

The California Environmental Flows Framework (CEFF) for the Los Angeles River

Technical Working Group Meeting #2

Mountains Recreation &
Conservation Authority




Stillwater Sciences

Part I: Introduction

Welcome

LA River CEFF Process
and Schedule

Discussion

Themes and flow nexus

Thematic Technical Working
Group (TTWG) Kickoff

Discussion

Part II: Breakout Groups

Management Goal Evaluation
Worksheet

TTWG Group Discussion

Lunch

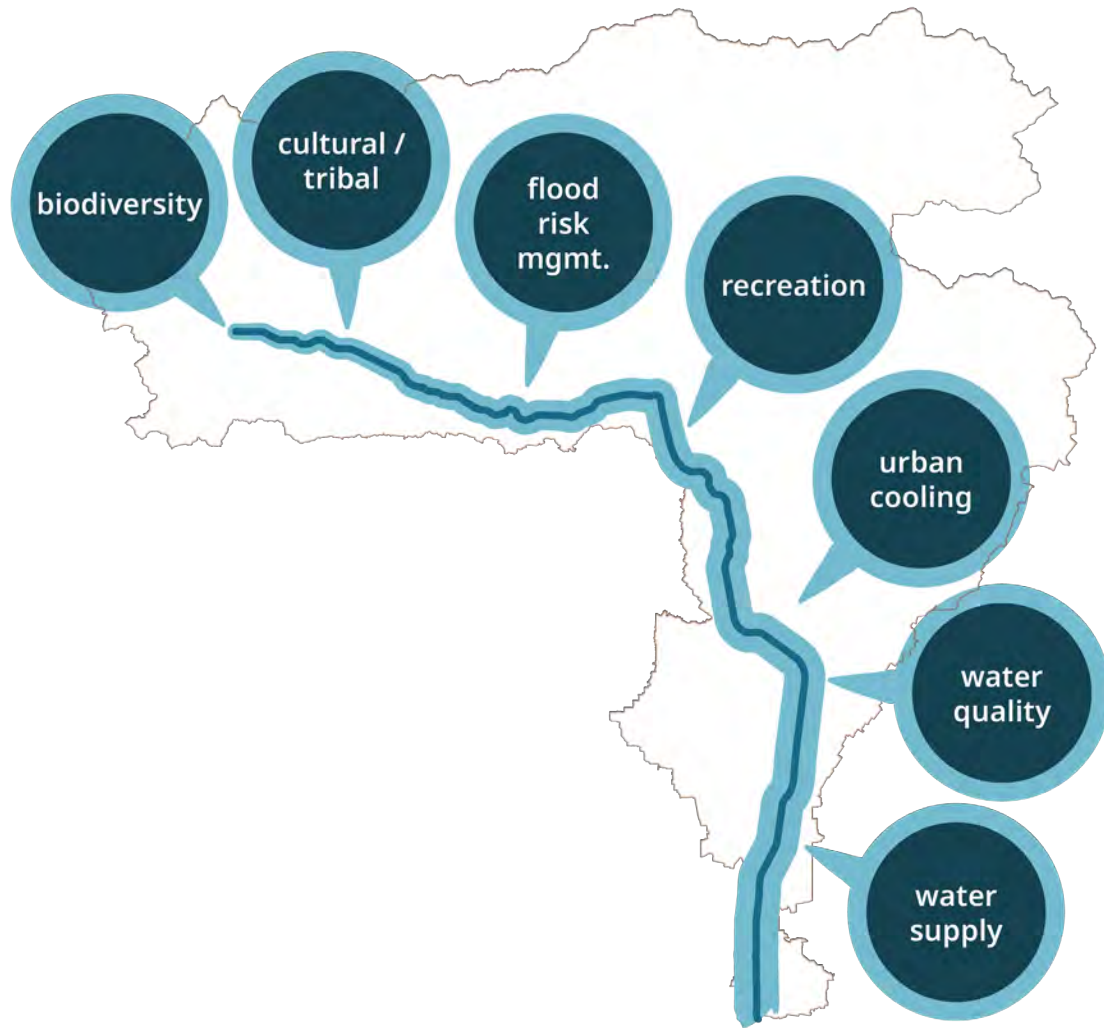
Part III: Next Steps

Looking ahead: TTWG Workplan
Guidance: CEFF Steps 9-12

CEFF Discovery Discussion

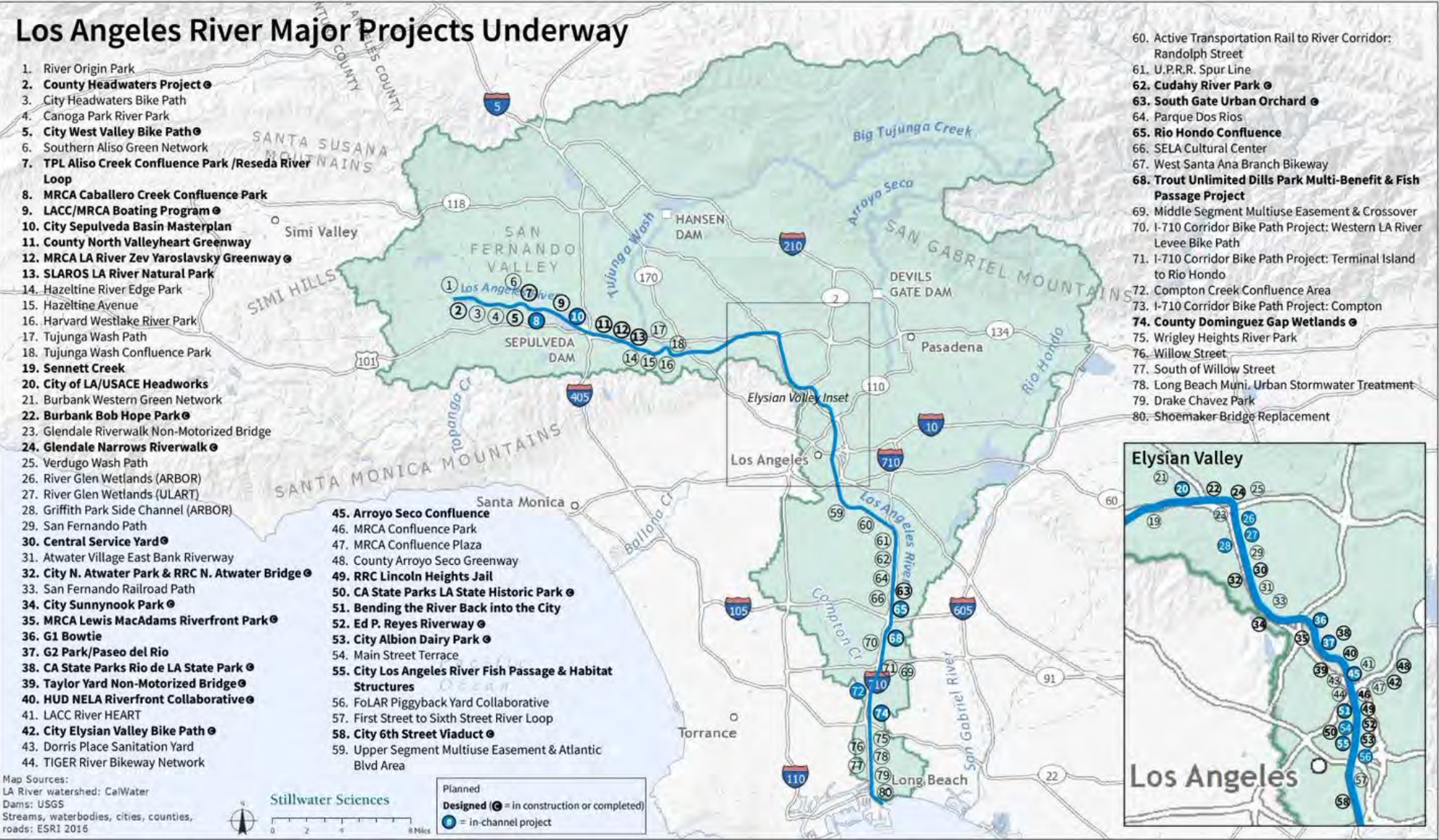
Next Steps

Closing



CEFF Outcome
Flow recommendations
that are aligned with
management goals

Current Planned Projects Inventory (includes some recent existing projects)



LA RIVER MASTER PLAN

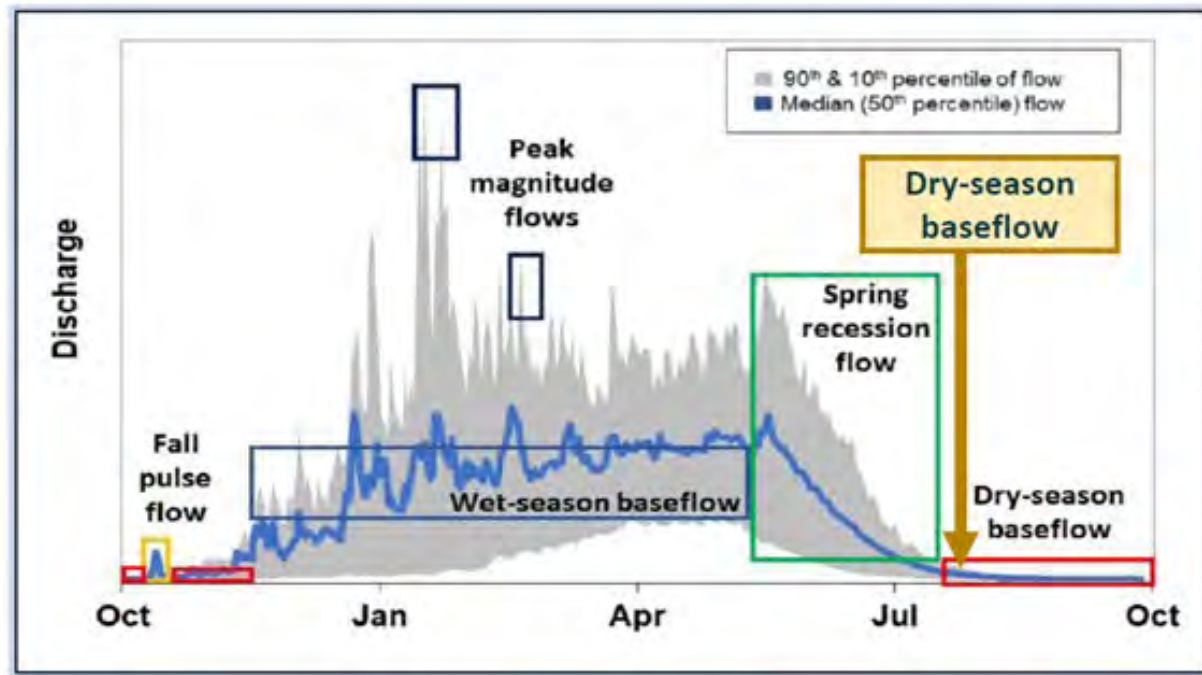






City of LA – Why is CEFF so Important?

The Five Functional Flow metrics: Reading a hydrograph



Source: CEFF Technical Report Figure 1.3 (California Environmental Flows Working Group 2021)

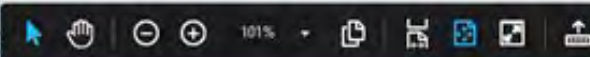
5. Dry-season baseflow

Flows sustained during the dry season by groundwater.

Ecological functions: supporting native species during the dry season, when water quality and quantity limit habitat suitability.



CALIFORNIA ENVIRONMENTAL FLOWS FRAME

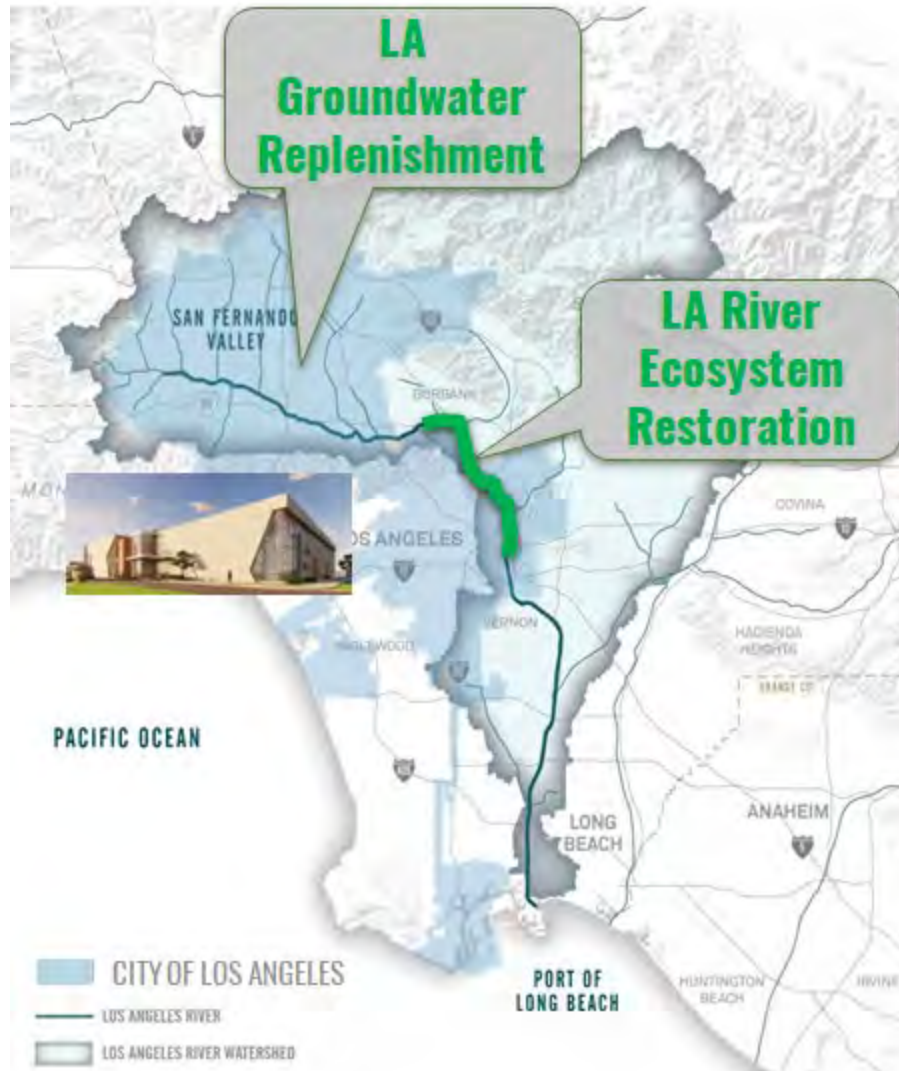


City of LA – LA River Ecosystem Restoration

PROJECT SEGMENTS (REACHES) - \$4.56 Billion



City of LA – Why is CEFF so Important?



Key Points

1. Competing Demands will Impact LA River
2. City of LA Developing Several Projects
3. **Balance Water Supply with Environmental & Recreational Needs**
4. City of LA is Committed to Implementing Solutions
5. CEFF Is Critical Towards Future of LA River

3

CEFF process for developing flow recommendations adapted for the Los Angeles River

SECTION A

Determining the biodiversity goals in the watershed.

Understanding the “natural” system.

SECTION B

*Determining the **recreational goals** in the watershed.*

*Determining flow needs for biodiversity **and recreational** goals given existing conditions.*

SECTION C

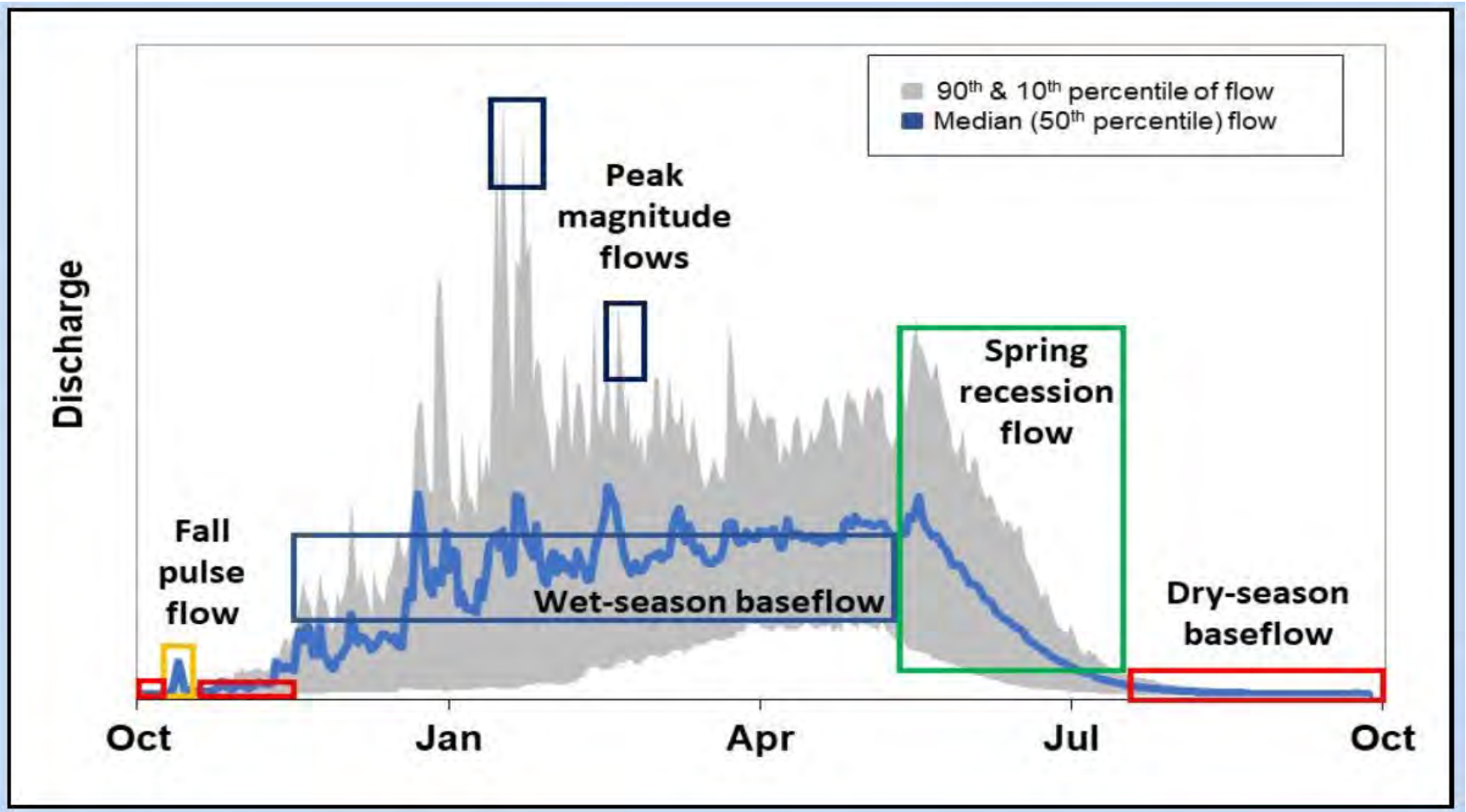
Determining the other watershed goals and their flow needs.

Developing the flow recommendations that best support achieving watershed goals.



