



Potrero Gateway
**Eco-Patch & 17th
Street Improvements**

GBD Presentation
15th September, 2021

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field collective
www.field-collective.land



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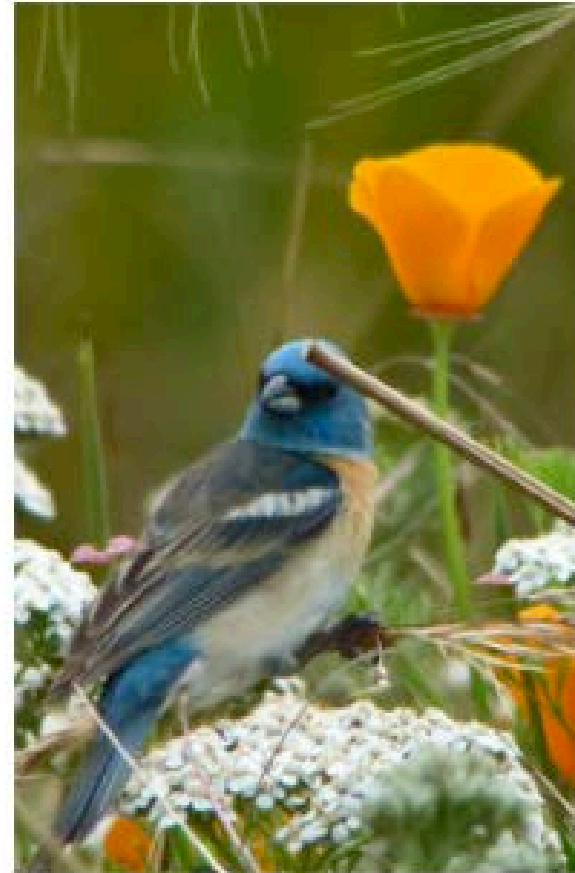
Why is biodiversity is important?

- Maintaining biodiversity, in particular for plants and wildlife that have been impacted by habitat fragmentation
- Unique identity for Potrero Hill that reflects it's natural history
- More resilient to climate change



San Francisco Biodiversity Policy

On May 23, 2017, the [Commission on the Environment](#) unanimously adopted a resolution that articulates a citywide vision and five long-term [goals](#) for San Francisco's nature and biodiversity. The resolution establishes the tremendous need for urban biodiversity work, illustrates some of the ongoing collaborative initiatives by the City and its community partners, and articulates strategies for the Department of Environment to employ to implement the five citywide biodiversity [goals](#).



“the resolution establishes the tremendous need for urban biodiversity work”

Citywide Biodiversity Vision. San Francisco is a place where our local biodiversity thrives in climate-resilient ecosystems that integrate healthy native wildlife and plant habitats throughout our city's physical environment, connecting ALL San Franciscans to nature daily and inspiring stewardship of our unique natural heritage in every neighborhood.



Healthy Ecosystems

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San Francisco Climate Action
A Vision for an Equitable and Sustainable City

Healthy Ecosystems

Healthy ecosystems sequester carbon from the atmosphere that cannot be directly eliminated. They also contribute to local biodiversity, improve air quality, and promote public health. Through the use of nature-based solutions the city can manage and restore local ecosystems, enhance urban forests, and create healthy soils.

Sector Goal:

Expand the use of nature-based solutions, such as soil and vegetation, to sequester carbon and protect biodiversity.

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“Expand the use of nature-based solutions, such as soil and vegetation, to sequester carbon and protect biodiversity.”

1 Advance citywide collaboration to continually refine nature-based climate solutions that sequester carbon, restore ecosystems and conserve biodiversity

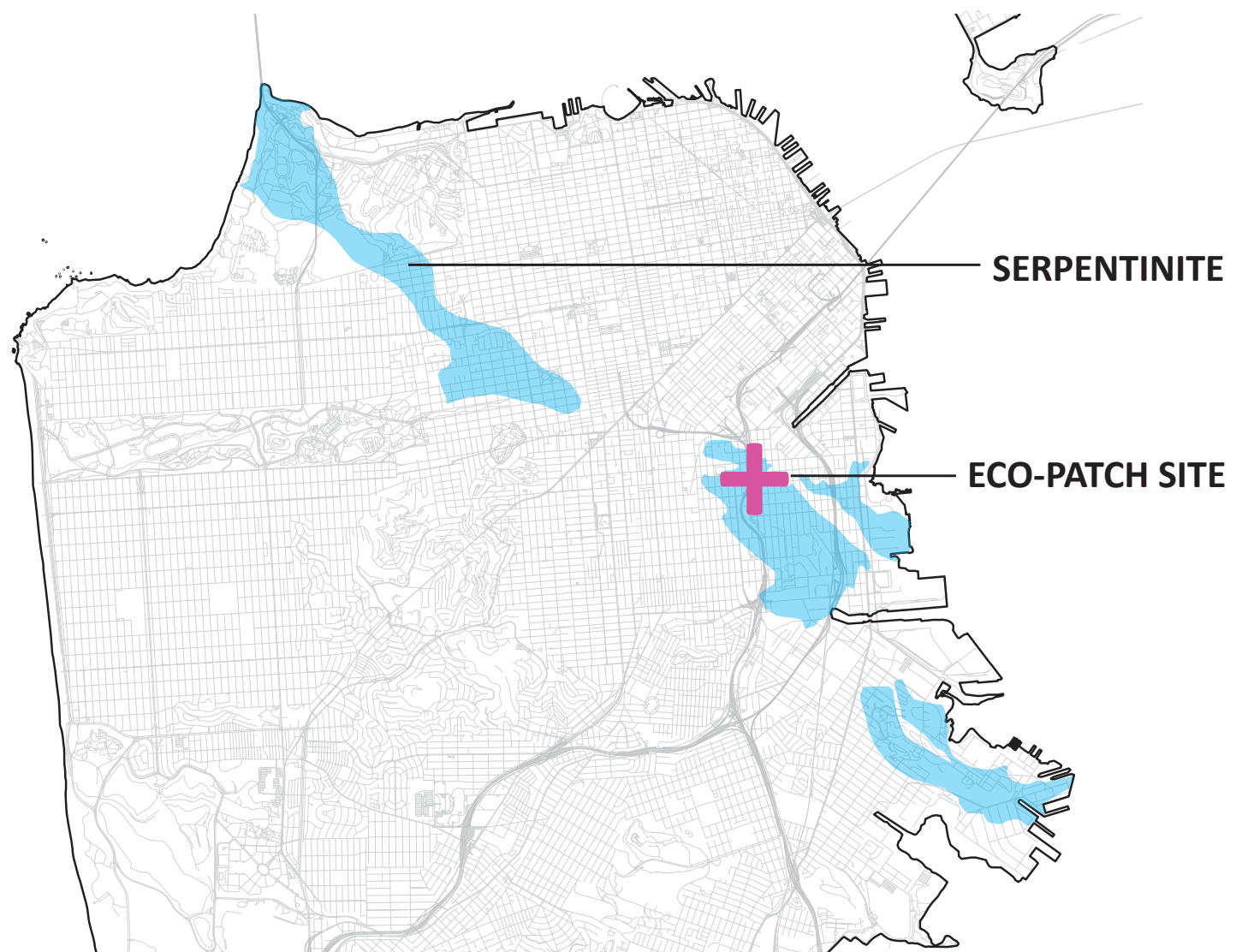
- By 2022, resource the interagency collaboration needed to support and shepherd the full implementation of the Healthy Ecosystems Chapter.
- Initiate an assessment of the potential for all City owned lands to sequester carbon while maximizing indigenous biodiversity.

