Calder Creek Restoration
at Ives Park

WILDLING DESIGN STUDIO

Waterways Restoration Institute

Calder Creek Restoration
at Ives Park

- Project Goal
- Walking Tour
- Cautionary tales for Calder creek
- Restoration planning criteria
- Master Plan discussion

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Project Goals

- Conceptual Restoration Plan to restore geomorphic processes at Calder Creek
  -Build on Master Plan vision

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Project Goals

- Watershed-wide vision planning for Calder Creek
  -Restoration concepts developed with participating Jewell Avenue property owners
  -Downstream vision planning for creek connectivity and to alleviate flood issues

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10/24/21
Image: courtesy City of Sebastopol

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Project Goals

Geomorphic processes?

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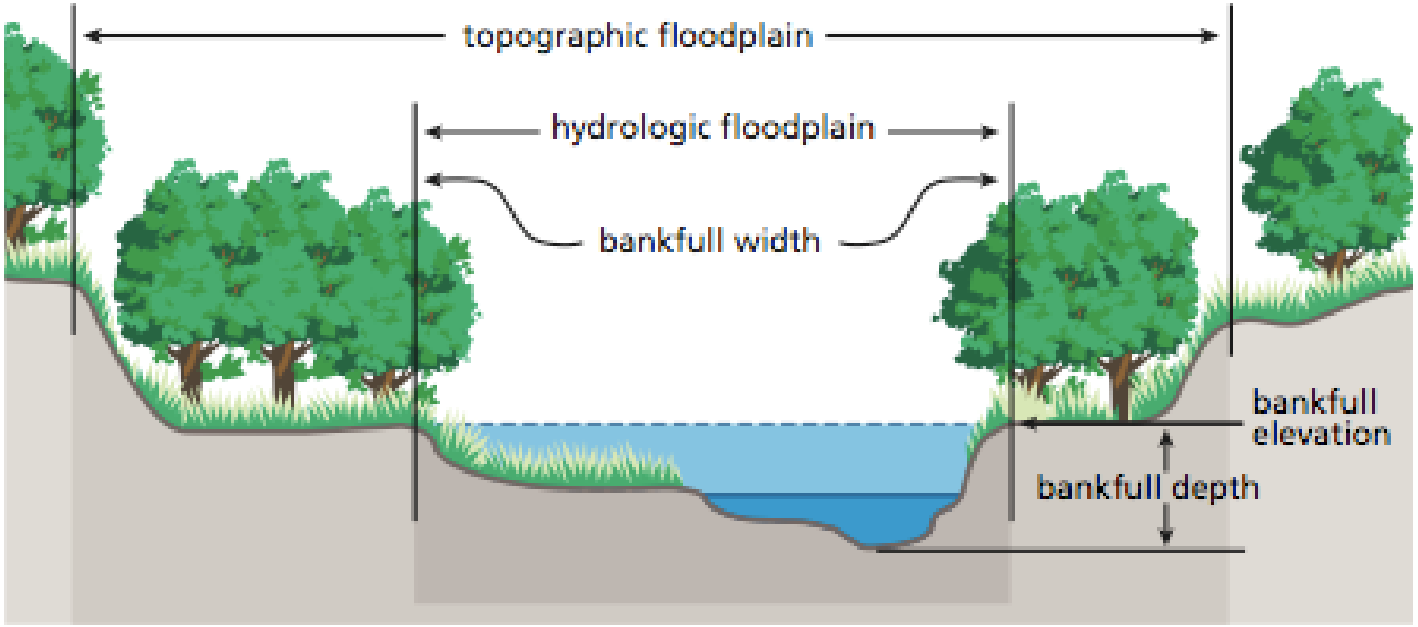
Project Goals

Geomorphic processes?



Streams convey water, sediment & dissipate energy
Landform responds to a range of flows and storms

Image: Stream Corridor Restoration: Principles, Processes and Practices (USDA-NRCS)

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A quick walking tour

Observations at Ives Park

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- Traffic
- Muted entry/welcome
- No indication of creek

At Jewell Avenue

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- Channelized creek
- Redwoods to edge
- Sewer line
- Fencing
- Protect stage area

Downstream of Jewell Ave

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By the swimming pool

- Historically ponded area = floodplain opportunity area
- Ballfields & Pool – firm edges

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- Channelized creek
- Play area flooding
- Fencing-visual barrier

Near the playground

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- Channelized creek
- Oaks to channel edge

- Creek close to property boundary
- Fencing-visual barrier

Approaching High Street

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- Channelized creek
- Culverted creek
- Culvert size

Approaching High Street

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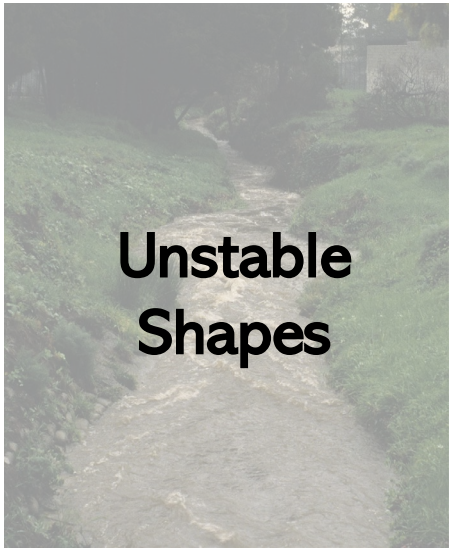
Cautionary tales for Calder Creek

When geomorphic processes meet engineered structures

Images: Artposters.com

Cautionary tales for Calder Creek

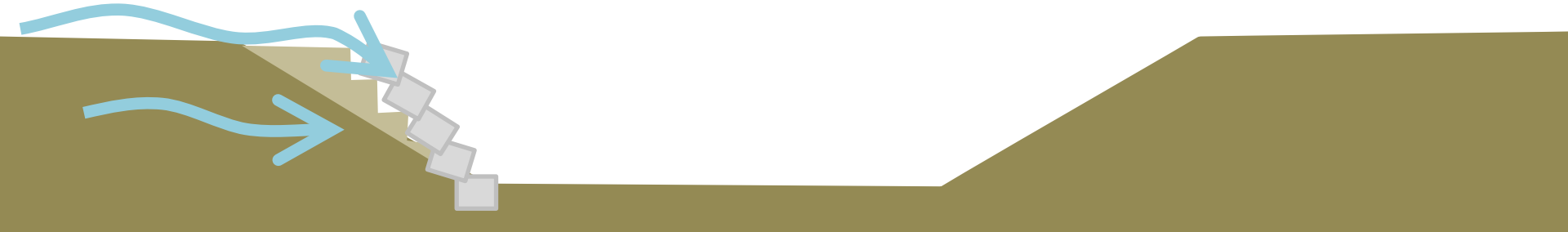
Common instruments of ~~control~~ horror




