

JUNE 2015

California Water Commission
Water Storage Investment Program
Stakeholder Advisory Committee
Meeting

Opening

- Welcome
- Member Introductions
- Today's Agenda

SAC Meeting Topics

- Human Right to Water
- Definitions
- Application Evaluation Process Flow Chart – Tee-up
- Priorities and Relative Value – In-Depth
- Discussion of Applying Priorities
- Public Comments
- Next Steps and Action Items

Human Right to Water Program Application

Water Storage Investment Program Definitions

Definitions to be Covered Today

- Public trust resources
- Delta
- Tributaries to the Delta

§79752

*A project shall not be funded pursuant to this chapter unless it provides measurable improvements to the **Delta** ecosystem or to the **tributaries to the Delta**.*

“Delta” Definition

California Water Code §85058 defines “Delta” to mean the Sacramento-San Joaquin Delta as defined in section 12220 of the Water Code and the Suisun Marsh, as defined in section 29101 of the Public Resources Code.

“Tributaries to the Delta” Draft Definition

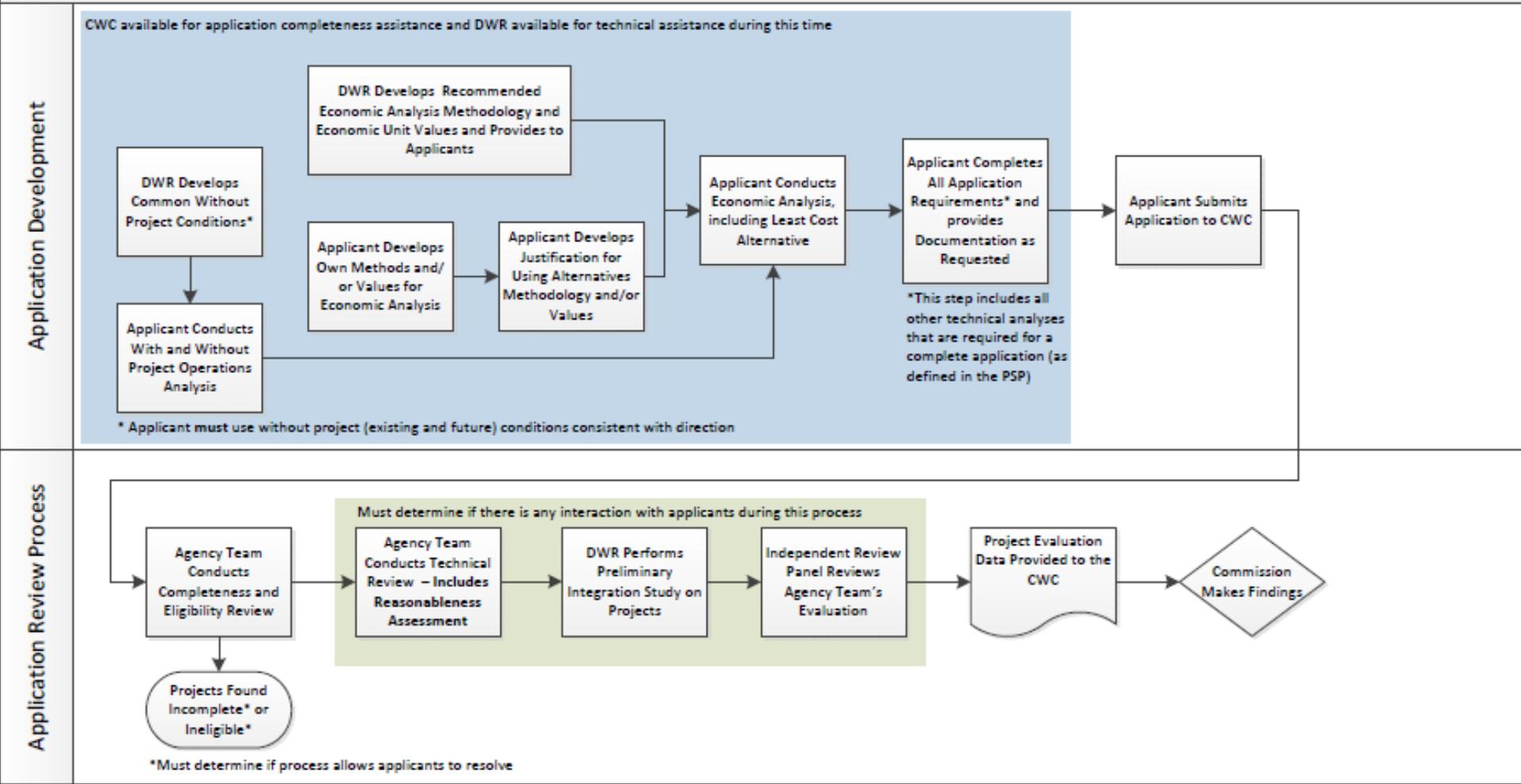
Waterways that are “tributaries to the Delta” include all river systems that make up the Sacramento River watershed and the San Joaquin River watershed (i.e., the natural/topographic hydrologic basins).

Questions?

