

MOPED PROJECTS MAP & MOBILITY PROJECT VIEWER

Data & Technology Services, Austin Transportation Department

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REBECCA L BRAND
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CONTEXT

Austin's local population - and traffic - are growing.



CONTEXT

Austin's local population - and traffic - are growing.

But so is construction, and projects to improve the city's mobility infrastructure are in the mix.



CONTEXT

The Moped platform, allows ATD to track these mobility projects (and their robust data attributes).



The screenshot shows the 'Projects' dashboard of the Moped platform. At the top, there are navigation tabs for 'Dashboard', 'Projects' (which is active), and 'Staff'. A search bar is located below the tabs, with the placeholder text 'Search by project name, project description, project phase, or eCAPRIS subproject ID.' To the right of the search bar is a 'NEW PROJECT' button. Below the search bar is a table listing projects. The table has columns for Project name, Status, Team members, Project sponsor, Project partners, eCAPRIS ID, Last modified, Signal IDs, Construction start, and Project completion. Five projects are listed, with their status indicated by a colored pill: 'Design' (green), 'Potential' (orange), 'Construction-ready' (green), and 'Construction' (green). A blue circular overlay on the right side of the table contains the text '229 ACTIVE PROJECTS' and '93 ACTIVE USERS'.

Project name	Status	Team members	Project sponsor	Project partners	eCAPRIS ID	Last modified	Signal IDs	Construction start	Project completion
CONGRESS AVE / ALPINE RD PHB CONVERSION	Design	Renee Orr - Project support	COA ATD Arterial Management	Texas Department of Transportation	13228.006	6/23/2022	4058	-	-
CONGRESS AVE / RAMBLE LN Traffic Signal	Design	Renee Orr - Project support	Texas Department of Transportation	Texas Department of Transportation	6598.056	6/23/2022	1111	-	-
ED BLUESTEIN BLVD / LOYOLA LN	Potential	Brian Craig - Project support Willard Peavy - Inspector	-	Private Developer	-	6/23/2022	58	-	-
WILLIAM CANNON DR / COLTON BLUFF SPRINGS RD TRAFFIC SIGNAL	Construction-ready	Renee Orr - Project support	-	-	-	6/23/2022	-	-	-
CONGRESS AVE / ST ELMO RD Signal Mods	Construction	Ben Henson - Inspector Renee Orr - Project support	Private Developer	-	-	6/23/2022	-	-	-

CONTEXT

The Moped platform, allows ATD to track these mobility projects (and their robust data attributes).

But right now, there isn't a great way to explore all this information holistically.



The screenshot shows the 'Projects' dashboard of the Moped platform. At the top, there are navigation tabs for 'Dashboard', 'Projects' (which is active), and 'Staff'. A search bar is located below the tabs, with the placeholder text 'Search by project name, project description, project phase, or eCAPRIS subproject ID.' To the right of the search bar is a 'NEW PROJECT' button. Below the search bar is a table of projects. The table has columns for Project name, Status, Team members, Project sponsor, Project partners, eCAPRIS ID, Last modified, Signal IDs, Construction start, and Project completion. There are five rows of project data. A yellow star icon with a curved arrow points to the 'Potential' status of the third project. A blue circular callout on the right side of the table contains the text '229 ACTIVE PROJECTS' and '93 ACTIVE USERS'.

Project name	Status	Team members	Project sponsor	Project partners	eCAPRIS ID	Last modified	Signal IDs	Construction start	Project completion
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PROCESS

The Problem:

How might we translate the prior & ongoing research on Moped visualization strategies to actionable design tasks?

Questions:

- What data needs to be visualized?
What data do we have?
- What are the specific needs for internal & external versions?
- What design steps make for flexible implementation down the line?



PROCESS

1

Weeks 1-3: Research

Goal

- Learn project context, UX/UI best practices
- Establish plan for design process