Gabions

Gabions

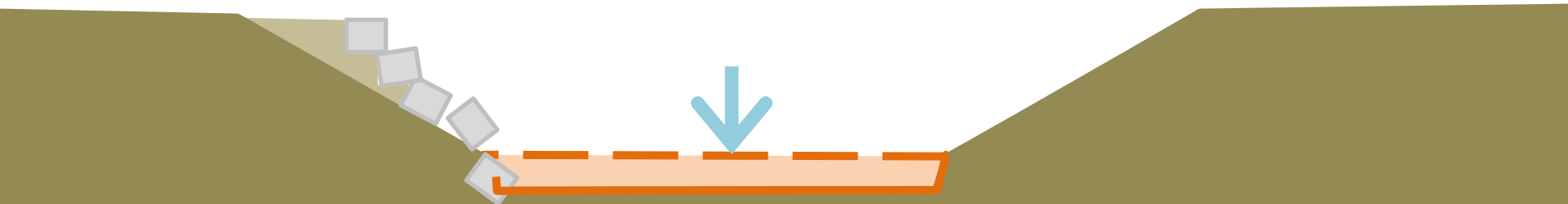
Photo by L.M. Johmann © 2002



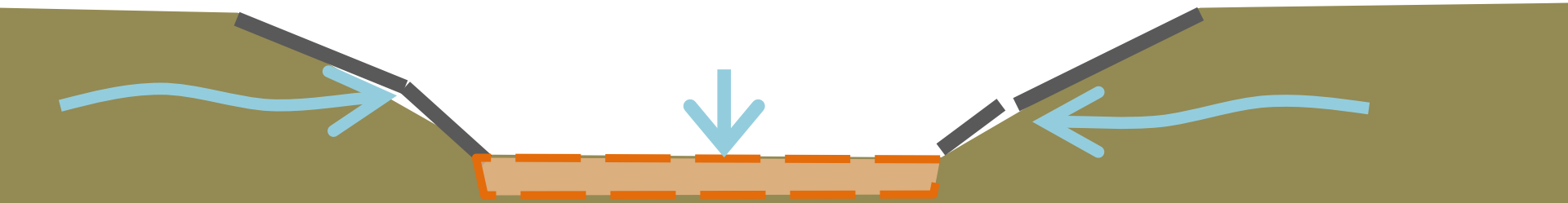
GABION BANK FAILURE

Gabions created the conditions for channel incision

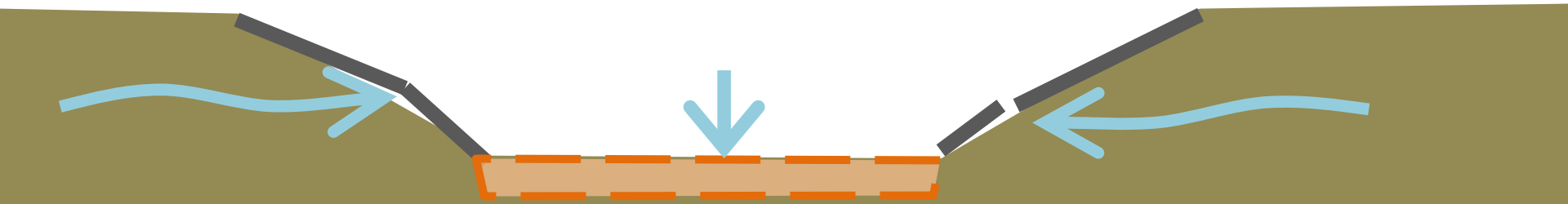
Project Invert. Exposes apron supporting gabions



