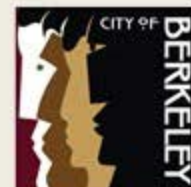


BERKELEY VISION ZERO

ALAMEDA COUNTY TRANSPORTATION COMMISSION

BICYCLE AND PEDESTRIAN SAFETY WORKSHOP

May 9, 2019



PRESENTATION AGENDA

- 1 Background: Bicycle and Pedestrian Planning
- 2 Berkeley Vision Zero Action Plan
- 3 Berkeley Pedestrian Plan Update
- 4 Vision Zero Next Steps

BERKELEY BICYCLE PLANNING

1971



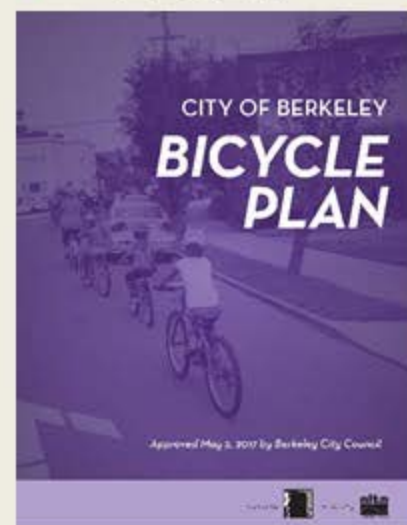
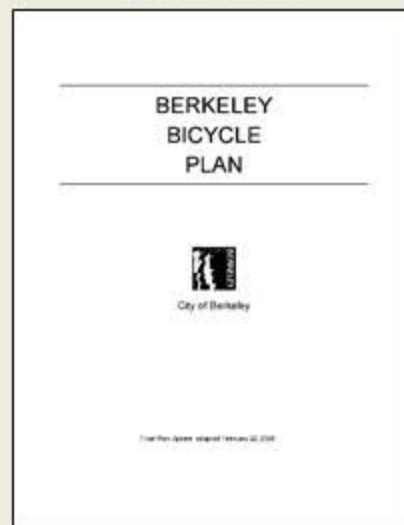
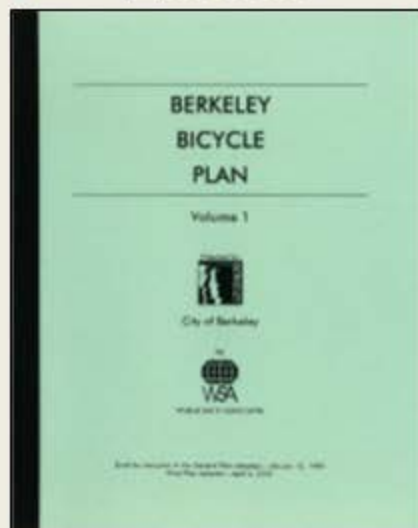
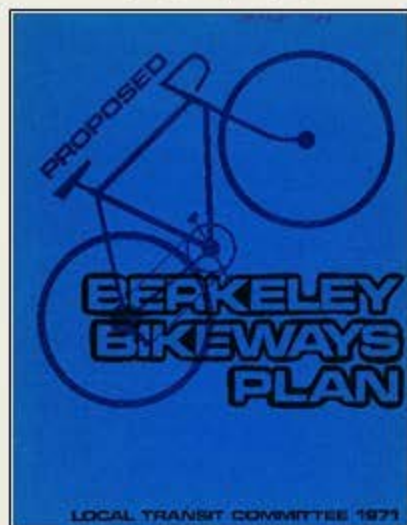
2000



