



# Digital Web Services Network

Bringing together digital product managers, designers, and engineers.

# DWSN Quarterly Forum

Thursday, Dec 05, 2024

[cdt.ca.gov/technology-innovation/dwsn](https://cdt.ca.gov/technology-innovation/dwsn)



California Department of  
**Technology**

# Digital Web Services Network

- Welcome to the DWSN forum, we will begin shortly.
- For the best experience, please use your computer to join the meeting.
- Mute your audio.
- Turn off your video.
- Use the raise hand button or the meeting chat for comments and questions.



Opening remarks

# Koji Kumpulainen

State Web Services Manager | California Department of Technology



# DWSN Forum Agenda

Opening Remarks.....	Koji Kumpulainen (10 minutes)
HTML first methodologies.....	Matthew Morgan (20 minutes)
Accessibility.....	Linda Tracy (10 minutes)
CA.gov portal redesign.....	Artem Khomishen, Christina Florente, Carter Medlin (20 minutes)
CA.gov Digital Branding .....	Sharon Rabang (5 minutes)
Suggested Future Topics / Closing Remarks.....	Koji Kumpulainen (10 minutes)



# Search Indexing Demystified: Boosting Visibility and Accessibility

## Matthew Morgan

Information Technology Supervisor | California Department of Rehabilitation

# California has adopted an HTML-First Strategy!

Is a PDF necessary for presenting this information?

Can the same information be easily presented or remediated as HTML content?

Delivering a Digital-First Public Experience - Software Development Principles:

## Default to HTML

“HyperText Markup Language (HTML) is the standard for publishing documents designed to be displayed in a web browser. HTML provides numerous advantages (e.g., easier to make accessible, friendlier to assistive technology, more dynamic and responsive, easier to maintain). When developing information for the web, agencies should default to creating and publishing content in an HTML format in lieu of publishing content in other electronic document formats that are designed for printing or preserving and protecting the content and layout of the document (e.g., PDF and DOCX formats). An agency should develop online content in a non-HTML format only if necessitated by a specific user need.”

# Resources: HTML-First

[Whitehouse.gov - Delivering a Digital First Public Experience](#)

[Section 508 – That doesn't need to be a PDF - PPT](#)

[W3.org – May 2024 Recommendations](#)



## Accessibility

# Linda Tracy

Senior Digital Accessibility Specialist | California Department of Technology





# Why use browser extensions to check accessibility?

- Accessibility browser extensions are a great **free tool** to help evaluate your website pages for accessibility compliance.
- They are automated and can check pages against latest accessibility guidelines and standards.
- They also help you easily identify potential accessibility issues on your site, with explanations on how to address the issues.

# Important note about browser extensions

- We recommend agencies use a combination of tools to test.
- Don't rely on one tool to catch all accessibility issues/concerns.
- Browser extensions shared today all work with Chrome. Visit their page (linked in slides) to determine if it will work with your preferred browser.

# Accessibility browser extensions: WAVE (Web Accessibility Evaluation Tool)

## WAVE

- Check accessibility errors on a page.
- Allows you to check:
  - Errors
  - Alerts
  - Structural elements (reading order and page structure)
  - Contrast errors
- For each issue, it provides:
  - Details on the issue
  - Why it matters
  - How to fix it
  - Standards and guidelines affected

# Accessibility browser extensions: Siteimprove Accessibility Checker

## [Siteimprove Accessibility Checker](#)

- Check accessibility errors on a page.
- Allows you to filter issues by conformance level.
- For each issue, it provides:
  - Conformance level issue
  - Guideline number
  - Why it's an issue
  - Where the issue is
  - List of affected abilities for the issue

# Accessibility browser extensions: Silktide

## [Silktide](#)

- Allows you to check:
  - Check accessibility errors on a page against either WCAG 2.0, 2.1, and 2.2, Levels A, AA and AAA.
  - Color contrast
  - Alt text
  - Focus order and landmarks
  - Headings
- Provides simulators for:
  - Screen reader
  - Impaired vision
  - Color blindness
  - Dyslexia

# Additional browser extensions to explore

- [axe DevTools](#)
- [Lighthouse](#)
- [BrowserStack](#): mobile test simulator (not free – but worth exploring if your department is able to)

# Questions

Contact us at [accessibility@state.ca.gov](mailto:accessibility@state.ca.gov).



## CA.gov 2024 redesign



# Artem Khomishen

Information Technology Manager | Web Development | California Department of Technology

# Christina Florente

Information Technology Specialist II | Web Development | California Department of Technology

# Carter Medlin

Information Technology Specialist II | Web Development | California Department of Technology



# Agenda

- About the project
- Walkthrough
- What we did
- Poll
- How you can help
- Questions





# About the project

Goals, background, and roadmap

# CA.gov goals and outcomes



Makes services easier to find and improve user experience for Californians



Aligns with the State of California's Digital strategy.



Improve digital access by prioritizing search (SEO)



Brings CA.gov up to current design standards

Help  
**Californians.**



Connect **people**  
to **impactful**  
services.

# What is CA.gov?

- CA's homepage
- Connects Californians to what they need
- Provides a directory
  - state services
  - all state departments
  - general state information
- Flagship site for other California state government

## Popular departments

[Department of Motor Vehicles](#) >

[California Department of Public Health](#) >

[Franchise Tax Board](#) >

[Employment Development Department](#) >

[California Department of Tax and Fee Administration](#) >

[Department of Fair Employment and Housing](#) >

## Popular services

[Food stamps](#) >

[Traffic tickets](#) >

[Business licenses](#) >

[Birth certificates](#) >

[Inmate locator](#) >

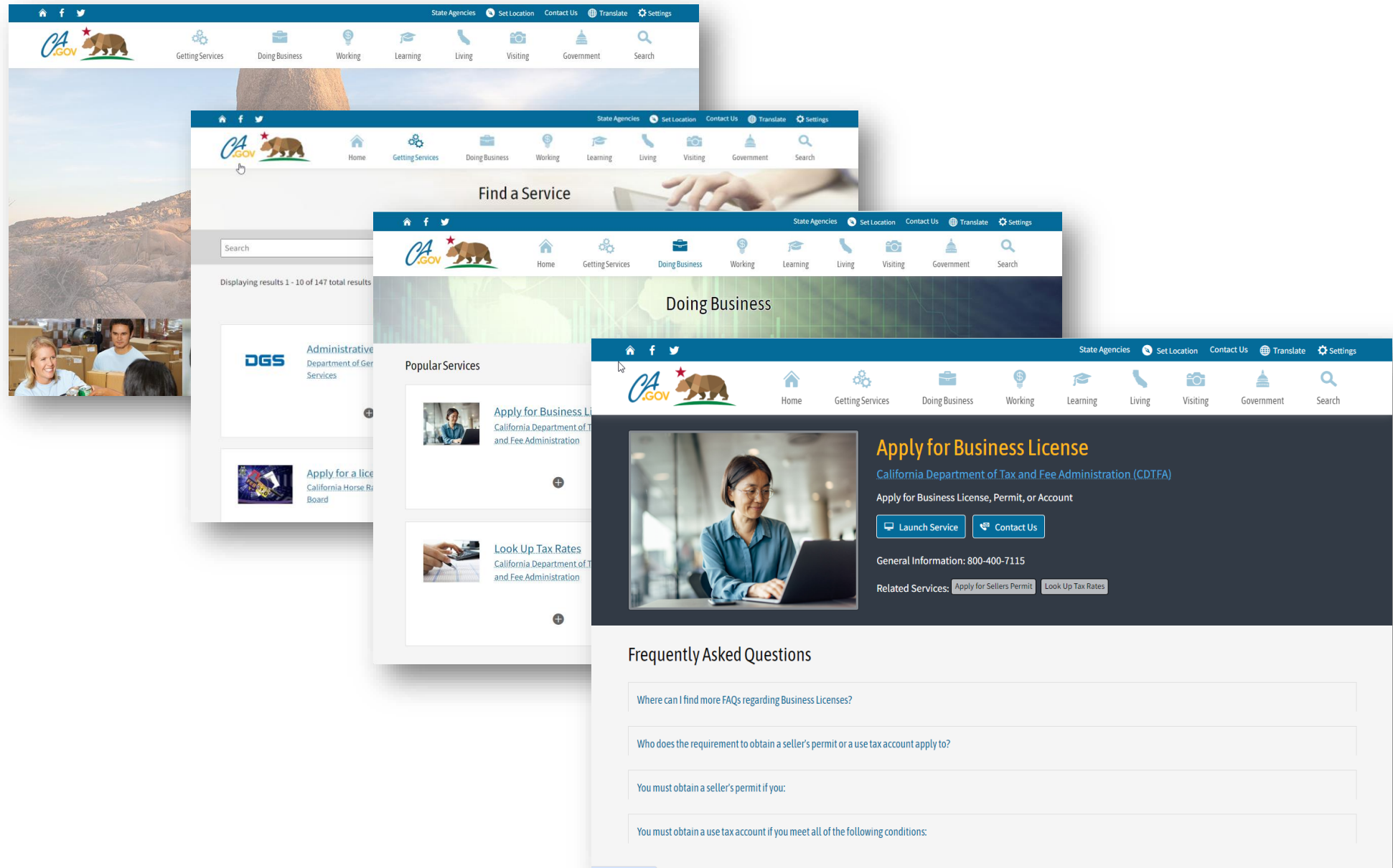
[Lottery numbers](#) >

[View all services](#)