Methods

- Desk research & full product audit
- User interviews & testing

2

Weeks 4-6: Design

Goal

- Define feature requirements
- Prototype design solutions

Methods

- User interviews & testing
- Feature planning
- UX/UI design

3

Weeks 7-10: Refine

Goal

- Handoff designs to development workflow
- Prioritize key features & next steps

Methods

- Iterate on mockups & animations
- Groom features in Zenhub

STAGE 1

1

Weeks 1-3: Research

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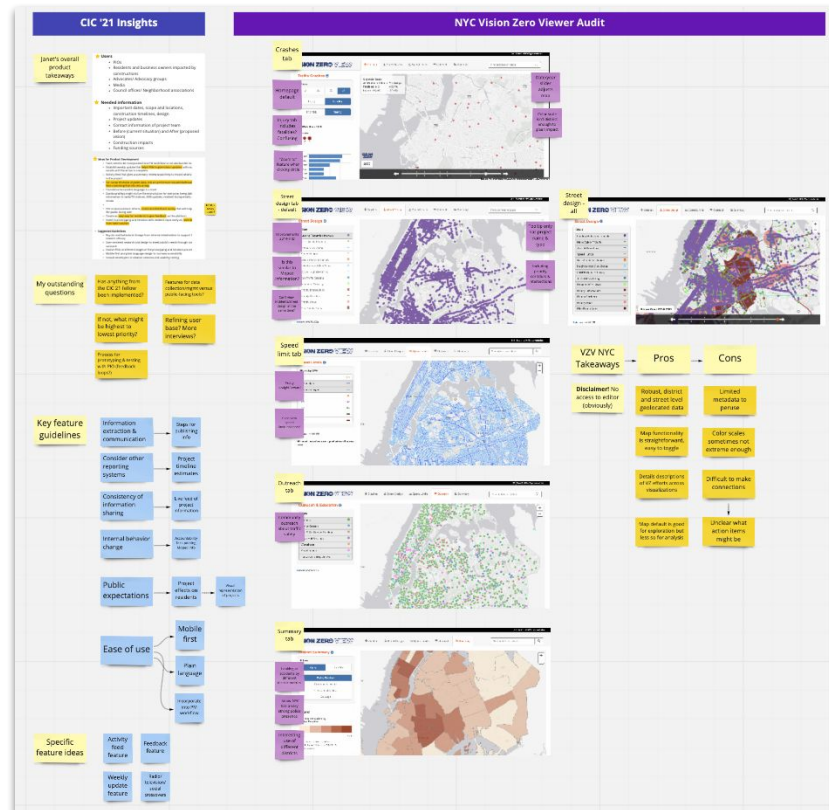
RESEARCH

Initial Desk Research

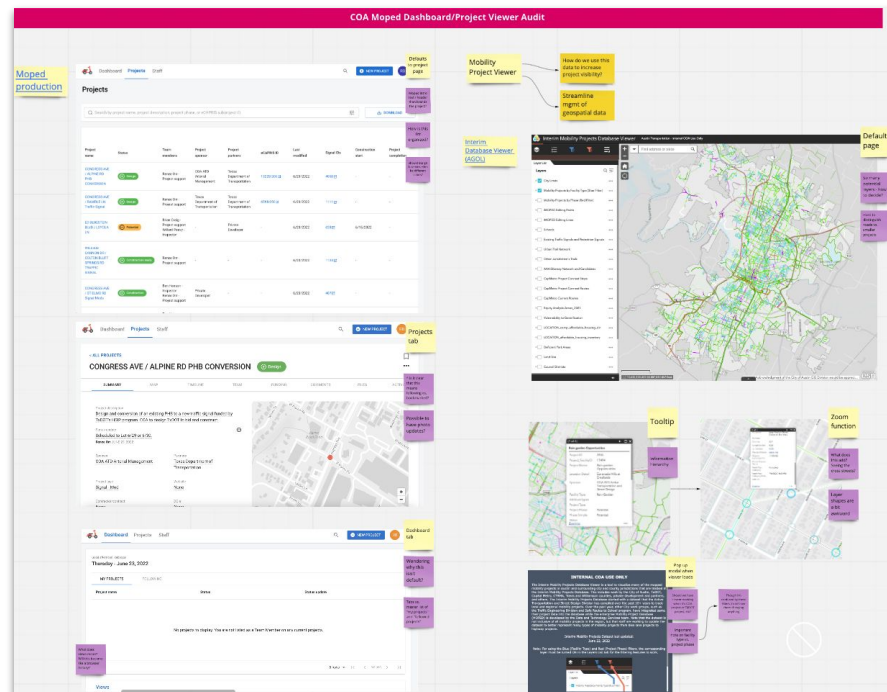
- Review CIC '21 insights
- Explore product landscape
- Note well-executed UI features

Continue Design Discovery

- Analyze internal products
- Map user flows
- Compare interaction capabilities



Internal Audit: Vision Zero Viewer, Moped, Interim Project Viewer (AGOL)