5 Maximize trees and other urban greening throughout the public realm

- Plant 30,000 street trees (~25% increase) in the sidewalk tree wells to complete the street tree network by 2040.
- Maximize, where woody vegetation is appropriate, planting coast live oak and other native trees and arborescent shrubs throughout the entire public realm.

8 Maximize greening and integration of local biodiversity into the built environment

- Maximize replacing concrete to create more green spaces, prioritizing street trees and habitat-friendly, climate-resilient local natives in the public right of ways.
- By 2025, develop and implement guidelines and incentives to maximize native pollinator habitat on public, residential, and large-scale development projects.



Serpentinite outcrop on the coastal bluffs of the Presidio
<https://www.nps.gov/goga/learn/education/serpentinite-faq.htm>



The first stage of the Eco-Patch project is a **900 square foot** test garden planted with a select number of plants from the Eco-Patch plant list.



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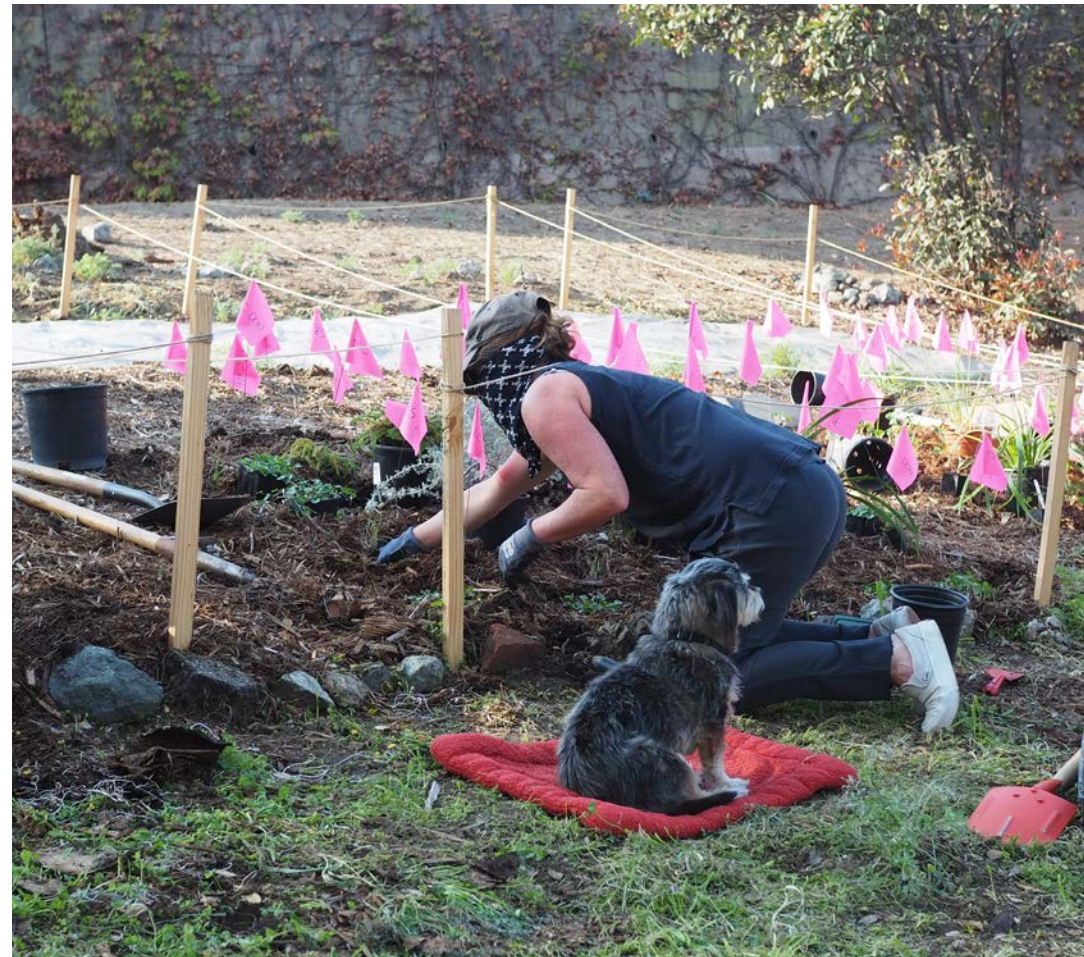