Break

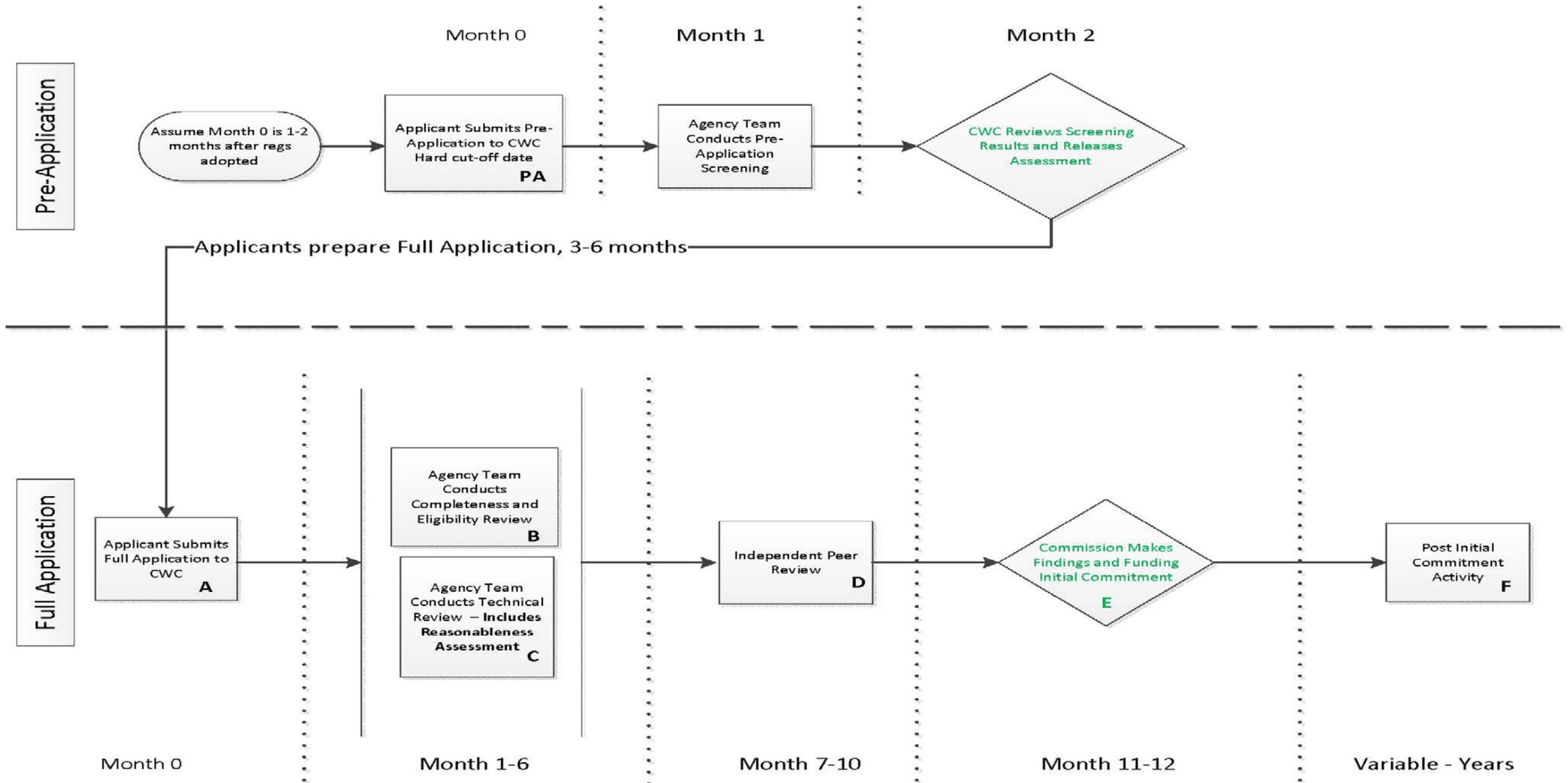
Water Storage Investment Program Application Evaluation Process Flow Chart

How Technical Work and Analysis Fits into Application Development and Review Process (DRAFT – For Discussion Purposes)



