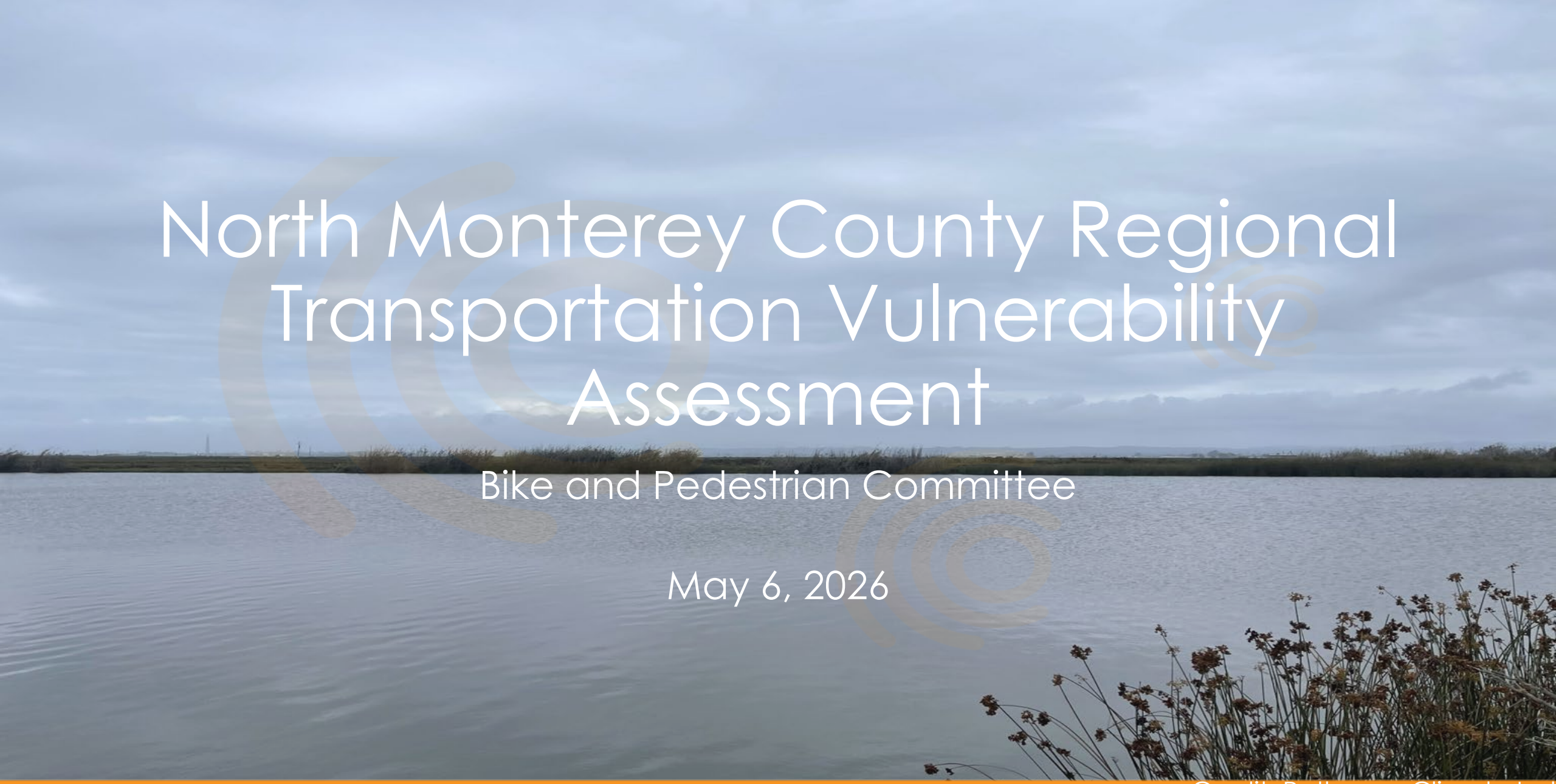
North Monterey County Regional Transportation Vulnerability Assessment

Bike and Pedestrian Committee

May 6, 2026



Credit: Pathways Climate Inst

TAMC

Agenda

1. Project Overview
2. Public Outreach Summary
3. Hazards
4. Exposure & Vulnerability Assessment
5. Hazard Viewer
6. Prioritization
7. Applications and Next Steps

Project Overview

Regional Transportation Vulnerability Assessment (RTVA)

Identified vulnerable transportation infrastructure to climate hazards

Assessed impacts to low-income and disadvantaged communities and sensitive habitats

Created a project prioritization list for adaptation strategies

Engaged with our TAC, Focus Group, and the public.

Project Outcomes

- ✓ Help TAMC understand hazards of interest for every project
- ✓ Support future climate resiliency projects
- ✓ Benefit other agencies and asset-owners in the North Monterey County