Project partners - a collection of motivated neighbors under various banners



Project Goals for Eco-Patch

- 1) plants are **native** to San Francisco;
- 2) plants will provide **habitat and food supply** for local native insects;
- 3) is visually and experientially engaging in order to encourage **neighborhood adoption** of the plants into backyards and other greenspaces;
- 4) will meet objectives of both CNPS and GBD **community groups** whilst also gaining approval by Caltrans and the San Francisco Department of Public Works.



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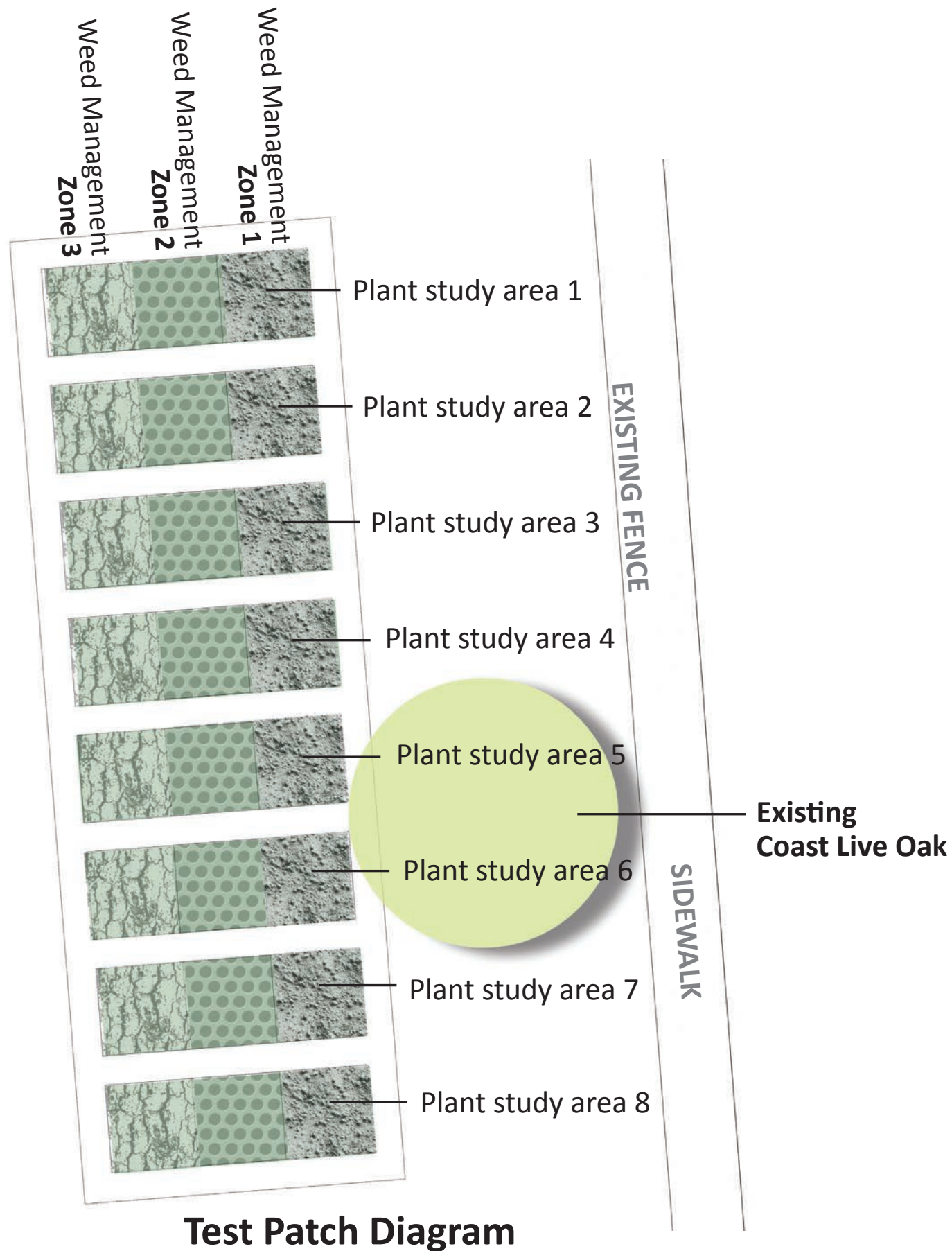
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8 different plant mix trials -including the two below:

OAK SAVANNA



SERPENTINE MEADOW



Test Patch Diagram



7 OAK SAVANNA

6 OAK UNDERSTORY

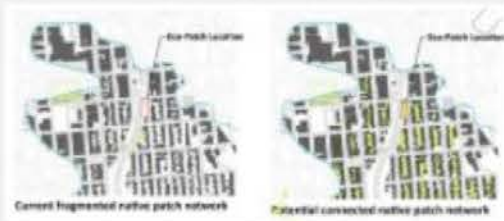
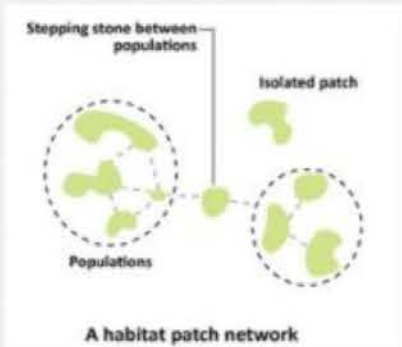
5 COFFEEBERRY SCRUB





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Potrero Native Patch Network



providing wildlife habitat and restoring biodiversity

Signage, Names?