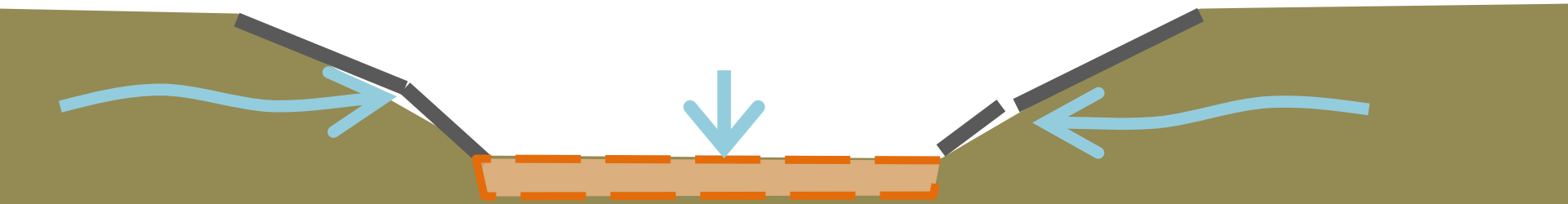
Concrete liners



Concrete liners



Concrete liners

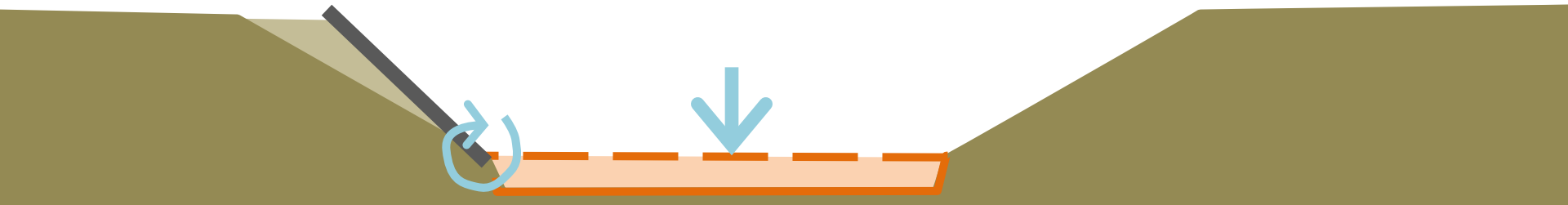



Concrete
liners

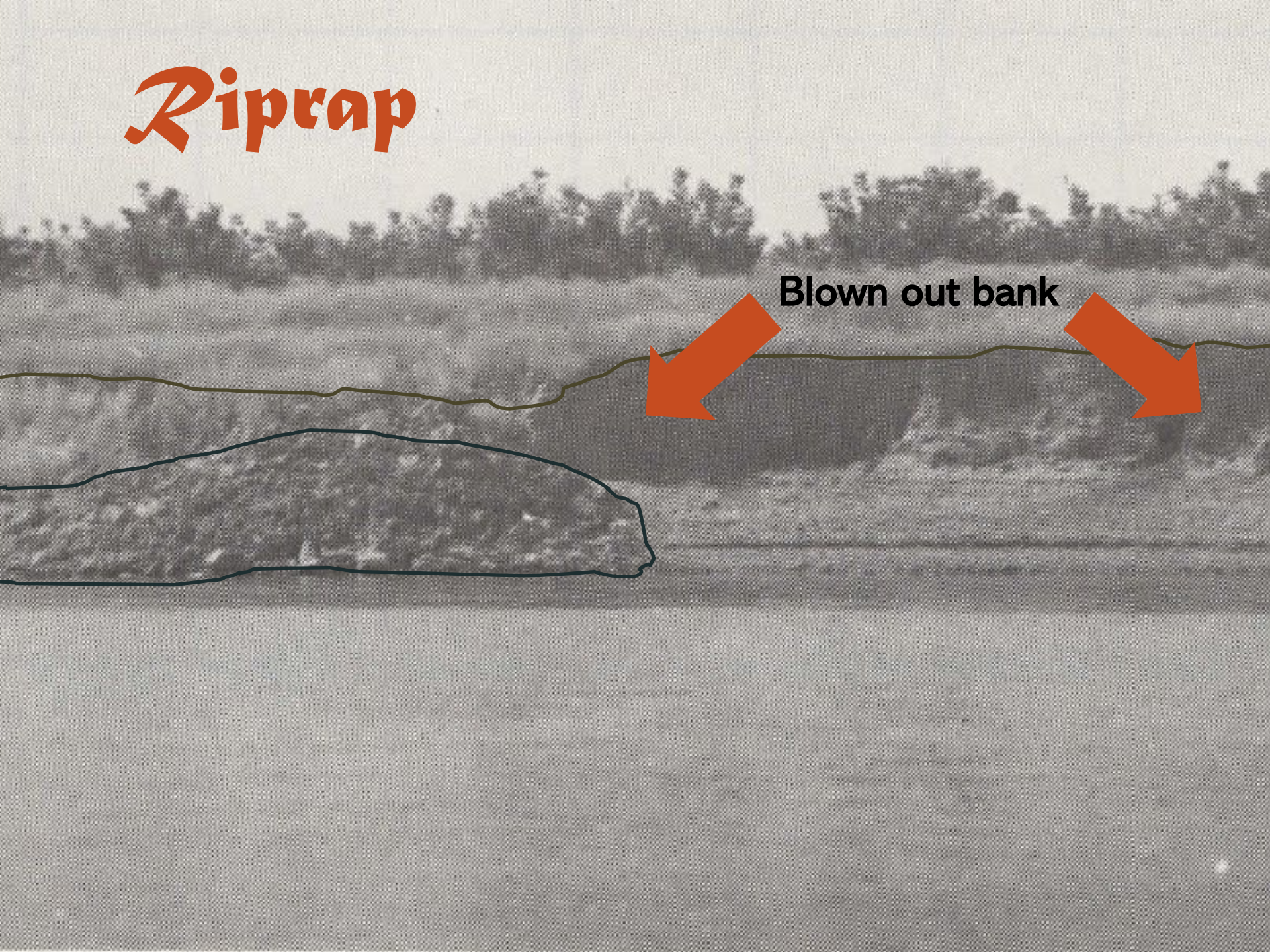
Concrete liners

Bank stabilization failed due to channel incision
Rock is emergency rip rap to save concrete lining