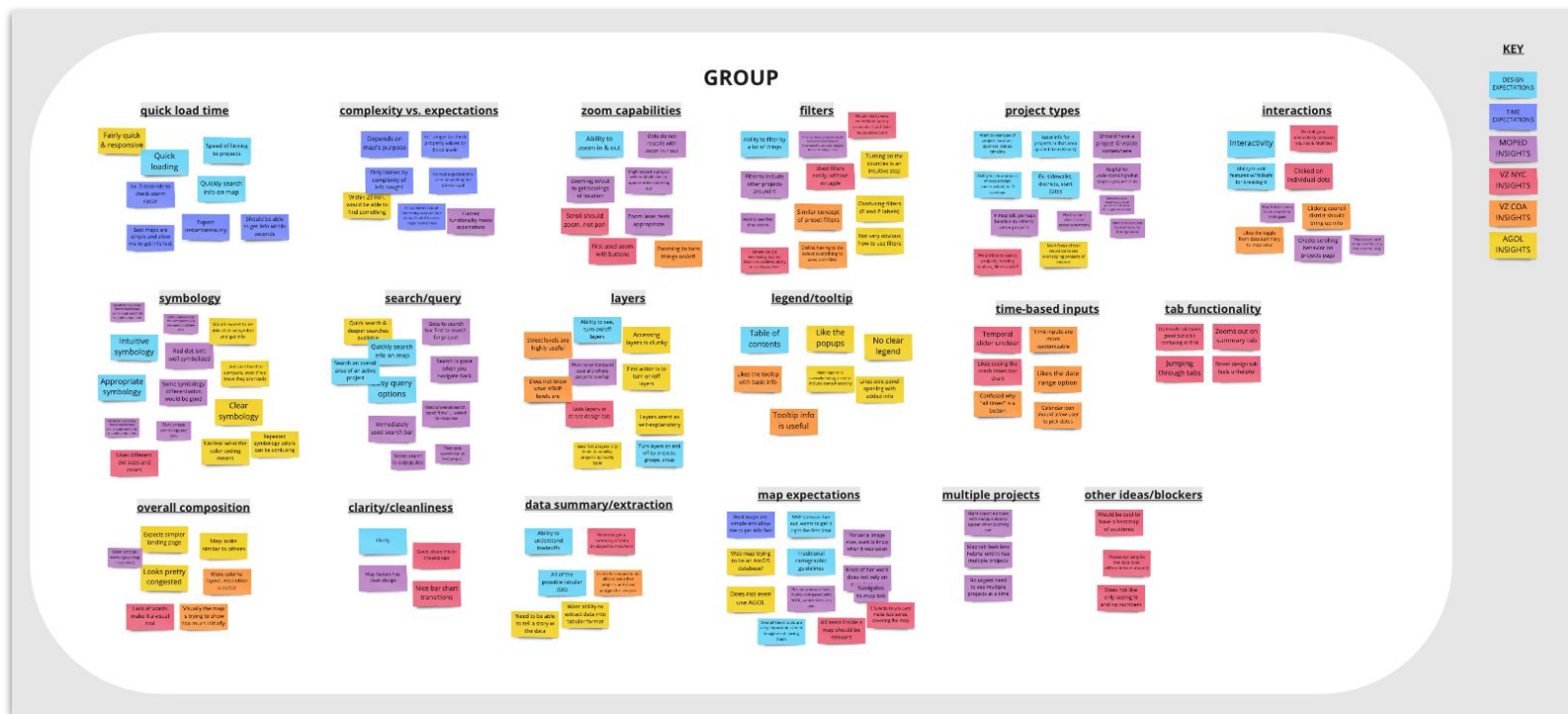
TEST

Moped user interviews: Performed user testing on existing products

GATHER											
		DESIGN EXPECTATIONS		TIMING EXPECTATIONS		MOPED INSIGHTS		VZ NYC INSIGHTS		VZ COA INSIGHTS	
FRANK H (ATD DTS)	High tech familiarity	Clarity	Interactivity	Speed of time to projects	Depends on map's purpose	As it becomes to check forms color	No longer to check property color or street names	Good to search but not to search for project	Red dot not used as symbol	Some symbology of project would be good	More different decision and colors
		Appropriate symbology	Traditional cartographic guidelines	Table of contents		Check styling between all projects page	Do not use red with traditional red	Look of words make it a visual tool	Nice bar chart transitions	Research on color guidelines with existing as the	Scroll should start, not pan
LAURA D (ATD)	High tech familiarity	Quick loading	Ability to see how search layers	Search results on map	Export Responsively	Only necessary complexity of the insight	Immediately send search bar	Mobile for use on the map	ABBREVIATED FOR TIME	ABBREVIATED FOR TIME	ABBREVIATED FOR TIME
		Intuitive symbology	Ability to see how search layers	Search results on map	Export Responsively	Only necessary complexity of the insight	Immediately send search bar	Mobile for use on the map	ABBREVIATED FOR TIME	ABBREVIATED FOR TIME	ABBREVIATED FOR TIME
IVONNE N (ATD)	Low-medium tech familiarity	Quick search info on map	Turn search on and off the project, change view	Search results on map	Export Responsively	Only necessary complexity of the insight	Immediately send search bar	Mobile for use on the map	ABBREVIATED FOR TIME	ABBREVIATED FOR TIME	ABBREVIATED FOR TIME
		Quick search info on map	Turn search on and off the project, change view	Search results on map	Export Responsively	Only necessary complexity of the insight	Immediately send search bar	Mobile for use on the map	ABBREVIATED FOR TIME	ABBREVIATED FOR TIME	ABBREVIATED FOR TIME
MEREDITH Q (ATD)	High tech familiarity	Ability to zoom in & out	Ability to filter by a lot of things	Search results on map	Export Responsively	Only necessary complexity of the insight	Immediately send search bar	Mobile for use on the map	ABBREVIATED FOR TIME	ABBREVIATED FOR TIME	ABBREVIATED FOR TIME
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NATHAN W (ATD)	Very high tech familiarity	Street view capabilities	Programmatic filtering	Embedded editing	Export Responsively	Only necessary complexity of the insight	Immediately send search bar	Mobile for use on the map	ABBREVIATED FOR TIME	ABBREVIATED FOR TIME	ABBREVIATED FOR TIME
		Street view capabilities	Programmatic filtering	Embedded editing	Export Responsively	Only necessary complexity of the insight	Immediately send search bar	Mobile for use on the map	ABBREVIATED FOR TIME	ABBREVIATED FOR TIME	ABBREVIATED FOR TIME

TEST

Affinity mapping: Group similar insights by feature groups



TEST

Idea generation: Rework feature requirements and ideas for implementation

SYNTHESIS: GENERATE

Reasonable loading times with visual feedback

Loading signal

Refresh option within map

Smooth transitions

Ways to improve load from design side (or is this a software issue)?