CEFF Overview: Functional Flow Metrics

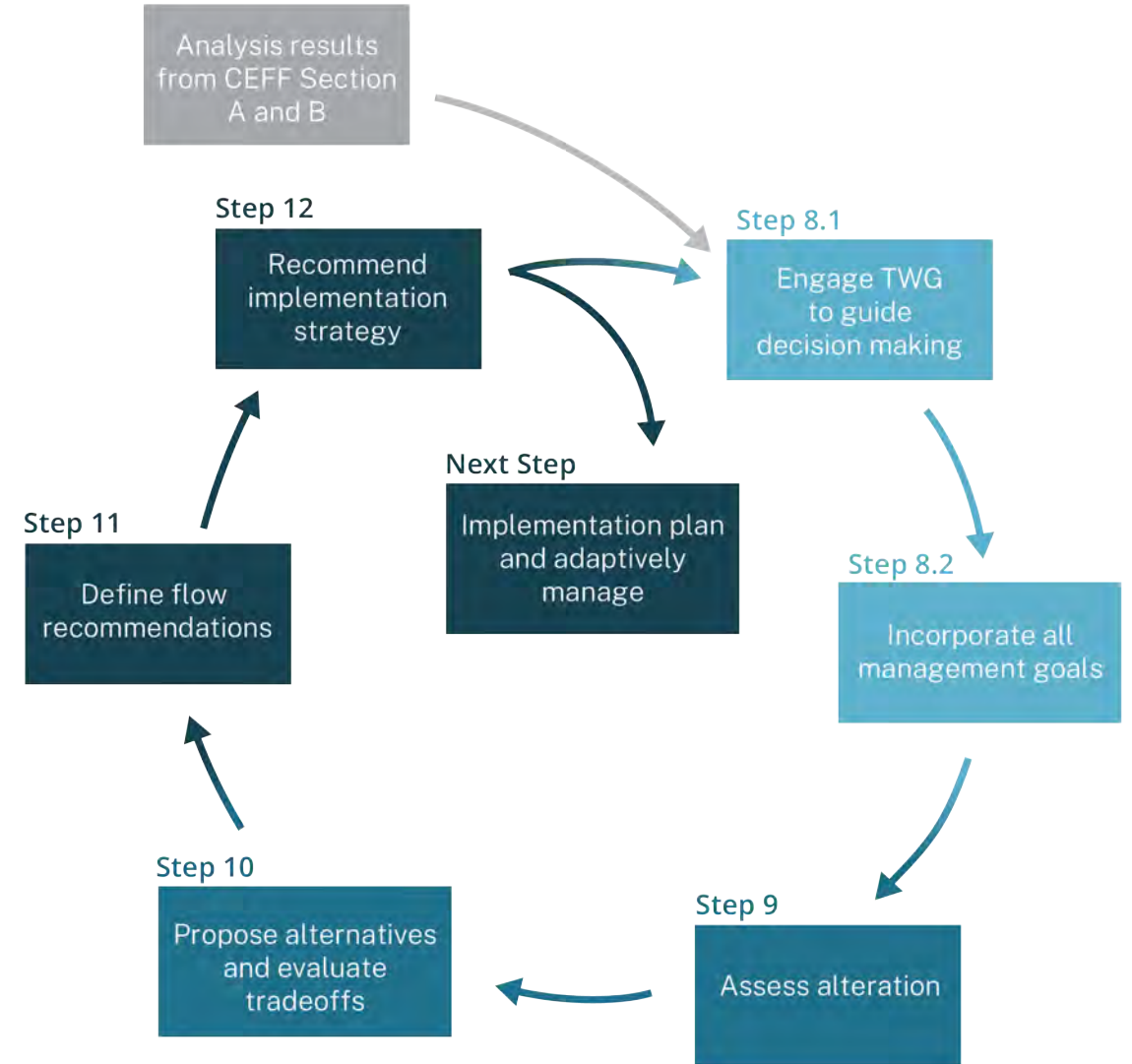
Key CEFF Outcome : A method to produce a hydrograph that accounts for management goal influences on flow



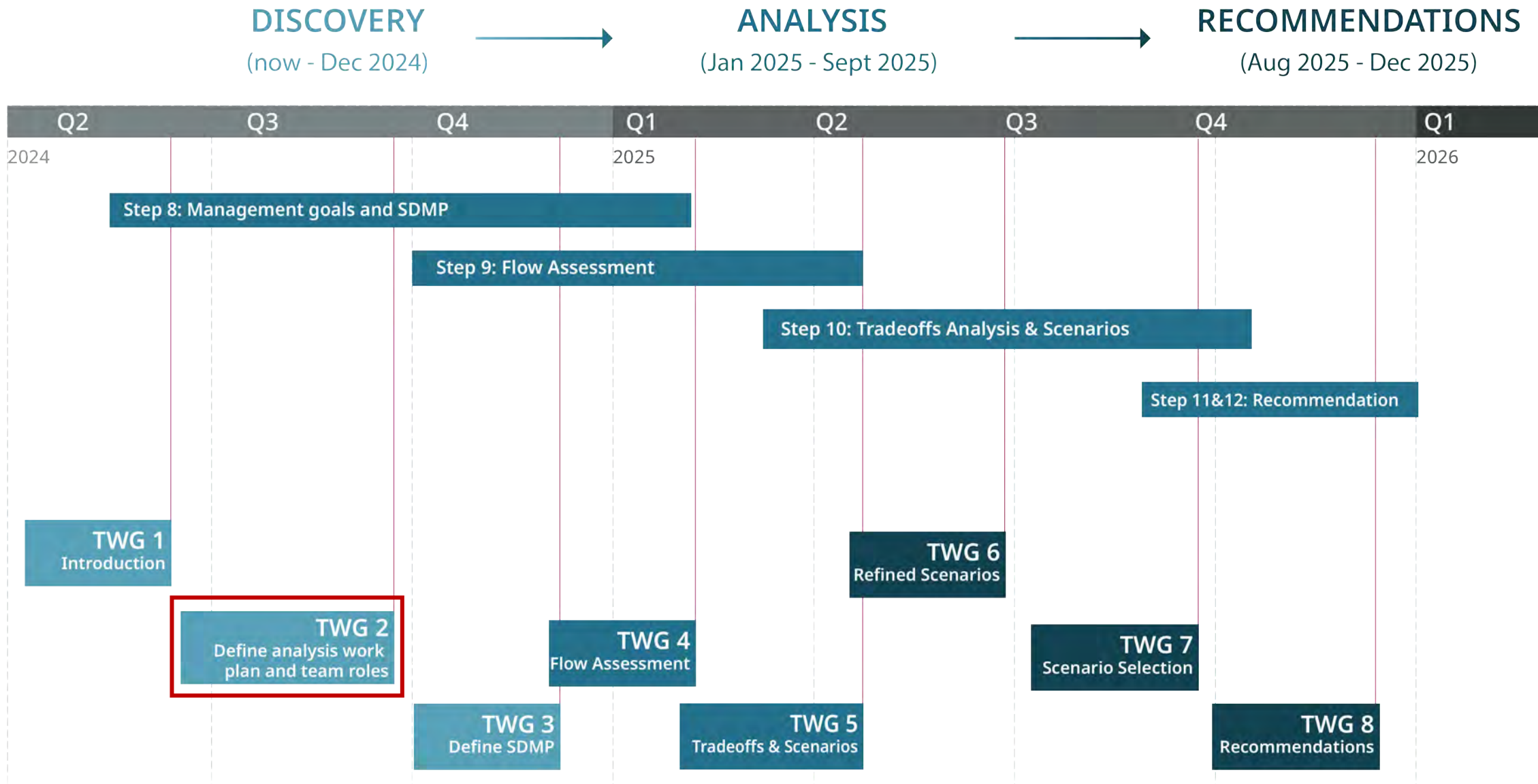
Source: CEFF Technical Report Figure 1.3 (California Environmental Flows Working Group 2021)



- **Step 8:** Working Group / Structured Decision-Making Process
- **Step 9:** Assess Flow Alteration and Planned Flows
- **Step 10:** Alternative Management Scenarios
- **Step 11:** Flow Recommendations
- **Step 12:** Proposed Implementation Plan Outline



CEFF C: Schedule



CEFF C Process: Step 8 Structured Decision-Making Process (SDMP)

Technical working group will be central to decisions and defining this process.

How will decisions be made at key points?

- Strategy for soliciting feedback from TWG
- CEFF process refinement/Theme workplans
- Decision schedule/milestones
- Decision making approach at milestones
- Potential decision support tools to aid in decision making, project organization

Key to success

- Trust the process as an opportunity
- Find “win-wins” and “low hanging fruit”
- Build understanding, collaborate across disciplines

GENERAL CEFF C PROCESS OVERVIEW



DISCOVERY STAGE: TWG 2 (desired outcomes for today)

Technical Working Group (TWG)

Broader group made up of agency and NGO representatives. Encompasses expertise on all management themes, as well as CEFF itself.

Thematic Technical Working Groups (TTWG)

Smaller, thematically-focused groups made up of members of the broader TWG. Each group makes significant progress on its own towards making the CEFF C flow recommendations.

Stakeholders

TBD

1. Initiate Thematic Technical Working Groups to support the CEFF C Process
2. Refine flow-related management goals for Themes (CEFF Step 8)
3. Inform workplan for TTWG role throughout the CEFF C Process
4. Gather your feedback the overall CEFF C process (questions, concerns, desired end products, etc.) and foster integrated solutions

Questions

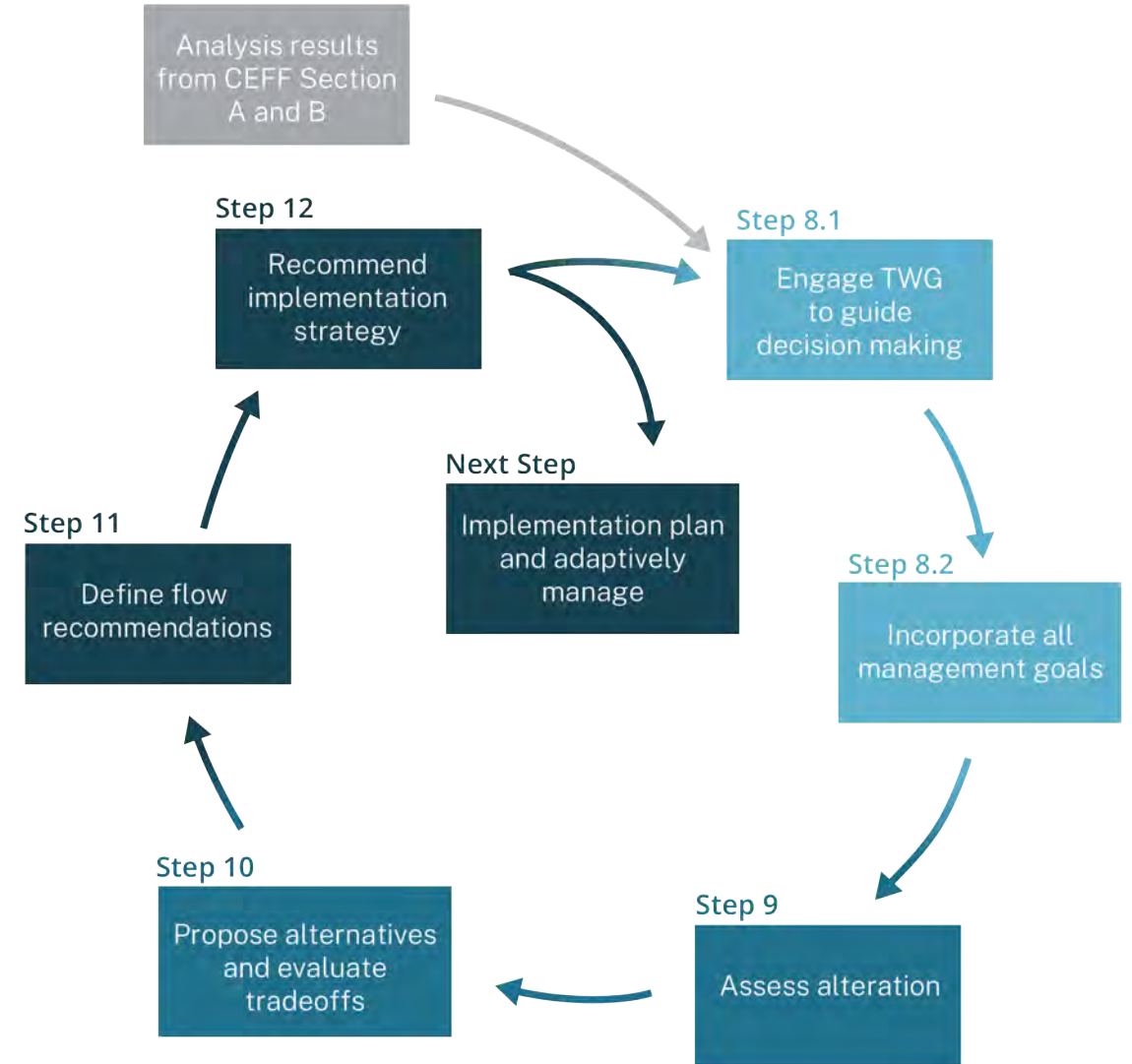
Photo credit: Ian Shive

Thematic Technical Working Group (TTWG) Kick-Off

CEFF Step 8

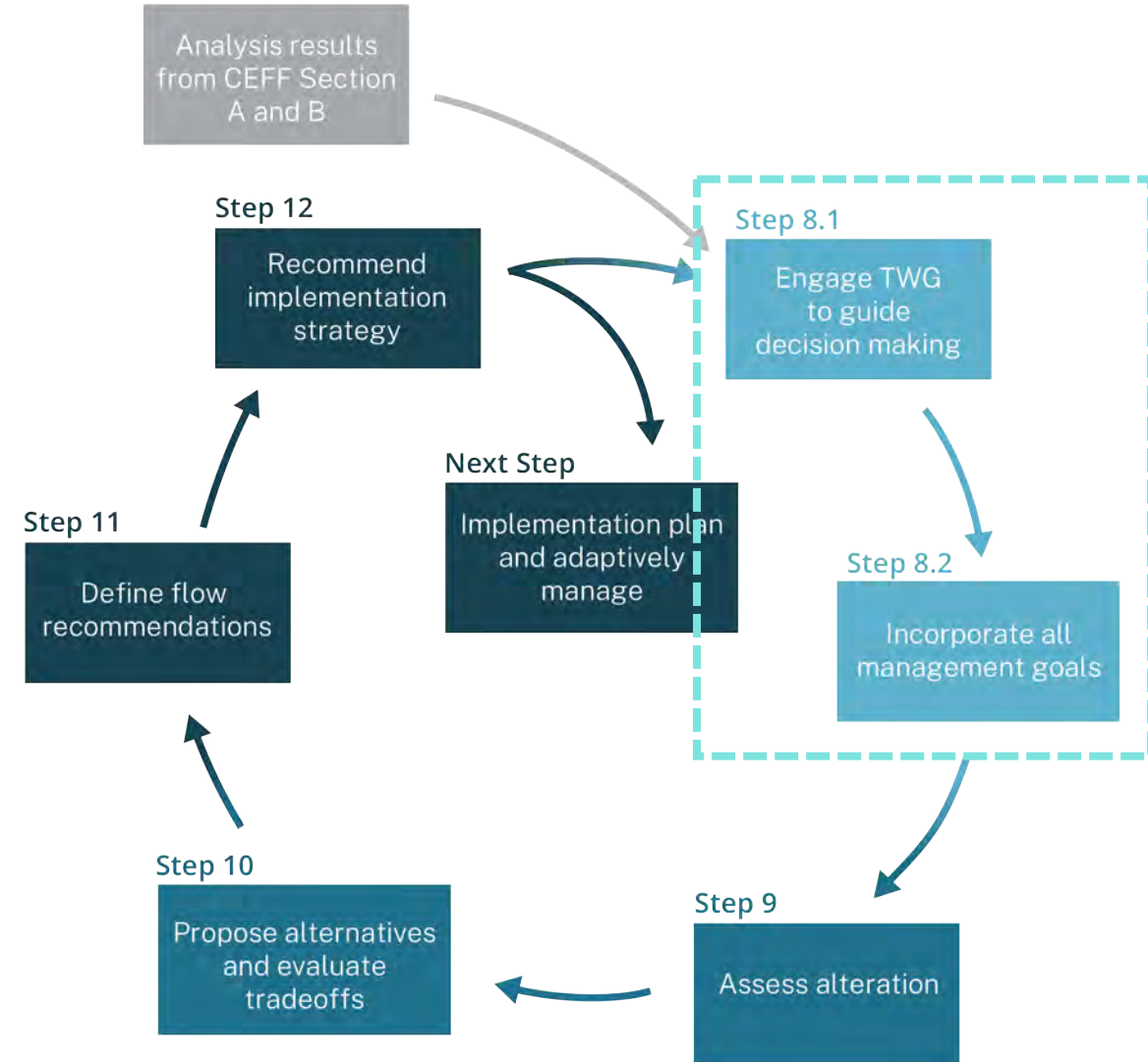
Photo credit: Ian Shive

- **Step 8:** Working Group / Structured Decision-Making Process
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CEFF Section C Process: Step 8

- **Step 8:** Working Group / Structured Decision-Making Process
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Seven Major Management Themes of the LAR



Subgroup organized around a theme

- Collecting and organizing theme information
- Contributing to essential CEFF analysis

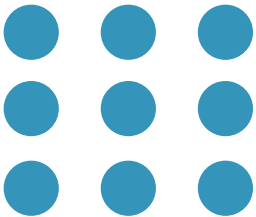
Comprised of theme experts from the TWG

- All welcome to **participate in** or **submit information to** TTWGs
- TWG members can serve on multiple TTWGs, if desired

TTWGs are your **opportunity** to have **your priorities and goals** reflected in CEFF process and outcomes



CEFF Section C Process: Steps 8.2A - 8.2B



Step 8.2Aa
Compile **thematic management goals** potentially intersecting with the LA River



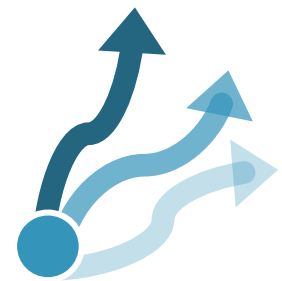
Step 8.2Ab
Determine **LA River reaches** where goals apply



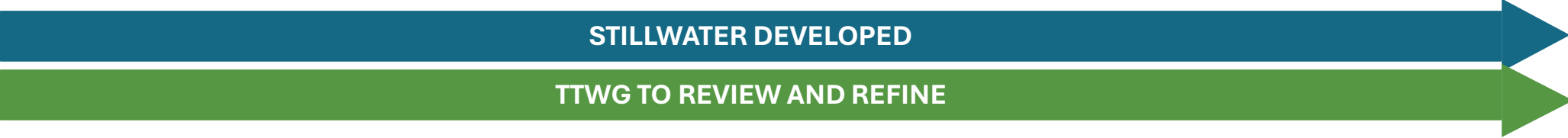
Step 8.2Ac
Determine whether management goals have a **flow nexus** with the LA River



Step 8.2Ad
Group similar goals into **sub-themes**



Step 8.2B
Develop **performance measures** for goals



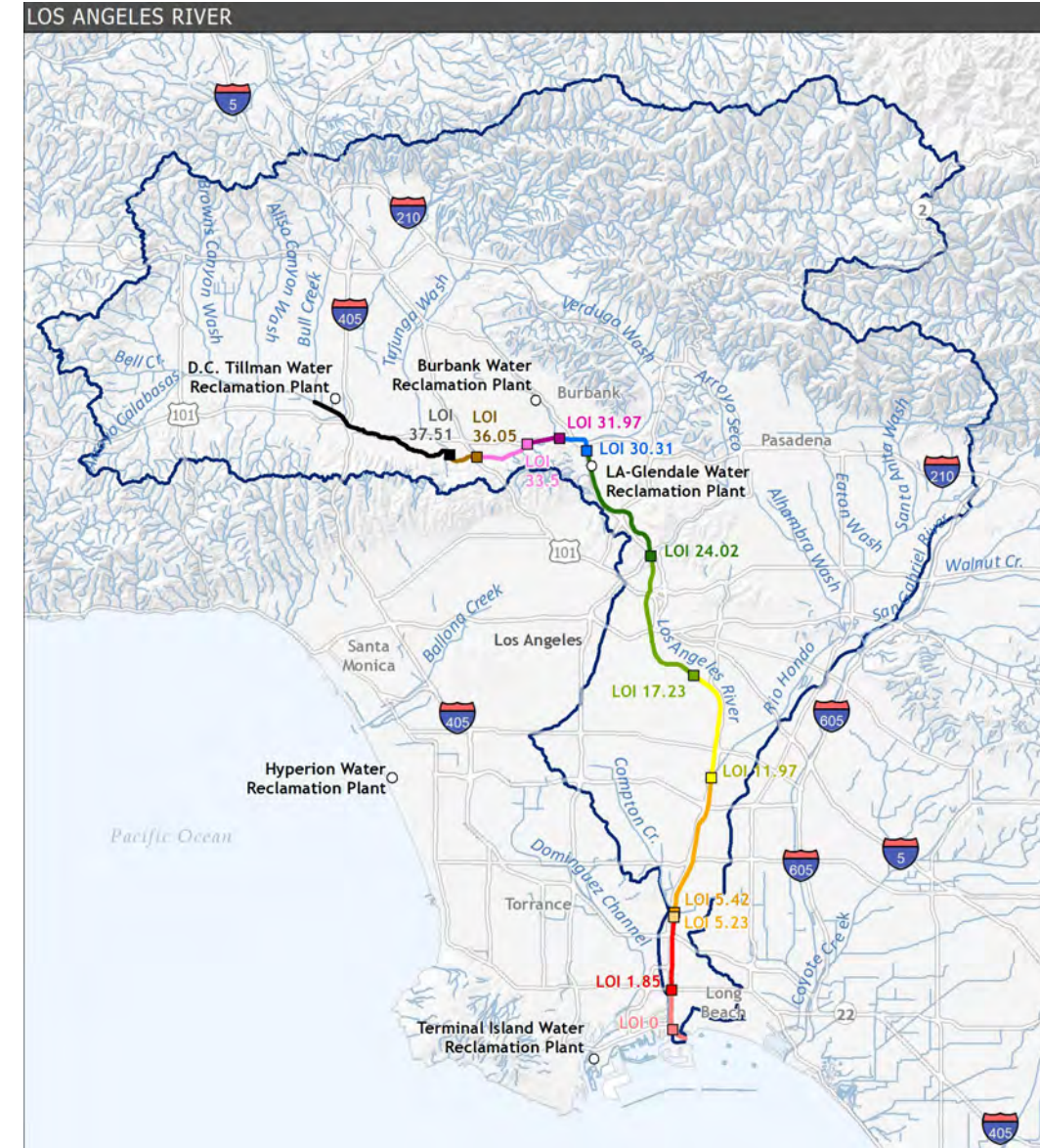
CEFF Section C Process: Refine (*THEME*) Management Goals

Which (THEME) management goals apply to the LA River?

- Initial management goal list compiled for each theme from available planning documents.
- Stakeholder input solicited during TWG 1 breakout group and by email following TWG.
- Management goal list updated based TWG 1.

Where do (THEME) management goals apply?

- LA River reaches where goals apply initially assigned from review of planning documents.