Failed concrete lining



Riprap



Riprap

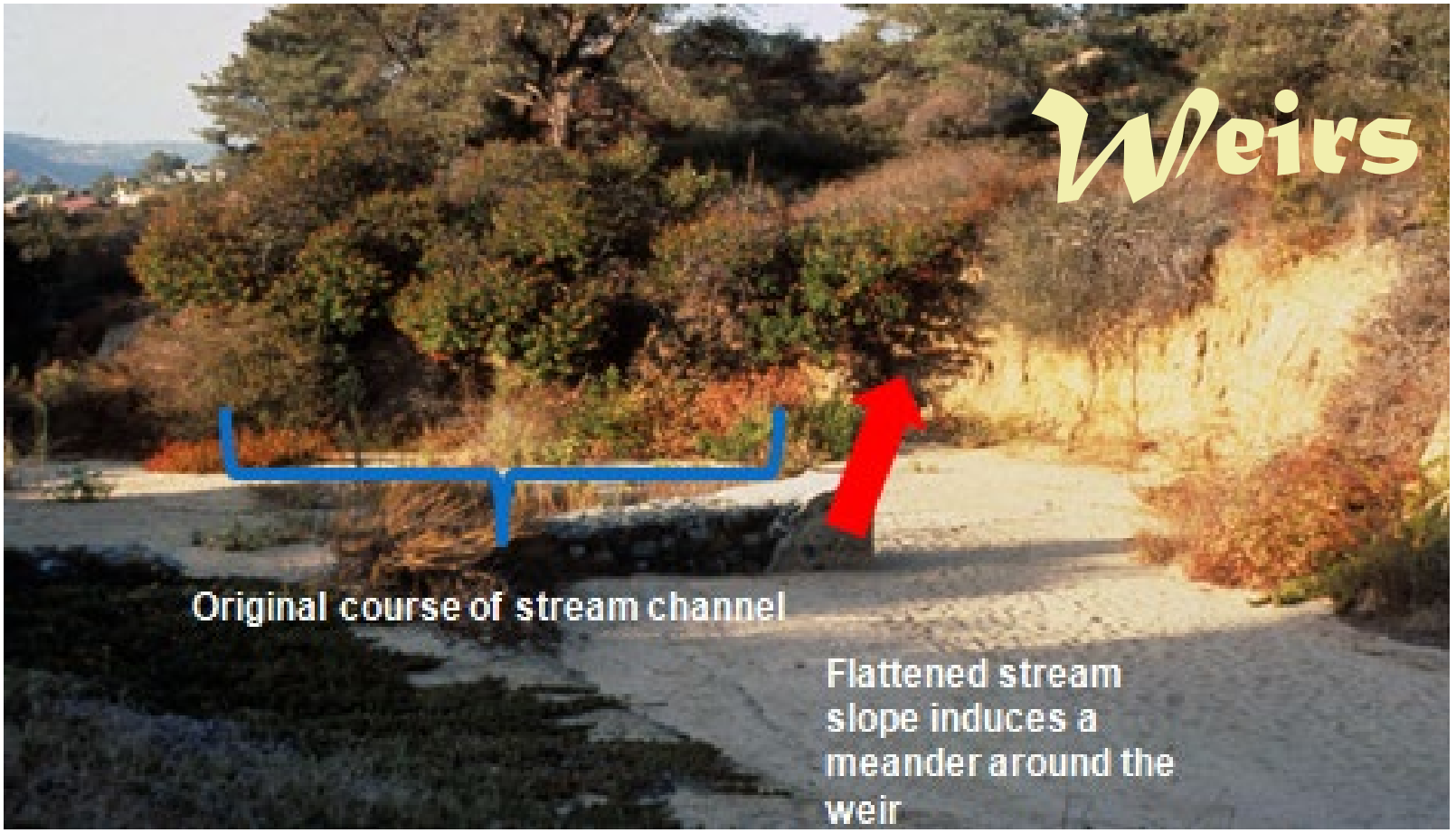

Sacrete

Block Systems

Block Systems


Block Systems


Block Systems



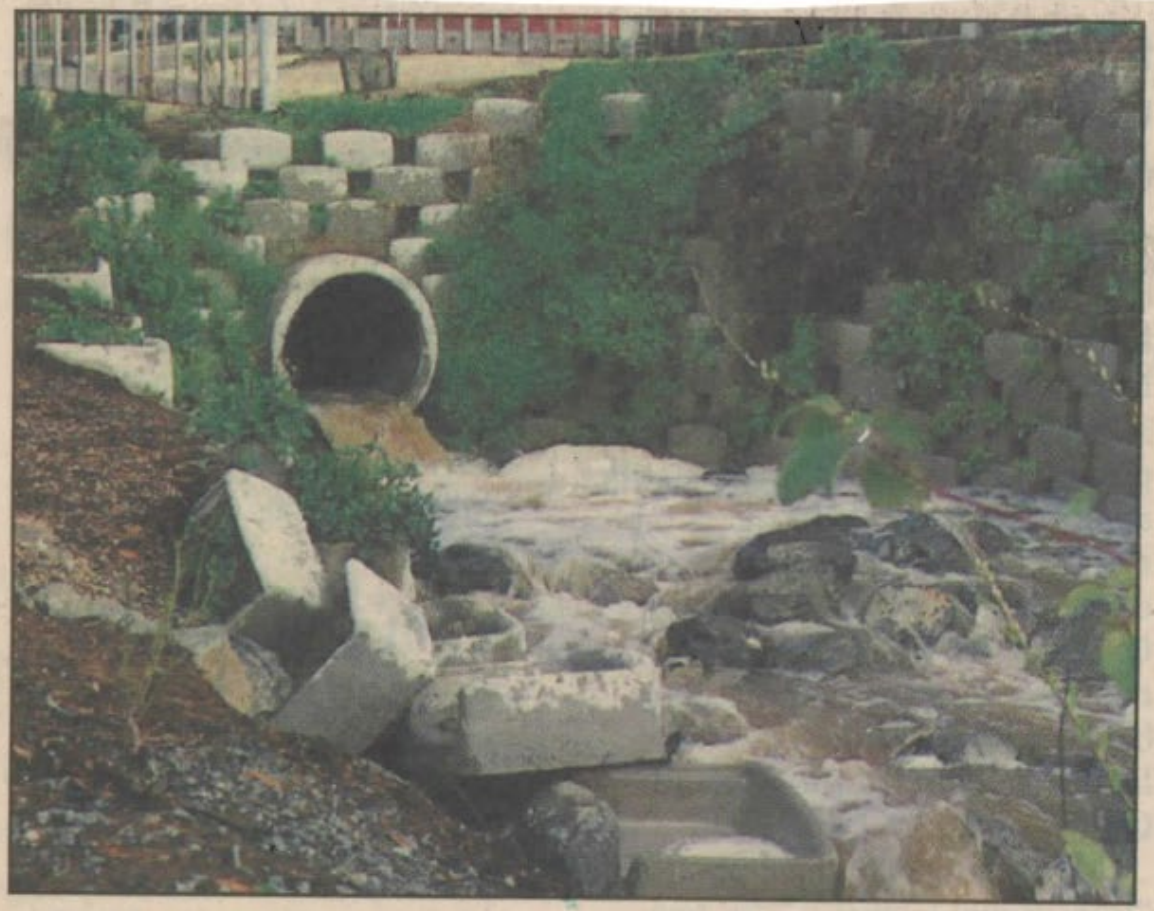
A weir often flattens the stream slope and creates re-meandering of the stream which flanks the weir


Weirs

Weirs

Weirs

Improper planting



Above, El Niño added a pool to Arlington Park — under the swing set. Center, a tree's roots gave way on the rain-weakened hillside on Galvin Drive, taking power and cable TV lines with it. The tree was just one of the storm season's casualties. Left, the percipitation also proved too much for the concrete planters on this portion of creek in Poinsett Park.

Top, bottom photo: J.R. Deaton. Center photo: Chris Treadway.