2005



2017



NUMBER OF BICYCLE-INVOLVED COLLISIONS, 2001 to 2012

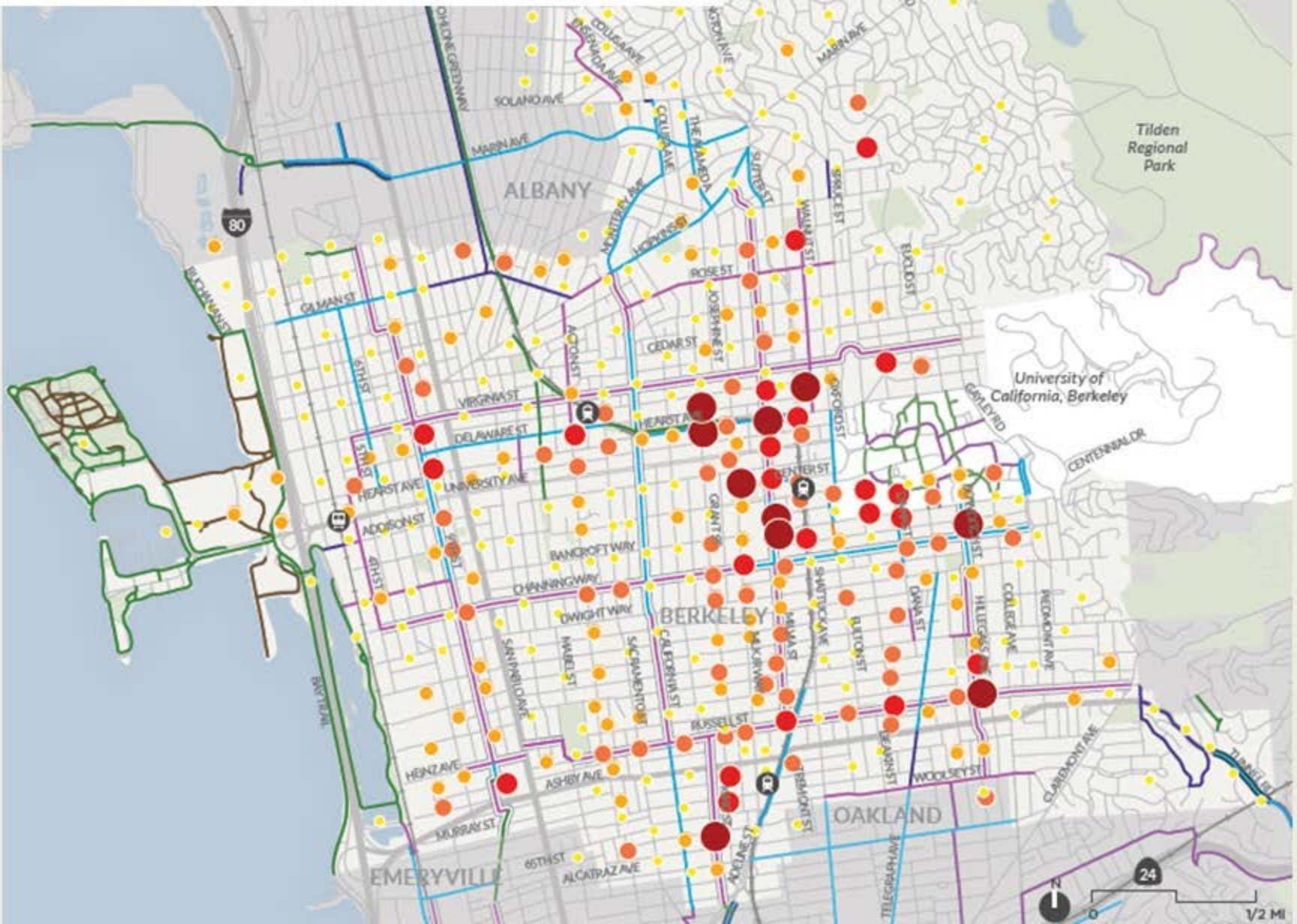
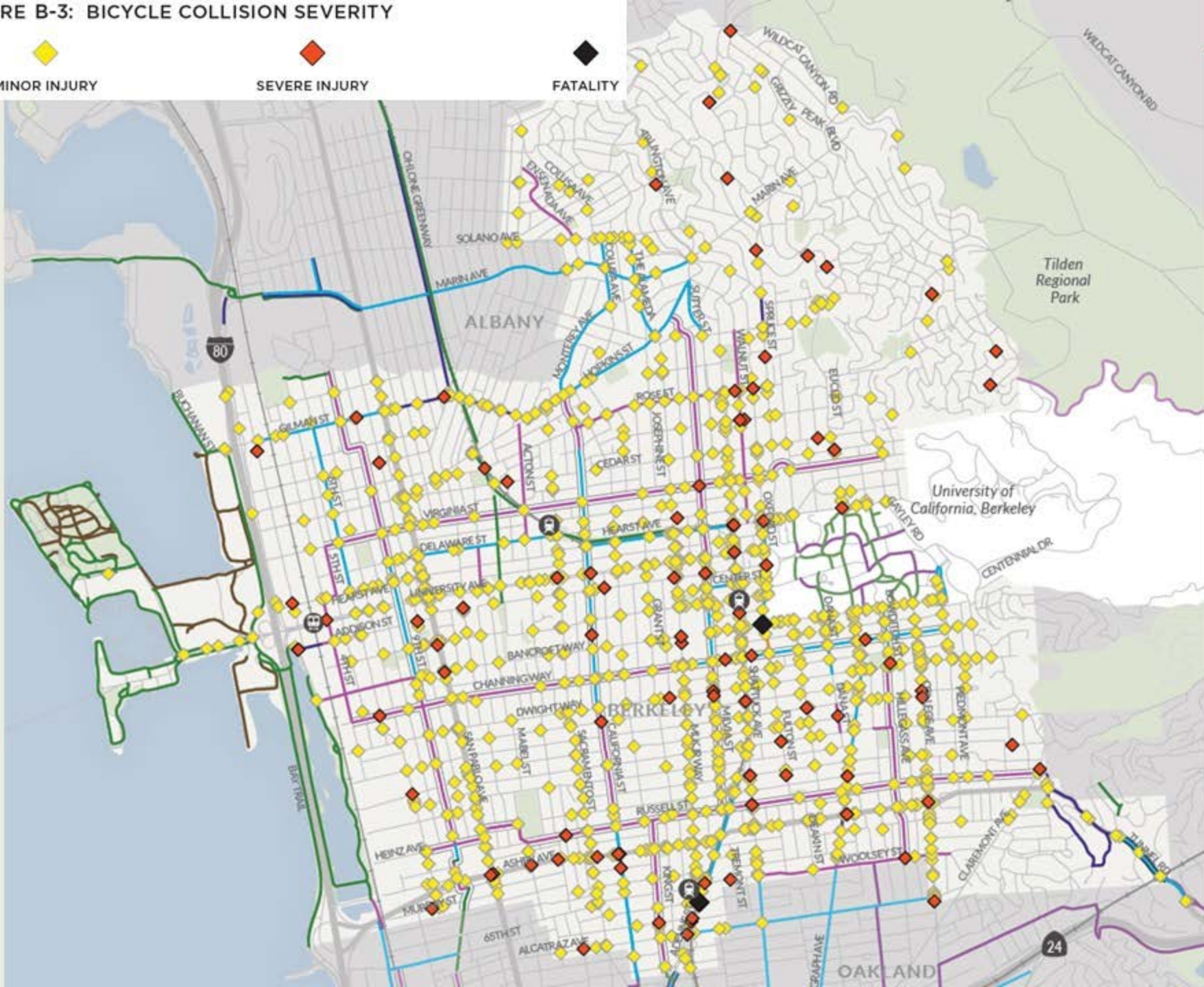


FIGURE B-3: BICYCLE COLLISION SEVERITY

MINOR INJURY

SEVERE INJURY

FATALITY



LEVEL OF TRAFFIC STRESS

Traffic stress is the perceived sense of danger associated with riding in or adjacent to vehicle traffic.

