Public Works Department, Park Division
965 Fir Street
Chico, CA 95928
(530) 896-7800

Agenda Prepared: 5/19/2023
Agenda Posted: 5/19/2023
Prior to: 6:00 p.m.

CITY OF CHICO
BIDWELL PARK AND PLAYGROUND COMMISSION (BPPC)

Regular Meeting Agenda
May 22, 2023, 6:00 pm
City Council Chambers - 421 Main Street, Chico CA

Commissioner Nava is participating remotely at 114 Circulo Vespucci Cr., Tubac, AZ 85640 where this agenda is also posted.

Materials related to an item on this Agenda are available for public inspection in the Park Division Office at 965 Fir Street, Chico during normal business hours or online at http://www.chico.ca.us/

1. REGULAR COMMISSION MEETING

1.1. Call to Order

1.2. Roll Call

2. CONSENT AGENDA

All matters listed under the Consent Agenda are to be considered routine and enacted by one motion.

2.1. APPROVAL OF THE MINUTES OF THE 4/24/23 BPPC MEETINGS

Action: Approve minutes of the BPPC's 4/24/23 Regular Meeting.

2.2. PERMIT TO HOLD A "COLOR RUN" IN LOWER BIDWELL PARK ON MAY 4.2024.

The Salvation Army requests to hold another "Brighten a Life" color run fundraiser in Lower Bidwell Park from 7:00 a.m. to 12:30 p.m. on 5/4/2024. This year's run on 4/29/23 went well and the applicant did an excellent job cleaning up after the event.

Recommendation: *Conditional approval of the permit.*

3. ITEMS REMOVED FROM CONSENT – IF ANY

4. PUBLIC HEARINGS NONE

5. REGULAR AGENDA

5.1. PRESENTATION ON THE UPPER PARK TRAIL SEDIMENT REDUCTION ACTION PLAN

The Bidwell Park & Playground Commission (BPPC) will receive an update and presentation from the City's consultants on an assessment that was conducted on the system trails, 10-Mile House Road, and other roads in Upper Bidwell Park for potential sediment reduction treatments.***(Report- Linda Herman, P&NRM)***

Recommendation: None, this is an informational item only.

5.2. REVIEW AND CONSIDERATION OF RECOMMENDATIONS IN THE LOWER BIDWELL PARK TRAFFIC AND CIRCULATION EVALUATION.

At its 4/24/23 meeting, the BPPC reviewed the recommendations in the draft multimodal circulation evaluation Headway Transportation conducted in Lower Bidwell Park. The Commission will continue its review and consideration of the recommendations provided in the evaluation report***(Report- Linda Herman, P&NRM)***

Recommendation: The Park & Natural Resource Manager recommends the BPPC review the prioritized recommendations and provide comments and/or direction to Staff.

5.3. PRESENTATION ON THE PROPOSED MONKEY FACE TRAIL DESIGN CONCEPT AND RECREATIONAL TRAILS GRANT APPLICATION.

The Bidwell Park & Playground Commission (BPPC) will receive an update from the City's consultant on the proposed application to the Department of Park & Recreation Recreational Trails Program (RTP) to try to obtain funding to provide better sustainable access to Monkey Face in Upper Bidwell Park. The Commission will also review a Draft concept for the proposed trail design. ***(Report- Linda Herman, P&NRM)***

Recommendation: The Park & Natural Resource Manager recommends the BPPC review the design concept and provide comments and/or direction to Staff.

6. BUSINESS FROM THE FLOOR

Members of the public may address the Commission at this time on any matter not already listed on the agenda; comments are limited to three minutes. The Commission cannot take any action at this meeting on requests made under this section of the agenda.

7. REPORTS AND COMMUNICATIONS

Items provided for the Commission's information only. No action can be taken on any of the items unless the Commission agrees to include it on a subsequent posted agenda.

7.1. Parks Division Report – Linda Herman, Park and Natural Resources Manager.

7.2. Street Tree Division Report – Richie Bamlet, Urban Forest Manager.

8. ADJOURNMENT

Adjourn to the next regular meeting on June 26, 2023, at 6:00 P.M. in the Council Chamber of the Chico Municipal Center building located at 421 Main Street, Chico, California.

CITY OF CHICO
BIDWELL PARK AND PLAYGROUND COMMISSION (BPPC)
MINUTES OF THE
APRIL 24, 2023 MEETING

1. REGULAR COMMISSION MEETING

1.1. Call to Order

The meeting was called to order by Vice Chair Thomas-Petty at 6:00 pm.

1.2. Roll Call

Commissioners Present:
Jesse Alexander
John Blachley
Nichole Nava
Jenny Scheer
Megan Thomas-Petty
Anjanette Shadley

Commissioners Absent: Jeff Glatz

Staff Present:

Shane Romain, Assistant Park & Natural Resources Manager
Linda Herman, Park & Natural Resources Manager (P&NRM)
Richie Bamlet, Urban Forest Manager (UFM)

1.3 Swearing In of New Commissioners (Debbie Presson, City Clerk)

1.4 Selection of Chair and Vice Chair (Debbie Presson, City Clerk)

The City Clerk requested nominations for the Chair position.

Commissioner Nava nominated Commissioner Thomas-Petty for Chair. Commissioner Shadley nominated Commissioner Alexander.

The Commission voted on the first Chair nomination request for Thomas-Petty as follows:

AYES:	Commissioners Blachley, Nava, Sheer, and Thomas-Petty.
NOES:	Commissioner Shadley
ABSTAIN:	Commissioner Alexander
ABSENT:	Commissioner Glatz

Commissioner Thomas-Petty received the majority vote and was appointed as Chair.

The City Clerk requested nominations for the Vice-Chair position.

Commissioner Shadley nominated Commissioner Alexander. Commissioner Thomas-Petty nominated Commissioner Nava.

The Commission voted on the first Vice Chair nomination for Alexander as follows:

AYES:	Commissioners Blachley, Sheer, Shadley and Thomas-Petty.
NOES:	None
ABSTAIN:	Commissioner Nava
ABSENT:	Commissioner Glatz

Commissioner Alexander received the majority vote and was appointed Vice-Chair.

2. CONSENT AGENDA:

All matters listed under the Consent Agenda are to be considered routine and enacted by one motion.

2.1. APPROVAL OF THE MINUTES OF THE 12/12/22 AND 3/27/23 BPPC MEETINGS

Action: Approve minutes of the Bidwell Park & Playground Commission (BPPC) Regular Meetings held on 12/12/22 and 3/27/23 .

2.2. PERMIT TO HOLD SALSA DANCES IN CITY PLAZA FROM APRIL 30, 2023 TO MAY 21, 2023.

Isaiah Meders and Rachel Hayes from Affinity Arts Chico (Applicants) request to hold Salsa Rueda dances in City Plaza on four Sunday evenings beginning April 30, 2023 and ending on May 21, 2023. The reservation request is from 5:00 p.m. to 10:00 p.m., with the dances occurring between 6:00 p.m. and 10:00 p.m. This application is being considered by the Commission because it is a new event to be held over multiple days.

Recommendation: Conditional approval of the permit

A motion to approve the Consent Agenda was made by Commissioner Scheer. The motion was seconded by Commissioner Nava.

The motion carried as follows:

AYES: Commissioners Shadley, Blachley, Nava, Sheer, Alexander and Vice-Chair Thomas-Petty.

NOES: None

ABSENT: Commissioner Glatz

3. ITEMS REMOVED FROM CONSENT NONE

4. NOTICED PUBLIC HEARINGS – NONE

5. REGULAR AGENDA

5.1. REVIEW AND CONSIDERATION OF RECOMMENDATIONS IN THE LOWER BIDWELL PARK TRAFFIC AND CIRCULATION EVALUATION.

At its 3/27/23 meeting, the Bidwell Park and Playground Commission (BPPC) received a presentation from Headway Transportation on a draft multimodal circulation evaluation they conducted in Lower Bidwell Park. The Commission reviewed and considered the recommendations provided in the report. ***(Report – Linda Herman, Park & Natural Resources Manager)***

Recommendation: Staff is recommended that the BPPC review the recommendations and provide direction on which items should be pursued and prioritized.

Commissioner Nava requested more information on the alignment of the park entrances with the local streets and crosswalks, what type of multi-use pattern was planned on Petersen Drive, and whether the City's Bike Plan was reviewed by the consultants as part of the report.

Commissioners Scheer voiced concerns from Woodland neighbors on the visual aesthetics of cars being closer to the street. She also would like to see another creek crossing bridge somewhere between the Highway 99 overpass and the bridge at Cedar Grove.

Chair Thomas-Petty expressed concern that the proposed lanes are not dedicated bike and pedestrian lanes but are multimodal one way lanes. She also expressed concern that the study was not conducted on a weekend day.

Several Commissioners expressed concerns about the number of trees that may have to be removed to make room for the attached side path preferred alternative between the 4th Street Entrance and Caper Acres.

There were no public comments on this item.

It was the consensus of the Commission to discuss the following list of potential action items at their next meeting,

1. Establishing the circulation pattern and facilities as shown in Figure 2 of the attached report.
2. Constructing a side-path on South Park Drive (4th Street Entry) as shown in Figure 3.
3. Constructing pedestrian crosswalks and ADA accessible ramps at the 4th Street/Woodland Avenue/South Park Drive intersection.
4. Expanding vehicle parking at the One-Mile parking lot on Vallombrosa Way.
5. Prohibiting vehicular travel on South Park Drive between El Monte Avenue and Centennial Avenue, which would include relocating the existing ADA parking spaces onto 8th Street.

8. BUSINESS FROM THE FLOOR.

Members of the public may address the Commission at this time on any matter not already listed on the agenda; comments are limited to three minutes. The Commission cannot take any action at this meeting on requests made under this section of the agenda.

There was no Business from the Floor.

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9. REPORTS AND COMMUNICATIONS.

The following items were provided for the Commission's information only.

9.1. Parks Division Report – Linda Herman, Park, and Natural Resources Manager

9.2. Street Tree Division Report – Richie Bamlet, Urban Forest Manager

When ready, Commissioner Shadley requested a copy of the schedule for the public outreach and engagement component of the Iron Canyon Fish Passage Project.

10. ADJOURNMENT

The meeting was adjourned at 7:16 p.m. to the next regular BPPC meeting on May 24, 2023, at 6:00 p.m. to be held in the Chico City Council Chamber Building, located at 421 Main Street in Chico, California.

Date Approved: ___/___/___

Prepared by:

_____ _____

Linda Herman, Park & Natural Resources Manager Date

Distribution: BPPC

BPPC Staff Report Meeting Date 05/22/2023

DATE: 05/18/2023

TO: Bidwell Park and Playground Committee (BPPC)

FROM: Linda Herman, Park & Natural Resources Manager

SUBJECT: Salvation Army "Brighten A Life" Color Run

REPORT IN BRIEF:

The Salvation Army (Applicant) is requesting to reserve Oak Grove A & B, in the One Mile Recreation Area, from 7 a.m. to 12:30 p.m. on 5/04/24 for another color run. However, Senior Ranger Bradford recommends that the reservation start earlier to ensure that the race starts at 8:30 a.m. prior to the opening of the main Lower Park gate. The Applicant anticipates 500 participants who will run through several partially enclosed tent stations to contain the spread of the colored powder. The Ranger also stated that the Applicant did a great job cleaning up after the event. A copy of their permit application is attached for the Commission's information.

Recommendation: *Park & Natural Resources Manager recommends conditional approval of the event.*

Event Details:

Date of Application	5/11/2023
Date of Event	5/4/2024
Time of Event	6:00am or 6:30 a.m. to 12:30pm
Event Name	"Brighten A Life" Color Run
Applicant Name	Christina Palmer for Salvation Army
Location	One Mile Picnic Area Oak Grove A and B, Lower Bidwell Park
Description	5K & 1-mile Fun Run
New Event?	☐Yes ☒ No. Years? 1
# Participants	500
Park Fees Paid	$350.00 (excludes $150 refund rolled over from this year's event)
Reason for Consideration?	Unusual event, with potential impacts to the park.

Conditions:

Staff recommends the Applicant adhere to the following permit conditions:

- Start the reservation at 6 a.m. or 6:30 a.m. to allow enough time to set up the stations and for the race to start at 8:30 a.m. prior to the main 4th Street entrance gate opening.
- Use environmentally friendly color powder.
- Use color powder only in "contained" areas (e.g., tents with side walls).
- Clean up residual color powder with leaf blowers and/or brooms and water.
- The applicant will need to do a final inspection of the racecourse at the conclusion of the event and remove all signs and course markings as well as pick up any associated trash.
- Follow all park rules, including no glass, alcohol, candles, or smoking allowed (see Section 4 of the permit application).
- Do not attach or hang signs or decorations on any City structures, trees, tree barriers, or vegetation.

Attachments: Application and Permit for Park Use

Distribution: Christina Palmeri

City of Chico
Application & Permit for Park Use
Public Works Department - Park Division

Number of People:

☐ 150 or less ☐ 151 or more ☑ Special Event

SECTION 1 - APPLICATION INFORMATION

Must be 18 or older to submit an application - Permit fees due upon submittal

This Reservation is not valid until approved by the Park Division

Salvation Army/Christina Palmer
Name of Applicant/Contact Person

Salvation Army
Organization Name (ifapplicable)

[redacted]
Home, Organization, or Company Address

Chico CA 95973
City, State, Zip

[redacted]
Contact Phone No.

[redacted]
Alternate Phone No.

Brighten A Life Color Fun Run
Description of Event (Family BBQ, walk/run)* Additional room at bottom of page

Saturday, May 4, 2024
Day and Date of Event

From: 9:00 AM To: 12:30 PM
Time of Event only

500
No. of People

From: 7:00 AM To: 12:30 pm
(Total time needed for set-up, Event, and clean-up)

[redacted]

Note: Park gates will not remain closed beyond normal opening time for any Event with less than 1,000 people. All races with less than 1,000 people at One Mile must start before 8:30 am. Street closure(s) subject to a separate permit and approval.
Use of 50 or 100 amp requires a certified electrician (See Section 2).

Area Requested: (Please check if requested)

☐ **Five Mile Picnic Area** ☐ **East** ☐ **West**
- ☐ BBQ - Pick up key Mon - Fri 8:00 am - 4:30 pm

☐ **Cedar Grove Picnic Area**
- ☐ Electricity (15 amp)
- ☐ Water (Public Events Only)

☐ **Cedar Grove Meadow**
- ☐ Water (Public Events Only)
- ☐ Electricity (100 amp)
- ☐ Electricity (50 amp)

☐ **Bidwell Bowl Amphitheater**
- ☐ Electricity (15 amp)

Note: Special conditions apply for amplified sound and 100 amp electricity (12R.10.170 CMC).

☐ **City Plaza (Additional fees may apply)**
- ☐ Electricity (15 amp) ☐ Electricity (100 amp)
- ☐ Event Restrooms ☐ Water
- ☐ Fountain: ☐ on ☐ off
- ☐ Meter Bags#

☐ **Council Ring**
- ☐ Fire Permit

☐ **Depot Park**
- ☐ Electricity (15 amp)

☐ **Lower Bidwell Park (Public Events only)**

☑ **One Mile Picnic/Barbecue Area**
- ☐ **Oak Grove A** ☐ **Oak Grove B**
- ☑ Electricity (15 amp)
- ☑ Band Stand (15 amp)
- ☐ BBQ - Pick up key Mon - Fri 8:00 am - 4:30 pm
  (Water is available, but no hose bib)
- ☐ **Sycamore Field:** Contact CARD to reserve.

☐ **Children's Playground**
- ☐ Electricity (15 amp) Pick up key Mon - Fri 8:00 am - 4:30 pm
- ☐ Electricity (100 amp)
- ☐ Water **(Public Events Only)**

☐ **Picnic Site No. 37 (Redwood Grove)** **No vehicle access before 11 am**

☐ **Upper Bidwell Park (Public Events only)**

☐ **Other (Specify):**

☐ **Early Entrance Needed (Public Events only)**

* **Additional Description of the Event (if needed)**

For Park Ranger Assistance during the Event call 530-897-4912 (Police Department Dispatch).

Office Distribution:

Permit File (original)	Park Ranger 1	Senior Park Ranger	Applicant	BPPC Cleaning Service	Facilities
Park Field Supervisor	Park Ranger 2	Calendar	920 Fund	DCBA Risk Management (email)	CPD

SECTION 2 - EVENT INFORMATION

Please answer the following questions by checking "yes" or "no"

Is this an annual event? If so, how many years have you been holding this event? 2nd Annual — Yes ☑ No ☐

Is there a patron admission, entry, or participant fee(s) required for your event? If fee is charged, how much is the fee? $40 pp — Yes ☑ No ☐

Will there be amplified sound/music at the event? (Please see the Noise Conditions for Park Use in Section 4) — Yes ☑ No ☐

Specify type (microphone, band, radio, PA system etc.): DJ system

When will amplified sound/music be heard? Time from: 8:00 AM to: 12:30 pm

Note: 50 / 100 amp electrical service requires a certified electrician to operate

Will there be an entertainment apparatus anywhere? These are only allowed in certain areas of the park. *No water appamtus allowed.* — Yes ☑ No ☐

Operator to provide proof of insurance to the City Park Division prior to event.

☑ Bounce house ☐ Climbing wall ☐ Ropes course ☐ Other:

Name of Operator

Will there be any vendors selling food, merchandise, or services at this event? (no glass or alcohol permitted) — Yes ☑ No ☐

If selling food, please describe how it will be prepared at the event: 3 Food Trucks

Valid pennit from Butte County Environmental Health is required for all food vendors and must be on hand.

Will event require that any part of the Park remain closed beyond the normal time of opening? — Yes ☐ No ☐

Note: Park gates will not remain closed beyond normal opening time for any event with less than 1,000 people. All races with less than 1,000 people at One Mile must start before 8:30 am. (Subject to approval by the City Park Division)

If yes, please state which gates: Time of closure: from: to:

Will event require overnight storage of property? If yes, how many security or other personnel will be provided? — Yes ☐ No ☑

Will there be early entrance (before 7 am) into the Park? **(An additional fee will be charged)** Note: Gate monitors are required at all the entrances and t:xits for early Park entrance until gates open at 9 am. — Yes ☑ No ☑

If yes, when will monitors be at their positions? Time from: 7:00 AM to: 9:00 AM

Portable Restrooms: You are required to rent portable restrooms for events with 200+ participants in the immediate area of the event site which will be available to the public during your event. — Yes ☑ No ☐

Restroom company: Johnny on the Spot Phone number:

Location(s) of portable restrooms:

Note: Restrooms shall be removed within 32 hours after conclusion of event.

Trash and Recycling: As an event organizer, you must properly recycle or dispose of waste during your event and immediately after the event. — Yes ☑ No ☐

The area must be returned to a clean condition. **For events with 200+ participants, additional trash and recycling cans are required at applicant's cost.** Note: Containers shall be removed within 32 hours after conclusion of event.

Trash company: Phone number:

Will your event include the use of any signs, banners, or decorations? (Please see Conditions for Park Use in Section 4) — Yes ☑ No ☐

If yes, please describe type and location: Salvation Army & Sponsor signs

Note: All signs and banners shall be free standing and not affixed to trees or Park property

Will water be needed during your event? If yes, for what purpose: — Yes ☐ No ☑

Please provide your own hose and shut-off nozzle. No hose bib is available at One Mile Recreation Area.

Is this a walk, run or bike race event? Walk/run — Yes ☑ No ☐

If so, are you using the standard race course? If not, please provide a map. — Yes ☑ No ☐

Note: Not using the standard race course requires Bidwell Park & Playground Commission (BPPC) approval.

One Mile/ Sycamore Field: If this is a One Mile reservation, will Sycamore Field be needed? — Yes ☐ No ☑

If yes, you will need to contact CARD at 545 Vallombrosa Ave. Chico (530) 895-4711.

City **Plaza Only:** Vehicles are not allowed in City Plaza. Loading and unloading **must** occur **from** the streets. Meter bags for loading and unloading may be obtained from the City by calling: (530) 896-7800.

Will vendors be placed on the perimeter sidewalks? — Yes ☐ No ☑

If yes, a Vend, Peddler, Hawk permit must be obtained from the Engineering Division at 411 Main Street, Chico (530) 879-6900.

Will City street closure(s) be needed? — Yes ☐ No ☑

If yes, a separate pennit must be obtained from the Engineering Division at 411 Main Street. Chico (530) 879-6900.

