam, and thus, diversion of water at La Grange dam is not seasonally dependent, under the rationale presented in OEP’s Revisions to the Merced ISR, flow-related effects below La Grange dam are not directly attributable to the Proposed Action.

¹⁰⁰ See USGS, National Water Information System, Web Interface, USGS Water Data for California, available at <http://waterdata.usgs.gov/ca/nwis/> website. More specifically, see web pages referenced below for real time and historical data from the USGS gauging stations on the Tuolumne River, and the MID and TID canals, all of which are at or below the La Grange dam.

The web pages below provide real-time or current data. There are two inputs that need to be entered or modified on these web pages: (1) to indicate whether data should be displayed in a graph or in a tabular format; and, (2) to specify the time span of the data to be reviewed.

River: http://waterdata.usgs.gov/ca/nwis/uv?site_no=11289650

MID: http://waterdata.usgs.gov/ca/nwis/uv?site_no=11289000

TID: http://waterdata.usgs.gov/ca/nwis/uv?site_no=11289500

The web pages below provide historic daily data. The same two inputs identified above must also be entered or modified on these web pages.

River:

http://waterdata.usgs.gov/ca/nwis/dv/?site_no=11289650&agency_cd=USGS&referred_module=sw

MID:

http://waterdata.usgs.gov/ca/nwis/dv/?site_no=11289000&agency_cd=USGS&referred_module=sw

TID

http://waterdata.usgs.gov/ca/nwis/dv/?site_no=11289500&agency_cd=USGS&referred_module=sw