Level of Traffic Stress

Comfortable up to % of Berkeley Residents*

LTS 1

- LOW STRESS
- SUITABLE FOR ALL AGES & ABILITIES, INCLUDING CHILDREN

90%

Types of Cyclists



LTS 2

- LOW STRESS, WITH ATTENTION REQUIRED
- INDICATES TRAFFIC STRESS THAT MOST ADULTS WILL TOLERATE

79%

Interested, But Concerned



LTS 3

- MORE STRESSFUL THAN LEVEL 2
- REQUIRES ATTENTION, SUITABLE FOR ADULTS WITH CONFIDENCE TO BICYCLE

16%

Enthusiastic & Confident



LTS 4

- MOST STRESSFUL
- SUITABLE ONLY FOR MOST TRAFFIC-TOLERANT

3%

Strong & Fearless



LINKS

- LTS 1 - ALL BICYCLISTS
- LTS 2 - INTERESTED BUT CONCERNED
- LTS 3 - ENTHUSIASTIC AND CONFIDENT
- LTS 4 - STRONG AND FEARLESS

INTERSECTIONS

- LTS 1 - ALL BICYCLISTS
- LTS 2 - INTERESTED BUT CONCERNED
- LTS 3 - ENTHUSIASTIC AND CONFIDENT
- LTS 4 - STRONG AND FEARLESS

OTHER

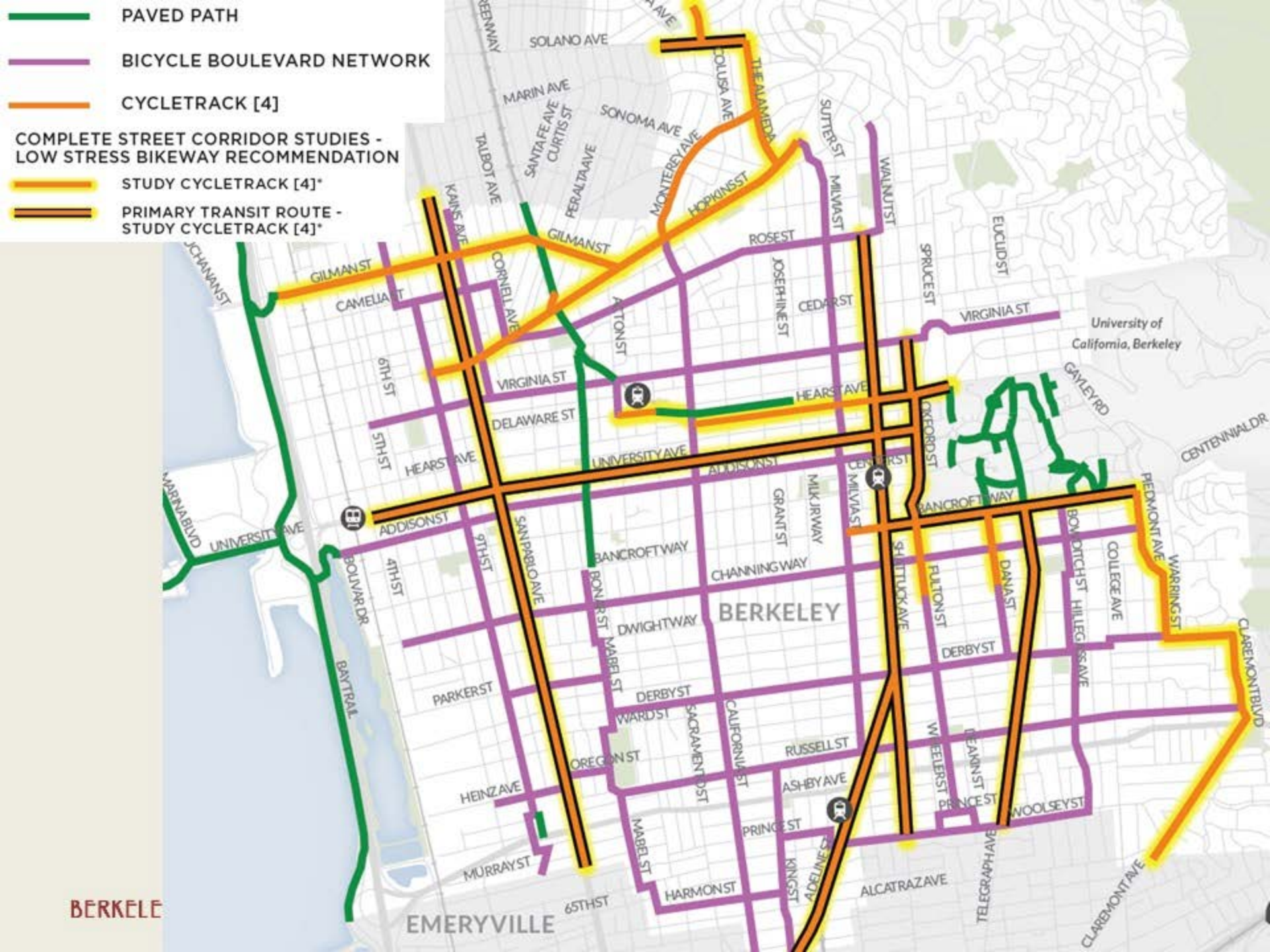
- BIKEWAY NETWORK
- BART STATION
- AMTRAK STATION