Improper planting

Improper planting

Rock gardening failure

hydraulic constrictions

hydraulic constrictions

Pinole Creek Trestle

hydraulic constrictions

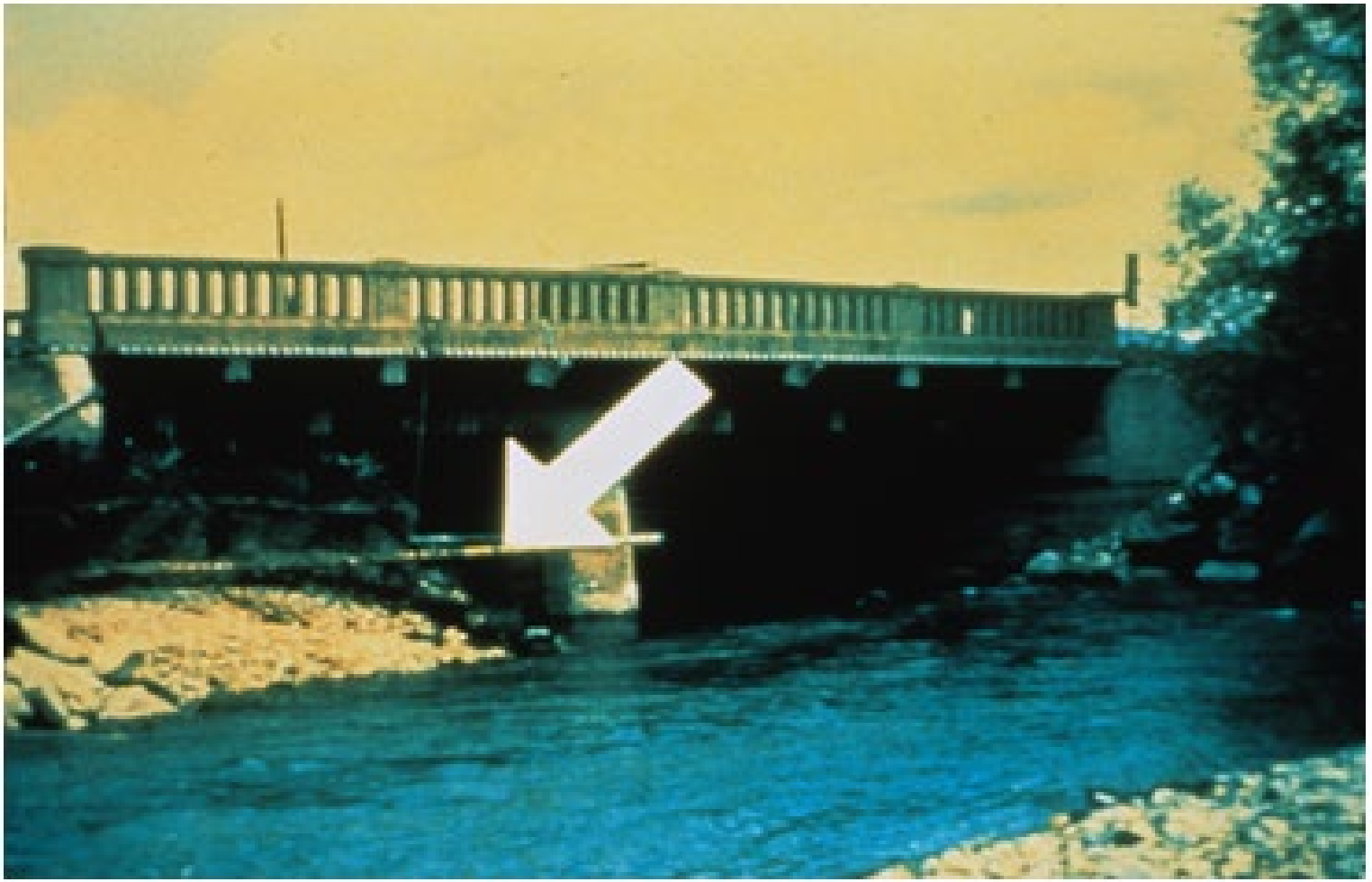

hydraulic
constrictions


Unstable shapes

Unstable shapes

Unstable shapes

Unstable shapes

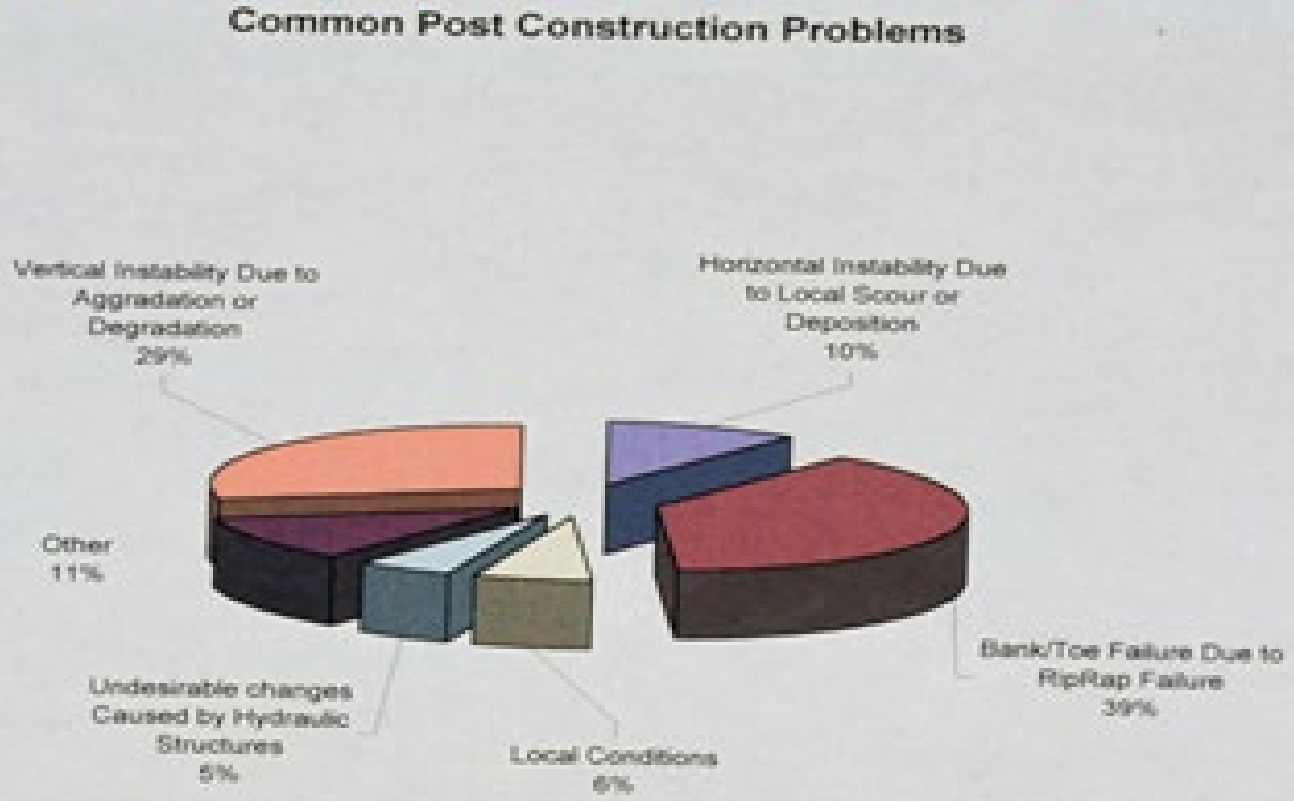


Undercuts bridge pillars

Arrow indicates past stream bottom elevation

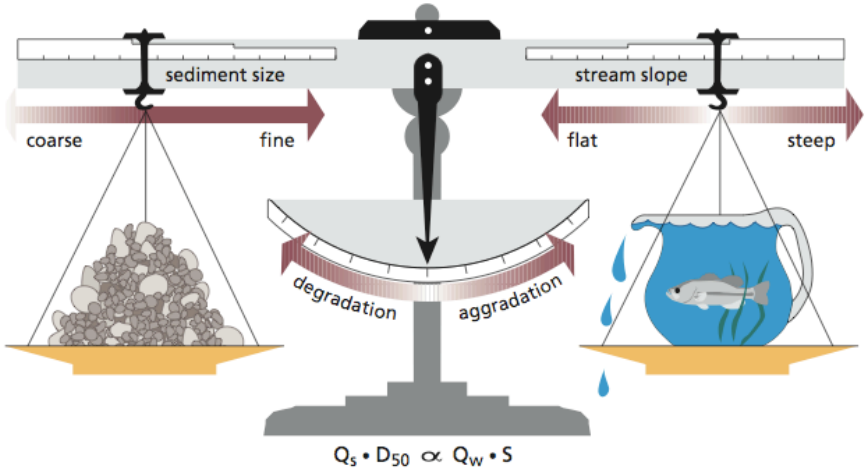
Unstable shapes

ARMY CORPS STUDY ON REASONS FOR PROJECT FAILURES- 1990



Restoration Planning Criteria

Reestablishing geomorphic processes



