

AIA
Communities
by Design

Petaluma, CA

Sustainable Design Assistance Team



50-year legacy

1967

Founded

230+

Communities

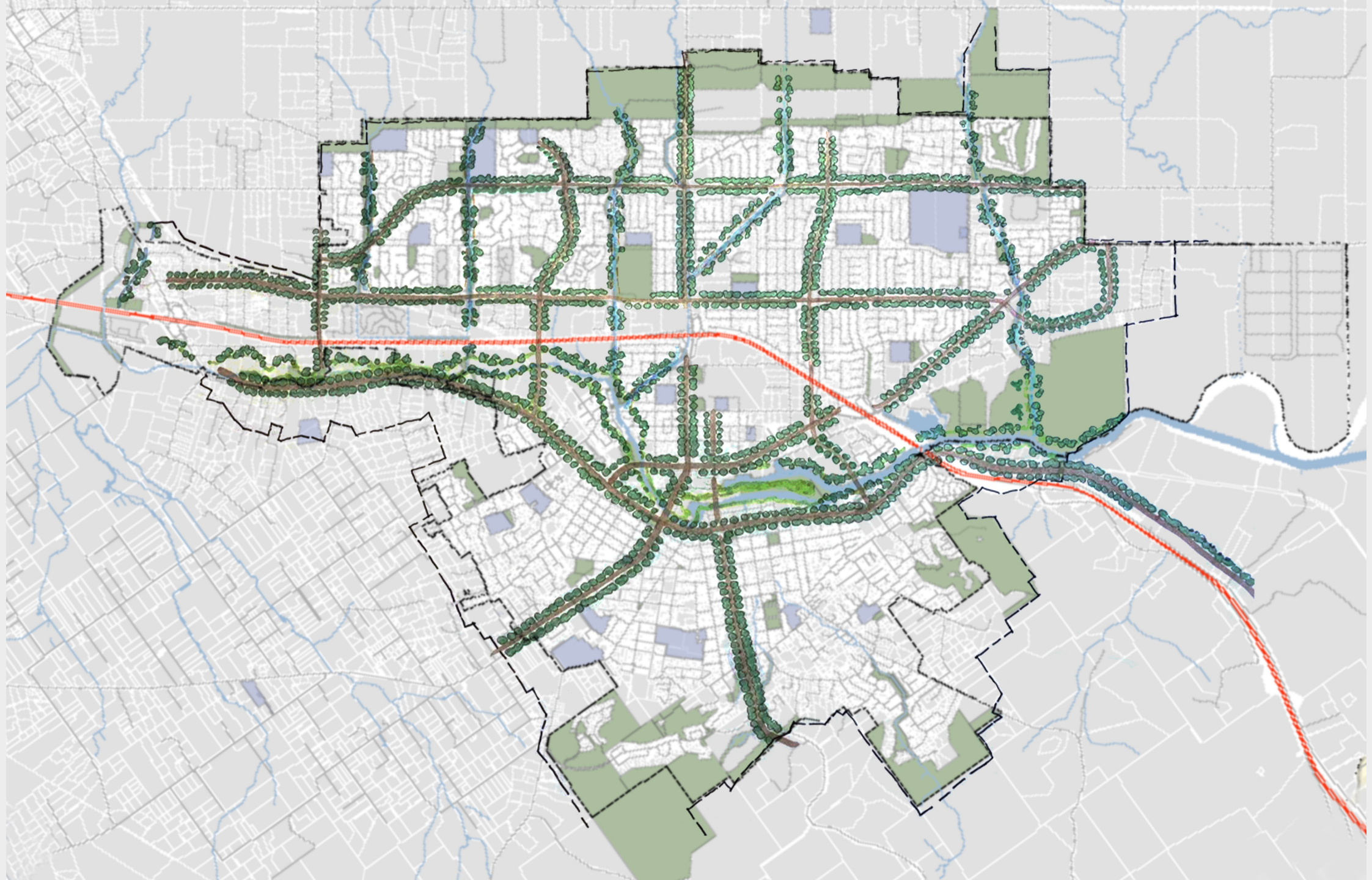
12+

Awards

What is a Design Assistance Team?

- 5-6 experts (supported by AIA staff) who create recommendations for communities
- Each team is:
 - Unique to the community
 - Multi-disciplinary
 - Committed to serving the community

Reimagining Mobility



Big ideas for reimagining mobility



**Remove
barriers**



**Create
connections**



**Build the
framework**

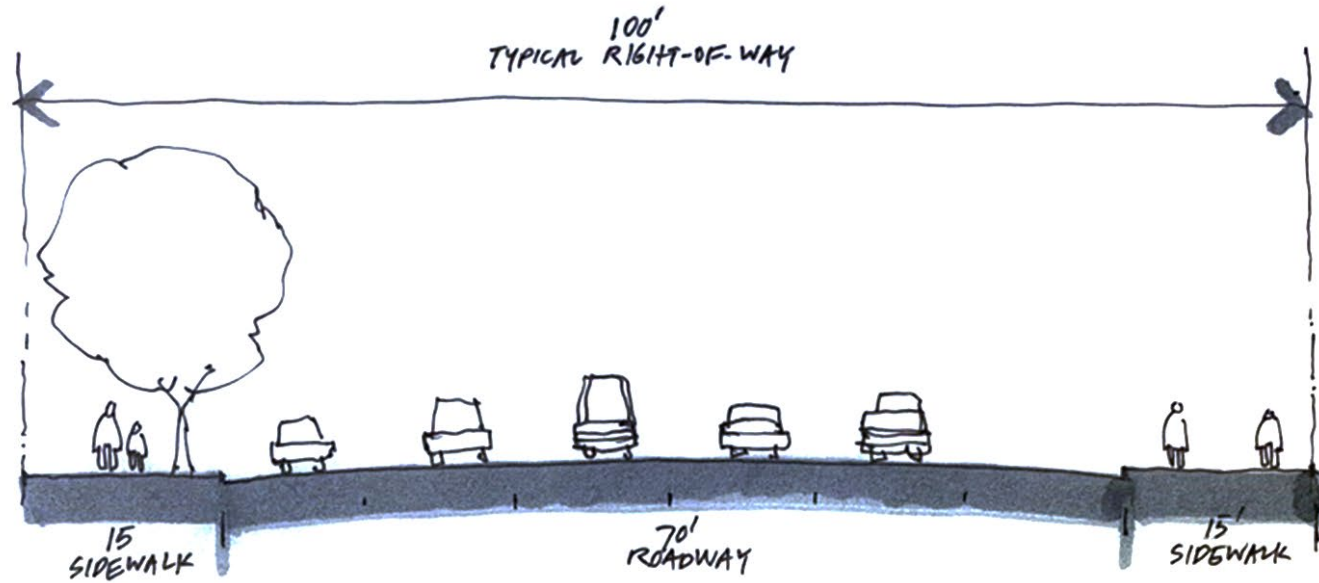
Turning big ideas into reality



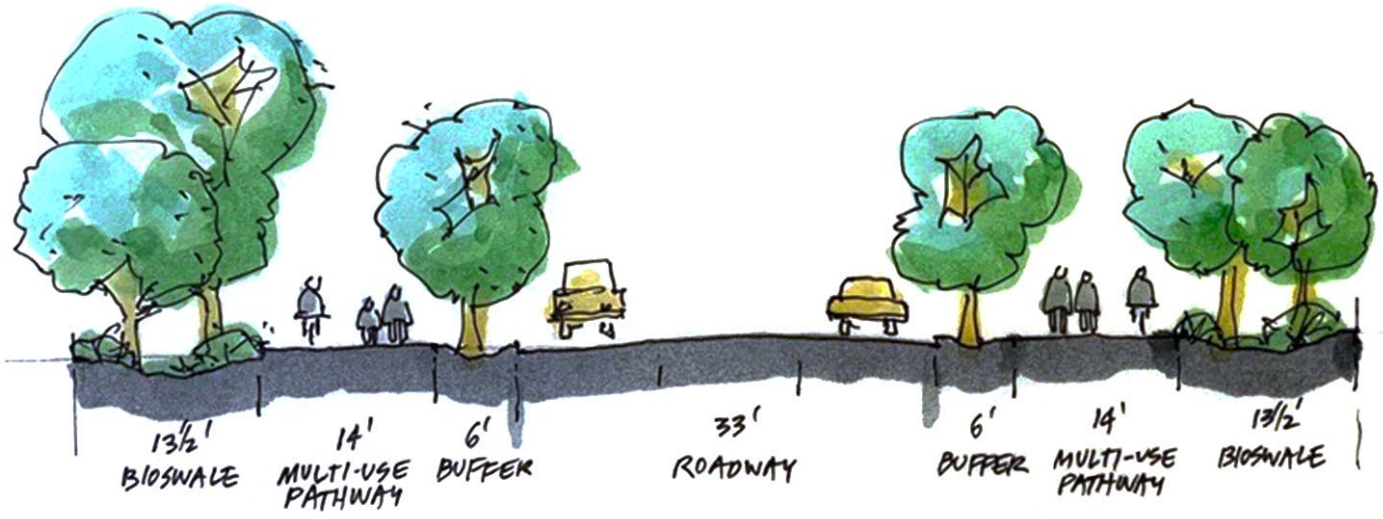
Remove barriers

- 1. Fix Washington Street**
- 2. Address the roads, rail, and river**
3. Make sidewalks and curb ramps accessible
4. Upgrade intersections and crossings





EXISTING



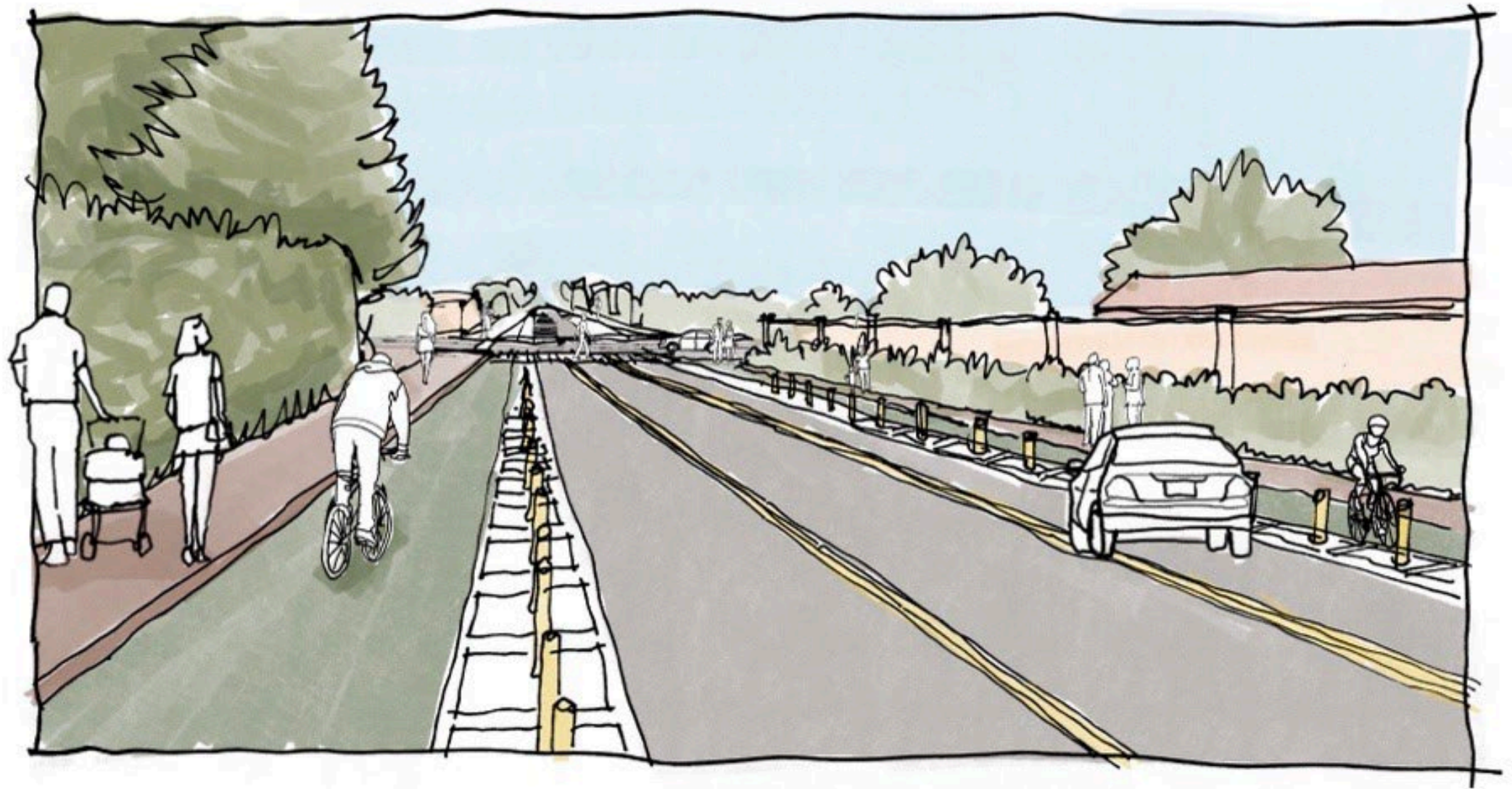
PROPOSED
SCALE: 1" = 100'

Turning big ideas into reality



Create connections

- 5. Reallocate space**
6. Build out paved trail network
7. Identify pedestrian focus areas
- 8. Improve transit reliability and frequency**



