

CALDER CREEK

RESTORATION & VISION CONCEPTS

Sebastopol, California



Waterways
Restoration
Institute



WILDLING
DESIGN STUDIO

An ecological approach to recreation & stormwater management

CALDER CREEK VISION PLAN



Sebastopol is a small, charming city known for its agricultural history and environmental ethos. The restoration of Calder Creek builds on this sensibility, bringing back the invigorating experience of a living stream to public spaces, and providing an inviting backdrop that creative and thoughtful urban design can respond to. Moreover, creek restoration here reestablishes watershed processes that build resilience to climate change and promote a natural processes-infused approach to integrated water management.

This Summary explores of Calder Creek restoration opportunities from Jewell Avenue to the Laguna de Santa Rosa. This project was focused on Ives Park, the city's "central park", with consultations with individual upstream property owners as well as "vision" level concepts for daylighting the creek through downtown Sebastopol.

Background

Draining a one square mile watershed, the creek initially traverses low hills and low density residential properties. Through these properties, willow riparian habitat along the creek supports songbirds, hawks, waders, aquatic birds, frogs, minks and river otters. While an 1886 newspaper article noted salmon in the creek, it was better known for a water wheel and wood slate dam, the latter which created a seasonal swimming pond. When the creek was engineered into a channel and also culverted into underground stormdrain pipes, its footprint was reduced, and flood flows increased in velocity. Eventually operation of the seasonal pond ceased, and the remaining creek area at Ives Park, with steep channel walls and floodable areas, became a management concern. The creek remains in this straightened and hardened channel through Ives Park, and is otherwise forgotten through downtown. It outlets in the Railroad Forest, approximately three hundred feet downstream from the Joe Rodota Trail trailhead at Petaluma Avenue.

Above: Overview of Calder Creek Restoration Concept and Vision Plan opportunity areas

Forward-looking Creek Restoration

As climate change and population pressures increase, the need for more housing, preservation of biodiversity, and water resource management is becoming more acute. Restoration of Calder Creek, including daylighting of culverted reaches and reestablishing and reconnecting its floodplain, creates a lower-maintenance option for stormwater storage, groundwater recharge, habitat and recreation. The restored channel corridor provides greater capacity and increases storage for those times when the Laguna de Santa Rose backwaters. The riparian canopy of the creek produces a zone of greater evapotranspiration, offsetting urban heat islands with shade and spaces for relaxation and respite. This will be a benefit through Ives Park as well as through any daylighted urban areas.

At Ives Park, the proposed stream restoration concept builds on the 2013 Ives Park Master Plan, maintaining the existing uses of the park while adding the necessary stream length and meander for a “dynamically stable” stream channel (one that erodes and deposits sediment in balance to maintain its channel form). It also widens and reconnects the stream to a functioning floodplain, creating more space for flooding or backwatering from extreme storms. Within the creek corridor, picnicking, trails, wading, informal nature exploration, and a sculpture garden are all accommodated. Options for modifying the Jewell Street/Willow Street intersection were evaluated in terms of pedestrian and vehicular movement, and benefit to the creek and park. A proposed “T” intersection was included in the Ives Park Master Plan with Creek Restoration presented here.

Beyond Ives Park, opportunities for Calder Creek were explored from High Street to

“The riparian canopy of the creek produces a zone of greater evapotranspiration, offsetting urban heat islands with shade and spaces for relaxation and respite...”

Petaluma Avenue. In some cases, the culverted creek crosses through private property. Therefore, the Vision Plan shows possibilities to demonstrate to property owners that the buried creek as a potential attraction that adds value to developments, while also serving as a public asset for its flood management, stormwater and habitat benefits.

With chronic flooding at Petaluma Avenue due to sedimentation in the stormdrain pipes and non-native trees obstructing flows in the open-channel reaches of Calder Creek in the Railroad Forest, this project also suggests increasing flood capacity within the Railroad Forest by removal of the railroad fill prism and replacement of the trail with a boardwalk, daylighting approximately three hundred feet of the creek that is currently culverted and allowing it to establish its own channel.

Acknowledgements

This project was made possible by a Switzer Foundation Leadership Grant to the Waterways Restoration Institute (WRI) with Wildling Design Studio (Wildling), and the cooperation of the City of Sebastopol.