Project Team

TAMC
TRANSPORTATION AGENCY FOR MONTEREY COUNTY

pathways
CLIMATE INSTITUTE

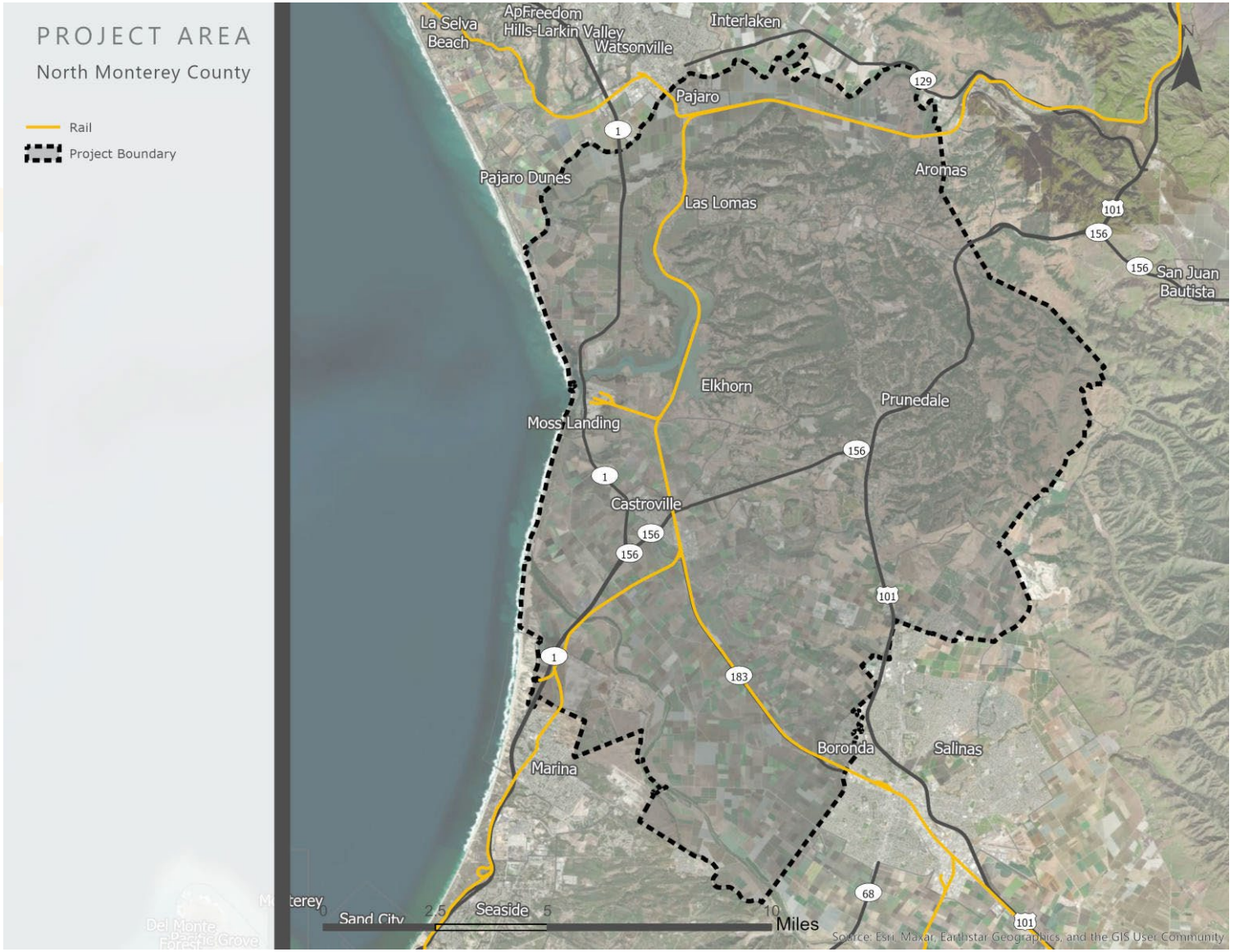
CAMBRIDGE
SYSTEMATICS

ESA

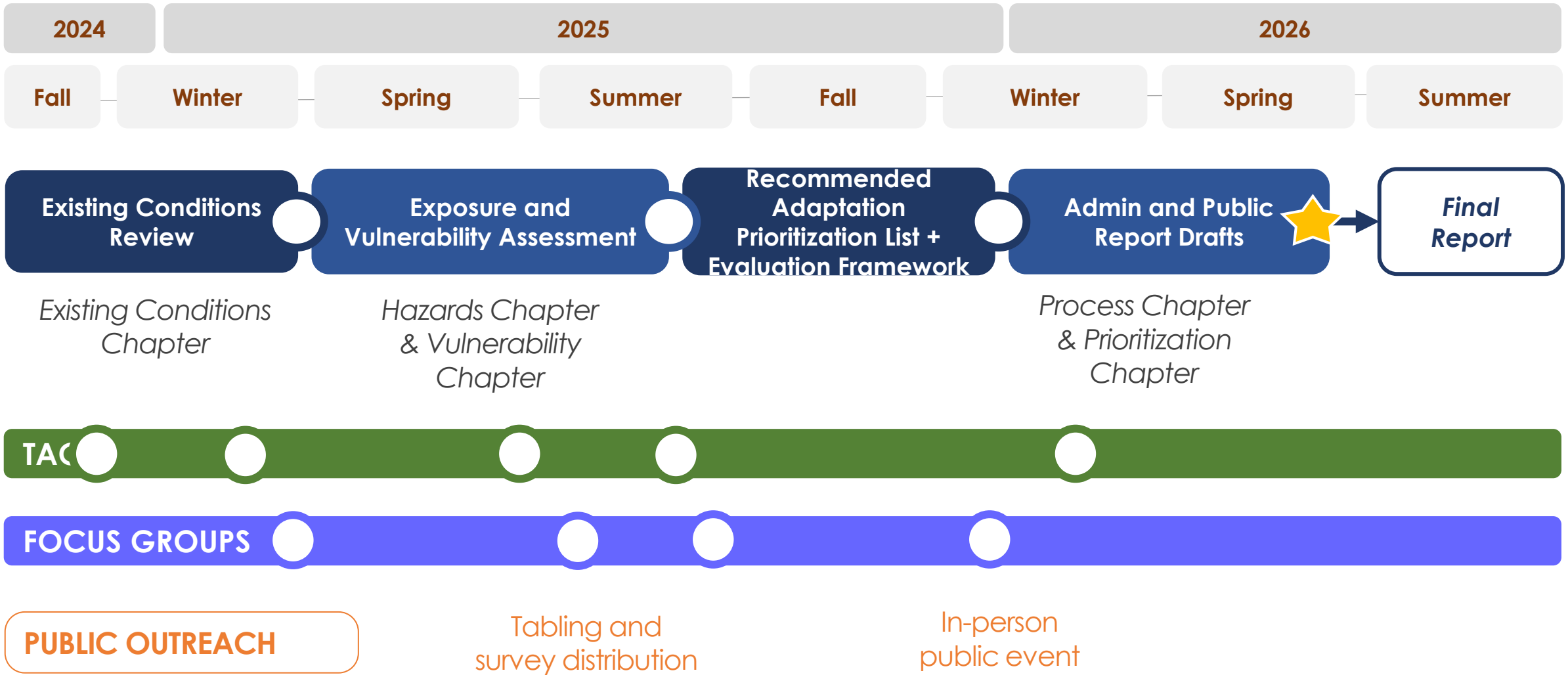
+ Technical Advisory Committee + Focus Group

Study Area

- Geography: Northern Monterey County
- Communities:
  - Moss Landing
  - Elkhorn
  - Pajaro
  - Castroville
  - Unincorporated coastal areas