PETALUMA GENERAL PLAN UPDATE



PUBLIC TRANSIT

Bus Routes

- Petaluma Transit
- Sonoma County Transit
- Golden Gate Transit

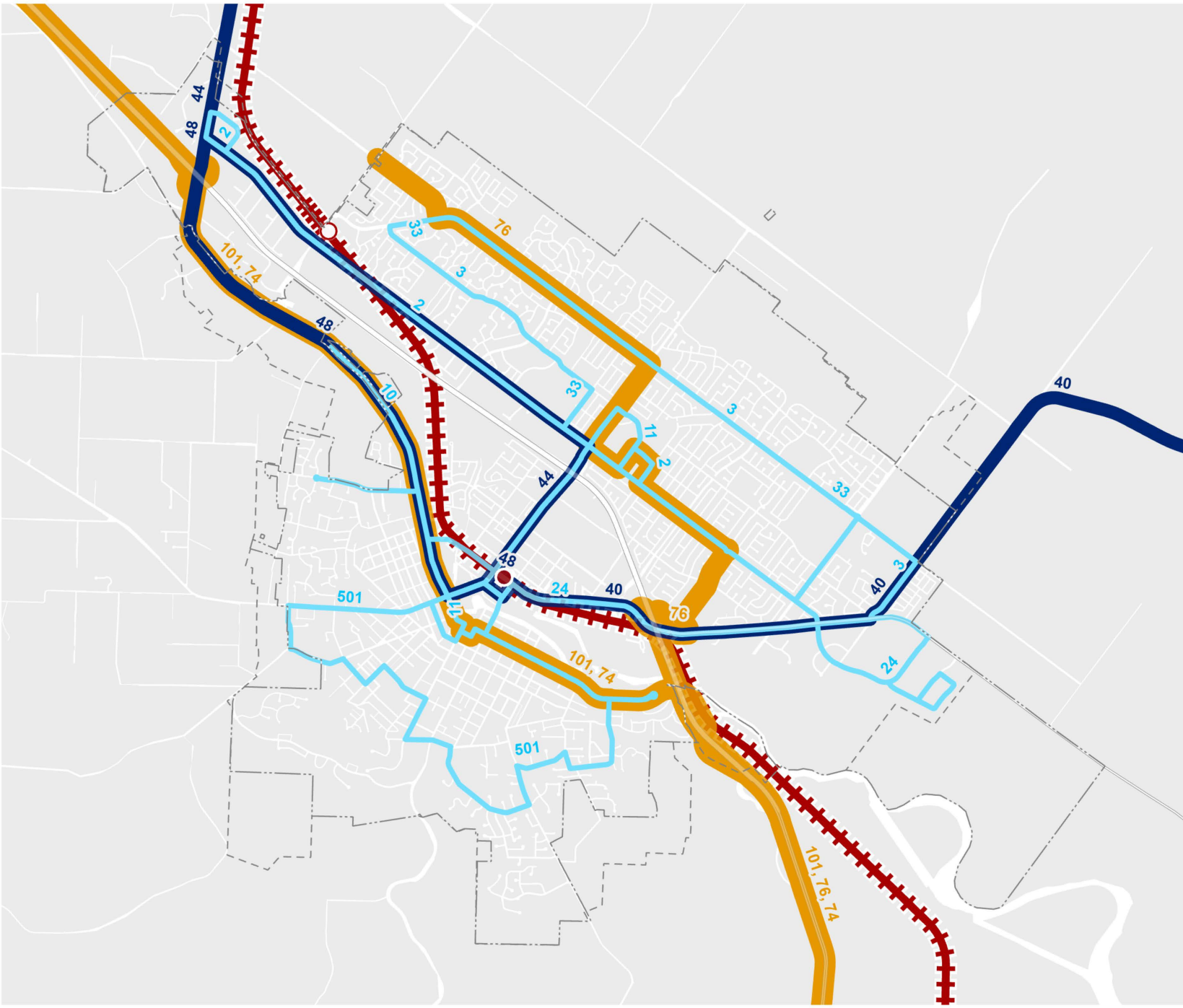
Passenger Rail

- Sonoma Marin Area Rail Transit
- Planned SMART Station
- Existing SMART Station

Boundaries

- City Limit
- Urban Growth Boundary

Source: Petaluma Transit; Sonoma County Transit; Golden Gate Transit; Sonoma-Marine Area Rail Transit



Turning big ideas into reality



**Build the
framework**

9. Update street design standards

10. Create a neighborhood traffic calming program
11. Create a downtown parking program
12. Update Safe Routes to School program
13. Explore micromobility pilot

Include sidepaths and protected bike lanes

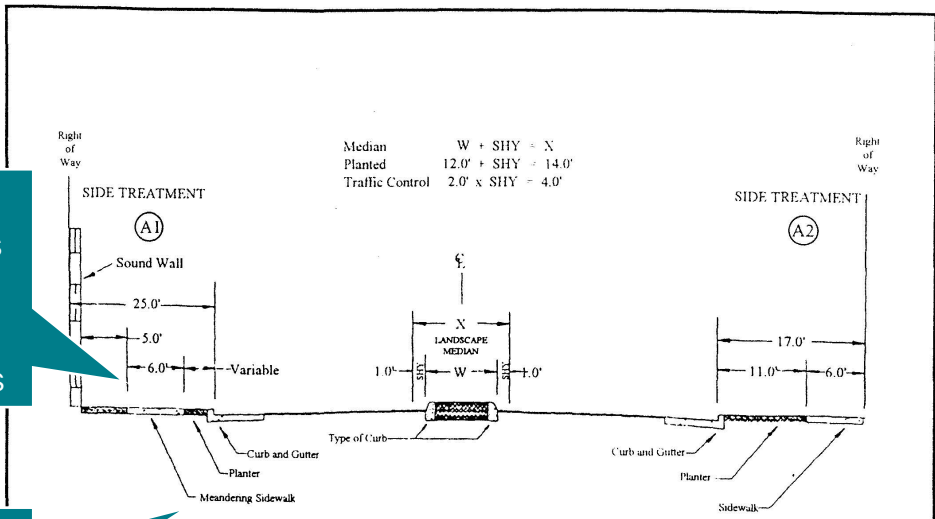
Don't meander sidewalks

Use 10' or 11' for travel lane widths

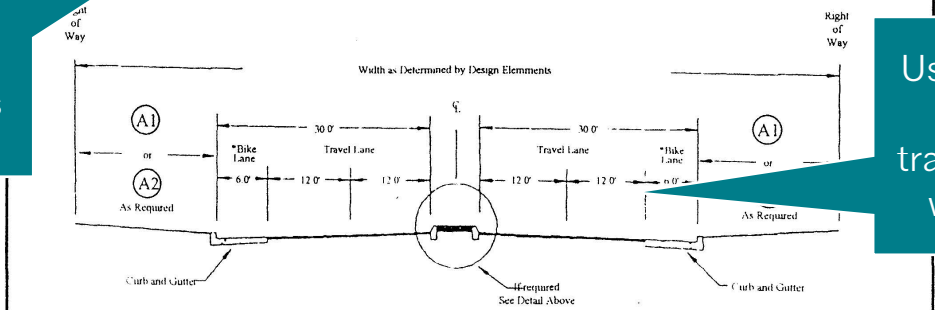
Always provide sidewalks on both sides

Include buffered bike lanes

Reduce design speeds



Arterial Street Detail

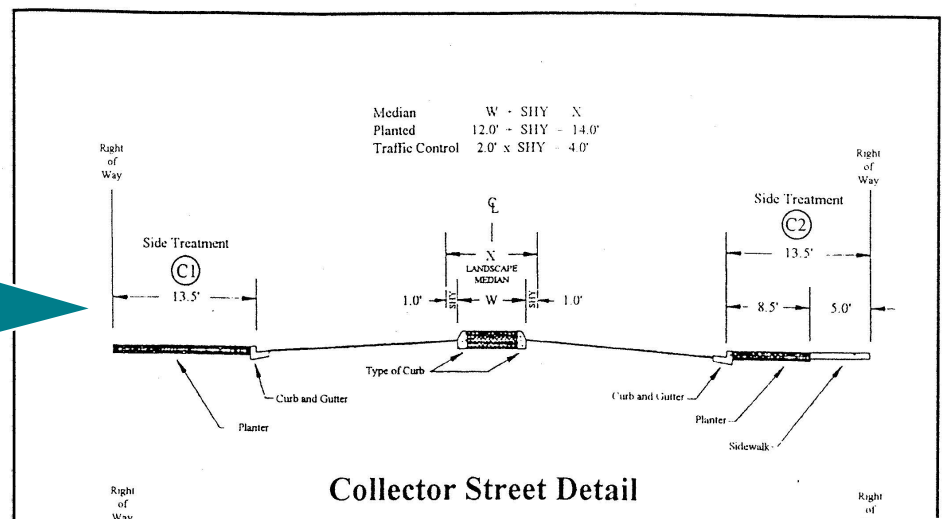


Arterial Street

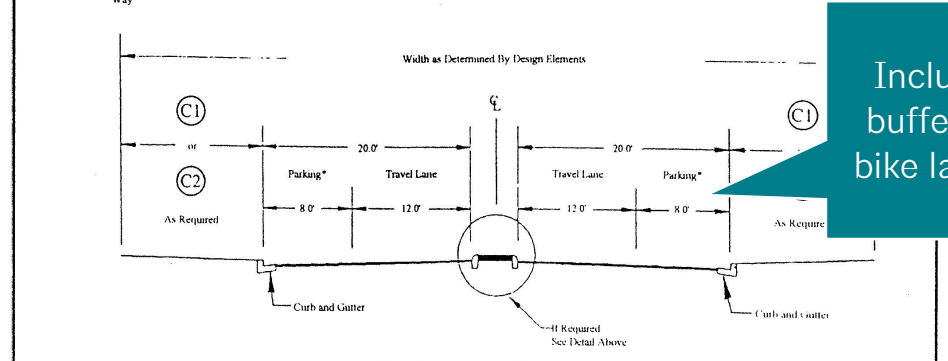
(N) Refer to Detail as shown above
 * Add 8'0" with Parking
 Structural Section Design T.1 shall be determined by the City Engineer for all Arterial Streets.

Street Design Elements

Operating Speed	Centerline Radius	Intersection Spacing	Traffic Volumes	Driveway Access	Sidewalks
45 MPH	1000'	350'	11 - 20,000	Limited	Yes



Collector Street Detail



Collector Street

(N) Refer to Detail as shown above
 * Add 6'0" with Parking
 Street Structural Section shall be Designed to meet T.1 - 6.0

Street Design Elements

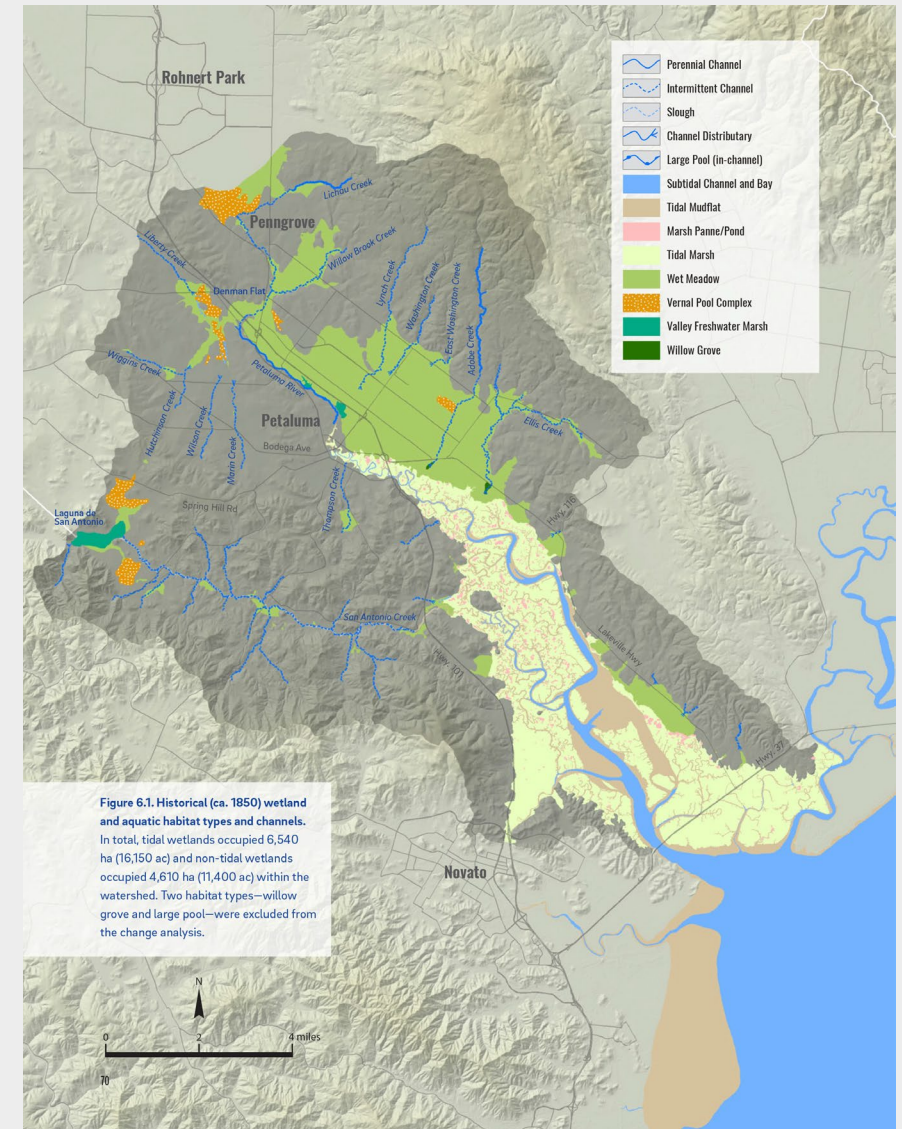
Operating Speed	Centerline Radius	Intersection Spacing	Traffic Volumes	Driveway Access	Sidewalks
35 MPH	500'	200'	2 - 6,000	Yes	Yes