Make quick queries/ exports easy - low vs. high lifts

Distinct & cohesive symbology

One symbol per project type

Utilize colors & textures

Limit project types on map (fewer symbols)

Ability to show different symbology filters? Is this needed?

Keep everything dots, or new shapes?

Hierarchy of available filters & layers

Dropdown lists

Vertical/ horizontal scroll

Individual bill buttons - click on/off

Pre-populated or nothing populated?

How many filters can someone use at once?

Error message if no projects match search?

Composition is as simple as possible (less distractions)

Limited color palette

Large map area

Explode/hide legend and filters

Do the Material UI standards already meet this?

Balance simplicity with functionality?

Intuitive/typical digital map attributes

Click on individual project to access tooltip

Zoom in/out embedded in viewer (with broad starting view)

Search bar for 1 or more locations

How much to include in MVP? Triage features?

How to innovate on these expected features?

Access to advanced project information

Deeper search options available

Time-based information (schedules)

Different tooltip / filter options based on role

Embedded in first level nav, or need to open separately?

What kind of info is relevant here? Analysis?

Ability to toggle between map & list views

CTA pill button

Arrows between views (swipe?)

Keep filters between map & list views

What queries are needed for this?

Where does this toggle live? Multiple places?

Derive insights & export them for use elsewhere

Card or modal that shows metrics of selected projects

Export to tabular format

Toggle between map & list view

Open table or individual projects? New sheet?

Ways to show analysis within the map itself?

EVALUATE

Priorities

- Navigation to "Projects Map"
- Filtering all possible values
- Search bar / auto complete
- Zoom in / out
- Timeline filter
- Project symbology (phase or component?)
- Interaction / scroll capabilities
- Toggle between list and map view

STAGE 2

1

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Weeks 7-10: Refine

Goal

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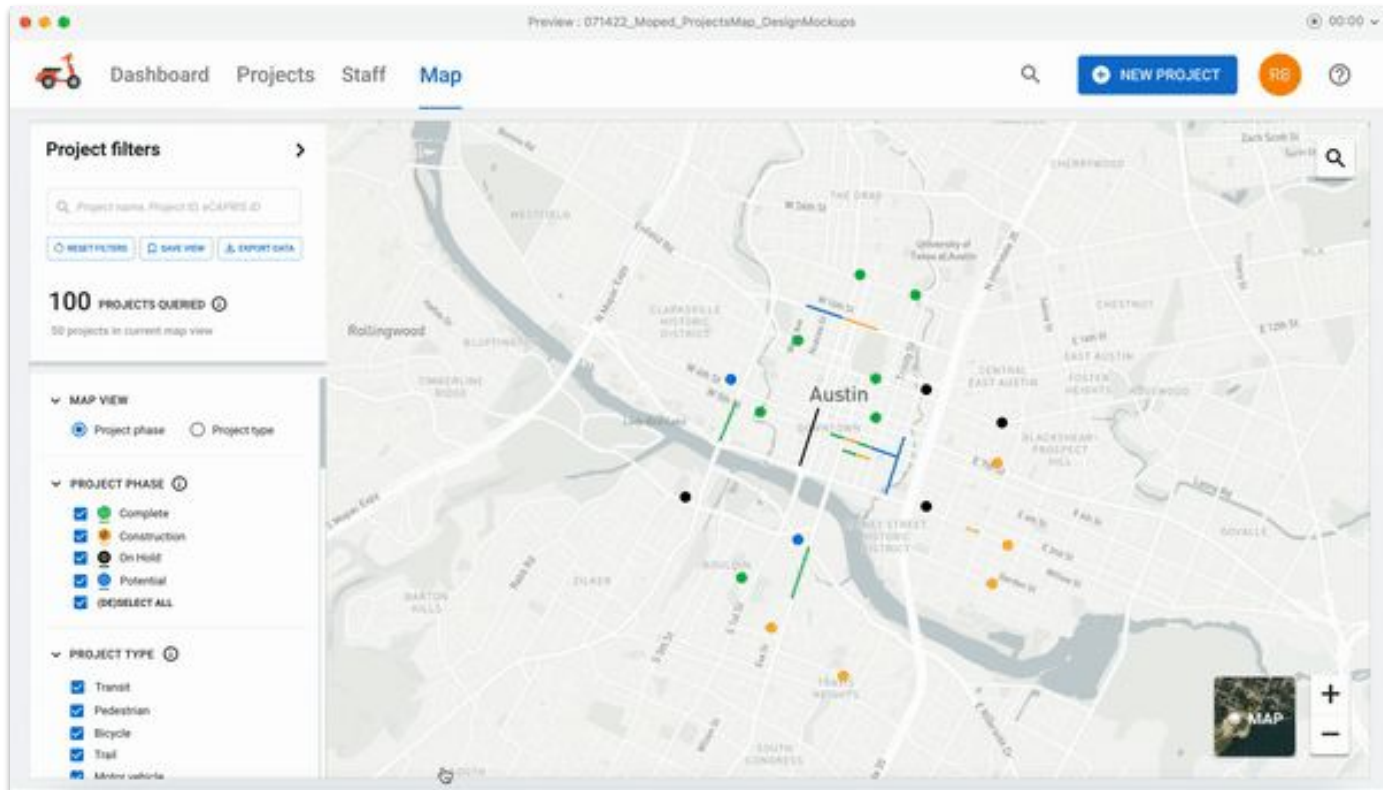
Methods