- PAVED PATH
- BICYCLE BOULEVARD NETWORK
- CYCLETRACK [4]

COMPLETE STREET CORRIDOR STUDIES -
LOW STRESS BIKEWAY RECOMMENDATION

- STUDY CYCLETRACK [4]*
- PRIMARY TRANSIT ROUTE -
STUDY CYCLETRACK [4]*



BERKELEY

BERKELEY PEDESTRIAN PLANNING



Berkeley Pedestrian Master Plan

Final Draft
January 2010



CITY OF BERKELEY PEDESTRIAN MASTER PLAN UPDATE KITTELSON & ASSOCIATES, INC. + TOOLE DESIGN GROUP

INTRODUCTION

The City of Berkeley (City) has many planning and policy documents and projects that aim to increase pedestrian safety and improve the overall connectivity and sustainability of the transportation system. Examples include the General Plan, Berkeley Strategic Transportation Plan, Berkeley Resilience Strategy, Climate Action Plan, and John Muir Elementary School Safe Routes to School Project. Additionally, the City recently adopted the update to the Bicycle Master Plan and is likely to adopt a Vision Zero policy within the next year. For this Pedestrian Master Plan Update (Plan) to be most effective, it will need to work in concert with other Citywide programs and policies and establish a clear relationship with regional and countywide transportation and transit planning efforts led by Alameda County Transportation Commission (Alameda CTC) and Alameda-Contra Costa County Transit District (AC Transit). In doing so, this Plan will help set the City up to pursue and win discretionary funds and effectively implement pedestrian improvements across the City.

Our approach to this scope of work reflects the importance of building on prior planning efforts to create a plan that is:

- Data-driven and information-based
- Safety-focused
- Inclusive and intersectional
- Implementation-ready

The goal of this scope of work is three-fold:

- To assess and amend the City's policies affecting pedestrian circulation.

TEAM + ROLES

- » **Kittelson and Associates, Inc. (Kittelson)**
As Prime, Kittelson is responsible for the overall successful execution and completion of the Update. Our project manager, Amanda Leahy, AICP, will lead communications with the City and direct the team's activities to fulfill the work plan on schedule and budget as well as in a manner that supports the City in continuing to strengthen their rapport and collaboration with community members and partner agencies.
- » **Toole Design Group (TDG)**
TDG will provide support to Kittelson throughout the project, bringing expertise to key activities such as public involvement, safe routes to school, and project prioritization. We plan to conduct the work collaboratively, providing the fullest benefits of our team's experience to the City.

- To reflect current existing conditions and review the progress made toward implementation of the prior plan.
- To prioritize a set of projects and programs and identify associated funding sources to leverage to further enhance pedestrian conditions in the City.

This project will use the City of Berkeley's 2010 Pedestrian Master Plan (2010 Plan) and 2012 Update as its starting point, preserving the basic structure of the document while making substantive