Project Workflow and Timeline



Credit: Pathways Climate Institute

Public Outreach Summary

Vulnerability and Prioritization

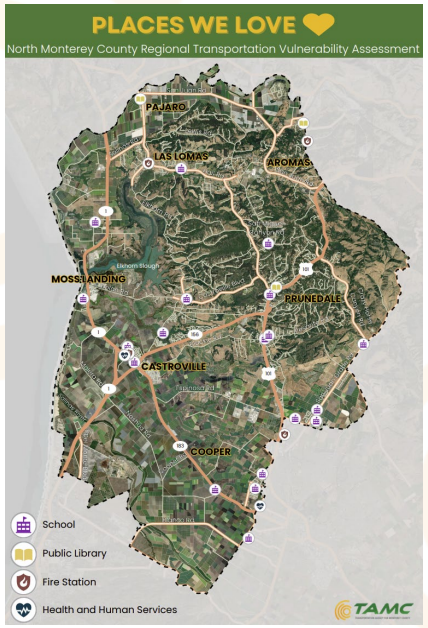
Vulnerability of transportation assets and roads

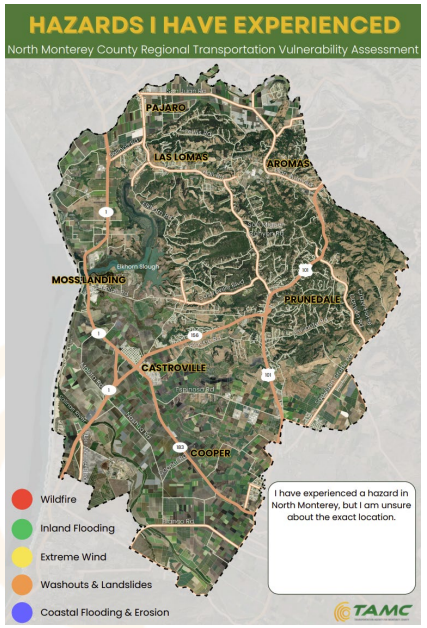
Relevance and impacts of transportation assets and roads to communities

Community informed recommended prioritization list

Public Outreach Summary

- In-person events at farmers markets
- Collaboration with CSU Monterey Bay students
- Focus Group meetings
- Presentations to local relevant projects and organizations
- TAMC RTVA Survey
- Community Open House





What We've Heard

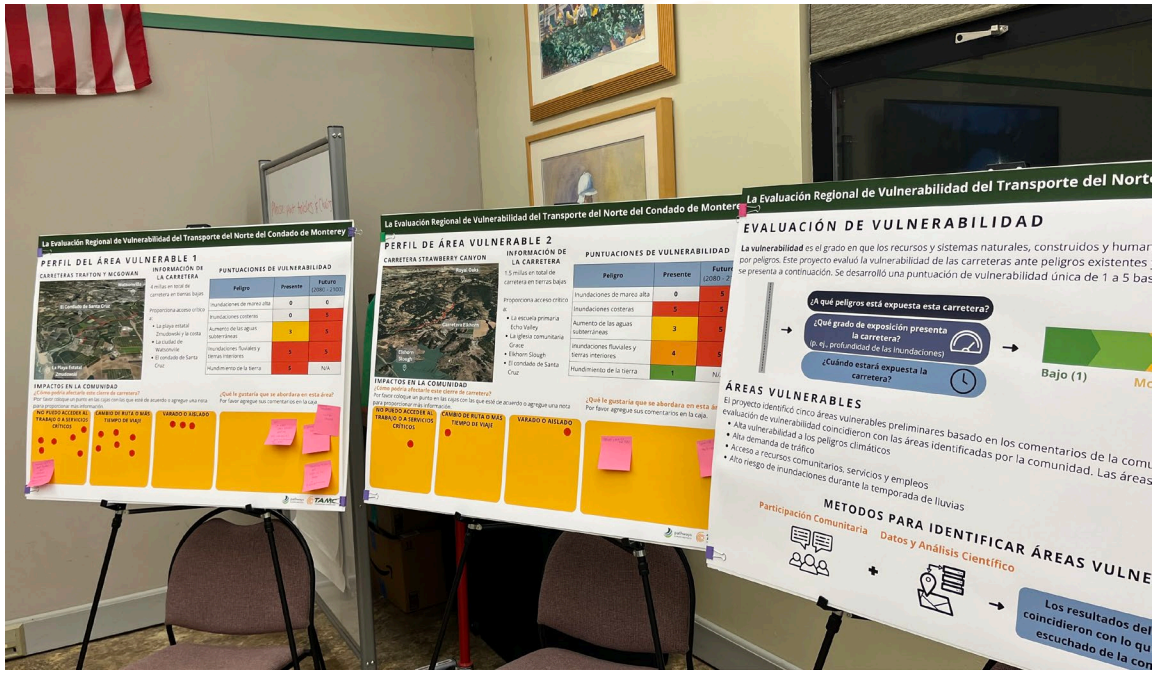
- The winter / rainy season causes heavy flooding along
  - Blackie, Blanco, Dolan, Elkhorn, Hall, Strawberry and Werner Roads
- Unable to access destination / stranded during flood events
- Students are unable attend school due to flooded roadways
  - School buses turn around or arrive late
  - Unsafe driving conditions
  - Concerns over student safety
- Residents rely on communication with family / friends in other areas for road conditions

Community Open House

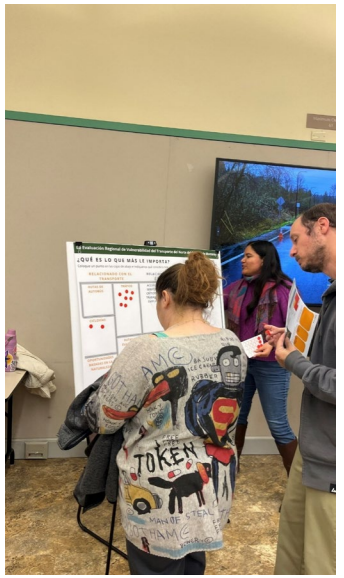
- Castroville Public Library
- Science fair layout
- In-language content
- Bilingual staff support (Regeneración Pajaro Valley Climate Action)
- Kids table, light snacks, and refreshments