- Iterate on mockups & animations
- Groom features in Zenhub

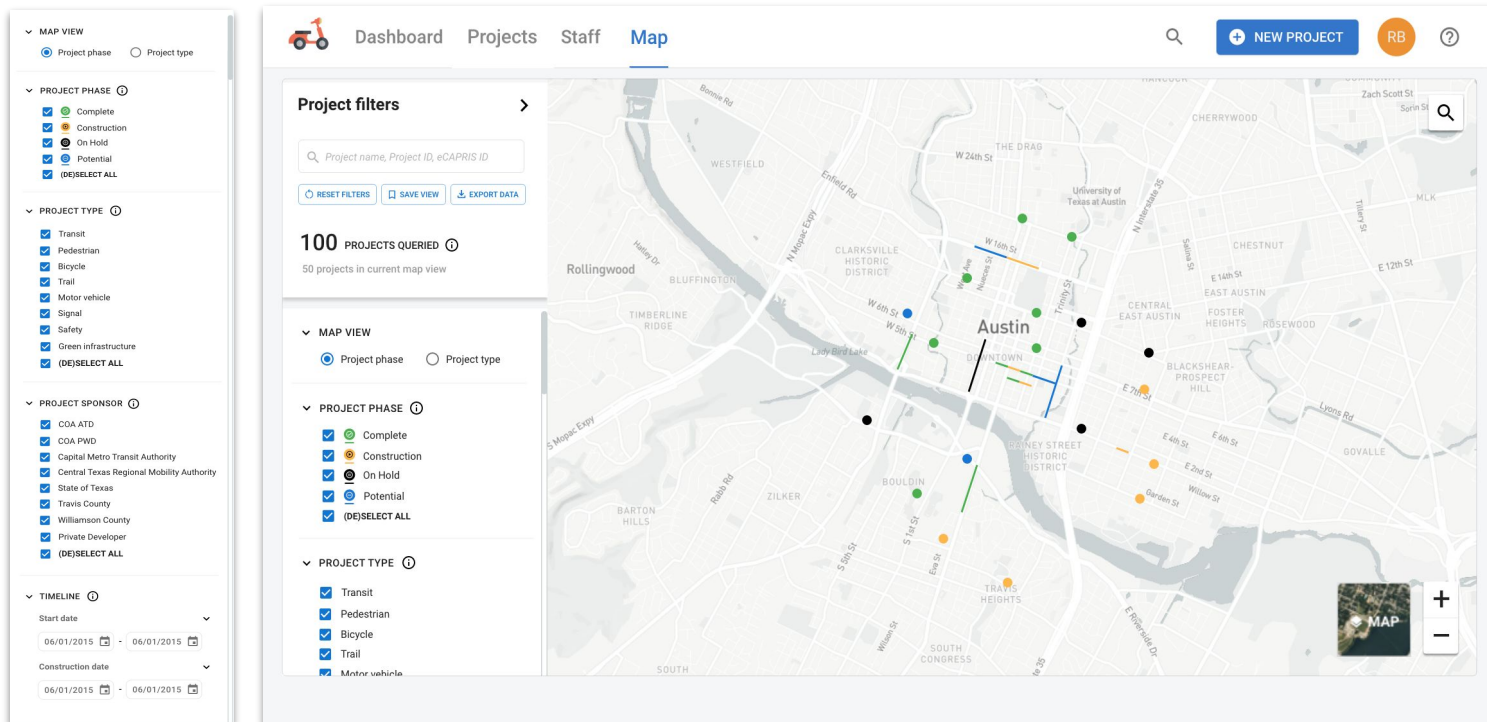
DESIGN

Moped Projects Map

Catered to
internal
users' needs



Full filters Default dashboard



DESIGN

By type

Adjusted dashboard

MAP VIEW

☐ Project phase ☒ Project type

PROJECT PHASE ⓘ

PROJECT TYPE ⓘ

- ☒ Transit
- ☒ Pedestrian
- ☒ Bicycle
- ☒ Motor vehicle
- ☒ Safety
- ☒ Signal
- ☒ Trail
- ☒ Green infrastructure
- ☒ (DE)SELECT ALL

PROJECT SPONSOR ⓘ

TIMELINE ⓘ

Dashboard Projects Staff **Map**

NEW PROJECT RB ?