SECTION 3A - PERMIT FEES

Reservations with 150 or fewer people, complete this section
(151 or more people, complete Section 3B)

Reservation Locations	Fee	No. of Days	Total
Bidwell Bowl - Partial Day (5 hours or less)	$55		
Bidwell Bowl - Full Day	$100		
Cedar Grove Picnic Area - Partial Day (5 hours or less)	$55		
Cedar Grove Picnic Area - Full Day	$75		
Cedar Grove Meadow - Partial Day (5 hours or less)	$55		
Cedar Grove Meadow - Full Day	$75		
Children's Playground - Partial Day (5 hours or less)	$30		
Children's Playground - Full Day	$55		
City Plaza - Partial Day (5 hours or less)	$55		
City Plaza - Full Day	$75		
Council Ring - Partial Day (5 hours or less)	$55		
Council Ring - Full Day	$75		
Depot Park - Partial Day (5 hours or less)	$30		
Depot Park - Full Day	$55		
Five Mile East - Partial Day (5 hours or less)	$55		
Five Mile West - Partial Day (5 hours or less)	$55		
Five Mile East - Full Day	$75		
Five Mile West - Full Day	$75		
One Mile Oak Grove A - Partial Day (5 hours or less)	$55		
One Mile Oak Grove B - Partial Day (5 hours or less)	$55		
One Mile Oak Grove A - Full Day	$75		
One Mile Oak Grove B - Full Day	$75		
One Mile Oak Grove A & B - Partial Day (5 hours or less)	$75		
One Mile Oak Grove A & B - Full Day	$125		
Picnic Site No. 37 (Redwood Grove) - Partial Day (5 hours or less)	$30		
Picnic Site No. 37 (Redwood Grove) - Full Day	$55		
Other Areas** - Partial Day (5 hours or less)	$30		
Other Areas** - Full Day	$55		

***Other Areas Require BPPC Approval*

Additional Fees	Fee	No. of Units	Total
Early Entrance Fee (before 7 am)	$35 / hour		
Events with vendors selling food, beverages, merchandise, or services	$10 / vendor		
Sound/Electricity (15 amp)	$15 / day		
Sound/Electricity (50 or 100 amp)	$35 / day		

Fees due upon submittal of application
Credit Card payment will be assessed a 2.75% convenience fee
Make checks payable to: City of Chico

Park Fees Total: _____
Convenience Fee: _____
Total Fees Required: _____

City of Chico Cash Receipt No:_____ Payment Method:_____ Date:_____ Received by: _____

SECTION 3B - PERMIT FEES

Reservations with 151 or more people, complete this section
(150 or fewer people, complete Section 3A)

Description	Fee		Total
Application Processing Fee	$40		40 –
Damage Deposit Fee (Refundable)	$150	Rolled from 2023	~~150~~ –
Event Fees Based on Number of Participants			
1 - 150	$75		
151 - 250	$150		
251 - 500	$230		230 –
501 - 1,000	$525		~~525~~ –
1,001 plus (see line below)	$750		
$0.50 per participant exceeding 1001	$0.50	# over 1001 x ______	

Additional Fees	Fee	No. of Units	Total
Early Entrance Fee (before 7 am)	$35 / hour	1	35 ~~35~~ –
Events with vendors selling food, beverages, merchandise, or services	$10 / vendor	3	30 –
Sound/Electricity (15 amp)	$15 / day	~~0~~ 1	15 ~~+0~~
Sound/Electricity (50 or 100 amp)	$35 / day	~~X~~ ~~1~~	~~0~~ ~~35~~ –
City Plaza Additional Restrooms (200 + participants)	$112.50 / day		

Fees due upon submittal of application — Park Fees Total: ~~830~~ –

Credit Card payment will be assessed a 2.75% convenience fee — Convenience Fee: ——

Make checks payable to: City of Chico — **Total Fees Required:** ~~830~~ – 350.

City of Chico Cash Receipt No: ~~1284~~ 8262 43303 Payment Method: CC Date: 5/11/23 Received by: LH

SECTION 4 - CONDITIONS FOR PARK USE

You are responsible for knowing the Park Rules. Please observe the following:

Alcohol	Alcohol is not permitted in any City Park or Playground.
BBQs	Portable BBQs (charcoal or propane only) may only be used next to existing BBQs in Lower Bidwell Park and Five Mile Recreation Areas, no other areas. No BBQs allowed during Red Flag Fire Warning or high wind advisory days.
Bicycles	Bicycles must observe all California vehicular codes including one-way streets. Riders are expected to be courteous and yield to equestrian and pedestrian traffic. Helmets must be worn at all times in Upper Park, except when on pavement. Riders must stay on designated trails. Bicycle riding is not allowed in Caper Acres or on the Sycamore pool deck.
Bounce Houses	Bounce houses, (except those with water) and other similar non-water play equipment, are only permitted in certain areas with a reservation and upon approval by the Park Division. The operators of this equipment must provide proof of insurance to the Park Division prior to event. Bounce houses are not allowed in Caper Acres.
Campfires	No campfires allowed at any time, except by permit and only in the Council Ring.
Camping	No overnight camping allowed unless authorized by the Bidwell Park and Playground Commission. Bidwell Park is a day use only park.
Clean up	Permittee is required to completely clean up area at the conclusion of event.
Damages	Any damage to City property as a result of this event will be repaired at permittee's expense.
Dogs	Dogs may be offleash from 5:30 am to 8:30 am in Lower Park. All other times, dogs must be on a leash 6 feet in length or less. Along the north side of Upper Park Road, dogs may be off leash anytime. While offleash, dogs must remain under control via master's voice. **Dogs are not allowed in Caper Acres, One Mile or Five Mile swimming areas, or designated swimming holes in Upper Park.**
Electrical	All power extension cords, sound amplification equipment, and staging to be supplied by permittee. Permittee shall provide "tripping" prevention devices over power cords crossing any pathway.
Fishing	Big Chico Creek: Check California Fish and Wildlife Regulations: www.wildlife.ca.gov. Horseshoe Lake: Age 14 and over - license required, catch and release. Under 14 - no license required, catch and keep.
Gate Closures	Upper Park gate at Parking Lot E is closed on Sundays, Mondays, during wet periods, and Red Flag Fire Warning days. Gates may be closed for approved special events. For gate opening and closing hours, visit:" ww.chico.ca.us/park-trails.
Glass	No glass containers allowed in any City Park or Playground.
Horses	Horses must stay on designated trails. Horses are not allowed in One Mile or Five Mile Recreation Areas. Horses must cross the creek at approved crossings. Safe and courteous riding is the Park standard.
Noise	No loud or unusual noises are allowed, including radios and headsets that can be heard over 50 feet away. For music or sound at One Mile Recreation Area, please face all speakers away from Woodland Ave.
Park Closures	Lower Park is closed from 11:00 pm to 5:00 am every day, unless directly and actively proceeding to a destination outside of the Park. Upper Park is closed to vehicles at **9:00 pm October - March, and 11:00 pm April - September** unless posted otherwise. Park may be closed during Red Flag Fire Warning or high wind advisory days.
Signs/ Defacing	Defacing of trees, tables, any park fixtures, open ground, or paved roads/paths with markings, staples, tacks, or signs is prohibited. No pinatas, slack lines, hammocks, or accessories shall be affixed to trees. Only barricades, cones, or selfstanding devices may be used for these purposes.
Smoking	Smoking or vaping is not permitted in any City Park or Playground.
Swimming	While in the One Mile swim area,compliance with lifeguards is required for public safety. Pool is open and lifeguards are on duty during summer swim season.
Vegetation	No taking, cutting, or injury of any vegetation in the Park is allowed.
Vehicle Traffic	• While gates are closed, limited use of vehicles to set up for event is permitted. Vehicles must be in compliance with the one-way designation of the roadway, must yield to all other activities (walking,jogging, bicycling, and horseback riding), must travel with flashers on and may not exceed ten (10) miles per hour. • Permittee shall provide adequate signs and supervision to avoid conflicts between vehicles, bicycles, equestrians, and general public. • Only emergency vehicles will be allowed access through the area of South Park Drive which has been closed to motor vehicles. • No vehicles are permitted to travel or park on grass areas.

SECTION 5 - INSURANCE

(fo be determined by Park Division)

INSURANCE REQUIREMENTS ARE APPLICABLE TO ALL E VENTS WHERE: ☐ Insurance Required ☐ Not Required

"There are more than 150 participants"

For Insurance questions for your event, please contact the Risk Management office

(530) 879-7910 or email risk-management@chicoca.gov

For liability coverage purposes, it is the applicant and the City of Chico's intent (hereinafter referred to as the "Parties"), that this permit is a written contract between the Parties.

Pursuant to the insurance policy related lo this permit/written contract, and consistent with the Certificate of Liability Insurance and Additional Insured Endorsements, the Parties hereby attach and incorporate by this reference, the Certificate of Liability Insurance and Additional Insured Endorsements, which arc further expressly made a material part of the said permit/written contract between the Parties.

Permittee shall supply, at least two (2) weeks in advance* of the scheduled event, a Certificate of Insurance issued by a company licensed to do business in California with a Best's Insurance Guide rating of "B" or better ("A" rated if Company is unlicensed) which provides evidence of comprehensive and general liability coverage in the amount of $1,000,000 combined single limit; $2,000,000 aggregate with policy endorsements as follows:

(1) Identification of permit application, identification of event, date of event.

Note: Numbers 2 and 3 below must be separate endorsements:

(2) The City of Chico, its officers, boards of commissions, and members thereof, its employees and agents are covered as additional insureds as respects to any liability arising out of the activities of the named insured.

(3) The insurance coverages afforded by this policy shall be primary insurance as respects to the City of Chico, its officers, employees, or agents. Any insurance or self-insurance maintained by the City of Chico, its officers, employees, or agents shall be in excess of the insurance afforded to the named insured by this policy and shall not contribute to it.

(4) An unqualified statement that "The insurer will provide the City at least ten (10) days prior notice of cancellation or material change in coverage" standard Certificate of Insurance cancellation language is not acceptable.

***Please Note: Your reservation may be cancelled if the insurance is not approved at least two weeks prior to the scheduled event.**

SECTION 6 - ACCEPTANCE OF CONDITIONS

In signing this Permit, I agree to indemnify and hold the City of Chico and/or the Bidwell Park and Playground Commission free and clear of all claims of damage for injury to persons or property in, upon or about City Parks or Playgrounds, and arising from my use of the Parks and Playgrounds as noted above, and to defend any action against the City of Chico resulting from any such claim, without cost to the City.

*I certify that I have read this application thoroughly, followed any and all instructions, understand its contents, will comply with the attached "Conditions for Park Use" in Section 4, will adhere to any additional conditions set forth by this permit, and supplied true and correct information herein to the best or my knowledge and belief.

Signature of Applicant _____ Date _____

RETURN THIS FORM TO:

City of Chico - Park Division

Deliver to: 965 Fir Street, Chico, CA 95928

Mail to: PO Box 3420, Chico, CA 95927

email to parkinfo@chicoca.gov

THIS RESERVATION JS NOT VALID UNTIL ALL FEES ARE PAID AND APPROVED BY THE PARK DIVISION.

A copy of the approved permit will be returned to you.

SECTION 7 - AUTHORIZATION

I certify that I have carefully reviewed this application pursuant to Title 12 and 12R of the Chico Municipal Code and hereby recommend this permit be:

☐ Approved by Director

☐ Approved by Director subject to insurance approval and any listed additional condition(s):

☐ Denied by Director

☐ Approved by Bidwell Park & Playground Commission (BPPC)

☐ Approved by BPPC subject to listed additional condition(s:) (see attached conditions)

☐ Denied by BPPC

Reason for Denial: _____

_____

_____

Approved by _____ Date _____

Bidwell Park & Playground Commission Report Meeting Date 5/22/23

DATE: 5/18/23

TO: Bidwell Park and Playground Commission (BPPC)

FROM: Linda Herman, Park & Natural Resources Manager (P&NRM)

SUBJECT: PRESENTATION OF THE UPPER PARK TRAILS SEDIMENT ASSESSMENT AND REDUCTION PLAN

REPORT IN BRIEF:

The Bidwell Park & Playground Commission (BPPC) will receive an update and presentation from the City's consultants on an assessment that was conducted on the system trails, 10-Mile House Road, and other roads in Upper Bidwell Park for potential sediment reduction treatments.

Recommendation: None, this is an informational item only.

DISCUSSION:

The City with the help from the Butte County Resource Conservation District, was also successful in obtaining a Nonpoint Source (NPS) Grant administered by the State Water Resources Control Board (SWRCB) in the amount of $706,352, with a local match of $291,450 in existing Park Division Capital and Operating budgets (Fund 002) to complete the Upper Park Road Sediment Reduction Project. Another component of the grant was also to prepare a sediment reduction assessment of the trails and some of the other roads in Upper Bidwell Park.

Using field inventories and data analysis, Pacific Watershed Associates (PWA) identified 140 sites along approximately 37 miles of roads and trails on both the north and south side of Upper Park with the potential to deliver sediment to streams in the project area. Of the 140 sites, they recommend that 121 sites be treated for erosion control and erosion prevention. They estimated that treating these sites will prevent the delivery of approximately 296 cubic yards of site-specific episodic erosion, and 940 cubic yards of episodic road/trail surface erosion currently draining to stream channels, either directly or via gullies, into the Big Chico Creek stream system.

This assessment report, attached as Attachment 1, also includes a prioritized Action Plan for cost-effective erosion prevention and erosion control, which can be expected to significantly contribute to reducing road and trail erosion maintenance costs and the long-term improvement of water quality and salmonid habitat in the watershed.

The estimated cost for implementing all recommended erosion control and erosion prevention treatments for the project area is $745,151. With this prioritized plan of action, the City is poised to seek potential grant funding to implement the plan, or portions of the plan in the future.

Attachments:

Attachment 1: Trail Sediment Reduction Assessment (w/o Appendices)
The entire report is available at https://chico.ca.us/post/upper-bidwell-park-road-sediment-reduction-project

Upper Bidwell Park Road and Trail Sediment Source Assessment And Reduction Project, Butte County, California

PWA Report No. 231040601
March 2023

City of Chico and California State Water Resources Control Board
Agreement No. D1913511

Prepared for:
City of Chico
965 Fir Street, Chico, CA 95927
Attn: Linda Herman, Park and Natural Resources Manager

Central Valley Regional Water Quality Control Board
364 Knollcrest Drive, Suite 205
Redding, CA 96002
Attn: George Low, Technical Lead

Prepared by:
Todd Kraemer, Project Hydrologist
Joel Flynn, Professional Geologist #8276
Pacific Watershed Associates Inc.
PO Box 4433, Arcata, CA 95518-4433
toddk@pacificwatershed.com / (707) 839-5130

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1 PROJECT SUMMARY

The Upper Bidwell Park Road and Trail Sediment Source Assessment and Reduction Project (Project) area is located east of Chico, California, within the bounds of municipal Upper Bidwell Park. The park was established in 1905, through a donation by Annie Bidwell of approximately 2,500 acres of land to the City of Chico. Today, Bidwell Park contains 3,670 acres and is the 3rd largest municipal park in the United States. The project area contains a high density (~6.5 mi/ac) road and trail network that was constructed over the last 100 years, including wagon and vehicle roads beginning in the early 1900s.

The Big Chico Creek watershed contains important habitat for anadromous salmonids in its lower reaches, including California Central Valley Spring Run Chinook Salmon, Central Valley steelhead, and Sacramento River winter-run Chinook. The watershed is contained within California 12-digit Hydrologic Unit #180201570503, which is designated as a "refugia" watershed for Spring Run Chinook salmon by the California Department of Fish and Wildlife (CDFW) and high priority for restoration and improvement of water quality in salmonid-bearing streams.

To address problems with road related erosion and improve salmonid habitat, the City of Chico received a grant agreement from the State Water Resources Control Board in 2020 to conduct an inventory of road and trail related sediment sources and generate a restoration plan for their landholdings in the Big Chico Creek watershed in Upper Bidwell Park. The City of Chico contracted Pacific Watershed Associates Inc. (PWA) to complete the inventory and develop a prioritized plan-of-action for cost-effective erosion control and erosion prevention treatments for road and trail related sediment sources in the watershed.

Using field inventories and data analysis, PWA identified a total of 140 sites along approximately 37.1 mi of roads and trails with the potential to deliver sediment to streams in the project area. Of the 140 sites, we recommend that 121 sites be treated for erosion control and erosion prevention. We estimate that treating these sites will prevent the delivery of approximately 296 yd^3 of site-specific episodic erosion, and 940 yd^3 of episodic road/trail surface erosion from 5.27 mi of hydrologically connected road and trail surfaces that are currently draining to stream channels, either directly or via gullies, in the Big Chico Creek stream system. Of the 5.27 mi of hydrologically connected road and trail, we recommend treating 4.94 mi to diminish road and trail surface runoff and delivery of fine sediment to the stream network. The estimated cost for implementing all recommended erosion control and erosion prevention treatments for the project area is $745,151.

The expected benefit of completing the erosion control and erosion prevention treatments recommended in this report lies in the reduction of long-term sediment delivery to the Big Chico Creek watershed, important areas for salmon and steelhead production in Butte County. This assessment includes a prioritized Action Plan for cost-effective erosion prevention and erosion control, which can be expected to significantly contribute to reducing road and trail erosion maintenance costs and the long-term improvement of water quality and salmonid habitat in the watershed. With this prioritized plan of action, entities interested in the sustainability of the trails, watershed, and preservation of salmonid habitat can advance efforts to obtain funding and implement the road and trail related erosion remediation plan for the project area.

2 CERTIFICATION AND LIMITATIONS

This report, entitled *Upper Bidwell Park Road and Trail Sediment Source Assessment and Reduction Project, Butte County, California*, was prepared by or under the direction of a licensed professional geologist at Pacific Watershed Associates Inc. (PWA), and all information herein is based on data and information collected by PWA staff. Sediment-source inventory and analysis for the project, as well as erosion control treatment prescriptions, were similarly conducted by or under the responsible charge of a California licensed professional geologist at PWA.

The interpretations and conclusions presented in this report are based on a study of inherently limited scope. Observations are qualitative, or semi-quantitative, and confined to surface expressions of limited extent and occasional exposures of subsurface materials. Interpretations of problematic geologic and geomorphic features (such as unstable hillslopes) and erosion processes are based on the information available at the time of the study and on the nature and distribution of existing features.

The conclusions and recommendations contained in this report are professional opinions derived in accordance with current standards of professional practice and are valid as of the submittal date. No other warranty, expressed or implied, is made. PWA is not responsible for changes in the conditions of the property with the passage of time, whether due to natural processes or to the works of man or changing conditions on adjacent areas. Furthermore, to be consistent with existing conditions, information contained in the report should be re-evaluated by a professional geologist prior to implementing work to ensure that all recommendations in the report are reviewed and implemented according to the conditions existing at the time of construction. Also, PWA is not responsible for recommendations implemented outside of their professional oversight. Finally, PWA is not responsible for changes in applicable or appropriate standards beyond our control, such as those arising from changes in legislation or the broadening of knowledge, which may invalidate any of our findings.

Certified by:

Joel Flynn, California Professional Geologist #8276

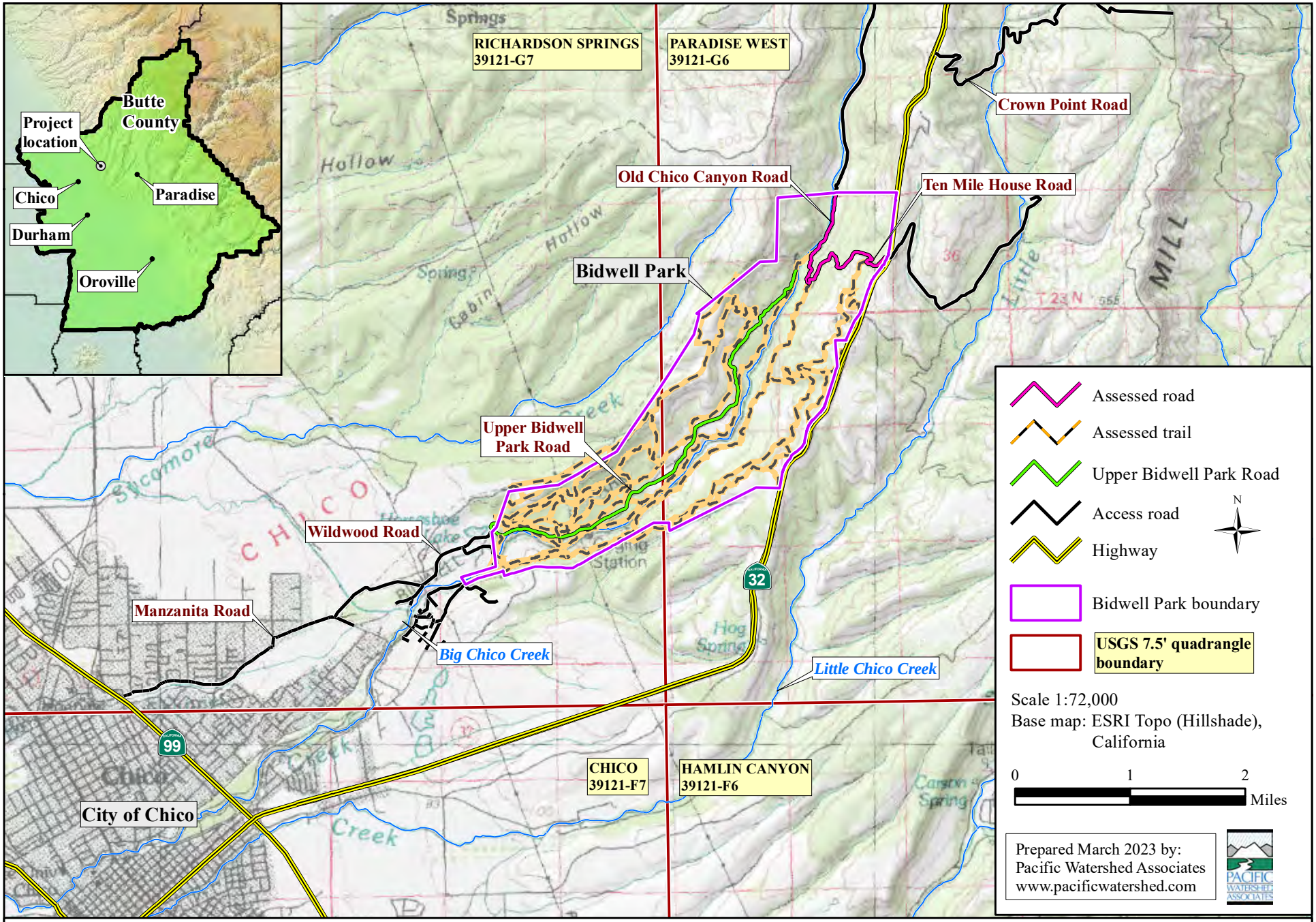
Pacific Watershed Associates Inc.