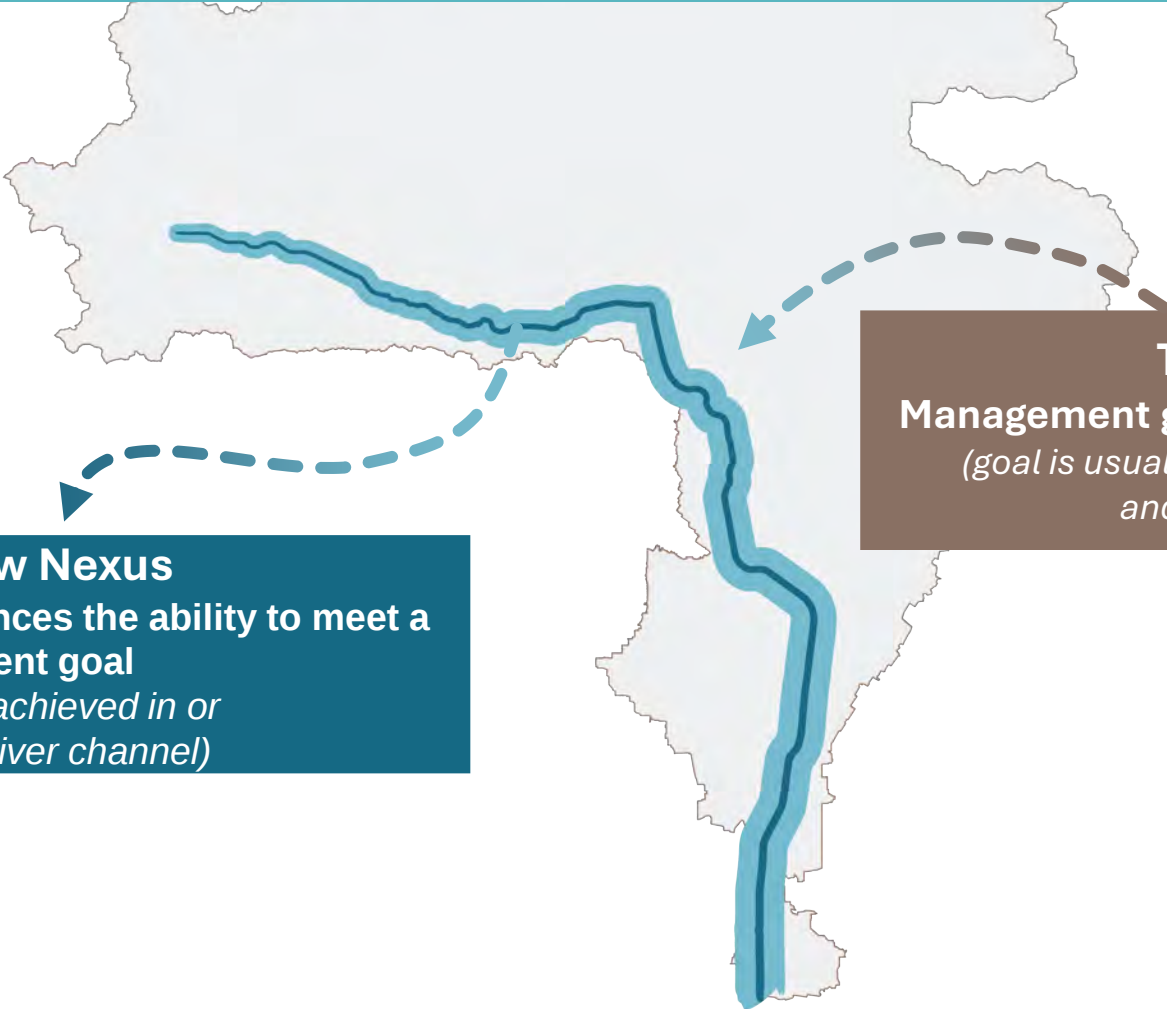


*What is a **flow nexus**?*

The relationship between **flow** and **management goals**

8.2.A: Finalize LA River Flow Nexus Determination

What is a flow nexus?
The relationship between **flow** and **management goals**



Type 1 Flow Nexus
Flow in the LA River influences the ability to meet a management goal
(goal is usually achieved in or adjacent to the river channel)

Type 2 Flow Nexus
Management goal influences flow in the LA river
(goal is usually achieved in the greater watershed and changes flow to the river)

Biodiversity Nexus Example



BIODIVERSITY
UC

C/T
WQ

FRM
WS

REC

**Goal: Steelhead passage
in the LA River**

Type 1 flow nexus?
(flow influences goal)

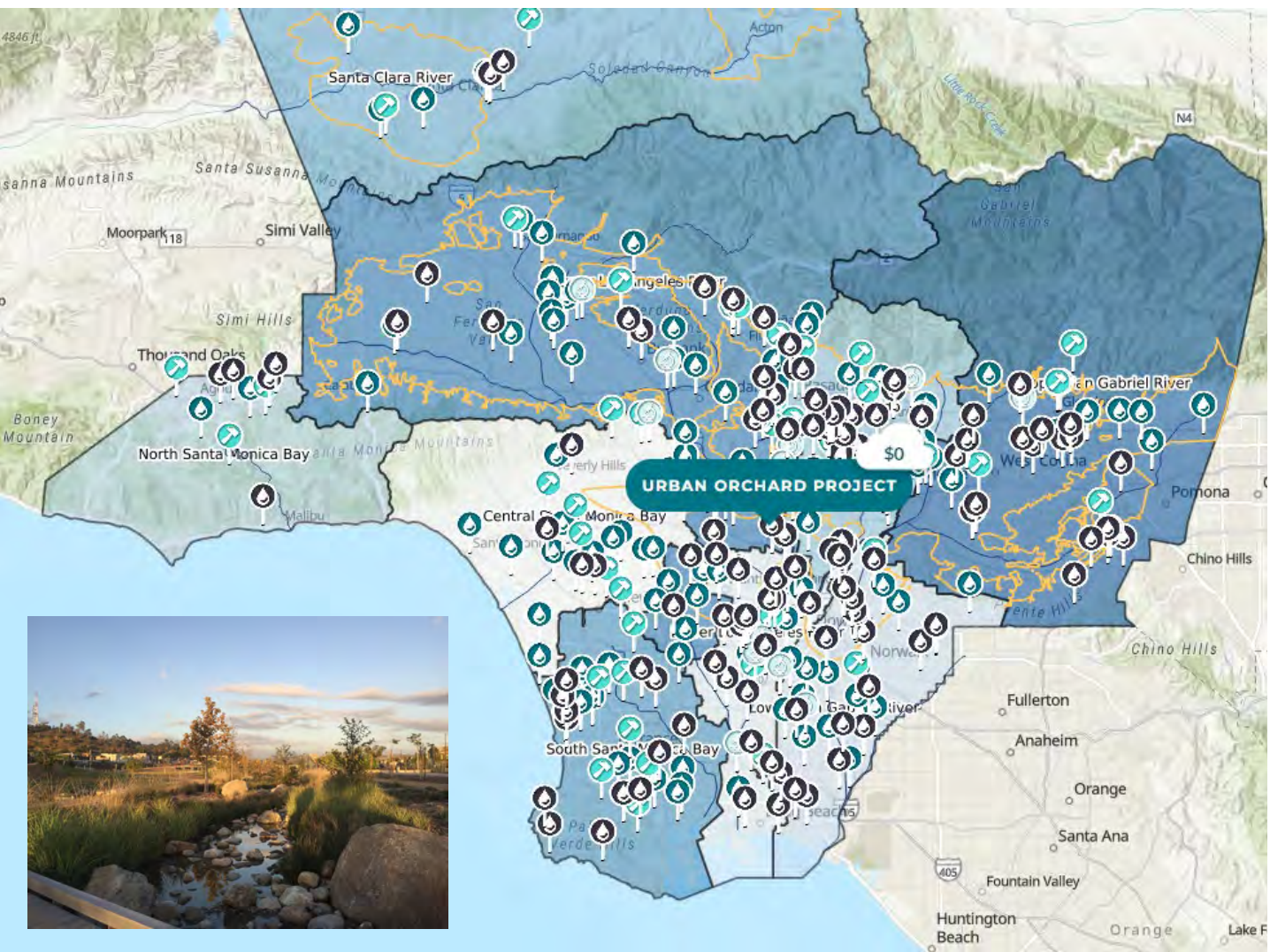
YES

Type 2 flow nexus?
(goal influences flow)

YES



Water Quality Nexus Example



Source: Safe Clean Water LA

BD C/T FRM REC UC
WATER QUALITY WS

Goal: Optimize off-channel storm water infiltration and reduce runoff to improve water quality, vegetation resiliency, and aquifer recharge

Type 1 flow nexus?
(flow influences goal)

NO

Type 2 flow nexus?
(goal influences flow)

YES

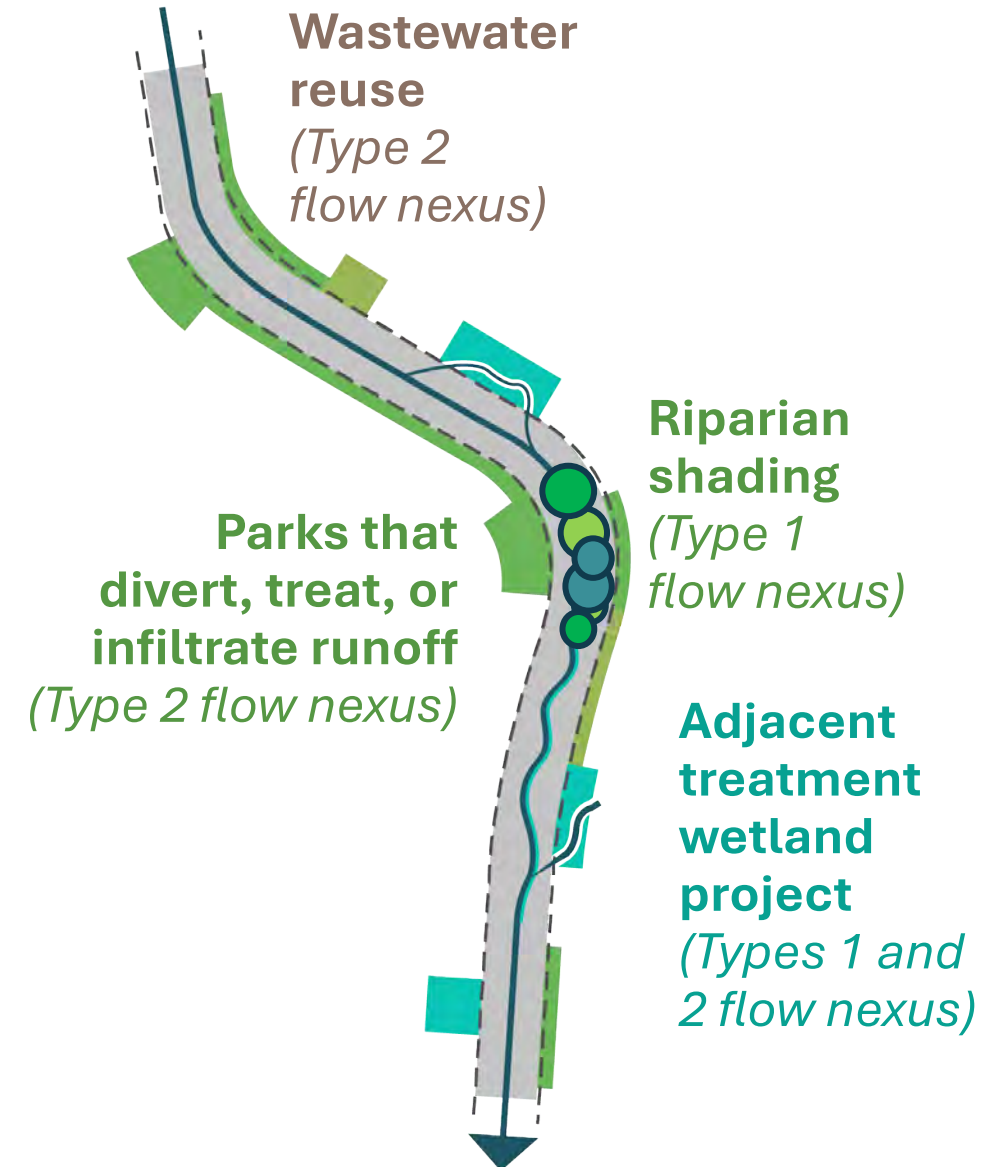
CEFF Section C Process: Refine (*THEME*) Management Goals

Which management goals have a flow nexus?

- Preliminary flow nexus assigned to goals to determine the ones that CEFF can address and set aside those that CEFF is not meant to address.

*What are the **sub-themes** for management goals?*

- Goals grouped into sub-themes to highlight similarities between goals to assist development of performance measures that can address multiple goals.



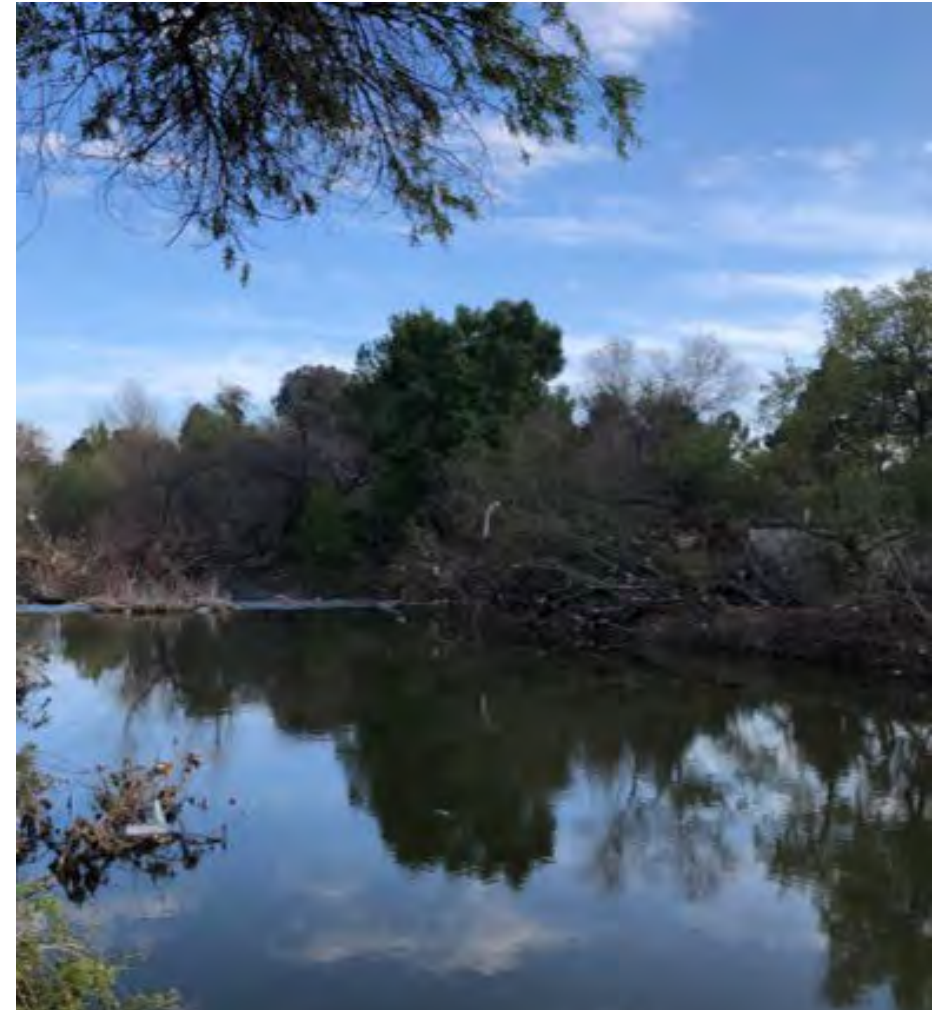
*What are the **performance measures** that link goal achievement to LA River flows?*

Examples of performance measures

- Infiltrate 8,000 AFY through the LA River channel from the Los Angeles Forebay to its confluence with Compton Creek.
- Support adult and juvenile steelhead migration in the LA River between the Pacific Ocean and Arroyo Seco from December to June.

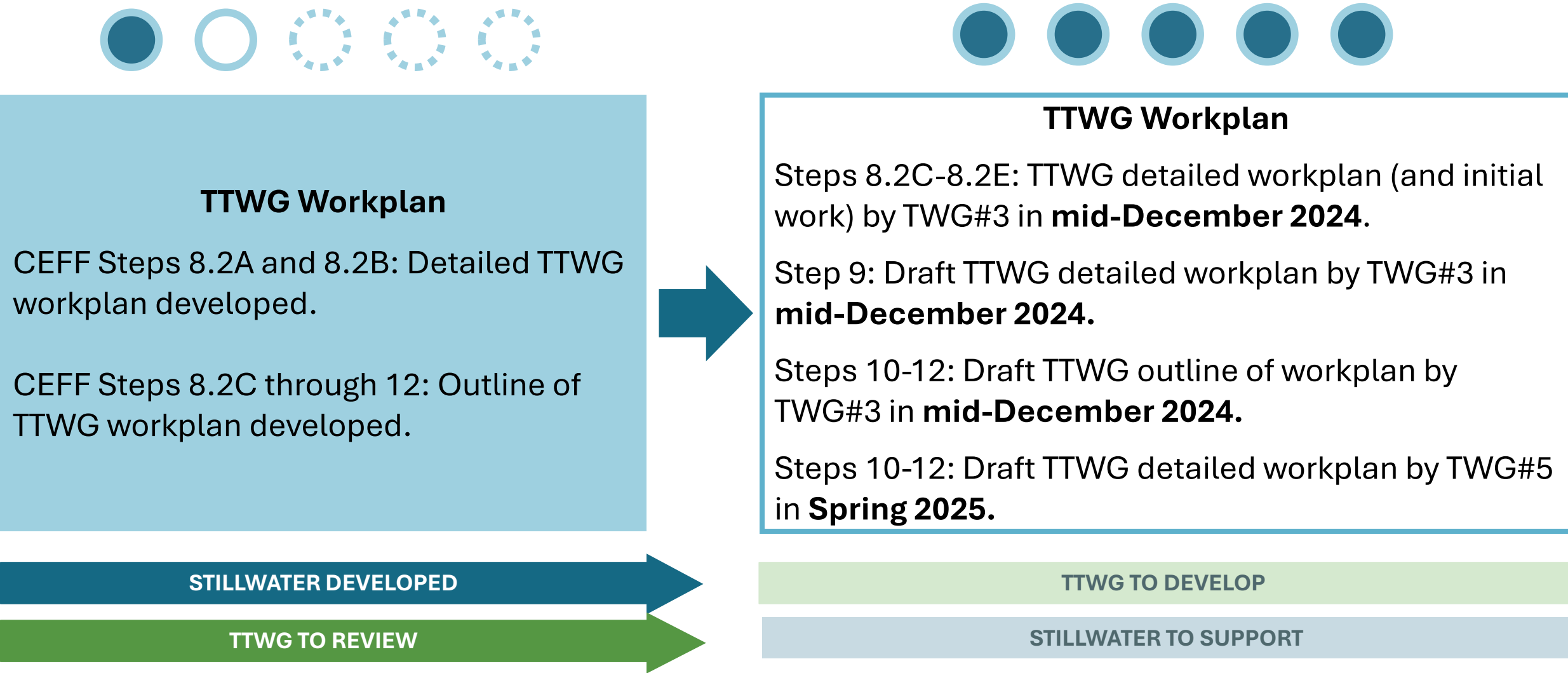
For goals with flow nexus

- Must have at least one performance measure.
- May need more than one performance measure.

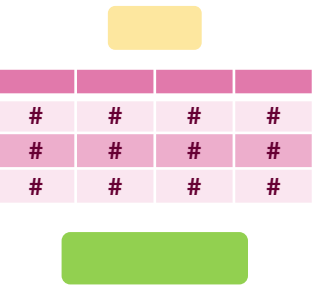
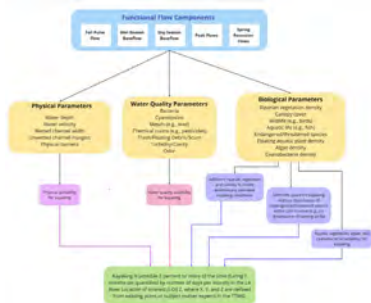


Los Angeles River, near confluence with Bull Creek, Woodley, CA

CEFF Section C Process: TTWG Workplans



CEFF Section C Process: Steps 8.2C-8.2E



Step 8.2C

Develop conceptual models diagramming linkages between flows and performance measures

What physical, water quality, biological, or anthropogenic parameters link flow and performance measures?

Step 8.2D

Determine suitability criteria for the parameters that link flows and performance measures

What specific parameter conditions are needed to achieve performance measures for themes?

Step 8.2E

Estimate channel flow range when suitability criteria are met for each performance measure

What range of flows occur when Type 2 nexus performance measures are met?
What range of flows meet Type 1 nexus performance measures?

TTWG TO DEVELOP

STILLWATER TO SUPPORT AND REVIEW

STILLWATER TO DEVELOP

TTWG TO REVIEW



CEFF Section C Process: Preliminary Conceptual Model

Conceptual Models provide **roadmap** for understanding how *goals influence flows (Type 2 flow nexus)* and *flows influence goals (Type 1 flow nexus)*.

- Each performance measure will need to show up in at least one conceptual model.
- Each conceptual model will have at least four parts.
- Conceptual models are *qualitative*.
- Objective is to show our understanding of system.
- **TTWGs** will develop conceptual models for the performance measures in their theme.
- **Stillwater** will support throughout process.

Flows

fall pulse flow, winter baseflow, winter peak flows, spring recession, dry-season flow

Parameters

Physical, water quality, biological, anthropogenic

Suitability Criteria

Qualitative description of what function parameters must support to achieve performance measure

Performance Measure

Conceptual Model Example

Goal: *Conserve and enhance water contact (REC-1) recreation within and along the LA River.*

What performance measure must be linked to functional flows?

One performance measure for goal could be focused on supporting kayaking.



Kayaking is possible X percent or more of the time during Y months (as quantified by number of days per month) in the LA River Location of Interest (LOI) Z, where X, Y, and Z are defined from existing plans or subject matter experts in the TTWG.

