Stakeholder Engagement Summary Matrix

Design Concept Alternatives

Lower Cordova Creek Planning Project

June 2021

Stakeholder Input	Project Team Response
Fish Habitat	
NMFS and CDFW fisheries biologists expressed concern over fish stranding in the creek.	Concerns regarding stranding are serious and warrant further investigation. The design team has previously and will continue to consider how to minimize stranding. The naturalized creek was designed with riffles that would hold back water if flows rapidly declined. The heights of these riffles have effectively been increased by beaver dams, creating larger pools upstream. While the design encourages fish passage, it should not exacerbate stranding. Currently, fish can pass into Cordova Creek when flows in the main channel are sufficient (and the jump into the creek is slowing decreasing at the head cut). A more hydrologically connected creek confluence should be designed to improve passage both in and out of the creek. The design team emphasizes that fish habitat in the creek may not be good during all years but considering that habitat in the lower American River (and especially off-channel rearing habitat) is so limited, an increase in habitat during some years is likely to be beneficial.
NMFS and CDFW fisheries biologists as well as SAFCA staff expressed concern over sustainability of flows given Aerojet may someday stop discharging remediated groundwater.	While its uncertain how long Aerojet will continue pumping groundwater, contaminant concentrations in the pumps which feed the creek are not showing decreases and Regional Water Board staff estimated discharges would continue for closer to 200 years. The opportunity to take advantage of perennial flows the remediation over this long timeframe to enhance habitat is a driving motivation for the naturalization. Aerojet must shut off discharges to the creek periodically for maintenance or emergencies. While they are not required to protect fish when shutting off water, Aerojet staff expressed willingness to be more protective of fish. and

	Water Forum provided Aerojet with information on the most critical time to maintain flows (i.e. before juveniles have emerged). As mentioned elsewhere, riffles and beaver dams hold back water and mitigate the effects of stops in discharge. It is also important to note that the creek drains a large amount of land naturally, so while flows without remediated water from Aerojet would not be perennial, runoff would continue to flow through the creek after rain events. The design team requested a model from Rancho Cordova to help quantify flows. A more hydrologically connected creek confluence should be designed to improve resilience to potential future changes by creating potential for alcove-type habitat.
CDFW fisheries biologists asked if there were other creeks which discharge into the lower American River which	Water Forum and the design team investigated other creeks using aerial imagery and in conversations with stakeholders like the Sacramento Area Creeks Council. While there are a few other creeks – Buffalo Creek and another near Olive Avenue – they do not appear to provide greater opportunities to create off-channel habitat.
CDFW fisheries biologists expressed concern that fish could pass upstream of the naturalized creek into the existing concrete channel, effectively ending up in an ecological trap – and in neighbor's backyards.	Fish passage into unideal habitat is a serious concern warranting more investigation and potentially action. Water Forum consultant Cramer Fish Sciences previously prepared a memo to cbec evaluating the potential for fish to pass upstream of the naturalized portion of the creek. At high flows it appeared that they could pass upstream into the un-naturalized portion of the drainage – however, fish should also be able to pass back downstream. Their modeling found that the designed velocity dissipater at the upstream

	end of the naturalized stream did not increase fish passage above it. This memo was shared out to the stakeholder group.
Ecosystem and Riparian Species	
Michelle Stevens, CSU professor and scientist working at Bushy Lake, encouraged including basking areas for Western Pond Turtles and thinking about the complex interactions between turtles, salmon and beavers.	Design team is working to include basking areas in the confluence. Basking areas would be subject to higher lower American River flows and would include wood that needs to be ballasted. After attending the CA Beaver Summit, Water Forum reached out to hosts/presenters Kate Lundquist, Occidental Arts and Ecology Center; and Karen Pope, US Forest Service – all stakeholders who can contribute expertise in designing for beaver synergy on the creek.
CNPS volunteer Dan Meier expressed concern that preserving one concrete bank to the Alternative 1 would lead to a creek that is only partially naturalized.	The design team shares the desire to create more opportunity for restoration with a longer alignment and recommends Alternative 2. If there is a preference for a confluence alignment which is straighter, steeper, and less disruptive to existing resources, but which has two naturalized, vegetated banks, the creek could be realigned just slightly further to the West.
SARA volunteer Betsy Weiland and CNPS volunteer Dan Meier expressed concern with disruption to mature trees and potential associated impacts to bird habitat.	Water Forum connected with a list of birders from Betsy and had a site visit with Dan Airola and a group of bird biologist who volunteer to check the bird boxes nearby. Dan and others felt that naturalization of the creek confluence would provide benefits to birds and some disruption to existing mature trees would be acceptable if construction were not completed during nesting season. Water Forum requested and WCB agreed to fund an additional vegetation survey (in place of extensive topographic survey since previously