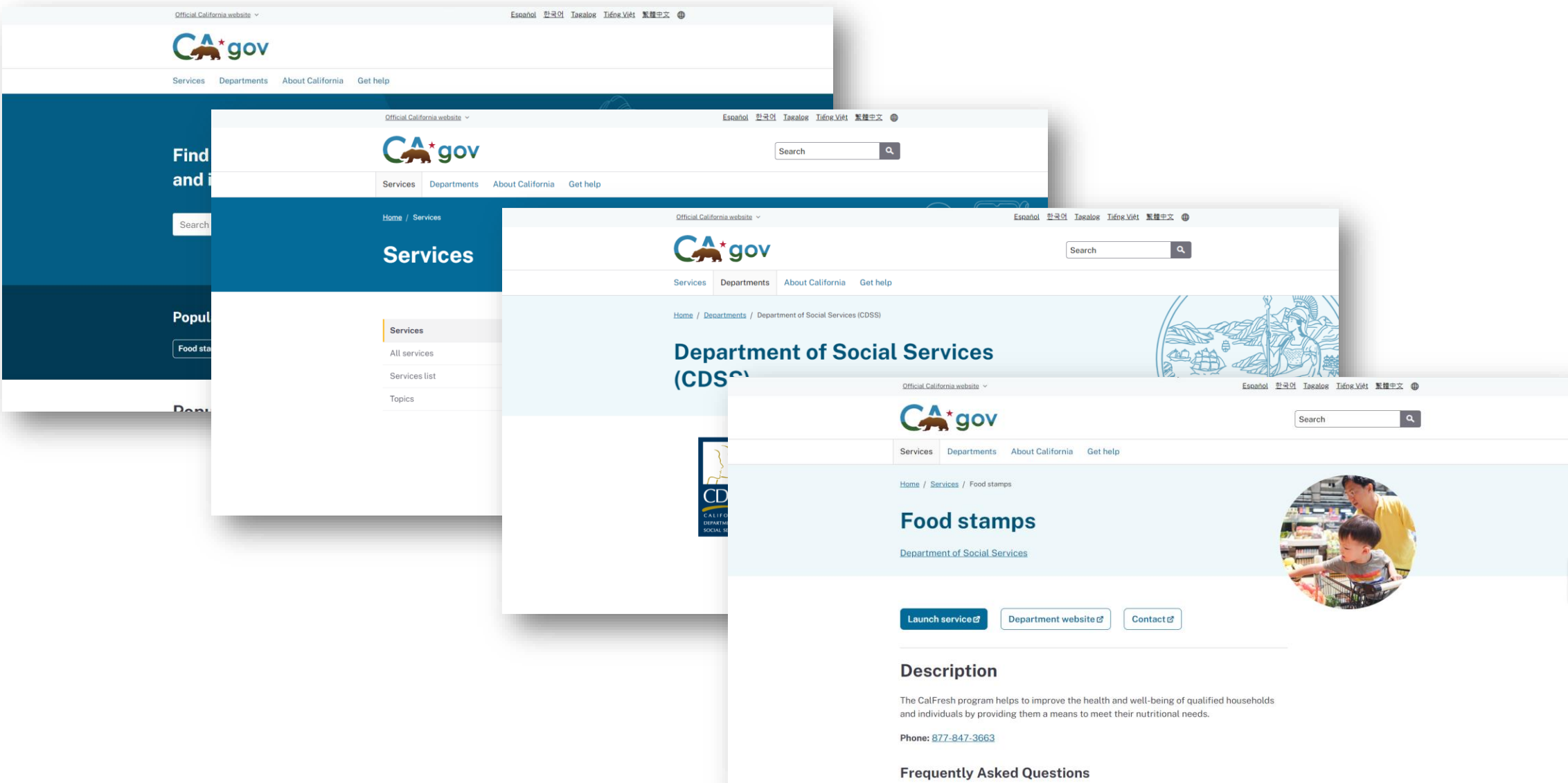
# Previous state

- Outdated
- Old web template
- Difficult to navigate and find services
- Inconsistent search behavior
- Google search results looked untrustworthy
- Helpful information is hard to find
- SEO is not optimized due to technical and design factors

# Previous site

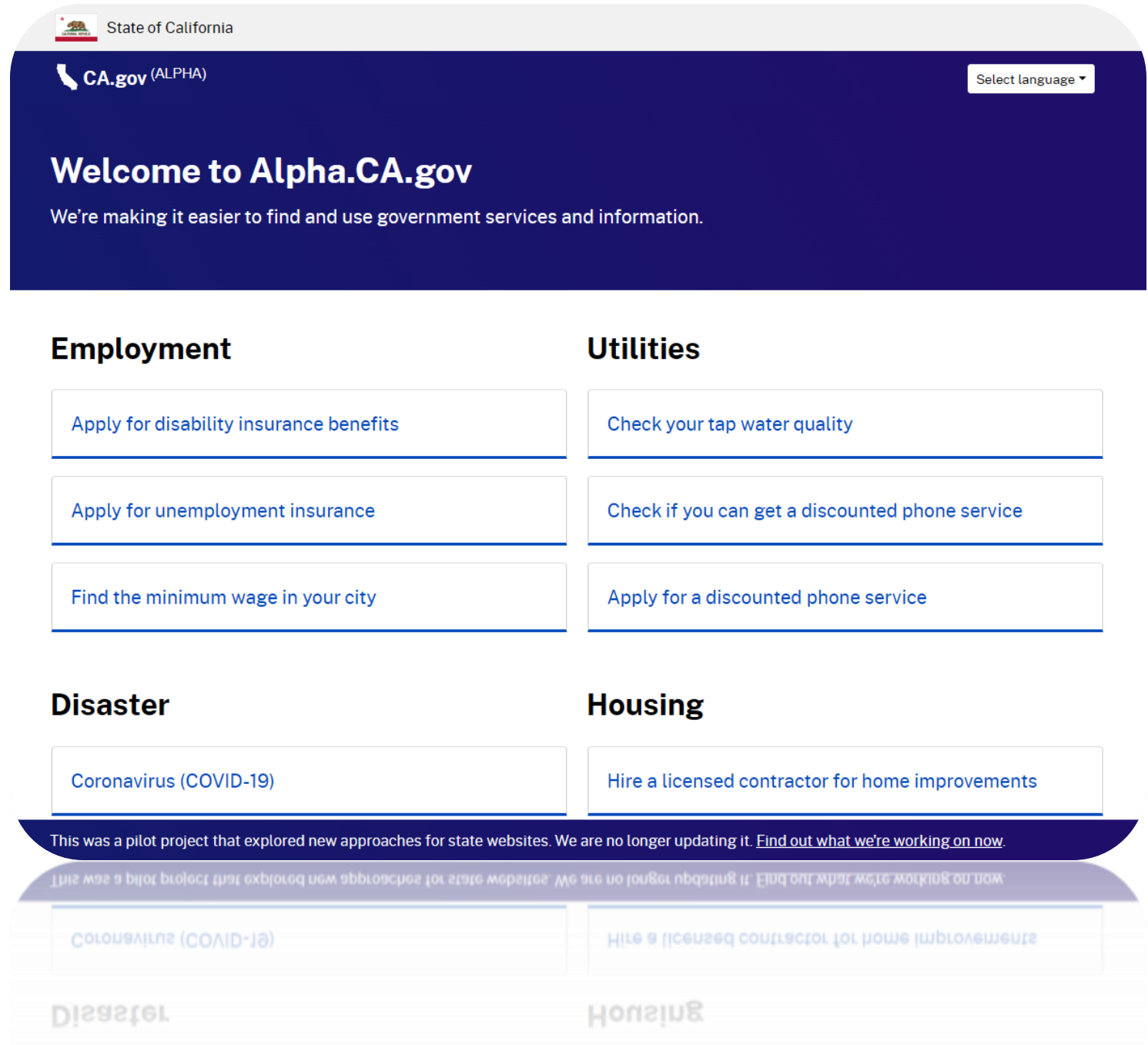


# Current site



# Alpha.ca.gov inspiration

- Alpha.ca.gov was a pilot for the future of CA.gov
- The redesigned CA.gov is the first step in many towards a digital front door for all CA services
- A central place to easily navigate all CA has to offer