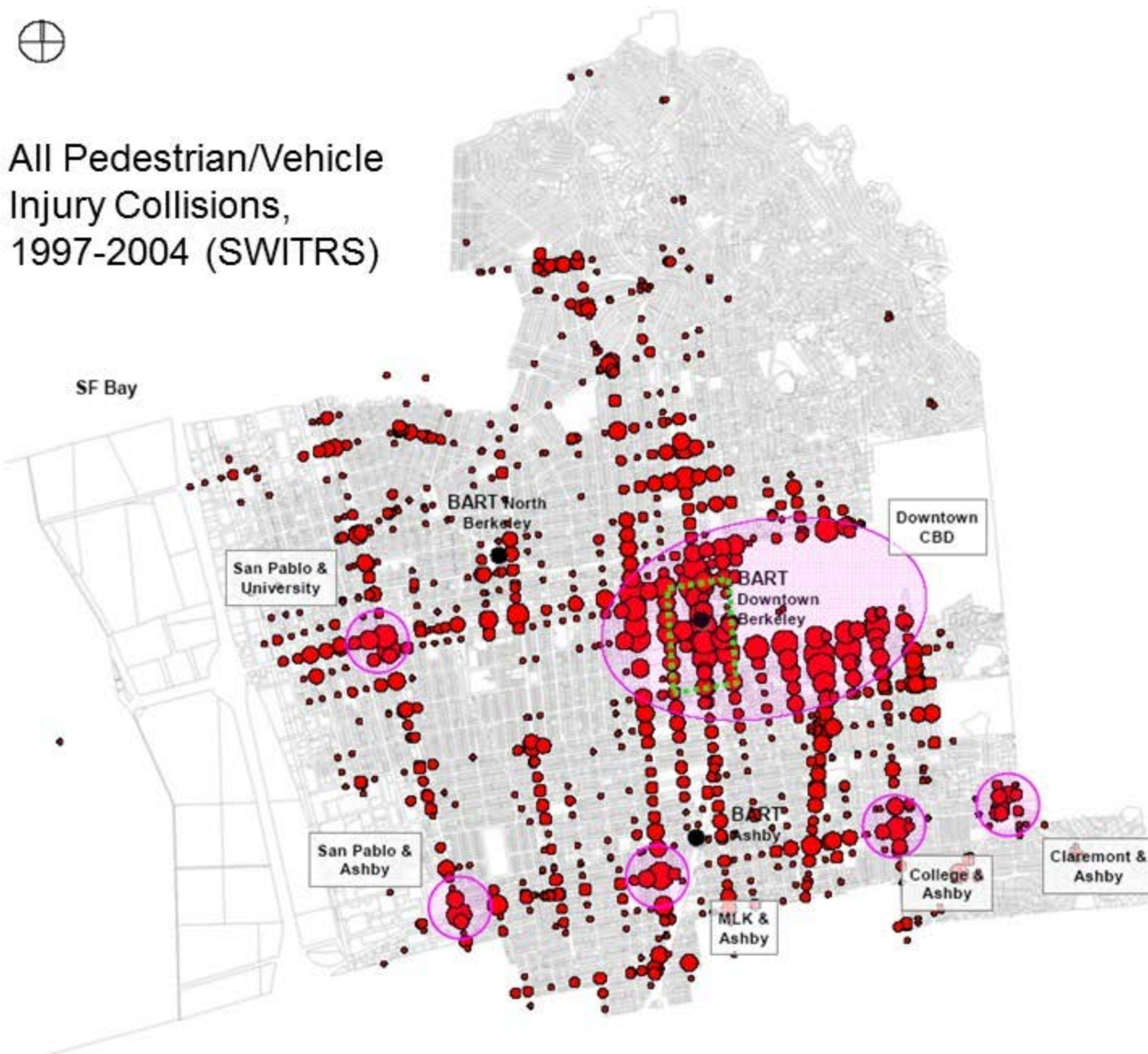


Berkeley Pedestrian Master Plan Update | November 6, 2013

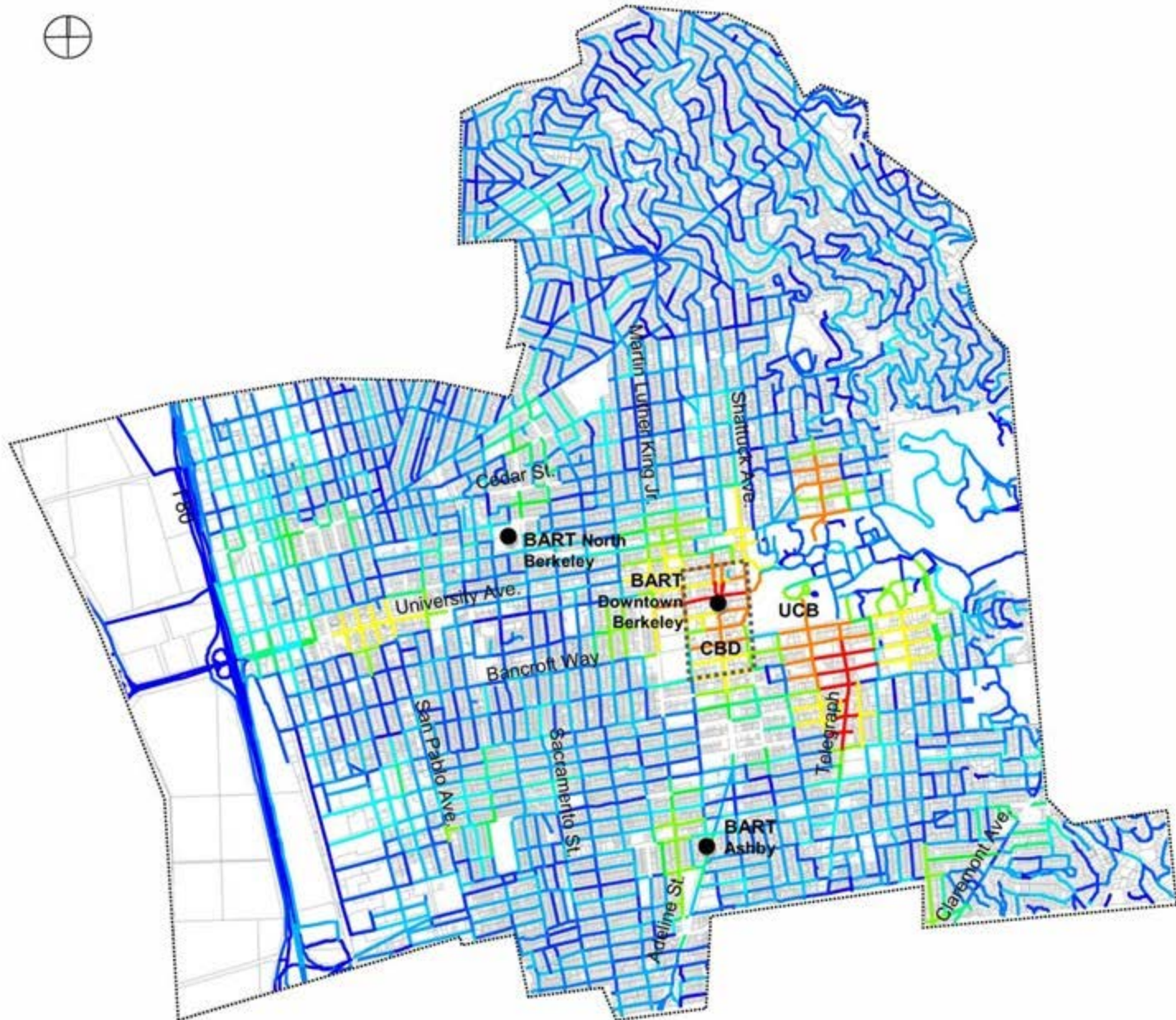
4 SWITRS exposure analysis Collisions per junction