Vermont St "Ecopatch" Demonstration Garden by Field Collective



Community Pollinator

Connect with neighbors ...

invites you to move around and experience the site, the hill, the landscape

<https://milliontrees.me/2014/10/03/butt...>



Bay Checkerspot Butterfly



Bees



Butterfly Waystation



Community Botanical Garden

Community Arboretum?

Precious plants, native species, butterflies are placed front and center

A "stage" for ecological processes

Putting plants, bugs and birds front and center

Drought-tolerant plants, native plants, a demonstration garden ...

Intertwined within a concrete jungle of transportation infrastructure is a garden of earthly delights ...

experimental, monitoring?, iNaturalist

Eco-patch meets art and public space, infrastructure

Concept Board 1 | Connecting Ecologies

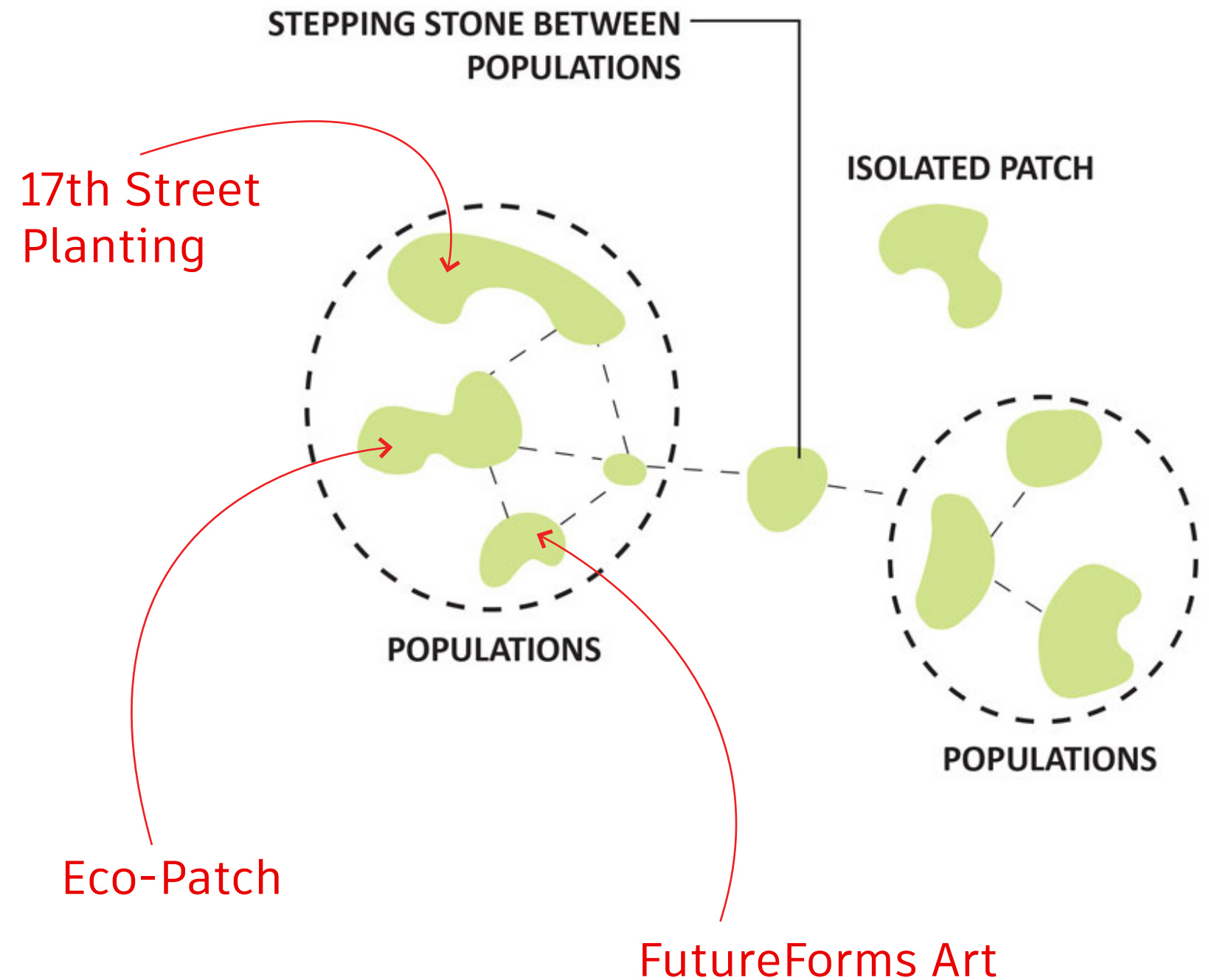
Artistic Vision for FutureForms Art (taken from their concept board)

To act “as a habitat ‘stepping stone’ in conjunction with the Eco-Patch”

“Providing wildlife habitat and restoring biodiversity”

“Eco-Patch meets art and public space, infrastructure”