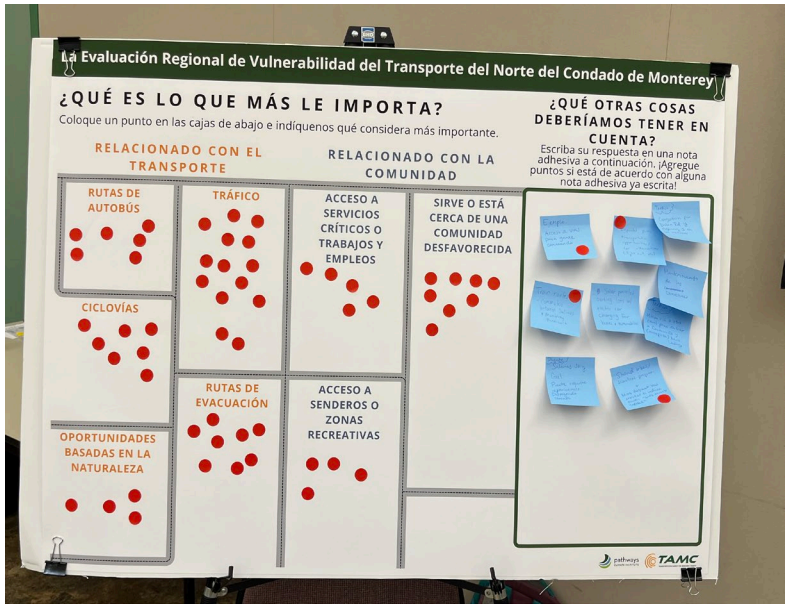
Findings from Open House

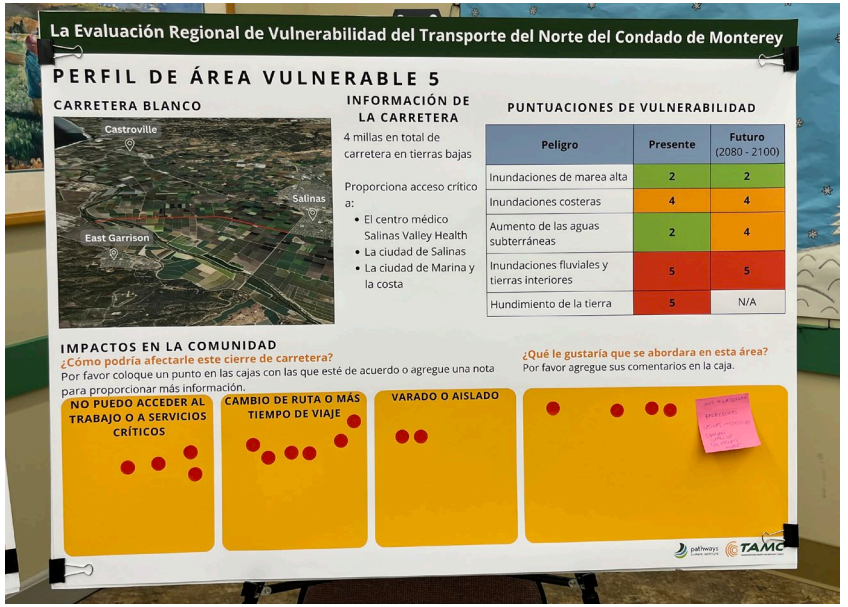
- Validated vulnerable areas (5)
- Validated proposed prioritization metrics
- Obtained information on additional roads of concern
- Confirmed community interest
- Received recommendations for future outreach




La Evaluación Regional de Vulnerabilidad del Transporte del Norte del Condado de Monterey
¿QUÉ ES LO QUE MÁS LE IMPORTA?
¿CÓMO PRIORIZAMOS LOS PROYECTOS?