3 INTRODUCTION

One of the most important elements of long-term restoration and maintenance of both water quality and fish habitat is the reduction of future impacts from upland erosion and sediment delivery. Sediment delivery to stream channels from roads and trail networks has been extensively documented and is recognized as a significant impediment to the health of salmonid habitat (Furniss et al., 1991; Higgins et al., 1992; Harr and Nichols, 1993; Flosi et al., 1998; NMFS, 2000, 2001). Unlike many watershed improvement and restoration activities, erosion prevention through "storm-proofing" rural, ranch, and forest roads and trails provides immediate benefits to the streams and aquatic habitat of a watershed (Weaver and Hagans, 1994; Weaver et al., 2006). It measurably diminishes the impact of erosion on the biological productivity of the watershed's streams and allows future storm runoff to cleanse the streams of accumulated coarse and fine sediment, rather than allowing continued sediment delivery from the park's access roads and trail system.

Big Chico Creek drains to the Sacramento River watershed, and contains productive habitat reaches for California Central Valley spring-run Chinook salmon and steelhead and Sacramento River winter-run Chinook. Currently, road and trail related erosion is a recognized threat to water quality and salmonid habitat in Big Chico Creek. To address road and trail related erosion problems in portions of the Big Chico Creek watershed owned by the City of Chico, the City contracted PWA to assess a network of roads and trails in the Upper Bidwell Park, a 3,670 acre oak woodland east of Chico, California (Maps 1 and 2). PWA staff scientists completed an assessment of 2.1 mi of roads and 35 mi of the primary trail network within Upper Bidwell Park during March and April 2021. Specifically, the purpose of the project was to: (1) conduct a 2 mi field inventory of related erosion sources on 10 Mile House Road and Old Chico Canyon Road within Upper Bidwell Park; (2) conduct a field inventory of all current and potential trail related erosion sources along nearly 35 mi of the primary trail system, and; (3) develop a prioritized Action Plan for cost-effective road and trail erosion control and erosion prevention treatments for Upper Bidwell Park. The sediment source assessment completes the PWA basin-wide erosion inventories on all roads and primary trails maintained by the City of Chico in Upper Bidwell Park, including the 43 erosion sites on 4.3 mi of Upper Park Road that were inventoried in 2017 and treated in 2022.

In this report we provide results of the field assessment and data analysis, and a detailed Action Plan for implementing erosion control and erosion prevention treatments to reduce additional road and trail related erosion in the project area. Like the 2017 PWA Action Plan for 4.3 mi of Upper Park Road, all treatment prescriptions follow guidelines described in the *Handbook for Forest and Ranch Roads* (Weaver et al., 2015), as well as *Parts IX* and *X* of the California Department of Fish and Game *Salmonid Stream Habitat Restoration Manual* (Taylor and Love, 2003; Weaver et al., 2006). Assessment data are summarized in Tables 1-5, Maps 1-3a-c, and Appendix A. Projected requirements for heavy equipment and/or hand laborers (trail crew) and estimated project costs are provided in Tables 6 and 7. Techniques for implementing road and trail related erosion control treatments in the project area are provided in Appendix B. Following the typical design drawings and drainage specifications during construction will lead to an effective "storm-proofed" road and trail system. Construction techniques are generally the same for the geometry of roads verses trails with the difference between roads verses trails being the dimensions or scale of the treatments. Trails generally have the same geometry but at a smaller scale, if the trail is not located on a former bulldozer constructed road prism.



Map 1. Location of the Upper Bidwell Park Road and Trail Sediment Source Assessment and Reduction Project, Big Chico Creek Watershed, Butte County, California.

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4 FIELD DESCRIPTION OF THE ASSESSMENT AREA

4.1 Location and Travel Directions to the Field Area

The project area is located in Bidwell Park, east of the town of Chico, CA (Map 1). The area is accessed of CA State Highway 99 by taking Manzanita Road and Wildwood Road east out of Chico approximately 15 minutes to Upper Bidwell Park. From town, travel on Manzanita Road to Wildwood Avenue and continue east to the parking lot nearby the Upper Park Road gate. Although Upper Bidwell Park is public land and has permissible vehicular access for visitors, official access within the Upper Park Road project area is recommended by contacting City of Chico staff.

Landowner address:
Park and Natural Resources Manager
City of Chico, Public Works, Parks Division
965 Fir Street, Chico, CA 95927
(530) 896-7800

4.2 Road and Trail Networks in the Big Chico Creek watershed

Sediment sources were inventoried on 4.3 mi of Upper Park Road in 2017 (see maps in the back of the report). This road was upgraded in 2022 using funds from a State Water Resources Control Board (SWRCB) Nonpoint Source (NPS) Pollution Grant Program procured by the City of Chico and Butte County Resources Conservation District (BCRCD).

For this report a sediment source assessment was conducted along an additional 2.1 mi of maintained rock-surfaced roads (10 Mile House Road and Old Chico Canyon Road) and along 35 mi of trails as part of the 2020 Upper Bidwell Park Road and Trail Sediment Source Assessment and Reduction Project (Maps 2 and 3a-c). The 2.1 mi of inventoried roads support backcountry access to the furthest northeast side of Upper Bidwell Park. The access routes, principal gates, and trailhead parking areas for 10 Mile House Road and Old Chico Canyon Road are located off State Route 32 and parking lot U at the end of Upper Park Road (Maps 2, 3a-c). The backcountry park roads end at a secondary, locked gate for the Big Chico Creek Ecological Restoration Reserve.

10 Mile House Road, Old Chico Canyon Road, and Upper Park Road were constructed in the 1930s (pre-first historical aerial photo records) and have been maintained over many decades. All inventoried roads and trails in the project area are currently used for recreation (e.g., hiking, swimming hole access, mountain biking). PWA observed problems typical of outdated land use and road/trail management practices along many of the inventoried road and trail segments, including filled stream crossings, undersized culverts, washed out stream crossings, and diverted streams. Multiple miles of non-system trails were observed during the trail erosion assessment, but PWA only mapped the trail system network shown on the Upper Bidwell Park trail map.

PWA labeled the roads and trails according to City of Chico base maps to facilitate data collection, mapping, and reporting (Maps 2, 3a-c; Appendix A). Several of the project roads and trails extend beyond the property boundary but were only mapped within the Upper Bidwell Park road/trail network as shown on the City of Chico base maps.

4.2.1 10 Mile House Road

10 Mile House Road is accessed from the "green gate" off Highway 32 to the intersection of Old Chico Canyon Road. The road is approximately 1.2 mi long and 12 to 15 ft wide; and was most likely used as a route for ranching and grazing management. Although maintenance activities have reduced some of the road surface erosion and the impacts of runoff and chronic gullying, many of the primary roads are insufficiently drained with minimal road shaping. In addition, PWA observed that old, unmaintained inboard ditches are currently incised and intercept the natural upslope, hillslope runoff patterns along many of these road segments.

4.2.2 Old Chico Canyon Road

Old Chico Canyon Road is a backcountry, access road from Upper Bidwell Park to the Big Chico Creek Ecological Reserve. The road is accessed via Highway 32 through the "green gate" on 10 Mile House Road. The road travels approximately 0.9 mi along the east side of Big Chico Creek from the intersection with 10 Mile House Road to the locked gate at the eastern park/reserve boundary

4.2.3 Annie Bidwell Trail

The Annie Bidwell Trail traverses the steep cliffs along 4.2-miles of the south side of Big Chico Creek (Photo 1). This trail bisects all of the stream channels below the Guardian Trail and most of the north facing slopes within the park boundary. This shared use trail begins at the east end of Chico Canyon Road and ends at 10 Mile House Road. The Annie Bidwell Access Trail is 0.4 mi long and has a 170 foot long bridge over Big Chico Creek (for emergence vehicle use). This shared use trail provides access to the Annie Bidwell Trail from the Bidwell Park Golf Course and the main parking lot on Upper Park Road (parking lot E). This trail does not provide access to the named swimming holes on Big Chico Creek.

4.2.4 B Trail

The B Trail is a steep, 1.6-mile long multi-use trail built by mountain bike enthusiasts (Photo 2). This trail has multiple switchbacks connecting the North Rim Trail and Upper Park Road. This trail also connects with the Middle Trail near the intersection with Upper Park Road.

4.2.5 Bloody Pin Trail

The Bloody Pin Trail is a steep 0.7 mi long. The trail is located on the south side of the park with steep switchbacks connecting the Humboldt Trail, Guardian Trail, and Annie Bidwell Trail.

4.2.6 Blue Oak Trail

The Blue Oak Trail is a short, relatively gently ascent from the Middle Trail to the North Rim Trail. The trail is 0.4 mi from parking lot C near the Horseshoe Lake area to the North Rim Trail.

Photo 1. View of Annie Bidwell Trail and PWA Geologist during field inventory and erosion assessment (Site #80). Trails in the park are often worn and collect runoff and transport fine sediment if not properly drained.

Photo 2. View of PWA Geologist completing the erosion assessment and site inventory data form on the B-Trail. Trail use and trail erosion have exposed bedrock and delivered fine sediment to this ephemenral stream crossing during storms (Site #109).

4.2.7 Guardian Trail

The Guardian Trail is an easy to moderate 4.2-mile long trail that traverses just below the southern rim of Big Chico Canyon. The trail is accessed from 10 Mile House Road or from several steep access trails from the Southern Rim and Humboldt trails above.

4.2.8 Humboldt Trail

The 1.4-mile Humboldt Trail is part of the historic Humboldt Wagon Road built by John Bidwell in the 1860's. The road was originally built to connect Chico with mountain communities to the east. The trail can be accessed via a short frontage trail near Peregrine Point.

4.2.9 Live Oak Trail

The Live Oak Trail is a very steep 0.5-mile long trail that connects the North Rim Trail to the Upper and Middle Trails.

4.2.10 Lower Trail

The Lower Trail is an easy, 1.8-mile multi-use trail directly above Upper Park Road (Photo 3). The trail begins at the main Bidwell Park parking lot (lot E) and ends at an intersection with Middle Trail. Middle Trail can also be accessed via short upslope trails along Lower Trail near parking lots F, G, and J.

Photo 3. View of Lower Trail and PWA Geologist standing in the shade in the background. Multiple trail paths increase the trail width and this increases the area of bare soil and potential surface erosion and volume of chronic sediment delivery that will occur during storms.

4.2.11 Manzanita Trail

The Manzanita Trail is a moderate 0.4-mile long trail that connects the North Rim Trail to the Middle Trail. This trail leads to the top of the popular Monkey Face rock formation.

4.2.12 Middle Trail

Middle trail is an easy to moderate 3.4-mile long multi-use trail that provides the main access to much of the northern side of Upper Bidwell Park and is part of many trail loop options (Photos 4 and 5). This trail begins near the entrance of Upper Bidwell Park at parking lot A and ends at the intersection with B Trail. The North Rim Trail can be accessed from Middle Trail via Blue Oak Trail, Maidu Trail, Manzanita Trail, Red Bud Trail, Live Oak Trail, and B Trail. The upper portion of Middle Trail can also be accessed from Upper Park Road near parking lot N.

4.2.13 North Rim Trail/Fence Line Trail

The moderately difficult, multi-use 3.4-mile North Rim Trail follows the northern rim of Big Chico Creek Canyon. This trail begins near parking lot B off Upper Park Road and ends at a park boundary gate 0.8 mi beyond B Trail; and offers outstanding, high elevation views of the park, Big Chico Creek, the City of Chico, and the Sacramento Valley. Multiple trails travel downslope and connect with Middle Trail, including B Trail, Live Oak Trail, Red Bud Trail, Manzanita Trail, Maidu Trail, and Blue Oak Trail. The 1-mile Fence Line Trail follows the northern boundary of Upper Bidwell Park on the ridge above the North Rim Trail.

Photo 4. View of Upper Park and PWA geologist collecting erosion assessment data on the Middle Trail. The bare, exposed soil on this wide trail will erode and deliver fine sediment to the stream crossing during storms.

Photo 5. View of Upper Bidwell Park and the Middle Trail with an amazing view of the park's volcanic terrain, chaparral, and annual grasses. This narrow trail segment is on its original ground with a slight outslope and minimal erosion (Site #122).

4.2.14 Pine Trail

The Pine Trail is a short, moderately difficult 0.5-mile long minor access trail connecting communities along Highway 32 to the Guardian Trail.

4.2.15 Red Bud Trail

The Red Bud Trail is a steep 0.5-mile long trail that runs under the high tension transmission lines from the North Rim Trail to the Middle Trail and intersecting with the Upper Upper and Upper trails between. The trail section between the North Rim Trail and the Upper Trail is considered difficult due to its very steep nature.

4.2.16 South Rim Trail

The South Rim Trail is a moderate to difficult 3.3-mile long trail along the south rim of Bidwell Park. The trail begins at the Annie Bidwell Trail and climbs steeply above the Guardian Trail, then follows the ridgeline and ends at the Peregrine Point parking lot on Highway 32. This trail offers excellent views to the north and west of Upper Bidwell Park, Big Chico Creek, and the greater valley below.

4.2.17 Upper Trail/Upper Upper Trail

The Upper Trail is a moderately difficult, 2.3-mile long multi-use trail along the base of the bluffs of Big Chico Creek Canyon. This trail and the 1-mile Upper Upper Trail directly above offer canyon views of the park and Big Chico Creek. The trail begins at an intersection with Middle Trail near the Manzanita Trail and passes directly below the Monkey Face rock

formation. The eastern-most 0.5-mile of trail is rated as difficult.

4.2.18 Yahi Trail

The Yahi Trail traverses 4.5 mi along the west of side Big Chico Creek. Most of the trail is within the riparian and flood-prone areas of the stream. This is the longest trail in the park, it bisects most of the streams below Upper Park Road and the south facing slope of the watershed within the park boundaries. The trail was built by the Sierra Club in 1967 and provides access to several swimming holes and scenic outlooks. This trail has a 0.2-mile long access trail and is designated pedestrian with no access for bicycles or horses.

5 FIELD TECHNIQUES AND DATA COLLECTION

PWA geologists completed an assessment of 2.1 mi of roads and 35 mi of the primary trail network on the property during March and April 2021. The Project consisted of three distinct elements: (1) conduct a 2.1 mile field inventory of related erosion sources on 10 Mile House Road and Old Chico Canyon Road within Upper Bidwell Park, (2) conduct a field inventory of all current and potential trail related erosion sources along nearly 35 mi of the primary trail system, and (3) develop a prioritized Action Plan for cost-effective road and trail erosion control and erosion prevention treatments for Upper Bidwell Park.

Because the purpose of the inventory was to quantify the potential magnitude of impacts of road and trail related erosion on fish-bearing streams, we excluded any site or road reach showing evidence for erosion (past, current, or potential) that did not also show evidence for current or potential sediment delivery to a stream. Many of the shared-use ridge roads and trails are currently in a poor condition and severely worn by users; however, erosion sources from upper hillslope areas did not exhibit potential to deliver sediment to streams and therefore these erosion sites were not recommended for treatment.

Inventoried sites for this assessment consisted of all stream crossings and any potential or existing erosion sources related to the road and trail system, such as road surface drainage points, gullies, springs, and landslides. For each site identified as a potential sediment source, PWA staff plotted its location digitally on geo-rectified base map using an android tablet and Avenza mapping software, and recorded a series of field observations including: (1) detailed site description, (2) nature and magnitude of existing and potential erosion problems, (3) likelihood of erosion or slope failure, (4) length of hydrologically connected road and trail surfaces associated with the site, and (5) treatments needed for prevention or elimination of future sediment delivery. The data collected for each site also includes an evaluation of *treatment immediacy* based on the potential or likelihood of sediment delivery from the site to a stream channel, and the level of urgency for addressing erosion problems at that location.

For each existing or possible problem site in the project area, PWA evaluated the potential for erosion and sediment delivery, and collected field measurements (width, depth, and length of the potential erosion area) to derive an estimated sediment delivery volume. For the stream crossings, PWA used tape and clinometer surveys to develop longitudinal profiles and cross sections of the site. These data were used to calculate road fill and potential sediment delivery volumes with the STREAM computer program. This proprietary software, developed by PWA,

provides accurate and reproducible estimates of: (1) the potential volume of erosion at a stream crossing, whether over time or during any possible catastrophic, storm-generated washout; (2) excavation volumes associated with a culvert, armored fill, or bridge installation, culvert replacement, or decommissioning of a stream crossing and; (3) backfill volume associated with a new culvert installation or replacement. In addition, field crews measured the lengths of hydrologically connected road and trail to derive estimates for chronic sediment delivery. The roadbed, ditch, and cutbank of hydrologically connected road reaches were inspected and each road reach assigned to one of four rates of chronic road surface lowering/cutbank retreat based on the level of road usage, types of surfacing materials, soil competency, vegetative cover, and observed evidence of surface erosion in progress: (1) 0.0 ft/10 yr (no surface erosion); (2) 0.1 ft/10 yr (low rating); (3) 0.2 ft/10 yr (moderate rating) and; (4) 0.3 ft/10 yr (high rating). Using these field observations, chronic sediment production for each hydrologically connected road/trail reach was estimated on a decadal basis by: (measured length) x (average width, including cutbanks and ditches) x (0.0-0.3 ft average lowering of the road/trail per decade).

Where stream crossings are recommended to be upgraded with a new culvert installation or culvert replacement, culverts are sized to convey the 100-year peak storm flow[1] including expected sediment and organic debris in transport. PWA staff calculated the necessary culvert sizes using either (1) the Rational Method (Dunne and Leopold, 1978) for drainage areas less than 80 acres or (2) the empirical equations of the USGS Magnitude and Frequency Method (Gotvald et al., 2012) for drainage areas equal to or larger than 80 acres. These culvert sizing calculations were used for stream crossings where the field-estimated bankfull channel dimensions were greater than approximately 3 ft by 1 ft in cross sectional area.[2]

In the final phase of the project, PWA personnel analyzed the inventory results to develop cost-effective erosion control and erosion prevention prescriptions, as well as a prioritized plan of action for the project area. Using field observations, data analyses, and information about realistic needs for future road/trail use from City of Chico and Park and Natural Resource Manager, Linda Herman, PWA developed a long-term treatment Action Plan for the Upper Bidwell project area. This Action Plan provides the City of Chico with prescriptions and estimated costs for storm-proofing treatment sites and hydrologically connected road segments, including PWA's professional recommendations for the most efficient and cost-effective methods to accomplish this goal.

6 RESULTS

The purpose of the field assessment was to identify and quantify all locations on roads and trails that are currently eroding and delivering sediment to streams in the project area or show a potential to do so in the future.

[1] The *100-year peak storm flow* for a location is the discharge that has a 1% probability of occurring at that location during any given year.

[2]For stream channels with cross sectional areas of 3 ft^2 or smaller, PWA follows the recommendations outlined in the California Department Fish and Game *Salmonid Stream Habitat Restoration Manual* and defaults to a minimum culvert size of 24 in.

6.1 Summary of Field Data and Analyses

PWA field crews identified and inventoried a total of 140 sites on 37.1 mi of roads and trails within Upper Bidwell Park (2.1 mi of road and 35 mi of the primary trail network). PWA field crews identified 17 erosion and sediment delivery sites on park roads and 123 erosion and sediment delivery sites on the park's primary trail system.

In total, PWA field crews measured approximately 5.3 mi of road and trail surfaces and/or ditches (representing 14% of the total inventoried road mileage) currently draining to stream channels, either directly or via gullies (Table 1). Based on assessments PWA has conducted over the last 2 decades in many similar watersheds, this represents a low connectivity value. However, from the hydrologically connected road and trail segments recommended for treatment, we estimate that approximately 940 yd^3 of sediment could be delivered to stream channels within the Upper Bidwell Park assessment area over the next decade if no efforts are made to change road drainage patterns (Table 2).

We recommend that 121 of the 140 road and trail erosion sites and 4.9 mi of the hydrologically connected road reaches be treated for erosion control and erosion prevention (Table 1). Field data show that treating the 121 sites could prevent the future episodic delivery of approximately 296 yd^3 of sediment to streams in the Upper Bidwell Park, and that treating the 4.9 mi of connected road segments could prevent delivery of approximately 940 yd^3 of fine sediment during the next decade alone (Table 2).