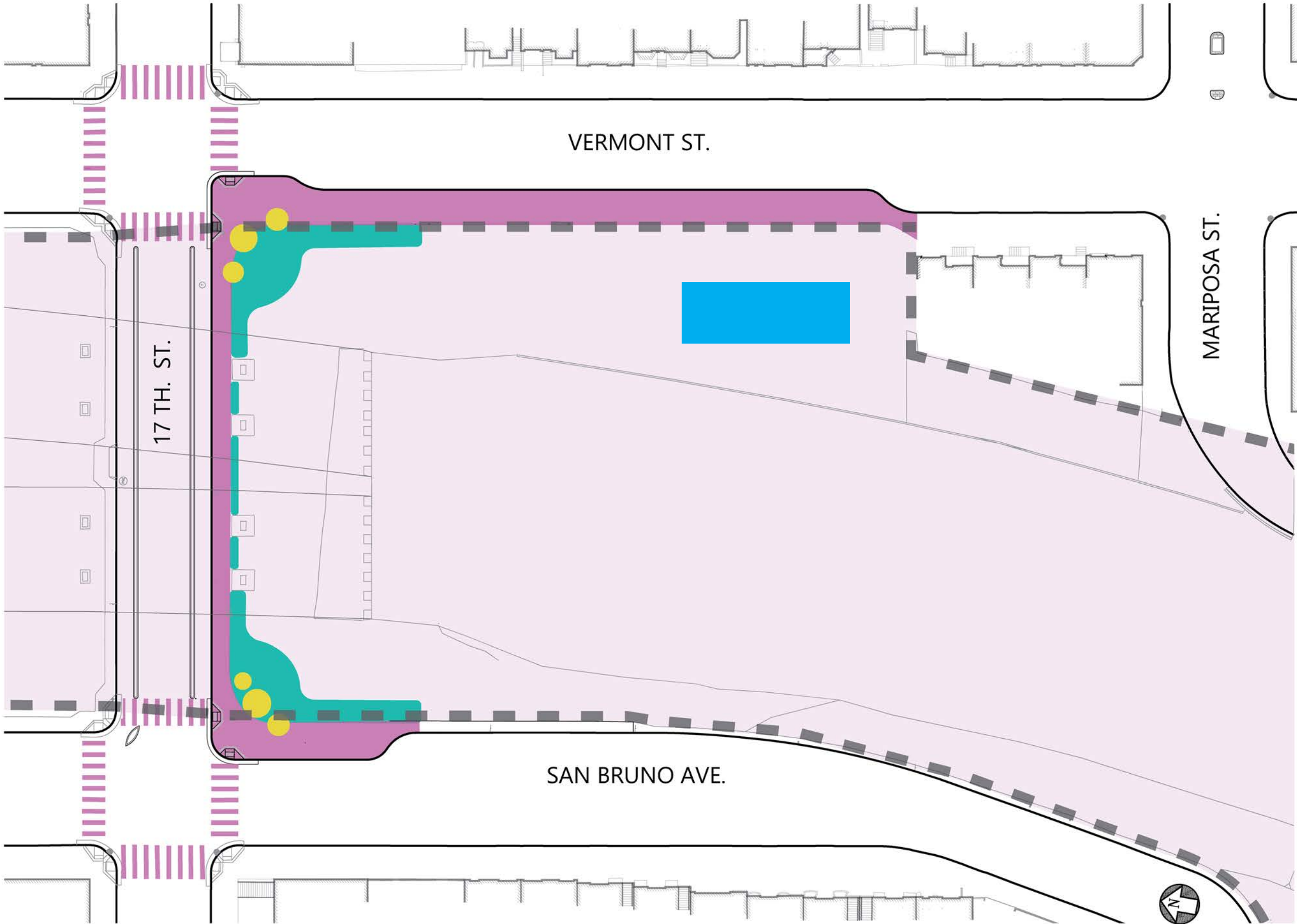
“Putting plants, bugs and birds front and center”



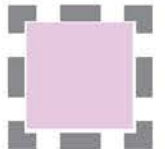
The planted artworks help reinforce the neighborhood's desire to build community around **art, ecology and public space**. These sculptural objects are meant to promote the interaction of plants, insects, birds and humans.



FUTUREFORMS



**CALTRANS
PROPERTY**



**STREETSCAPE
IMPROVEMENTS**



- WIDENED SIDEWALK
- DECORATIVE PAVING
- DECORATIVE CROSSWALK
- PEDESTRIAN LIGHTING
- ENHANCED CORNERS

**LANDSCAPE
ARCHITECTURE**



- FENCING
- PLANTING
- SOIL STABILIZATION

PUBLIC ART



- SCULPTURE

**ECO-PATCH
TEST GARDEN**



Public Works has designed a beautiful planting plan and we greatly appreciate their work to improve 17th Street!

However, it doesn't reflect the community's desire or the city's long term goals to support biodiversity through the use of native plants.

Our proposal

Field Collective hopes to work with DPW to amend the plant list to:

- reflect previously stated project goals of improving biodiversity and ecological resilience
- take into consideration the GBD's concerns about maintenance



What we would deliver

- 4 different plant palettes based on the varying microclimates and growing conditions
- Each palette would be designed to maximize aesthetic and ecological benefits relating to the plant seasonality, bloom colors and biodiversity impact

Plant study area 8: Serpentine Meadow



Image credit: <https://www.usbr.gov/mp/cvpcp/> © Lech Naumovich - <https://ebcnps.org/news/serpentine-prairie-2020-06/>

Landscape archetype precedents



Carex praegracilis

Castilleja exserta

©2018 Walter Sigmund "Castilleja exserta 8031.JPG" - https://commons.wikimedia.org/w/File:Castilleja_exserta_8031.JPG



