

Los Angeles River Instream Flow Criteria: Technical Study
Technical Advisory Committee Meeting (Webinar)
March 11, 2022 1:00 – 3:00 pm

Meeting Objectives:

- Discuss availability of final products
- Present results of water quality analysis
- Discuss preliminary results of restoration analysis

Participants:

Adena Hopenstand
Andrea Dell'Apa CWH_LARW (Council for Watershed Health)
Andrew Collison (ESA Consultants)
Anthony Hicke (ULARA WM)
Anthony Nercessian (LA DWP)
Brian Baldauf (MRCA)
Chris Medak (USFWS)
Dan Schultz (SWRCB)
David Coupe
Dean Wang (Long Beach Water Department)
Derek Booth (Stillwater)
Dave McPherson (USBR)
Edward Belden (LA Mayor- LA River Works)
Elisha Wakefield
Felicia S.
Hassan Rad (LA City)
Jane Tsong (Watershed Conservation Authority)
Joe Gonzalez (RMC)
Jonathan Bishop (SWRCB)
J Portugal
Kyle Evans (CDFW)
Lori Webber (State Water Board)
Maddy Uetrecht
Manuel Aguilar (City of Los Angeles)
Melanie Tory
Melissa Lane
Michael Affeldt (LA City)
Mike Lyons (MBC Aquatic Sciences)
Nate Butler (Stillwater Sciences)
Nathan Holste (USBR)
P Fernandez
Rosi Dagit (RCD Santa Monica Mountains)
Sarah Rascon (MRCA)
Stefani Daryanto
Steve Skripnik

Project Team:

Anneliese Sytsma (Colorado School of Mines)
Daniel Philippus (Colorado School of Mines)
Terri S Hogue (Colorado School of Mines)
Jordy Wolfand (University of Portland)
Eric Stein (SCCWRP)
Kris Taniguchi-Quan (SCCWRP)

Steven Webb (LARWQB)
Tatyana Isupov (SWRCB)
Wendy Katagi (Stillwater)
Yareli Sanchez (Council for Watershed Health)

Agenda

1. Introductions and meeting goals – 1:00 – 1:10
2. General updates and project status – 1:10 - 1:30
 - a. availability of products
 - b. publications
 - c. questions and feedback on products to date
3. Water quality effects analysis – 1:30 – 2:00
4. Restoration analysis – 2:00 – 2:45
 - a. Colorado School of Mines preliminary results
 - b. Status of Stillwater/NHC efforts
 - c. Coordination
5. Wrap up and next steps – 2:45 – 3:00

Meeting Notes:

Temperature analysis:

- Chris Medak: for the scenario of increasing the low flow channel width and depth, wouldn't an increase in both create shallower depths and warmer temperatures?
 - The temperature scenario with a larger low flow channel also included demolishing a portion of the concrete channel to allow for subsurface upwelling. That was the key mechanism of cooling. Link to the paper:
<https://www.frontiersin.org/articles/10.3389/fenvs.2021.749085/full>
- Nathan Holste: What flows were modeled here? How were storm runoff events accounted for? As base flows the WRP effluent comprise a large percentage, but when fish migrate in response to storm events the WRP flows would comprise a small percentage of the flow.
 - This paper was modeling non-storm flows during dry season, as opposed to stormflows
- Wendy Katagi: We do have comments and questions about this publication as we reviewed this carefully and found the approach and conclusions to be questionable. The publication would benefit from more local data, southern steelhead tolerance differences from other salmonids, among other points that steelhead experts have found—especially steelhead migrating in SGR, OC Trabuco/SJ, and other systems with warmer temps than reflected here. Derek will cover this.
- Edward Belden: Major challenge in that there isn't comprehensive temperature data collected in the river. Great for everyone to help fill this gap.
 - Jane Tsong: Hi Edward, thanks for your question about data. Due to SCCWRP's identification of the data gap in temperature, WCA has been working with Heal the Bay to collect temperature data. Though they've been taking data by hand, we're in the final stages of obtaining the Flood Control permit that will enable us to install loggers to get

new data this coming dry season. We hope this data can be incorporated into the models in the future.

- Nathan Holste: Did the study consider the historical water temperature data from the USGS Long Beach gaging station? There is data from the early 1980s that shows water temperature is much lower (below 25oC) during the early part of the year. (All associated with storm events during Feb and March)
 - Yes, we did use gage data, but our study did not include the storm period, which would be expected to be cooler
- Nathan Holste: Is there a way to get measured temperature data of the wastewater effluent? That would seem to be a key data source.
 - Yes, this was used as input into the i-tree cool model
 - Stefani Daryanto: @Nathan Holste you can download data of wastewater effluent from CIWQS https://www.waterboards.ca.gov/water_issues/programs/ciwqs/
- Manuel Aguilar: The discussion has focused on implications on fish wildlife. What about the implications of introducing non-native species into the LA River, such as fish?
 - Warmer conditions in the river are more conducive to non-native species. But to reintroduce cold water species, need to lower temperatures *and* deal with the non-natives