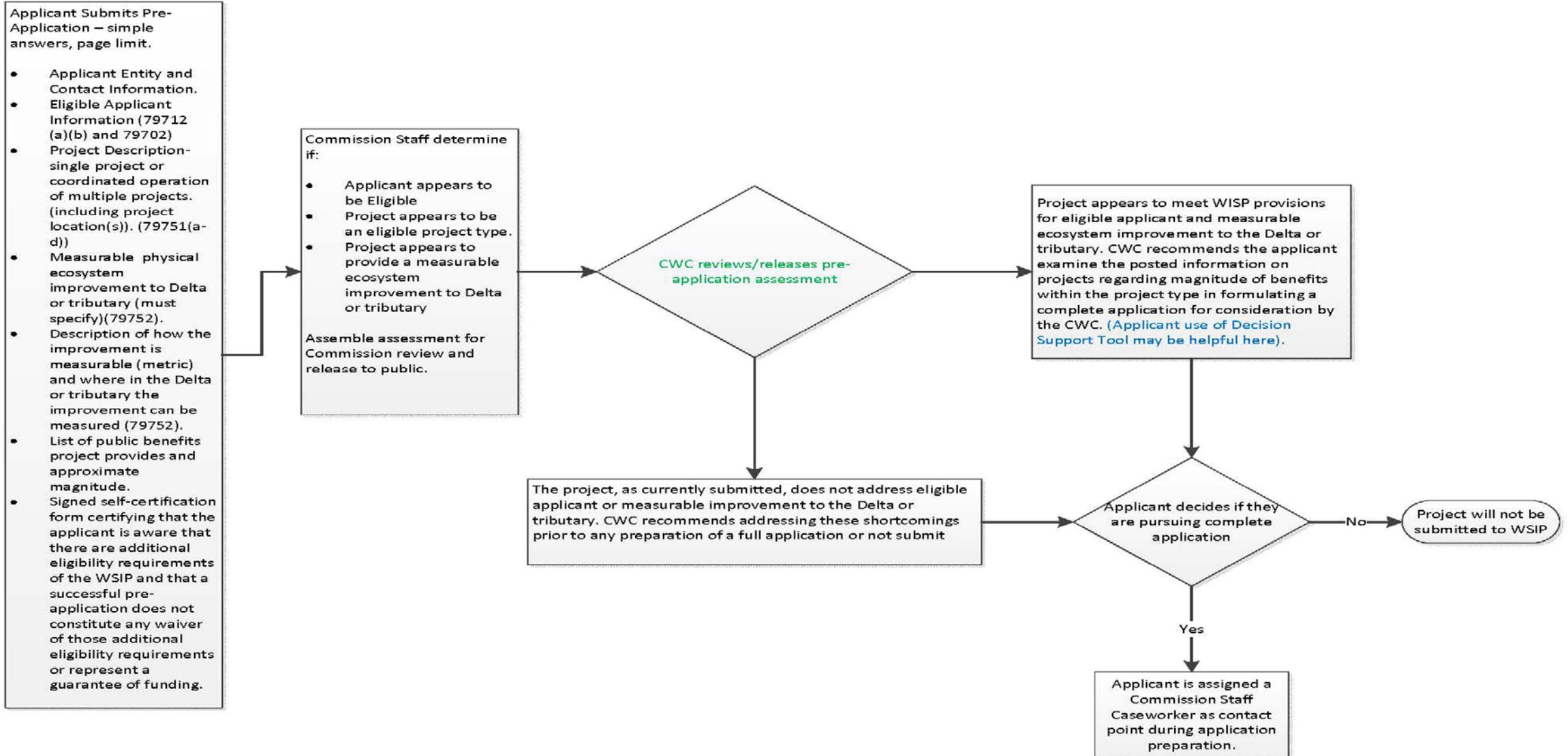
Staff Working Draft 5/15/15 – For Discussion Purposes Only

General Solicitation Process



Staff Working Draft 5/15/15 – For Discussion Purposes Only

PA – Preliminary Application



A – Application Submittal

Objective

To receive all information for evaluation.

What Materials?

Applicant submits(list):
WORK IN PROGRESS – back populate from B,C,D
Application components still being determined

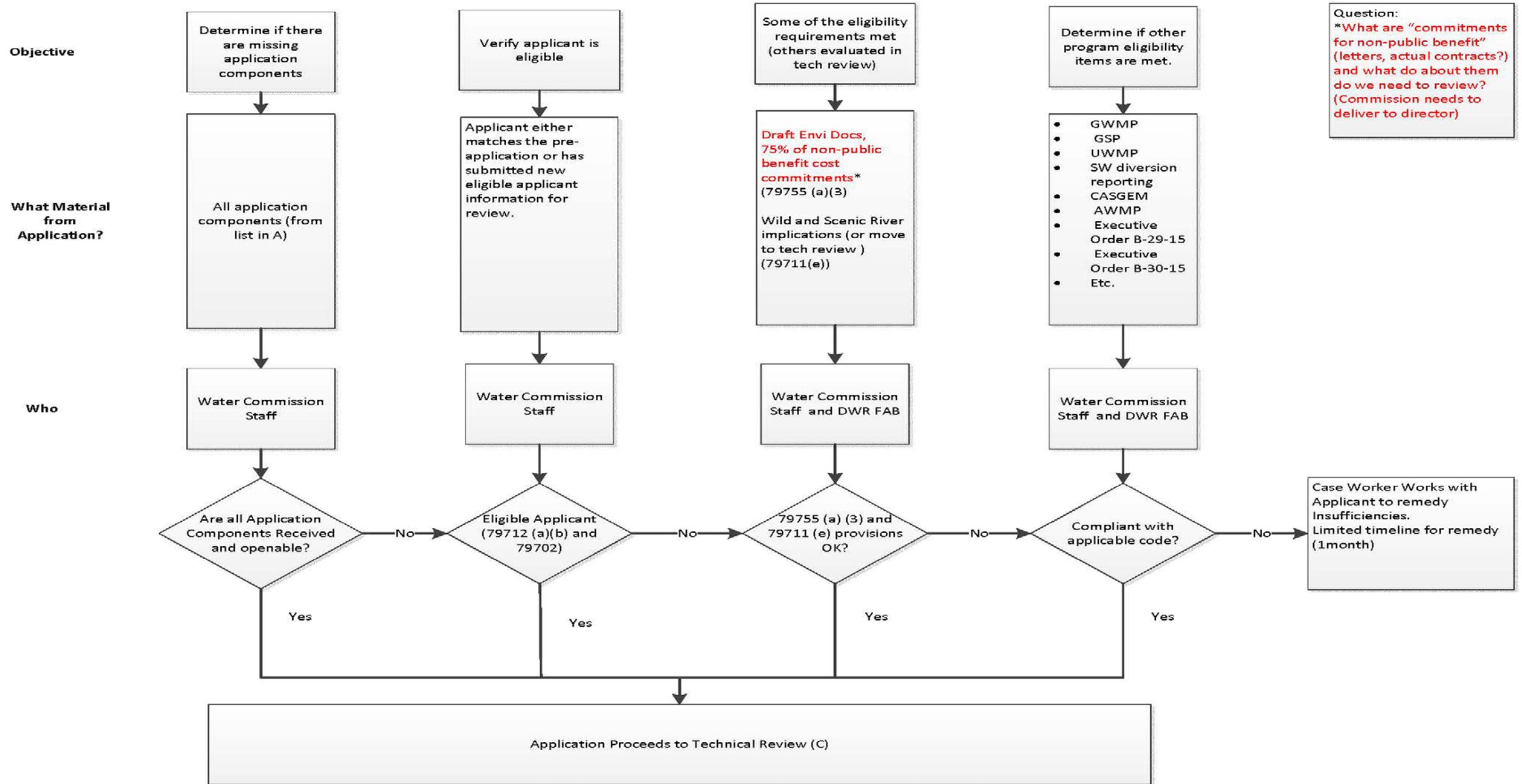
Via Electronic Submittal Tool

Application material to Completeness Eligibility Review (B)