All Pedestrian/Vehicle
Injury Collisions,
1997-2004 (SWITRS)



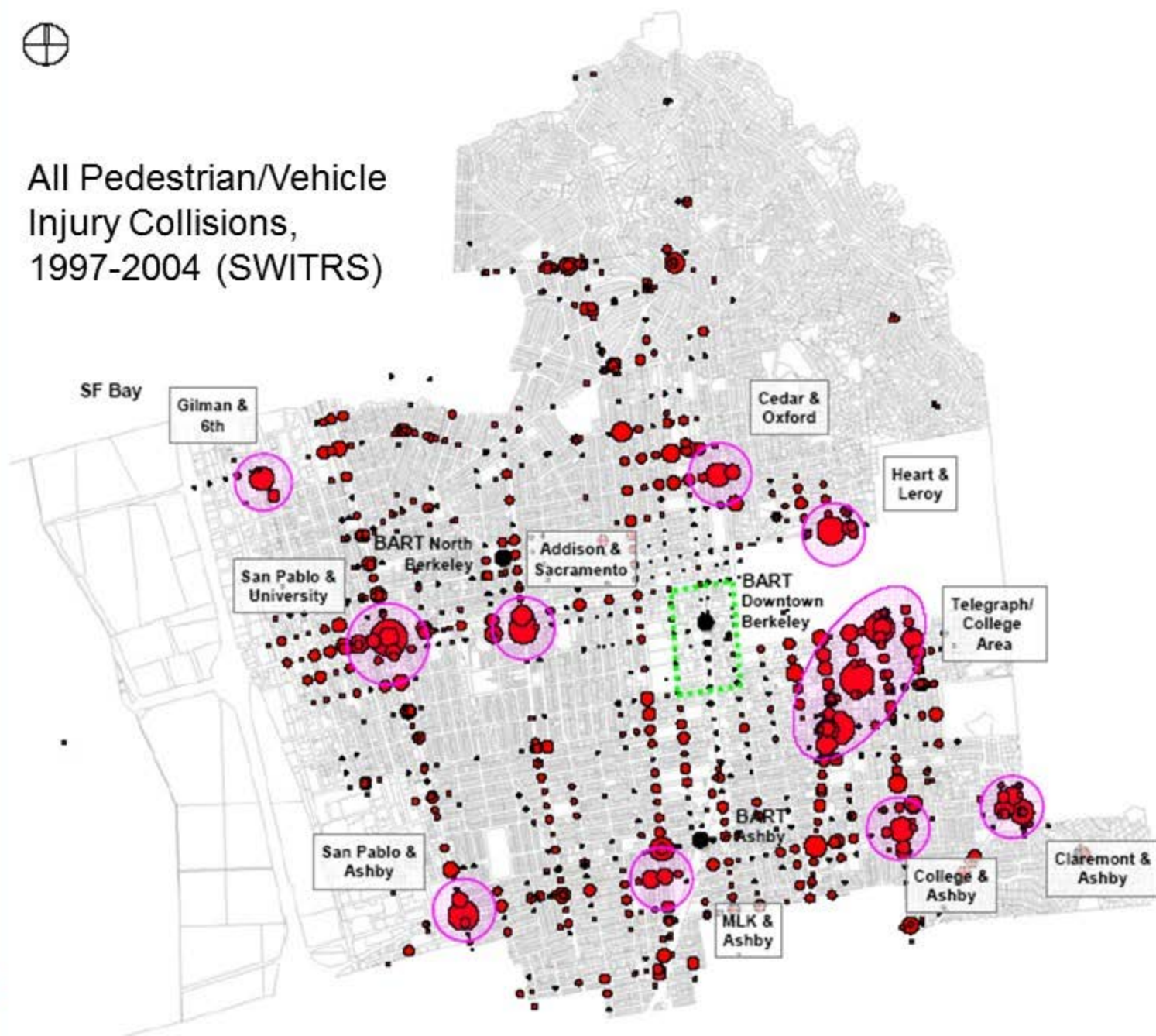
3 Pedestrian volume model **Forecasted mid-day peak movement levels**