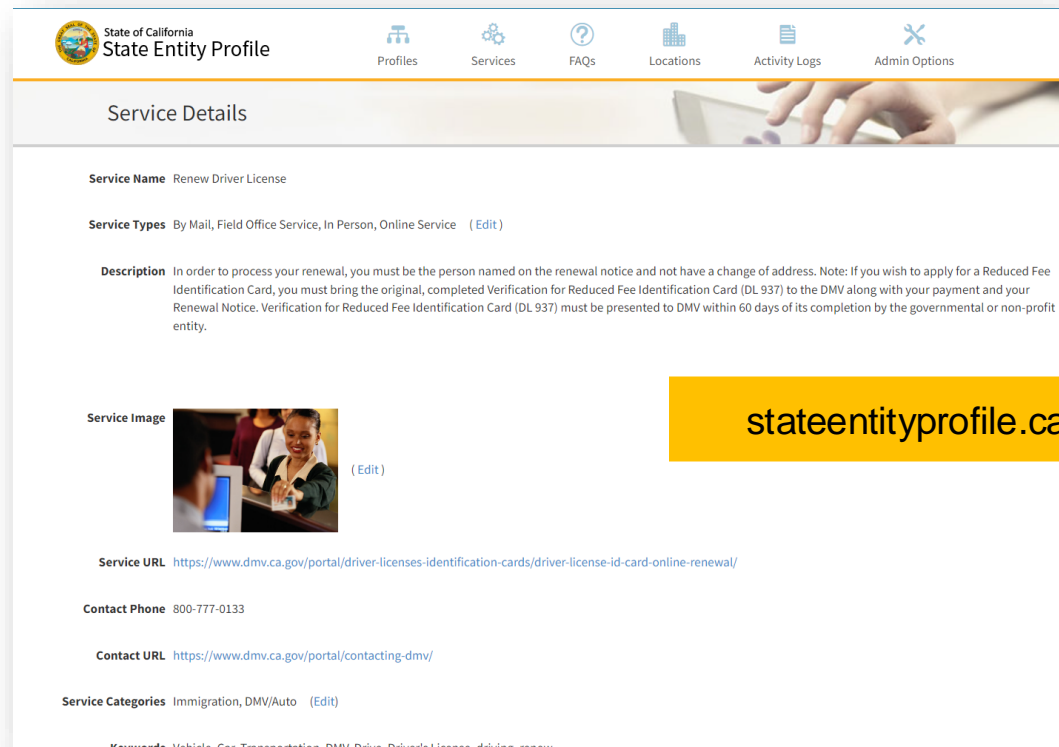




# What is the State Entity App?

## A distributed content ownership platform

Agencies and departments add or maintain their CA.gov **profiles** and **services**.

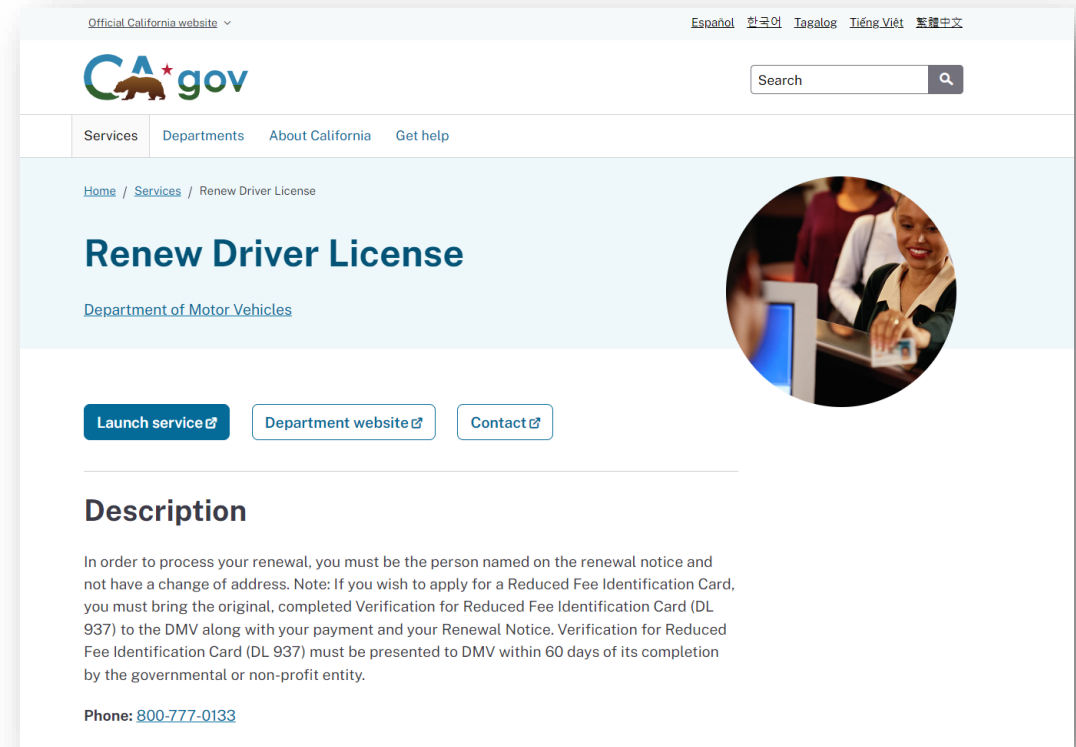


The screenshot shows the 'State of California State Entity Profile' management interface. It features a navigation bar with icons for Profiles, Services, FAQs, Locations, Activity Logs, and Admin Options. The main content area is titled 'Service Details' and contains the following information:

- Service Name:** Renew Driver License
- Service Types:** By Mail, Field Office Service, In Person, Online Service (Edit)
- Description:** In order to process your renewal, you must be the person named on the renewal notice and not have a change of address. Note: If you wish to apply for a Reduced Fee Identification Card, you must bring the original, completed Verification for Reduced Fee Identification Card (DL 937) to the DMV along with your payment and your Renewal Notice. Verification for Reduced Fee Identification Card (DL 937) must be presented to DMV within 60 days of its completion by the governmental or non-profit entity.
- Service Image:** A photo of a person at a computer terminal with an '(Edit)' link.
- Service URL:** <https://www.dmv.ca.gov/portal/driver-licenses-identification-cards/driver-license-id-card-online-renewal/>
- Contact Phone:** 800-777-0133
- Contact URL:** <https://www.dmv.ca.gov/portal/contacting-dmv/>
- Service Categories:** Immigration, DMV/Auto (Edit)

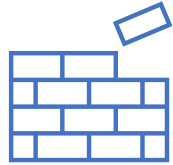
Keywords: Vehicle, Car, Transportation, DMV, Drive, Driver's License, driving, renew.

stateentityprofile.ca.gov



The screenshot shows the public-facing CA.gov page for the 'Renew Driver License' service. It includes the CA.gov logo, a search bar, and navigation links for Services, Departments, About California, and Get help. The page title is 'Renew Driver License' under the Department of Motor Vehicles. It features three buttons: 'Launch service', 'Department website', and 'Contact'. The description text is identical to the management interface, and the phone number 800-777-0133 is displayed at the bottom.

# CA.gov Roadmap



**Improve access to government services for Californians**



**Modernize the State's web and mobile presence**



**Leverage Ca.gov as the backbone for digital government service delivery**

## **NOW - Foundational release**

- Improve information architecture, navigation, and SEO
- Lead by example by using latest web standards and best practices
- Simplified content design and mobile first approach

## **NEXT - New features release**

- Website translation strategy and implementation that is scalable to other departments
- Location based services to make government services more relevant
- Explore Gen-AI to help users navigate and understand government services

## **FUTURE - Continuous releases**

- Flagship site for CA's Design System
- A better way to publish important government information and programs
- Empower partners through better integration for local government services
- An updated content management platform for state and local government to publish their services and information

# Walkthrough

## Website and features

- Homepage
- Navigation
- Services and departments
- About California
- Get help

[Launch CA.gov](#)

The screenshot shows the CA.gov homepage with the following elements:

- Header:** "Official California website" with language options (Español, 한국어, Tagalog, Tiếng Việt, 繁體中文) and the CA.gov logo.
- Navigation:** Links for Services, Departments, About California, and Get help.
- Main Hero Section:** A dark blue banner with the text "Find government services and information" and a search bar labeled "Search CA.gov".
- Popular services:** A row of buttons for Food stamps, Traffic tickets, Business permits, Birth certificates, Medi-Cal, and Lottery numbers.
- Popular topics:** A grid of topic buttons including Personal records, Businesses, DMV/Auto, Jobs and unemployment, Social services, and Housing and real estate, with a "View all topics" button below.
- California highlights:** Three featured cards: "Places to visit" (museum), "State parks" (beach), and "Camping reservations" (forest).