IVES PARK MASTER PLAN UPDATE



OVERVIEW

CALDER CREEK RESTORATION INFORMS MASTER PLAN UPDATE

- | | | |
|---------------------------|----------------------------|----------------------------------|
| 1 New T Intersection | 6 New stage | 12 Baseball field |
| 2 New park entry | 7 Restored Calder Creek | 13 Pool |
| 3 Rose garden | 8 Central green | 14 Playground |
| 4 Preserved redwood trees | 9 Picnic area | 15 Sculpture Garden / High Entry |
| 5 Boardwalk trail section | 10 Pedestrian bridge | 16 BBQ area |
| | 11 Vehicular access bridge | |



Restoration of Calder creek creates a safe and accessible interface to bring the public back to the water's edge, increases habitat, flood storage and groundwater infiltration.

A portion of the existing vertical channel wall is maintained to protect a stand of redwood trees. A deck is cantilevered over this wall, with an overlook crossing the creek at the current outlet location, marking a terminus of an accessible loop trail around the creek. A pedestrian bridge protects a city sewer main within its alignment, while another bridge is rated for vehicular access. The design modifies an existing sculpture garden and uses the riparian canopy as a backdrop for some of the

artwork. The playground and a bbq area are shifted to accommodate the creek, while the stage is relocated along the creek to create a large central green with seating upslope from performances.

With a geomorphic approach to restoring the channel, wide floodplains also accommodate trails, relaxing, exploration, play and habitat. Preliminary grading focused on an equilibrium stream and accessible pathways, inviting all users to experience the creek. Terracing and some vertical walls area also used to achieve this. The increase in varied terrain creates new sightlines and points of interest within the park.

Facing Page: Master Plan Update with Creek Restoration

Above: Section through creek near upper Jewell entry looking upstream towards pedestrian bridge with protected sewer line, and in the distance, redwoods, boardwalk and overlook.

Right: View of park entry from High Street with sculpture garden in the foreground. Landscape terracing in the background balances an accessible walkway with the creek's geomorphic equilibrium channel design approach.



HIGH STREET - S. MAIN STREET



DOWNTOWN VISION CONCEPTS

CALDER CREEK CAN INSPIRE NEW AMENITIES AND ATTRACTIONS

- 1 Daylighted Creek
- 2 Boardwalk
- 3 Overlook
- 4 Promenade
- 5 Seating area
- 6 Creek access
7. Walkway

Through downtown Sebastopol, public and private parking areas are shown converted back to a daylighted Calder Creek. Due to site constraints, there is a naturalized creek bed with vertical channel walls.

Between High and Main Street, these narrow constraints in one area result in cantilevered boardwalks along the edges, with one stretch of boardwalk crossing through the creek corridor. This is to provide support and protection for an existing city sewer main.



Top: Vision Concept for daylighting Calder Creek between High and S. Main Streets.

Above right: A daylighted Calder Creek can create an open space amenity for future urban design if desired by property owners.

Opposite page, top: Vision Concept for daylighting Calder Creek between S. Main Street and Petaluma Avenue.

Opposite page, left: A promenade leverages the urban cooling and shade provided by the daylighted Calder Creek corridor, with outdoor dining and socializing.



S. MAIN STREET - PETALUMA AVENUE

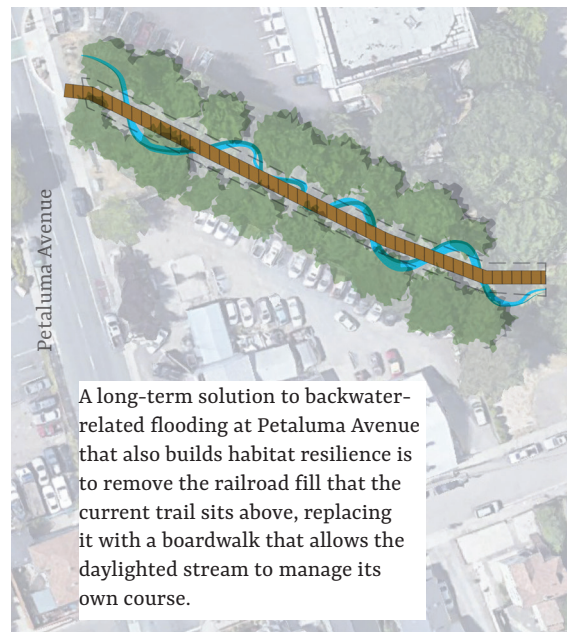
S. Main Street

Petaluma Avenue



Between Main Street and Petaluma Avenue, the creek creates a visual focus along a promenade that includes a side path gently sloping to the creek bottom. A narrower walkway completes a loop around the channel while maintaining some parking. This promenade includes extended terraces for seating ideal for future dining, from food truck “food courts” or restaurants associated with new development.