Clarkia rubicunda

Lasthenia californica ssp. californica

Plant species

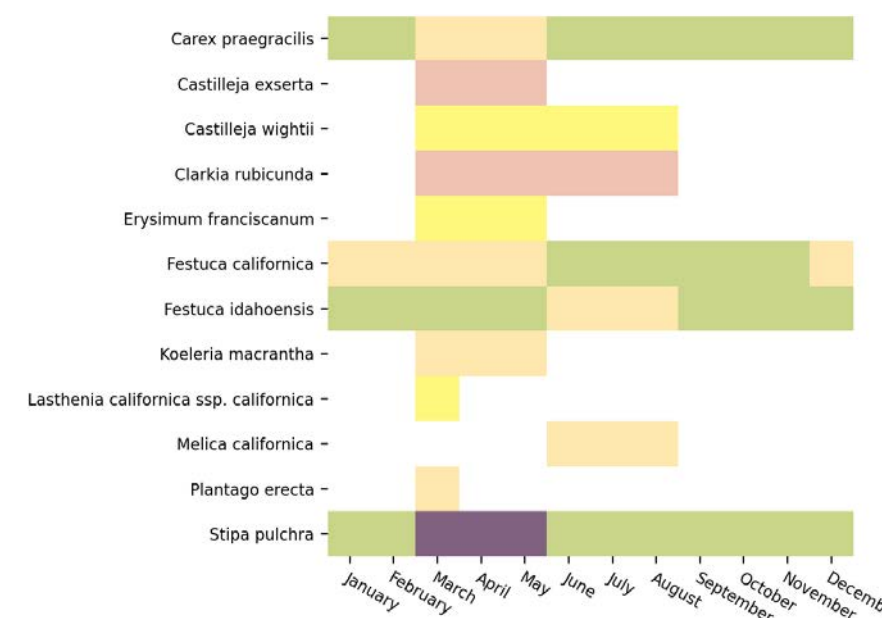
Landscape inspiration:

Serpentine Meadow - a dynamic landscape of diverse grasses and wildflowers. Greens, yellows and pink textures and colors; a sense of uniform layers across the plane.

Our design response to test:

- High, medium, and low layers of inflorescence within a homogenous matrix of grasses of mixed diversity

Plant colors during year:



Plant study list:

Groundcover Layer (50%)
Carex praegracilis

Filler Species (5-10%)
Castilleja exserta
Stipa pulchra

Seasonal Layer (25-40%)
Castilleja wightii
Erysimum franciscanum
Plantago erecta
Clarkia rubicunda
Lasthenia californica ssp. californica

Structural Layer (10-15%)
Festuca idahoensis
Festuca californica
Melica californica



Groundcover example
Yerba Buena



Filler example
Dune Gilia



Seasonal example
Ithuriel's Spear



Structural example
California Melicgrass

Design Approach

1. Categorize / analyze plants

We categorize plants into the following categories following the criteria set out in the book *Planting in a Post Wild World*.

- Groundcovers

Erosion control, weed suppression, green mulch.

Should be: Low, shade tolerant, tend to be rhizomatous, stress tolerant

- Filler species

Seasonal color, temporary fillers until plants are mature, fills in holes in planting after a disturbance

Should be: Able to reseed itself

- Seasonal layer

Visually dominant plants for a time. Larger quantities for impact

Should be: Mid height, long to medium lifespans. When not in bloom plants will be companions to the structural plants

- Structural layer

Backbone of planting. Trees, dominant shrubs, tall perennials and grasses. Distinctive form.

Must be: long-lived, Clump-forming, year-round structure

Design Approach

2. Design plant mix

Design each plant mix by creatively synthesizing our landscape archetype analysis with the species list.

For each mix we design a layering of plants (structural, seasonal, filler or groundcover), and using a spreadsheet, we ensure each mix meets both the percentage proportions of the classifications, as defined by Rainer and West (2016), the design intent, and the habitat needs of our targeted species.