# What we did

About CA.gov



# Project team

## Development

Konstantin Koryaka (front-end)

Carter Medlin (back-end)

## UX design and Research

Christina Florente

Jack Gregory (intern)

Anhtuc Ho (intern)

Daria Taback

## Product Owner

Artem Khomishen

## Product Management

Artem Khomishen

Alice Nguyen

## Operations

Shalica Bracciotti

Steven Pierce

## Executive Sponsor

Blaine Wasylikiw

## Leadership

Koji Kumpulainen

Greg Duncan

Artem Khomishen

## Stakeholders

Lianna Bailey-Crimmins (CDT)

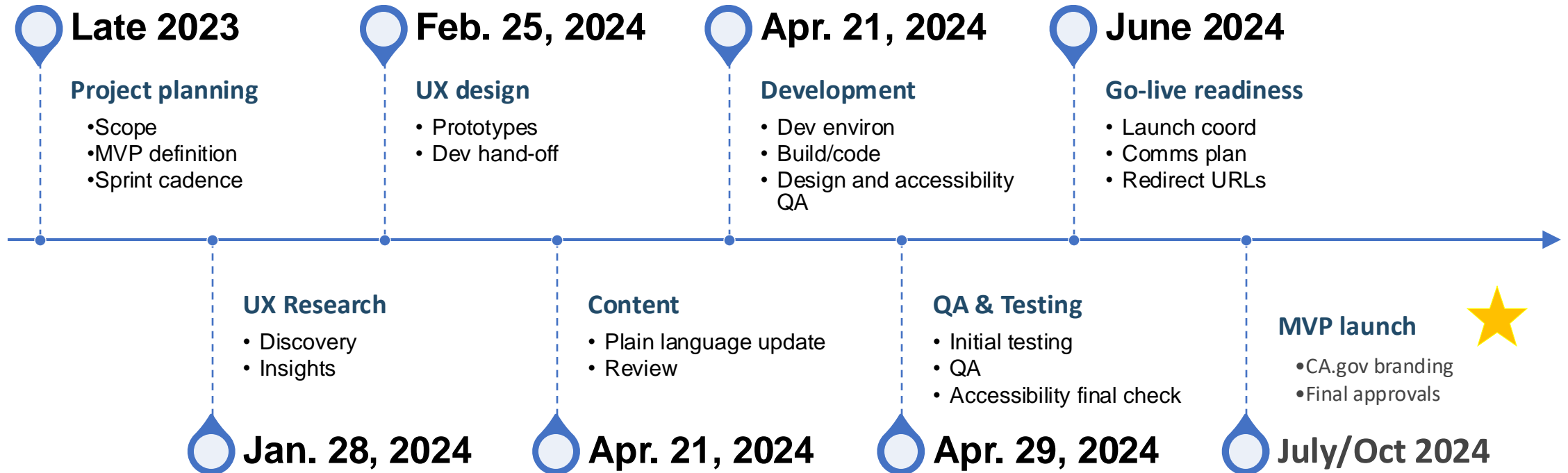
Jared Johnson (CDT)

Jonathan Porat (CDT)

Amy Tong, GovOps

Governor's Office

# Overall process and timeline



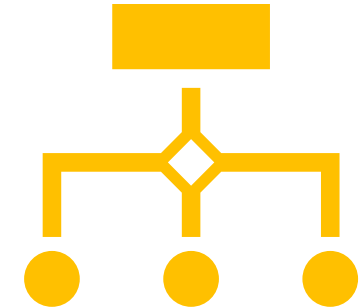
# Research

What we did



# Research methods

- Survey and identifying top tasks
- Analytics and analysis
- Card sorts (open and closed)
- Information architecture
- Learn about the State entity app (data)



**Outcomes:** Improved navigation and data informed designs



# Tools we used

- Ethnio (survey)
- Usertesting.com (card sorting)
- Figjam (affinity mapping, brainstorming, IA)
- Google analytics
- Spreadsheets (tedious analysis)
- Page feedback

# Survey

## Goal

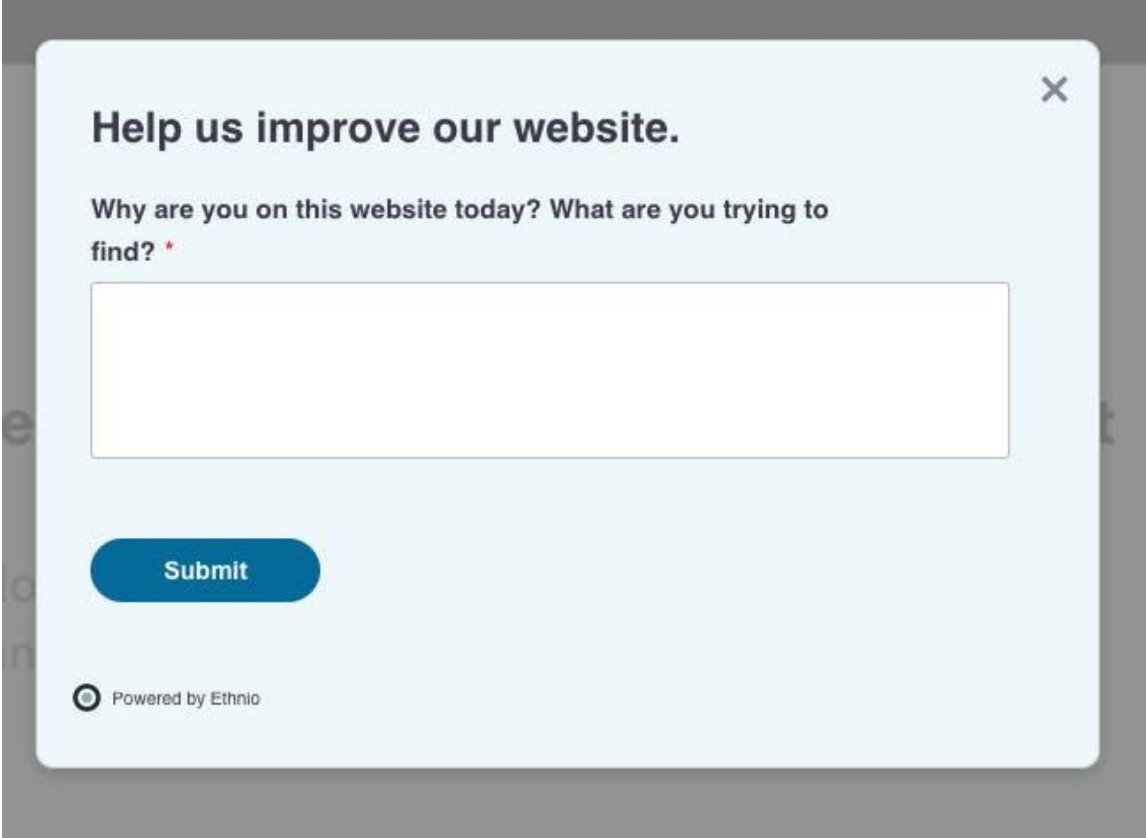
Find out why people come to ca.gov

## How

Ethnio intercept

## What

200 responses



A screenshot of a survey pop-up window. The window has a light blue background and a dark blue border. At the top right, there is a close button (an 'x' icon). The main heading is "Help us improve our website." Below this, the question is "Why are you on this website today? What are you trying to find? \*". There is a large, empty text input field below the question. At the bottom of the input field, there is a blue button with the text "Submit". At the bottom left of the pop-up, there is a small logo and the text "Powered by Ethnio".

# Top 25 services

Page title and screen class	Views
Apply for Food Stamps Service Details   www.ca.gov	57,479
Pay Traffic Ticket Service Details   www.ca.gov	50,881
Apply for Birth Certificate Service Details   www.ca.gov	46,295
Apply for Business License Service Details   www.ca.gov	43,865
Search for Registered Sex Offenders Service Details   www.ca.gov	43,501
Locate a California Prison Inmate Service Details   www.ca.gov	36,795
Look Up Winning Lottery Numbers Service Details   www.ca.gov	22,158
Find a CA State Job Service Details   www.ca.gov	19,754
Apply for Sellers Permit Service Details   www.ca.gov	14,419
Apply for Marriage Certificate Service Details   www.ca.gov	13,895
Search for Unclaimed Property Service Details   www.ca.gov	13,124
Apply for Medi-Cal Service Details   www.ca.gov	12,518
Find a Smog Station Service Details   www.ca.gov	11,118

Page title and screen class	Views
Apply for Death Certificate Service Details   www.ca.gov	10,818
File for Unemployment Service Details   www.ca.gov	10,376
Renew Driver License Service Details   www.ca.gov	9,803
California Low Cost Auto Service Details   www.ca.gov	9,630
Get Digital Vaccine Record Service Details   www.ca.gov	9,341
Change Home Address Service Details   www.ca.gov	8,860
Get a Fishing or Hunting License Service Details   www.ca.gov	7,656
Get a High School Diploma Service Details   www.ca.gov	7,085
Look Up Contractor License Service Details   www.ca.gov	6,526
Renew Vehicle Registration Service Details   www.ca.gov	5,752
Change Name on ID Card Service Details   www.ca.gov	5,548
Apply for Medical Insurance Service Details   www.ca.gov	5,480

# Card sorting w/Californians

The screenshot shows a web browser window displaying a card sorting exercise. The browser address bar shows `ia.usertesting.com/uxZMB7X`. The page title is "card sorting". The cards are organized into several categories:

- Obtain/renew passport
- Clean-energy rebates
- Find out if I have any unclaimed property
- Find the specific prison my friend is at
- Get courthouse hours and address
- Get clemency/pardon for a crime
- Apply for food stamps
- Getting married and need a marriage license
- Obtain low-cost auto insurance
- Get the link for the sex offender locator
- Get the contact info for a state department
- Where is my Real ID.
- Look for a state job
- Obtain vaccine record

Businesses

- File a business form
- Find a legit roofing business
- Get my business tax ID number

Taxes

- Obtain W-4 form (tax withholding for job)
- File my personal taxes
- Stimulus or middle class tax refund

Professional licensing and permits

- Verify a contractor's license status before remodelling my house.
- Renew professional license
- Jobs and unemployment
- Get a fishing permit

Housing and real estate

- Obtain copy of property title
- Mortgage payment help
- Research property values
- Get state data and statistics

DMV/Auto

- Find smog testing locations
- Renew vehicle registration
- Apply for a driver's license
- Renew driver license

Personal records and documents

- Renew health insurance
- Copy of death certificate

Health and wellness

- Get Covid testing kits
- Get Medicare and locate medical services

Assistance and social programs

- Financial help
- Get child support for my family
- Get unemployment

Visit California

Transcript

Smart tags

Okay, sorry, I'm just reordering these a little bit.  
1, 2, 3.  
Okay.  
Okay.  
Sorry, I'm just reordering here.  
Okay.  
Unknown call.  
Okay, let's see.  
Job.  
Okay, again, the auto obtain look, um, where's my real  
Id get the contact for State Department.  
**Like** Um, okay.  
Talk to a person, live about my issue, get a business  
license.  
**Aversion** I don't like how this keeps doing this.  
Okay.  
Okay.  
**Like** Um, okay.  
**Like** I'm still just working on this here.  
Um, okay.  
Um, how difficult did you find this card sorting  
exercise?  
**Easy** I found it pretty easy.  
**Dislike** It just took a few minutes to sort of, um, sort through it  
all.  
Just a heads up.  
**Pain point** The, the way the card sort working, it made the ca like  
if it got too long, it would hide a category.  
**Pain point** So I had to reorg those a few times so I could see all  
the categories.  
**Easy** Um, but otherwise I found it pretty easy.