Table 1. Inventory results for sediment delivery sites and hydrologically connected road and trail segments, Upper Bidwell Park Road and Trail Sediment Source Assessment and Sediment Reduction Project, Butte County, California.

Sources of sediment delivery	Sediment delivery sites		Hydrologically connected roads and trails adjacent to sites		Total length of roads and trails surveyed for project (mi)
	Inventoried (#)	Recommended for treatment (#)	Inventoried (mi)	Recommended for treatment (mi)	
Stream crossings[a]	124	105	4.50	4.17	-
Road/trail surface drainage problems	9	9	0.57	0.57	-
Spring	7	7	0.20	0.20	-
Total	**140**	**121**	**5.27**	**4.94**	**37.1**

[a]A total of 9 stream crossings, 4 road surface drainage problems, and 4 spring sites on 10 Mile House Road are recommended for treatment.

Table 2. Estimated future sediment delivery for sites and road/trail surfaces recommended for treatment, Upper Bidwell Park Road and Trail Sediment Source Assessment and Sediment Reduction Project, Butte County, California

Sources of sediment delivery	Estimated future sediment delivery (yd^3)	Percent of total
1. Episodic sediment delivery from road/trail related erosion sites (indeterminate time period)		
Stream crossings	243	82%
Road/trail Surface Discharge Points	51	17%
Springs	2	<1%
Total episodic sediment delivery	**296**	**100%**
2. Chronic sediment delivery from road/trail surface erosion (estimated for a 10 yr period)[a]		
Total chronic sediment delivery	**940**	

[a]Sediment delivery for rocked and native surface roads is calculated for a 10 yr period. It is based on field-based road and trail widths, and 1 of 4 empirical values for road and trail surface lowering based on field analyses by PWA staff: (1) 0.0 ft/10 yr (no surface erosion); (2) 0.1 ft/10 yr (low rating); (3) 0.2 ft/10 yr (moderate rating); and (4) 0.3 ft/10yr (high rating).

PWA recommends treatment for 105 stream crossings in the Upper Bidwell Park assessment area, which account for 87% of all treatment sites (Table 1). Inventoried stream crossing sites recommended for treatment include 47 fords (wet crossings with no fill), 34 fill (unculverted) crossings, 14 armored fills (wet crossing with buttressed fill), 6 crossings with a culvert, 3 bridges, and 1 catchment/abutment structure. We project that approximately 243 yd^3 of future road related sediment delivery will originate from the 105 stream crossings if they are left untreated, which is approximately 82% of total future episodic sediment delivery from sites recommended for treatment in the Project area (Table 2). Nine (9) of the stream crossing assessed and recommended for treatment are located on inventoried roads. Furthermore, of the 105 stream crossings, 17 have the potential to divert in the future and 6 streams are currently diverted. There are 3 existing culverts at stream crossings that are likely to plug with debris and sediment during storms. PWA identified 7 sites on roads and trails with culverts during the assessment in which 6 are currently undersized and recommended for treatment (Table 3). PWA identified 34 stream crossings on the roads and trails that have a filled channel crossing and lack a drainage structure sufficiently designed for the 100-year peak storm discharge

Future sediment delivery sites identified by PWA during the road and trail erosion assessment were assigned treatment immediacy rankings, which represent the urgency for performing corrective/preventive measures to prevent future sediment delivery at each site before the erosion or failures occur. Evaluation of treatment immediacy is based on the following criteria: (1) erosion potential; (2) sediment delivery volume; (3) treatment cost-effectiveness and; (4) the

Table 3. Erosion problems at stream crossings, Upper Bidwell Park Road and Trail Sediment Source Assessment and Sediment Reduction Project, Butte County, California.

Stream crossing problem	# Inventoried	Percent of total[a]
Stream crossings with diversion potential	17	16%
Stream crossings currently diverted	6	6%
Crossings with culverts likely to plug[b]	3	3%
Crossings with culverts that are currently undersized[c]	6	6%

[a]From Table 1, total stream crossings recommended for treatment = 105.
[b]Culvert plug potential is moderate to high.
[c]Culverts in stream channels larger than 3 ft x 1 ft that are too small to convey the calculated 100-year peak storm flow.

value or sensitivity of downstream resources being protected. Of the 121 sites recommended for treatment, 2 sites were designated as "high" or "high-moderate" treatment immediacy, 25 sites were designated as "moderate" treatment immediacy, 31 sites were designated with a "moderate-low" treatment immediacy, and 63 sites were designated as "low" treatment immediacy (Table 4).

The two high and high-moderate treatment immediacy sites have the potential to deliver approximately 21 yd^3 of sediment to streams in Upper Bidwell Park. This is approximately 7% of projected sediment delivery from the sites recommended for treatment in the assessment area. In addition, we estimate that 40 yd^3 of fine sediment could originate from hydrologically connected road reaches adjacent to these sites during the next decade.

PWA identified 25 sites with a moderate treatment immediacy. These sites could deliver approximately 127 yd^3 of sediment to streams in Upper Bidwell Park, which represents approximately 43% of projected sediment delivery from all of the sites recommended for treatment in the assessment area. We estimate that 335 yd^3 of fine sediment could originate from hydrologically connected road reaches adjacent to these sites during the next decade.

Thirty-one (31) sites were identified with a moderate-low treatment immediacy and have the potential to deliver approximately 87 yd^3 of sediment to streams in Upper Bidwell Park, which represents approximately 29% of projected sediment delivery from sites recommended for treatment in the assessment area. We estimate that 247 yd^3 of fine sediment could originate from hydrologically connected road reaches during the next decade.

Sixty-three (63) inventoried sites were assigned a low treatment immediacy. These sites have the potential to deliver approximately 61 yd^3 of sediment to streams, which represents approximately 21% of sediment delivery from sites recommended for treatment in the assessment area. In addition, approximately 318 yd^3 of fine sediment could originate from hydrologically connected road reaches adjacent to these sites during the next decade.

Finally, 19 sites were identified that require no erosion control or erosion prevention treatment. These sites include stream crossings that meet proper design and construction for the 100-yr

design storm. Although these sites have the potential to deliver a total of approximately 9 yd^3 of future sediment from site-specific episodic erosion and 45 yd^3 chronic road surface erosion to stream channels, field data show that the risk of sediment delivery from these sites is extremely low.

Table 4. Treatment immediacy ratings for sediment delivery sites, Upper Bidwell Park Road and Trail Sediment Source Assessment and Sediment Reduction Project, Butte County, California.

Treatment immediacy	Upgrade erosion sites	Estimated future sediment delivery from inventoried erosion sites (yd^3)[a]		Estimated future sediment delivery from roads, trails, and cutbank surfaces (yd^3)[b]	
High	1 Trail surface drainage discharge point [#164]	12	4%	15	2%
High-moderate	1 Stream crossing [#64]	9	3%	25	3%
Moderate	20 Stream crossing [#47, 52, 54, 61, 65, 66, 74, 80, 88, 122, 133, 146, 158, 159, 160, 162, 163, 165, 169, 182]	127	43%	335	35%
	4 Road surface drainage discharge points [#44, 46, 49, 51]				
	1 Spring [#60]				
Moderate-Low	26 Stream crossings [#45, 48, 50, 53, 55, 63, 67, 69, 90, 97, 98, 102, 114, 124, 126, 127, 128, 132, 134, 135, 145, 156, 170, 172, 173, 179]	87	29%	247	26%
	4 Trail surface drainage discharge points [#72, 144, 147, 161]				
	1 Spring [#174]				
Low	58 Stream crossings [#59, 62, 70, 71, 75, 78, 79, 81, 82, 84, 85, 87, 89, 91, 92, 93, 94, 96, 99, 100, 101, 103, 104, 105, 109, 110, 112, 113, 115, 119, 120, 121, 123, 125, 129, 130, 131, 137, 139, 140, 141, 142, 143, 148, 150, 151, 152, 153, 154, 155, 157, 166, 167, 168, 175, 178, 180, 181]	61	21%	318	34%
	5 Springs [#56, 57, 58, 95, 149]				
Total	**121 upgrade sites[c]**	**296**	**100%**	**940**	**100%**

[a]Episodic sediment delivery for road and trail related sites (indeterminate time period).
[b]Chronic sediment delivery from adjacent hydrologically connected roads, trails, and cutbanks (estimated for a 10 yr period).
[c]Road upgrade sites: 17 erosion sites on 10 Mile House Road and Old Chico Canyon Road are recommended for upgrading.

7 RECOMMENDED TREATMENTS

PWA recommends 15 different types of erosion control and erosion prevention treatments for the Upper Bidwell Park project area. The treatments are organized into two categories of upgrading measures for both roads and trails (site-specific treatments and road and trail surface treatments). In addition to the treatments summarized in Table 5, detailed treatment information for each site is also provided in Appendix A and in the assessment database. Overviews of construction and installation techniques for the recommended treatments are provided as typical drawings in Appendix B.

Upon implementing the road and trail upgrading treatments, all bare soil areas should be seeded with native grasses and flowering plants appropriate for the area. In addition, bare soil areas with any risk of sediment delivery shall be mulched with weed-free straw to prevent sediment delivery via surface erosion.

7.1 Site-Specific Treatments

Stream crossing upgrade treatments are primarily implemented to reduce the risk of catastrophic failure and sediment delivery resulting from road and trail, washouts, culvert pugging, gullying, headcut migration, and stream diversion. PWA recommends 105 stream crossing sites for upgrading in the project area (Maps 2, 3a-c; Tables 1, 4, 5; Appendix A). Recommended treatments to upgrade the sites include replacing 6 undersized culverts with new culverts sized for the 100-yr design storm, converting 35 stream crossings to armored fill crossings and 3 to ford crossings. Nine (9) critical dips are recommended at stream crossings to prevent stream diversion. Upgrading treatments for 39 sites will require excavating and relocating a total of approximately 153 yd^3 of spoil material, constructed armored fills will require a total of 131 yd^3 of riprap either collected on site or imported from a local quarry, and a total of 13 yd^3 of rock armor is recommended at 5 sites to prevent outboard fillslope erosion and upstream headcut migration.

7.2 Road and Trail Surface Treatments

Road and trail surface treatments are designed to control road drainage by reshaping the roadbed and trail surface, dispersing road and trail surface runoff onto stable slopes, and preventing delivery of concentrated runoff to streams. Upgrading treatments to redirect flow include outsloping the roads and trails and installing rolling dips. Road and trail surface erosion is curtailed by adding aggregate base rock, which fortifies the surface and reduces production of fine sediment. In wet areas, woven geotextile fabric is recommended to be installed beneath trail surface rock. As shown in Table 5 and Appendix A, recommended upgrading road and trail treatments include:

1. Installing 233 rolling dips on roads and trails.
2. Outsloping the road and trail for a total of 400 ft.
3. Remove berm on trails for a total of 277 ft.
4. Construct 125 ft of elevated boardwalk on trails.
5. Construct bedrock steps on trails for 120 ft.
6. Reroute trail alignment for 1,115 ft in 6 locations
7. Rock the road/trail surface in 10 locations.
8. Install 8 water bars on trails.
9. Treat 6 “other” trail-related erosion site locations.

Table 5. Recommended erosion control and erosion prevention treatments, Upper Bidwell Park Road and Trail Sediment Source Assessment and Sediment Reduction Project, Butte County, California.

Treatment type			No.	Comments
Site specific treatments	Stream crossing treatments	Armored fill (wet) crossing	35	Road: Install 2 armored fill crossings (Sites #45, 53) using 20 yd^3 of rock armor. Trail: Install 33 armored fill crossings (Sites #61, 63, 64, 66, 74, 81, 87, 93, 97, 98, 102, 114, 115, 121, 122, 123, 124, 127, 128, 129, 130, 131, 133, 140, 146, 153, 155, 157, 159, 162, 163, 165, 172) using 111 yd^3 of rock armor.
		Ford (wet) crossing	3	Trail: Install 3 ford crossings (Sites #90, 158, 160) using 2 yd^3 of rock armor.
		Culvert (replace)	6	Road: Replace culvert at a culverted fill (Sites #47, 48, 50, 52, 54, 59).
		Clean culvert	3	Clean debris/sediment from culvert to prevent plugging (Sites: 56, 57, 60).
		Critical dip	9	Road: Install 3 to prevent stream diversion on 10 Mile House Road and 1 on Old Chico Canyon Road (Sites #47, 48, 50, 52). Trail: Install 5 to prevent stream diversion (Sites #150, 159, 162, 163, 169).
		Excavate soil recommended for upgrading	39	At 39 sites, excavate and remove a total of 153 yd^3 of sediment at stream crossings (Sites #45, 47, 53, 55, 59, 61, 64, 74, 81, 87, 90, 93, 97, 98, 102, 114, 115, 122, 123, 124, 127, 128, 130, 131, 133, 137, 139, 140, 145, 146, 147, 153, 155, 157, 158, 159, 162, 165, 172).
		Rock (armor) at stream crossings	5	Trail: At 5 sites, add a total of 13 yd^3 of rock armor on outboard stream crossing fillslopes and headcuts (Sites #126, 145, 147, 164, 165).
Road surface treatments	Road shaping and drainage treatments	Rolling dip	233	Install 233 rolling dips to improve road/trail surface drainage and prevent erosion and sediment delivery. A total of 5 rolling dips are recommended for 10 Mile House Road and 3 rolling dips for Old Chico Canyon Road.
		Outslope road/trail	3	At 1 location, a total of 125 ft of road to improve road surface drainage (Site #49) on 10 Mile House Road. At 2 locations, outslope trail and remove ditch for a total of 275 ft to improve trail surface drainage (Sites #65 and 172).
		Remove berm	8	Road: Remove berm for a total of 125 ft on 10 Mile House Road to improve road surface drainage (Site#: 49). Trail: At 7 locations, remove berm for a total of 152 ft of trail to improve trail surface drainage (Sites #74, 95, 137, 139, 157, 172, 174).
		Construct elevated boardwalk	3	At 3 locations, construct an elevated walkway for a total of 125 ft to improve trail, wetlands, and water quality (Sites #113, 170, 174).
		Construct steps in bedrock	1	At 1 location, construct 120 ft of steps in bedrock (Site #119).
		Reroute trail alignment	6	At 6 locations, realign trail (Sites # 61, 62, 65, 66, 158, 160) for 1,115 ft to improve water quality, reduce sedimentation and trail wear, experience, and access.
		Road trail surface	10	At 10 locations, use road rock to rock the trail surface. (Sites # 88, 90, 126, 127, 129, 131, 153, 172, 173, 174)
		Waterbars	8	Install to improve drainage on trails (Site #139 and 141).
		Other	6	Other treatments include an increase in trail width in bedrock, construction of rock buttress and earthen berm, decommission short trail segment, maintain wooden bridge, and install geotextile fabric beneath rocked trail (Sites #69, 142, 158, 164, 173, 174, 182).

8 HEAVY EQUIPMENT AND LABOR REQUIREMENTS

Heavy equipment and labor needs for road and trail erosion control treatments in the assessment area are detailed in the project database and summarized, based on treatment prioritization, in Table 6. Most trail sites recommended for treatment require the use of trail laborer crews. Road sites recommended for treatment will require heavy equipment (e.g., excavator, bulldozer, dump truck, grader, roller, and water truck). Hand labor is also required at road sites needing new culverts or culvert repairs, or for applying seed and mulch to ground disturbed during construction.

Equipment needs are reported in Table 6 as equipment times, in hours, to treat all sites and road segments. These estimates only include the time needed for the actual treatment work, and do not include additional construction activities such as opening roads, staging equipment and materials at work sites, installing temporary sediment barriers and traps, final grading, or spreading road rock, straw, and mulch. Costs for these additional construction activities are provided in Table 7, below.

PWA estimates that the majority of the trail work at stream crossings will be completed with trail crew laborers and hand tools. We have estimated 1,999 hours of trail crew laborer time will be required for site specific erosion control and erosion prevention remediation tasks at trail stream crossings sites, including constructing armored fills and fords; plus, additional trail upgrade treatments such as constructing boardwalks, realignments, and causeways. For road drainage treatments we have estimate 651 trail crew hours for rolling dip construction and 9 hours for road outsloping.

Table 6. Estimated heavy equipment and labor requirements based on treatment immediacy, Upper Bidwell Park Road and Trail Sediment Source Assessment and Reduction Project, Butte County, California.[a,b]

Treatment immediacy	# of sites	Excavated volume[c] (yd^3)	Excavator (hr)	Bulldozer (hr)	Labor for road treatments (hr)	Labor for trail treatments (hr)
High or high-moderate	2	10	14	0	0	43
Moderate or moderate-low	56	447	64	62	22	1,721
Low	63	50	11	9	10	895
Total	**121**	**507**	**89**	**71**	**32**	**2,659**

[a] Equipment and labor times do include hours necessary for site specific and road and trail drainage treatments at 121 identified erosion sites, transporting riprap and road surface rock, culverts, and spreading seed, straw, and mulch.
[b] Equipment and labor times do include hours for technical advice and instruction and necessary traveling between sites recommended for treatment.
[c] Excavated volume includes material permanently removed and stored as well as material excavated and reused for backfilling upgraded stream crossings.

On roads where heavy equipment access to sites is feasible and permissible (i.e., 10 Mile House Road and Old Chico Canyon Road), treatment recommendations will require 89 hr of excavator time, 71 hr of bulldozer time, and 32 hours for heavy equipment laborers (Table 6). An excavator, bulldozer, and dump truck will not be needed at remote trail erosion treatment sites, and some road treatment sites may not require all three pieces of equipment to implement road erosion and erosion prevention treatments.

9 ESTIMATED COSTS

The estimated total cost to implement the recommended erosion control and erosion prevention treatments for the project area is $745,151 (Table 7). Approximately $99,091 or 13% of the total budget is for clearing and brushing roads and using heavy equipment and labor to implement road erosion control and erosion prevention treatments on 10 Mile House Road and Old Chico Canyon Road. Trail crew laborers will spend the majority of the estimated hours (3,484 hours) at a cost of approximately $278,720 or 37% of the project total. Approximately $90,732, or 12% of the total, is for the purchase of rock, culvert, and trail boardwalk materials. A total of $141,550, or 19% of the total project cost, is projected for detailed project planning, on-site equipment operator instruction and supervision, establishing effectiveness monitoring measures, and post-project analysis and reporting. Costs detailed in Table 7 also include expenses for the use of lowboy trucks to haul construction equipment to and from the work area (footnote "f"); truck/trailer time for delivering straw mulch and culverts to work sites (footnote “g”); time required by a motor grader and water truck to create a “finished” grade to banks, ditches, and road surfaces following rough construction by other equipment (footnote “h”); and labor time for spreading straw mulch and seed (footnote “i”).

Most of the treatments listed in this plan are not complex or difficult for equipment operators and laborers with experience in road and trail upgrading and maintenance. The costs in Table 7 are assumed reasonable if work is performed by experienced outside contractors and trail crews. The use of inexperienced operators or the wrong combination of heavy equipment would require additional technical oversight and supervision in the field, as well as an escalation of the costs to implement the work; the same rationale is applied to with trail crew labor. To help ensure success of the project, it is imperative that only the most experienced and reliable heavy equipment operators and trail crews be employed under the supervision of an experienced professional geologist, and that the project technical advisor and trail crew leader is on-site full time at the beginning of the project and intermittently after road and trail work have begun.

10 CONCLUSIONS

This assessment is a comprehensive evaluation of the risks of erosion and sediment delivery to streams along a total of 2.1 mi of maintained roads and 35 mi of trails within the Upper Bidwell Park, Butte County, California. It provides field data and analyses to identify and quantify currently observable and possible future sources of sediment and erosion along roads and trails in property owned and managed by the City of Chico.

Table 7. Estimated equipment times and costs to implement road and trail erosion control and erosion prevention treatments, Upper Bidwell Park Watershed Assessment Project, Butte County, California.

Cost category[a]		Cost rate[b] ($/hr)	Estimated Project Times			Total estimated costs[e] ($)
			Treatment[c] (hr)	Logistics[d] (hr)	Total (hr)	
Move in, move out[f]	Lowboy	185	24	--	24	4,440
	Pilot Car	120	12	--	12	1,440
	Dump truck	160	12	--	12	1,920
	Water truck	192	6	--	6	1,152
	Truck / trailer	202	24	--	24	4,848
Road opening	Excavator	315	8	--	8	2,520
	Bulldozer	357	8	--	8	2,856
Heavy equipment for site-specific and road drainage treatments	Excavator	315	97	29	126	39,690
	Bulldozer	357	71	21	92	32,844
	Dump truck	160	12	4	16	2,560
	Roller	160	18	5	23	3,680
	Water truck	192	15	5	20	3,840
	Truck / trailer	202	6	2	8	1,616
	Grader	245	7	2	9	2,205
	Laborers	130	43	13	56	7,280
Trail crew and truck / trailer for site-specific and road drainage treatments[g]	Trail crew site specific treatments	80	2,020	606	2,626	210,080
	Trail crew road drainage treatments	80	660	198	858	68,640
	Truck / trailer	202	434	130	564	113,928
Rock costs (includes delivery for 504 yd^3 of road rock and 133 yd^3 of riprap)						71,344
Culvert materials costs (210’ of 24-inch and 40’ of 36-inch diameter culverts, including costs for couplers, elbows)						12,588
Boardwalk materials for trails						6,800
Mulch, seed, and planting materials for disturbed ground[i]						1,980
Miscellaneous erosion control supplies and rental equipment (trash pump, etc.)						5,350
PWA supervision, coordination, layout, and reporting[j]						141,550
Total Estimated Costs: $745,151						

(Continued on next page.)