PLANT MIX 7: OAK SAVANNA

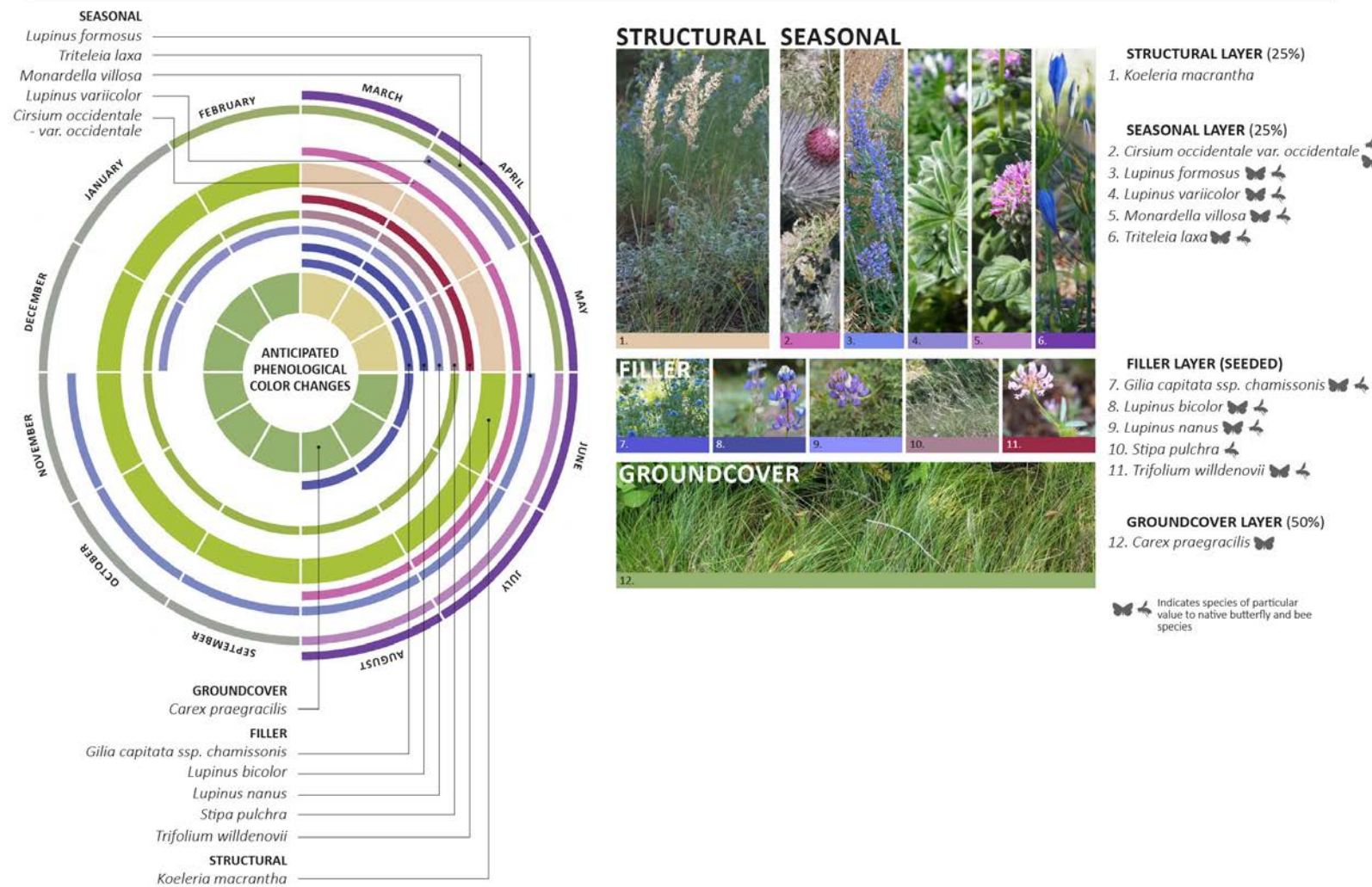
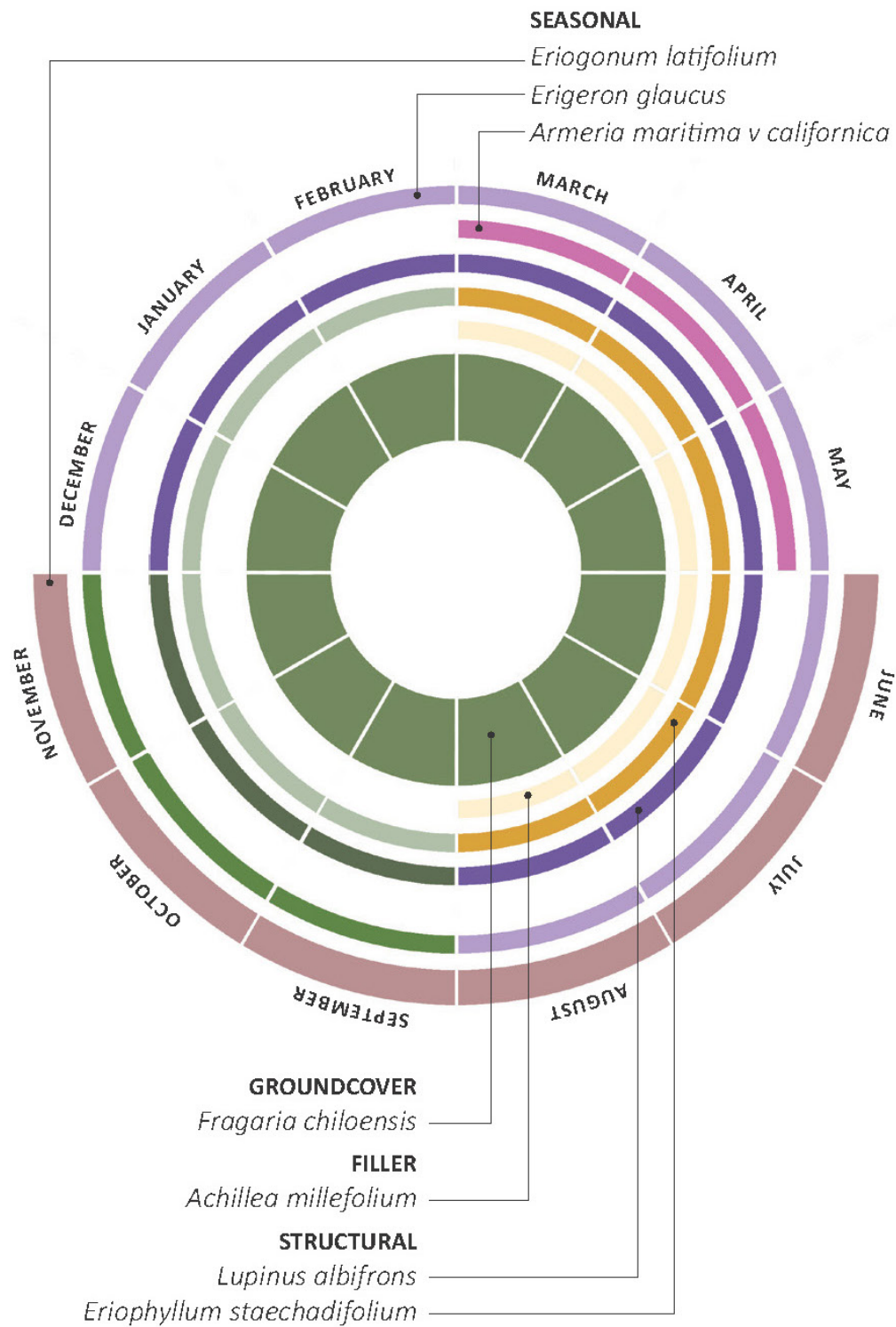