Project filters

Project name, Project ID, eCAPRIS ID

RESET FILTERS SAVE VIEW EXPORT DATA

100 PROJECTS QUERIED ⓘ

50 projects in current map view

MAP VIEW

☐ Project phase ☒ Project type

PROJECT PHASE ⓘ

PROJECT TYPE ⓘ

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- ☒ Bicycle
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DESIGN

By type

Error message

MAP VIEW

☐ Project phase ☒ Project type

PROJECT PHASE ⓘ

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TIMELINE ⓘ

Dashboard Projects Staff **Map**

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50 projects in current map view

MAP VIEW

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PROJECT PHASE ⓘ

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Austin

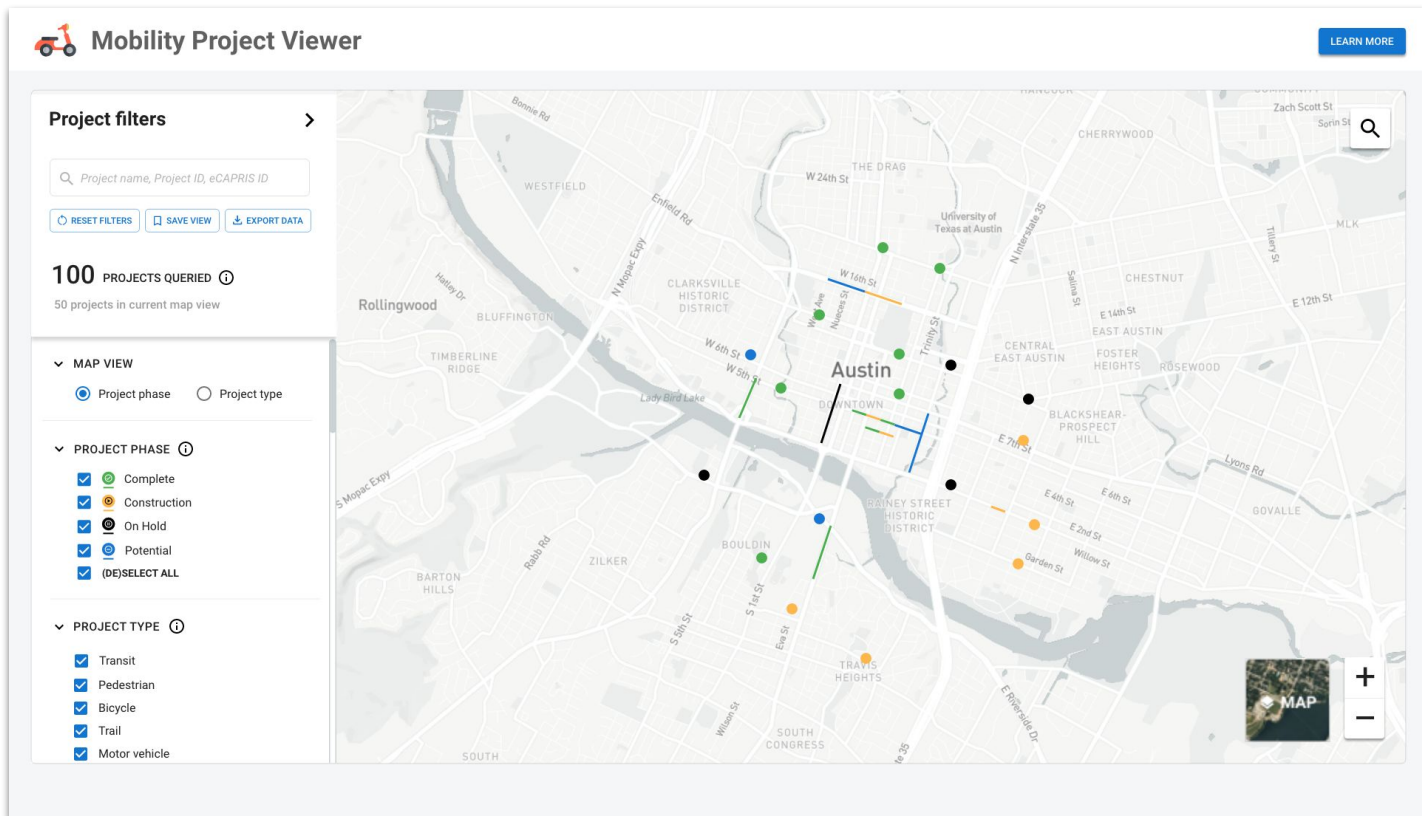
No projects match the search.
Please reset the filters or try new filters.