Table 7—continued.

[a]Costs excluded from the list are for (1) tools and miscellaneous materials and (2) variable administration and contracting expenses.

[b]Heavy equipment costs include operator and fuel. Costs listed are estimates for favorable local private sector prevailing wage equipment rental, labor, trail crew rates.

[c]Treatment times refer to equipment and labor hours expended explicitly for erosion control and erosion prevention work at all project sites, roads, and trails.

[d]Logistics times for heavy equipment (30%) include all equipment hours expended for opening access to sites on maintained and abandoned roads, travel time for equipment to move from site to site, and conference times with equipment operators to convey treatment prescriptions and strategies. Logistic times for laborers (30%) include estimated daily travel time to project area.

[e]Total estimated project costs for equipment rental and labor are based on private sector rates at prevailing wage. Materials costs are subject to change.

[f]Lowboy hauling costs area based on one haul each (1 to move in and 1 to move out) at 6 hr/ round trip, for excavator, bulldozer, grader, and roller.

[g]For road drainage treatments, an additional 7 hr of water truck time, 7 hr of roller time, and 7 hr of grader time are added for final grading and spreading road rock.

[h]An additional 10 hr of labor time are added for spreading straw mulch and seeding, 22 hr of labor for initial delivery of straw to sites.

[i]Seed costs are based on 20 lb of erosion control seed per acre at $10.00/lb. Straw needs are 29 bales per acre at $10.0/bale.

[j]Supervision time includes detailed layout (flagging, etc) prior to equipment arrival, training of equipment operators, technical oversight during equipment operations, technical advice during trail construction and post-project documentation and reporting.

An integral part of this assessment is a prioritized Action Plan for cost-effective erosion control and erosion prevention for the assessment area. When implemented and employed, the treatment prescriptions outlined in this report may be expected to significantly contribute to the long-term protection and improvement of water quality and salmonid habitat in the Big Chico Creek watershed.

Though the project area is sensitive to disturbance, the recommended treatments outlined in this report have been widely tested, will improve road and trail conditions, and reduce road and trail related erosion. The amount of future road and trail related failures could be greatly reduced by implementing relatively straight forward treatments. Most of the potential geologic constraints that have been described are typical of other road and trail upgrading projects throughout northwest California. Although there is potential for these geologic constraints to affect the success and design life of the project, it is our opinion that if the recommendations outlined in this report are followed and implemented under the direction of a licensed professional geologist experienced with projects of this nature, the likelihood of unavoidable failures and unexpected deleterious affects to water quality will be greatly reduced.

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Assessed road

Assessed trail

Upper Park Road

Access road

Highway

Site map extent

Bidwell Park boundary

USGS 7.5' quadrangle boundary

0 2,500 5,000 Feet

Scale 1:30,000 1 inch = 2,500 feet
Base map: Mosaic USGS 7.5 minute quadrangle maps

N

Prepared March 2023 by:
Pacific Watershed Associates
www.pacificwatershed.com

RICHARDSON SPRINGS 39121-G7

PARADISE WEST 39121-G6

Map 2c

Old Chico Canyon Road

Ten Mile Creek Road

Bidwell Park

Map 2b

Sycamore Creek

Upper Bidwell Park Road

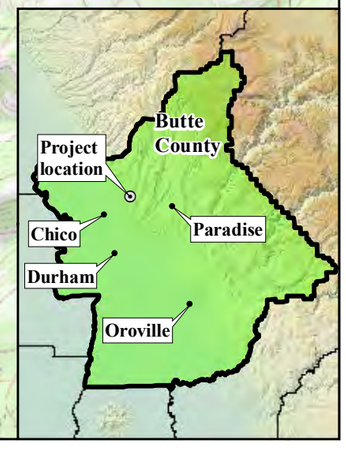
Map 2a

Wildwood Road

Big Chico Creek

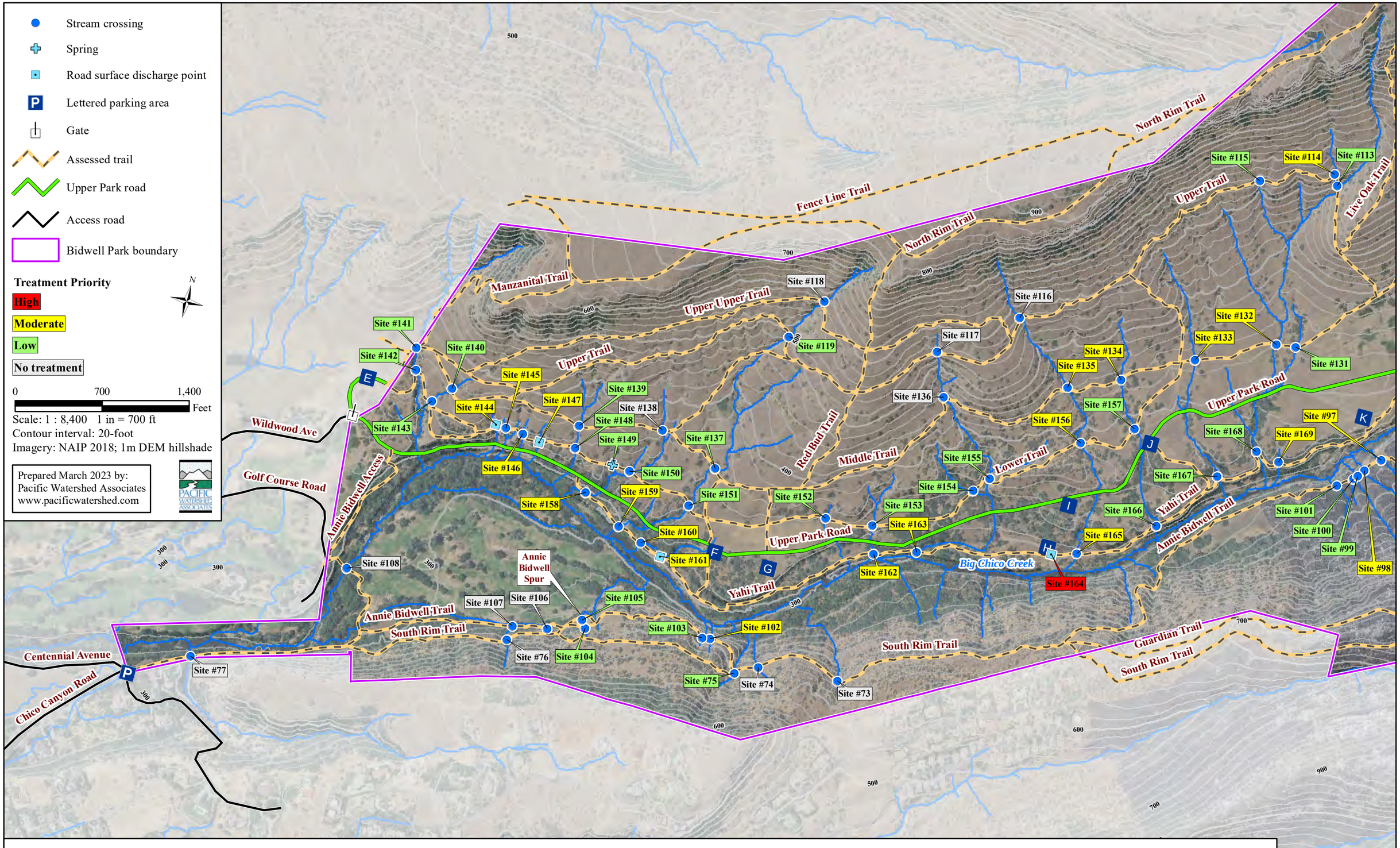
Manzanita Road

City of Chico



Map 2. Index map for Upper Bidwell Park Road and Trail Sediment Source Assessment and Reduction Project, Big Chico Creek Watershed, Butte County, California.

P:\GIS\10288 Big Chico Creek 2017\10288 map 1 - location.mxd



Map 3a. Inventoried sites by problem type and treatment immediacy for Upper Bidwell Park Road and Trail Sediment Source Assessment and Reduction Project, Big Chico Creek Watershed, Butte County, California.

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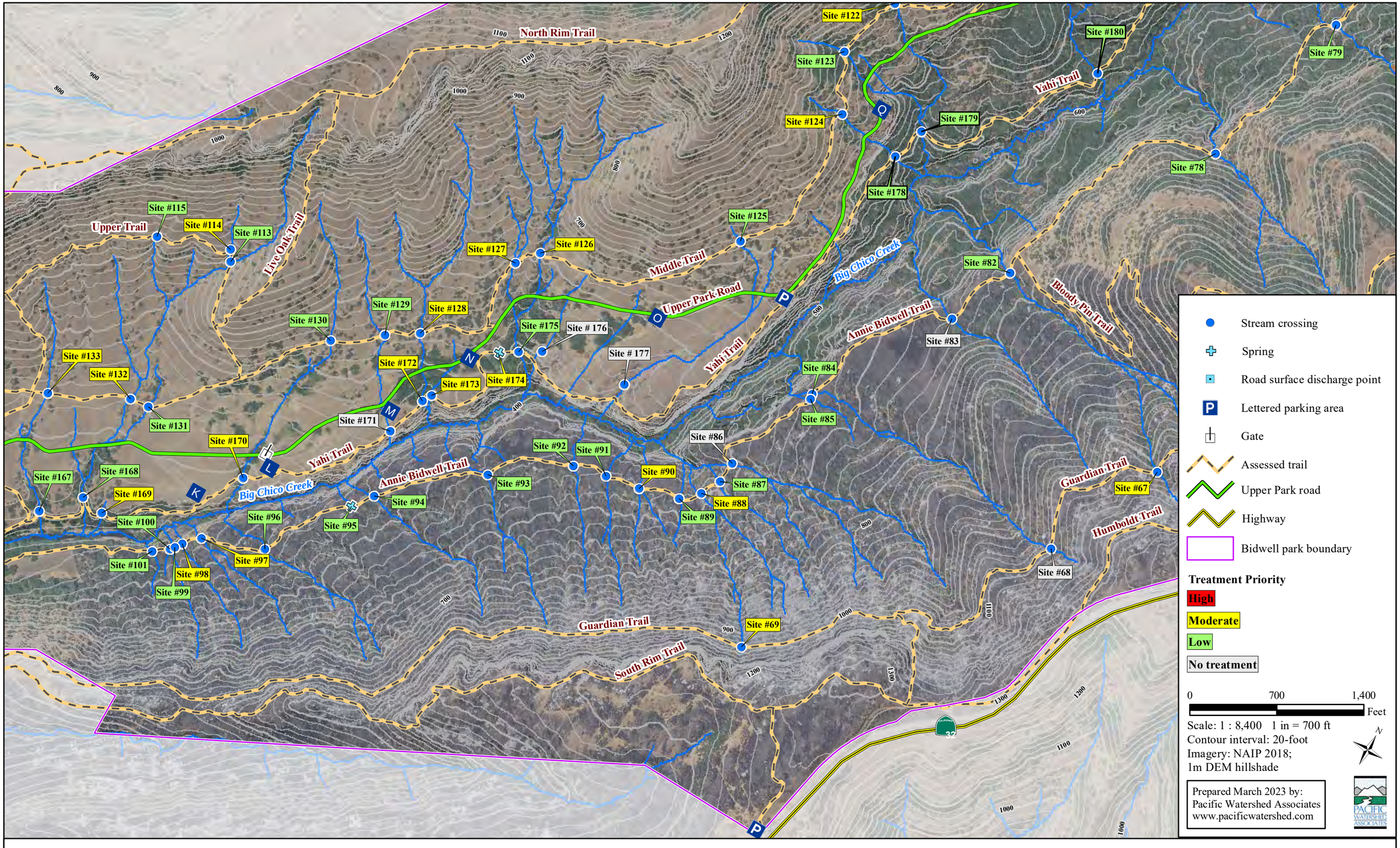

Map 3b. Inventoried sites by problem type and treatment immediacy for Upper Bidwell Park Road and Trail Sediment Source Assessment and Reduction Project, Big Chico Creek Watershed, Butte County, California.

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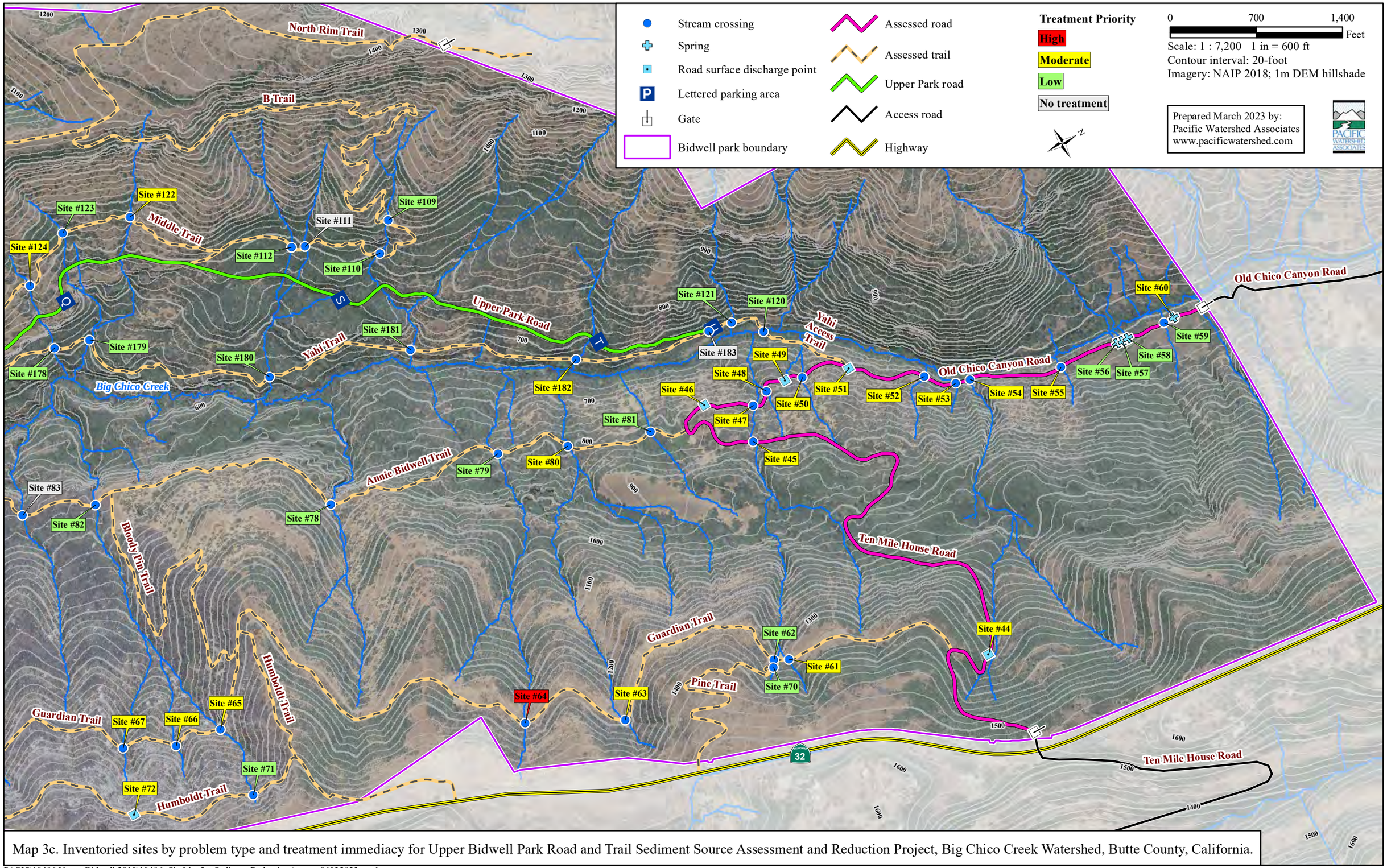

Map 3c. Inventoried sites by problem type and treatment immediacy for Upper Bidwell Park Road and Trail Sediment Source Assessment and Reduction Project, Big Chico Creek Watershed, Butte County, California.

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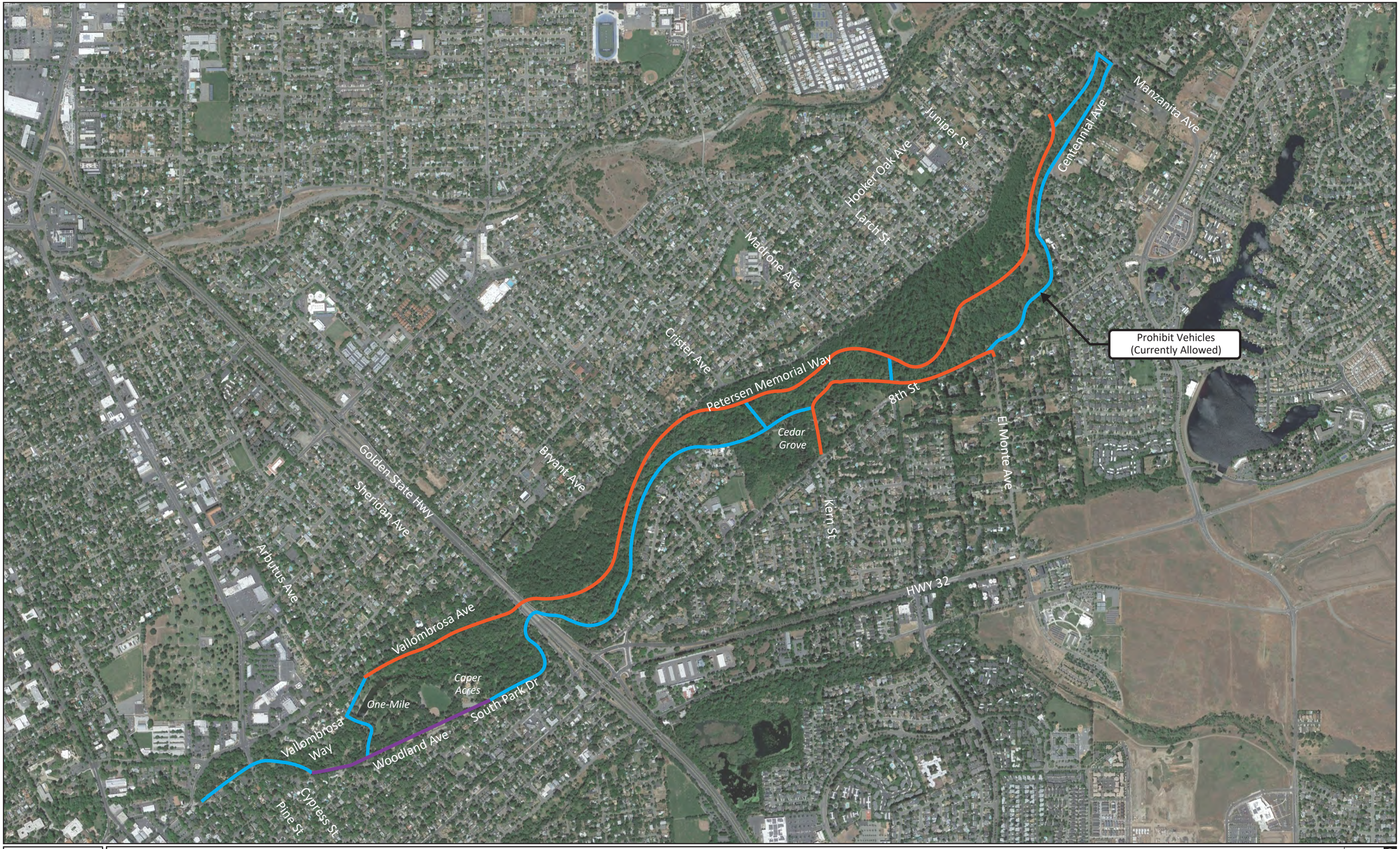
HEADWAY TRANSPORTATION