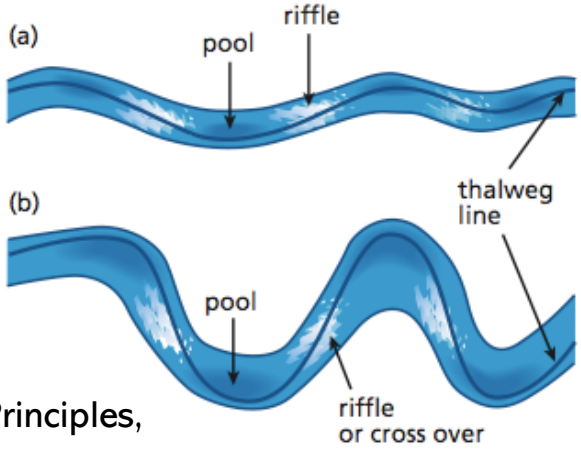
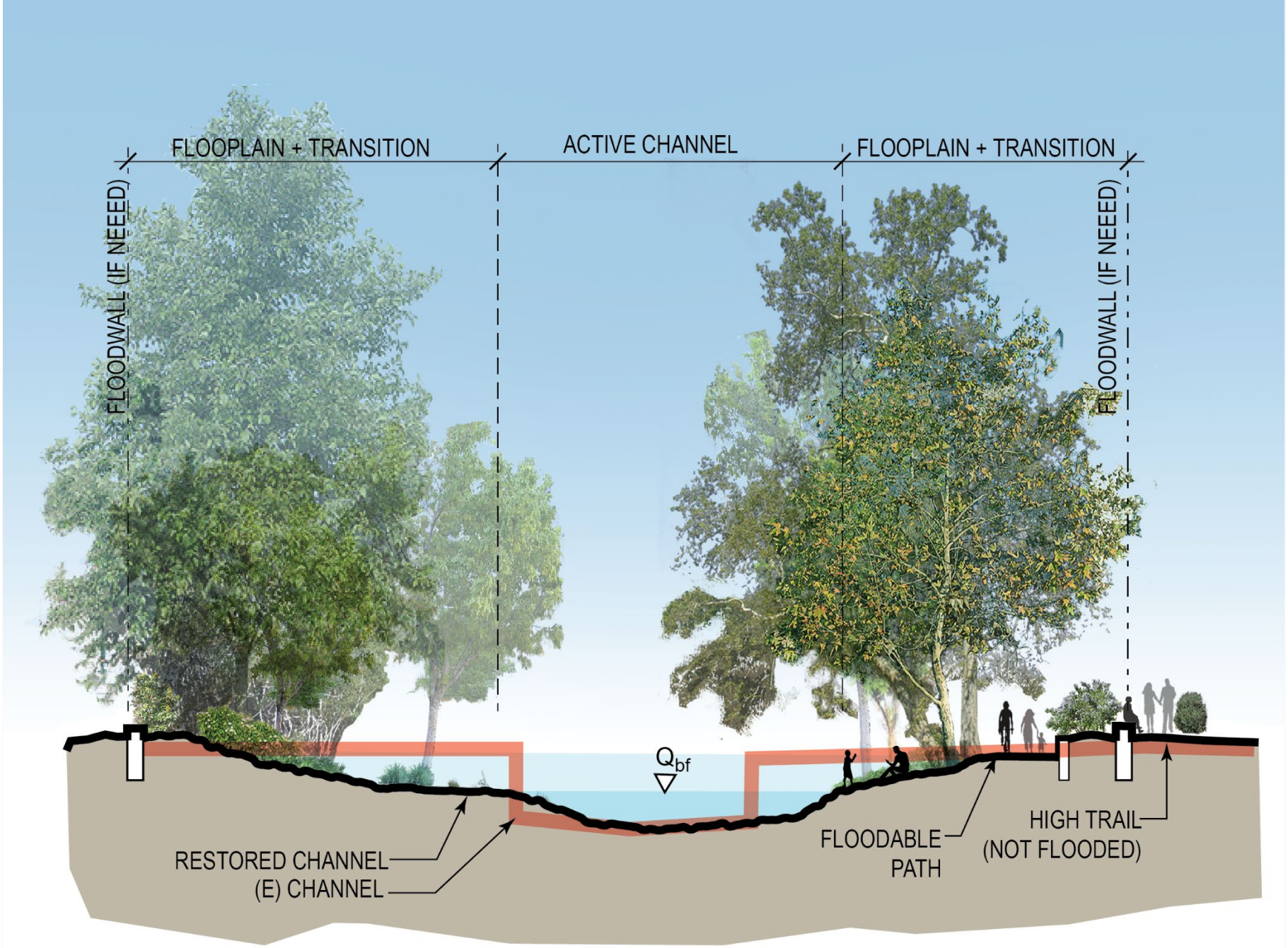


Image: Stream Corridor Restoration: Principles, Processes and Practices (USDA-NRCS)

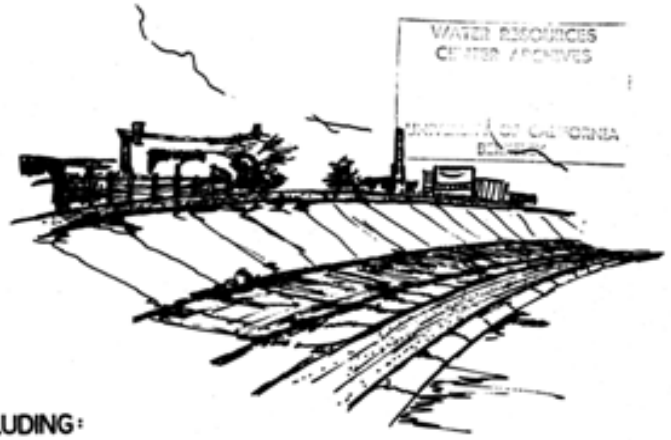

FLOOPLAIN + TRANSITION
ACTIVE CHANNEL
FLOOPLAIN + TRANSITION
FLOODWALL (IF NEEED)
FLOODWALL (IF NEEED)
Q_{bf}
RESTORED CHANNEL
(E) CHANNEL
FLOODABLE
PATH
HIGH TRAIL
(NOT FLOODED)

From horror show to happy stream #1

Proposed Channelization Project for Wildcat and San Pablo Creeks

DRAFT ENVIRONMENTAL IMPACT REPORT
FOR

PHASE I WILDCAT-SAN PABLO CREEK IMPROVEMENTS



INCLUDING:

ENGINEERING REPORT-APPENDIX A
FINANCIAL REPORT- APPENDIX B

WILDCAT CREEK FLOOD PROJECT PERFORMING IN THE 2005-2006 FLOOD


VGM
Village


Sedimentation &
erosion

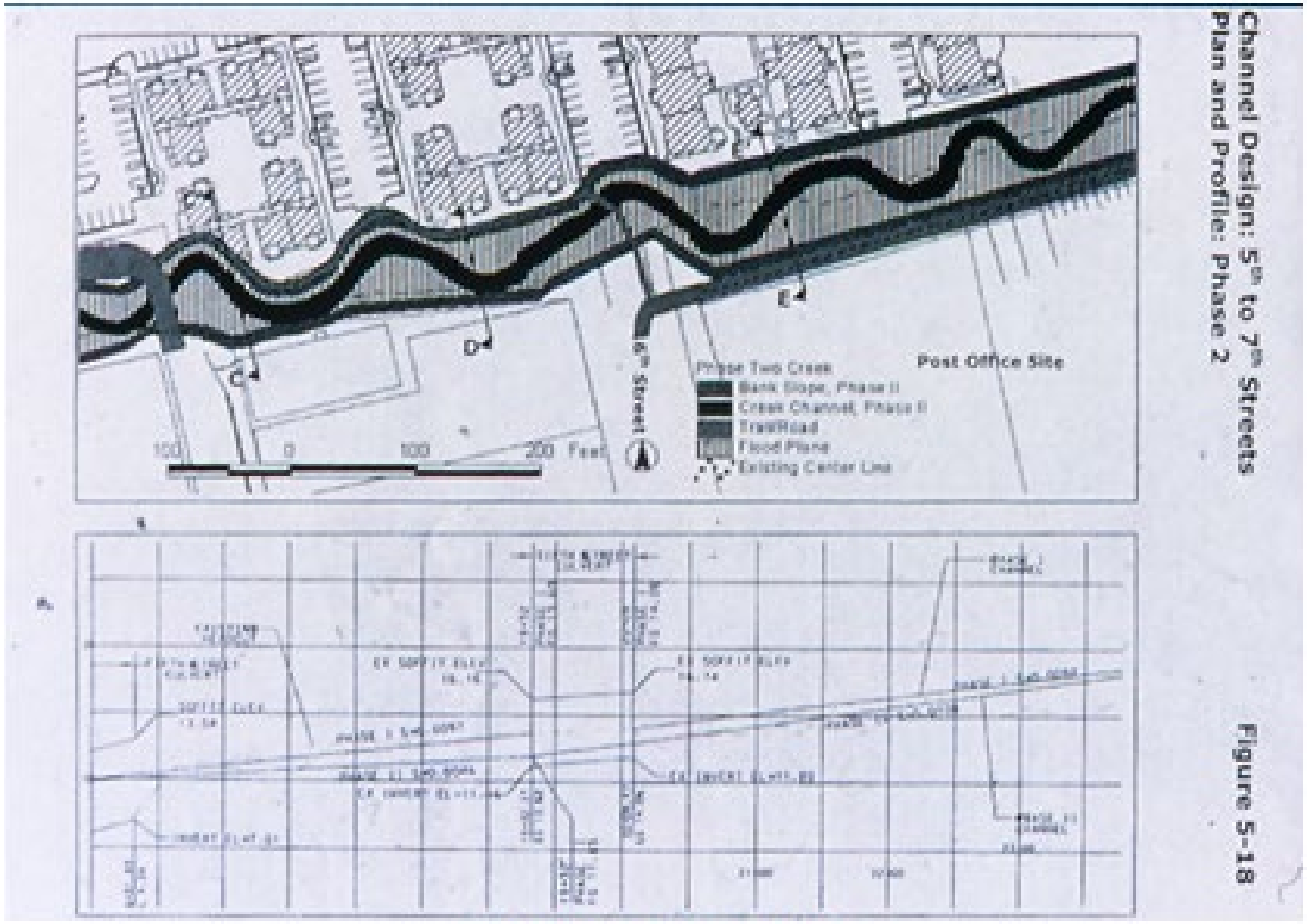

Channel
incision


Lateral
movement
UNIVERSAL
PICTURE

From horror show to happy stream #2

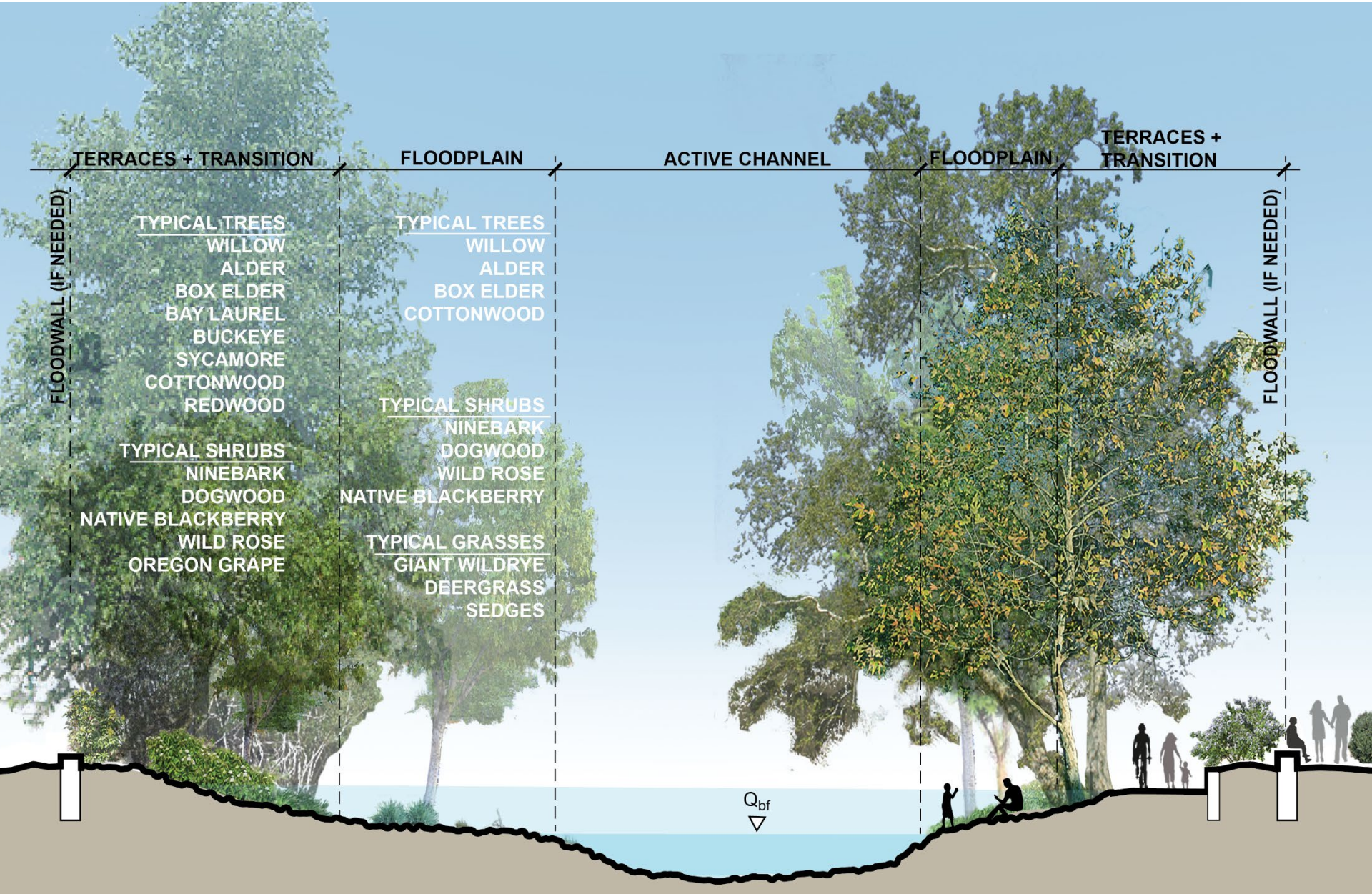
***Viewpoint 2. April 2015** photo looking upstream to bank erosion reduction project completed December 2013*