MAP

DESIGN

Mobility Project Viewer

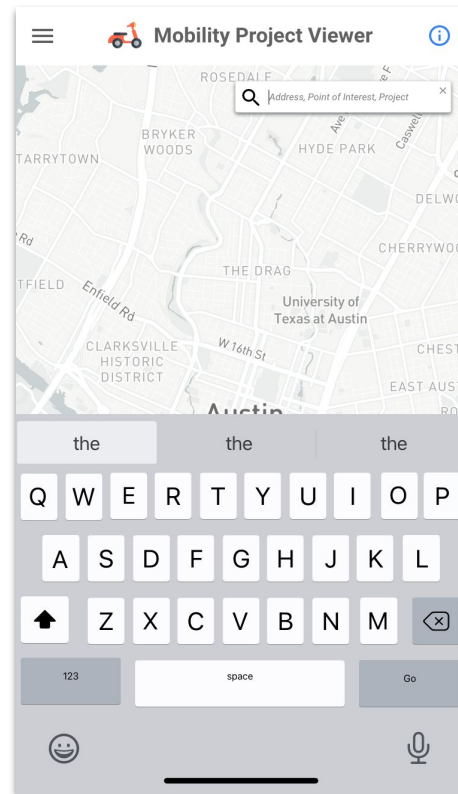
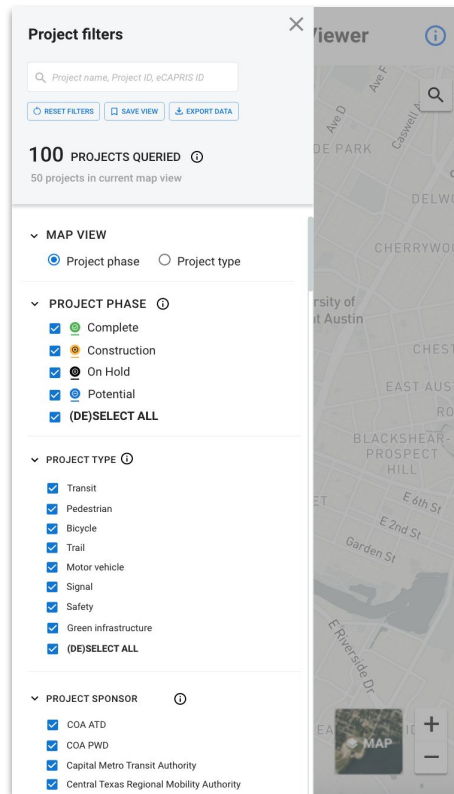
Adjust some features for an external audience



DESIGN

Mobility Project Viewer

Includes mobile accessibility



STAGE 3

1

Weeks 1-3: Research

Goal

- Learn project context, UX/UI best practices
- Establish plan for design process

Methods

- Desk research & full product audit
- User interviews & testing

2

Weeks 4-7: Design

Goal

- Define feature requirements
- Prototype design solutions

Methods

- User interviews & testing
- Feature planning
- UX/UI design

3

Weeks 8-10: Refine

Goal

- Handoff designs to development workflow
- Prioritize handoff & next steps

Methods

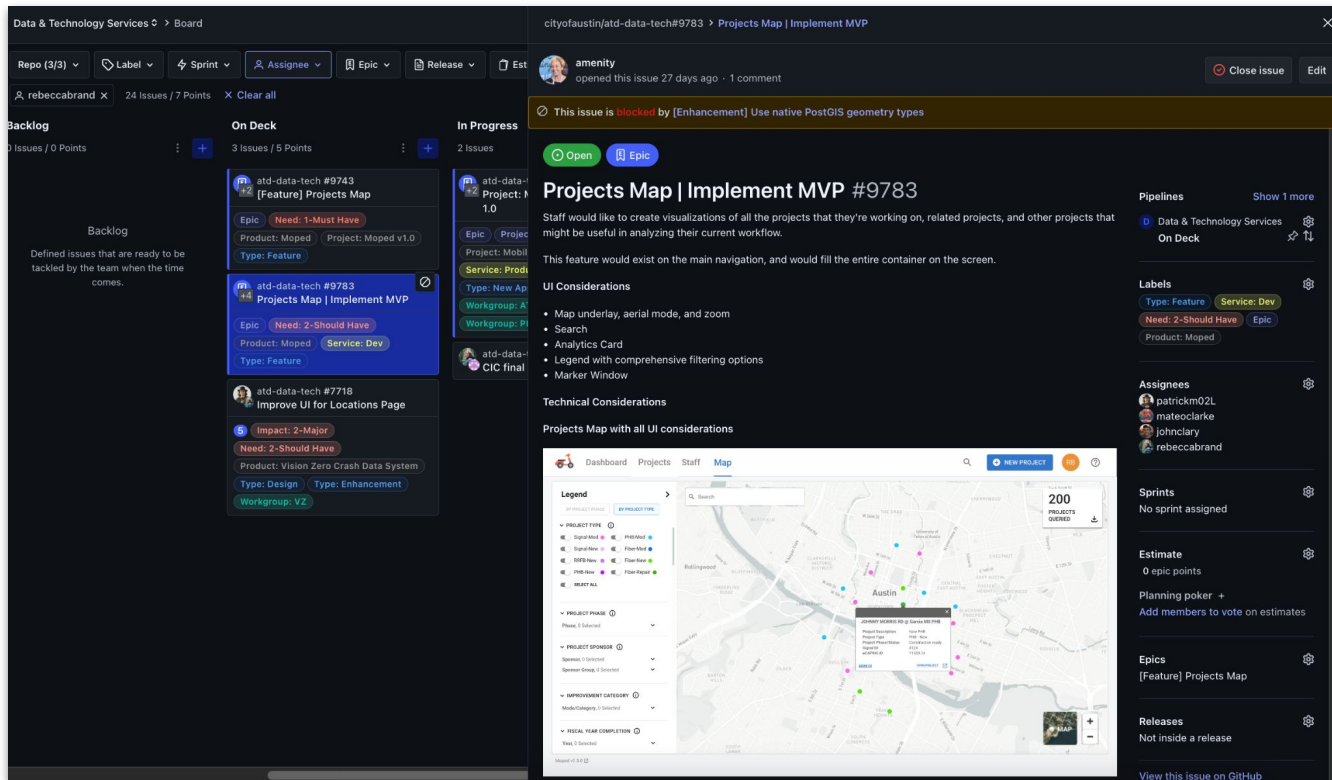
- Iterate on mockups & animations
- Groom features in Zenhub