RAILROAD FOREST



Petaluma Avenue

A long-term solution to backwater-related flooding at Petaluma Avenue that also builds habitat resilience is to remove the railroad fill that the current trail sits above, replacing it with a boardwalk that allows the daylighted stream to manage its own course.



City of Sebastopol Planning Commission Staff Report

Meeting Date: August 9, 2022
Agenda Item: 6A
To: Planning Commission
From: Kari Svanstrom, Planning Director
Subject: Calder Creek Naturalization Project – Final Presentation
Recommendation: Recommend City Council approve the Concept and incorporate into the Ives Park Master Plan

Background:

The approved Ives Park Master Plan includes the concept of naturalizing Calder Creek as it runs through the Park. The City is working with WRI (Waterway Restoration Institute) and a Switzer Foundation Fellow to help envision what the naturalization of Calder Creek could be, both within Ives Park, as part of the Master Plan, as well as up- and down- stream.

This agenda item is the final presentation in a series of four meetings with the Planning Commission, which serves as the City's Parks Commission, to review and provide input on the naturalization project.

Discussion:

Jessica Hall and WRI will present the development of the final draft Conceptual option. This includes refinement of the "Option B" alignment within Ives Park approved by Council on February 1, 2022, as well as later phase concepts for the creek within downtown and east of downtown. Jessica Hall has incorporated the input from the Commission as well as Council into the final concept for the Creek naturalization, maintaining the Little League fields. The integration of a portion of Willow/Jewell Ave, as adopted in the Ives Park Master Plan, is included in this concept.

The surrounding programmatic features of Ives Park and Ives Park Master Plan are illustrative of how the various elements might be configured. Formal revisions of the non-creek programmatic elements would be formally reviewed in a separate, subsequent process that would involve additional public participation from the community (as noted in the Planning Commission Workplan).

The downtown vision portion of the concept would require additional outreach to property owners, this portion represents a vision of what a naturalized creek in downtown could be, in support and coordination with private property owners and City property. The concept east of downtown, within the City's property to the Railroad Forest parcel, includes areas controlled by Sonoma County Regional Parks, and would require outreach and a partnership with them. After review and input from the Planning Commission and Council, staff will pursue these in a future phase work.

Next Steps:

City staff has been in discussion with Ann Riley and Joshua Bradt, Co-Directors of the California Urban Stream Preservation (CUSP), a non-profit organization related to WRI, to continue work on this project. CUSP has been preparing a pre-grant proposal prepared with the Prunuske Chatham Inc., to submit to the Calif Coastal Conservancy on behalf of the City. It is anticipated that the pre-grant proposal would fund additional design work for the Park

Staff is requesting the Commission recommend the Council approve both a service agreement to work with CUSP and authorize CUSP to submit the pre-grant proposal.

If approved by Council, the Jewell/Willow intersection will be further analyzed from a traffic perspective by the City's traffic consultant, W-Trans.

Public Comment:

No public comments have been received as of the writing of this staff report.

Recommendation:

Receive the report, and recommend that City Council:

- 1) approve Phase 1 (Ives Park alignment / concept),
- 2) provide feedback on Phase 2 (downtown and east of downtown concepts)
- 3) approve a Service Agreement to work with the California Urban Stream Partnership (CUSP) to continue implementation work on Calder Creek Naturalization project, including potential grant applications
- 4) Authorize CUSP to submit a grant proposal to the California Coastal Conservancy on behalf of the City.

Attachments:

Calder Creek Restoration and Vision Concepts final report

Additional information:

The Ives Park Master Plan, can be found on the City's Parks Planning page:

<https://www.ci.sebastopol.ca.us/City-Government/Departments-Services/Planning/Parks-Planning>

California Urban Stream Partnership: <https://www.californiaurbanstreampartnership.com/>