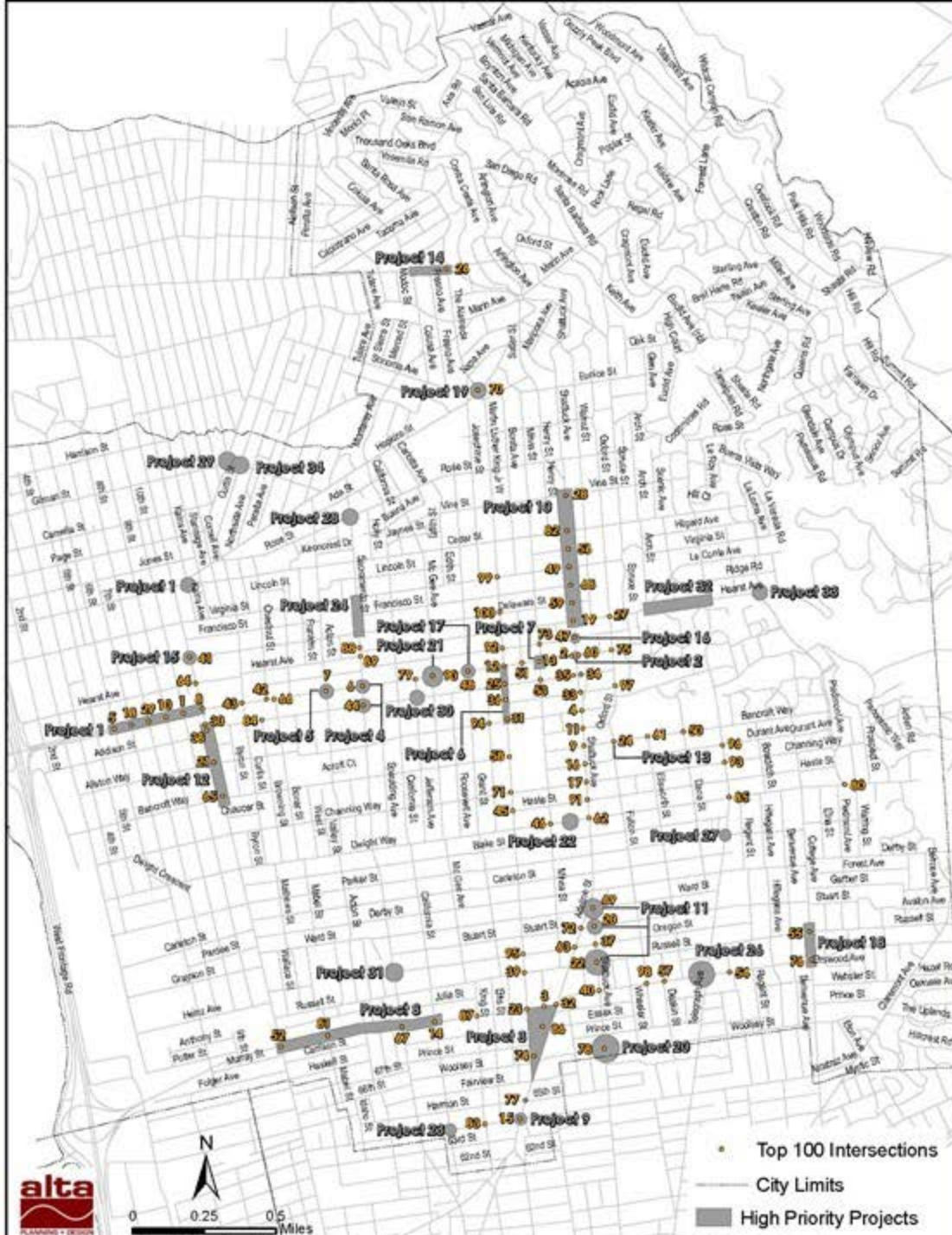


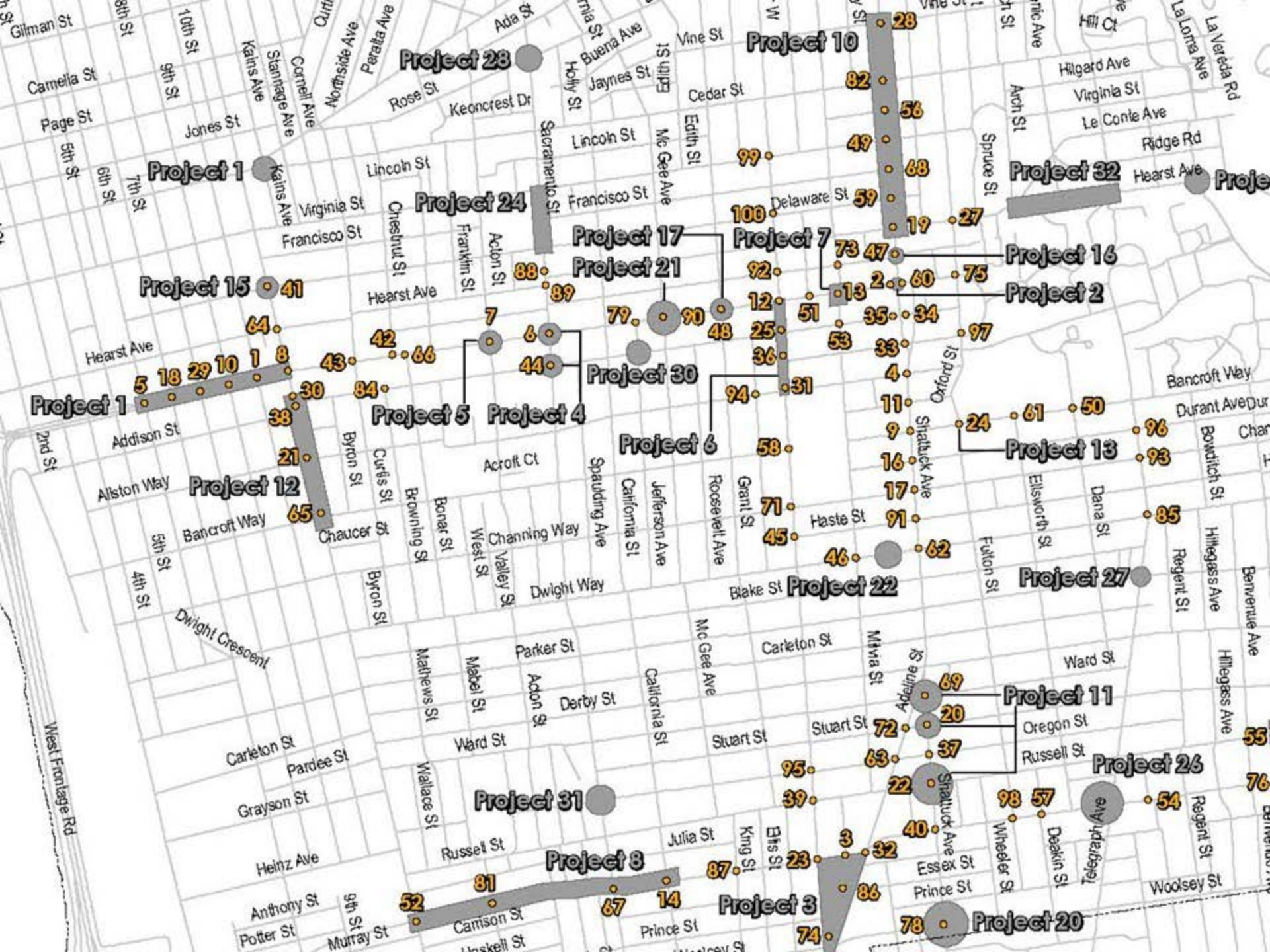
4 SWITRS exposure analysis Collisions and pedestrian movement model