HANDOFF

Issue Grooming

Set expectations for development process

Learn about implementation workflow



HANDOFF

Amended design system: codifies new Moped features for flexible reproduction

Projects Map Design System

CONTENT SPECIFIC TO PROJECTS MAP BUILDOUT (INTERNAL TOOL)

Fixed Header

Project filters

Project name, Project ID, CAPS ID

SELECT FILTERS | SAVE VIEW | REPORT DATA

100 PROJECTS QUERIED

50 projects in current map view

Buttons

DEFAULT | ON HOVER | ON CLICK

EDIT FILTERS | SMALL

SAVE VIEW

REPORT DATA

Search

IN HEADER

Project name, Project ID, CAPS ID

IN MAP VIEWPORT

Address, Point of Interest, Project

Filters

MAP VIEW

Project phase | Project type

PROJECT PHASE

Complete
Construction
On Hold
Potential
DESELECT ALL

PROJECT TYPE

Transit
Pedestrian
Bicycle
Motor vehicle
Signal
Trail
Green infrastructure
DESELECT ALL

PROJECT SPONSOR

LA-ATO
COA PMO
Capital Metro Transit Authority
Central Texas Regional Mobility Authority
State of Texas
Tarrant County
Williamson County
Private Developer
DESELECT ALL

TIMELINE

Start date
06/01/2018 - 06/01/2019

Construction date
06/01/2018 - 06/01/2019

MAP VIEW

Project phase | Project type

PROJECT PHASE

Complete
Construction
On Hold
Potential
DESELECT ALL

PROJECT TYPE

Transit
Pedestrian
Bicycle
Motor vehicle
Signal
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Green infrastructure
DESELECT ALL

PROJECT SPONSOR

LA-ATO
COA PMO
Capital Metro Transit Authority
Central Texas Regional Mobility Authority
State of Texas
Tarrant County
Williamson County
Private Developer
DESELECT ALL

TIMELINE

Start date
06/01/2018 - 06/01/2019

Construction date
06/01/2018 - 06/01/2019

Symbology

PROJECT TYPE	WITH ICONS	PROJECT PHASE
Transit	Transit	Complete
Mode Type	Pedestrian	Construction
Safety	Bicycle	Design
Signal	Motor Vehicle	On Hold
Green	Safety	Potential
	Signal	Cancelled
	Trail	
	Green infrastructure	

TIMELINE / CALENDAR OPTIONS

06/01/2015 - 07/22/2022

06/01/2015 - 07/22/2022

06/01/2015 - 07/22/2022

July 2022

July 2022

July 2022

Map Design

STREET MAP

AERIAL MAP

TILES (SCREENSHOTS FROM MOPED)

MAP | AERIAL | STREETS

Tooltip Options

JOHNNY MORRIS RD @ Garcia MS PHB

Project Description: New I-10
Project Type: Civil Work
Project Phase/Status: Construction Ready
Signal ID: 1159634
mCAPS ID: 1159634

VIEW | INFO | REPORT DATA

JOHNNY MORRIS RD @ Garcia MS PHB

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mCAPS ID: 1159634

VIEW | INFO | REPORT DATA

Zoom

+

-

IMPACT

- **Increase data transparency:** more filtering options, eventual public platform to broaden connection
- **Improve mobility options:** streamline process for identifying & collaborating on new projects
- **Sync with Vision Zero goals:** translate policy efforts to safer infrastructure strategies (and save \$)



TAKEAWAYS

- **Local government is agile:** I enjoyed leaning into PM mindset and challenging my preconceived notions of bureaucracy.
- **Design contains multitudes:** The work spanned design, research, planning, and even development (thanks to Discovery Day).
- **People are everything:** Talking with is the most enlightening & rewarding part of any project. Much love to my team & users!



THANK YOU!

ATD DTS ❤️ Patrick, Amenity, Rose, Mateo & Everyone

CIF 💙 Rachel, Arianna, Emily (Facilitator) & Judy (Mentor)



REBECCA L BRAND
Harvard University
Masters in Design Engineering

ADDENDUM

- **Role:** UX/UI Designer
- **Supervisors:** Patrick McDonnell & Amenity Applewhite
- **Dates:** June 13 - August 19, 2022
- **Duration:** 10 weeks
- **Projects:**
 - Design for the Moped Projects Map & Mobility Project Viewer
 - Support PM work on Vision Zero, issue maintenance, DTS branding