# Key findings

**Research driven findings (analytics, survey data, card sorting, user feedback)**



**Insights:** Californians come to CA.gov for **everything** they think the government does – **and can't find**. They may not know what to search for. Our current architecture makes things **hard to find**.



**Recommendations:** We should **highlight specific** services by **topics** to make them easy to access. **Update the information architecture and navigation** so users can easily find what they're looking for.



# User experience design

What we did

Used user data and  
insights to create a human-  
centered design



# New navigation and landing pages

**Goal:** Make it easier for people to get the services and information they need.

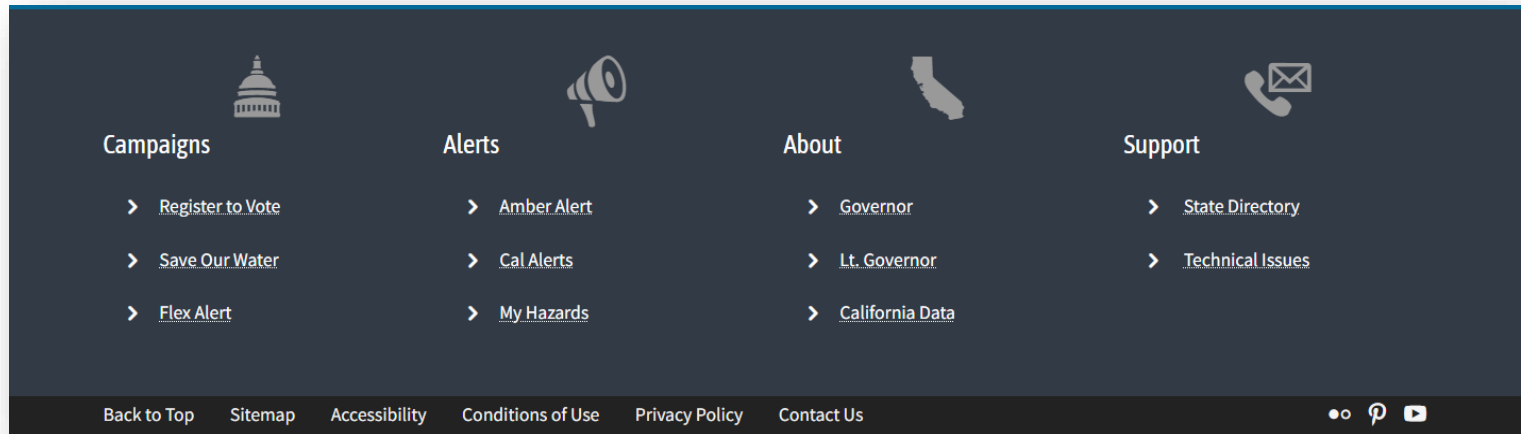
## **Used data to make decisions**

- Top task survey
- Analytics
- Card sorting with Californians

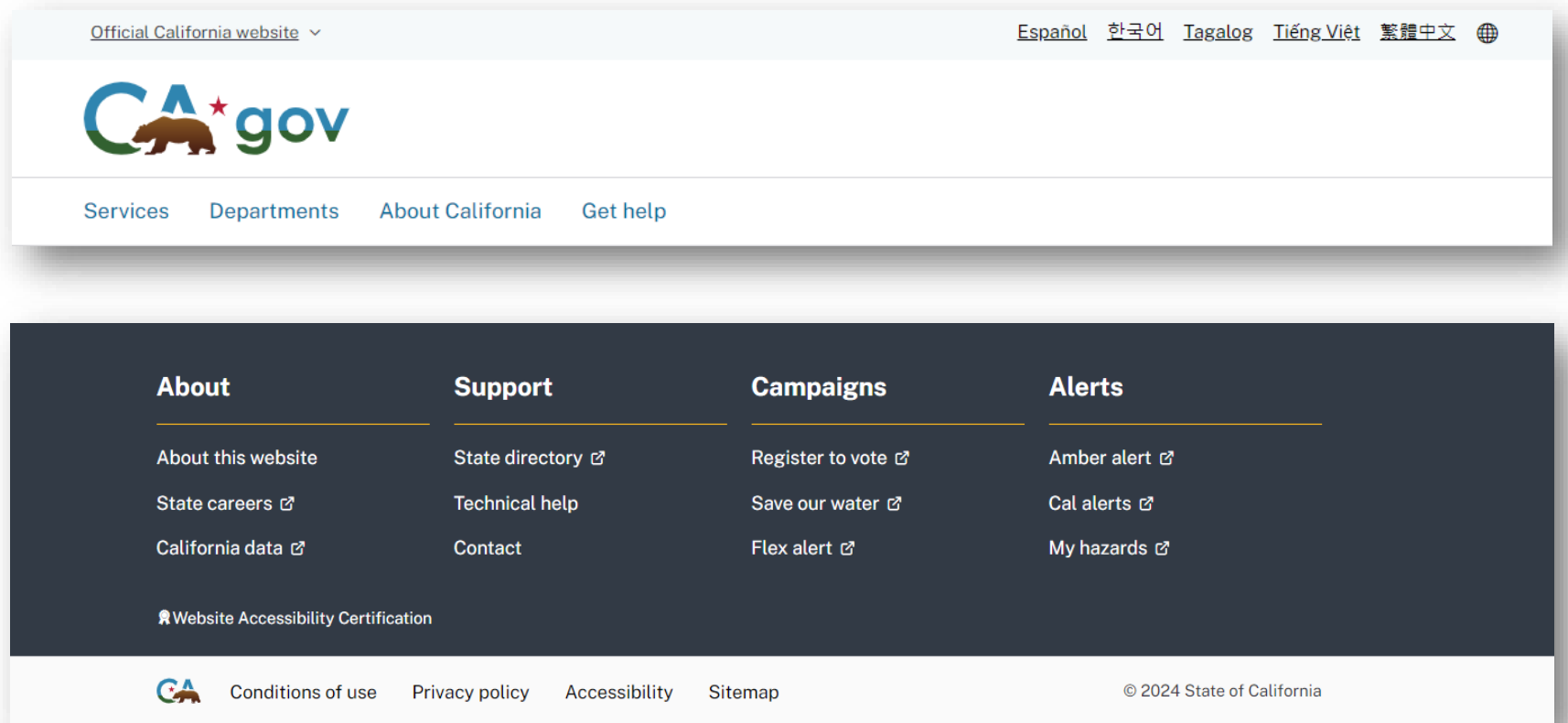
## **Outcomes**

- Reduces cognitive load with a simple design
- Promotes top tasks
- Guides a user to their task with streamlined navigation