Staff Working Draft 5/15/15 – For Discussion Purposes Only

B – Eligibility and Completeness



Staff Working Draft 5/15/15 – For Discussion Purposes Only

C – Technical Review

	Feasibility (79757 (a)(1) and 79755(a)(5)(A)(B))							
Objective	1. Technical Feasibility	2. Verification of physical benefits (pubic and non), Benefit to Delta or tributary	3. Econ Analysis	4. Environmental Documentation/ Permits	5. Restore ecological health and improve water management for beneficial uses of the Delta (79755(a)(5)(B))	6. Project tasks, budget, schedule	7. Success Measures and Assurances	8. Program Priorities and Relative Envi Values
What Material from Application?	Feasibility Study for the project (WSIP specific model runs and WSIP Economic Analysis listed as separate portions of review.)	Operational Model Runs with WSIP common/preferred assumptions + any associated updates to feasibility study information including climate change sensitivity analysis.	Econ Analysis using physical benefits from WSIP Operational Model including cost allocation Cost Estimate (budget)	Current Environmental Documents	Information from 1-4	Workplan for project activities through construction. Budget and supporting basis of estimate Proposed schedule of project activities	Technical Managerial and Financial Capacity Monitoring and Assurance Plan Concepts	1. DFW ecological priorities and relative environmental values. 2. SWRCB water quality priorities and relative environmental values. 3. Other Priorities?
Who	Commission Staff DWR	Commission Staff, Consultant, DWR	Commission Staff, Consultant, DWR	Commission Staff, DWR, SWRCB, DFW	Commission Staff, DWR, SWRCB, DFW, DSC, RWQCB?	Commission Staff DWR, DFW, SWRCB	Commission Staff DWR	Commission Staff, DWR, SWRCB, DFW, DSC, RWQCB?
Output	Concurrence on technical feasibility of project: <ul style="list-style-type: none"> Project Descrip Supporting Studies Supporting Data/Technical info Water balance Operations Plan Constructability Improves operation of a state water system. 	<ul style="list-style-type: none"> Quantities of Physical Benefits Improved operation of water system Benefit to Delta or Trib Benefit synergies in multiple project packages vs. component projects Reasonableness Assessment if preferred assumptions not used Project sensitivity 	<ul style="list-style-type: none"> Monetized magnitude of benefit Verification of max allowable grant amount Cost effectiveness (Economic feasibility) 	<ul style="list-style-type: none"> Status of: Envi Docs (at least public draft) Identification of mitigatable and non-mitigatable impacts Permits Water rights 	<ul style="list-style-type: none"> Project benefits support co-equal goals. Delta Plan-self-certification check list Net improvement to ecosystem or water quality condition (79750 (b)) Findings from Agencies that project benefits meet requirements of Ch8 	<ul style="list-style-type: none"> Work plan is implementable Costs are reasonable and logical. Request for final environmental documents/ permit funding Schedule is reasonable for described tasks 	<p>Assessment of whether the applicant demonstrates capacity to under take a project of the magnitude being proposed.</p> <p>Assessment of proposed benefit monitoring.</p>	<ul style="list-style-type: none"> How each application addresses priorities. Either a comparative analyses of relative environmental values between projects of similar type and magnitude of benefit or relative environmental values applied to each application.
Information to Independent Peer Reviewers								

Purpose of Independent Peer Review is to conduct QC review of Technical Evaluation performed by Technical Review Team.
 Independent Peer Reviewers receive Technical Review Information, access to applications to assess Tech Review (**What packaged form of tech review?**)

Independent Peer Reviewers works with Technical review team to resolve any questions regarding review information

Independent Peer Reviewers work with Tech Review Team to formulate project portfolios for CWC considerations.
[Decision Support Tool would be helpful here.](#)
 Tech Review Team performs integration study on project portfolios

Independent Peer Reviewers final review of information package and release findings to CWC.