	completed LiDAR is sufficient) to better understand impacts to mature trees and design a creek alignment which minimizes disruption.
Wildlife Biologist Dan Airola suggested the design team consider a creek alignment which follows an existing swale and decreased in grade more gradually.	The design team previously considered a similar alignment but found that the risk of bank erosion associated with this alignment was too high. Additionally, a slightly shorter creek alignment preserves opportunities to create more main-channel fish habitat as described in Reclamation & Water Forum habitat restoration plans.
Mary Maret, Regional Parks, expressed satisfaction with the lower level of disruption to existing natural resources shown in both refined concept alternatives. She expressed a slight preference for Alternative 1 as the least disruptive.	The design team responded to previous input from Regional Parks to avoid disrupting previously naturalized areas as much as possible. See above - Water Forum requested and WCB agreed to fund an additional vegetation survey to better understand impacts to mature trees and design a creek alignment which minimizes disruption.
Recreation and Access	
Sacramento County Regional Parks lead natural resource specialist Mary Maret noted that a designated equestrian trail runs along the creek confluence area and would be disrupted under Alternative 2.	If a creek alignment which disrupts the equestrian trail is selected, the design will include a re-route of the trail.
Soil Born Farms staff provided input on the route and width of a trail connecting the farm and the creek confluence, requesting that the trail connect to the main farm road and existing gate, and remain narrow enough to preserve the “wild” feel and rich habitat value of the East side of the naturalization project. Educators like to stop at the large Oak, called the wisdom tree, with groups	As the design progresses, trail specifications will be laid out. Trail specifications will be developed to minimize disruption while improving the accessibility between the creek and the farm. Meeting ADA accessibility standards for the entire length of the trail may be challenging due to the steep grade of the confluence area and the desire to minimize disruptions to habitat within the naturalization site. The design team will continue

of students and then bring them all the way down to the river.	to investigate accessibility regulations and stakeholder input. While the gate connecting the creek to the farm will be locked when the farm is closed, the trail will be accessible for all the public.
Soil Born Farms educators and managers asked that the planting plan include some breaks in the dense riparian vegetation along the creek to facilitate groups of students getting up close to the creek and potentially participating in citizen-science projects.	The design team will work to include a break in the vegetation. However, additional investigation into the feasibility of this feature is needed as breaks in vegetation may not be as robustly protected from erosion and vegetation is likely to fill in with time. With continued beaver activity, more breaks in the vegetation are likely to naturally occur – the design will strive for these kinds of synergy, drawing on the expertise of stakeholders.
Soil Born Farms and Sacramento County Regional Parks staff expressed that the existing bridge feels unsafe for pedestrians, especially large groups of students, due to high use by cyclists. These stakeholders shared a strong desire to widen the bridge to reduce user conflict.	Improving the accessibility and safety of the bridge is a key element of the project. The design increases the bridge width to 20 feet, maintaining the 12-foot bike and vehicle lanes and adding a separate pedestrian lane. The bridge may include a pavilion-style turn out which could include mounted signage.
Soil Born provided input on signage content, noting that they are developing more creek-based curriculum that may focus on urban creek stewardship. Soil Born encouraged the design of signs to communicate the stewardship responsibilities neighbors have to urban creeks using Gary Hare's trash collection surveys.	Water Forum followed up with Soil Born Farms staff who shared data on trash collection to inform signage content. Water Forum will continue to work with Soil Born Farms, Regional Parks and other interested stakeholders on signage locations, specifications, themes, and content.
David Bolen, Sacramento County, commented that it may be beneficial to keep the bridge in service during construction and locate the new bridge upstream or downstream.	If needed, the design team would relocate the bridge upstream to avoid known sensitive cultural resources. However, upstream relocation would disrupt existing riparian vegetation established as part of the previous naturalization project – which

Related – Dylan Wood, CDFW, noted that there is a patch of invasive blackberry just upstream of the bridge.	stakeholders and the design team would like to avoid. More work is needed to determine a bike trail re-route and the feasibility of a temporary bridge. Regardless, invasive blackberry will be removed as part of bridge construction.
Mike Meschi, Sacramento County, asked about the turnaround radius and use by emergency vehicles. Meschi also commented that the design should consider eliminating bridge skew.	The design maintains the width of the bridge crossing for vehicles while adding width for a pedestrian crossing. While the design team desires to eliminate bridge skew to maximize channel width under a new bridge, further consideration is needed. The design team will continue to prioritize habitat and access. While at first reducing the turn in the bike trail approach west of the bridge seems preferable, this turn encourages cyclists to reduce their speed just ahead of a busy pedestrian-cyclist intersection. The design team has also heard from cyclists that turns make the trail more interesting to ride.
Dalia Fadl, City of Rancho Cordova, expressed a preference for maintenance access on both sides of the channel and noted that 15' maintenance roads are standard, but often are narrower and unpaved in the Parkway.	The design will not incorporate 15' maintenance roads as requested due to physical space constraints and the goals of the project to provide improved habitat and recreation / education access. Water Forum will work to facilitate greater collaboration and understanding of responsibility among project partners including Rancho Cordova and Regional Parks.
Soil Born Farms expressed a desire to revive the low water crossing flooded by beaver activity to enable grazing on the West side of the creek.	Work on the upstream low water crossing is not within the scope of the Lower Cordova Creek Planning Project. However, during a stakeholder meeting Regional Parks and Rancho Cordova staff acknowledged the desire from Soil Born to pursue grazing and Soil Born might have an opportunity to partner with them on future maintenance projects.

Stakeholder Engagement Summary Matrix

Design Concept Alternatives

Lower Cordova Creek Planning Project

June 2021

Link to Mural from March 2021 Stakeholder Design Formulation Workshop – Pros and Cons:

https://app.mural.co/t/waterforum8123/m/waterforum8123/1612916202130/9019e9d63b9945ffade427485d3823038119f55b?sender=u23c7da598b287e960f529589