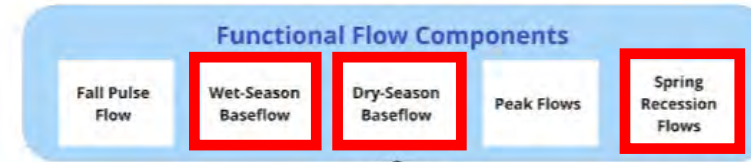
Conceptual Model Example

Goal: *Conserve and enhance water contact (REC-1) recreation within and along the LA River.*

What **functional flows** would potentially influence the performance measure?

Kayaking is influenced by...

- Wet-season baseflow
- Spring recession flow
- Dry-season baseflow



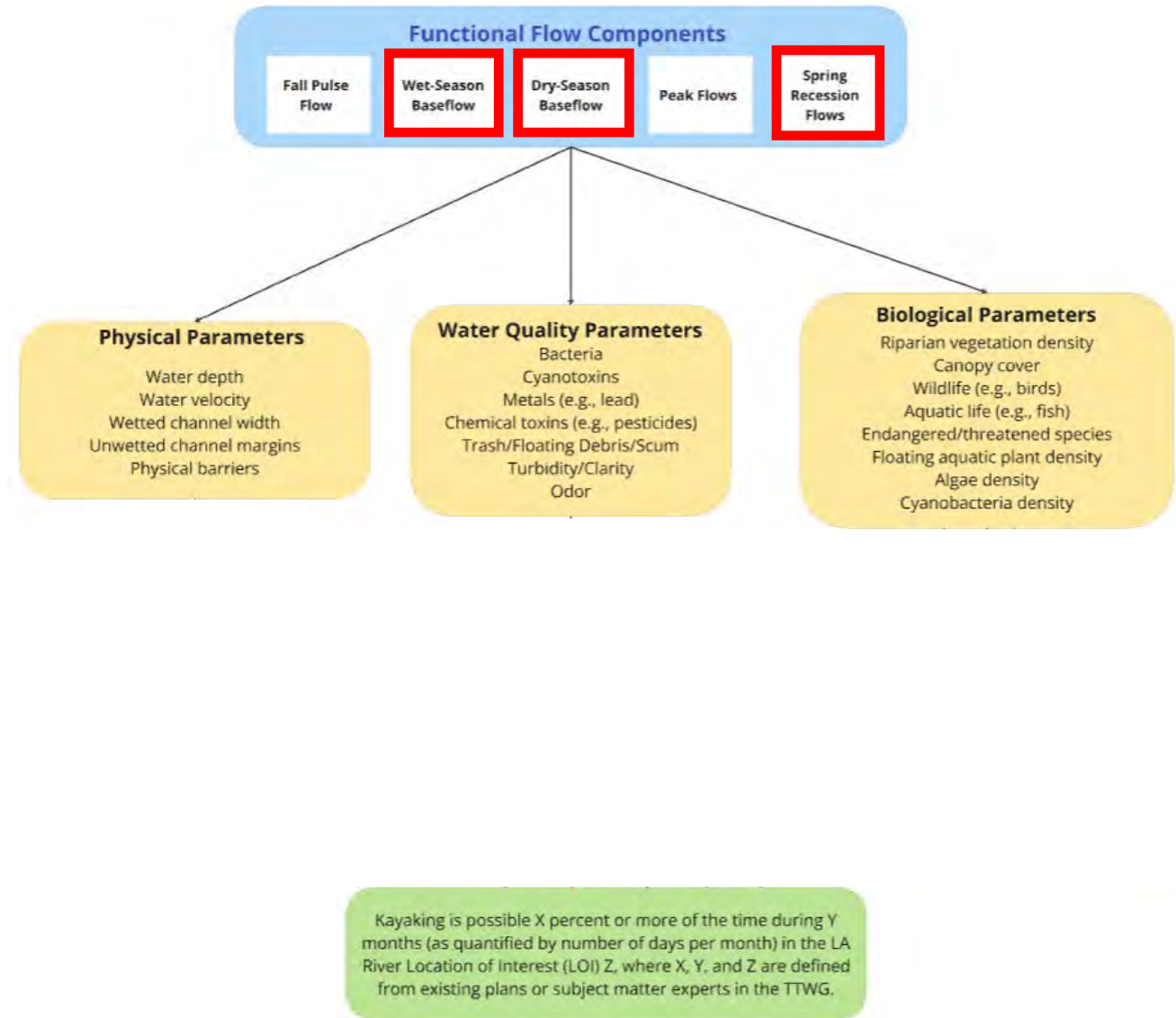
Kayaking is possible X percent or more of the time during Y months (as quantified by number of days per month) in the LA River Location of Interest (LOI) Z, where X, Y, and Z are defined from existing plans or subject matter experts in the TTWG.

Conceptual Model Example

Goal: *Conserve and enhance water contact (REC-1) recreation within and along the LA River.*

What physical, water quality, or biological parameters would influence the performance measure?

(See conceptual model for list)



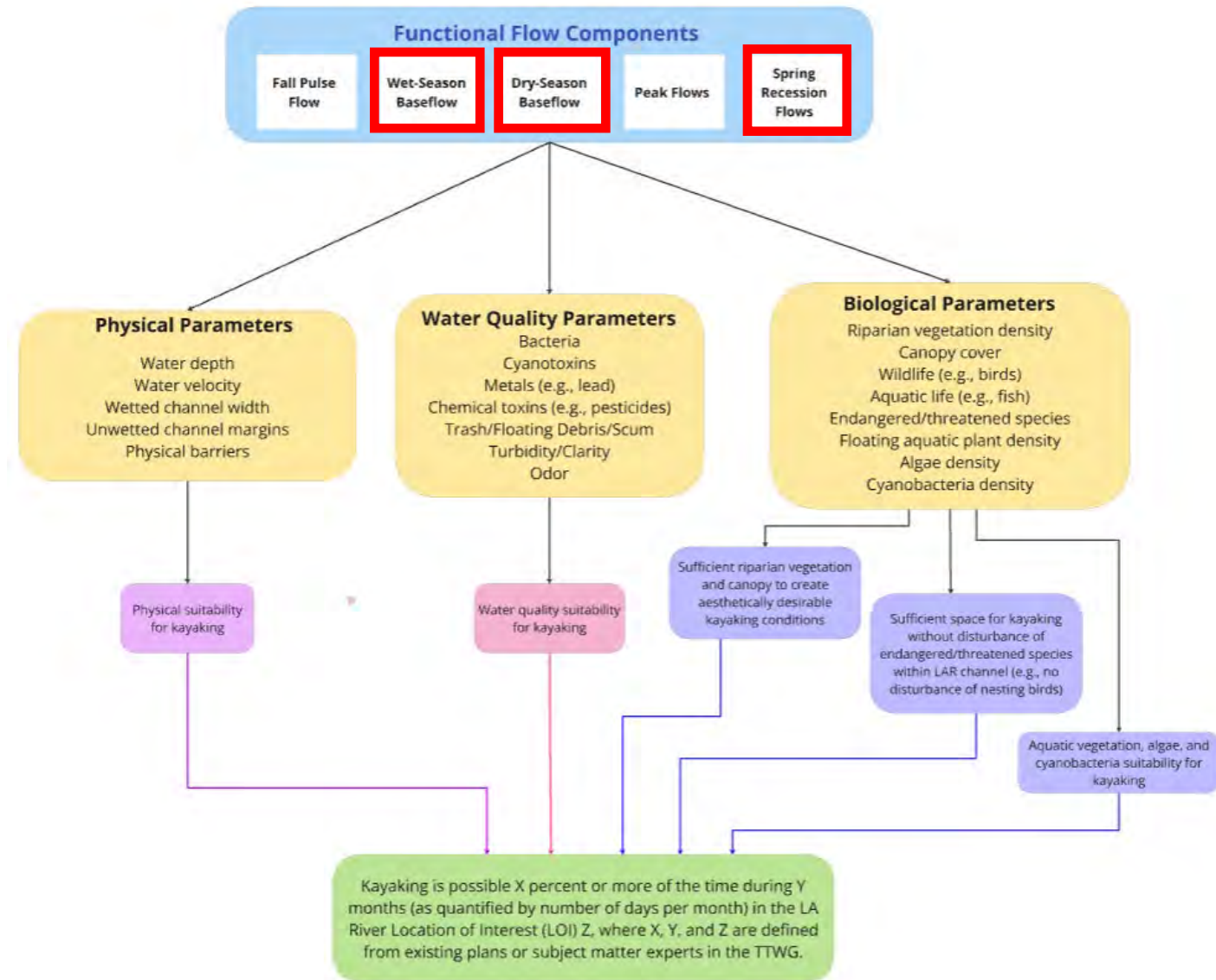
Conceptual Model Example

Goal: *Conserve and enhance water contact (REC-1) recreation within and along the LA River.*

What must be the condition of those physical, water quality, and biological parameters to achieve the performance measure?

Parameters must meet flow-related suitability criteria like water depth for kayaking.

Flow-related criteria for parameters compiled in next step.



CEFF Section C Process: Suitability Criteria

Suitability criteria specify numerical criteria for parameters describing condition needed to achieve performance measures.

- Suitability criteria can be:
 - Thresholds
 - Ranges with equal suitability
 - Ranges with variable suitability
- Objective is to identify:
 - What can be evaluated in the CEFF analysis?
 - What is recognized as important, but not understood well enough to quantify in CEFF analysis?
- **TTWGs** will develop suitability criteria.
- **Stillwater** will support throughout process.



Los Angeles River, Glendale Narrows

CEFF Section C Process: Goal to Suitability Criteria Example

Term (sub-step)	Recreation Example
Goal (8.2A)	Conserve and enhance water contact (REC-1) recreation within and along the LA River.
Performance measure for goal (8.2B)	Kayaking is possible X percent or more of the time during Y months (as quantified by number of days per month) in the LA River Location of Interest (LOI) Z, where X, Y, and Z are defined from existing plans or subject matter experts in the TTWG.
Parameter linking flow and performance measure (8.2C)	Water depth needed for kayaking.
Suitability criteria for whether performance measures are achieved (8.2D)	Minimum water depth for “good” kayaking is 1.5 feet as specified in <i>Review of Recreational Uses and Associated Flow Needs Along the Main-stem of Los Angeles River</i> (Sanchez and Stein 2019).



CEFF Section C Process: Goal to Suitability Criteria Example

Term (sub-step)	Biodiversity Example
Goal (8.2A)	Ensure the long-term persistence of a viable, self-sustaining, wild Southern California steelhead population
Performance measure for goal (8.2B)	Adult steelhead migration is supported X percent of the time in the mainstem LA River from the Pacific Ocean to Arroyo Seco from Y (time of year) to Z (time of year), where X, Y, and Z are defined from existing plans or subject matter experts in the TTWG.
Parameter linking flow and performance measure (8.2C)	Water depth needed for adult steelhead migration.
Suitability criteria for whether performance measures are achieved (8.2D)	Minimum water depth for steelhead migration is 0.7 feet (Thompson 1972; Bell 1991; SWRCB 2007; CDFW 2013; SWRCB 2014; Holmes et al. 2016)



CEFF Section C Process: Estimate flow range when suitability criteria met

Existing models and data will be used to evaluate:

- Potential flow modifications to the LA River at different LOIs assuming Type 2 flow nexus goals are achieved.
- What range of flows support achieving Type 1 flow nexus goals.

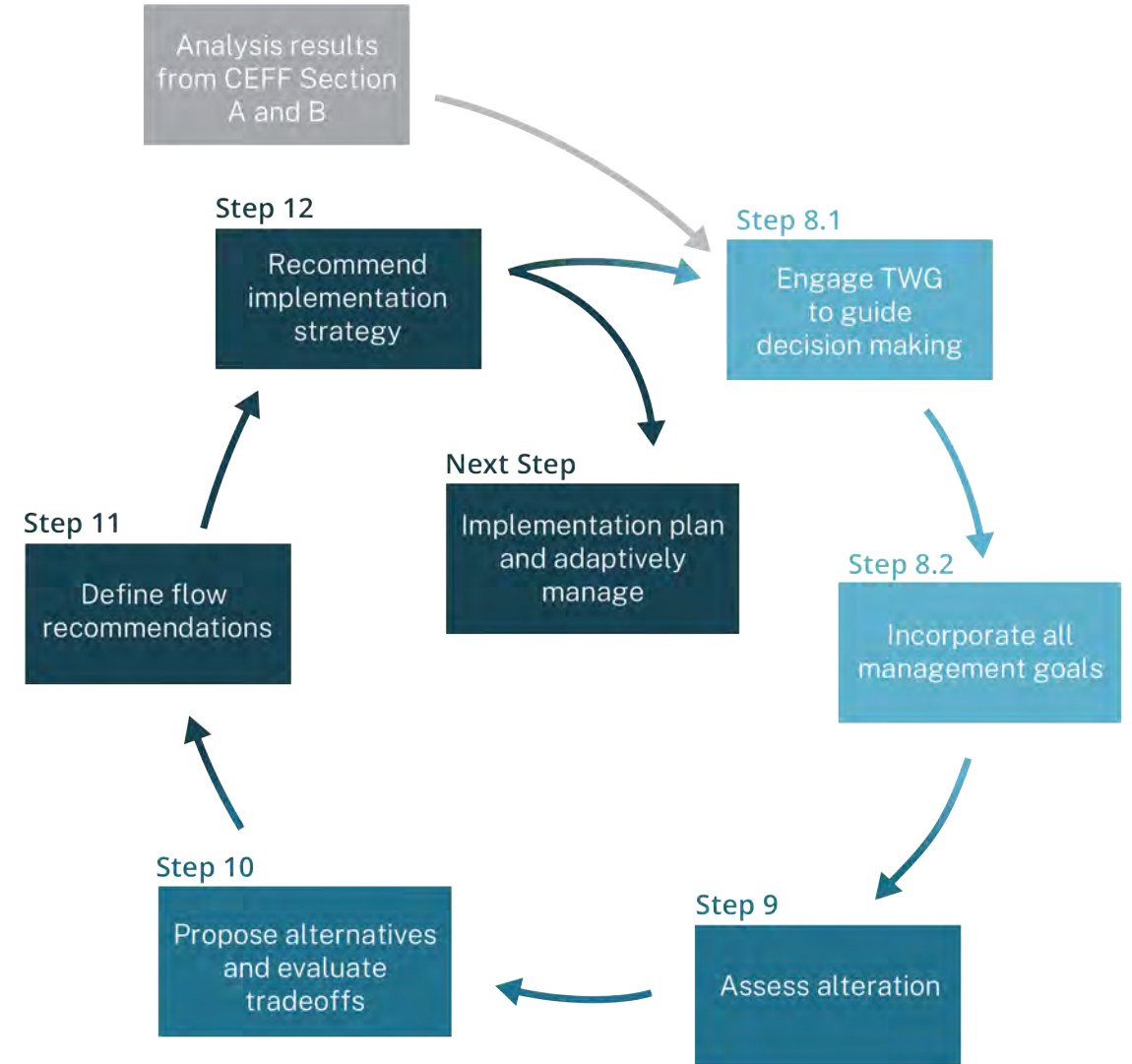
Models Available for LA River	Hydrology	Hydraulics	Water Temperature	Water Quality
LA River Storm Water Management Model (SWMM)	X			X
LA County Watershed Management Modeling System (WMMS)	X			X
LA River HEC-RAS model		X	X	
LA River i-Tree Cool River water temperature model			X	

Qualitative analysis approach may be developed in collaboration with TTWGs as needed when models or data limit quantitative analysis.

Stillwater will lead analysis with support from **TTWGs**.

CEFF Section C Process: Looking ahead

- **Step 8:** Working Group / Structured Decision-Making Process
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Questions

Photo credit: Ian Shive

Breakout Session

Thematic Technical
Working Groups(TTWGs)

Management Goals Evaluation

Photo credit: Ian Shive

List of TTWG Potential Participants by Theme

Biodiversity/ Habitat	Flood Control	Recreation	Tribal/ Cultural	Urban Cooling	Water Quality	Water Supply
Jon Avery	Eric Batman	Steve Appleton	Shelly Backlar	Chad Hecht	Eileen Alduenda	Tim Brick
Baron Barrera	Monica Eichler	Brian Baldauf	Brian Baldauf	Karina Gonzalez	Jon Ball Matt Bolt	Cara Campbell
Edward Belden	Tim Fairbank	Candice Dickens- Russell	Leneyde Chavez	Edith de Guzman	Jason Casanova	Jesus Gonzalez
Brionna Drescher	Mark Hanna	Joe Edmiston	Miguel Luna	Gordon Haines	Mas Dojiri Mark Gold	Ben Harris
Monica Eichler	Ben Harris	Mary Ferguson	Nathan Nunez	Rita Kampalath	Esther Lofton	John Hunyh
Kyle Evans	Nathan Holste	Mahesh Pujari	Rudy Ortega	Carling Monder	Ronald Mayuyu Jorge Mejia	Ronald Mayuyu
Wendy Katagi	Mitul Luhar	Stacee Karnya		Jonathan Parfrey	LB Nye	Chisom Obegolu
Nurit Katz	Ernie Rivera	Bronwen Stanford		Marta Segura	Susie Santilena	Erik Porse
AJ Keith	Alex Robinson	Jane Tsong		Julie Zimmerman	Taraneh Nik-Khah Thuan Nguyen	Dan Schultz
Chris Medak	William Saunders	Andrea Vona			Katherine Pease	Ryan Thiha
Mayra Molina	Philip Serpa				Mahesh Pujari	
Bruce Orr	Melissa Turcotte				Eric Stein	
Christian Romberger	Amanda Wagner				Ryan Thiha	
Kat Superfisky	Patricia Wood				Bryan Truong	
Kris Taniguchi-Quan					Belle Zheng Miller Zou	

TTWG Management Goal Refinement

CALIFORNIA ENVIRONMENTAL FLOWS FRAMEWORK | LOS ANGELES RIVER

LAR CEFF Management Goals Synthesis Instructions

Step 1: Compile water quality management goals potentially intersecting with the LA River

An initial water quality management goal list was compiled from available planning documents, with each planning document assigned a unique identifier (see List of Plans worksheet tab), then this initial list management goals was presented at TWG#1 (see Water Quality Goals at TWG#1 tab). Stakeholder input on the initial water quality management goal list was solicited during the TWG#1 breakout group and by email following the meeting. The initial water quality management goal list was updated based on the feedback received, then each water quality management goal in the list was assigned a unique identifier following the format "WQ - number" (where the WQ abbreviation stands for "water quality"). Unique identifiers were assigned to provide an easy way for users to track individual goals (see Water Quality Goal Evaluation tab).

TTWG Task: Finalize water quality management goal list

1. Review goal list (see Column E of Water Quality Goal Evaluation tab).
2. Confirm goal list is complete or compile additional water quality goals that TTWG believes should be added to the list.

Step 2: Determine LA River reaches where water quality management goals apply

In order to understand the portions of the LA River where water quality management goals are applicable, the planning documents for each goal were reviewed and the LA River reaches where goals apply were assigned based on the LA River CEFF Location of Interest (LOI) reaches defined in the LA River CEFF Section A report (Stillwater Sciences 2023). LA River CEFF LOIs are mapped to the right. A kmz of the LA River CEFF LOIs is available upon request.

TTWG Task: Finalize water quality management goal applicability to LA River reaches

1. Review initial assignment of LA River reaches where goals apply (see Column D of Water Quality Goal Evaluation tab).
2. Confirm initial assignment of LA River reaches is correct or edit as needed. Note: goals in the "Not a LA River management goal" sub-theme (see Column A of Water Quality Goal Evaluation tab) do not need an assignment of LA River reaches where the goal applies.

Step 3: Determine water quality management goals with a LA River flow nexus

In order to focus the LA River CEFF analysis on goals linked to flow in the LA River, all identified management goals were reviewed to determine whether there is sufficient flow nexus to advance the management goal in the LA River CEFF analysis. Two types of flow nexus were possible:

- **Type 1 flow nexus (flow influences goal)** refers describes when flow in the LA River affects the ability to meet a management goal/performance measure. For example, in-channel projects such as side channels, diversions, adjacent parks, or fish passage enhancements.
- **Type 2 flow nexus (goal influences flow)** describes when activities or projects undertaken to achieve a management goal/performance measure affect flow in the LA River. For example, watershed projects that alter the amount of stormwater into the LA River channel. Watershed projects may be adjacent to the channel or anywhere in the watershed including along tributaries.

Management goals may have one, both, or neither type of flow nexus. An initial assignment of the LA River flow nexus for the water quality management goals was determined by answering two questions:

1. Does the amount of flow in the LA River channel affect this goal? If yes, Type 1 flow nexus.

LOS ANGELES RIVER

[Instructions-Read Me](#)
[List of Plans](#)
[Water Quality Goal Evaluation](#)

[Water Quality Goals at TWG#1](#)

Each TTWG has an Excel workbook of LA River management goals.

TTWG Management Goal Refinement

CALIFORNIA ENVIRONMENTAL FLOWS FRAMEWORK | LOS ANGELES RIVER

LOS ANGELES RIVER

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1. Does the amount of flow in the LA River affect the ability to meet this goal? If yes, Type 1 flow nexus.

Instructions-Read Me | List of Plans | Water Quality Goal Evaluation | Water Quality Goals at TWG#1

Ready Accessibility: Investigate

Instruction tab lays out the basic instructions for the workbook.