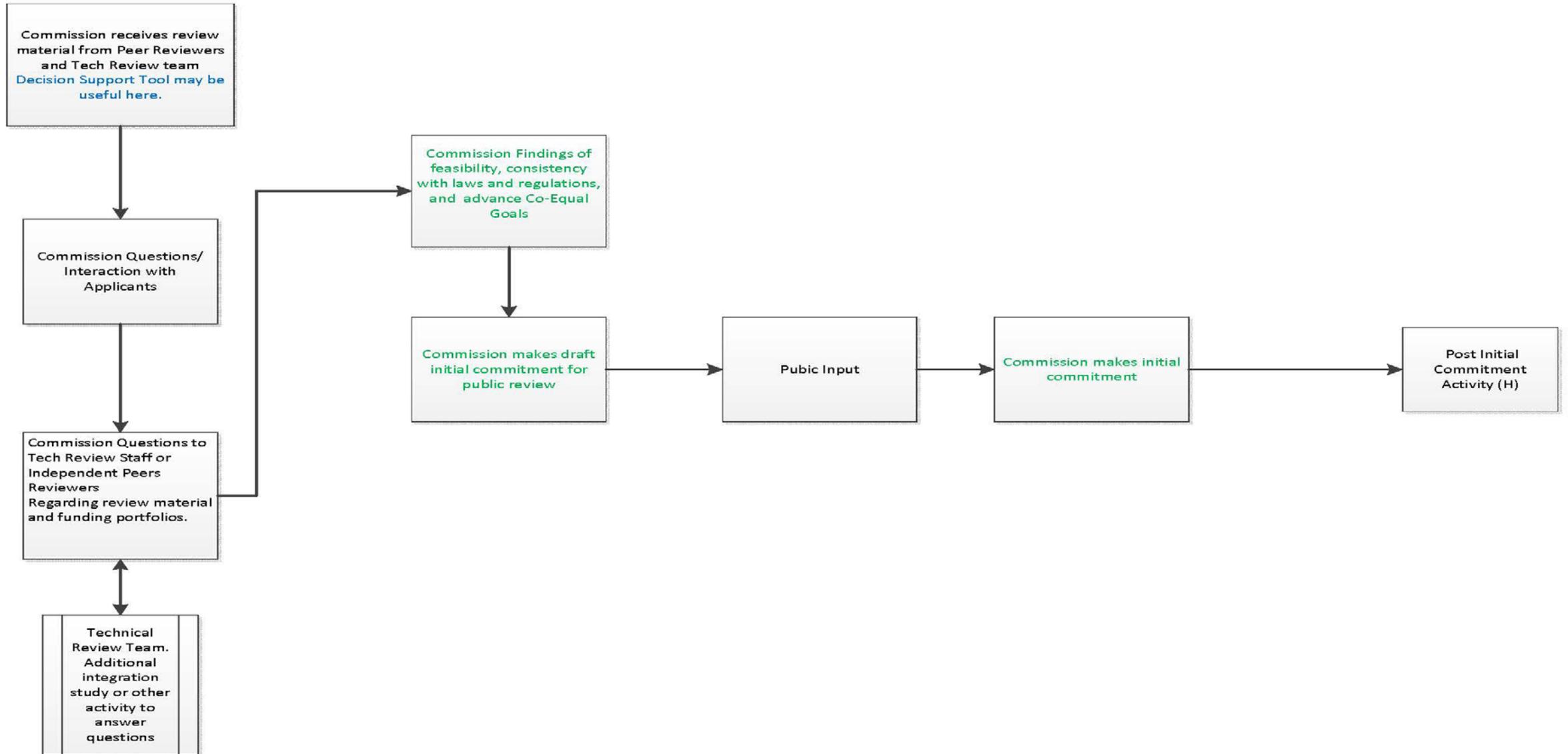
Tech review team prepares information package for CWC.

- Information to CWC:
- Independent Peer Reviewer Findings
 - Project Applicant
 - Project Descriptions
 - Maximum CWC funding allowed (79756 (a)(b))
 - CWC funding request
 - Total Project Cost (cost through construction not life cycle)
 - Public Benefit provided (79753)
 - Magnitude of Physical Benefit (79750)(b), 79753, 79756(b))
 - Magnitude of Monetized Benefit (79750)(c))
 - Magnitude of Monetized Benefit (79750)(c)) normalized on cost of investment
 - Improves a water system of the state (79750(b)
 - Net improvement in ecosystem and WQ condition (79750 (b)
 - Provides measurable ecosystem benefit to Delta or tributary (79752)
 - Project Feasibility Assessment (79757(a)(1), 79755 (a)(5)(A)(B))
 - Technical feasibility
 - Economic feasibility
 - Financial feasibility
 - Environmental feasibility (Envi Documents)
 - Mitigatable Environmental Impacts
 - Non-mitigatable Environmental Impacts
 - Agency findings (DWR, SWRCB, DFW) that Public Benefits claimed are consistent with Chapter 8 of Act. (79755 (a)(3))
 - Priorities and Rel Envi Values applied to Project (79754)
 - Assessment of Project and Co-equal Goals (79755(a)(5)(B))
 - Status of Envi Docs and permitting (79755(a)(5)(C) &79755(c)
 - Status of Contracts for Non-public benefits (79755(a)(2))
 - Status of Agency Contracts for public benefits (79755(a)(3))
 - Timeline to finish construction
 - Budget – are they requesting funding for Envi Docs/Permits?
 - Technical, Managerial, Financial Capacity & Benefit Monitoring