From horror show to happy stream #3



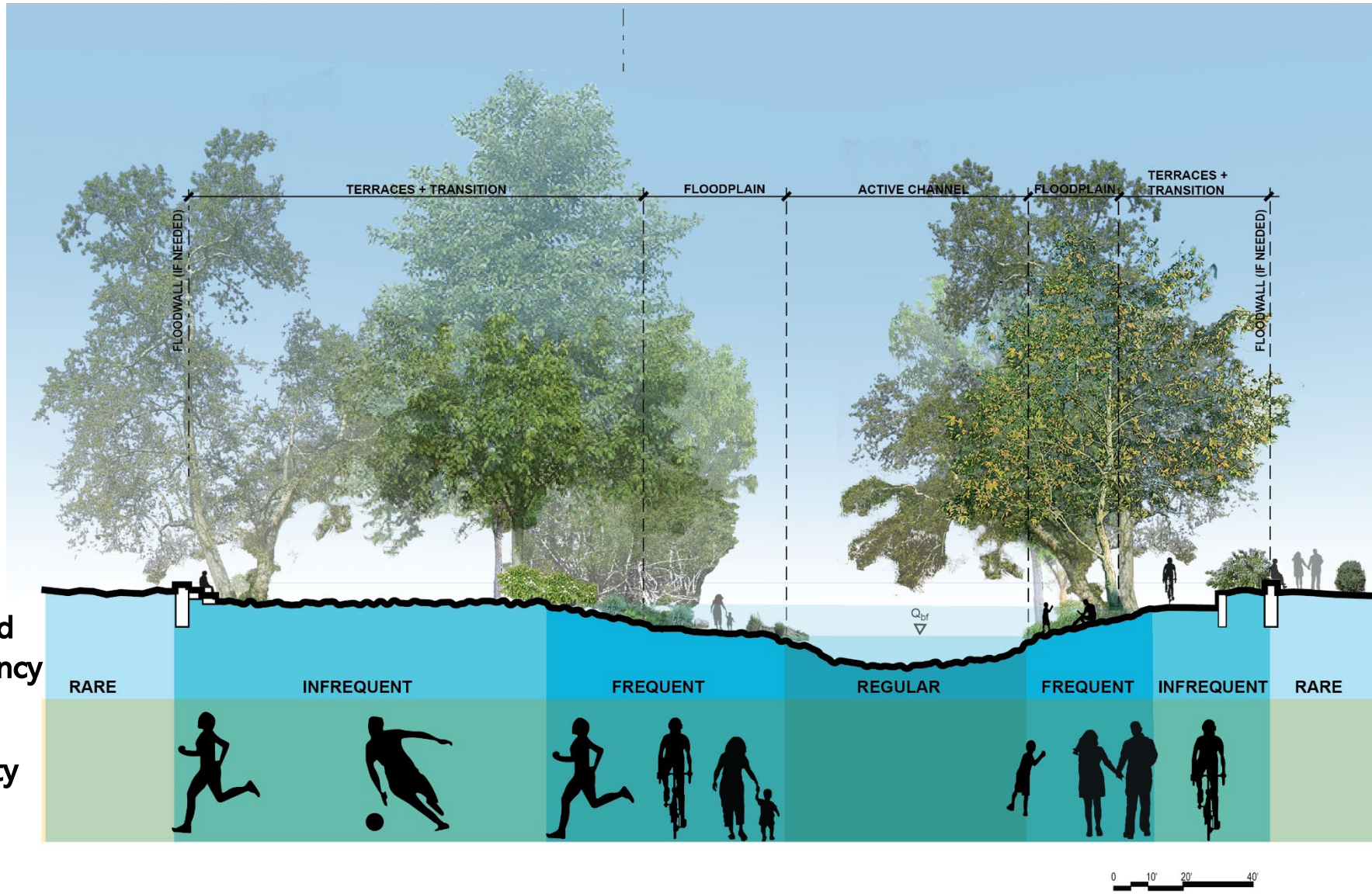
Design: WRI, Roger Levanthal, RDG

Regionally appropriate streamside plantings
for stream health & bank stability



Compatible activities within the stream corridor

based on flood-flexibility



Master Plan Reflections: What would you like us to consider?

Creek improvements

1. Remove chain link fencing & guardrails. Remove safety hazards from creek walls. Patch and repair creek wall as necessary. Restore natural channel in meadow area and rose garden area; underground creek in picnic area. Expand to rose garden area. Remove central bridge and relocate northern bridge. Add natural creek edge and seating.

Site improvements

2. Install sculpture garden along entry walk from High Street.

3. Install new ADA ramp and stairs, develop new entry node.

4. Install new ADA ramp.

5. Update flatwork to be ADA compliant & develop a new entry node.

6. Convert existing park restrooms into storage for pool needs.

7. Remove selected billboards at baseball field to increase visibility and add shrubs .

8. Provide new large central green space by relocating playground (see 14).

9. Cap creek to form a large central green space and relocate picnic areas along a new perimeter walk.

10. Install new stage.

11. Install a new perimeter path behind the baseball field.

12. Relocate pool fencing along Willow Street to allow more space for pedestrians. Install planting to screen chain link fencing. Replace sections of the perimeter pool screen with transparent panels to allow for more visibility and park connection

13. Remove existing baseball restroom structure and install new prefabricated restroom structure with new drinking fountain that accomodates the park and baseball users.

14. Install new trellis/seating/performance area

15. Install new entrance gateway features

Playground improvements

16. Relocate new playground adjacent to open turf park area and restrooms. Install diverse types of play equipment to encourage a variety of active play as well as social and creative play.

Planting improvements

17. To improve security and access, reduce or remove areas of perimeter planting along Jewell Ave. and Willow St.

18. To improve security and access, reduce or remove areas of perimeter planting between the Veterans Hall and the park

19. Replace redwood trees that are in declining state. Move to edge of turf to open up area for informal use.

20. Remove and thin out planting at the "onion patch."

21. Remove and thin out planting between the baseball field and residential lots. Coordinate with home owners.

22. Install edible gardens.

23. Install bio-basin / stormwater filter

24. Remove concrete stage at west end of pool.

25. Convert turning lane to parkland and interpretive garden.

Off-site improvements

26. Look for opportunities to provide direct pedestrian access to South Main Street

27. Improve pedestrian safety by adding bulb outs and crosswalks at major crossings.

General

- Update irrigation system and incorporate water savings strategies.
- Install educational signage about park history and ecology.
- Replace park lighting with improved security lights.
- New site furnishings (lighting, benches, trash receptacles,recycling, drinking fountains).
- New park planting to be native.
- Asphalt & concrete flatwork to be replaced; install root barriers.

PROJECT
Ives Park Renovation Master Plan - Proposed Master Plan
Sebastopol, CA

MONTH DAY YEAR
03 07 2013

RHAA
Royston Hanamoto Alley & Abey Landscape Architects and Planners