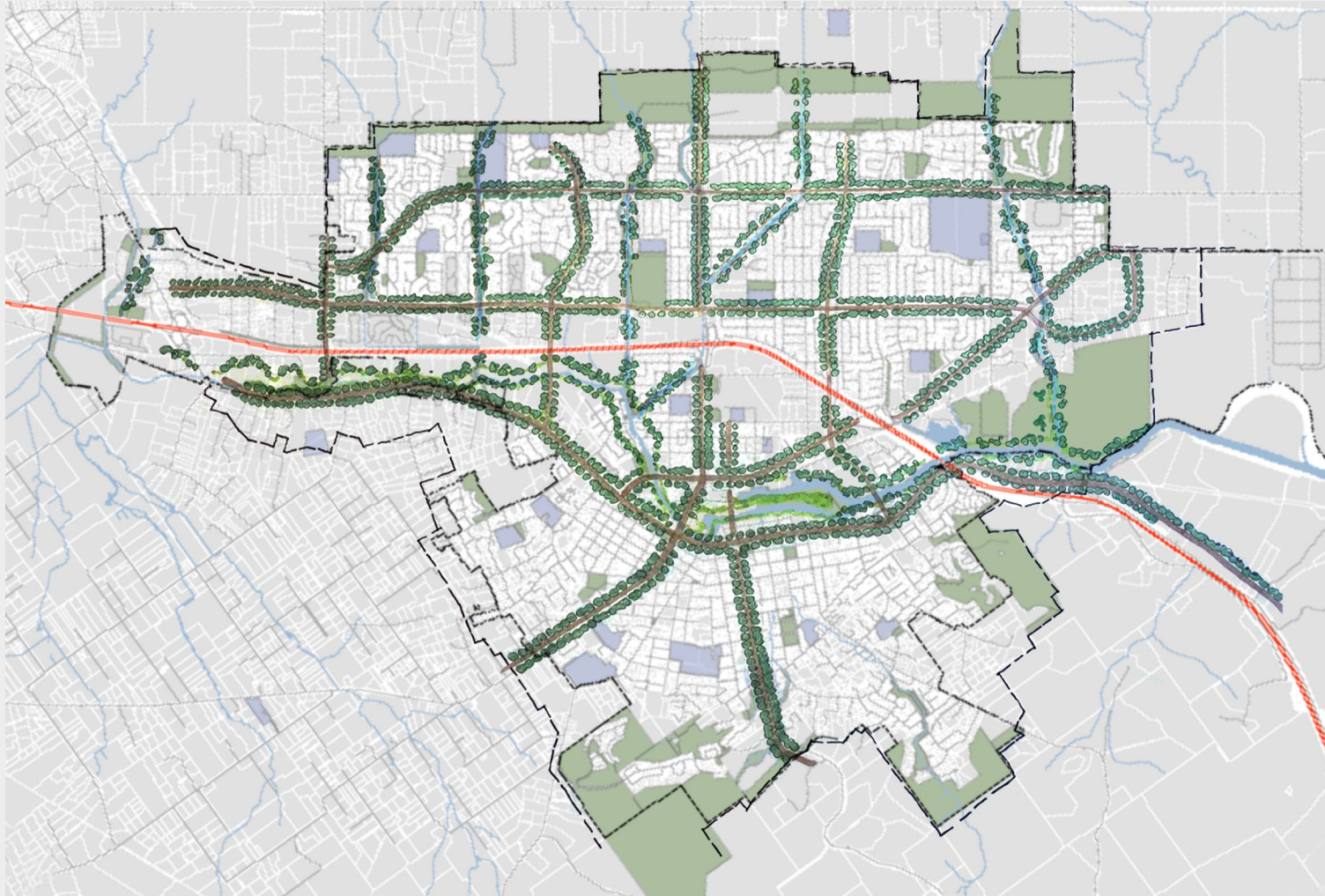
Creating connectivity

Respect

- Tidal wetlands once covered over 16,000 acres along the lower Petaluma river
- Non-tidal wetlands occupied 11,400 acres throughout the watershed
- In the late 19th century, large-scale dredging and construction of numerous cut-offs, completely altered the native ecosystem. Tidal wetlands have since decreased by 58%.
- Non-tidal wetlands have decreased by 84%, as a result of urban development.

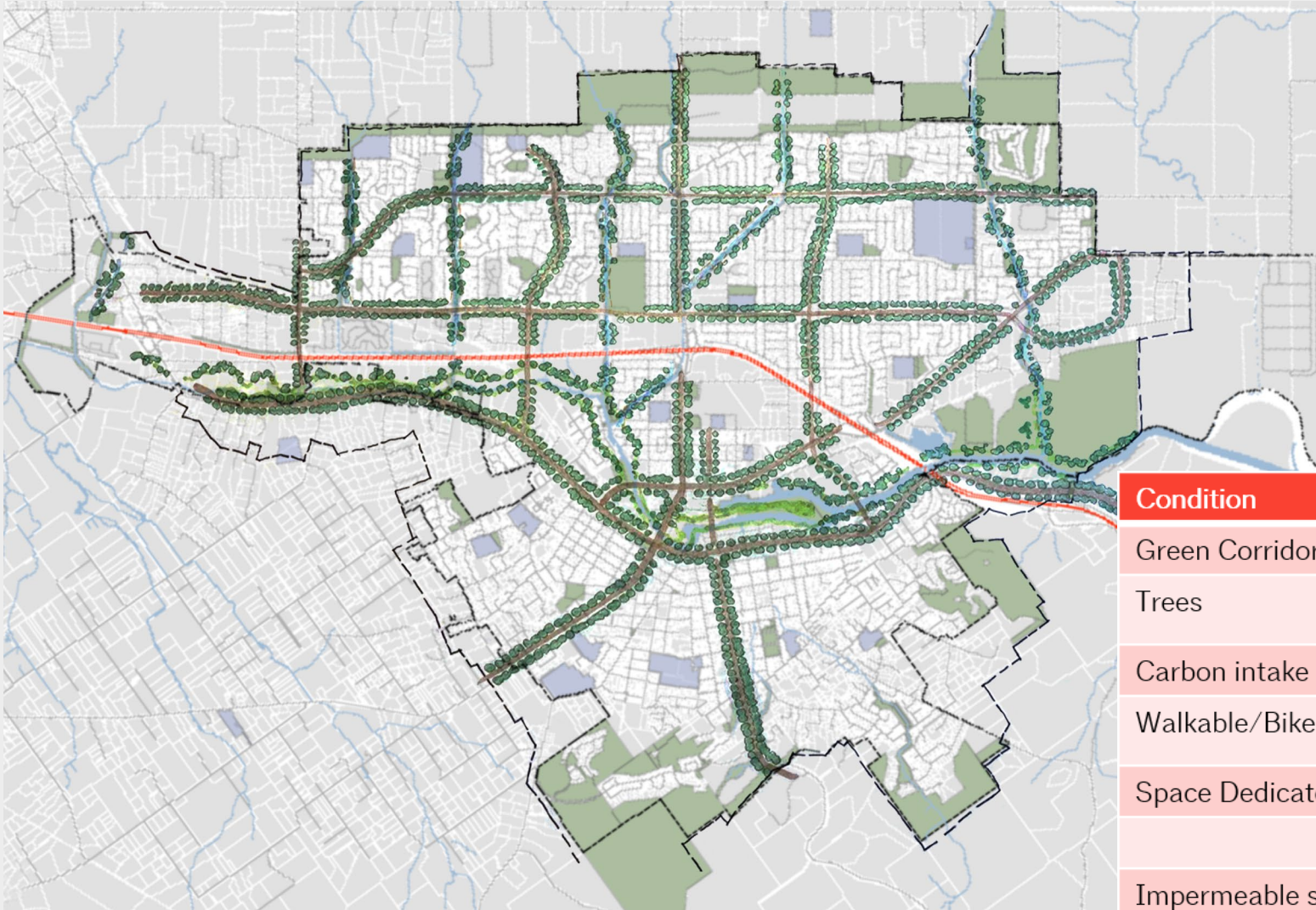


Green Connectors



Transforming grey corridors into healthy, walkable, bikeable, resource rich diverse corridors

Improve



Condition	Improvement
Green Corridors	29 miles total
Trees	12,000 approx new trees
Carbon intake (Trees)	264,000 lbs per year
Walkable/Bikeable Space	42 acres increase
Space Dedicated to Cars	45% decrease (94 acres)
	10% decrease citywide
Impermeable surface	21% decrease (52 acres)

Cool - clean

- Trees need room to grow
- Trees need loose, good soil, air and water
- Native trees are adapted to rain and drought



Protect

- The southeastern portion of the city is significantly vulnerable
- Historically this area was tidal wetlands
- Further south we still find complete salt marsh wetlands



Restore

- Multi-benefit wetland restoration strategies
- Green corridors creating a system of interconnected boulevards and parks
- Petaluma River becomes a centerpiece for the City
- Riverfront Park adds 20 acres of park land
- Plus 26 acres of restored wetlands proving flood protection
- Multigenerational recreation – open fields, cooling splash pads, nature-based play, boardwalk strolling, sunset-sunrise overlooks, educational recreation.

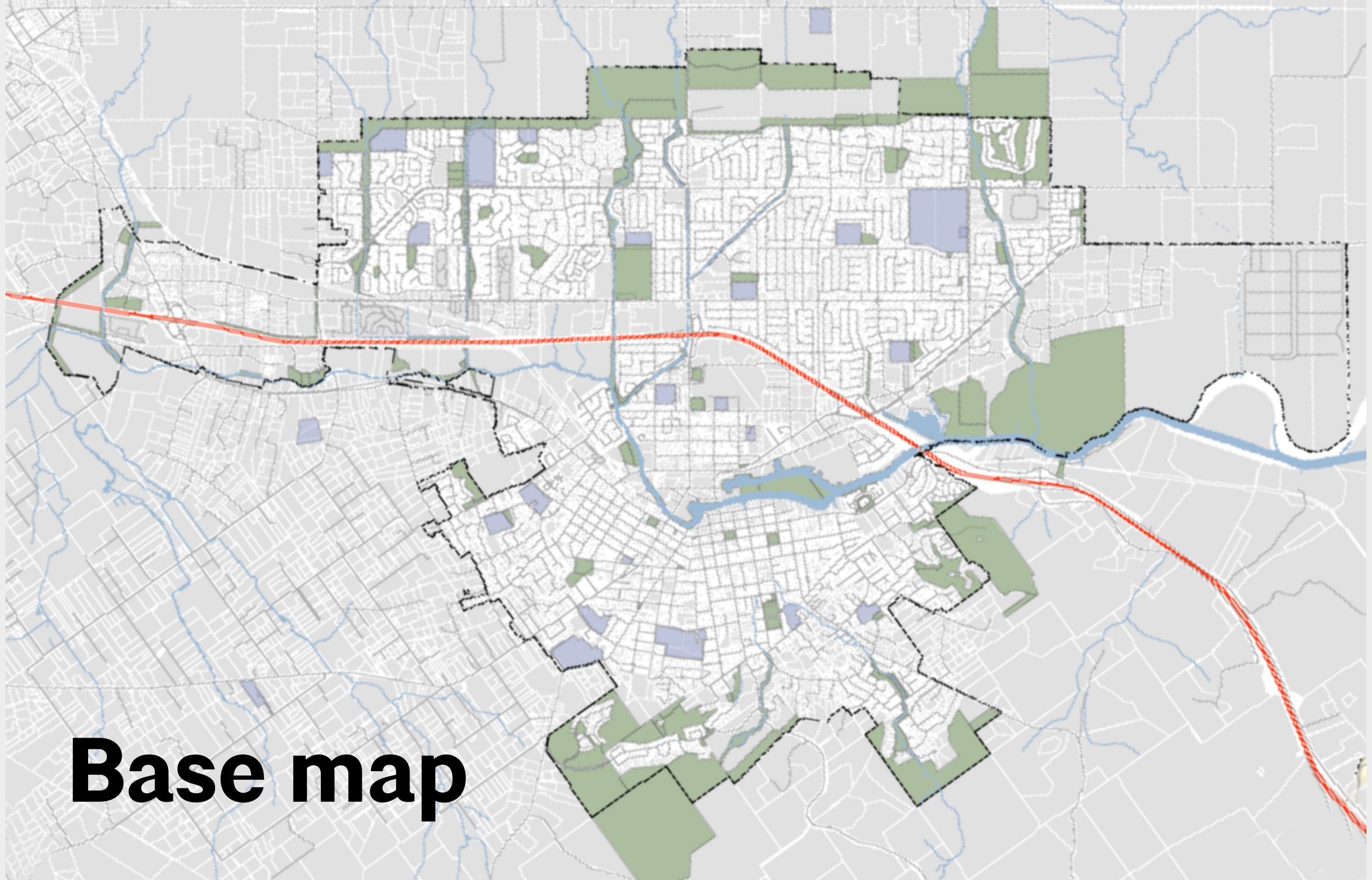


15-minute city

The 15-minute city

Principles

- Look for existing mixed-use areas
- Do not displace existing housing
- Focus on:
 - Health & human services first
 - Affordable housing
 - Employment opportunities



Base map

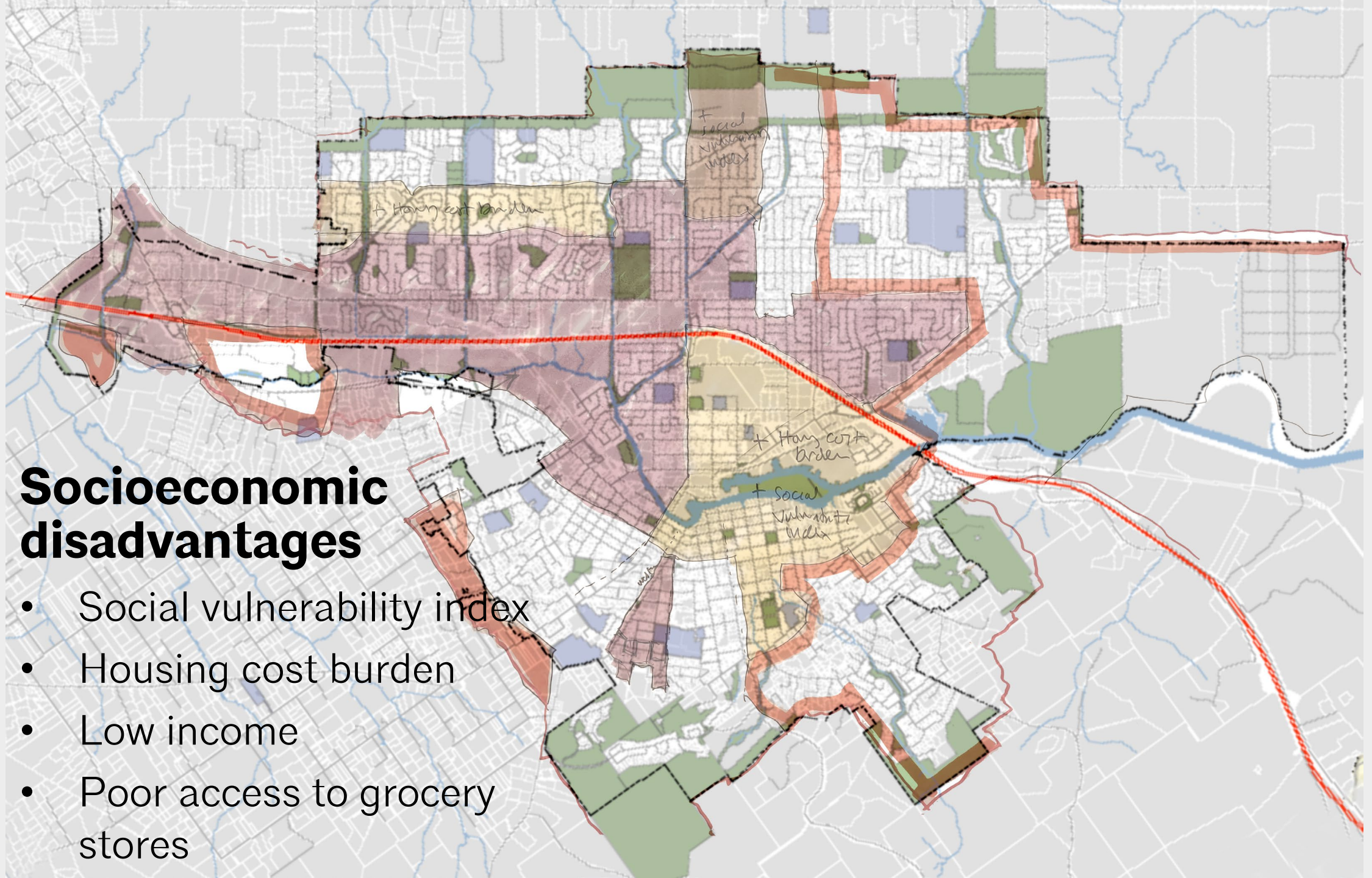
A map of an urban area showing environmental impacts. The map features a grid of streets, a river, and various colored overlays. A prominent red line runs horizontally across the middle of the map. Several areas are shaded in orange and yellow, indicating heat islands or pollution impacts. Green areas represent parks or green spaces, and blue areas represent water bodies. The map is overlaid with a grid of streets and a network of waterways.