Staff Working Draft 5/15/15 – For Discussion Purposes Only

E – CWC Findings and Initial Funding Decision



Staff Working Draft 5/15/15 – For Discussion Purposes Only

F – Post Initial Commitment Activity

		If funding Final Envi Doc and Permit		Funding of Construction Costs		
Time	1 Month		Variable - months to years	3 Months	Years	? Years
Activity	Soft Commitment	Hard Commitment for only limited costs (79755(c))	Complete 79755 (a) items	Hard Commitment. Encumber funding and execute agreement	Implementation of Agreement through Closeout	Post Construction Benefit Monitoring and Management
Includes	<p>CWC tentative commitment of a not to exceed amount via letter. Establishes communication and necessary docs for hard commitment. Can include</p> <ul style="list-style-type: none"> Audited Financials – annual until hard commitment (need 3yrs worth to review before execute agreement) Additional information on environmental doc status, or request for information necessary to clear any other concerns (completed UWMP, GWMP plan etc...) Must complete items in 79755(a) If Environmental Document/Permit funding – initiate Agreement Development Update to CWC at least annually 	<p>Funding here would count against total funding cap.</p> <p>Develop agreement Execute Agreement Administer</p> <p>Reimburse on proportional share (public benefit cost share to non-public benefit cost share)</p>	<p>No hard commitment until:</p> <ul style="list-style-type: none"> Contractor Bidding complete. Final project costs determined. 100% Contracts for non-public benefit cost share obtained Public Agency Contracts completed. Final Environmental Documents and Permits (CWC has performed Responsible Agency Duties (concurrency)) Final Permits 79755(b) – CWC will need to submit findings to legislature for each 79755(a) criteria. Need to work out how this will occur – periodic from soft commitment forward until all awardees complete this step? 	<ul style="list-style-type: none"> Encumbrance of funds by commission staff w/ assistance from DWR FAB. Sets up the vendor, specific funding, all codes necessary to track funds. GO Bond, project, tax certification, public reporting items necessary for tracking of GO Bond funding. Development of Agreement may involve updated scope, schedule, budget. Execution of agreement involves Grantee, Commission and Legal Counsel for the Commission (legal sufficiency). 	<p>Grant Administration by Commission Staff, payment of invoicing, progress reporting, Amending agreement as project is implemented and budget shifts.</p> <p>Commission staff will also need to manage the larger funding picture – liquidation periods. And GO bond reporting.</p>	<p>Implementation of contracts between Grantee and Resource Agencies for obtaining public benefits of project.</p> <p>Any reporting to Commission at this point or is Commission's involvement completed at Agreement Close out?</p>

Questions?

Public Comment

Lunch Break

During the afternoon think about...

- Proposition 1 did not state how the ecosystem and water quality priorities should be used, how should the Commission consider the CDFW and State Water Board priorities while evaluating projects?

Water Storage Investment Program

CDFW Ecosystem Priorities

Outline of Presentation

- Ecosystem priorities
- Relative environmental values
- Current status and next steps

Proposition 1 Chapter 8

Proposition 1 continuously appropriates \$2.7 billion to the California Water Commission (CWC) for:

“public benefits associated with water storage projects that improve the operation of the state water system, are cost effective, and ***provide a net improvement in ecosystem and water quality conditions...***”

California Water Code §79754

CWC, in consultation with the CDFW, State Water Board, and DWR, to develop and adopt, by regulation, methods for quantification and management of public benefits by December 15, 2016. The regulations must include:

- Priorities and relative environmental value of **ecosystem benefits** as provided by the CDFW
- Priorities and relative environmental value of **water quality benefits** as provided by the State Water Board

Draft CDFW Ecosystem Priorities

1. Promote the recovery of endangered, threatened, and other at-risk native fish species and native fish assemblages through water project operations
2. Restore physical processes and flow regimes to improve native habitats and natural communities to promote the recovery of endangered, threatened and other at-risk native species
3. Enhance commercial and recreational opportunities
4. Reduce the negative impacts of non-native species on native species and natural communities
5. Prevent or reduce negative impacts from in-river structures on anadromous fishes
6. Increase quality and quantity of aquatic and riparian habitat and managed and unmanaged wetlands

Draft CDFW Ecosystem Priorities

1. Promote the recovery of endangered, threatened, and other at-risk native fish species and native fish assemblages through water project operations to achieve one or more of the following:
 - a) Provide cold water at the appropriate time and location to improve water temperatures for egg survival and fry rearing of salmon and steelhead in Central Valley tributaries.
 - b) Provide flows at the appropriate time and location to maintain adequate dissolved oxygen in redds and to prevent dewatering of salmon and steelhead redds in Central Valley tributaries.
 - c) Provide flows to reduce juvenile stranding of salmon and steelhead in Central Valley tributaries.

Draft CDFW Ecosystem Priorities

1. Promote the recovery of endangered, threatened, and other at-risk native fish species and native fish assemblages through water project operations to achieve one or more of the following (continued):
 - d) Operate facilities to avoid stranding of immigrating adult salmonids and sturgeons in floodways and bypasses.
 - e) Provide increased spring flows to improve conditions for juvenile and smolt rearing and out migration.
 - f) Provide summer flows to improve conditions for in-river rearing of juvenile salmonids.
 - g) Provide attraction flows at the appropriate time and location to benefit anadromous species during upstream migration to improve passage and reduce straying

Draft CDFW Ecosystem Priorities

1. Promote the recovery of endangered, threatened, and other at-risk native fish species and native fish assemblages through water project operations to achieve one or more of the following (continued):
 - h) Increase Delta outflow in spring, summer, or fall for pelagic fishes including Delta smelt and Longfin smelt; to increase survival of emigrating juvenile salmonids.
 - i) Restore and enhance seasonal patterns of flow and temperature to benefit life stage specific requirements of green sturgeon and white sturgeon including increased outflow to improve juvenile recruitment.
 - j) Operating as an integrated and coordinated system, use operational flexibility and water exchanges between state, federal and local storage projects to achieve goals and objectives described in this section.

Draft CDFW Ecosystem Priorities

2. Restore physical processes and flow regimes to improve native habitats and natural communities to promote the recovery of endangered, threatened and other at-risk native species through achieving one or more of the following :
 - a) Provide pulse flows to activate fluvial geomorphological processes, including accretion and erosion, channel form and function, and sediment transport.
 - b) Enhance habitat complexity and quality including run-riffle-pool complexes, large wood introduction, and increased escape cover.
 - c) Restore historic salmonid habitat in channels or sloughs, including re-watering channels.