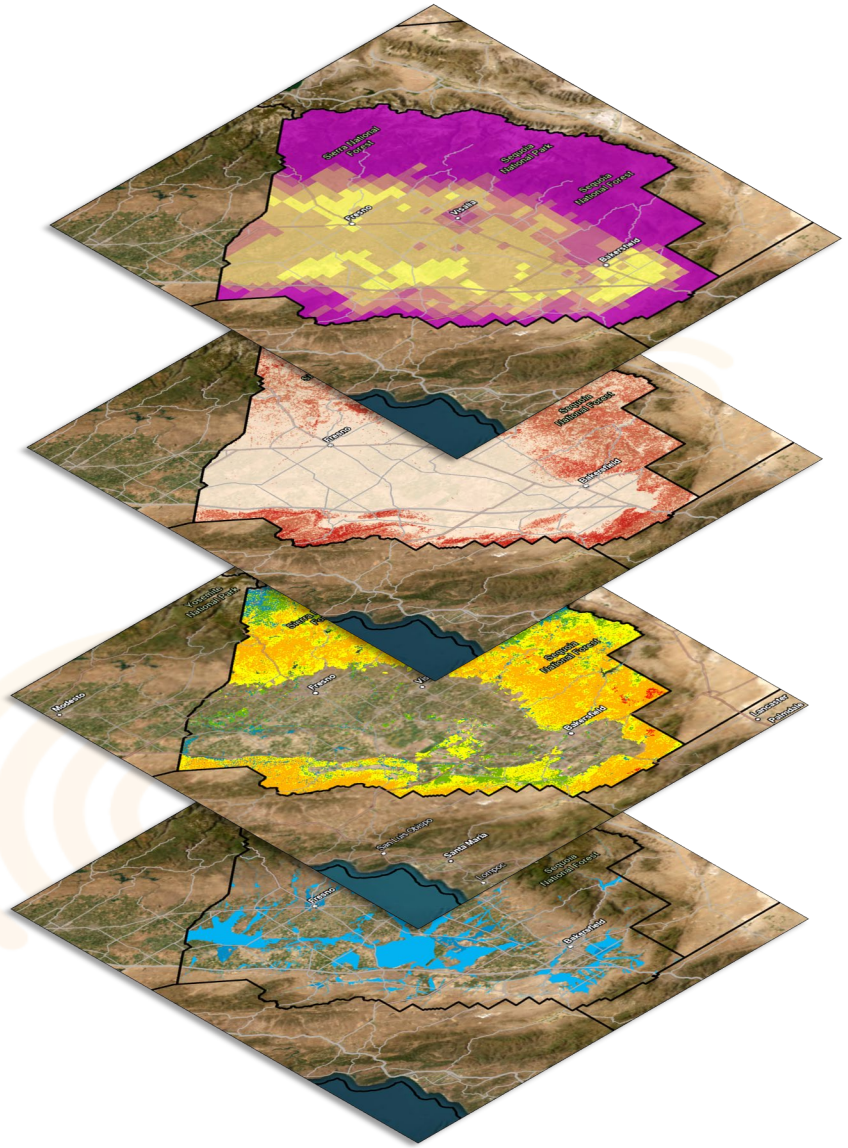

La Evaluación Regional de Vulnerabilidad del Transporte del Norte del Condado de Monterey
¿QUÉ ES LO QUE MÁS LE IMPORTA?
Coloque un punto en las cajas de abajo e indíquenos qué considera más importante.
RELACIONADO CON EL TRANSPORTE
RELACIONADO CON LA COMUNIDAD
¿QUÉ OTRAS COSAS DEBERÍAMOS TENER EN CUENTA?
Escriba su respuesta en una nota adhesiva a continuación. ¡Agregue puntos si está de acuerdo con alguna nota adhesiva ya escrita!
RUTAS DE AUTOBÚS
TRÁFICO
ACCESO A SERVICIOS CRÍTICOS O TRABAJOS Y EMPLEOS
SIRVE O ESTÁ CERCA DE UNA COMUNIDAD DESFAVORECIDA
CICLOVÍAS
RUTAS DE EVACUACIÓN
ACCESO A SENDEROS O ZONAS RECREATIVAS
OPORTUNIDADES BASADAS EN LA NATURALEZA


La Evaluación Regional de Vulnerabilidad del Transporte del Norte del Condado de Monterey
PERFIL DE ÁREA VULNERABLE 5
CARRETERA BLANCO
Castroville
Salinas
East Garrison
INFORMACIÓN DE LA CARRETERA
4 millas en total de carretera en tierras bajas
Proporciona acceso crítico a:
• El centro médico Salinas Valley Health
• La ciudad de Salinas
• La ciudad de Marina y la costa
PUNTUACIONES DE VULNERABILIDAD
Peligro | Presente | Futuro (2080 - 2100)
Inundaciones de marea alta | 2 | 2
Inundaciones costeras | 4 | 4
Aumento de las aguas subterráneas | 2 | 4
Inundaciones fluviales y tierras interiores | 5 | 5
Hundimiento de la tierra | 5 | N/A
IMPACTOS EN LA COMUNIDAD
¿Cómo podría afectarle este cierre de carretera?
Por favor coloque un punto en las cajas con las que esté de acuerdo o agregue una nota para proporcionar más información.
NO PUEDO ACCEDER AL TRABAJO O A SERVICIOS CRÍTICOS
CAMBIO DE RUTA O MÁS TIEMPO DE VIAJE
VARADO O AISLADO
¿Qué le gustaría que se abordara en esta área?
Por favor agregue sus comentarios en la caja.

Hazards

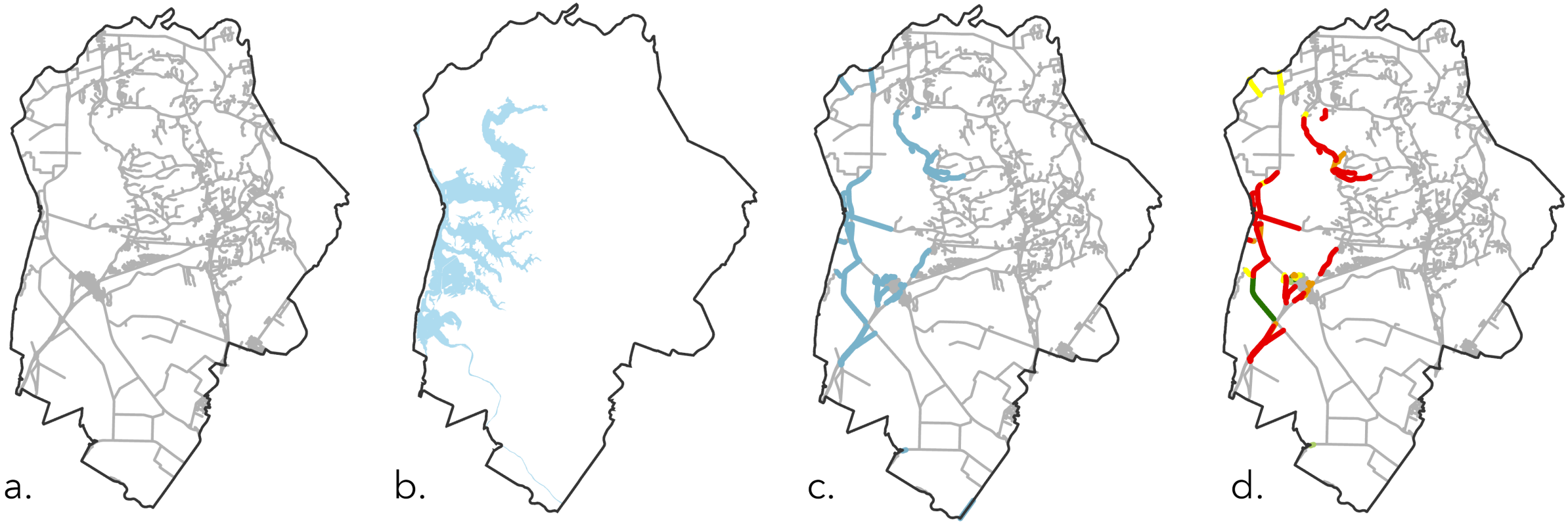
Hazards Chapter

- Best Available Climate Data Sources
- Climate Scenarios and Horizons
  - Mid and late century
- Climate Stressors
- Climate Hazards
- Compounding Hazards



Exposure & Vulnerability Assessment

Asset + Hazard –> Exposure & Vulnerability



Draft Exposure Results

- Exposure analysis completed for project area (North Monterey County)
- Roadways and Rail segmented into 1/10th mile segments
- Full array of Climate Stressor and Hazards tagged to each segment

Vulnerability Assessment

- Climate vulnerability: the degree to which physical, biological, and socioeconomic systems are susceptible to and unable to cope with adverse impacts of climate change.
- Analyzed climate hazards and stressors for existing, mid-century, and late-century scenarios
  - Coastal flooding
  - Shallow groundwater rise
  - Subsidence
  - FEMA
  - Rainfall runoff

Vulnerability Assessment Metrics

Coastal, Low-lying Areas

- Coastal and Tidal Flooding (flood depth)
- Shallow Groundwater – Existing (depth below ground)
- Shallow Groundwater – Future (depth below ground)
- Subsidence (mm/year)