Water Quality Modeling –

Suspended Solids and Metals:

- Chris Medak: any comparison of change in concentration versus inflow of stormflows?
 - Simulation was across 7 water years, we didn't look at any wet weather capture scenarios, we looked at reducing dry weather flows that go through stormdrain (e.g., irrigation overspray).
 - How do these concentrations compare if looking at stormwater and wastewater?
 - Depends on which constituent. These plots are for the dry-weather only. Goal is to understand interplay of increasing reuse and increasing dry-weather diversions. If we do 50% reuse and 50% reduction in urban drool, we would essentially see no change from baseline. For lead, if you reduce WRP, the concentrations of lead in the river will go up by 80%. If you don't have WRP discharge, you lose the dilution effect in the river.
 - Terri Hogue and Mark Gold have done a lot of work on wet weather water quality for many watersheds in LA

Contaminants of Emerging Concern (CECs):

- Melanie Tory: The term "baseline" keeps being used. It would be helpful to clarify what you mean by "baseline." As I understand it from the last report, the "baseline" conditions were developed from a limited number of water years for which data was readily available.
 - Yes, the term baseline is the same as the previous study and was based on WY 2011-2017, the years where we had sufficient data and limited WRP reuse.
- Lori Webber: Is the long-term goal to develop a data dashboard to look at different scenarios and the effects it would be, similar to the flow ecology analysis?
 - No, it's possible but we don't have funding to do that. It could be done with additional funding or in partnership with another group. The restoration work that Anneliese is

leading would be a better candidate for a data dashboard as there are many scenarios and options that you could play around with.

Restoration Analysis:

- Andy Collison: Did you look at changing low flow channel in concrete reach or in soft-bottom of the Glendale Narrows?
 - We did not evaluate the reach through the Glendale Narrows. Rather, we evaluated a reach upstream of Glendale WRP (LA14) that does not currently have a low flow channel, and a concrete reach upstream of Compton Creek confluence (LA3) that does currently have a low flow channel.
- Wendy Katagi: Native rainbow trout (*O. Mykiss*) are currently found in the Upper Arroyo Seco, an upper tributary of the LA River per CDFW 2022
 - LA Times and underwater camera video showing native rainbow
<https://www.facebook.com/watch/?v=1171356226666408>
- Chris Medak: willow shear stress seems low, they naturally require periodic scour
 - We analyzed if we could maintain a shear stress where they are not repeatedly getting scoured outside of normal conditions. We have data on adult willow and ability of willows to recolonize. Looking at the more sensitive ranges, ability to allow seedlings to persist and not perpetually scouring them out. What we are developing is an approach to think about the optimization exercise. We can add in other species/life stages or adjust the ecohydraulic targets, as needed.
 - Derek Booth: Keep in mind that the study borrowed data from other studies that were not located in the LA River. What we are hearing about here is a framework. In many cases, we don't have the data right now to populate these models that align with unique reality of the LA River. We're focusing on how to best use and develop this kind of framework.
- Nathan Holste: If you're looking at sensitivity to width and depth dimensions, I suggest that you should also look at integrating that with sensitivity to channel roughness. Hydraulics can be quite sensitive to roughness assumptions. Low submergence ratios (shallower depth) tend to have larger effective roughness than higher flows. Note that HEC-RAS does not incorporate this and is also sensitive to the width of the roughness zones
 - Yes, but echoing Derek in that we are setting up a framework and process. Additional details and other dimensions could be added to this framework.
- Nathan Holste: As the work progresses, you may want to consider species life history needs to focus on different seasons rather than the metric of number of days for the whole year
 - Yes, we have discussed this and also ran analysis on different seasons but ultimately showed results across entire year. We will circle back to this suggestion.
- Edward: were the low flow channel dimensions theoretical or based on actual channel dimensions?
 - Both, we considered the actual low flow channel widths, where applicable, and used other proposed designs to bookend the range of widths that we simulated.
- Chris Medak: lower LA River is important for bird foraging so while it may be less desirable for willow restoration, the trade-off of maximizing water diversion below LA14 may have impacts on bird foraging resources. This was not at all captured by the baseline modelling because the focus species was determined to not have habitat under current conditions (therefore either the

model is incorrect or the representative species for bird foraging resources was not appropriate).

- Great point, thanks Chris. Since willow, steelhead, and Santa Ana sucker are not the only species of importance, we will be careful not to make recommendations for flows based on those species alone. We will consider looking into including bird foraging habitat (or a proxy) in the future

Action Items:

- Post meeting materials on the study website and share it with TAC
- Continue to coordinate with other restoration planning efforts
- Consider ways to incorporate different channel roughness scenarios into the restoration analysis
- Analyze patterns in preliminary temperature monitoring data
- Share draft reports with the TAC for review