Draft CDFW Ecosystem Priorities

2. Restore physical processes and flow regimes to improve native habitats and natural communities to promote the recovery of endangered, threatened and other at-risk native species through achieving one or more of the following (continued):
 - d) Increase the frequency, magnitude and duration of floodplain inundation to achieve multi-objective benefits of wetland habitat, primary productivity and food web support, juvenile fish rearing habitat, and alternative migration corridors.
 - e) Provide groundwater recharge and improve sediment quality and environmental water quality.
 - f) Restore access to anadromous fish habitat by improving fish passage.

Draft CDFW Ecosystem Priorities

2. Restore physical processes and flow regimes to improve native habitats and natural communities to promote the recovery of endangered, threatened and other at-risk native species through achieving one or more of the following (continued):
 - g) Enhance salmonid habitat through implementation of sediment management plans.
 - h) Restore riparian communities to increase shading and reduce water temperatures for aquatic species and to support terrestrial species.
 - i) Enhance habitat through removal or modification of flood infrastructure, including levees and weirs.

Draft CDFW Ecosystem Priorities

3. Enhance commercial and recreational opportunities through achieving one or more of the following:
 - a) Provide reservoir-based recreation, both consumptive and non-consumptive uses, including fishing, hunting, boating, swimming, nature observation, and education.
 - b) Increase populations of economically valuable commercial or recreational species.
 - c) Increase wildlife habitat on refuges or provide increased water supply to refuges.

Draft CDFW Ecosystem Priorities

4. Reduce the negative impacts of non-native species on native species and natural communities by achieving one or both of the following :
 - a) Develop and implement invasive species management plans.
 - b) Develop and implement water project operations plans which use methods such as flushing flows and thermal control to suppress non-native species abundance and distribution and promote restoration of natural communities

Draft CDFW Ecosystem Priorities

5. Prevent or reduce negative impacts from in-river structures on anadromous fishes by achieving one or more of the following:
 - a) Remediate unscreened or poorly screened diversions that entrain fish.
 - b) Remediate existing barriers to improve fish passage
 - c) Construct and operate facilities to reduce stranding and mortality of adult salmonids and sturgeons in floodways and bypasses.

Draft CDFW Ecosystem Priorities

6. Increase quality and quantity of aquatic and riparian habitat and managed and unmanaged wetlands by achieving one or both of the following :
 - a) Provide water to enhance wetlands and riparian habitat for the benefit of aquatic and terrestrial species.
 - b) Enhance managed seasonal wetlands on wildlife refuges and other lands being managed for public ecosystem values.

Ecosystem – Relative Environmental Values

1. Number of ecosystem priorities addressed
2. Consistency with existing conservation/recovery plans
3. Water use efficiency
4. Measurable rather than descriptive benefits
5. Proximity to existing resources
6. Expected magnitude of the measurable benefits
7. Clear performance measures
8. Certainty of achieving the benefits

Continued...

Ecosystem – Relative Environmental Values

9. Immediacy of benefits provided
10. Duration or permanence of the benefits
11. Climate change adaptability and resilience

Next Steps

- Refine ecosystem priorities
- Develop an approach to consider the relative environmental values of ecosystem public benefits
- Prepare draft regulation and guidelines language for incorporation to benefits evaluation criteria by August 2015

Discussion

- Are the ecosystem priorities clearly expressed?
- Are the priorities at the appropriate level of detail?
- Are there any priorities you think we have missed?

Break

Water Storage Investment Program

State Water Board Water Quality Priorities

Draft State Water Board Water Quality Priorities

1. Improve **water temperature** conditions in water bodies on California's Clean Water Act (CWA) Section 303(d) list that are impaired for temperature.
2. Improve **dissolved oxygen** conditions in water bodies on California's CWA 303(d) list that are impaired for dissolved oxygen.
3. Improve **nutrient** conditions in water bodies on California's CWA 303(d) list that are impaired for nutrients.
4. Improve **mercury** conditions in water bodies on California's CWA 303(d) list that are impaired for mercury.
5. Improve **salinity** conditions in water bodies on California's CWA 303(d) list that are impaired for sodium, total dissolved solids, chloride, or specific conductance/electrical conductivity.

Draft State Water Board Water Quality Priorities

6. Protect and/or clean up **groundwater** in DWR's CASGEM high- and medium-priority basins.
7. Achieve **Delta tributary stream flows** that resemble natural hydrograph patterns or other flow regimes that have been demonstrated to improve conditions for aquatic life.
8. Reduce current or future **water demand** on the Delta watershed by developing local water supplies.

Draft State Water Board Water Quality Priorities

1. Improve water **temperature** conditions in water bodies on California's Clean Water Act (CWA) Section 303(d) list that are impaired for temperature:

Provide measurable improvements in temperature levels to reduce or eliminate exceedances of water quality objectives for temperature downstream of reservoirs.

Achieving this priority may involve:

- a) Design and operate reservoirs so the manner of releasing water, both physically and temporally, results in achieving water quality objectives for temperature.

Draft State Water Board Water Quality Priorities

2. Improve **dissolved oxygen** conditions in water bodies on California's CWA Section 303(d) list that are impaired for dissolved oxygen:

Provide measurable improvements in DO levels to reduce or eliminate exceedances of water quality objectives for DO in and downstream of reservoirs.

Achieving this priority may involve:

- a) Design and operate reservoirs so the manner of releasing water, both physically and temporally, results in achieving water quality objectives for DO.

Draft State Water Board Water Quality Priorities

3. Improve **nutrient** conditions in water bodies on California's CWA Section 303(d) list that are impaired for nutrients:

Provide measurable improvements in nutrient levels to reduce or eliminate exceedances of water quality objectives for nutrients in and downstream of reservoirs.