Both

- FEMA Special Flood Hazard Areas
- Rainfall Runoff

Inland, High-elevation Areas

- Uplift (mm/year)
- Landslides Susceptibility (susceptibility class)
- Wildfire Threat – Existing (threat class)
- Wildfire Threat – Future (change in probability)
- Post Wildfire Debris Flow (threat level)

Vulnerability Criteria

Vulnerability	Rating	Hazard
Low	1	
	2	
Moderate	3	
	4	
High	5	

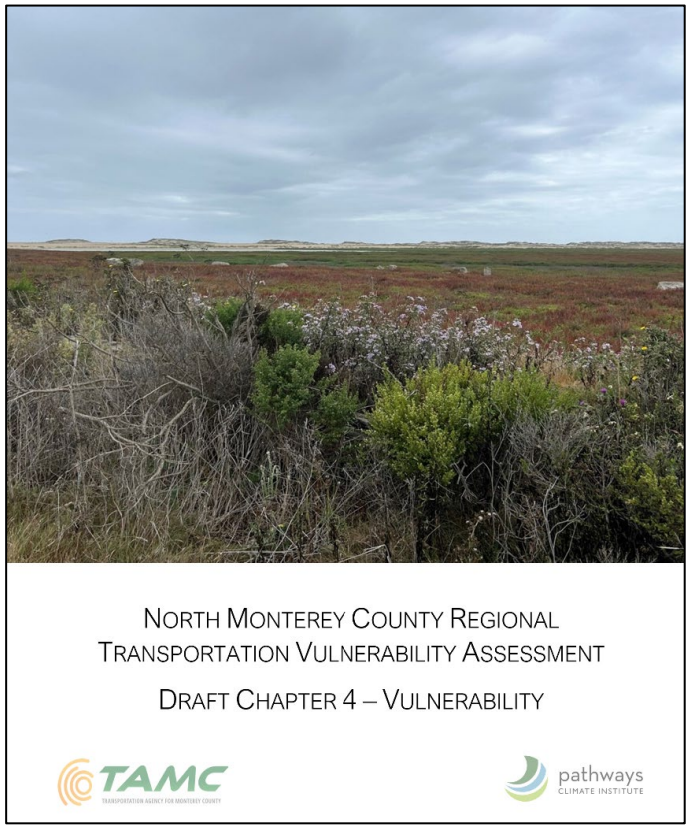
Relevant citation for criteria noted under the tables

- **Low:** Hazard causes limited impacts to roadways for both damage and operations; roadways can quickly recover
- **Moderate:** Hazard may cause short-term closures, damage, impact safety, take a longer time to recover, and/or shorten roadway lifespan
- **High:** Hazard can strand communities, damage is severe, substantial impacts to roadway lifespan (may require reconstruction), elevated threat to life safety and property

Vulnerability Chapter

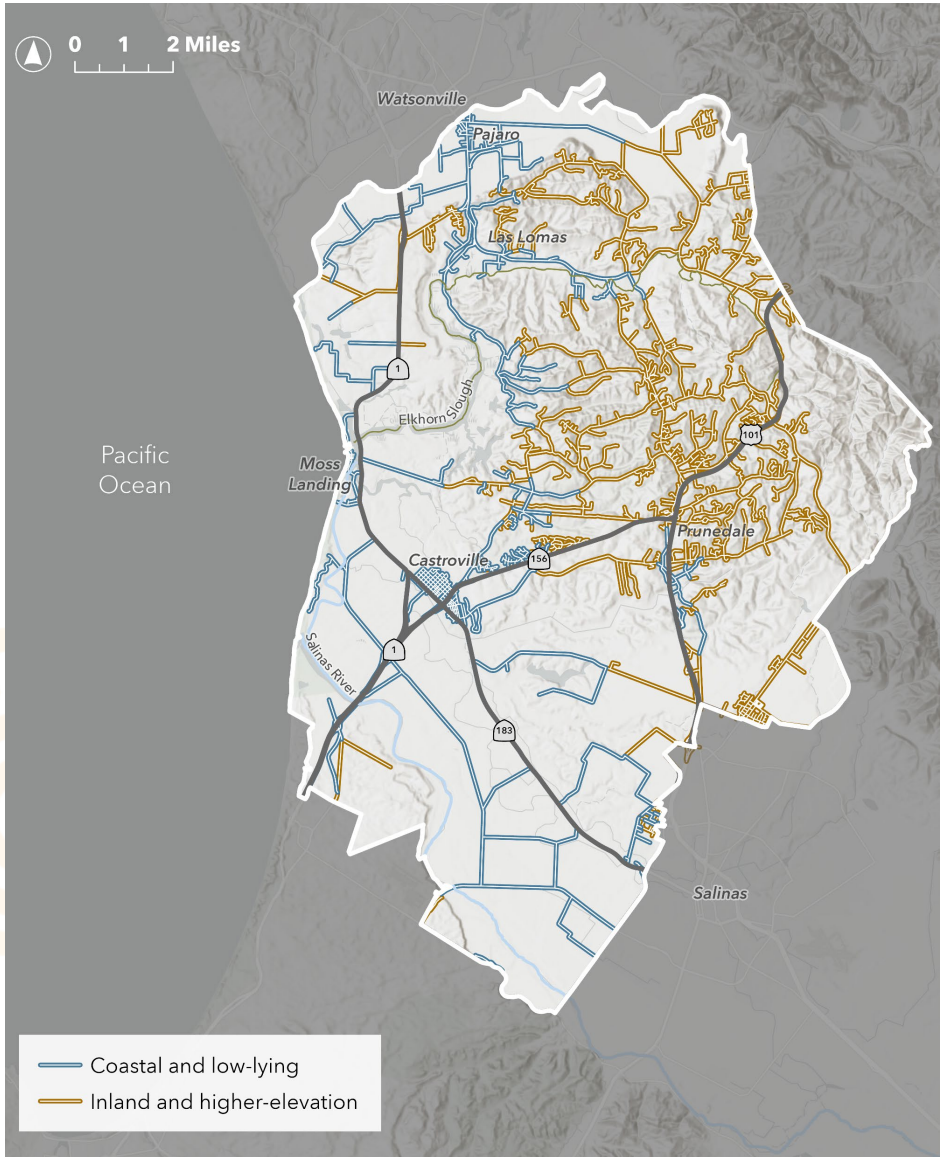
- Defines the vulnerability criteria by hazard
- Provides exposure results (e.g., length of roadway flooded by functional type)
- Presents vulnerability scores, rolled up by functional type