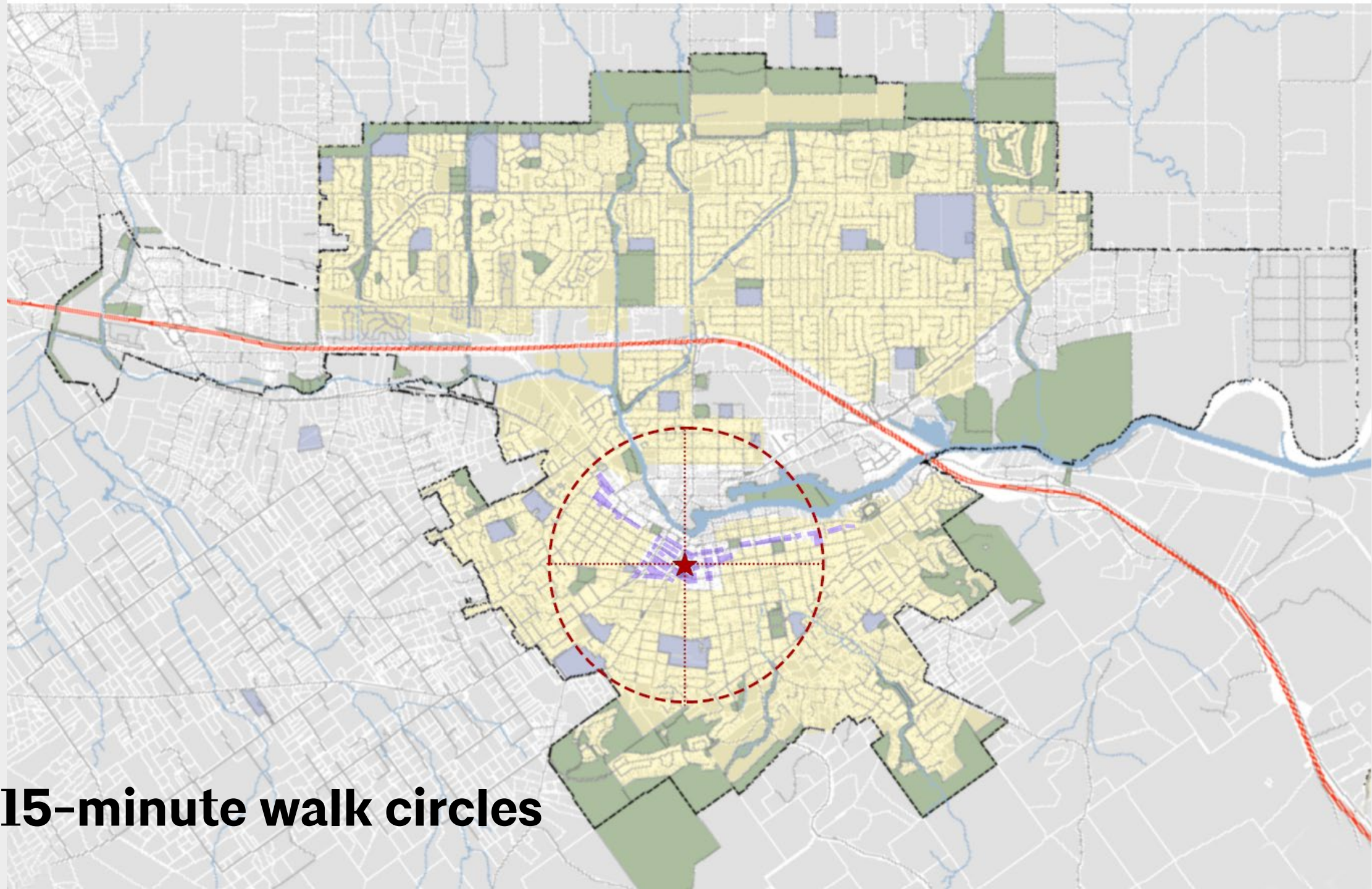
Environmental impacts

- Heat islands
- Pollution impacts

Socioeconomic disadvantages

- Social vulnerability index
- Housing cost burden
- Low income
- Poor access to grocery stores

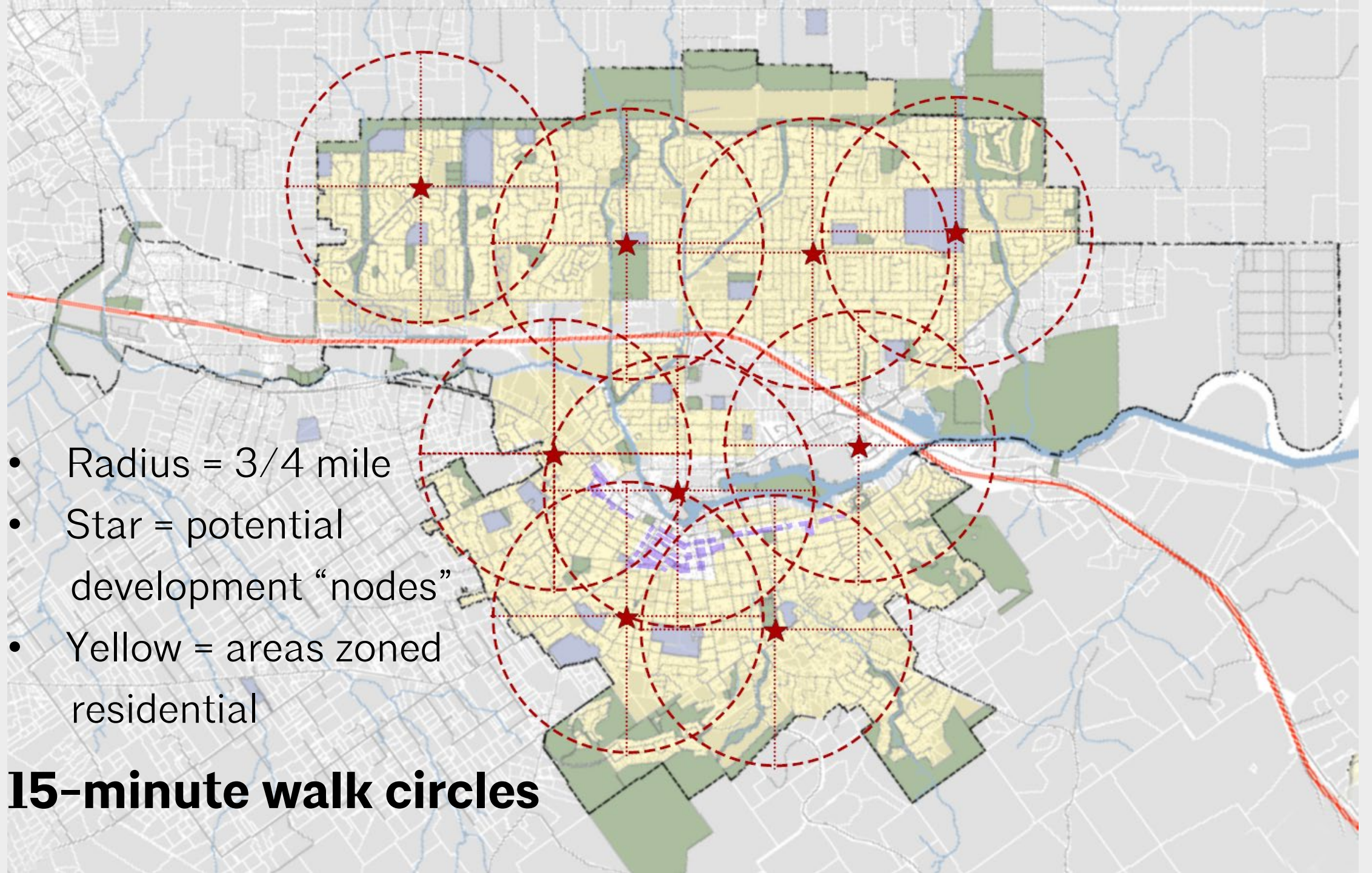




15-minute walk circles

- Radius = 3/4 mile
- Star = potential development “nodes”
- Yellow = areas zoned residential