TTWG Management Goal Refinement

	A	B	C	D
	Plan	Management goal	Subgoal	Notes
1	Arroyo Seco Watershed Assessment, USACE Arroyo Seco Ecosystem Restoration, and related Arroyo Seco outreach	Better manage, optimize, and conserve water resources while improving water quality		
2	Bowtie Parcel Demonstration Wetland Project	Reduce metals (zinc, copper) and bacteria loads into the Los Angeles River...wetland pools would capture nearly 100% of total copper, total zinc and total suspended solids during dry weather		
3	Burbank 2017 Wastewater Change Petition	Pursuant to its current Wastewater Change Petition, the City is proposing to use an additional 2,322 AF of tertiary-treated water to continue to meet the growing local irrigation and industrial demand for recycled water and to supply portions of the City of Los Angeles within the ULARA,3 as shown in Figure A-7, and this will result in reduced discharges of wastewater to the Western Channel over the next 10 years.		
4	Burbank 2017 Wastewater Change Petition	Burbank is proposing to gradually increase its use of recycled water from 2,705 AF to approximately 5,027 AF by 2025 (see Figure A-7). Over approximately the next ten years, this proposed change would gradually reduce the volume of BWRP's discharges into the Burbank Western Channel from 5,376 AF to 3,766 AF (see Figure A-7).		
5	Common Ground, from the Mountains to the Sea: Watershed and Open Space Plan for San Gabriel and Los Angeles Rivers	Provide open space along tributaries in urbanized areas to extend the river parkways and allow for pedestrian and bike paths, restoration of habitat, water quality improvement, and flood protection.		
6	Common Ground, from the Mountains to the Sea: Watershed and Open Space Plan for San Gabriel and Los Angeles Rivers	Improve water quality to optimize water supplies and protect beneficial uses. Encourage infiltration of urban runoff into groundwater where consistent with water quality goals, to extend the water supply and reduce		

(THEME) Goals at TWG#1 tab specifies goals as seen at last TWG.

TTWG Management Goal Refinement

WATER QUALITY MANAGEMENT GOALS EVALUATION WORKSHEET				
ID	Plan	Year	Organization(s)	Link
1	One Water Plan and EIR, and other relevant City of LA, LADWP studies	2018	One Water LA	Flow study: https://www.lacitysan.org/cs/groups/sg_owla/documents/document/y cnt030189.pdf Summary: https://watercenter.dev.colostate.edu/wp-content/uploads/sites/33/2021/10/One-Water-LA-2040-Plan-Summar
1b	Urban Water Management Plan	2015	Los Angeles Dept of Water and Power	M217.pdf (lacity.gov)
1c	Urban Water Management Plan	2020	Los Angeles Dept of Water and Power	https://www.ladwp.com/sites/default/files/documents/LADWP_2020_I
2	Los Angeles River Master Plan	2022	LA County	https://larivermasterplan.org/

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Instructions-Read Me List of Plans Water Quality Goal Evaluation Water Quality Goals at TWG#1 + 100%

List of Plans tab specifies all plans mentioned in the workbook.



Plan ID number: Best way to locate a plan quickly!

Related plans (e.g., plans that get updated regularly) are given same number with a unique letter.

WATER QUALITY MANAGEMENT GOALS EVALUATION WORKSHEET				
ID	Plan	Year	Organization(s)	Link
1	One Water Plan and EIR, and other relevant City of LA, LADWP studies	2018	One Water LA	Flow study: https://www.lacitysan.org/cs/groups/sg_owla/documents/document/y cnt030189.pdf Summary: https://watercenter.dev.colostate.edu/wp-content/uploads/sites/33/2021/10/One-Water-LA-2040-Plan-Summar
1b	Urban Water Management Plan	2015	Los Angeles Dept of Water and Power	M217.pdf (lacity.gov)
1c	Urban Water Management Plan	2020	Los Angeles Dept of Water and Power	https://www.ladwp.com/sites/default/files/documents/LADWP_2020_1
2	Los Angeles River Master Plan	2022	LA County	https://larivermasterplan.org/



TTWG Management Goal Refinement

Plan name

WATER QUALITY MANAGEMENT GOALS EVALUATION WORKSHEET				
ID	Plan	Year	Organization(s)	Link
1	One Water Plan and EIR, and other relevant City of LA, LADWP studies	2018	One Water LA	Flow study: https://www.lacitysan.org/cs/groups/sg_owla/documents/document/y_cnt030189.pdf Summary: https://watercenter.dev.colostate.edu/wp-content/uploads/sites/33/2021/10/One-Water-LA-2040-Plan-Summar
1b	Urban Water Management Plan	2015	Los Angeles Dept of Water and Power	M217.pdf (lacity.gov)
1c	Urban Water Management Plan	2020	Los Angeles Dept of Water and Power	https://www.ladwp.com/sites/default/files/documents/LADWP_2020_1
2	Los Angeles River Master Plan	2022	LA County	https://larivermasterplan.org/



TTWG Management Goal Refinement

Year plan was published

WATER QUALITY MANAGEMENT GOALS EVALUATION WORKSHEET				
ID	Plan	Year	Organization(s)	Link
1	One Water Plan and EIR, and other relevant City of LA, LADWP studies	2018	One Water LA	Flow study: https://www.lacitysan.org/cs/groups/sg_owla/documents/document/y cnt030189.pdf Summary: https://watercenter.dev.colostate.edu/wp-content/uploads/sites/33/2021/10/One-Water-LA-2040-Plan-Summar
1b	Urban Water Management Plan	2015	Los Angeles Dept of Water and Power	M217.pdf (lacity.gov)
1c	Urban Water Management Plan	2020	Los Angeles Dept of Water and Power	https://www.ladwp.com/sites/default/files/documents/LADWP_2020_1
2	Los Angeles River Master Plan	2022	LA County	https://larivermasterplan.org/

Instructions-Read Me

List of Plans

Water Quality Goal Evaluation

Water Quality Goals at TWG#1

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100%



TTWG Management Goal Refinement

Organization(s) involved in development of plan

WATER QUALITY MANAGEMENT GOALS EVALUATION WORKSHEET				
ID	Plan	Year	Organization(s)	Link
1	One Water Plan and EIR, and other relevant City of LA, LADWP studies	2018	One Water LA	Flow study: https://www.lacitysan.org/cs/groups/sg_owla/documents/document/yent030189.pdf Summary: https://watercenter.dev.colostate.edu/wp-content/uploads/sites/33/2021/10/One-Water-LA-2040-Plan-Summar
1b	Urban Water Management Plan	2015	Los Angeles Dept of Water and Power	4217.pdf (lacity.gov)
1c	Urban Water Management Plan	2020	Los Angeles Dept of Water and Power	https://www.ladwp.com/sites/default/files/documents/LADWP_2020_1
2	Los Angeles River Master Plan	2022	LA County	https://larivermasterplan.org/



TTWG Management Goal Refinement

Link to plan on the internet
(last accessed 9/20/2024)

WATER QUALITY MANAGEMENT GOALS EVALUATION WORKSHEET				
ID	Plan	Year	Organization(s)	Link
1	One Water Plan and EIR, and other relevant City of LA, LADWP studies	2018	One Water LA	Flow study: https://www.lacitysan.org/cs/groups/sg_owla/documents/document/y_cnt030189.pdf Summary: https://watercenter.dev.colostate.edu/wp-content/uploads/sites/33/2021/10/One-Water-LA-2040-Plan-Summar
1b	Urban Water Management Plan	2015	Los Angeles Dept of Water and Power	M217.pdf (lacity.gov)
1c	Urban Water Management Plan	2020	Los Angeles Dept of Water and Power	https://www.ladwp.com/sites/default/files/documents/LADWP_2020_I
2	Los Angeles River Master Plan	2022	LA County	https://larivermasterplan.org/



TTWG Management Goal Refinement

Management goal evaluation

Background on goals

Sub-theme	Goal Category	Goal	Applicable LOI(s)	Management goal (verbatim)	Type 1 flow nexus (flow influences goal)	Type 2 flow nexus (goal influences flow)	Advance to LAR CEFF Water Quality analysis	Performance Measure(s)	Plan	Plan ID	Included at TWG#1	Notes
Groundwater	WQ	13	LOI 0 - LOI 37.51	Protecting coastal groundwater basins from seawater intrusion	yes	additional input needed	yes		LA County Water Plan	8	X	
Infiltration	WQ	36	NW of LOI 37.51, on mainstem	Optimize storm water infiltration and reduce runoff to improve water quality, vegetation resiliency, and aquifer recharge	no	yes	yes		Bepulveda Basin Vision Plan	24	X	Overlaps with water supply and biodiversity.
Regulatory compliance / pollutant removal	WQ	4	LOI 0 - LOI 37.51	To maintain or enhance water quality in relation to the designated existing and potential beneficial uses of the water.	yes	additional input needed	yes		LA Regional Water Quality Control Board Basin Plan	4	X	Flows could be important to enhancing water quality for example in buffering temperature changes for beneficial uses like cold water habitat. Therefore, Yes on Type 1.
Regulatory compliance / pollutant removal	WQ	20	LOI 24.02 (confluence with mainstem)	Better manage, optimize, and conserve water resources while improving water quality	additional input needed	yes	yes		Arroyo Seco Watershed Assessment, USACE Arroyo Seco Ecosystem Restoration, and related Arroyo Seco	14	X	No specifics about how this could be achieved but conserving water resources to improve water quality is likely to result in change in flow to river (Yes on Type 2)
Regulatory compliance / pollutant removal	WQ	21	LOI 0 - LOI 37.51	To address the water resources needs of the region in an integrated and collaborative manner to improve water supplies, enhance water supply reliability, improve surface water quality, preserve flood protection, conserve habitat, and expand recreational access in the Region (Greater LA Watershed)	yes	yes	yes		Greater Los Angeles County Integrated Regional Water Management Plan 2006	15a	X	Very broad options to implement - could have either flow newuses
Regulatory compliance / pollutant removal	WQ	30a	LOI 0 - LOI 37.51	WQ-30 subgoal - Improve water quality and contribute to attainment of water-quality requirements.	yes	yes	yes		Safe Clean Water LA	16	X	Very vague but SCWP but many options for how it impacts or is impacted by flow
Regulatory compliance / pollutant removal	WQ	37	LOI 24.02	Reduce metals (zinc, copper) and bacteria loads into the Los Angeles River -> 4 wetland pools would capture nearly 100% of total copper, total zinc and total suspended solids during dry weather	no	yes	yes		Bowtie Parcel Demonstration Wetland Project	25	X	Wetlands would impact flow though perhaps marginally
Regulatory compliance / pollutant removal	WQ	57c	LOI 0 - LOI 37.51	WQ-57 subgoal - Implement water quality treatment at multiple scales to maximize efficiency	additional input needed	additional input needed	additional input needed		LA River Revitalization Masterplan	26		Unclear "how" but could impact or be impacted by flows

[Instructions-Read Me](#)[List of Plans](#)[Water Quality Goal Evaluation](#)[Water Quality Goals at TWG#1](#)

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(THEME) Goal Evaluation tab is where the management goal refinement will be done.



Management goal evaluation

Background on goals

WATER QUALITY MANAGEMENT GOALS EVALUATION WORKSHEET												
Sub-theme	Goal Category	Goal	Applicable LOI(s)	Management goal (verbatim)	Type 1 flow nexus (flow influences goal)	Type 2 flow nexus (goal influences flow)	Advance to LAR CEFF Water Quality analysis	Performance Measure(s)	Plan	Plan ID	Included at TWG#	Notes
Groundwater	WQ	13	LOI 0 - LOI 37.5	Protecting coastal groundwater basins from seawater intrusion	yes	additional input needed	yes		LA County Water Plan	8	X	
Infiltration	WQ	36	NW of LOI 37.51, or mainstem	Optimize storm water infiltration and reduce runoff to improve water quality, vegetation resiliency, and aquifer recharge	no	yes	yes		Sepulveda Basin Vision Plan	24	X	Overlaps with water supply and biodiversity.
Regulatory compliance / pollutant removal	WQ	4	LOI 0 - LOI 37.5	To maintain or enhance water quality in relation to the designated existing and potential beneficial uses of the water.	yes	additional input needed	yes		LA Regional Water Quality Control Board Basin Plan	4	X	Flows could be important to enhancing water quality for example in buffering temperature changes for beneficial uses like cold water habitat. Therefore, Yes on Type 1.
Regulatory compliance / pollutant removal	WQ	20	LOI 24.02 (confluence with mainstem)	Better manage, optimize, and conserve water resources while improving water quality	additional input needed	yes	yes		Arroyo Seco Watershed Assessment, USACE Arroyo Seco Ecosystem Restoration, and related Arroyo Seco	14	X	No specifics about how this could be achieved but conserving water resources to improve water quality is likely to result in change in flow to river (Yes on Type 2)
Regulatory compliance / pollutant removal	WQ	21	LOI 0 - LOI 37.51	To address the water resources needs of the region, all integrated and conservative manner to improve water supplies, enhance water supply reliability, improve surface water quality, preserve flood protection, conserve habitat, and expand recreational access in the Region (Greater LA River)	yes	yes	yes		Greater Los Angeles County Integrated Regional Water Management Plan 2006	15a	X	Very broad options to implement - could have either flow nexuses
Regulatory compliance / pollutant removal	WQ	30a	LOI 0 - LOI 37.51	WQ-30 subgoal - Improve water quality and contribute to attainment of water-quality requirements.	yes	yes	yes		Safe Clean Water LA	16	X	Very vague but SCWP but many options for how it impacts or is impacted by flow
Regulatory compliance / pollutant removal	WQ	37	LOI 24.02	Reduce metals (zinc, copper) and bacteria loads into the Los Angeles River -> 4 wetland pools would capture nearly 100% of total copper, total zinc and total suspended solids during dry weather	no	yes	yes		Bowtie Parcel Demonstration Wetland Project	25	x	Wetlands would impact flow though perhaps marginally
Regulatory compliance / pollutant removal	WQ	57c	LOI 0 - LOI 37.51	WQ-57 subgoal - Implement water quality treatment at multiple scales to maximize efficiency.	additional input needed	additional input needed	additional input needed		LA River Revitalization Masterplan	26		Unclear "how" but could impact or be impacted by flows

Instructions-Read Me

List of Plans

Water Quality Goal Evaluation

Water Quality Goals at TWG#1

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TTWG Management Goal Refinement

Management goals from plans

Plans, unique ID numbers, and notes on if it was part of TWG #1 goals

CALIFORNIA ENVIRONMENTAL FLOWS FRAMEWORK LOS ANGELES RIVER						
Management goal (verbatim)	Type 1 flow nexus (flow influences goal)	Type 2 flow nexus (goal influences flows)	Advance to LAR CEFF Water Quality analysis	Performance Measure(s)	Plan	Included at TWG#1
Protecting coastal groundwater basins from seawater intrusion	yes	additional input needed	yes		LA County Water Plan	8 X
Optimize storm water infiltration and reduce runoff to improve water quality, vegetation resiliency, and aquifer recharge	no	yes	yes		Sepulveda Basin Vision Plan	24 X
To maintain or enhance water quality in relation to the designated existing and potential beneficial uses of the water.	yes	additional input needed	yes		LA Regional Water Quality Control Board Basin Plan	4 X
Better manage, optimize, and conserve water resources while improving water quality	additional input needed	yes	yes		Arroyo Seco Watershed Assessment, USACE Arroyo Seco Ecosystem Restoration, and related Arroyo Seco outreach	14 X

Management goal evaluation

Background on goals

Sub-theme	Goal Category	Goal	Applicable LOI(s)	Management goal (verbatim)	Type 1 flow nexus (flow influences goal)	Type 2 flow nexus (goal influences flow)	Advance to LAR CEFF Water Quality analysis	Performance Measure(s)	Plan	Plan ID	Included at TWG#1	Notes
Groundwater	WQ	13	LOI 0 - LOI 37.51	Protecting coastal groundwater basins from seawater intrusion	yes	additional input needed	yes		LA County Water Plan	8	X	
Infiltration	WQ	36	NW of LOI 37.51, on mainstem	Optimize storm water infiltration and reduce runoff to improve water quality, vegetation resiliency, and aquifer recharge	no	yes	yes		Sepulveda Basin Vision Plan	24	X	Overlaps with water supply and biodiversity.
Regulatory compliance / pollutant removal	WQ	4	LOI 0 - LOI 37.51	To maintain or enhance water quality in relation to the designated existing and potential beneficial uses of the water.	yes	additional input needed	yes		LA Regional Water Quality Control Board Basin Plan	4	X	Flows could be important to enhancing water quality for example in buffering temperature changes for beneficial uses like cold water habitat. Therefore, Yes on Type 1.
Regulatory compliance / pollutant removal	WQ	20	LOI 24.02 (confluence with mainstem)	Better manage, optimize, and conserve water resources while improving water quality	additional input needed	yes	yes		Arroyo Seco Watershed Assessment, USACE Arroyo Seco Ecosystem Restoration, and related Arroyo Seco	14	X	No specifics about how this could be achieved but conserving water resources to improve water quality is likely to result in change in flow to river (Yes on Type 2)
Regulatory compliance / pollutant removal	WQ	21	LOI 0 - LOI 37.51	no address the water resources needs of the region (all integrated and conservative manner to improve water supplies, enhance water supply reliability, improve surface water quality, preserve flood protection, conserve habitat, and expand recreational access in the Region (Greater LA River)	yes	yes	yes		Greater Los Angeles County Integrated Regional Water Management Plan 2006	15a	X	Very broad options to implement - could have either flow newuses
Regulatory compliance / pollutant removal	WQ	30a	LOI 0 - LOI 37.51	WQ-30 subgoal - Improve water quality and contribute to attainment of water-quality requirements.	yes	yes	yes		Safe Clean Water LA	16	X	Very vague but SCWP but many options for how it impacts or is impacted by flow
Regulatory compliance / pollutant removal	WQ	37	LOI 24.02	Reduce metals (zinc, copper) and bacteria loads into the Los Angeles River -> 4 wetland pools would capture nearly 100% of total copper, total zinc and total suspended solids during dry weather	no	yes	yes		Bowtie Parcel Demonstration Wetland Project	25	x	Wetlands would impact flow though perhaps marginally
Regulatory compliance / pollutant removal	WQ	57c	LOI 0 - LOI 37.51	WQ-57 subgoal - Implement water quality treatment at multiple scales to maximize efficiency.	additional input needed	additional input needed	additional input needed		LA River Revitalization Masterplan	26		Unclear "how" but could impact or be impacted by flows

[Instructions-Read Me](#)[List of Plans](#)[Water Quality Goal Evaluation](#)[Water Quality Goals at TWG#1](#)

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55%



TTWG Management Goal Refinement

Management goals ID category and number
(unique identifier for each management goal)

Management goals from plans

WATER QUALITY MANAGEMENT GOALS EVALUATION WORKSHEET				CALIFORNIA ENVIRONMENTAL FLOWS FRAMEWORK LOS ANGELES RIVER			
Sub-theme	Goal ID Category	Goal ID	Applicable LOI(s)	Management goal (verbatim)	Type 1 flow nexus (flow influences goal)	Type 2 flow nexus (goal influences flows)	Advance to LAR CEFF Water Quality analysis
Groundwater	WQ	13	LOI 0 - LOI 37.51	Protecting coastal groundwater basins from seawater intrusion	yes	additional input needed	yes
Infiltration	WQ	36	NW of LOI 37.51, and mainstem	Optimize storm water infiltration and reduce runoff to improve water quality, vegetation resiliency, and aquifer recharge	no	yes	yes
Regulatory compliance / pollutant removal	WQ	4	LOI 0 - LOI 37.51	To maintain or enhance water quality in relation to the designated existing and potential beneficial uses of the water.	yes	additional input needed	yes
Regulatory compliance / pollutant removal	WQ	20	LOI 24.02 (confluence with mainstem)	Better manage, optimize, and conserve water resources while improving water quality	additional input needed	yes	yes

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TTWG Management Goal Refinement

LA River Location of Interest (LOI) where management goal applies
(see Instructions – Read Me tab for map of LA River LOIs)

WATER QUALITY MANAGEMENT GOALS EVALUATION WORKSHEET					
Sub-theme	Goal ID Category	Goal ID	Applicable LOI(s)	Management goal (verbatim)	
Groundwater	WQ	13	LOI 0 - LOI 37.51	protecting coastal groundwater basins from seawater intrusion	
Infiltration	WQ	36	NW of LOI 37.51, on mainstem	optimize storm water infiltration and reduce runoff to improve water quality, vegetation resiliency, and aquifer recharge	
Regulatory compliance / pollutant removal	WQ	4	LOI 0 - LOI 37.51	to maintain or enhance water quality in relation to the designated existing and potential beneficial uses of the water.	
Regulatory compliance / pollutant removal	WQ	20	LOI 24.02 (confluence with mainstem)	better manage, optimize, and conserve water resources while improving water quality	