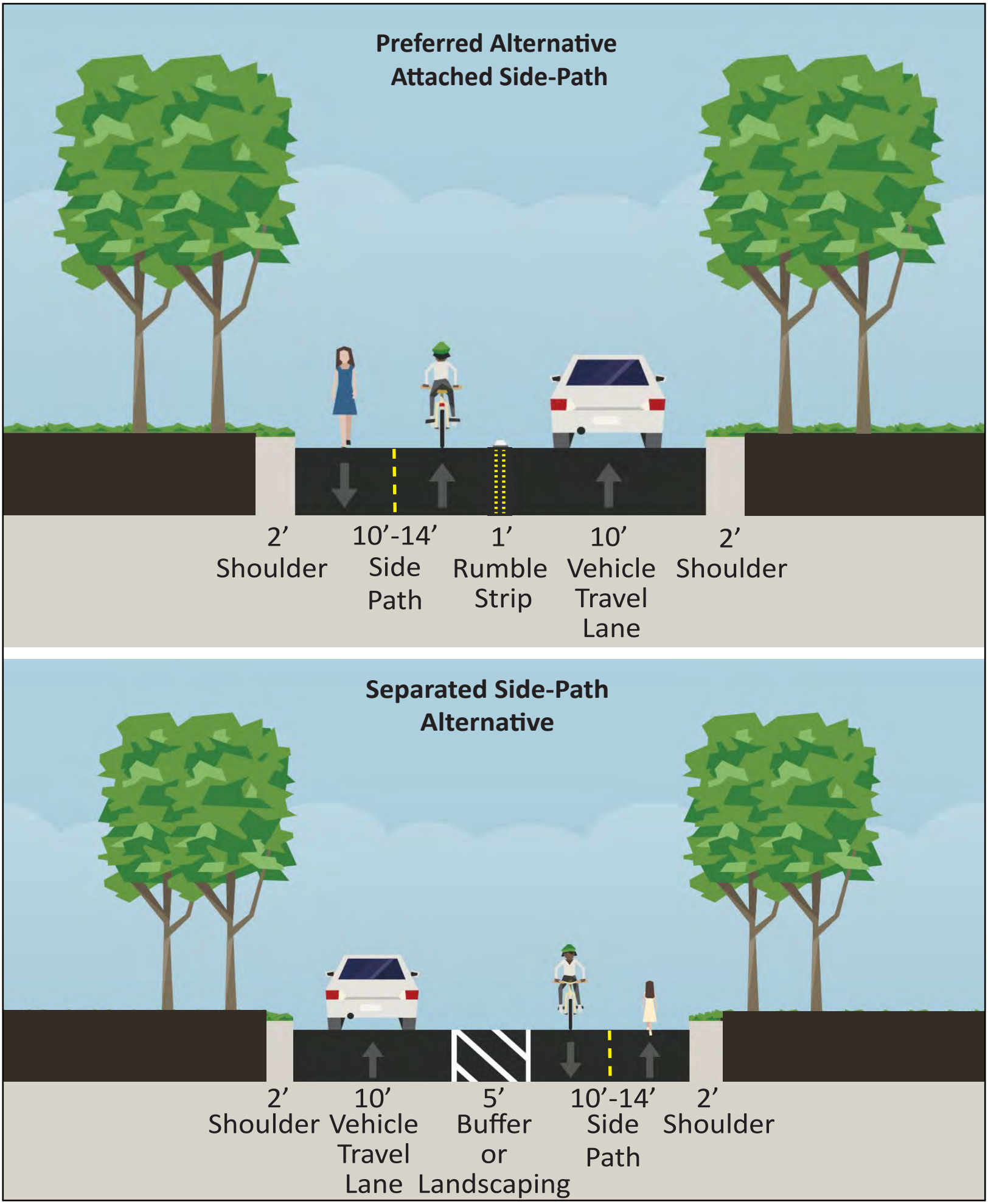
NO SCALE

Figure 1
Lower Bidwell Park
Traffic and Circulation Review
Field Review Observations



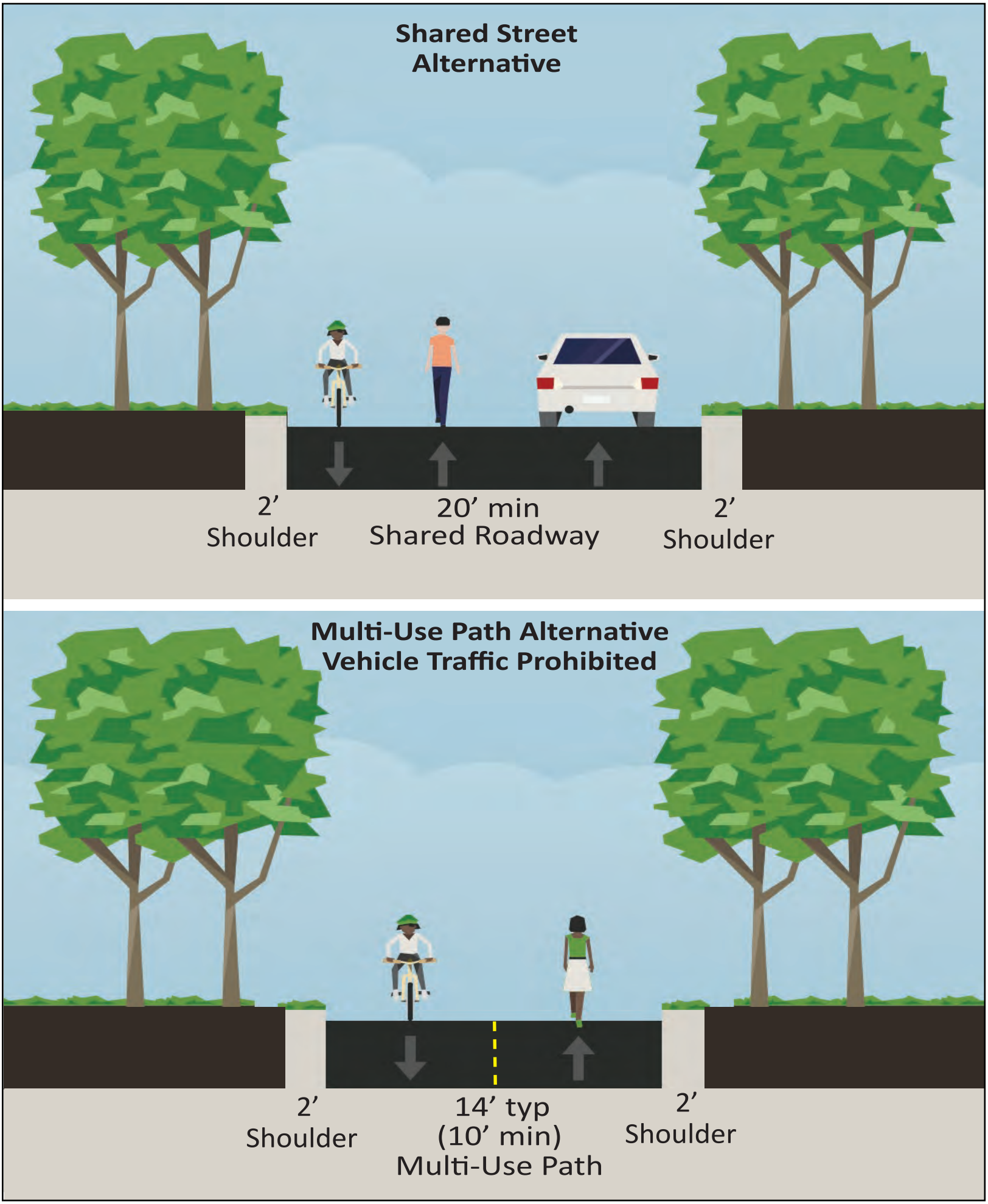
Notes:
1. One-way vehicle traffic (counterclockwise) on roadways where vehicles permitted
2. Two-way bicycle and pedestrian traffic on all paths
3. Side-Path (purple) and Multi-Use Path (blue) Alternatives are required as shown
4. Shared Street Alternative (Orange) is proposed as shown. Orange Segments could be constructed with the Side Path configuration.

Figure 2
Lower Bidwell Park
Traffic and Circulation Review
Proposed Path and Roadway Types



NO SCALE

Figure 3
Lower Bidwell Park
Traffic and Circulation Evaluation
Side Path Alternatives



HEADWAY TRANSPORTATION

NO SCALE

Figure 4
Lower Bidwell Park
Traffic and Circulation Evaluation
Shared Facility Alternatives

General Improvements
- Reduce speed limit to 15 mph throughout park
- Align all bicycle and pedestrian accesses with cross streets
- Consider removing/relocating mid-block accesses as appropriate
- Install trail name and wayfinding signs
- Consider wayfinding system
- Install trail maps at clear locations near main entrances and attractions

Remove pedestrian access south of Covell Park Ave

Centennial Ave

Manzanita Ave

Juniper St

Hooker Oak Ave

Construct additional vehicle access and parking on Petersen Memorial Way (location TBD)

Lower posted speed limit on Petersen Memorial Way to 15 MPH

Prohibit vehicles east of El Monte Ave

Madrone Ave

Larch St

Lower posted speed limit on South Park Drive to 15 MPH

Relocate ADA parking to 8th Street

Construct vehicle exit at El Monte Ave

Crister Ave

Sign and stripe pedestrian crosswalks consistently on Vallombrosa Ave

8th St

El Monte Ave

Cedar Grove

Install more prominent signage at Cedar Grove entrance

Construct wider entrance at Cedar Grove

Golden State Hwy

Sheridan Ave

Bryant Ave

Petersen Memorial Way

Kern St

Forest Ave

Consider future vehicle connection between 8th St and Vallombrosa Ave

Arbutus Ave

Expand parking at One-Mile

HWY 32

Construct multi-use path between Peterson Memorial Way and One-Mile Bridge

Vallombrosa Ave

Construct multi-use path

Woodland Ave

Construct additional One-Mile Bridge for two-way bicycle and pedestrian travel

One-Mile

Capet Acres

Construct direct path between One-Mile Bridge and South Park Dr

South Park Dr

Construct South Park Dr with one-way vehicle traffic and side-path

Stripe crosswalks and construct pedestrian ramps at Main Entry

Relocate posted speed limit sign closer to Main Entry

Sign and stripe pedestrian crosswalks consistently on Woodland Ave

Remove mid-block bike/ped access

Pine St

Cypress St

HEADWAY TRANSPORTATION

NO SCALE

Potential Vehicular Improvements
Potential Bicycle and Pedestrian Improvements

Figure 5
Lower Bidwell Park
Traffic and Circulation Review
Potential Improvements

Bidwell Park & Playground Commission Report Meeting Date 5/22/23

DATE: 5/19/23

TO: Bidwell Park and Playground Commission (BPPC)

FROM: Linda Herman, Park & Natural Resources Manager (P&NRM)

SUBJECT: PRESENTATION ON THE PROPOSED MONKEY FACE TRAIL DESIGN CONCEPT AND RECREATIONAL TRAILS GRANT APPLICATION

REPORT IN BRIEF:

The Bidwell Park & Playground Commission (BPPC) will receive an update from the City's consultant on the proposed application to the Department of Park & Recreation Non-motorized Recreational Trails Program (RTP) to try to obtain a grant to provide better sustainable access to Monkey Face in Upper Bidwell Park. The Commission will also review a Draft concept for the proposed trail design.

> **Recommendation:** the Park & Natural Resource Manager recommends the BPPC review the design concept and provide comments and/or direction to Staff.

BACKGROUND:

The Federal Highway Administration (FHWA) provides funds to the State of California for grants to federal, state, local and non-profit organizations to acquire, develop and/or maintain motorized and non-motorized recreational trail projects. The CA Department of Parks & Recreation is the administrator of the funds under the non-motorized Recreational Trails Program (RTP) and there is $1.7 million allocated to this grant component this year.

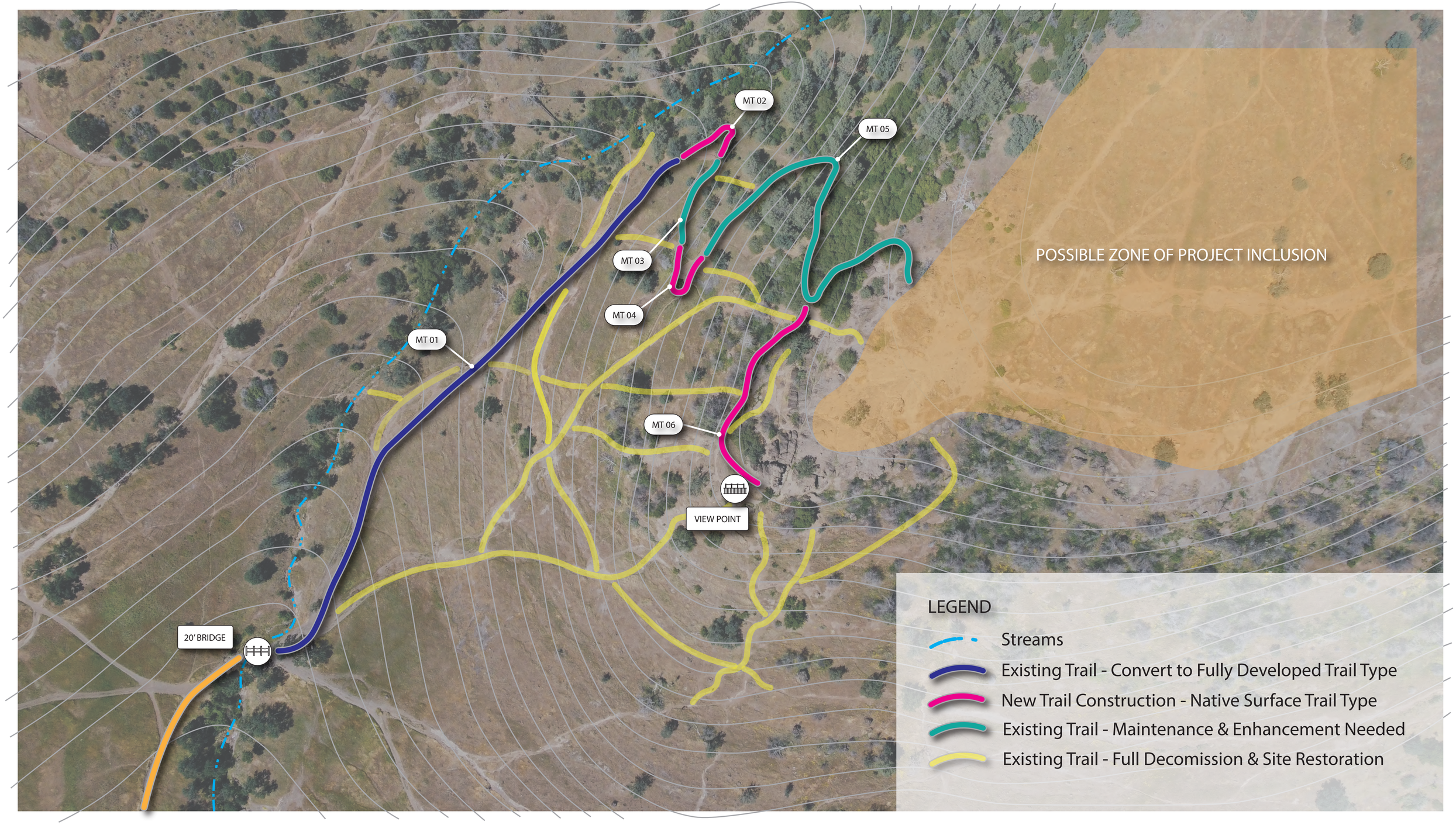
DISCUSSION:

The City retained Andrew Pellkofer from Trail Labs Co. to survey the area of Monkey Face, and to develop a conceptual design, scope of work and cost estimate for the grant application. From field operations and experience in building trails, the consultant is recommending the attached initial trail design concept for the Commission's review and consideration. The design also includes decommissioning some of the other trails and may be modified based on the Commission's and public comments.

The estimated cost for implementing the recommended design concept is $300,000 to $325,000. The RTP program requires a local 12% match which would be $36,000-$39,000 over the 3-year term of the grant, The match, if awarded a grant, would be provided using in-kind staffing and/or existing Park Division operating or capital budgets. The grant application is due June 15, 2023 and the City Council will be considering a resolution authorizing the grant application at its 6/6/23 meeting.

Attachments:

Attachment A: Monkey Face Trail Design



DESIGNED BY: A. PELLKOFER

DRAWN BY: A. PELLKOFER

REVIEWED BY:

DATE 05.19.23

SHEET NO. A1

SHEET 1 OF 1

MANZANITA TRAIL

UPPER BIDWELL PARK

CONCEPT TRAIL PLAN

REVISIONS

DESC. DATE

TRAIL LABS CO

BPPC Division Report

Meeting Date 5/22/23

DATE: 5/17/23

TO: Bidwell Park and Playground Commission (BPPC)

FROM: Linda Herman, Park and Natural Resources Manager

SUBJECT: Parks Division Report

NARRATIVE

1. Updates

a. Commissioner Training – The City Clerk's Office has retained a consultant to provide training to all of the City's Commissions and Boards. The training will be held on June 22, 2023 and all members of the BPPC members are required to attend. The start time of the workshop has not been finalized but it would likely be 3-4 hours or more.

a. Upper Park Prescribed Burn – Chico Fire are planning to conduct another prescribed burn in Middle and Upper Park the first week of June, 2023. They will burn the same units they previously burned from the Wildwood entrance to Horseshoe Lake.

b. Goats – The City's contractor Capra Environmental will be bringing the goats back in June to graze various locations within Bidwell Park and other City properties. They will likely be here until November or December 2023.

c. 2023-24 Budget – The City Council approved the proposed budget at its 5/16/23 meeting. The Parks Division's new budget requests this year included two full-time hourly maintenance aide positions and additional funding to remodel the Caper Acres restrooms. The final adoption of the budget is scheduled for the 6/6/23 Council meeting.

2. Maintenance Program

Staff provides on a need and time basis the cleaning and safety inspections of all recreation areas including grounds, playgrounds, picnic sites, roads, and paths, coupled with the weekend cleaning and re-supplying of all open park restrooms. Maintenance and repair of park fixtures, daily opening of gates, posting reservations and the removal of graffiti from all park infrastructure.

a. Lower Park: Routine Maintenance, Staff has been focusing on keeping up with mowing lawns and line trimming weeds. Reservation season is in full force, so staff works to keep reservation areas clean and neat. We just started the first cleaning of the pool for the season. There was a large volume of rock and sand pulled out (43 dump truck loads). The parking lot at Cedar Grove and the Nature Center were graded.

b. Middle Park: We have started to mow weeds in Middle Park.

c. Upper Park: Parking lot B/Easter Cross parking lot was graded. It was in bad shape. We imported 120 tons of base rock; it will be easier to maintain in the future. Staff worked with Chico Velo Trailworks volunteers to build an elevated causeway to build walkway above a marshy area on a section of Lower Trail. It was a substantial project, and it went really well. The project required 20,000 lbs. of boulders, 6,000 lbs. of drain rock and 9,000 lbs. of topsoil. The causeway is a great improvement to the trail that should last for a very long time.

d. Green way Parks: Repairs were made to both drinking fountains at Comanche Creek.

e. Upcoming projects: we will continue to work on prepping the pool for the swimming season. A portion of the old deer pens fencing is still waiting to be completely removed. We are hoping to replace a drinking fountain at Lot E and install the new sign at Salmon Hole in the near future.