15-minute walk circles



NODE 5
Leghorn Marketplace

NODE 4
Lucchesi Park

NODE 1
Washington & Lakeville

NODE 2B
Petaluma & Magnolia

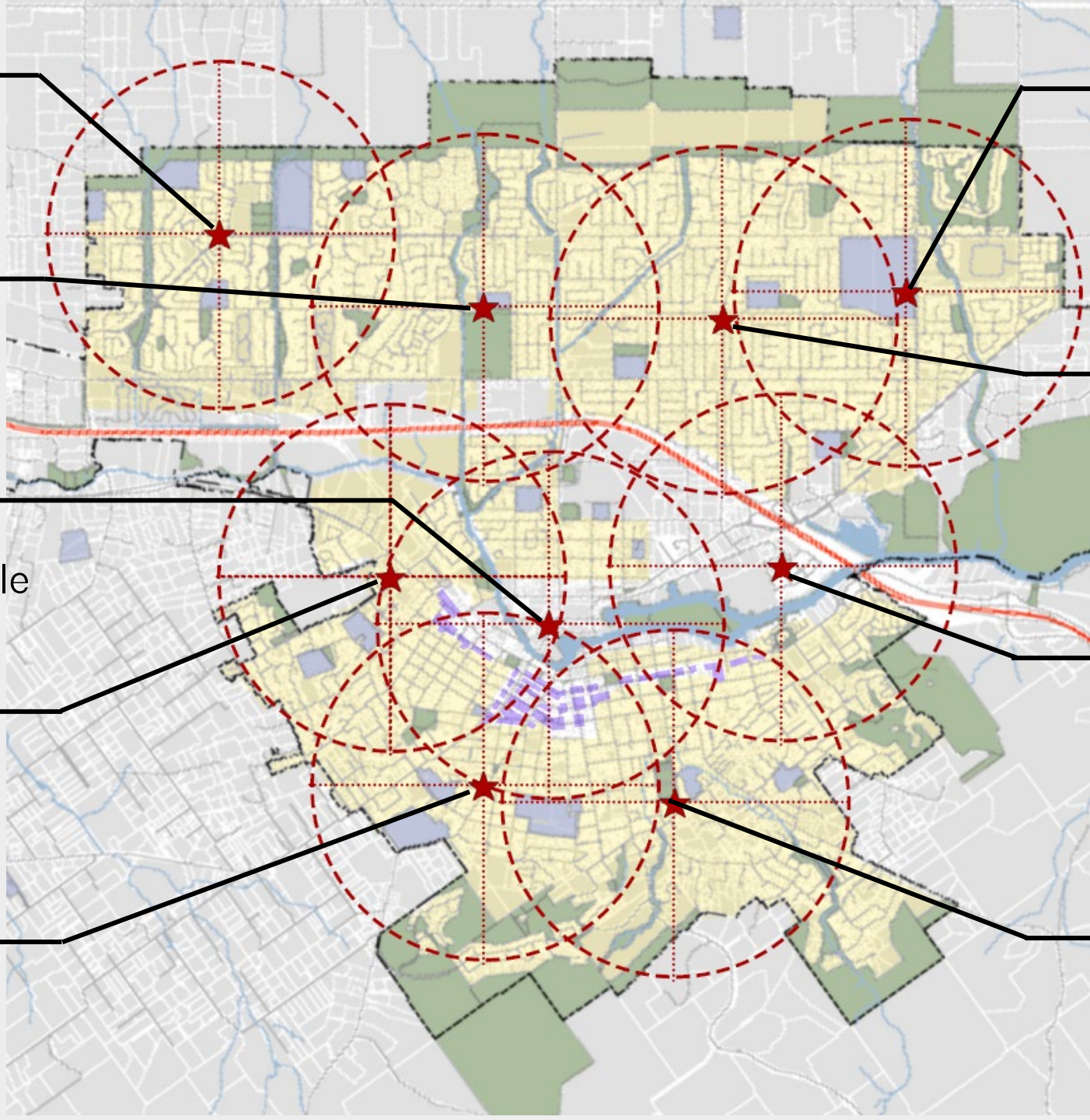
NODE 3A
Western & Baker

NODE 3C
Casa Grande High

NODE 2C
Caufield & Crinella

NODE 2A
Marriott

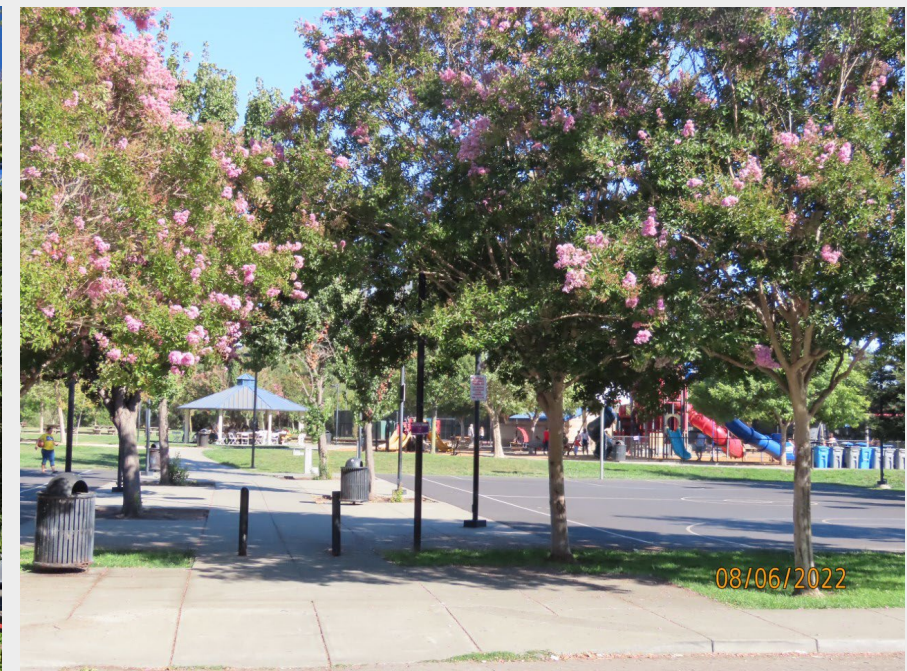
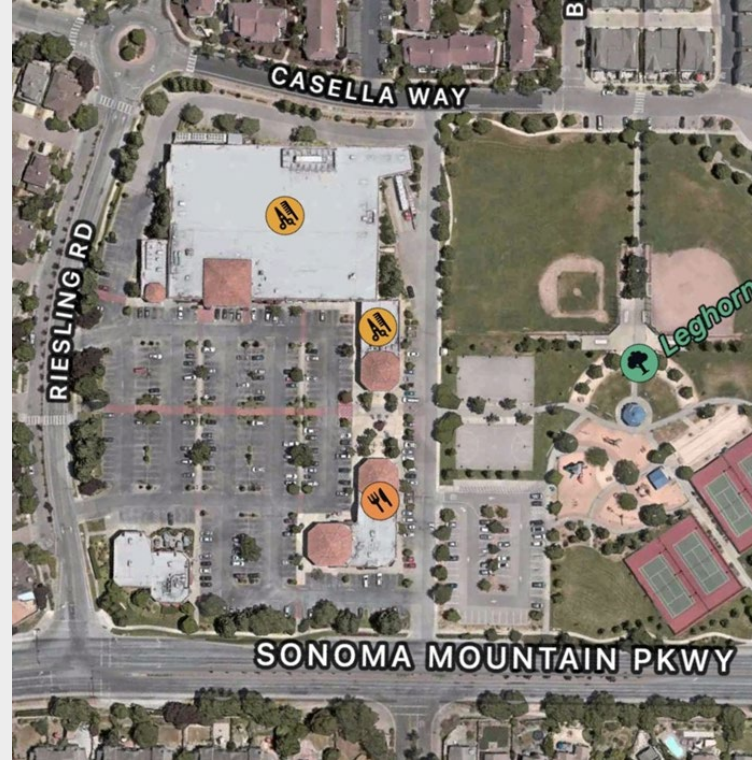
NODE 3B
McNear Park



NODE 5

Leghorn Marketplace

- This mixed use neighborhood center already exists!
- Grocery store here
- Some vacancy, could be more visible, more pedestrian-friendly access
- Adjacent to playground



NODE 4

Lucchesi Park

- Not a lot of appropriate development sites in this neighborhood
- Expand, improve Boys & Girls Club, add other non-profit tenants
- Improved facilities for ball fields, add street-facing concessions
- Library on N. McDowell



NODE 4

Lucchesi Park

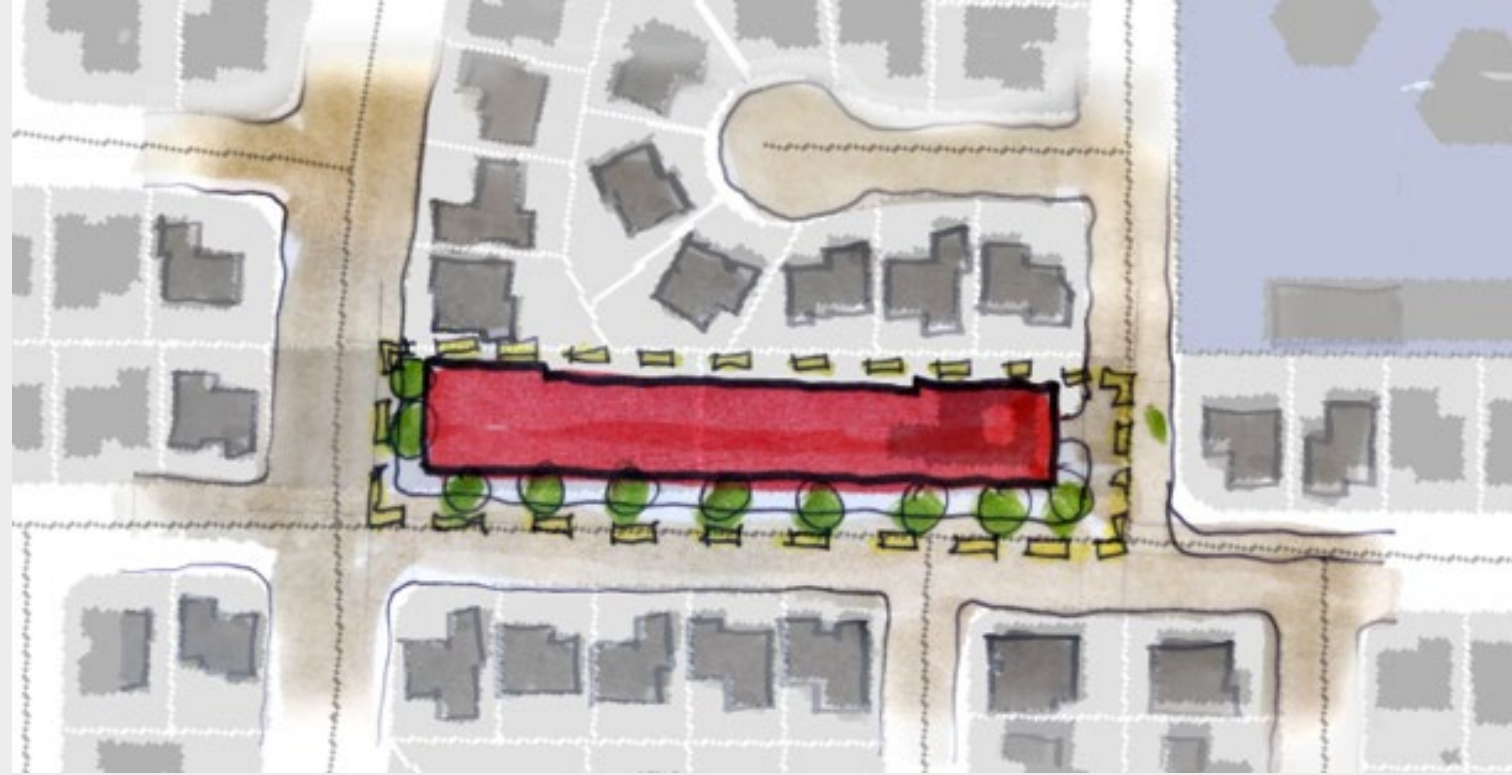
- Not a lot of appropriate development sites in this neighborhood
- Expand, improve Boys & Girls Club, add other non-profit tenants
- Improved facilities for ball fields, add street-facing concessions
- Library on N. McDowell



NODE 3C

Caufield & Crinella

- Not a lot of appropriate development sites in this neighborhood
- Childcare, social services, health center, other office uses possible
- Possible location for small location



NODE 3C

Casa Grande High School

- Large underutilized lot
- Critical need for a grocery store here
- Smaller retail buildings, parking not visible from street
- Second story offices on Casa Grande (tax prep, law, ESL, etc.)
- Major opportunity to improve streetscape



NODE 3C

Casa Grande High School

- Large underutilized lot
- Critical need for a grocery store here
- Smaller retail buildings, parking not visible from street
- Second story offices on Casa Grande (tax prep, law, ESL, etc.)
- Major opportunity to improve streetscape



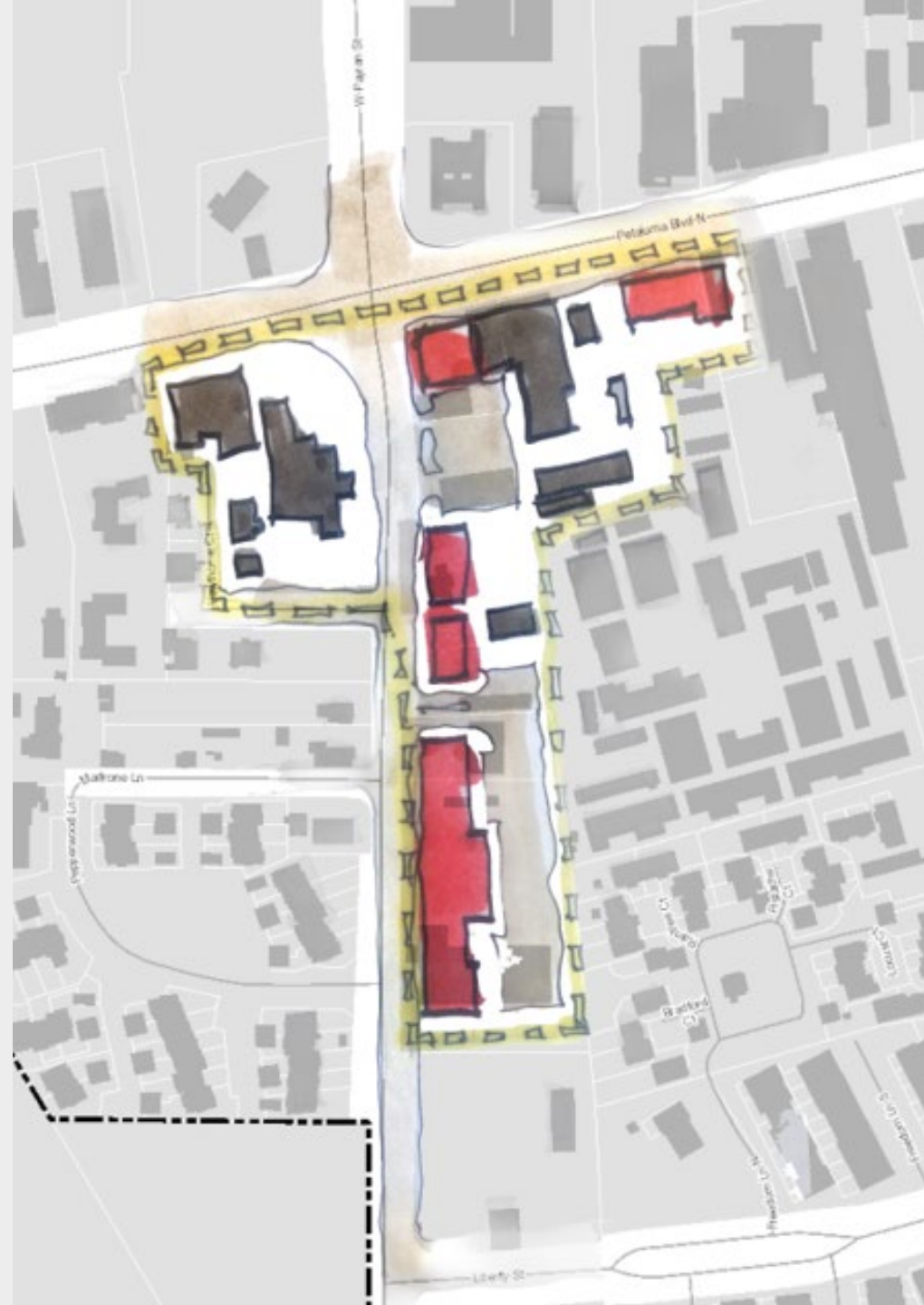


Casa Grande

NODE 2B

Petaluma & Magnolia

- Restaurants, grocery store already here
- Many underutilized industrial sites
- Possible neighborhood health center
- Interim planning overlay district to up-zone parcels
- Maintain connection to agricultural heritage



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Petaluma & Magnolia

- Restaurants, grocery store already here
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NODE 3A

Western & Baker

- Restaurants and small market already here
- Industry here
- Possible partnership with major employer could enlarge facility, improve street fronts
- Possible incubator office/light industrial



NODE 3A

Western & Baker

- Restaurants and small market already here
- Industry here
- Possible partnership with major employer could enlarge facility, improve street fronts
- Possible incubator office/light industrial





Western & Baker

NODE 3B

McNear Park

- Well-served neighborhood, no easy development sited
- Enlarge, improve Cavanaugh Rec Center
- New bleachers for ballfield with street-facing concessions stands
- Food truck locations, pop-up markets



NODE 3B

McNear Park

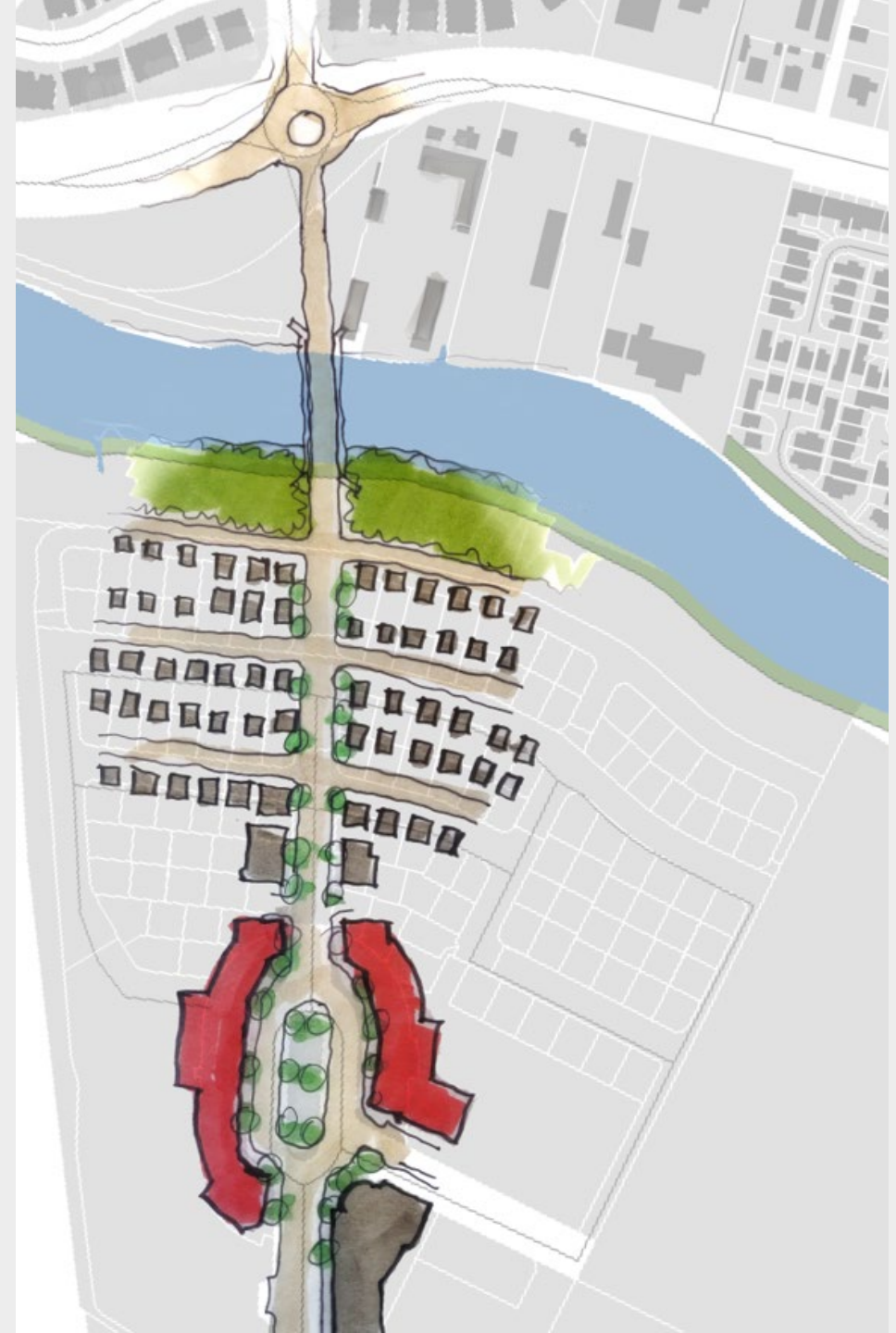
- Well-served neighborhood, no easy development sited
- Enlarge, improve Cavanaugh Rec Center
- New bleachers for ballfield with street-facing concessions stands
- Food truck locations, pop-up markets