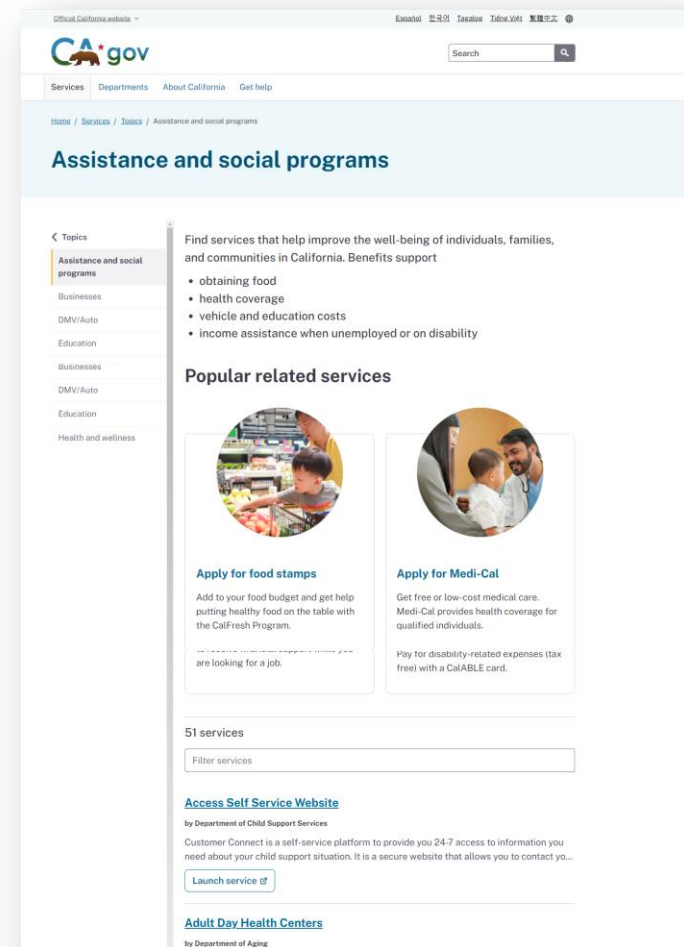
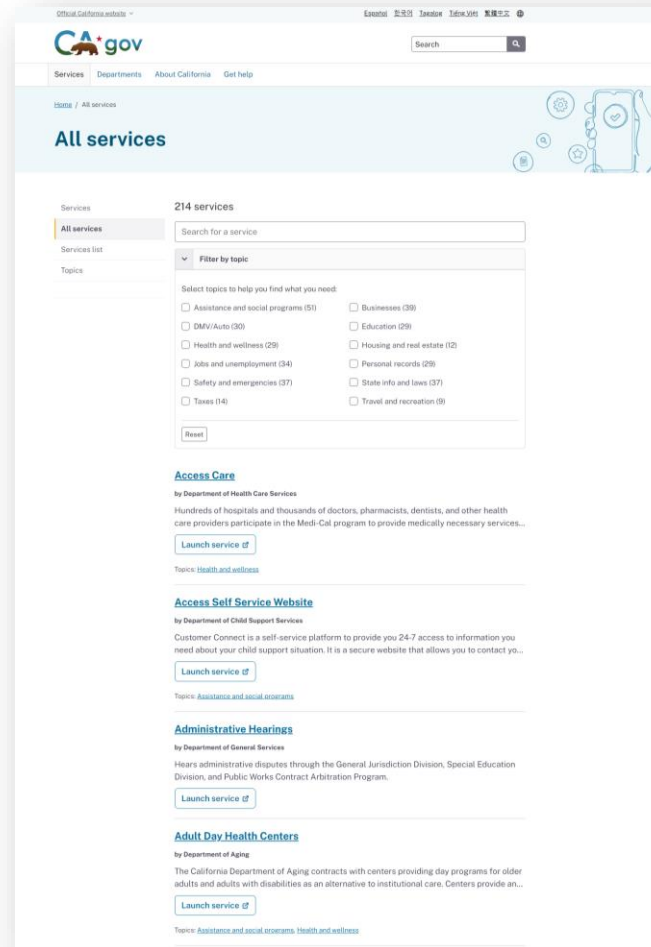
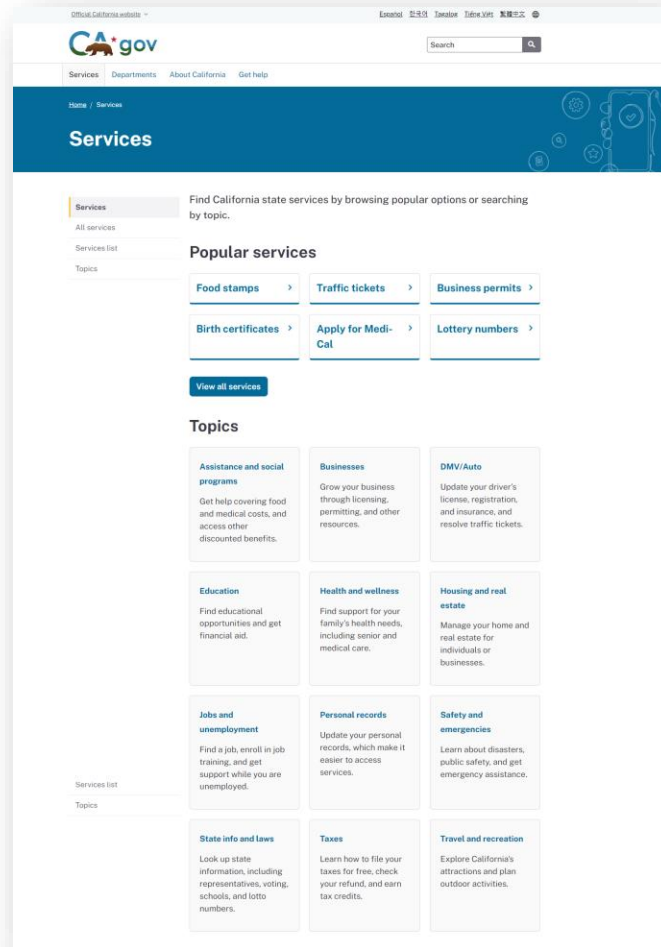
# Previous navigation



# Updated navigation



# Updated navigation and layouts



# Tools we used

- Figma (prototyping and collaborating)
  - [UI Kit](#)
- Coda (tasks, documenting metadata)
- GitHub (page development tracking and reviews)
- Docs (content writing, reviews, approvals)

ca.gov prototypes

CAgov

File Assets

Pages

- Header and footer components 07/24
- Typography / print styles 11/18/24
- Immigrant guide
- Workspace 9/24/24 **\*\*newest\*\***
- Workspace 6/7/24
- Workspace 4/18/24

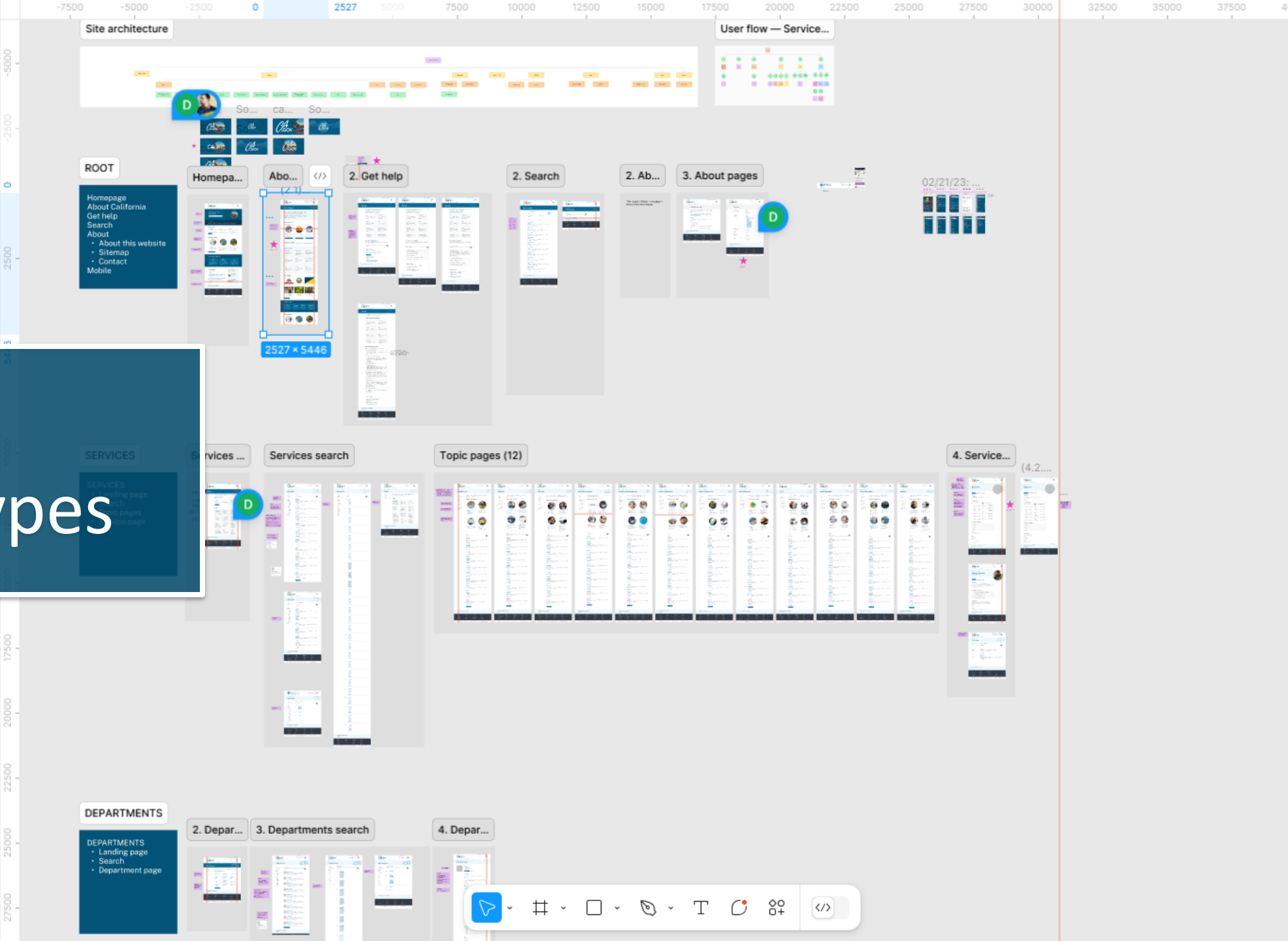
# Figma prototypes

Layers

- FOOTER / SUPPORT
- DEPARTMENT
- SERVICES
- ROOT

Text

- User flow — Service Search
- Site architecture
- About California
- image 611
- Homepage
- Topic pages (12)
- 4. Department page
- 3. Departments search
- Services search
- 4. Service page
- 3. About pages