3. Volunteer and Donor Program

a. Chico Spring Clean – The 3rd annual Chico Spring Clean was held on April 22nd. Over 200 people participated in the event and removed 40 yards of debris from around the Chico community.

b. Chico Action Volunteers in Education (CAVE) The CAVE students have wrapped up their spring semester. The focus of their efforts was weeding planter areas, Caper Acres and the 4th Street entrance to Bidwell Park. The Parks Division looks forward to the students returning in the fall.

c. Donations – The continued monthly $250 donation from Peter Washington in April.

d. Upcoming Volunteer Opportunities –

   i. Volunteer Calendar – To find out about upcoming volunteer events please CLICK HERE or visit https://www.chico.ca.us/post/volunteer-calendar

MONTHLY SUMMARY TABLES

Table 1. Monthly Public Permits

Upcoming Monthly Public Permits - June					
Date	**Location**	**Organization**	**Event**	**Time of Event**	**Participant #**
06/03/23	One Mile	American Cancer Society	Relay for Life 5k	8:00am	100
06/11/23	One Mile	North Valley Intergroup AA	Unity Day & BBQ for AA	10:30am	140
06/24/23	City Plaza	Stonewall Alliance, Chico	Chico Pride Pop-Up & Fair	11:00am	300
4/27-9/14	City Plaza	DCBA	Thursday Night Market	6:00pm	300
6/1,6/2, 6/7-6/10	Cedar Grove Meadow	Legacy Stage	Shakespeare in the Park	8:00pm	199
				Total	**1,039**

Table 2. Monthly Volunteer Hours

Parks and Greenways -PALS- (Partners, Ambassadors, Leaders & Stewards) Volunteer Activities, April 23							
Date	**Location**	**Partner/Agency**	**# of Volunteers**	**Hrs. Worked**	**# of Vols Xs Hrs. = Total Hrs.**	**Task**	**Leader**
Various	Chico Parks and Greenways	PALS	104	N/A	1184	Park Ambassadors	Shane Romain
4/5/2023	LCC @ Humboldt	Friends of Comanche Creek	3	3	9	General Cleanup	Liz Stewart
4/7/2023	Verbena Fields	Traditional Ecological Knowledge	15	3	45	Vegetation Mgmt.	Cathryn Carkhuff
4/7/2023	Comanche & Teichert	Friends of Comanche Creek	5	3	15	General Cleanup	Liz Stewart
4/7/2023	1 Mile	CAVE	4	3	12	Vegetation Mgmt.	Kevin Seeger
4/14/2023	Comanche & Teichert	Friends of Comanche Creek	7	3	21	General Cleanup	Liz Stewart
4/14/2023	Verbena Fields	Traditional Ecological Knowledge	18	3	54	Vegetation Mgmt.	Cathryn Carkhuff
4/14/2023	1 Mile	CAVE	3	3	9	Vegetation Mgmt.	Kevin Seeger
4/21/2023	Comanche & Teichert	Friends of Comanche Creek	3	3	9	General Cleanup	Liz Stewart
4/21/2023	Verbena Fields	Traditional Ecological Knowledge	12	3	15	Vegetation Mgmt.	Cathryn Carkhuff
4/22/2023	Various	Chico Spring Clean	200	3	600	General Cleanup	Shane Romain
4/28/2023	Comanche & Teichert	Friends of Comanche Creek	6	3	18	General Cleanup	Liz Stewart
4/28/2023	Verbena Fields	Traditional Ecological Knowledge	15	3	45	Vegetation Mgmt.	Cathryn Carkhuff
4/28/2023	1 Mile	CAVE	4	3	12	Vegetation Mgmt.	Kevin Seeger
3/25/2023	Old Humboldt Rd	CCW-Chico High Eco Club	10	3	30	General Cleanup	Dan Bringolf
				TOTAL HRS.	**2078**		

Table 3. Monthly Parks and Greenways Cleanup totals

Encampment Cleanups, April 2023										
Date	Location	Coop. Org.	# of Staff	# Workers/ Vols.	Total People	Hours Worked	People Xs Hours Total	Total Debris (cubic yards)	Total Debris (lbs)	Total Debris (tons)
4/3/2023	Teichert Ponds		3			2.5		10	3,800	**1.9**
4/3/2023	Lot at MLK		3		3	1	3	10	3,500	**1.75**
4/4/2023	Teichert Ponds							100	34,100	**17.05**
4/4/2023	Peterson Dr		3		3	0.5	1.5	1	350	**0.175**
4/5/2023	Teichert Ponds							20	7,300	**3.65**
4/5/2023	E Lindo at E 9th ave		3		3	1	3	1	350	**0.175**
4/10/2023	Lost Park		3		3	0.5	1.5	1	350	**0.175**
4/10/2023	W 4th and Cedar		3		3	0.5	1.5	2	700	**0.35**
4/11-4/12/23	Teichert Ponds				30	11	330	300	155,700	**77.85**
4/14/2023	North 5 Mile		3		3	1	3	2	700	**0.35**
4/17/2023	Mercer Grove		3		3	2	3	10	3,500	**1.75**
4/17/2023	Mangrove Bridge		3		3	2	6	10	3,500	**1.75**
4/18/2023	Site 19		3		3	0.5	1.5	2	700	**0.35**
4/19/2023	Petersen at Madrone		3		3	1	3	1	350	**0.175**
4/21/2023	Childrens Playground		3		3	1	3	2	700	**0.35**
4/24/2023	Burnap and East Bikepath		3		3	1.5	4.5	8	3,880	**1.94**
4/24/2023	W Sac and N Cedar		3		3	1	3	4	1,400	**0.7**
4/24/2023	N Cedar and Rancheria		3		3	0.5	1.5	3	1,050	**0.525**
4/24/2023	LCC at Bruce		3		3	0.5	1.5	3	1,050	**0.525**
4/25/2023	Lindo at Cohasset		3		3	1.5	4.5	2	700	**0.35**
4/26/2023	Cohasset at airport		2		2	1.5	3	2	700	**0.35**
							TOTAL HRS	TOTALCUBIC YARDS	TOTAL LBS	TOTAL TONS
							378	**494**	**224,380**	**112**

PHOTOGRAPHS

Figure 1 Spring Clean Staff

Figure 2 Spring Clean Volunteers

Figure 3 CAVE Volunteers

Figure 4 Trail armoring Trailworks Volunteers

Figure 5 Chico High Eco Club

Figure 6 Park Rules sign

Figure 7 Grading Upper Park Easter Cross/Lot B

Figure 8 Lower Trail causeway construction

Figure 9-Color Run Before

Figure 10-Color Run After

BPPC Division Report Meeting Date 05/23/23

DATE: 05/23/23

TO: Bidwell Park and Playground Commission (BPPC)

FROM: Richie Bamlet, Urban Forest Manager

SUBJECT: Tree Division Report

NARRATIVE

1. Updates

a. Recruitment – The two tree watering positions have been filled.

b. UFMP. Urban Forest Master Plan (UFMP) was adopted at the 5/16 City Council meeting.

c. Service requests - In April 50 calls for tree service were received, of which 9 (18%) were related to cracked, hanging, or fallen limbs.

2. Planning/Monitoring

a. Damage Reports: One damage report was sent to Risk Management in April.

3. Planning and Building Development

a. Landscape reviews: Permit comments in the City TRAKIT permit system included tree mitigation requirements, Tree preservation protocols during development and species choices.

4. Miscellaneous

a. Final draft Urban Forest Master Plan (UFMP): The Urban Forest Master Plan was adopted at the 5/16 City Council meeting. Council members voted 6-1 to adopt the version redlined at the 5/1 Internal Affairs Committee (IAC) but to bring it back for further refinement at a future IAC meeting. The redlined Strategic Plan is Attachment 1.

b. Arbor Week: Tree Division had three Arbor Day celebrations in April. City of Chico has been recognized as a Tree City USA for the 39th consecutive year. City staff from Public Works celebrated by planting 17 trees with local schools. Participating schools: Parkview elementary, Little Chico Creek elementary and Notre Dame school. Over 400 students from kindergarten through 8th grade took part in the celebration. Tree species included “Red push” pistache, apple, kumquat, zelkova, redbud, dogwood, and London plane “Columbia”. See Figures 1,2,3.

c. Community planting: The “Wednesday volunteers” continued to plant trees around the community in April. See Figures 4 and 5.

d. Staffing: Greg Nicholas transferred from Public Works Underground Division to the grant funded tree watering assignment. Greg will be on temporary assignment until the end of the grant term March 2025. After that time, it is hoped that the position will be made permanent. Alfredo Pineda will also be joining the Tree Division as an hourly Maintenance Aide. Alfredo will continue watering trees planted under the Urban Forest Revitalization grant project.

5. Maintenance

a. Tree Maintenance – West Coast Arborists (WCA) completed trimming along Bruce Road.

b. Tree replanting: City staff are identifying suitable replanting locations. Trees that have recently been removed and stump ground are being assigned a suitable shade tree species and added to replanting lists and watering routes.

6. Outreach, Training and Education

a. UFM was the guest on KZFR 90.1 Ecotopia. The main topic of discussion was the UFMP process.

7. Street Tree Supervisor Report

The Street Tree Supervisor's monthly summary data tables for April 2023 are included below:

a. Table 1 April Staff hours

Category	Staff Hours	% of Total	% Change from Last Month	Trend
Tree Crew Hours				
1. Safety	283	31.3%	131.3%	
2. Tree Work	503	55.6%	112.9%	
3. Special Projects	62	6.9%	38.5%	
4. Admin Time/Other	56	6.2%	35.0%	
Monthly Totals	904	100.0%	92.1%	

b. Table 2 April Staff productivity.

Item	Values	% Change from Last Month	Trend
5. Productivity			
Calls			
Call Outs	33	46.5%	
Service Requests: Submitted	0	-	
Service Requests: Completed	51	83.6%	
Sub Total	0	-	
Trees			
Planted: Trees	17	24.3%	
Pruned	153	28.6%	
Removed: Trees (smaller)	0	-	
Removed: Stumps	0	-	
Removed: Trees	12	120.0%	
Sub Total	182	29.6%	
Tree Permits (#)			
Submitted	11	-	
Approved	4	-	
Denied	1	-	
Total	16	-	
6. Contracts			
Expenditures ($)	$ 3,450	-	

8. Upcoming Issues

a. The UFMP will be revisited at a future IAC meeting.

b. Public Works are staffed up ahead of the warmer weather to ensure that newly planted trees are watered.

c. Students and staff at Little Chico Creek elementary school seek to nominate an oak tree on the school grounds as a Heritage Tree. Tree Division staff will work through the process to attain this recognition.

PHOTOGRAPHS

Figure 1
Arbor Day Parkview elementary 4/27/23. Photo montage. Students voted to name their trees according to the following:
Kindgerarten class: Kumquat - “Fuzzbucket”;
5th grade graduating classes:
Apple tree – “Big Green Tractor”;
Red push pistache - “Groot”;
Red push pistache - “Shady Hubert.”

Figure 2: Notre dame 8th grade graduating class. Students voted to name their trees “Deacon Steve”, “Zacchaeus”, and “Demitreeus”

Figure 3: Students at Little Chico Creek. National Arbor Day April 28th

Figure 4: Wednesday volunteers Westminster ct. Chitalpa tree planted in park strip.

Figure 5. Wednesday volunteers. Homeowners on Westminster Ct received free dogwood and redbud trees.

Attachments: Attachment A. Redlined UFMP Strategic Plan per IAC 5/1/23 meeting.

GUIDING PRINCIPLE: A CONNECTED COMMUNITY

Goal				
1	By 2028, engage at least 50% of residents through outreach and engagement efforts that is representative of all residential types and demographics within the City of Chico.			
	Action Items	Cost	Method of Measurement	Who is Responsible
1.a	Develop an urban forest advisory committee -consisting of City staff, community members, and other invested stakeholders to ensure a broad range of voices have a say in urban forest practices in Chico.	$	• Expand on current UFMP Working group. • Revisit initiating the Tree Committee consisting of three (3) BPPC members, City Staff and Community Stakeholders. • Meets quarterly or as-needed.	PW O&M, and all City departments
1.b	Identify both communities of place and communities of interest to grow the network of partners, to assist in community engagement and outreach activities	$	• Contact list created of local non-profits, Community groups, Civic groups, churches, HOAs, property management companies, developers, businesses. • Initial list of 100 contacts created and kept up to date.	City with collaboration partners from 1. a
1.c	Create a chicotrees.org webpage for community input on the Tree Division Urban Forestry, display current urban forest data like canopy cover, tree inventory statistics, current legislation and annual trees planted and removed.	$	• Track web traffic numbers. • Green Industry legislation kept current e.g. AB 1881, SB1383 and others.	City
1.d	Develop a comprehensive education program to enhance community member understanding of tree maintenance practices including planting, establishment care, pruning, costs of deferred maintenance and the importance of continuing to water trees to maintain tree health during drought conditions.	$$	• Work with partners identified in 1a, 1b to develop content. • Effectiveness of programs assessed by survey of attendees. • Frequency of events (target quarterly). • Approaches to encourage tree retention on residential private properties are developed. This is a critical action threshold to achieve no net loss of tree canopy (Action 3.L)	PW O&M, with collaboration partners from 1. a

1.e	In partnership with local non-profits or advocacy groups ~~the Butte Environmental Council~~ and other partners, hold quarterly community engagement activities such as tree planting and care events, educational workshops, and free tree give aways for private property.	$	• Delivers programs developed in 1.d • Number of participants (attendees and training providers). • Number of trees distributed. Target 500 by 2025. • Tracked mortality rate of trees over a three-year period. • Calculate environmental benefits of free trees from i-tree suite.	Local non-profits or advisory groups ~~BEC~~ and partners from _ 1. a

	Action Items	Cost	Method of Measurement	Who is Responsible
1.f	Collaborate with a local utility company to develop a free residential shade tree giveaway program.	$	• Emphasis on drought tolerance, climate adaptation, energy savings. • Promotion of appropriate species to plant under utilities. • Partnership created with water provider to promote turf rebate program for water savings. • Trees provided by grant funding or utility.	City and participating utilities
1.g	Develop an incentive program that offsets the cost to water a newly planted tree over three years, when residential property owners elect to provide establishment care for a newly planted City-managed tree. Grant funding or tree mitigation funds could be used for this incentive program.	$	• Build on 1.d and collaborators in 1.f. • Expand outreach to educate on low cost of young tree establishment compared to other land uses. • Explore partnerships with local business to incentivize tree watering activities.	PW and partnering entities
1.h	Many desirable tree species are not readily available in the nursery trade. Explore the possibility of a city tree nursery in partnership with civic and non-profit groups.	$	• Possible locations identified. • Explore partner sites such as CSU, local nurseries contract grows opportunities. Explore possible school involvement, Master Gardeners and other communities of interest identified in 1. b	PW O&M, with collaboration partners from 1. a
1.i	Develop outreach efforts that manage resident expectations when non-emergency service requests are submitted.	$	• Provide website (1.c) and other social media outreach. • Develop and communicate protocols for response times based on available staffing resources.	PW O&M, PIO
1.j	Promote habitat values of city street trees and how they act as wildlife corridors from larger open spaces.	$	• Collaborate with appropriate partners from 1.b e.g., Audubon Society. • Provide website (1.c) and other social media outreach	PW

Action Items		Cost	Method of Measurement	Who is Responsible
1.k	Support and develop use of the city owned urban forest as a resource for increasing community food resilience and access to locally sourced food.	$	• Seek and apply for funding mechanisms such as grants, donations, and community volunteerism. • Develop partnerships with non-profit, businesses and civic groups. Ref to 1.a, 1.b, 1.e. • Develop MOU's, permits and protocols for BPPC approval. • Develop fruit gleaning and distribution programs of city-owned fruit trees. • Develop a free fruit tree program for residents, schools, and other qualifying entities. • Short-term goal: distribute 300 fruit trees by 2025. Re-assess program	Partners from 1.a, Climate Action Corp, BCLFN, Local non-profits or advisory groups ~~BEC~~
1.l	Incorporate urban forestry messaging into existing City initiatives.	$	• Notes: Public landscapes and urban forestry impact every aspect of city living. Even when urban greening benefits are secondary to the primary purpose of city-led initiatives, urban forestry messaging should be incorporated into outreach and public engagement activities. • Report outreach activities in annual and monthly BPPC staff reports.	PW O&M, PIO, BPPC
1.m	Develop plans to direct tree planting and maintenance activities to areas ~~neighborhoods~~ with the highest need consulting the Environmental Justice Element and Active Transportation Plans.	$	• Set priorities utilizing data from sources such as American Forests Tree Equity scores, CalEnviroscreen and data in this UFMP in conjunction with up-to-date inventory data.	PW O&M, Planning, GIS

Action Items		Cost	Method of Measurement	Who is Responsible
1.n	Develop a demonstration arboretum that highlights trees adapted to projected changes in climate.	$$	• Identify candidate sites on either city-owned property, such as World of Trees or in partnership with other entities such as CSU, Butte College, CARD. • Explore alternative option for non-geographic locations that could host walking tours (see action 1.o). • Select and procure tree specimens. Develop specification plan and install specimens. • Develop print, website, and social media content. • Develop long-term monitoring and reporting plan to determine success and failure of tree species.	PW O&M, PIO, UCANR, CSU, CARD, other partners from 1. a
1.o	Explore and integrate the use of smart phone and tablet applications that support GPS for self-guided tours, tree and urban forest information, games and scavenger hunts that facilitate learning.	$	• Develop interested partners from 1.a, 1.b. Climate Action Corps, educational institutions. • Also use to promote Heritage Tree Program (action 5.g) and demonstration arboretum (1.s)	Climate Action Corps, educational institutions
1.p	Chico attains recognition for promotion of urban forestry standards.	$	• Bidwell Parks and Playground Commission determine which awards staff should prepare to qualify and apply for including Society of Municipal Arborists (SMA) Accreditation. Tree Cities of the World. Tree City Growth Award-Sterling award and Bee City USA.	BPPC, PW O&M, PIO
** $ Low (0-$25,000), $$ Medium ($25,000 -$50,000), $$$ High ($50,000 - $100,000), $$$$ Very High (>$100,000)*				

GUIDING PRINCIPLE: THE COMFORT OF TREES

Goal				
2	By 2033 increase canopy cover by 50% across all non-City-managed land use types.			
Action Items		**Cost**	**Method of Measurement**	**Who is Responsible**
2.a	Public outreach during the development of this UFMP indicates that parking lot shade is inadequate. Evaluate the effectiveness of Municipal Code 19.70.60. Identify reasons for success and failure.	$$	• Conduct aerial imagery analysis of parking lots that were installed as part of a discretionary approval permit after the date of the parking lot shade ordinance was enacted. • Report on successes and failures of parking lot landscape. • Follow up with field verification and collect inventory sample data.	Building Division, GIS, CSU, PW O&M, partners from 1. A
2.b	Update Municipal Code 19.70.60 parking lot standards for tree planting that provides adequate space and soil volume to support long-term tree growth and health.	$	• Conduct research to determine successful design strategies to attain 50% parking lot shade. • Update Municipal Code 19.70.60 to require engineering and design standards appropriate for the parameters of the development site.	Building Division, GIS, PW O&M, partners from 1. A
2.c	Continue to ~~E~~enforce Municipal Code 19.70.60, which requires parking lots to be covered with 50% shade by year 15 on all new development. Work with existing property owners that developed parking lots prior to City incorporation to encourage compliance with CMC 19.70.060. General Plan Action OS-6.1.1 (Urban Forest Maintenance) "Working with commercial parking lot owners to improve the shade canopy."	$$	• Reach out to selected stakeholders to encourage ~~engage in~~ corrective measures through grant funding.~~.~~ • Develop long-term maintenance strategies to ensure healthy parking lot tree canopy, for example action 5. P. • Consider alternatives to the common 50% at 15-year standard if it is deemed impractical.	Building Division, GIS, PW O&M, partners from 1. A
2.d	Develop parking lot tree planting standards workshops in collaboration with Building Development.	$$	• Build capacity and acceptance of strategies that attain the goal of adequate parking lot shade.	Building Division, GIS, PW O&M, partners from 1. A

	Action Items	Cost	Method of Measurement	Who is Responsible
2.e	Develop a comprehensive educational program for commercial, retail, and industrial landowners on how trees add economic value to their business or property, City standards, proper tree maintenance practices, and the importance of continuing to water trees to maintain tree health during drought conditions.	$	• Expand on action 1. D	PW O&M, PIO, CoC, water utility provider, Local non-profits or advisory groups ~~BEC~~
2.f	Enforce tree pruning Best Management Practices (BMPs) on private commercial parking lots that are a requirement of development.	$	• Develop outreach to landscape and tree companies to build capacity.	PW O&M, PIO, CoC, water utility provider, Local non-profits or advisory groups ~~BEC~~
2.g	Provide resources to local non-profits or advocacy groups ~~Butte Environmental Council~~ to conduct outreach and engagement efforts to businesses along commercial corridors and retail centers.	$$	• Implement programs developed in action 2.e	PW O&M, PIO, CoC, water utility provider, Local non-profits or advisory groups ~~BEC~~
2.h	Develop an urban forest focus group ~~coalition~~ comprised of other significant local and regional landowners like Chico Area Recreation and Park District, Chico Unified School District, Chico State University, Mechoopda Tribe, Butte County, utility companies, and others to ensure shared urban forest goals and policies. Findings will be reported to the Bidwell Park & Playground Commission.		• Coalition meets once per year. • Report on activities	Build on partners from action 1.a
2.i	Continue to develop programs with Chico Unified School District regarding plantings, species selection, maintenance, management of landscapes, and Arbor Day events.	$	• Every K-12 student experiences at least one Arbor Day event, demonstration, or lesson regarding trees and urban forestry before graduation. • Attain grant funding either for City or non-profit partner to develop educational programs which build in already successful projects.	~~BEC~~, CUSD, City, Local non-profits or advisory groups
2.j	Encourage citizens to remove invasive trees from private property.	$	• Pursue partnerships with tree care companies to help get the message out. • Incentivize with free replacement trees (action 1.e) • Initially focus on properties located within ¼ mile of Bidwell Park.	PW O&M, partners from action 1. a
2.k	Encourage citizens to remove invasive trees from private property. Encourage partner entities to apply for recognition e.g., Tree Campus for K-12 schools and hospitals, Tree line USA for utility tree companies.		• City or partners assist with application process. • Achieve at least one signup.	PW O&M, partners from action 1.a, 2. H.