Achieving this priority may involve one or more of the following strategies:

- a) Managing nutrient loading, including maintenance activities.
- b) Managing sediment.
- c) Restoring wetlands.
- d) Managing recycled wastewater.
- e) Regulating quantity and timing of freshwater flow (including from the Delta).

Draft State Water Board Water Quality Priorities

3. Improve nutrient conditions in water bodies on California's CWA Section 303(d) list that are impaired for nutrients (continued):

Potential strategies (continued):

- f) Aerating bottom waters.
- g) Capping or dredging bottom sediments.
- h) Increasing flushing or circulation rates.
- i) Harvesting aquatic plants.
- j) Managing biological communities.
- k) Inactivating nutrients.
- l) Biological control.

Draft State Water Board Water Quality Priorities

4. Improve **mercury** (and methylmercury) conditions in water bodies on California's CWA Section 303(d) list that are impaired for mercury:

Provide measurable improvements in mercury/methylmercury levels in water or sediment to reduce or eliminate exceedances in water quality objectives for mercury in and downstream of reservoirs.

Achieving this priority may involve one or more of the following strategies:

- a) Preventing or cleanup up contamination from mine sites (e.g., acid mine drainage).
- b) Aerating anoxic bottom sediment and waters.
- c) Managing water levels, nutrients, dissolved oxygen, and other factors that affect production of methylmercury in reservoirs and bioaccumulation of methylmercury in fish.
- d) Changing the timing and location of reservoir discharges.

Draft State Water Board Water Quality Priorities

4. Improve mercury (and methylmercury) conditions in water bodies on California's CWA Section 303(d) list that are impaired for mercury (continued).

Potential strategies (continued):

- e) Managing fisheries to control bioaccumulation.
- f) Reducing the source of mercury before flooding.
- g) Limiting the extent of flooded areas.
- h) Communicating health risks associated with fish consumption.
- i) Capping or dredging bottom sediment.

Draft State Water Board Water Quality Priorities

5. Improve **salinity** conditions in water bodies on California's CWA Section 303(d) list that are impaired for sodium, total dissolved solids, chloride, or specific conductance/electrical conductivity:

Provide measurable improvements in salinity levels to reduce or eliminate exceedances of water quality objectives for salinity in the Delta or San Joaquin River, or any other waters downstream of reservoirs.

Achieving this priority may involve one or more of the following strategies:

- a) Releasing stored water to meet salinity objectives.
- b) Operational or physical changes at the Delta export pumps.
- c) Operational or physical changes to Delta channels.
- d) Treating or reusing agricultural drainage.
- e) Re-operation of agricultural drainage (e.g., real-time salinity management).

Draft State Water Board Water Quality Priorities

6. Protect and/or clean up **groundwater** in DWR's CASGEM high- and medium-priority basins.

Potential strategies (continued):

- a) Capture and infiltration of storm water runoff, emphasizing low impact development and green infrastructure technologies.
- b) Increasing percolation of low-nitrate/low-salt waters.
- c) Developing and implementing Salt and Nutrient Management Plans (per Recycled Water Policy).
- d) Establishing or enhancing local groundwater management efforts (e.g., Integrated Regional Water Management planning) that include performance standards for maintaining groundwater quality and quantity.

Draft State Water Board Water Quality Priorities

6. Protect and/or clean up groundwater in DWR's CASGEM high- and medium-priority basins (continued).

Potential strategies (continued):

- e) Using recycled water to improve or protect groundwater quality in manner that also offsets overdraft and increases surface water storage.
- f) Providing large-scale groundwater cleanup where there is not a readily identifiable or viable responsible party.
- g) Constructing and using barrier wells to prevent or reduce seawater intrusion.
- h) Preventing contamination in groundwater from spreading, especially to groundwater used as drinking water.

Draft State Water Board Water Quality Priorities

7. Achieve **Delta tributary stream flows** that resemble natural hydrograph patterns or other flow regimes that have been demonstrated to improve conditions for aquatic life.

Achieving this priority may involve:

- a) Designing to divert and store (in surface impoundments or groundwater basins) high flows that exceed established instream flow criteria caps or other levels that are demonstrated to exceed flows needed for aquatic habitat, or to cause human or environmental harm.

Draft State Water Board Water Quality Priorities

8. Reduce current or future **water demand** on the Delta watershed by developing local water supplies.

Achieving this priority may involve one or more of the following strategies:

- a) Maximizing use of recycled water.
- b) Increasing storm water capture and reuse, emphasizing low impact development and green infrastructure technologies, that provide multiple benefits (e.g., water quality, supply, habitat, flood control, etc.).
- c) Conjunctive use or other groundwater storage that result in measurable improvements to Delta flows or flow variability conducive to enhancing conditions for native aquatic life.

Discussion

Questions:

Are there any additional water quality priorities that we could consider?

What are some approaches that we could take to determine and quantify the relative environmental value of water quality benefits associated with water storage/supply projects?

Water Storage Investment Program Facilitated Discussion – Applying Priorities to the WSIP

§79754

...The regulations shall include the priorities and relative environmental value of ecosystem benefits as provided by the Department of Fish and Wildlife and the priorities and relative environmental value of water quality benefits as provided by the state board.

Facilitated Discussion

- Proposition 1 did not state how the priorities should be used, how should the Commission consider CDFW and State Water Board priorities while evaluating projects?

Public Comment

Water Storage Investment Program

SAC Next Steps and Action Items