Design Prototype

Section

Position

X -47112

Layout

W 2527

Appearance

100%

Fill

DEDEDE

Stroke

000000

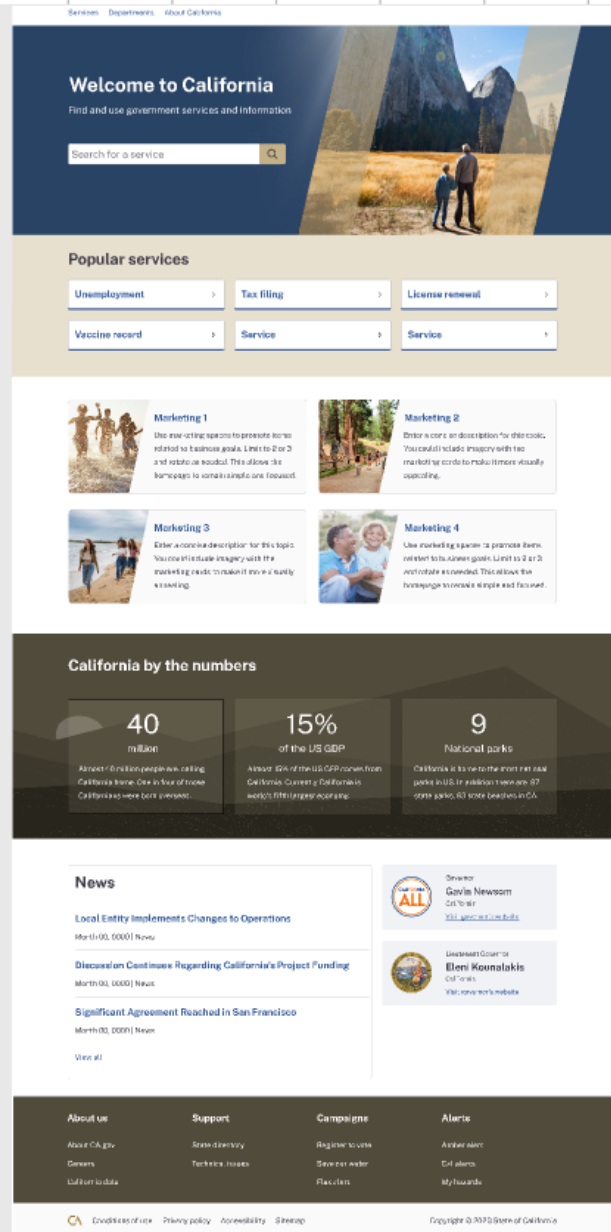
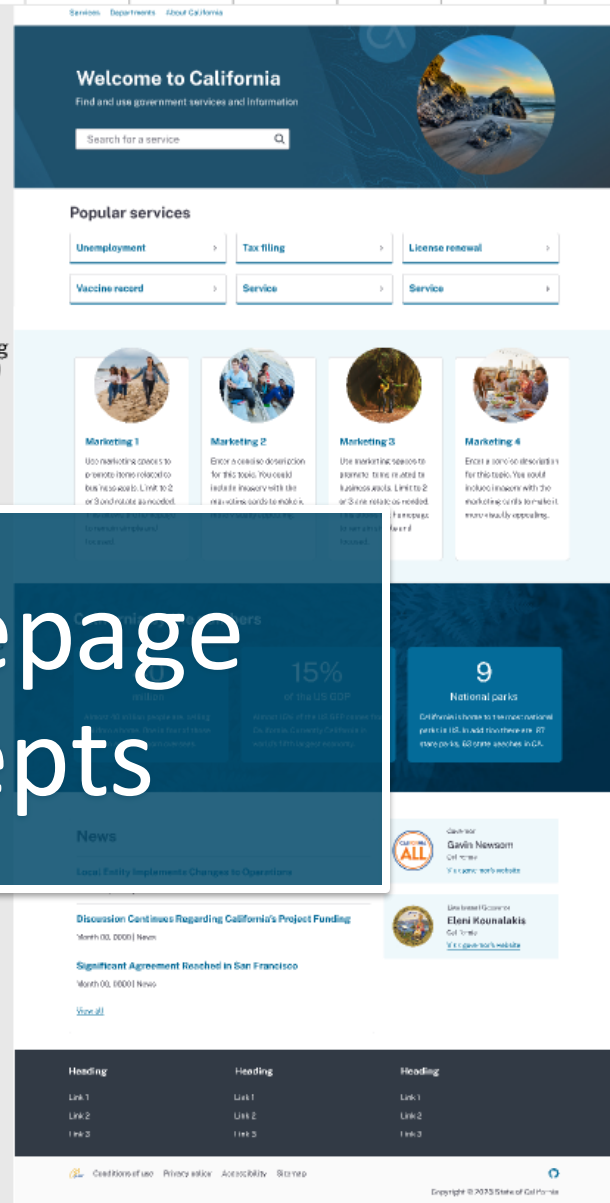
Inside

Selection colors

- White
- go-p1
- go-p3
- Grayscale/Gray 90
- Oceanside/Primary
- Gray/white
- V6/Gray-900
- Grayscale/Gray 20
- Oceanside/Primary
- V6/Gray-50

Navigation icons: Home, Grid, Selection, Lasso, Text, Erase, Copy, Paste, and Code.

# Homepage concepts



Design Prototype

Page

E8E8E8

Show in exports

Local variables

Local styles

Export

1x PNG

Export ca.gov prototype

Preview





# Performance

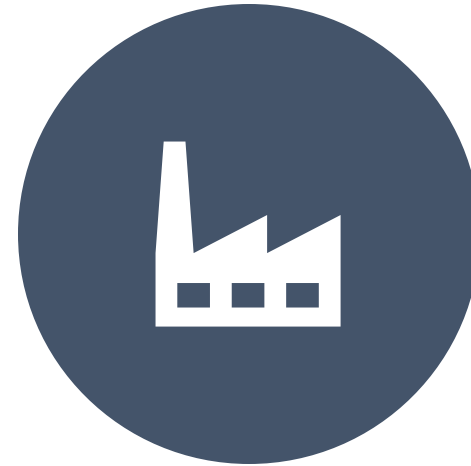
What we did



# Static Site Generation

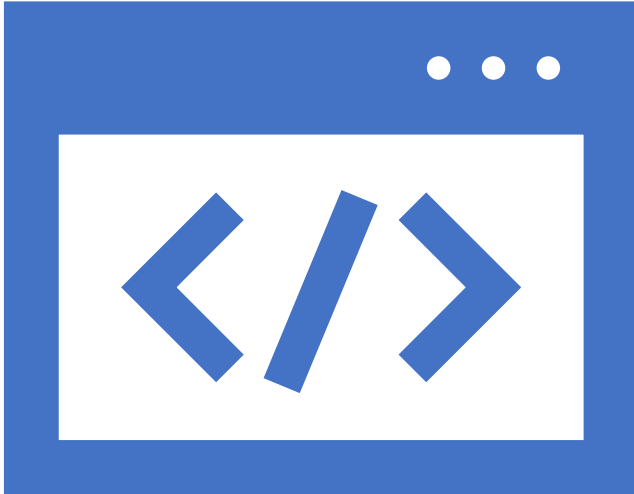


HTML FILES, NO  
RUNTIME



CONTENT  
REGENERATED DAILY

# Fully rendered pages



- Fully rendered HTML
- No AJAX
- Ready to be crawled

# WebP Images



- Best available image format
- Polyfill code replaces WebP with PNG

# Optimized SVGs



MANUAL PROCESS  
OPTIMIZED



BR/GZIP  
COMPRESSION

# Nested CSS



- Tighter, cleaner CSS
- Polyfill for legacy CSS
- `CSS.supports("selector(&"))`

# Public Immutable static



STATIC CONTENT ANYWHERE,  
AS LONG AS IT IS USED



CACHE BUSTING FOR  
CHANGES



# Search engine optimization

What we did

# Search is priority

Site structured for search

Full meta structures

Full rendered; no AJAX



See what the robots think



# Monitoring

← Page with redirect		EXPORT
<a href="https://www.ca.gov/agency/?item=california-state-teachers-retirement-system">https://www.ca.gov/agency/?item=california-state-teachers-retirement-system</a>	Dec 3, 2024	
<a href="https://www.ca.gov/agency/?item=office-of-lieutenant-governor">https://www.ca.gov/agency/?item=office-of-lieutenant-governor</a>	Dec 3, 2024	
<a href="https://www.ca.gov/service/?item=manage-your-real-estate-license">https://www.ca.gov/service/?item=manage-your-real-estate-license</a>	Dec 3, 2024	
<a href="https://www.ca.gov/service/?item=apply-for-the-california-dream-act">https://www.ca.gov/service/?item=apply-for-the-california-dream-act</a>	Dec 3, 2024	
<a href="https://www.ca.gov/service/?item=california-department-of-insurance-(cdi)">https://www.ca.gov/service/?item=california-department-of-insurance-(cdi)</a>	Dec 3, 2024	
<a href="https://www.ca.gov/agency/?item=visit-california">https://www.ca.gov/agency/?item=visit-california</a>	Dec 3, 2024	

Reason ↑
Alternate page with proper canonical tag
Blocked due to access forbidden (403)
Blocked due to other 4xx issue
Crawled - currently not indexed
Discovered - currently not indexed
Duplicate without user-selected canonical
Duplicate, Google chose different canonical than user
Excluded by 'noindex' tag
Not found (404)
Page with redirect
Redirect error
Server error (5xx)
Soft 404



CA.gov

<https://www.ca.gov> › departments › services ›

## Find a Job

Find a Job, look up job openings, find information about applying for jobs in California. Phone: 800-807-6755

---

How to Apply for a Job



---

Where can I find more information regarding finding a job?