NODE 2A

Riverfront Marriott

- Make the traffic circle a lively urban node
- Restaurant & retail
- Legal offices, job training, etc.
- 50 units affordable housing
- Bridge is CRITICAL for neighborhood across the river





08/06/2022

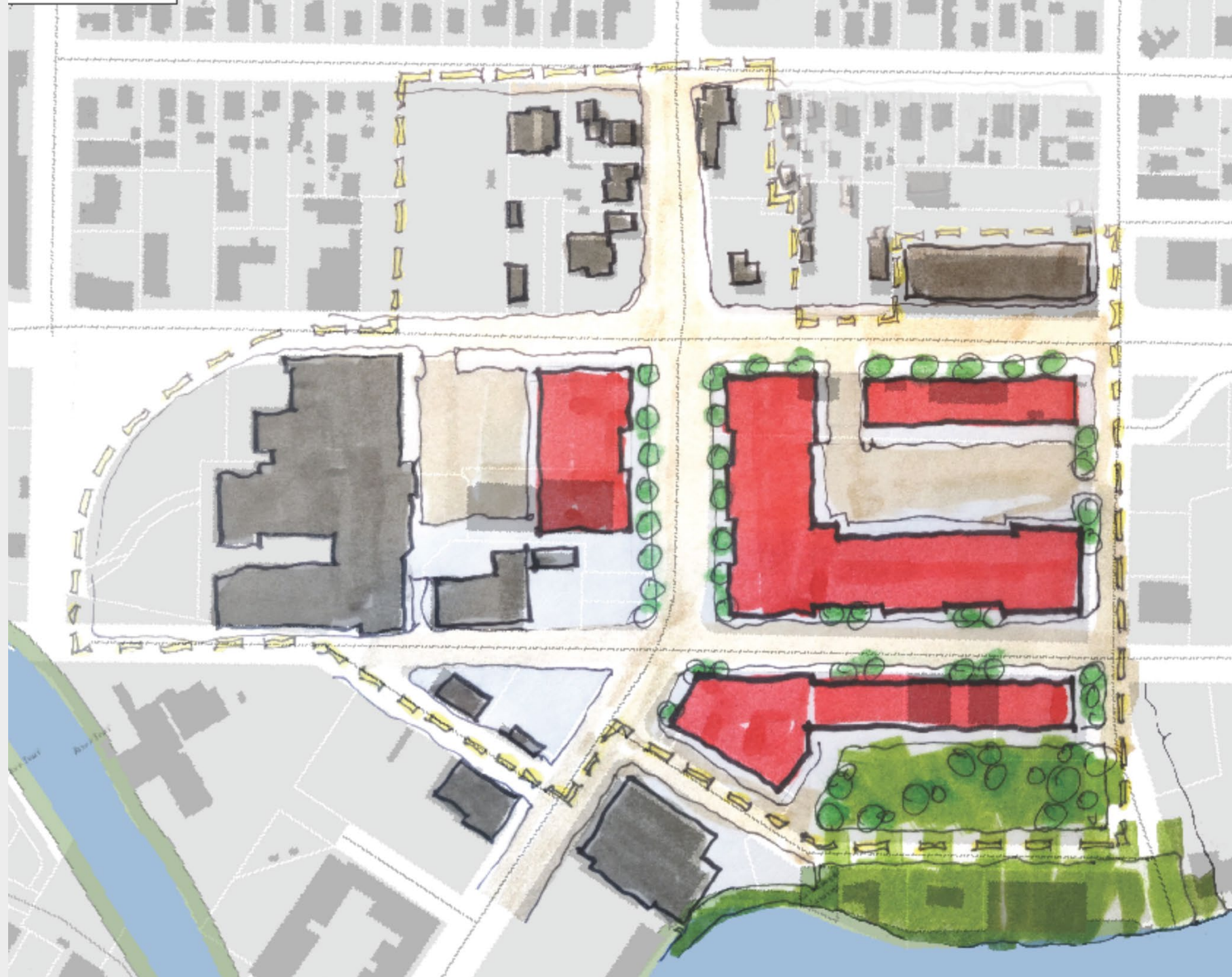


Marriott Circle

NODE 1

Washington &
Lakeville

- 200 units affordable housing
- Restaurant & retail
- Commercial office
- Interim planning overlay district
- Engage the river





Copeland St

Copeland St

WELLER St

GRAND CENTRAL
PETALUMA SHOP
CONVEY
CHOCOLATE
EMPORIUM
PASTRIES
RECIPIES
ARTISANAL GIFTS
STOP VIEW
TRAFFIC LIGHTS



Washington & Lakewood

Decarbonizing Petaluma

Adopted Operating & Capital Improvement Budget (FY 2021-22)

“COVID Recovery: Assisting our residents and businesses to get on their feet, **recover from the pandemic**, and ensure Petaluma remains strong and healthy, while maintaining and improving upon business innovations that we have realized during the pandemic.

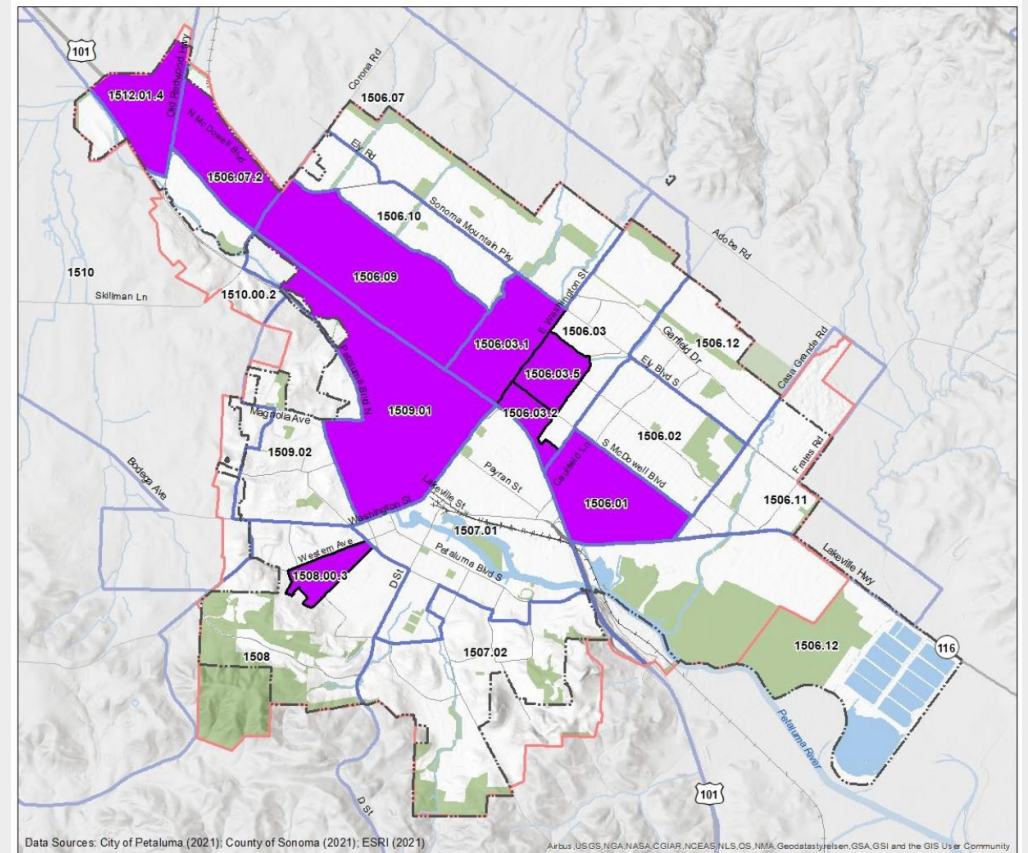
Measure U Implementation: Implementing the City’s **workforce stabilization** strategy, **infrastructure investments** and priority initiatives via our Measure U funding to build the City organization **back up after decades of disinvestment** and position ourselves to achieve the community’s priorities.

Climate Action: From the City Council’s 2019 action on a **climate emergency** resolution to the Climate Action Commission’s recommendation and subsequent Council adoption of the **Climate Emergency Framework**, our City’s goal of **carbon neutrality by 2030** is shifting how we think about all City business.”

Recommended disadvantaged communities

“It is ethically imperative that the climate crisis must be solved while **simultaneously addressing the crisis of inequity** in the community which threatens successful climate action and collective empowerments.”

Petaluma’s Health and Environmental Justice Analysis (October 2021) offers a thoughtful and detailed description of Petaluma’s Disadvantaged Communities, as required in CA SB-1000.



Recommended Disadvantaged Communities

Environmental Justice analysis

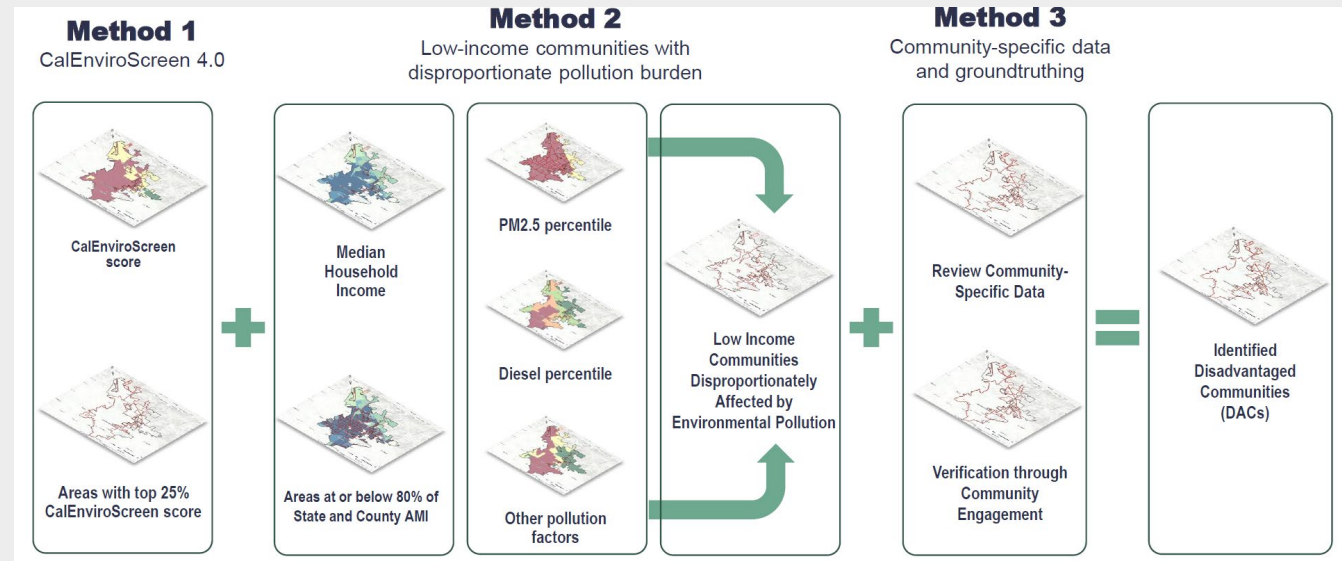
Screening analysis performed based on three sequential methods. In compliance with CA SB-1000, the City of Petaluma's EJ strategy should address unique and compound risks associated with pollution exposure, air quality, access to public services and food, safe and sanitary homes and physical activity.