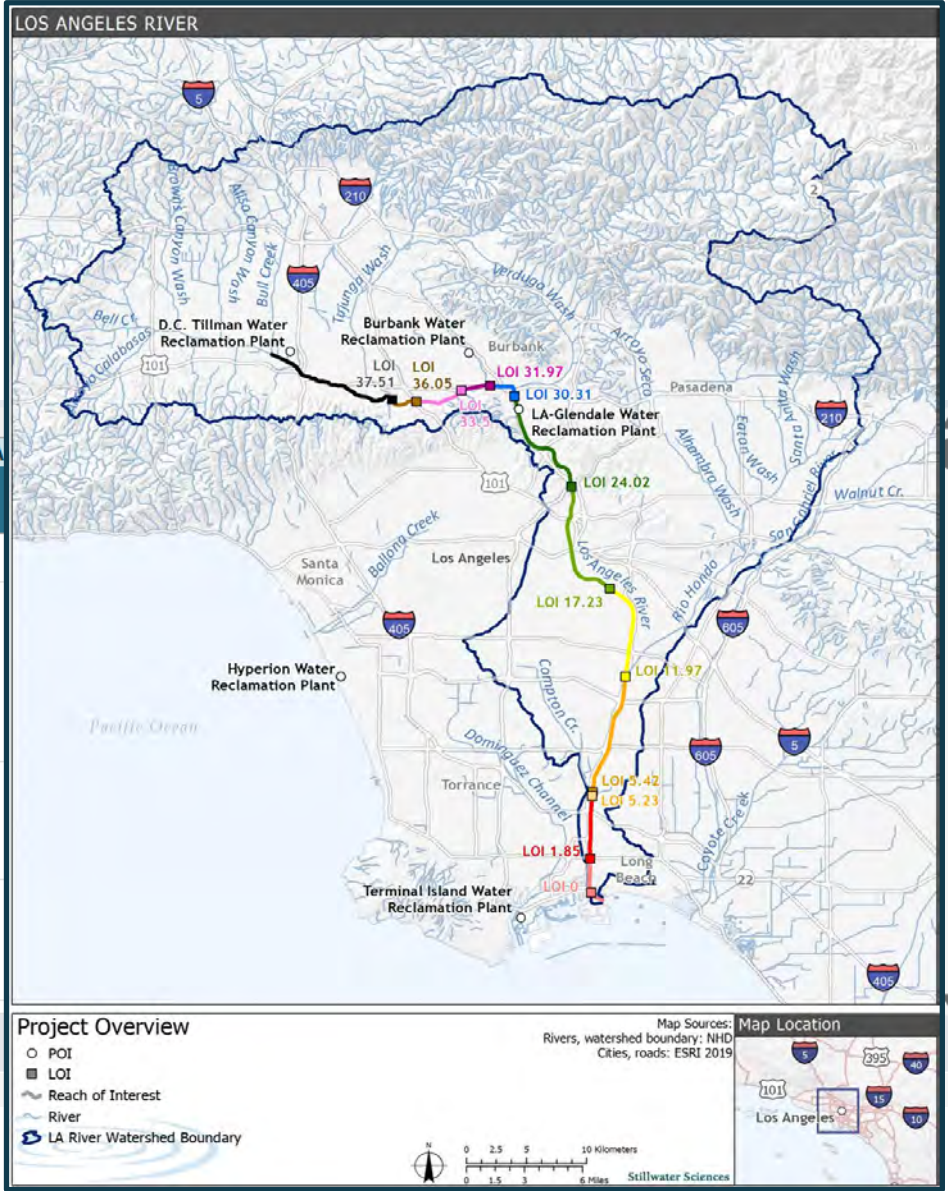
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List of Plans

Water Quality Goal Evaluation

Water Quality Goals at TWG#1

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Flow nexus determinations
for management goals

WATER QUALITY MANAGEMENT GOALS EVALUATION WORKSHEET					CALIFORNIA ENVIRONMENTAL FLOWS FRAMEWORK LOS ANGELES RIVER		
Sub-theme	Goal ID Category	Goal ID	Applicable LOI(s)	Management goal (verbatim)	Type 1 flow nexus (flow influences goal)	Type 2 flow nexus (goal influences flows)	Advance to LAR CEFF Water Quality analysis
Groundwater	WQ	13	LOI 0 - LOI 37.51	Protecting coastal groundwater basins from seawater intrusion	yes	additional input needed	yes
Infiltration	WQ	36	NW of LOI 37.51, on mainstem	Optimize storm water infiltration and reduce runoff to improve water quality, vegetation resiliency, and aquifer recharge	no	yes	yes
Regulatory compliance / pollutant removal	WQ	4	LOI 0 – LOI 37.51	To maintain or enhance water quality in relation to the designated existing and potential beneficial uses of the water.	yes	additional input needed	yes
Regulatory compliance / pollutant removal	WQ	20	LOI 24.02 (confluence with mainstem)	Better manage, optimize, and conserve water resources while improving water quality	additional input needed	yes	yes

Instructions-Read MeList of PlansWater Quality Goal EvaluationWater Quality Goals at TWG#1

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TTWG Management Goal Refinement

Document assumptions or important information on flow nexus determinations in Notes column

WATER QUALITY MANAGEMENT GOALS EVALUATION WORKSHEET												CALIFORNIA ENVIRONMENTAL FLOWS FRAMEWORK LOS ANGELES RIVER											
Sub-theme	Goal Category	Goal	Applicable LOI(s)	Management goal (verbatim)	Type 1 flow nexus (flow influences goal)	Type 2 flow nexus (goal influences flow)	Advance to LAR CEFF Water Quality analysis	Performance Measure(s)	Plan	Plan ID	Include at TWG?	Notes											
Groundwater	WQ	13	LOI 0 - LOI 37.51	Protecting coastal groundwater basins from seawater intrusion	yes	additional input needed	yes		LA County Water Plan	8	X												
Infiltration	WQ	36	NW of LOI 37.51, on mainstem	Optimize storm water infiltration and reduce runoff to improve water quality, vegetation resiliency, and aquifer recharge	no	yes	yes		Sepulveda Basin Vision Plan	24	X	Overlaps with water supply and biodiversity.											
Regulatory compliance / pollutant removal	WQ	4	LOI 0 - LOI 37.51	To maintain or enhance water quality in relation to the designated existing and potential beneficial uses of the water.	yes	additional input needed	yes		LA Regional Water Quality Control Board Basin Plan	4	X	Flows could be important to enhancing water quality for example in buffering temperature changes for beneficial uses like cold water habitat. Therefore, Yes on Type 1.											
Regulatory compliance / pollutant removal	WQ	20	LOI 24.02 (confluence with mainstem)	Better manage, optimize, and conserve water resources while improving water quality	additional input needed	yes	yes		Arroyo Seco Watershed Assessment, USACE Arroyo Seco Ecosystem Restoration, and related Arroyo Seco projects	14	X	No specifics about how this could be achieved but conserving water resources to improve water quality is likely to result in change in flow to river (Yes on Type 2)											
Regulatory compliance / pollutant removal	WQ	21	LOI 0 - LOI 37.51	To address the water resources needs of the region in an integrated and collaborative manner to improve water supplies, enhance water supply reliability, improve surface water quality, preserve flood protection, conserve habitat, and expand recreational access in the Region (Greater LA Watershed)	yes	yes	yes		Greater Los Angeles County Integrated Regional Water Management Plan 2006	15a	X	Very broad options to implement - could have either flow newuses											
Regulatory compliance / pollutant removal	WQ	30a	LOI 0 - LOI 37.51	WQ-30 subgoal - Improve water quality and contribute to attainment of water-quality requirements.	yes	yes	yes		Safe Clean Water LA	16	X	Very vague but SCWP but many options for how it impacts or is impacted by flow											
Regulatory compliance / pollutant removal	WQ	37	LOI 24.02	Reduce metals (zinc, copper) and bacteria loads into the Los Angeles River -> 4 wetland pools would capture nearly 100% of total copper, total zinc and total suspended solids during dry weather	no	yes	yes		Bowtie Parcel Demonstration Wetland Project	25	X	Wetlands would impact flow though perhaps marginally											
Regulatory compliance / pollutant removal	WQ	57c	LOI 0 - LOI 37.51	WQ-57 subgoal - Implement water quality treatment at multiple scales to maximize efficiency.	additional input needed	additional input needed	additional input needed		LA River Revitalization Masterplan	26		Unclear "how" but could impact or be impacted by flows											

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Water Quality Goal Evaluation

Water Quality Goals at TWG#1

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Sub-themes for management goals

WATER QUALITY MANAGEMENT GOALS EVALUATION WORKSHEET					CALIFORNIA ENVIRONMENTAL FLOWS FRAMEWORK LOS ANGELES RIVER		
Sub-theme	Goal ID Category	Goal ID	Applicable LOI(s)	Management goal (verbatim)	Type 1 flow nexus (flow influences goal)	Type 2 flow nexus (goal influences flows)	Advance to LAR CEFF Water Quality analysis
Groundwater	WQ	13	LOI 0 - LOI 37.51	Protecting coastal groundwater basins from seawater intrusion	yes	additional input needed	yes
Infiltration	WQ	36	NW of LOI 37.51, on mainstem	Optimize storm water infiltration and reduce runoff to improve water quality, vegetation resiliency, and aquifer recharge	no	yes	yes
Regulatory compliance / pollutant removal	WQ	4	LOI 0 - LOI 37.51	To maintain or enhance water quality in relation to the designated existing and potential beneficial uses of the water.	yes	additional input needed	yes
Regulatory compliance / pollutant removal	WQ	20	LOI 24.02 (confluence with mainstem)	Better manage, optimize, and conserve water resources while improving water quality	additional input needed	yes	yes

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Water Quality Goal Evaluation

Water Quality Goals at TWG#1

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1. Finalize management goal list
2. Finalize where goals are applicable to LA River LOIs
3. Finalize LA River flow nexus determinations
 - Verify initial determinations
 - Determine whether Type 1 or 2 flow nexuses listed as “Additional input needed” are a “yes” or “no”.
4. Finalize sub-themes for management goals
5. Develop performance measures for all management goals with a flow nexus.

Questions

Photo credit: Ian Shive

List of TTWG Potential Participants by Theme

Biodiversity/ Habitat	Flood Risk Management	Recreation	Cultural/Tribal	Urban Cooling	Water Quality	Water Supply
Jon Avery	Eric Batman	Steve Appleton	Shelly Backlar	Chad Hecht	Eileen Alduenda	Tim Brick
Baron Barrera	Monica Eichler	Brian Baldauf	Brian Baldauf	Karina Gonzalez	Jon Ball Matt Bolt	Cara Campbell
Edward Belden	Tim Fairbank	Candice Dickens- Russell	Leneyde Chavez	Edith de Guzman	Jason Casanova	Jesus Gonzalez
Brionna Drescher	Mark Hanna	Joe Edmiston	Miguel Luna	Gordon Haines	Mas Dojiri Mark Gold	Ben Harris
Monica Eichler	Ben Harris	Mary Ferguson	Nathan Nunez	Rita Kampalath	Esther Lofton	John Hunyh
Kyle Evans	Nathan Holste	Mahesh Pujari	Rudy Ortega	Carling Monder	Ronald Mayuyu Jorge Mejia	Ronald Mayuyu
Wendy Katagi	Mitul Luhar	Stacee Karnya		Jonathan Parfrey	LB Nye	Chisom Obegolu
Nurit Katz	Ernie Rivera	Bronwen Stanford		Marta Segura	Susie Santilena	Erik Porse
AJ Keith	Alex Robinson	Jane Tsong		Julie Zimmerman	Taraneh Nik-Khah Thuan Nguyen	Dan Schultz
Chris Medak	William Saunders	Andrea Vona			Katherine Pease	Ryan Thiha
Mayra Molina	Philip Serpa				Tania Pineda Enriquez	
Bruce Orr	Melissa Turcotte				Mahesh Pujari	
Christian Romberger	Amanda Wagner				Eric Stein	
Kat Superfisky	Patricia Wood				Ryan Thiha	
Kris Taniguchi-Quan					Bryan Truong	
					Belle Zheng	
					Miller Zou	

BREAKOUT GROUP EXERCISE

- 1) **What is a goal for your organization and/or**
- 2) **What do you want from the river?**

In Person Participants: write your response and name on available post-it notes and then place post-it note on your theme board located around the room.

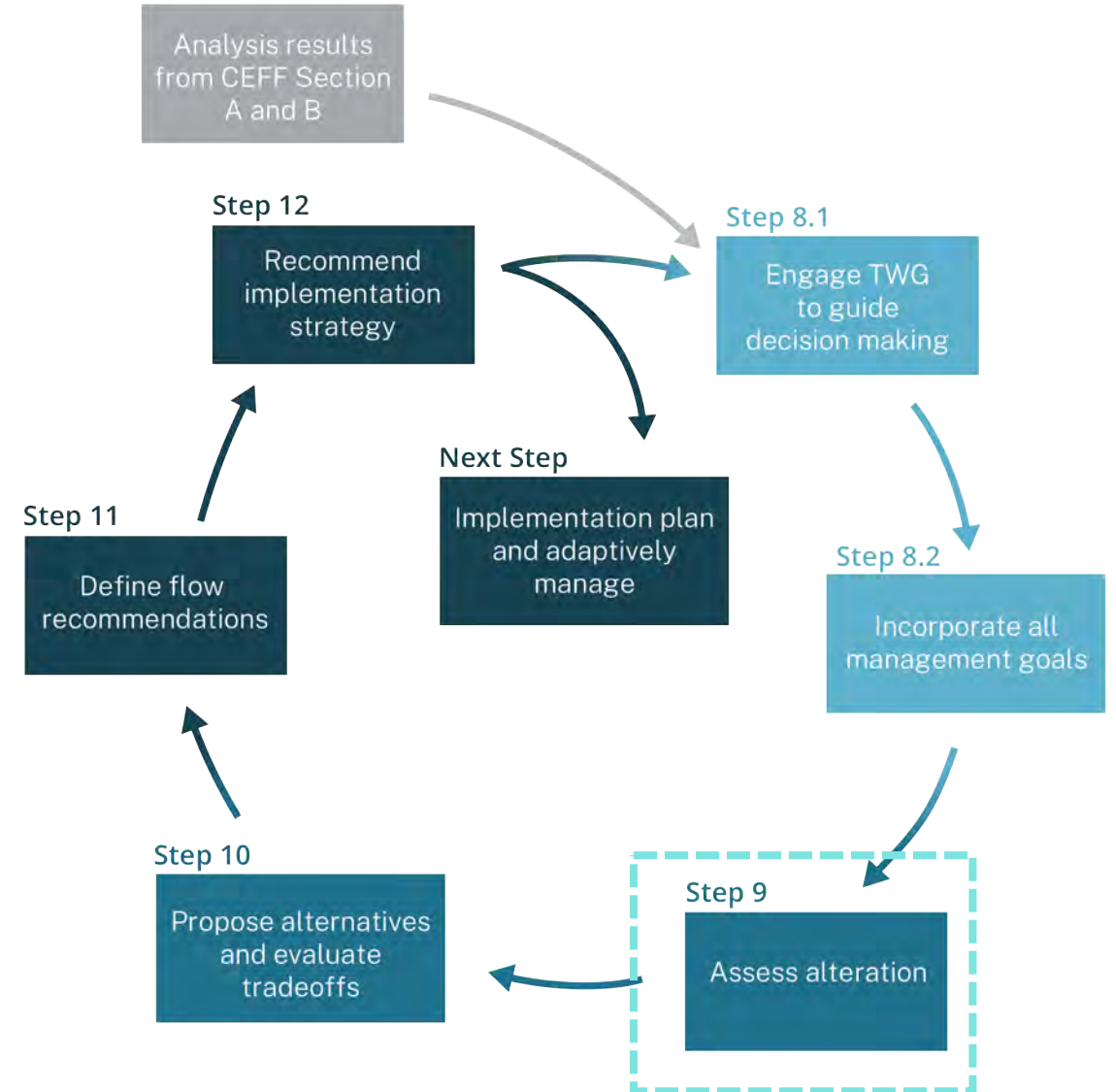
Virtual Participants: compose your response and be ready to type it into the chat of the zoom breakout room when you arrive

TTWG Workplan Guidance

CEFF Steps 9 - 12

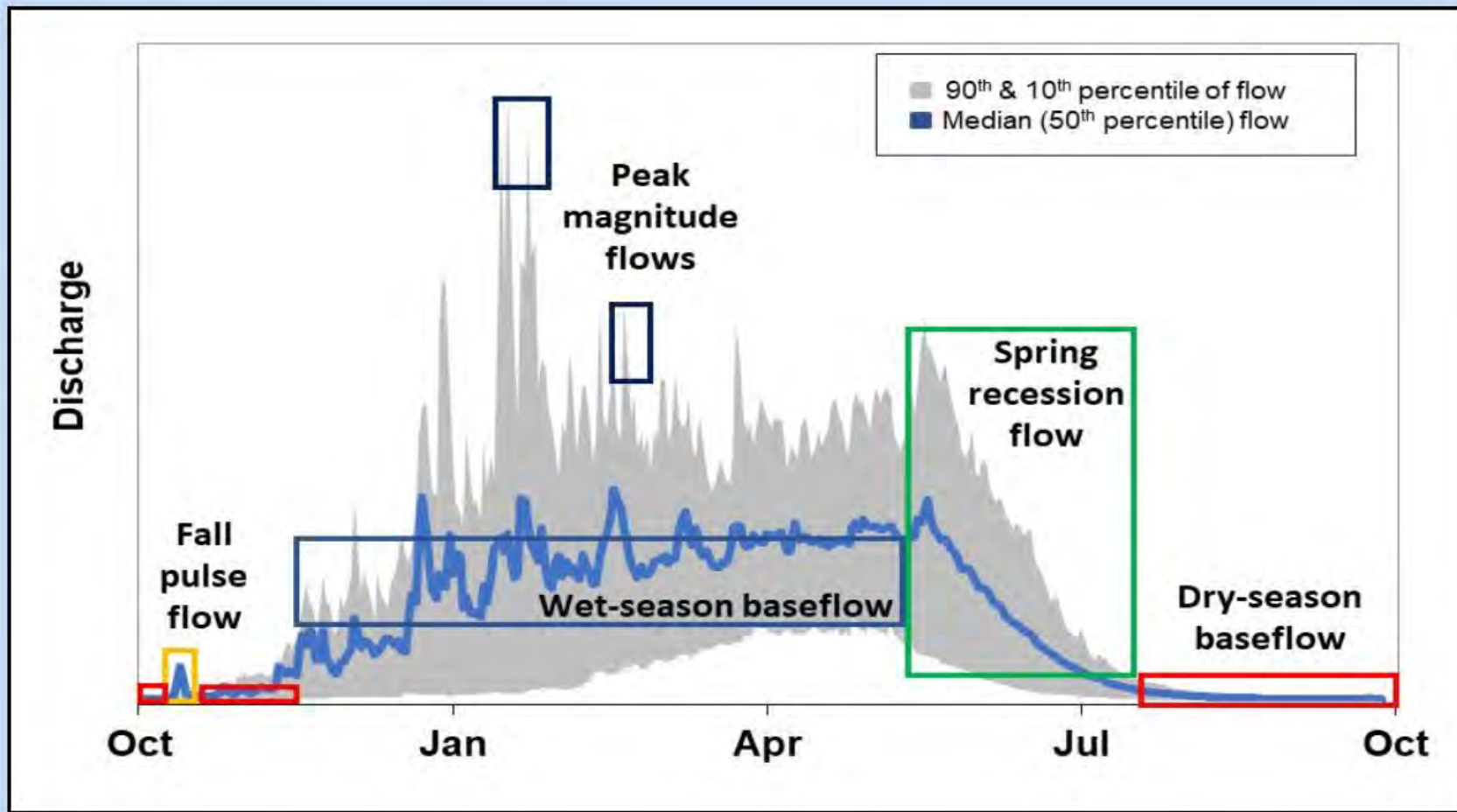
Photo credit: Ian Shive

- Step 8: Working Group / Structured Decision-Making Process
- **Step 9: Assess Flow Alteration and Planned Flows**
- Step 10: Alternative Management Scenarios
- Step 11: Flow Recommendations
- Step 12: Proposed Implementation Plan Outline



TTWG Workplan: Step 9.1 Flow Alteration Assessment Methods (Dec. 2024)

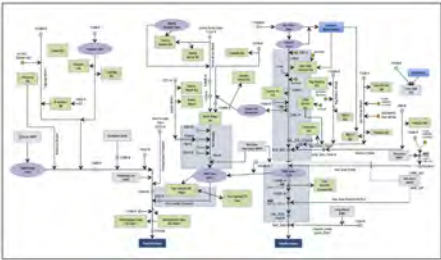
KEY NEED FROM TTWGs: A method to produce a hydrograph that accounts for theme influences on flows



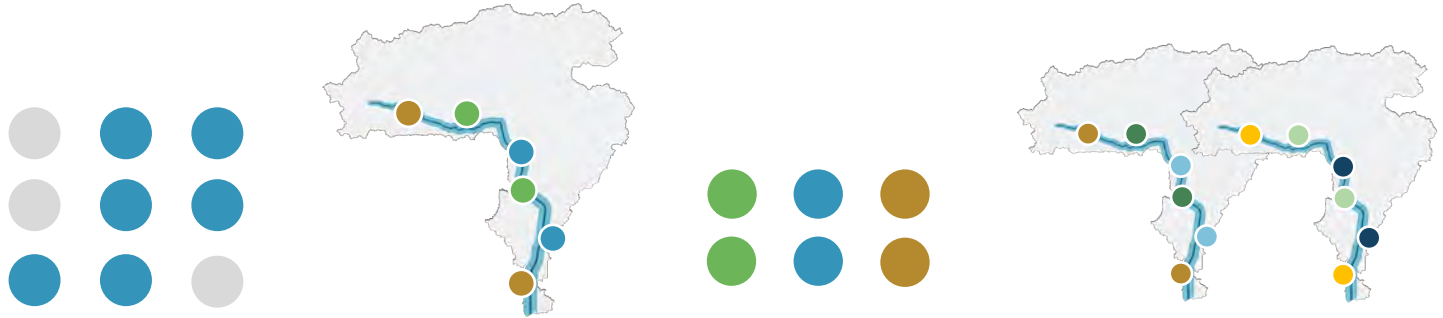
Source: CEFF Technical Report Figure 1.3 (California Environmental Flows Working Group 2021)



Task 9.1: Flow Alteration Assessment Methods (existing and planned projects)



Artes: An Integrated Model of Water Supply in L.A. County. Porse, E., & Pincetl, S. (2017).



Step 9.1A

Review existing models and datasets

What information can we build from to assess conditions?

Step 9.1B

Spatial database framework

Set up database for project inventory

Step 9.1C

Assessment methods for existing and planned conditions

a.

Define relevant “existing”, “planned” projects.

b.

Partition project polygons, discharge points, LOIs

c.