Structured data markup

“Find a Job” in

Google



```
▼<url>  
  <loc>https://www.ca.gov/departments/16/</loc>  
  <lastmod>2022-10-31</lastmod>  
</url>
```

## XML Sitemap

Saves crawl budget. “lastmod” preventing re-crawls.

Exact for departments and services, monthly for everything else

<https://www.ca.gov/service/?item=check-your-refund-status>

...

<https://www.ca.gov/departments/236/services/33/>

# 301 Redirects

Auto-redirect for  
legacy URLs

Continues link history

No slugs



What CA.gov topics are you interested in learning more about?

<https://forms.office.com/g/ZCC7bxRNMf>

# How you can help

All state entities that use the CA.gov domain are required to annually verify the accuracy of their state entity profile

- Review your agency profile on CA.gov
  - [www.ca.gov](http://www.ca.gov)
- Register for a new account
  - <https://stateentityprofile.ca.gov/Account/Register>
- Update existing services/Add new services
  - <https://stateentityprofile.ca.gov/Account/Login>

# Questions...



Contact us at [cagov-website-info@state.ca.gov](mailto:cagov-website-info@state.ca.gov)



CA.gov Digital Branding

# Sharon Rabang

UX Designer | Web Development | California Department of Technology

[cdt.ca.gov/technology-innovation/dwsn](https://cdt.ca.gov/technology-innovation/dwsn)



California Department of  
**Technology**



# CA.gov Digital Branding

## CA.gov portal | Core brand logo

[Official California website](#) ▾



[Services](#)

[Departments](#)

[About California](#)

[Get help](#)

# CA.gov logo

**Concept** | Iconic state flag



# Dynamic digital branding

A **suite** of CA.gov visual elements designed for various digital **touch points**



CA.gov lockup



CA.gov logo



CA.gov icon

# CA.gov logo

**Benefits** | An updated logo helps your state website

- Build and maintain **trust** with your audience as an **official** California state website
- Look **consistent** with the **CA.gov**
  - Portal
  - Departments
  - Agencies
  - Campaigns

# CA.gov logo

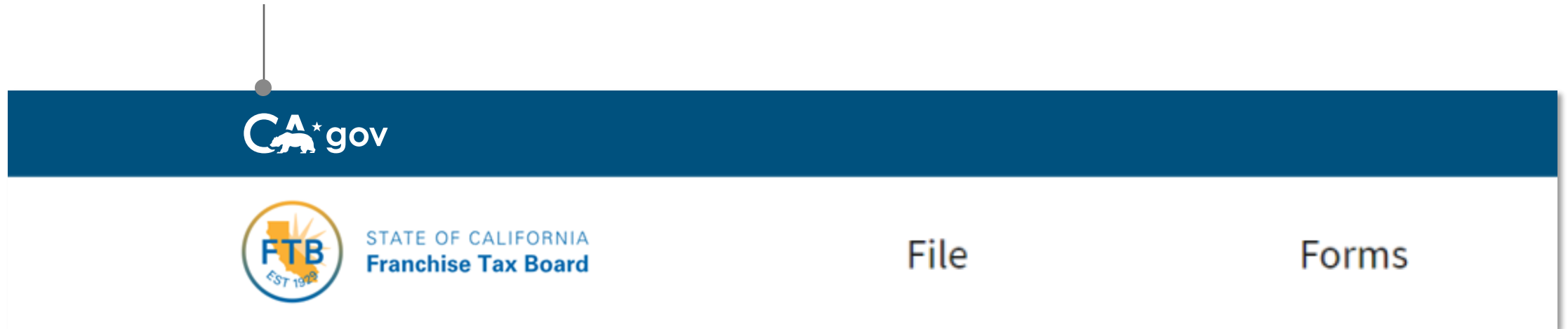
Resources | [California Web Standards](#)

## [CA.gov Logo](#)

- CA.gov logo assets
  - Downloads
- Digital branding guidelines
  - Logo versions
  - Specifications
  - Color

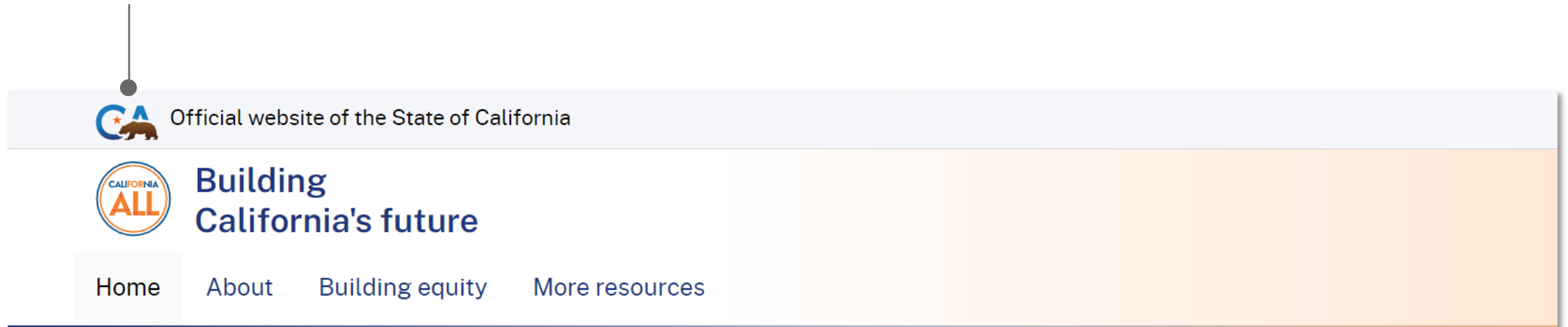
# Logo version 1

**CA.gov lockup** | Example in a wide, open space



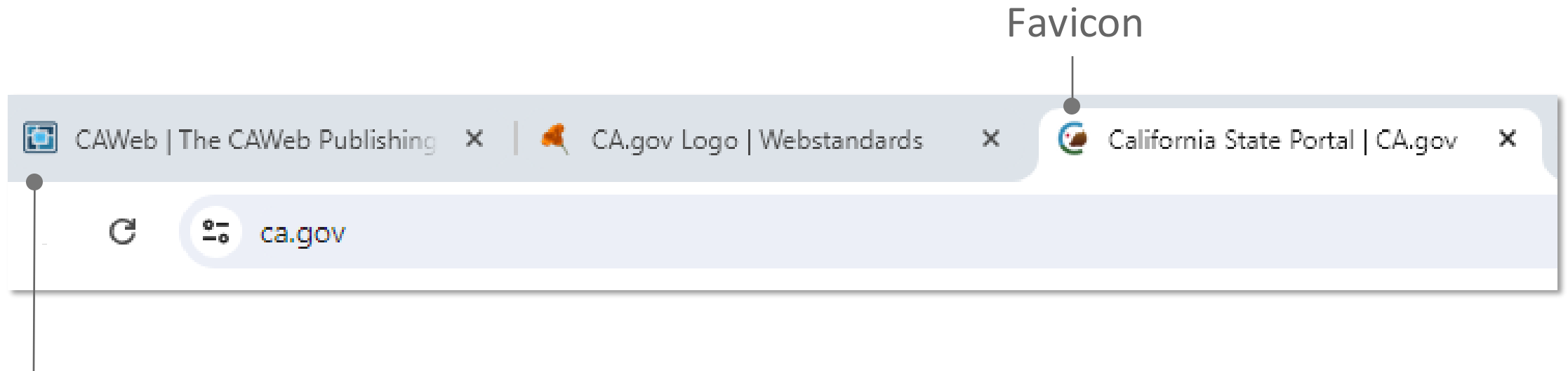
# Logo version 2

**CA.gov logo** | Example in a tight, narrow space



# Logo version 3

## CA.gov icon | Example in a browser tab



### Recommendation

Use your own brand as a favicon to make it easy for users to find and identify your site among other state websites.



# CA.gov logo

## Color | Colorways and variants

Colorway variant

Core brand: State flag colors

Palette theme 1: Coastal colors

Gradient



Flat



Monochromatic





# Suggested Future Topics

## Closing Remarks

# Koji Kumpulainen

State Web Services Manager | California Department of Technology



# Digital Web Services Network

Bringing together digital product managers, designers, and engineers.

## Thank you

Post conference materials will be published on the [DWSN Website](#).

For questions, please write to: [DigitalWebServicesNetwork@state.ca.gov](mailto:DigitalWebServicesNetwork@state.ca.gov)



# Digital Web Services Network

Bringing together digital product managers, designers, and engineers.

## Next DWSN Quarterly Forum

Date: March 13, 2025