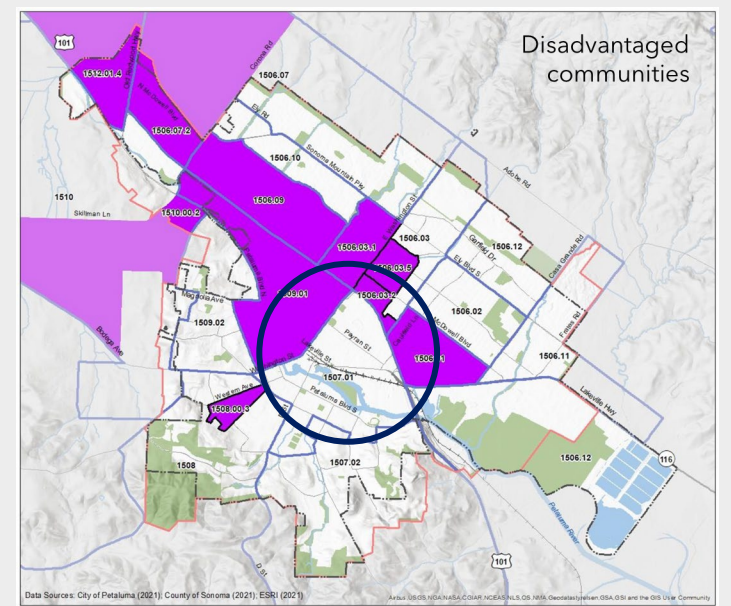
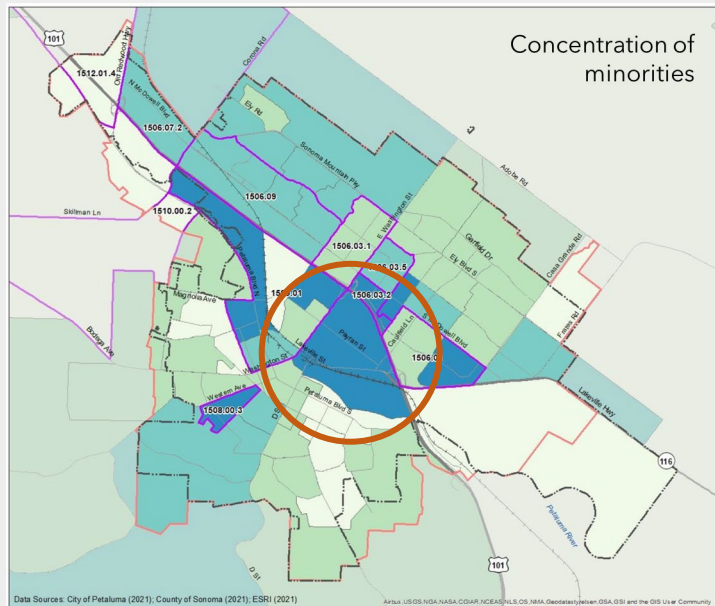
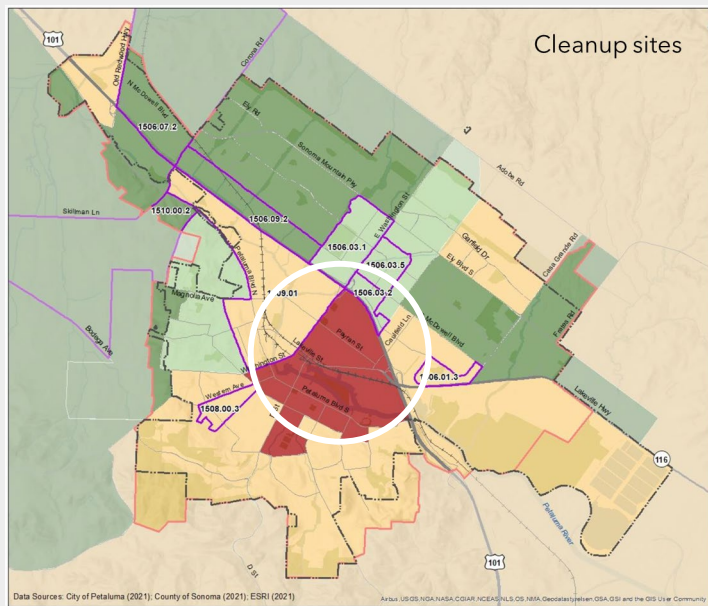
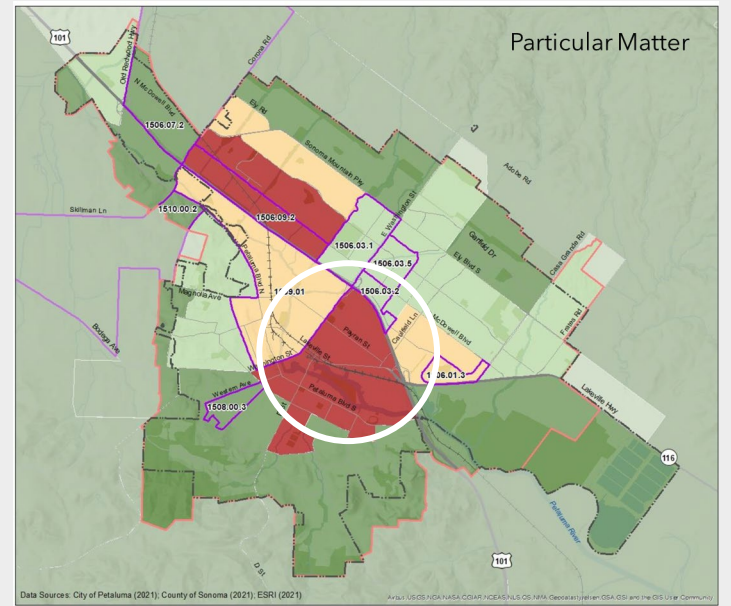
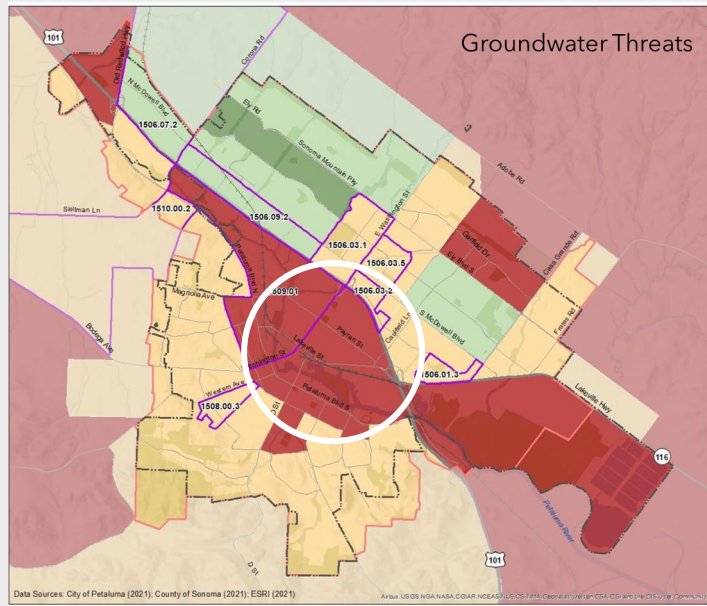
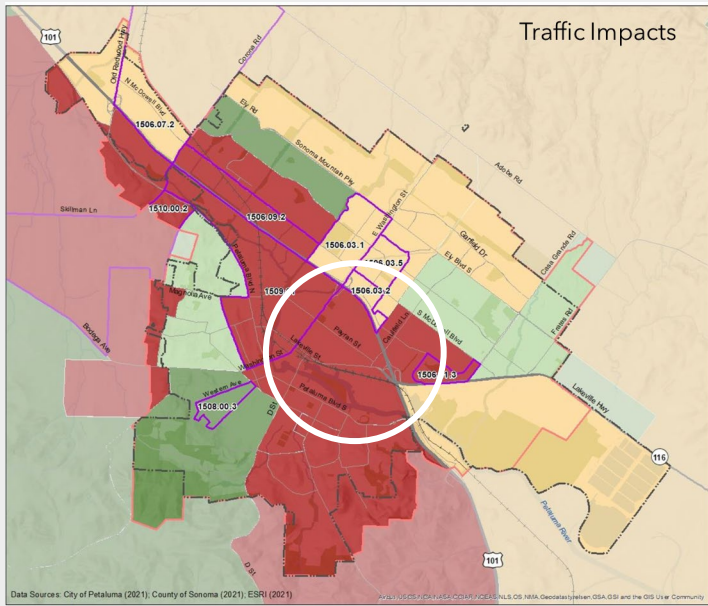
Opportunities in three key areas

- US Census undercounting has been acknowledged to be 5% for the Latino population.
- High-pollution burden and traffic impacts may disproportionately affecting undercounted population groups.
- Method 3A could incorporate the compounded effects of Covid, including long-COVID, long-term care and support.

Recommendations

- Consider income inequality as a function of income distribution's standard deviation inside each US Census Block Groups, also in contrast with the county's or the state's standard deviation.
- Consider the US Census 5% undercounting of Latino population both in EJ analysis and in determining minimum participation requirements in civic engagement.





Greenhouse Gas Inventory

The City of Petaluma total 2018 GHG emissions were estimated to be **472,422 MTCO₂e**.

On-road **transportation** accounted for 314,493 MTCO₂e, or **67%** of total emissions.

Residential energy accounted for 60,409 MTCO₂e, or **13%** of total emissions.

Community Sector	Subsector	Subsector MTCO ₂ e	Sector MTCO ₂ e	Percent of Total
Transportation	On-Road Transportation	314,493	314,493	67%
Energy	Residential	60,409	114,475	24%
	Nonresidential	54,065		
Solid Waste	Residential	12,669	33,137	7%
	Commercial	20,468		
Transportation	Off-Road Transportation	9,727	9,727	2%
Water and Wastewater	Water Use	73	590	0.1%
	Wastewater Treatment	517		
Total		472,422		100%

Source: RCPA 2018 Sonoma County Greenhouse Gas Inventory and Raimi + Associates.

Greenhouse Gas Inventory

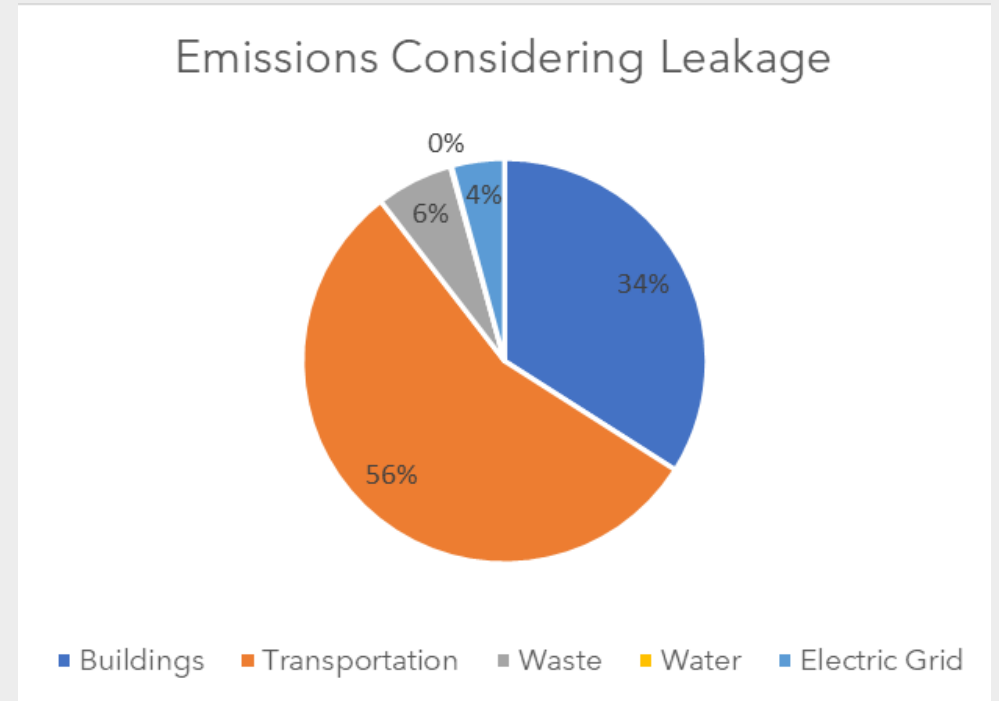
Petaluma's GHG Inventory **consolidates energy use** inside buildings - including electricity and natural gas - as a single Community Sector.

Accounting for electricity relies **supplier-based carbon emissions factor**, making it susceptible to opt-in and opt-out, as well as direct access and PPAs in the commercial subsector.

Accounting methods do not include **methane leakage** in production and distribution of natural gas.

Recommendations

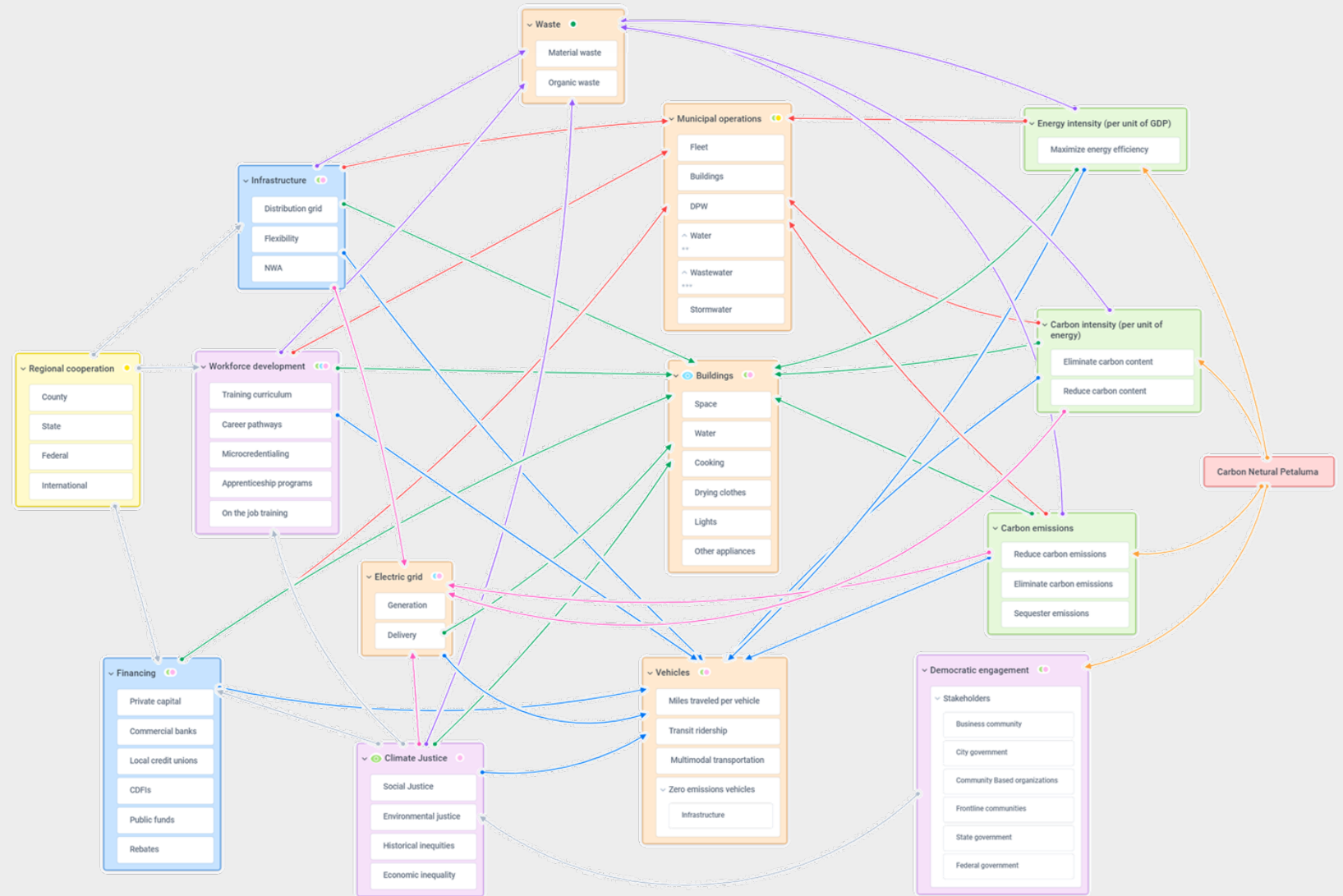
- Consider separation of Scope 1 and Scope 2 emissions in both residential and commercial buildings.
- Consider methane leakage accounting when calculating emissions from energy use inside buildings.