- *Asset geodatabase also includes exposure results for other asset types (e.g., critical services, railways)*

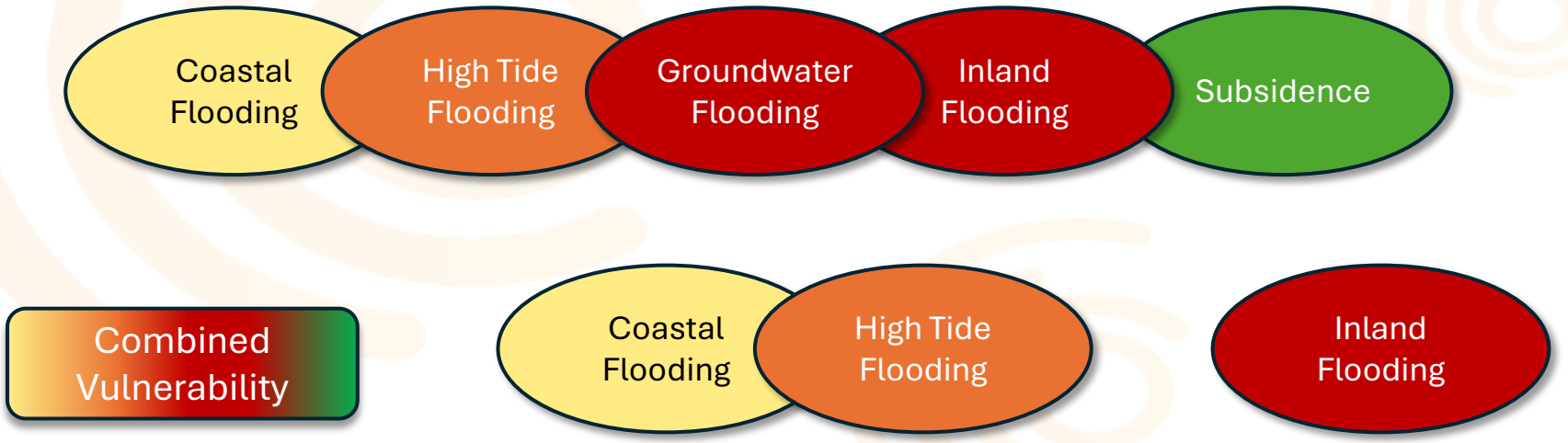


Vulnerability Approach + Findings

- Combines *hazard vulnerability* and *consequences*
- Report includes:
  - Exposure summary tables by hazard
  - Vulnerability summary tables by hazard
- *But there are many more ways to look at the data*



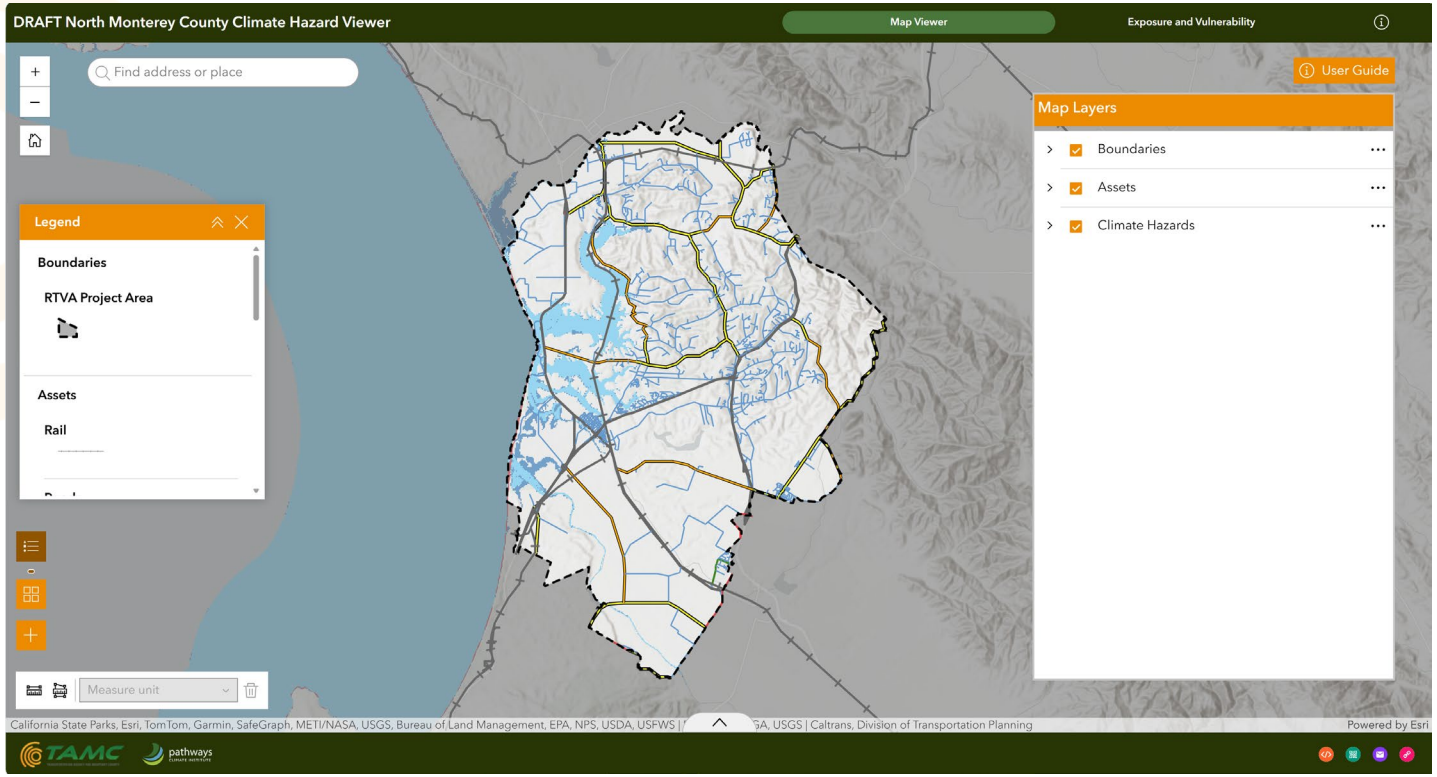
Vulnerability Ratings for All Roadways for All Hazards