** $ Low (0-$25,000), $$ Medium ($25,000 -$50,000), $$$ High ($50,000 - $100,000), $$$$ Very High (>$100,000)*

GUIDING PRINCIPLE: THE COMFORT OF TREES

Goal				
3	Increase City-wide canopy cover to 40% by 2062.			
	Action Items	**Cost**	**Method of Measurement**	**Who is Responsible**
3.a	Achieve a minimum stocking rate of 95% of all identified City-managed planting sites by 2042.	$$$	• Tree inventory is kept up to date. • Tree inventory is reassessed every decade. • Unviable planting sites are removed from the database. • 95% of vacant sites equates to approximately 8000 sites planted. • Pursue grant funding.	PW O&M
3.b	Plant ~~at least~~ 500 ~~more~~ street trees ~~than are removed~~ annually ~~by the city.~~	$$	• Pursue replanting of vacant sites. • Stump grind removed tree sites and replant as part of a "remove and replace" strategy. • Work with development community to install ROW shade trees as part of development. • Track metrics and report annually to BPPC.	PW O&M, Planning, Building Division
3.c	Prioritize tree planting actions towards City-managed vacant sites on commercial corridors and neighborhoods with low canopy cover.	$$$	• Work with partners to identify suitable sites. • Pursue concrete removal strategies where locations would otherwise be suitable, but no tree-well exists. • Identify adjacent property owners willing to supply irrigation. • Pursue strategies to install irrigation infrastructure. • Pursue grant funding opportunities for low-income/disadvantaged neighborhoods, commercial corridors especially on walking and bus routes.	PW O&M, Planning, Building Division
3.d	Continue analysis of empty planting sites in the right-of-way. Refine list to remove those identified as unavailable.	$	• 95% inventory accuracy verified by field checks indicating viable tree planting sites.	PW

Action Items		Cost	Method of Measurement	Who is Responsible
3.e	Maintain a 5-year average survival rate of 97% for newly planted trees.	$$$	• Use Actions 1.d and 1.e to build capacity in the community for successful tree care. • Practice sustained maintenance practices for street tree establishment. • Maintain 5-year rolling average based on field surveys. • Report metrics on city website and to BPPC	PW O&M and partners 1. a
3.f	Select tree species for individual locations that will provide the highest possible canopy cover for the space given the planting area.		• Promote "right tree right place" principles.	PW
3.g	Promote the use of non-native cultivar trees with a proven record of successful establishment and growth in highly demanding municipal forest situations.		• Utilize arboretum established in action 1.n.	PW
3.h	Develop City of Chico Best Practices Manual with alternative design standards for City infrastructure such as sidewalks, streets, and curb and gutters, that increase the available space and soil volume for trees, and likelihood of tree preservation when infrastructure conflicts occur.	$	• Supplement planter and pavement design options to reduce conflicts between trees and infrastructure to include suspended pavement, pervious pavement/rubberized pavers, flexible (e.g., rubber) sidewalks. • Pursue tree-based strategies to select trees that do not exhibit high potential for infrastructure damage.	PW, Planning, Building Division
3.i	Set neighborhood tree canopy goals and measures to increase total canopy tree cover in the city.		• Analyze data to determine the required balance of public and private trees needed to achieve the desired canopy goal.	PW, GIS
3.j	Meet or exceed annual baseline Total Yearly Benefits of public tree assets of $6.6 million as measured by the USDA i-Tree Streets model.		• Run i-tree Streets annually on the citywide tree inventory and report values.	PW
3.k	Ensure no net loss of canopy cover. ~~on both public and private land.~~		• Measure at 10-year intervals using LiDAR or other strategies. • Canopy should not fall below 36% using same assessment area as analysis in 2021.	PW
** $ Low (0-$25,000), $$ Medium ($25,000 -$50,000), $$$ High ($50,000 - $100,000), $$$$ Very High (>$100,000)*				

Goal				
4	By 2033, the City-managed tree inventory will increase in resiliency and sustainability by achieving targets for species and age diversity, health condition, and transitioning to climate appropriate species.			
	Action Items	Cost	Method of Measurement	Who is Responsible
4.a	Limit the planting of non-native tree species that represent more than 5% of the city inventory.		• Metrics used as a guide to promote diversity in the species palette. • Chinese pistache, red maple, and crape myrtle~~. A~~ are examples of trees that should be limited in use.	PW
4.b	Annually review the City recommended tree species list and update it as appropriate to ensure species are suitable for current and future climate conditions, are low water use, will achieve species diversity standards, and will prioritize well-adapted local and regionally native species.	$	• Report annually to BPPC with recommended changes. • Review list with industry experts and consult scientific and horticulture literature.	PW, CSU, Master Gardeners, UCANR
4.c	Ensure that the top six most common trees in the city inventory have a relative performance index score of 1 or better.		• Data compiled during inventory reassessments every decade.	PW
4.d	Conduct an analysis of tree species in the inventory that are marked as poor or critical to further understand if they are suitable for the city recommended tree species list, or if they should be removed.		• Determine cause of failure and determine biotic and abiotic factors.	PW
4.e	Develop standards for green stormwater infrastructure projects to include trees. Update the tree species selection process for such projects to align with the standards established in the UFMP.		• Adopt standards for green stormwater infrastructure projects to include trees.	PW O&M, PW ENG
4.f	Provide resources and educational materials for private property owners on current and emerging threats to trees, such as drought, pests, and diseases, and steps they can take to improve tree health.	$	• Goal expands on 1.a	PW
4.g	Develop a 'deferred', 'preferred', 'restricted', 'prohibited' list of trees for use in the right-of-way.	$	• Promote strategy with Landscape architects. Monitor tree palette composition of landscape plans submitted during the development process. • Modify annually and report to BPPC. • Promote changes on city website and distribution lists.	PW, 1a partners

Action Items		Cost	Method of Measurement	Who is Responsible
4.h	Conduct an analysis of the Northern California black walnut (Juglans hindsii) species, to identify strategies that preserve trees in the short-term. and replace failing trees over the long-term.		• Identify large stature walnuts that are candidates for pruning. • Trees exhibiting >50% dead canopy are removal candidates.	PW
4.i	Develop a long-term plan to replace failing trees based on analysis of the Northern California black walnut (Juglans hindsii).	$$	• Monitor population and size classes.	PW
4.j	Continue to expand the Tree Inventory and include designated trails in Bidwell Park and other open spaces.	$$	• Continue program started on Petersen and South Park Drive to tag and assess trees >12" DBH on designated trails in lower and middle park.	PW
** $ Low (0-$25,000), $$ Medium ($25,000 -$50,000), $$$ High ($50,000 - $100,000), $$$$ Very High (>$100,000)*				

GUIDING PRINCIPLE: START WITH TREES

Goal				
5	By 2028, City planning processes, ordinances, and policies will be aligned with the standards of the UFMP.			
	Action Items	**Cost**	**Method of Measurement**	**Who is Responsible**
5.a	Ensure that Urban Forest policies and procedures are incorporated into other City standards and management plans.		• Highlight examples of included messaging in staff reports to BPPC.	All City
5.b	Periodically ~~R~~review and update ~~the~~ Municipal Code Section 16.66: Tree Preservation Regulations. ~~to ensure that defined protected tree regulations apply to all private property trees regardless of qualifications, entitlements, or lot size.~~		• Review to determine suitable exemptions.	PW, Planning
5.c	Update the City Tree Preservation Regulations to apply to public capital improvement projects, so trees removed through a project will require replacement.		• Monitor CIP projects in the same way as private property development projects.	PW, Planning
5.d	~~Develop,~~ Update and revise standards and guidelines to better protect and preserve trees during construction.	$	• Determine which types of trees should be monitored for long-term survival after development. • Report to BPPC findings with assessment of effectiveness of tree preservation guidelines. • Review guidance under CMC 19.68.	PW, Planning
5.e	Update the standards for new residential developments to encourage ~~require~~ a tree planting plan that will lead to 40% canopy cover for the development project.	$	• Develop exemptions based on physical site characteristics. • Cross reference goal 7. d.	PW, Planning, Building Division
5.f	~~Update the~~ During a scheduled General Plan update, ~~to~~ adopt the canopy cover and urban forestry goals of the UFMP.		• Updated General Plan.	PW, Planning
5.g	~~Update the~~ During a scheduled General Plan update, ~~to~~ reference species selection, planting guidelines, and other best management practices identified in the UFMP.		• Updated General Plan.	PW, Planning
5.h	During a scheduled General Plan update, ~~E~~ensure the permit review process for landscape plans aligns with goals of the UFMP and are approved in consultation with the City's urban forester or a City-qualified certified arborist prior to issuance of permits.		• Review staffing plans to ensure timely reviews of landscape plans by a qualified arborist.	PW, Planning, Building Division

Action Items		Cost	Method of Measurement	Who is Responsible
5.i	Update the City Design Guidelines Manual to include tree planting guidance and landscape design standards. ~~that include minimum tree planting requirements by land use type.~~	$$	• Guidance will include placement of trees during the landscape plan review process to avoid impeding sight distance views at intersections. • Landscape Design Standards to enhance water conservation and improve soil health issues. • Develop guidelines for innovative ways to add trees to development projects in situations with limited planting space. • Identify desirable trees for preservation at the beginning of the design process so engineering solutions can be developed for their protection. • Review sidewalk design and ROW tree planting criteria to mitigate sidewalk displacement by tree roots.	PW, Planning, Building Division, consultant
~~5.j~~	~~Establish and implement a performance bond process for development projects to ensure trees are successful 5 years after planting.~~		• ~~Monitor long-term survival of trees.~~	~~PW~~
5.k	Adopt a policy requiring trees in streetscape improvement projects.		• Extend the "Complete Streets "concept to specifically include suitable shade trees, particularly along pedestrian and bike paths.	PW O&M, PW ENG, Planning, Building Division
5.l	Explore the development of a private tree ordinance to protect trees on private property not associated with development.	$	• Continue public outreach to build off feedback received during development of this UFMP. • Conduct analysis of private tree ordinances in California. • Develop language suitable for Chico including qualifying criteria (example by species, size, location on property), protection against improper pruning practices such as tree-topping, mitigation measures, exemptions. • Report findings to BPPC.	PW, Planning

Action Items		Cost	Method of Measurement	Who is Responsible
5.m	Update and promote the Heritage Tree Ordinance and celebrate historically significant trees.		• Conduct an analysis of similar programs. • Create a survey to determine reasons for low take-up. • Modify regulations to increase participation from private property owners.	PW
5.n	Update Title 14 to improve its functionality.	$	• Update Street Tree Law ordinance to allow for enhanced penalties and enforcement of illegal public tree removals. • Update language.	PW
5.o	Develop programs to remove and replace invasive trees on public property.	$$	• Program compliments action 2.j on private property. • Initially focus on properties located within ¼ mile of Bidwell Park.	PW
5.p	Develop a procedure for final approval and acceptance of projects once complete, including the requirement that as-builts are received and scanned in a timely manner.	$	• Landscape inspection procedures for final Certificate of Occupancy issuance clarified. • Training provided to Planning staff for landscape inspections of private landscape elements.	PW, Planning, Building Division
~~5.q~~	~~Explore the necessity of a city Solar ordinance.~~	~~$~~	• ~~Monitor number of solar/tree conflicts to determine the necessity.~~	~~PW, Planning~~
5.r	Coordinate with stormwater managers to recognize the important contribution and value of trees and tree canopy in stormwater and flood requirements for 85 percentile storm control management plans and strategies.	$	• Ref 5.i ~~l~~	PW O&M PW ENG
5.s	Coordinate with floodplain managers and GIS staff to analyze and model strategies to supplement stormwater and flood control.	$	• Green Stormwater Infrastructure (GSI) strategies considered.	PW O&M, PW ENG, GIS
5.t	Promote trees and canopy as an efficient and cost-effective part of the solution to managing stormwater.	$	• Ref 5.i ~~l.~~	PW O&M, PW ENG
5.u	Encourage and promote the benefits of stormwater planting pits, swales, channels, and other designs intended to capture and retain stormwater for use by urban trees.	$$	• Install at least one demonstration site with incorporated stormwater capture designs, such as Silva Cells.	PW O&M, PW ENG

Action Items		Cost	Method of Measurement	Who is Responsible
5.v	Supplement design standards to support the construction of suspended sidewalks, curb drains, stormwater tree pits, and other designs that promote the temporary storage and infiltration of stormwater; especially in areas with a high percentage of impervious surface and where planter space is limited (e.g., commercial, and downtown areas).	$$	• Design Standards updated	PW O&M, PW ENG
5.w	Encourage development designs that support the State MS4 General Permit requirements that include provisions for matching the predevelopment hydrograph for 85 percentile storm events with the post-development hydrograph, thereby reducing stormwater and channeling valuable water to support trees and other landscaping.	$	• Design Standards updated	PW O&M, PW ENG
** $ Low (0-$25,000), $$ Medium ($25,000 -$50,000), $$$ High ($50,000 - $100,000), $$$$ Very High (>$100,000)*				

GUIDING PRINCIPLE: START WITH TREES

Goal				
6	By 2028, the City will have tree management practices and policies that lead to sustainable management of the urban forest.			
	Action Items	**Cost**	**Method of Measurement**	**Who is Responsible**
6.a	Achieve a 5-to-7-year pruning cycle of all City-managed trees.		• All City-managed trees pruned or inspected every 5-to-7-years.	PW O&M
6.b	Annually conduct a level 1 survey on City-managed trees.	$	• Target 10,000 trees per year. • Staff possessing TRAQ credential windshield survey to identify clear defects.	PW O&M
6.c	Complete first formative pruning of trees within 5 years after planting.	$	• As part of 6.a young tree care will ensure reduced future maintenance.	PW O&M
6.d	Provide all newly planted trees a minimum of 3 years of establishment care and watering.	$$$	• Goal 7.g provides one FT Maintenance Worker to focus on young tree care. • Goal 3.e provides proxy for success.	PW O&M
6.e	Identify veteran trees in Bidwell Park and develop additional protection, preservation, and maintenance standards appropriate for their age and condition.	$$$	• Veteran tree definition criteria established. • Identified trees assessed at ISA Level 2 and added to TreeKeeper database. • Determine equipment and training needs for inhouse Level 3 ISA assessments; Cost Benefit Analysis conducted to compare costs of service provided by consultant. • Cross reference with action point 6. S.	PW O&M
6.f	Develop a program to auction high value wood removals to the highest bidder.	$	• Report dollar value of proceeds to BPPC.	PW O&M
6.g	Update standard details to align with the standards discussed in this UFMP (Technical Assessment Section 5.3).	$	• Updated standard details.	PW O&M, PW ENG
6.h	Implement the street tree planting plan included in this UFMP.	$$$	• Report annually to BPPC numbers, location and types of trees planted.	PW O&M

Action Items		Cost	Method of Measurement	Who is Responsible
6.i	Ensure all identified dead trees in the city managed tree inventory are removed annually.	$$$	• Report removal numbers to BPPC	PW O&M
6.j	Address emergencies and urgent tree work within one week of notification.	$	• Report from service request database response time.	PW O&M
6.k	Promote the elevation of limbs and foliage for traffic safety and line of site clearance at intersections as a high priority.	$	• Report on number of trees pruned annually for sightline issues.	PW O&M
6.l	Program Downtown elevations, sightlines and building clearance at least every other year as needed.	$	• Report numbers of trees pruned.	PW O&M
6.m	Program volunteer tree removal from alleyways on a mid-term cycle.	$	• When schedule allows, remove volunteer trees that are an encroachment issue.	PW O&M
6.n	Revise tree pruning and productivity standards for Public Works and contractors.		• Report number of trees pruned per year	PW O&M
6.o	Develop city and contractor workflows and equipment needs to ensure the inventory is updated as trees are removed, planted, or pruned.	$	• Provide training, tools and software to allow in-house and contractor staff to update work orders in the field.	PW O&M
6.p	Develop and promote the concept of "whole tree life cycle" to include salvaged wood and use of wood products.	$	• Develop outreach materials for print, website, and social media	PW O&M, PIO
6.q	Research local wood workers, tree care companies, and resource recovery operations that may be able to use wood waste generated by the city.	$	• Develop "highest and best use" strategy.	PW O&M
6.r	Create partnerships with companies identified in 6.q and individuals who can use City-generated wood waste.	$	• Report of board feet milled. • Highlight end use of wood products.	PW O&M
6.s	Work with Risk Management to create a tree risk management strategy that identifies objectives and action thresholds for tree risk management, coordinates risk management objectives with a tree inspection program, prioritizes risk mitigation measures and coordinates with work plans, identifies risk assessment priorities, protocols, policies, and final authority for removals, and adds urban forest risk management policies to the City Hazard Mitigation Plan.	$	• Define policies and procedures for tree removal, both during development and in the city ROW.	PW O&M

Action Items		Cost	Method of Measurement	Who is Responsible
6.t	Develop a Policies and Procedures manual that outlines group operations, best management practices and official policies and procedures that guide day-to-day urban forestry operations.	$	• Technical manual for staff created	PW O&M
6.u	Coordinate management strategies for trees in utility rights-of-way including electric, natural gas, water, and other utilities. Confirm safety is top priority, but also focus on health and wellbeing of the tree.		• Uphold best management practices to ensure long-term health of the urban forest. Renew and update permit processes and fees. • Uphold that the least amount of work required to meet objectives is done.	PW O&M, PW ENG
6.v	Develop a policy and identify responsibility for quality control, quality assurance, and auditing of tree care operations that are performed by contracted staff to ensure compliance with contract specifications.		• Report on number of call-backs.	PW O&M
6.w	Identify department staff with an interest in tree care. Develop and implement a training program on basic tree care skills, including small branch removal, young tree training, and risk identification. Mentor individuals who demonstrate an aptitude and interest for arboriculture and provide opportunities for advancement and certification pay.	$	• Develop a process that incentivizes City staff to obtain Tree Risk Assessment Qualification (TRAQ) through the International Society of Arboriculture (ISA). (Assists goal 6.b) • Report on certifications attained by Public Works staff.	PW O&M
6.x	Use GIS analytics to evaluate service request/work orders to identify areas of high maintenance concentration and to identify patterns related to disease, pests, or other specific maintenance issues. This data will help inform where pro-active tree management should focus.		• Report findings to BPPC	PW O&M
** $ Low (0-$25,000), $$ Medium ($25,000 -$50,000), $$$ High ($50,000 - $100,000), $$$$ Very High (>$100,000)*				

GUIDING PRINCIPLE: SUSTAINABLE RESOURCES

Goal	
7	By 2033, the city will have the resources to fully support implementation of the UFMP.

Action Items		Cost	Method of Measurement	Who is Responsible
7.a	Achieve appropriate funding to meet Goal OS-6 of the General Plan, to ensure a healthy and robust urban forest.	$$$$	• Annual increase in funding until desired goal is met.	PW O&M
7.b	Continue to seek external funding sources that support tree planting and establishment care projects like the Community Choice Aggregation (CCA) program, to reduce the energy load on the grid by providing shade trees to residents.	$$	• Other sources of funding include dispensary tax, Inflation Reduction Act urban forestry funding.	PW O&M
7.c	Conduct a~~n~~ routine analysis of mitigation and in-lieu fees to determine if fees are adequate to replace and care for newly planted trees and adjust fees as appropriate.	$	• Conduct fee study and make recommendations	PW O&M
~~7.d~~	~~Explore opportunities to leverage future development projects to increase resources for urban forest management.~~	~~$~~	• ~~Cross reference action item 5. e.~~	~~PW O&M~~
7.e	Annually provide a report on the City's return on investment from the funding that is allocated to urban forest management.	$	• Report to BPPC	PW O&M
7.f	Ensure the City has continued funding to create a staff position or on-call contract for a certified arborist to effectively manage and implement planning policies on private property including code enforcement, site plan review, post-installation inspections.	$	• Public Works report to BPPC on proposed staffing changes.	PW O&M
7.g	Review 2017 Staffing plan to determine revised needs to attain the goal of General Plan goal OS-6. Include 1 FT position focused on young tree care establishment.	$$$$	• Cross reference action items 6.a, 6.n, 6. J.	PW O&M
7.h	Continue to ~~E~~ensure a City arborist is directly involved in reviewing new development designs, project permits, and removal applications to ensure best arboricultural practices are being instituted.		• Ref 7.f.	PW O&M, Planning
7.i	In partnership with other agencies, bring International Society of Arboriculture training opportunities to Chico that will help support the greater arboriculture industry north of Sacramento.		• Report on number and type of ISA courses hosted in the Chico area. • Report on number of candidates assessed.	PW O&M, CARD
7.j	Pursuant with accepted tree removal policy, establish revenue streams from recycled wood.		• Ref 6.f	PW O&M

Action Items		Cost	Method of Measurement	Who is Responsible
7.k	Explore corporate sponsorship opportunities for the Heritage Tree Program.		• Goal to identify one tree care company that will offer reduced cost of tree maintenance on private Heritage Trees.	PW O&M
7.l	Assess fleet age, condition, and usage hours to determine when equipment used for urban forest maintenance will need to be replaced; once identified, begin purchasing process at least one year prior to the projected "aging out" date.		• Report assessment to PW Fleet manager	PW O&M
7.m	Consider providing the tree crew with a smaller aerial truck for easier maneuvering around the city.		• Report assessment to PW Fleet manager ref 7.l	PW O&M
7.n	Rent or contract for specialty equipment that would not be used often for urban forest management and/or by any other department in the city, or, consider sharing specialty equipment with other nearby cities.		• e.g., Stump grinder.	PW O&M
7.o	Develop a policy to budget for or pursue grant funding to re-inventory publicly owned trees every ten years.	$$$	• Pursue grant funding. • Pursue outreach initiatives to engage the community and interested groups to learn about condition assessments of community trees	PW O&M, CalFire
7.p	Optimize funding from newly established assessment districts CMD's (Chico Maintenance Districts). Work with Public Works Engineering to ensure adequate funding is built into assessment schedules for cyclical tree maintenance.		• Provide amortization costs associated with whole tree life cycle.	PW O&M
7.q	Develop a Pest Vulnerability Matrix		• Liaise with Ag Commissioner and UC Extension agents to determine current and future biological threats.	PW, UCANR
7.r	Develop Emerald Ash Borer (EAB) Action Plan.	$	• If EAB arrives in California from Oregon, monitor and report on the 1179 ash trees in the ROW in Chico	PW O&M
7.s	Develop an Integrated Pest Management Program (IPM)	$	• Report on effective ways to reduce the amount of pesticides used on City landscapes.	PW O&M

** $ Low (0-$25,000), $$ Medium ($25,000 -$50,000), $$$ High ($50,000 - $100,000), $$$$ Very High (>$100,000)*