Qualitatively assess flow influence on goal achievement

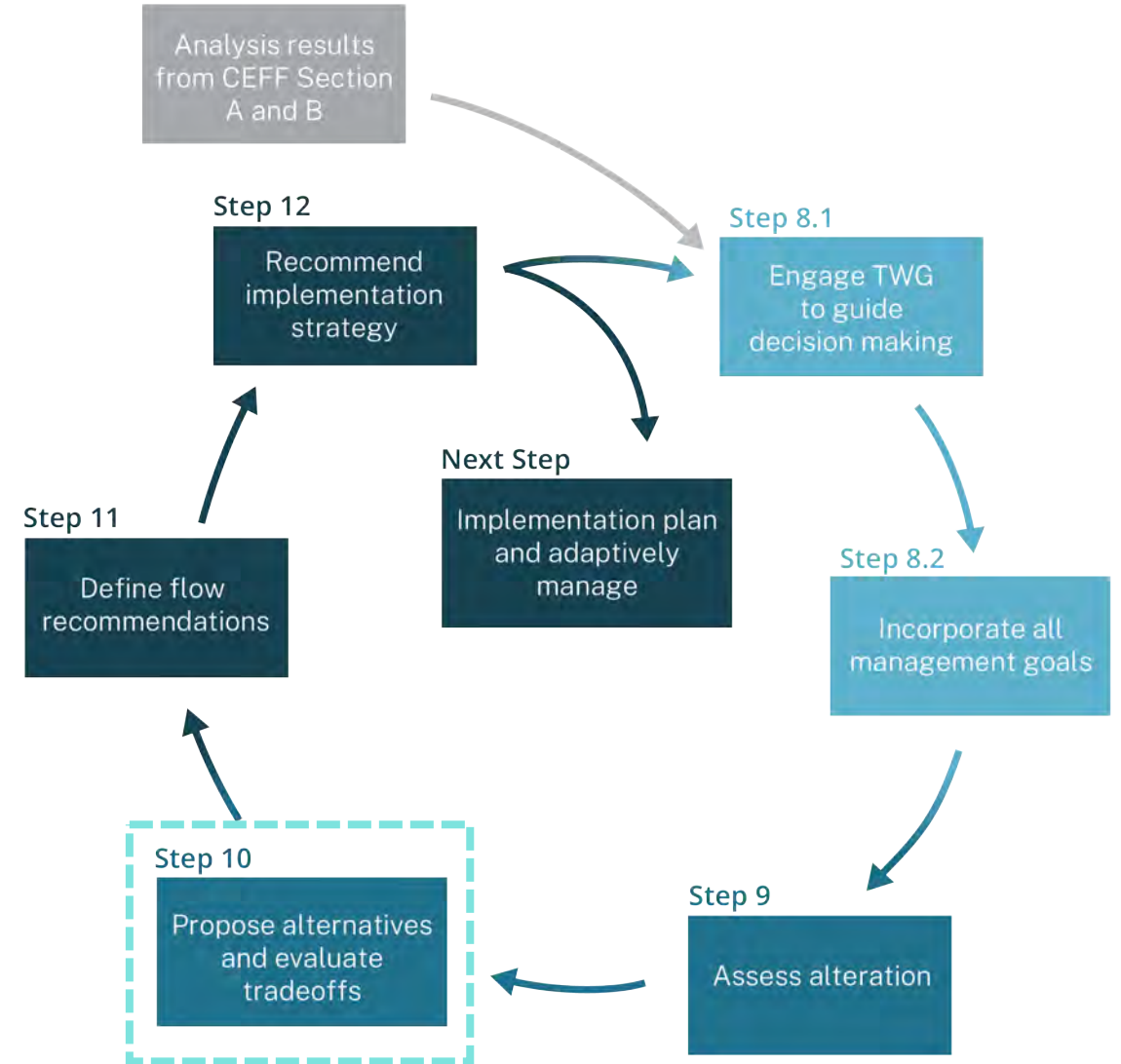
Step 9.2

Flow assessment measurement

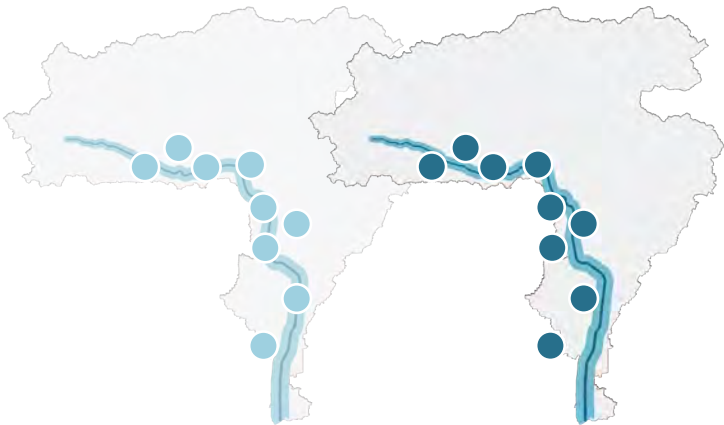
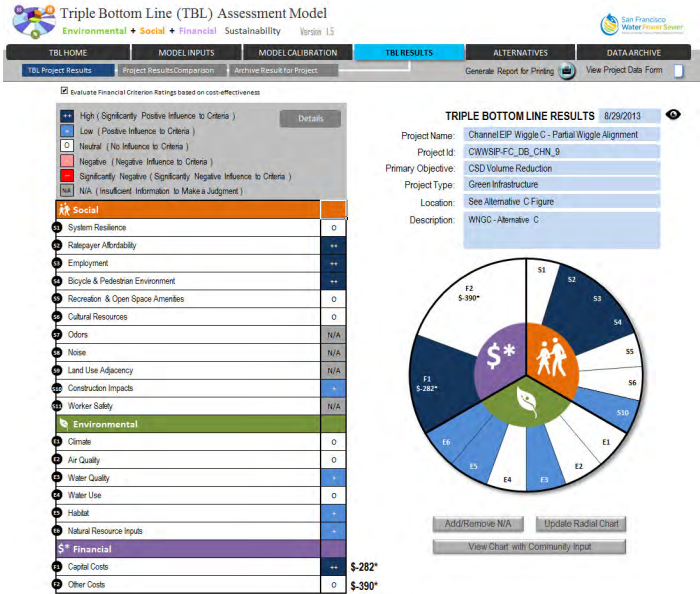
Complete measurement following 9.1



- Step 8: Working Group / Structured Decision-Making Process
- Step 9: Assess Flow Alteration and Planned Flows
- **Step 10: Tradeoffs Analysis and Alternative Management Scenarios**
- Step 11: Flow Recommendations
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Task 10: Tradeoffs Analysis & Alternative Scenarios - overview of steps



Step 10.A

Flow alteration
synthesis

*Evaluate existing
and planned
conditions
relationship to
flow.*

Step 10.B

Tradeoff analysis
for theme

*Determine cross-
theme conflicts,
opportunities.*

Step 10.C

Alternative
scenarios
development

*Suggest alternative
actions based on
tradeoff analysis
results.*

Step 10.D

Alternative scenarios
evaluation and
tradeoffs
optimization

*Assess tradeoffs of
alternative scenarios,
Refine alternatives.*

CEFF Steps 8-10 Process Example

Steelhead Fish Passage

Photo credit: Ian Shive

Example Step 8: Establish biodiversity goals & performance measures

Goal: *Ensure the long-term persistence of a viable, self-sustaining, wild Southern California steelhead population*

Performance measure (preliminary): Adult steelhead migration is supported X percent of the time in the mainstem LA River from the Pacific Ocean to Arroyo Seco from Y (time of year) to Z (time of year), where X, Y, and Z are defined from existing plans or subject matter experts in the TTWG. (*Replicate performance measure for juvenile steelhead*).

Performance measure (preliminary): Improve passage opportunities in the mainstem LA River from the Pacific Ocean to tributaries from L (time of year) to M (time of year) for adult and juvenile steelhead by actively managing dam operations on tributaries, while supporting adequate spawning and rearing habitat in tributaries for N population recovery targets, where L, M, and N are defined from existing plans or subject matter experts in the TTWG.

Example Step 9: Steelhead existing condition assessment

FINAL TECHNICAL MEMORANDUM • SEPTEMBER 2020

Conceptual Ecological Model and Limiting Factors Analysis for Steelhead in the Los Angeles River Watershed



PREPARED FOR
Council for Watershed Health
177 E. Colorado Blvd., Suite 200
Pasadena, CA 91105

PREPARED BY
Stillwater Sciences
555 5th Street, 35th Floor
Los Angeles, CA 90013

Stillwater Sciences

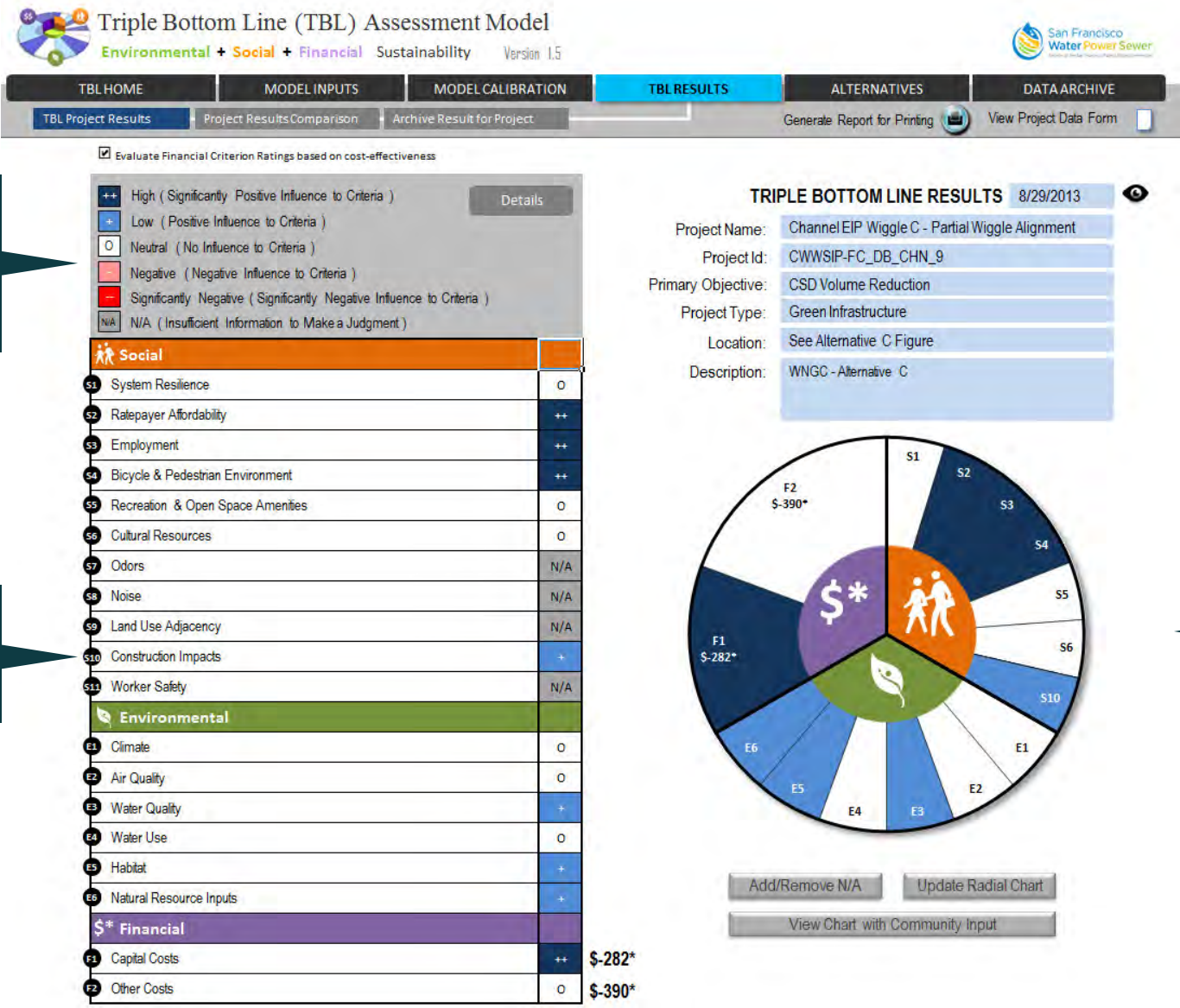


Example Step 9: Steelhead management actions planned condition assessment



Fish Passage Projects in Planning

Example Step 10: Assessing tradeoffs (example decisions support tool from San Francisco)



Ordinal ranking system limits impressions of false precision

Have the option to show or hide those goals not impacted

Example Step 10: Alternative Scenarios (solving conflicts, finding win-wins)



Dam release environmental flows offset reduction in WWTP discharge



LAR NMFS steelhead recovery goals

CEFF Steps 8-10 Process Example

Flood Risk Management

Photo credit: Ian Shive

Goal (preliminary): *Achieve flood risk management goals in all reaches of the river*

Performance Measure (preliminary): Design channel modifications to accommodate 1% ACE (100-year) flood flow in at risk reaches in the Elysian Valley

Example Step 9: Flood risk and management facilities existing condition assessment

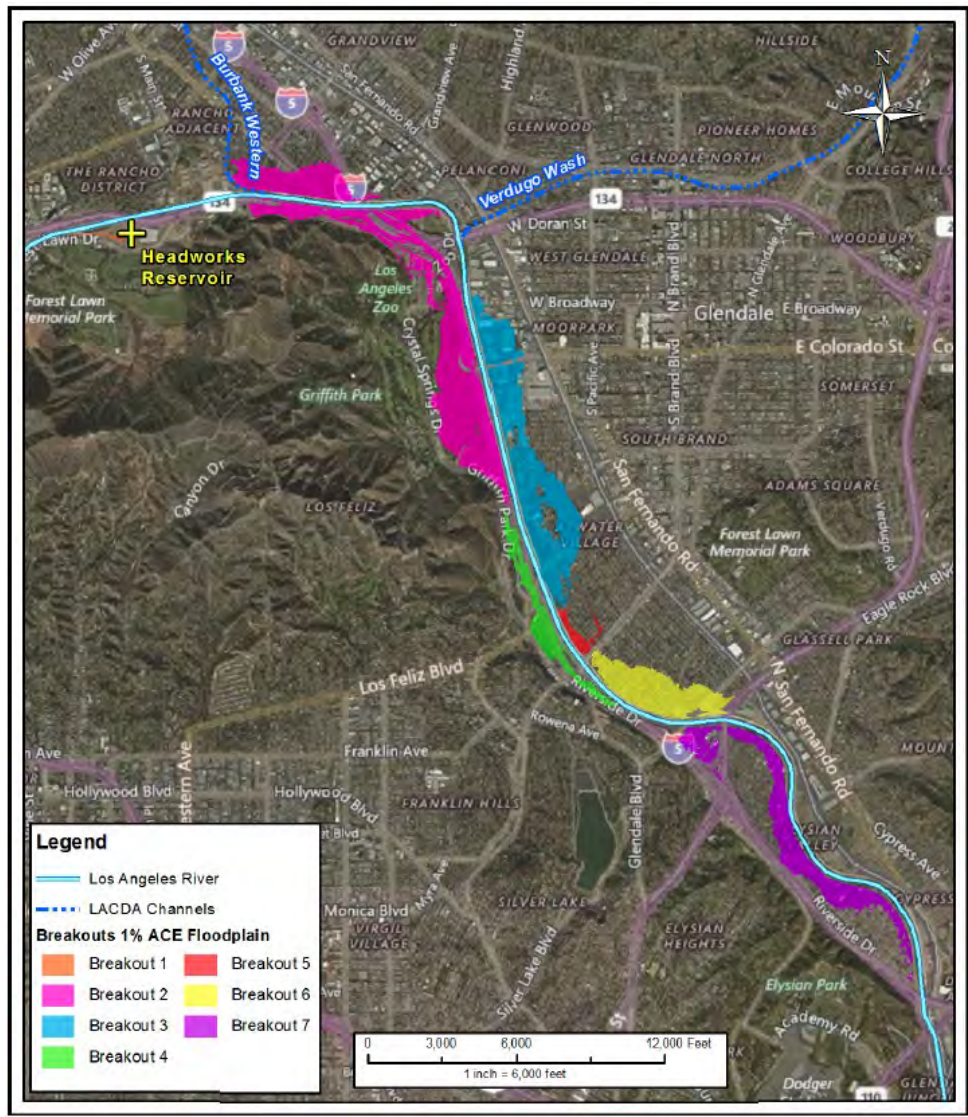
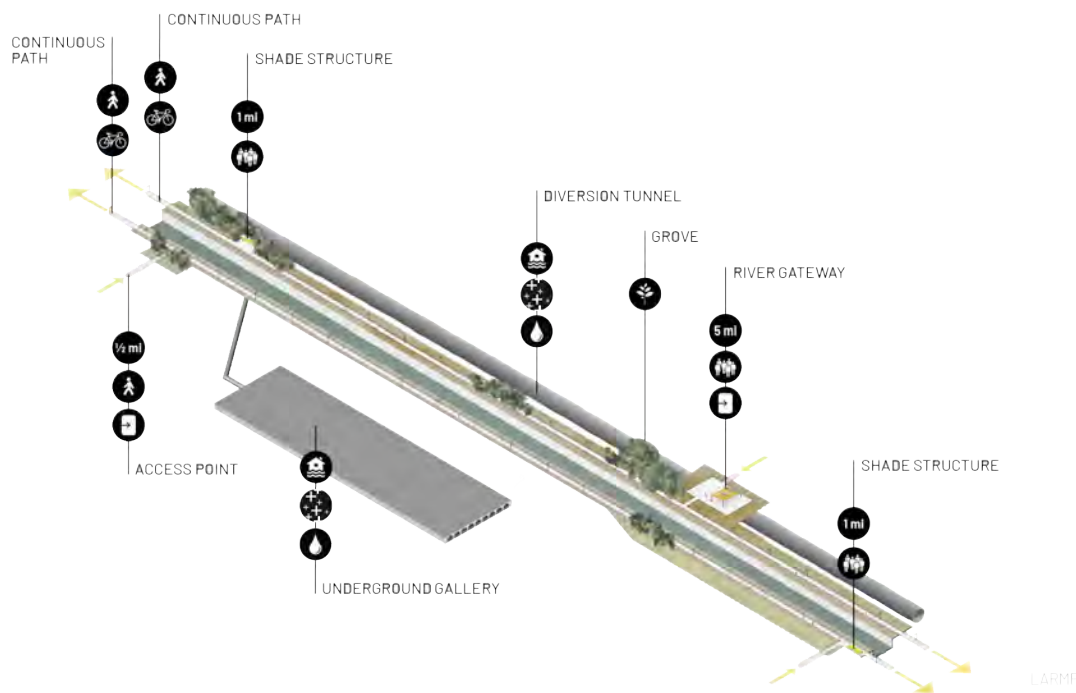