Hazard Viewer

North Monterey County Hazard Viewer

- Dynamic online viewer
- Explore North Monterey hazards, exposure and vulnerability results



Prioritization

Prioritization Metrics

Transportation-related

- Roadway Type
  (Functional Class)

- Bikeways
  (Access to bike path)

- Traffic demand
  (Average Daily Traffic)

- Evacuation route
  (Predesignated evacuation route)

- Bus routes
  (MST route)

- Nature-based opportunities
  (Feature types in project area)

Prioritization Metrics

Community-related

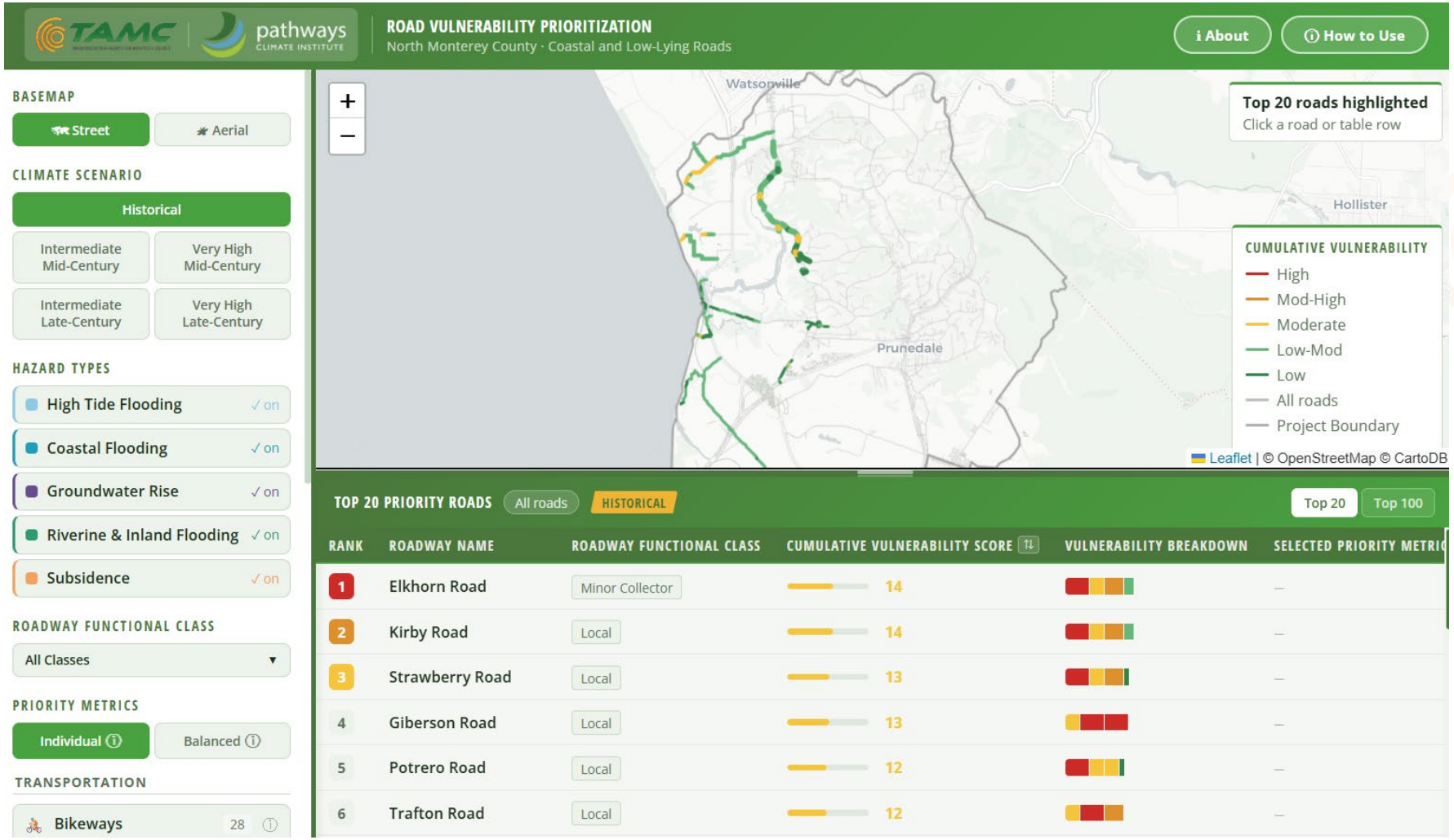
Proximity to disadvantaged communities
(SB 535 Disadvantaged Communities)

Trail or recreational access
(Access to trails)

- Access critical services or jobs
  (Critical services assets and community identified services)
  (Jobs information through community outreach - qualitative)

- Safe Routes to Schools
  (Priority identified areas)

Prioritization Viewer



Prioritization List

Table 6-2. Comparison of Vulnerable Roads Across **All** Prioritization Metrics

Rank	Transportation- and Community-related Metrics (Vulnerability Score / Number of Metrics Met)	Transportation-related Metrics (Vulnerability Score / Number of Metrics Met)	Community-related Metrics (Vulnerability Score / Number of Metrics Met)
1	**Elkhorn Road (14/8)**	**Elkhorn Road (14/4)**	**Castroville Boulevard (11/5)**
2	**Castroville Boulevard (11/8)**	Davis Road (11/4)	**Salinas Road (7/5)**
3	**Salinas Road (7/8)**	Blanco Road (10/4)	Matiasevich Lane (7/5)
4	San Juan Road (8/7)	San Juan Road (8/4)	Bishop Street (7/5)
5	Porter Drive (7/7)	San Miguel Canyon Road (6/4)	Preston Street (5/5)
6	Merritt Street (6/7)	**Castroville Boulevard (11/3)**	**Elkhorn Road (11/4)**
7	Davis Road (11/6)	Nashua Road (10/3)	Preston Road (8/4)
8	Blanco Road (10/6)	**Salinas Road (7/3)**	McFadden Road (8/4)
9	Hall Road (6/6)	Porter Drive (7/3)	Brooklyn Street (7/4)
10	Blackie Road (5/6)	Reservation Road (7/3)	Railroad Avenue (7/4)

Final Discussion

- How might this information be useful to your organization?
- Any questions or feedback on project results, findings or finalization?

Thank you!

Public Review: May 11-June 11, 2026

Final Draft: by June 30, 2026