*Leakage as a percentage of emissions has been estimated to be over 50% of total emissions.

Mitigation and sequestration

It is all interconnected



Mitigation and sequestration

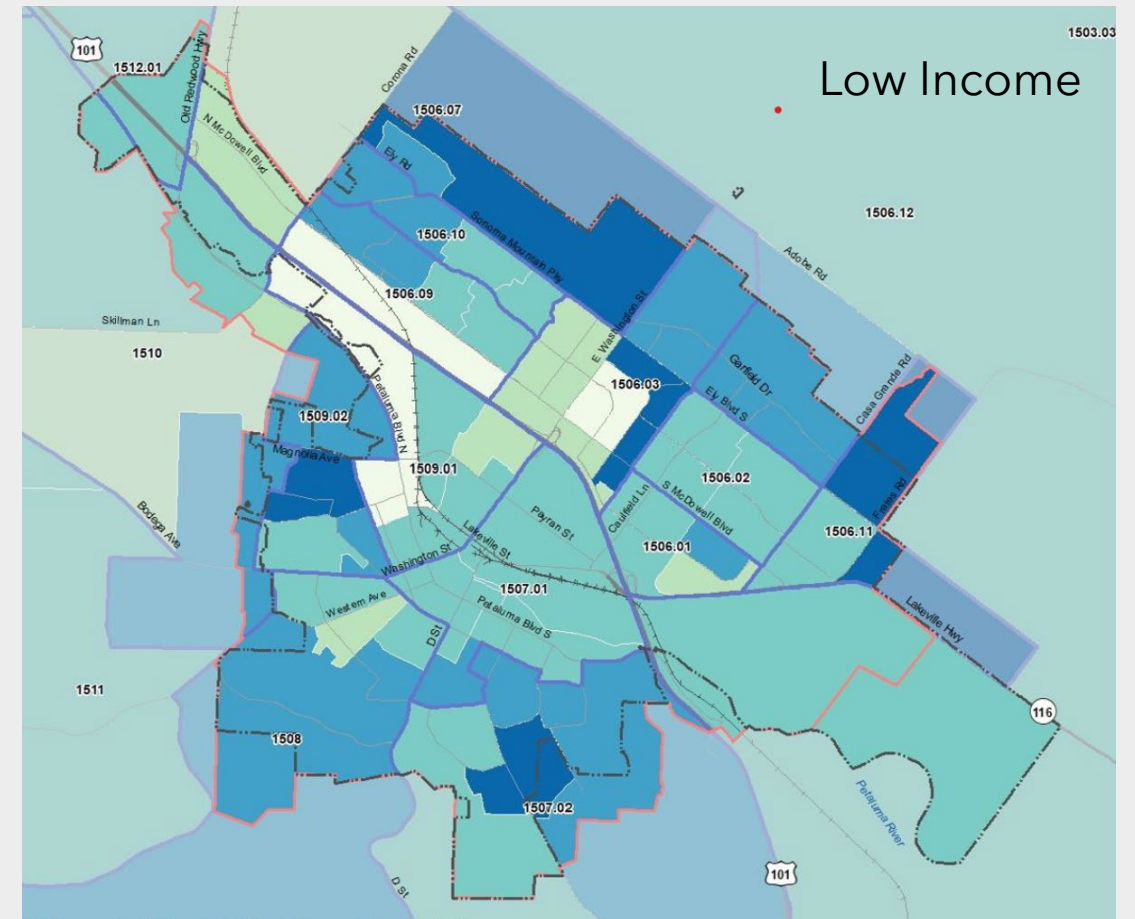
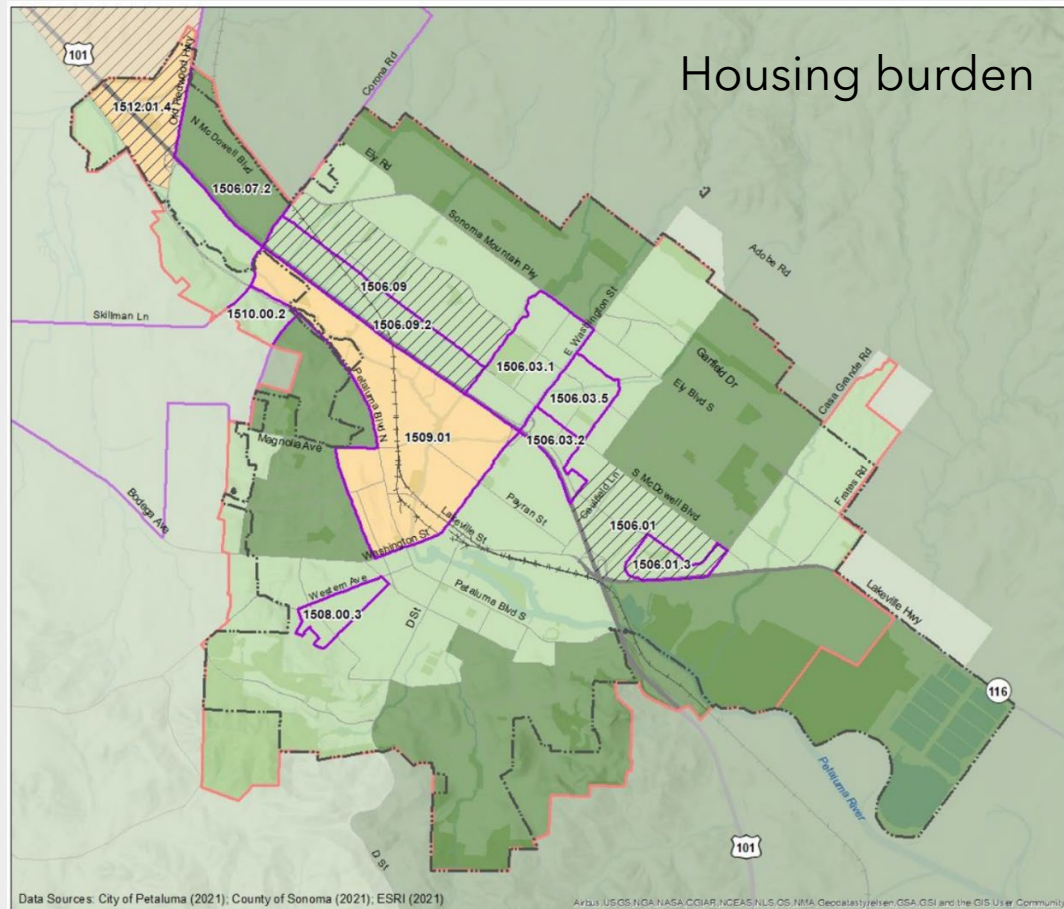
Carbon neutrality* requires a reduction in:

- **Energy intensity**
 - Maximize energy efficiency across all aspects of the economy.
 - Eliminate energy waste.
- **Carbon Intensity**
 - Reduce carbon content in all forms of energy.
- **Carbon Emissions**
 - Eliminate carbon emissions, prioritizing Scope 1 emissions.

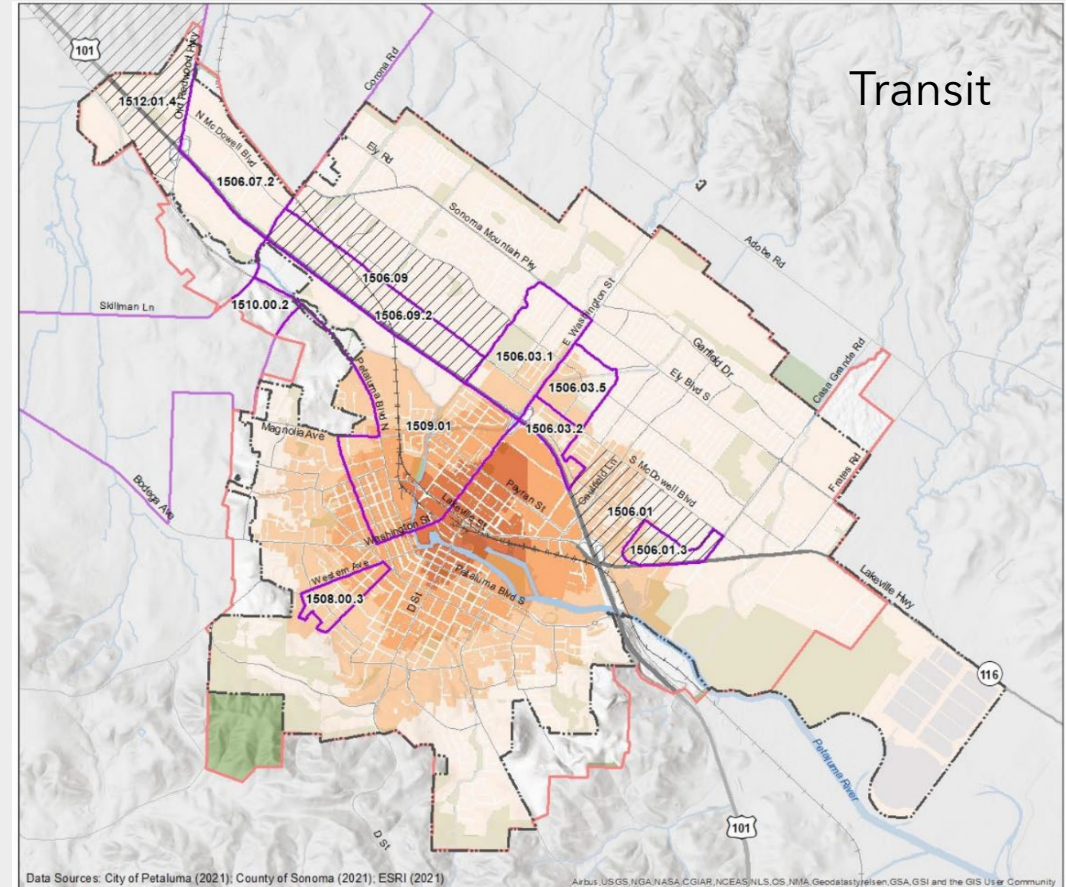
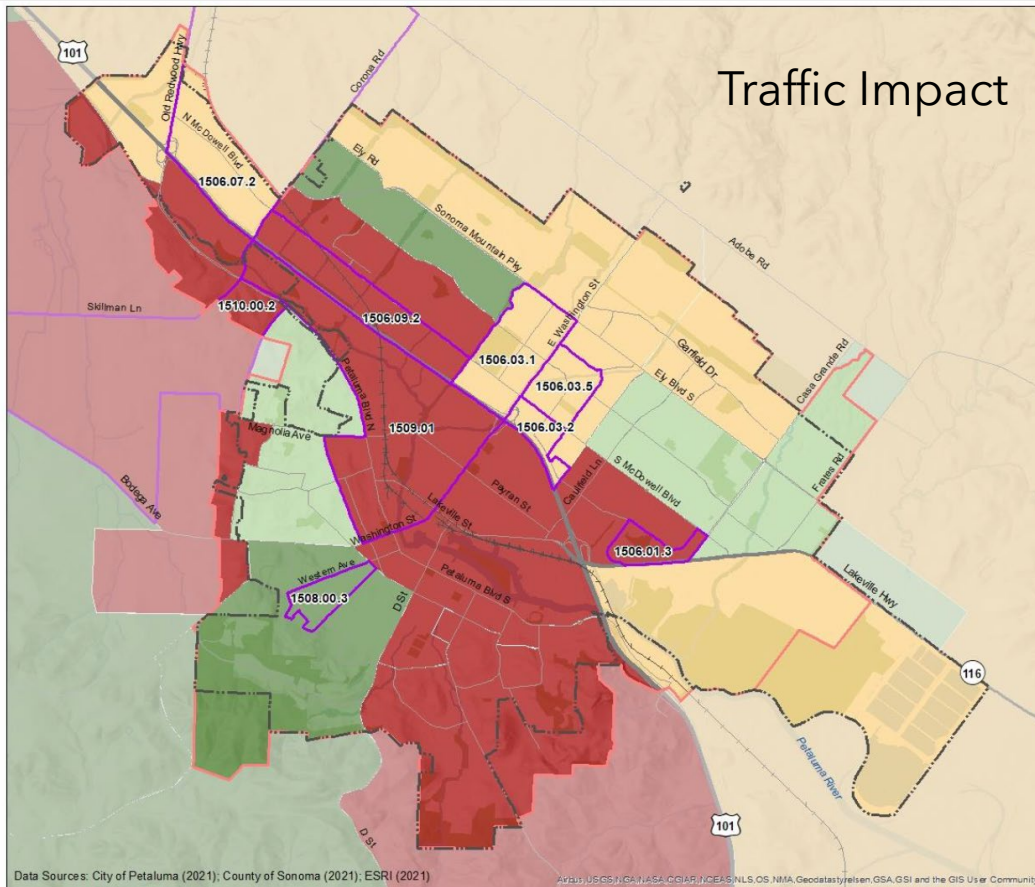


**Including municipal operations.*

Efficiency & decarbonizing the built environment



Efficiency & integration of transportation systems



Recommendations

- **Enabling infrastructure.** Prioritize work with the distribution utility company to model future loads and anticipate necessary upgrades, considering a phased approach to fully electrifying all buildings, and transportation, also considering fluctuations in efficiency of batteries and heat pumps.
- **Data Collection and flexibility.** Recommendation 10: Prioritize data collection (smart meters and thermostats), grid flexibility and interactivity, while designing resiliency measures such as microgrid interconnection.

Recommendations

- **Workforce development.** Determine skill and capacity development needs, considering potential job and career pathways for disadvantaged communities, including other vulnerable groups such as undocumented, formerly and currently incarcerated, Indigenous peoples and Tribal Nations.
- **Regional cooperation for support and wraparound services.** Develop a multi-regional approach to workforce development support, including wraparound services such as child-care, transportation, language support and employer certification.

Financing recommendations

- Develop a strategy to increase **private and philanthropic participation** for the development of affordable energy efficiency and electrification financing options.
- Rely on the state government and philanthropic organizations to provide **city-wide loan loss reserve and loan guarantees** for low-income individuals, as well as those without or with a limited credit history.
- Use the government's convening power to enable industry consolidation, scale and bulk purchasing power.

Resilience recommendations

- Considering the economic shock of pandemic, develop a strategy to **increase BOTH climate adaptation and economic resilience**, focusing on bolstering the city's ability to withstand the effects of climate change – including flooding and fire risks, heat waves and uncharacteristically cold winters – and anticipate the subsequent compounded economic effect.
- Promote business continuity, preparedness and the development of a resilient workforce and skill training programs, **to mitigate the individual and regional impact of potential industry and core employment shifts**, following the compounded impacts of climate change and economic downturn.

Questions?

Thank you.