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PLANT MIX 1: COASTAL DUNE SCRUB



STRUCTURAL



SEASONAL



FILLER



GROUNDCOVER



STRUCTURAL LAYER (20%)

- 1. *Eriophyllum staechadifolium* 🦋 🐝
- 2. *Lupinus albifrons* 🦋 🐝

SEASONAL LAYER (35%)

- 3. *Armeria maritima v californica* 🦋
- 4. *Erigeron glaucus* 🦋 🐝
- 5. *Eriogonum latifolium* 🦋 🐝

FILLER LAYER (SEEDED)

- 6. *Achillea millefolium* 🦋 🐝

GROUNDCOVER LAYER (45%)

- 7. *Fragaria chiloensis* 🦋 🐝

🦋 🐝 Indicates species of particular value to native butterfly and bee species



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Maintenance

- We would integrate maintenance into the design by collaborating with the GBD maintenance crew to refine the plant palettes to meet maintenance thresholds



Our fee

Broken into 2 stages

Stage 1:

Development of 4 different plant palettes, designed for the specific microclimates and growing conditions of the site = **\$1,650**

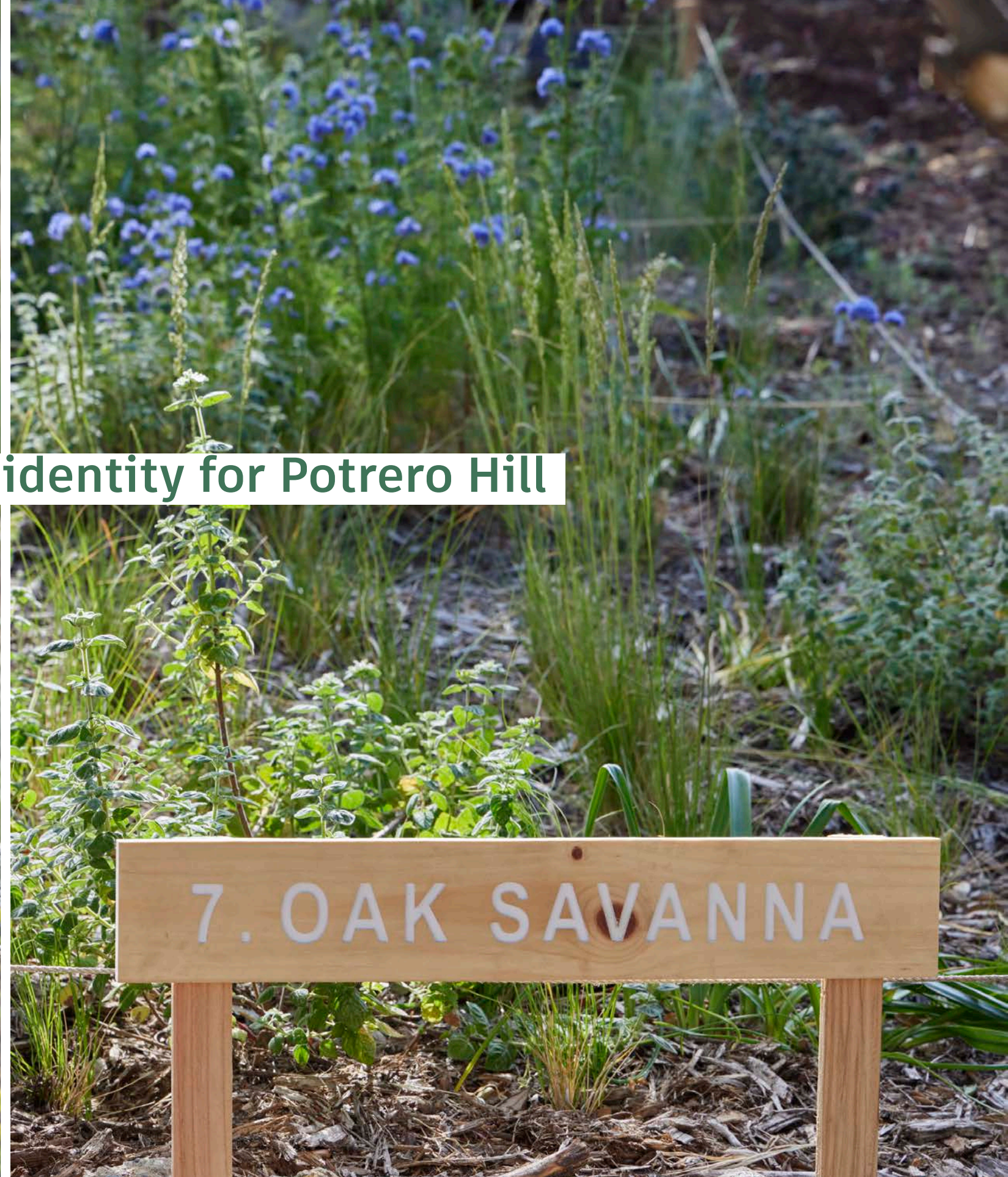
Stage 2:

Planting plans to hand over to DPW = **\$900**





Let's foster a vibrant identity for Potrero Hill



“My point is this: each of the acres we have developed for specific human goals is an opportunity to add to Homegrown National Park. We already are actively managing nearly all of our privately owned lands and much of the public spaces in the United States. **We simply need to include ecological function in our management plans to keep the sixth mass extinction at bay.**”

– **Douglas W. Tallamy**, *Nature’s Best Hope: A New Approach to Conservation that Starts in Your Yard*