Figure 8. Los Angeles River 1% ACE (100-year) Flood: Overtopping Locations

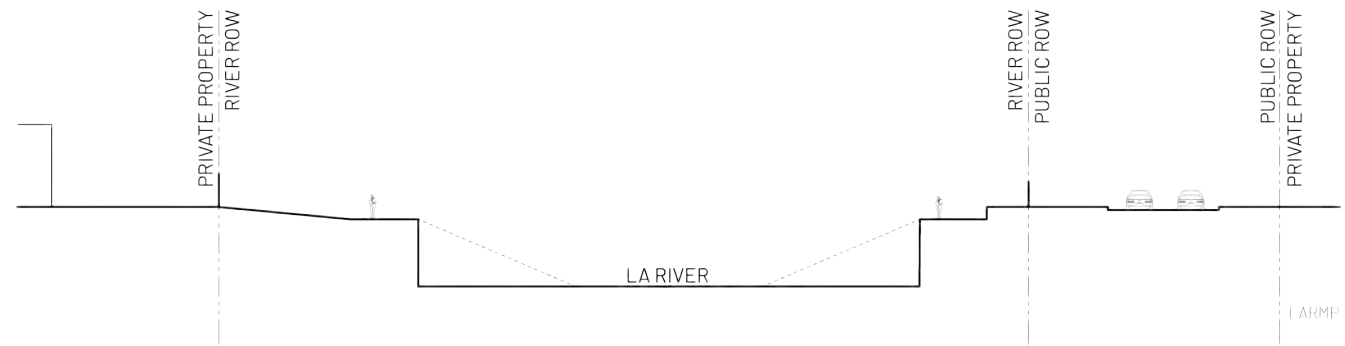


Sepulveda Basin flood control operations

Example Step 9: Flood risk management facilities planned condition assessment

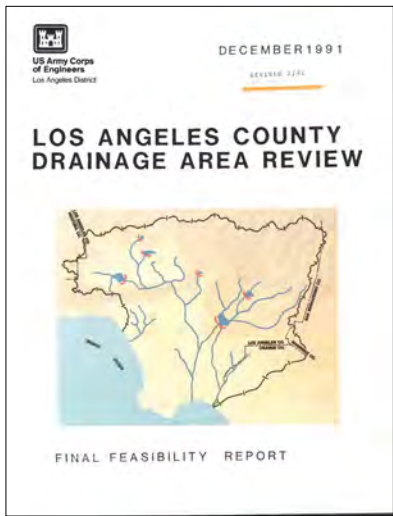


Box Channel: Diversions Kit of Parts.
Source: LA River Masterplan

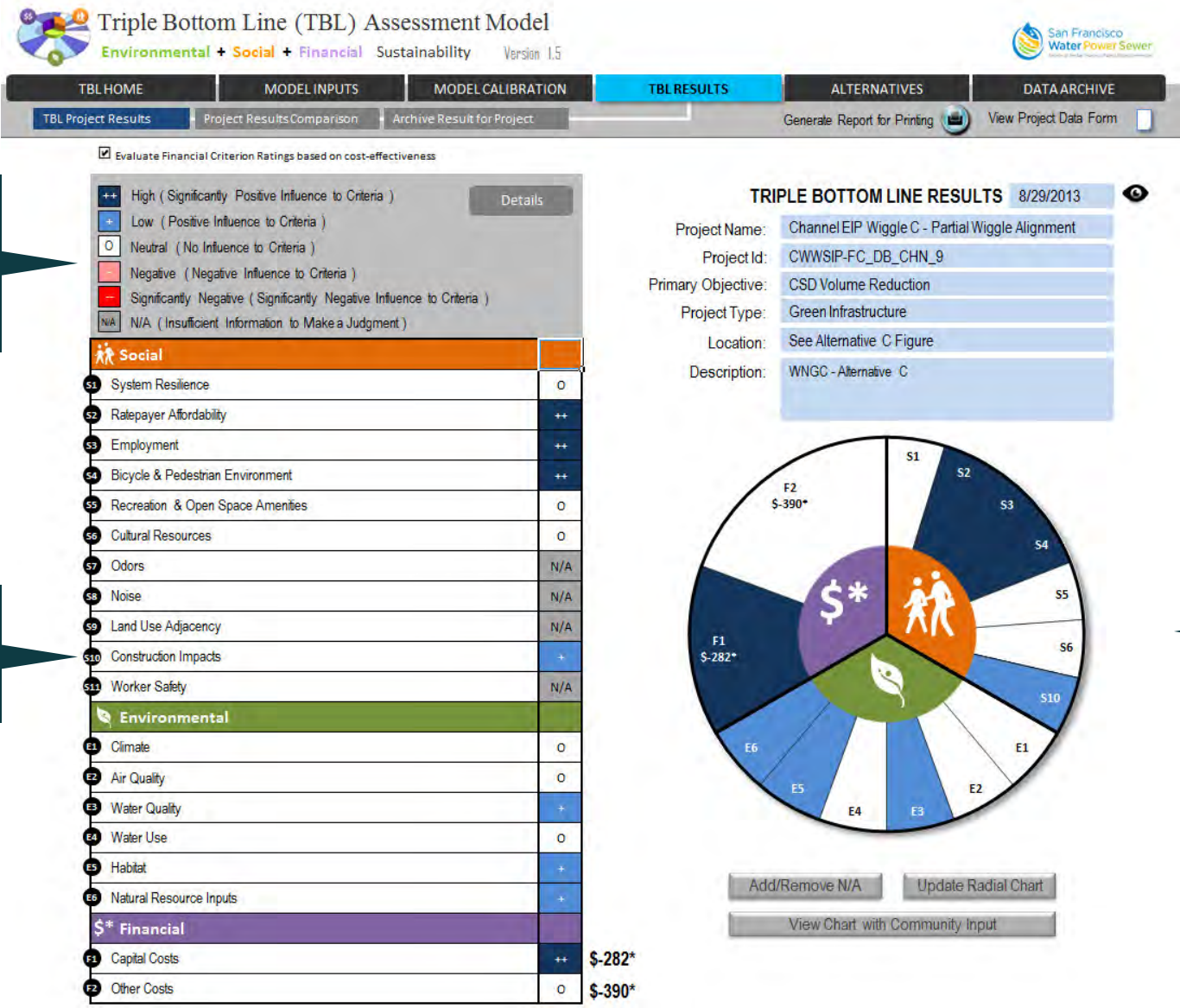


Converting an existing trapezoidal channel into a rectangular channel can result in a substantial increase in channel capacity; however, this strategy should always be combined with other multi-benefit components.

Source: LA River Masterplan



Example Step 10: Assessing tradeoffs (example decisions support tool from San Francisco)



Ordinal ranking system limits impressions of false precision

Have the option to show or hide those goals not impacted

Example Step 10: Alternative Scenarios (solving conflicts, finding win-wins)

Off-channel flood storage concepts for multi-benefit exploration identified in Tradeoffs Analysis



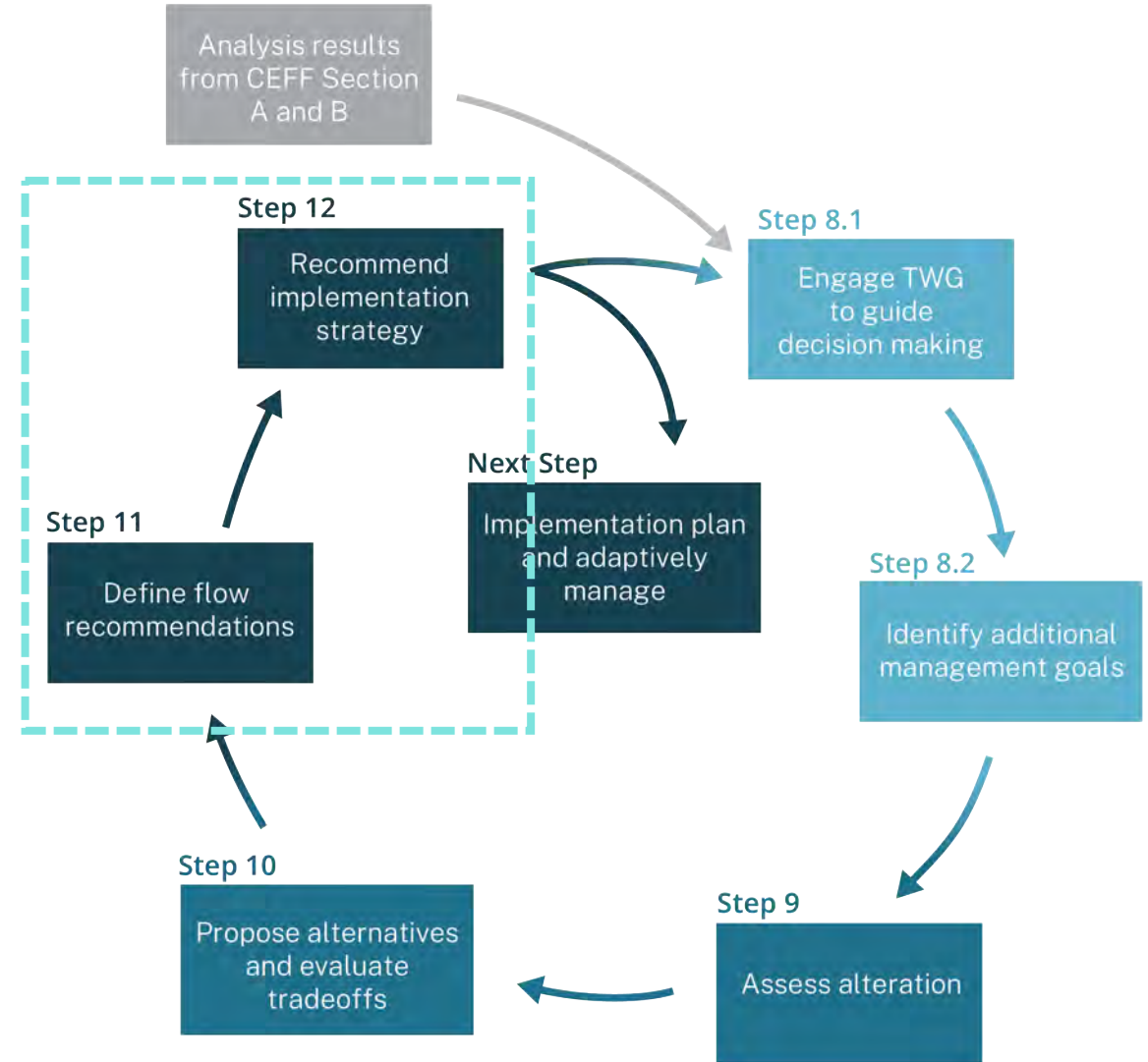
Figure 2-30. This diagram shows mine locations. San Gabriel River Masterplan (2006)



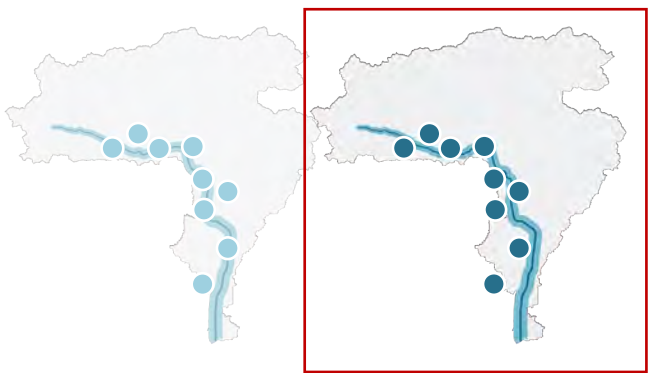
Figure 4-30 Reach 8. LATC, Looking Southeastward (Existing and Rendering of Proposed Restoration Measures)¹⁶

CEFF C Process: Steps 11-12

- **Step 8:** Working Group / Structured Decision-Making Process
- **Step 9:** Assess Flow Alteration and Planned Flows
- **Step 10:** Tradeoffs Analysis and Alternative Management Scenarios
- **Step 11:** Flow Recommendations
- **Step 12:** Proposed Implementation Plan Outline



Step 11 & 12: Flow Recommendations



Step 11A

Preferred
scenario
selection

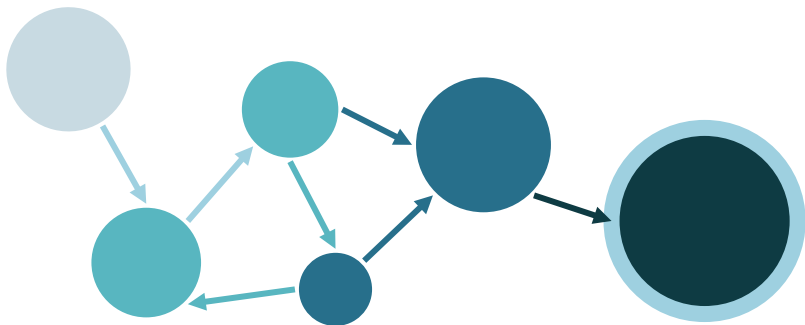
*Final evaluation
of value
tradeoffs, decide
on preferred
scenario*



Step 11B

Preferred
scenario
refinement

*Final goal
achievement
measurement
and optimization*



Step 11C

Recommended
flows and
management
actions

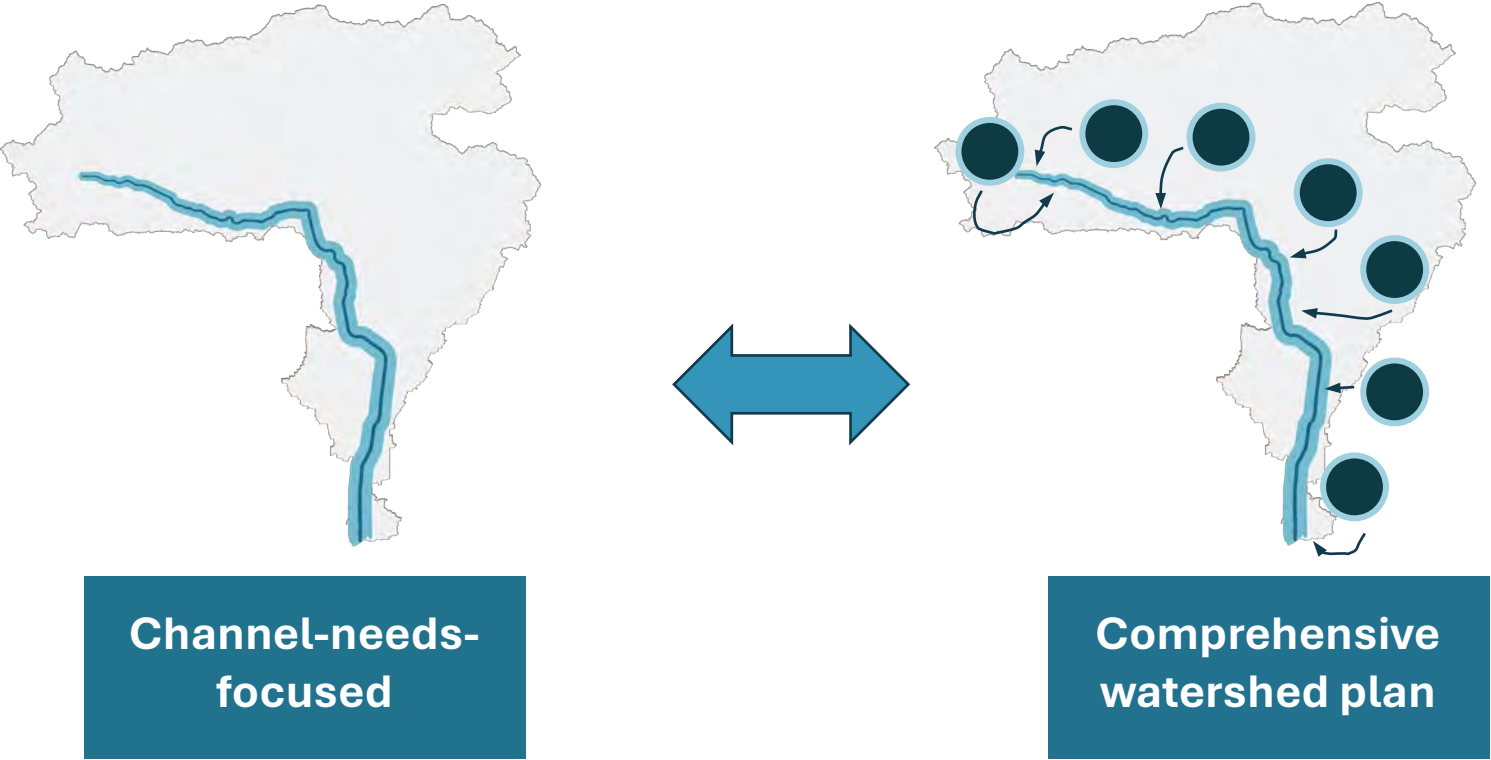
*Documentation of
recommendations*

Step 12

Implementation and
adaptive
management plan
guidance

*Path to creating these
plans in the future*

CEFF Step 10-12: Potential Outcomes Spectrum



**Channel-needs-
focused**

**Comprehensive
watershed plan**

Discussion

Discovery Phase of CEFF

Photo credit: Ian Shive

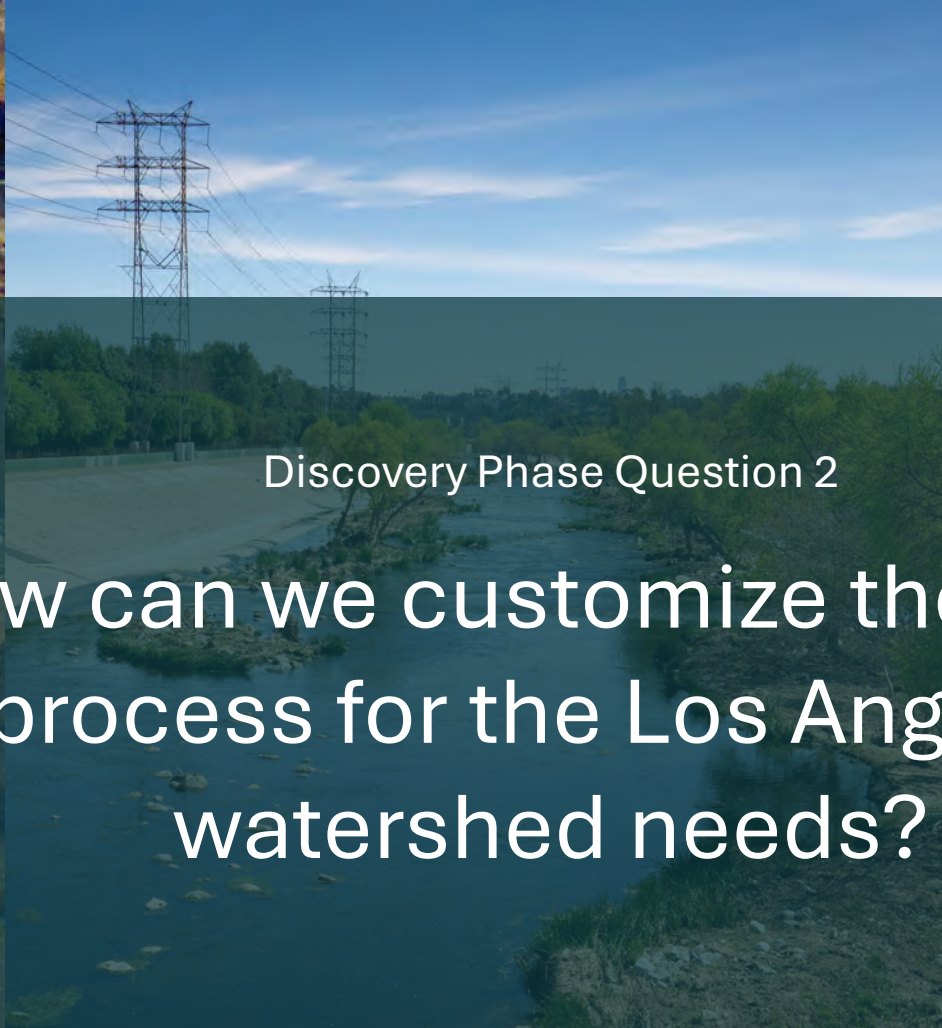


Discovery Phase Question 1

What are your concerns or challenges with the CEFF process?



Photo credit: Mark Capelli



Discovery Phase Question 2

How can we customize the CEFF process for the Los Angeles watershed needs?



Photo credit: Ian Shive



Photo credit: M. R. Perry

Discovery Phase Question 3

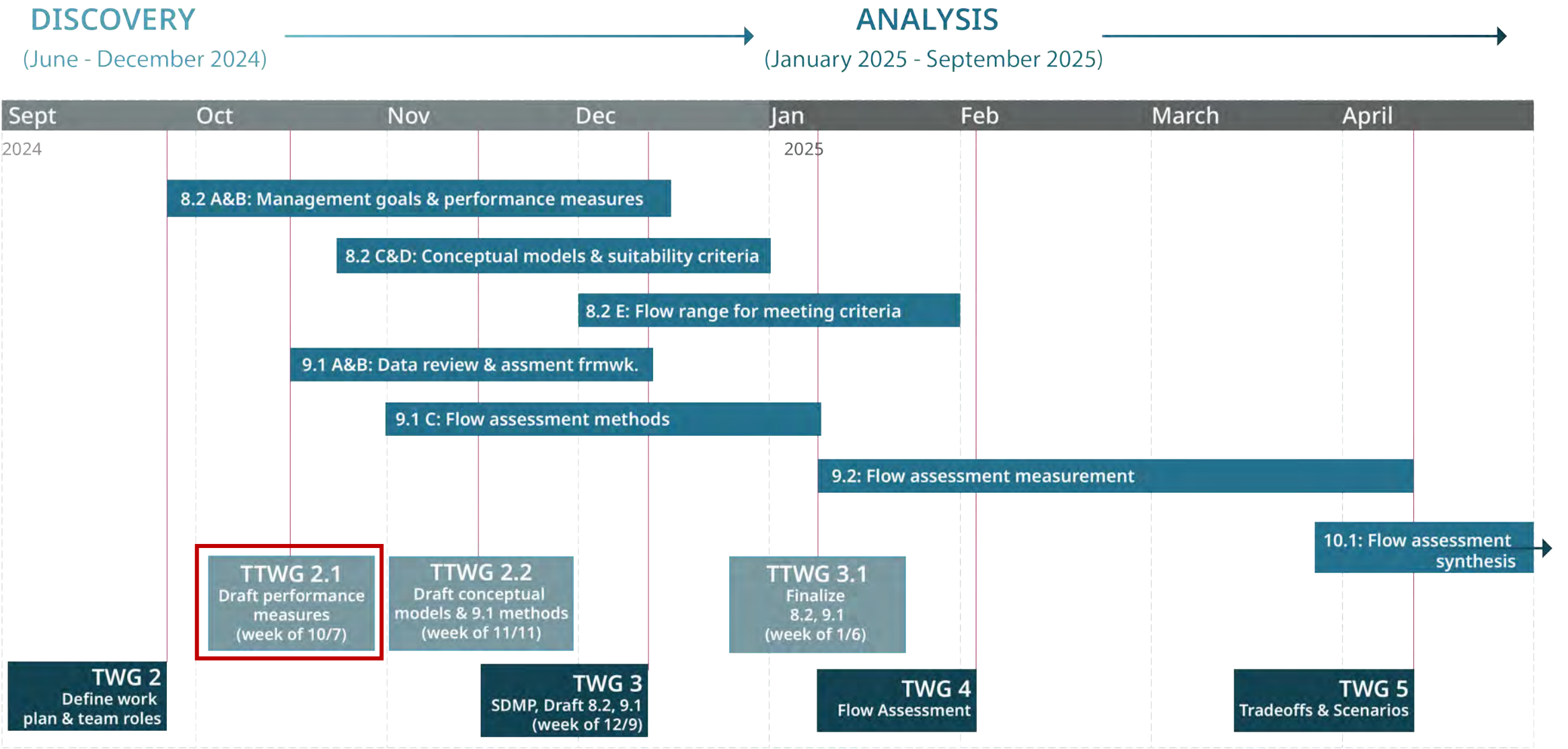
How will the CEFF process help you, your organization, and the Los Angeles region achieve goals?

Next Steps

TTWG WORKPLAN & GOALS

Photo credit: Ian Shive

TTWGs next steps (Completion of CEFF Discovery Phase)





Mountains Recreation &
Conservation Authority



LA River CEFF

LA River from Fletcher Street Bridge, Los Angeles, CA
Cropped photo by "[Downtowngal](#)" used under [CC BY-SA 4.0](#)