All Pedestrian/Vehicle
Injury Collisions,
1997-2004 (SWITRS)







BERKELEY VISION ZERO

*Now therefore, be it resolved that the
Berkeley City Council adopts the
Vision Zero goal of **eliminating traffic
deaths and severe injuries by 2028.***

Berkeley City Council Resolution No. 68,371-N.S. March 27, 2018

VISION ZERO? DEFINED

Vision Zero Overview

VISION ZERO...

- *Is a data-driven strategy to eliminate all traffic fatalities and severe injuries*
- *Is founded on a Safe Systems approach that recognizes humans will make mistakes and roadway systems should be designed to protect them*
- *Road safety goals are accomplished through a combination of engineering, education, and enforcement measures*



Source: Vision Zero Network

VISION ZERO CORE ELEMENTS

What Makes a Vision Zero City

- Leadership and Commitment
- Safe Roadways and Safe Speeds
- Data-driven Approach, Transparency, and Accountability
- Complementary Goals: Climate Change, Livability, Public Health, Economic Vitality



CORE ELEMENTS FOR VISION ZERO COMMUNITIES

Leadership and Commitment

1. Public, High-Level, and Ongoing Commitment.

The Mayor and key elected officials and leaders within public agencies, including transportation, public health, and police, commit to a goal of eliminating traffic fatalities and serious injuries within a specific timeframe. Leadership across these agencies consistently engages in prioritizing safety via a collaborative working group and other resource-sharing efforts.

2. Authentic Engagement. Meaningful and accessible community engagement toward Vision Zero strategy and implementation is employed, with a focus on equity.

3. Strategic Planning. A Vision Zero Action Plan is developed, approved, and used to guide work. The Plan includes explicit goals and measurable strategies with clear timelines, and it identifies responsible stakeholders.

4. Project Delivery. Decision-makers and system designers advance projects and policies for safe, equitable multi-modal travel by securing funding and implementing projects, prioritizing roadways with the most pressing safety issues.

Equity and Engagement

Elevating equity and meaningful community engagement, particularly in low-income communities and communities of color, should be a priority in all stages of Vision Zero work.

Safe Roadways and Safe Speeds

5. Complete Streets for All. Complete Streets concepts are integrated into communitywide plans and implemented through projects to encourage a safe, well-connected transportation network for people using all modes of transportation. This prioritizes safe travel of people over expeditious travel of motor vehicles.

6. Context-Appropriate Speeds. Travel speeds are set and managed to achieve safe conditions for the specific roadway context and to protect all roadway users, particularly those most at risk in crashes. Proven speed management policies and practices are prioritized to reach this goal.

Data-driven Approach, Transparency, and Accountability

7. Equity-Focused Analysis and Programs. Commitment is made to an equitable approach and outcomes, including prioritizing engagement and investments in traditionally under-served communities and adopting equitable traffic enforcement practices.

8. Proactive, Systemic Planning. A proactive, systems-based approach to safety is used to identify and address top risk factors and mitigate potential crashes and crash severity.

9. Responsive, Hot Spot Planning. A map of the community's fatal and serious injury crash locations is developed, regularly updated, and used to guide priority actions and funding.

10. Comprehensive Evaluation and Adjustments. Routine evaluation of the performance of all safety interventions is made public and shared with decision makers to inform priorities, budgets, and updates to the Vision Zero Action Plan.

IMPORTANCE OF VISION ZERO

Vision Zero Nationwide

TRAFFIC DEATHS IN US

- US records close to 40,000 roadway and highway deaths per year
- US crash death rate more than twice the average of other high-income countries

Motor vehicle crash deaths in 10 comparison high-income countries, 2013



Deaths per 100,000 people

SOURCE: WHO Global Status Report on Road Safety, 2015.

IMPORTANCE OF VISION ZERO

Traffic Deaths and Severe Injuries in Berkeley

Between
2013 and
2017...

- Approximately two people were killed and 22 people were severely injured each year in traffic collision on Berkeley streets
- Pedestrians and bicyclists were involved in only 50% of all crashes but represented over 70% of all traffic fatalities
- High vehicle speeds, violation of pedestrian right of way, and violation of auto right of way were the primary causes of severe and fatal collisions

COLLISION DATA

- From UC Berkeley SafeTREC Transportation Injury Mapping System (TIMS)
- 2013-2017 data (2016 and 2017 are provisional)
- Includes all collisions resulting in an injury (ranging from Complaint of Pain to Fatal)
- Does not include collisions resulting only in property damage
- Does not include freeway collisions (I-80, I-580)

Transportation Injury Mapping System (TIMS)

TOOLS

- [CA Active Transportation Safety Information Pages \(CATSIP\)](#)
- [Street Story](#)
- **[Transportation Injury Mapping System \(TIMS\)](#)**
- [Tribal Crash Data Tool](#)

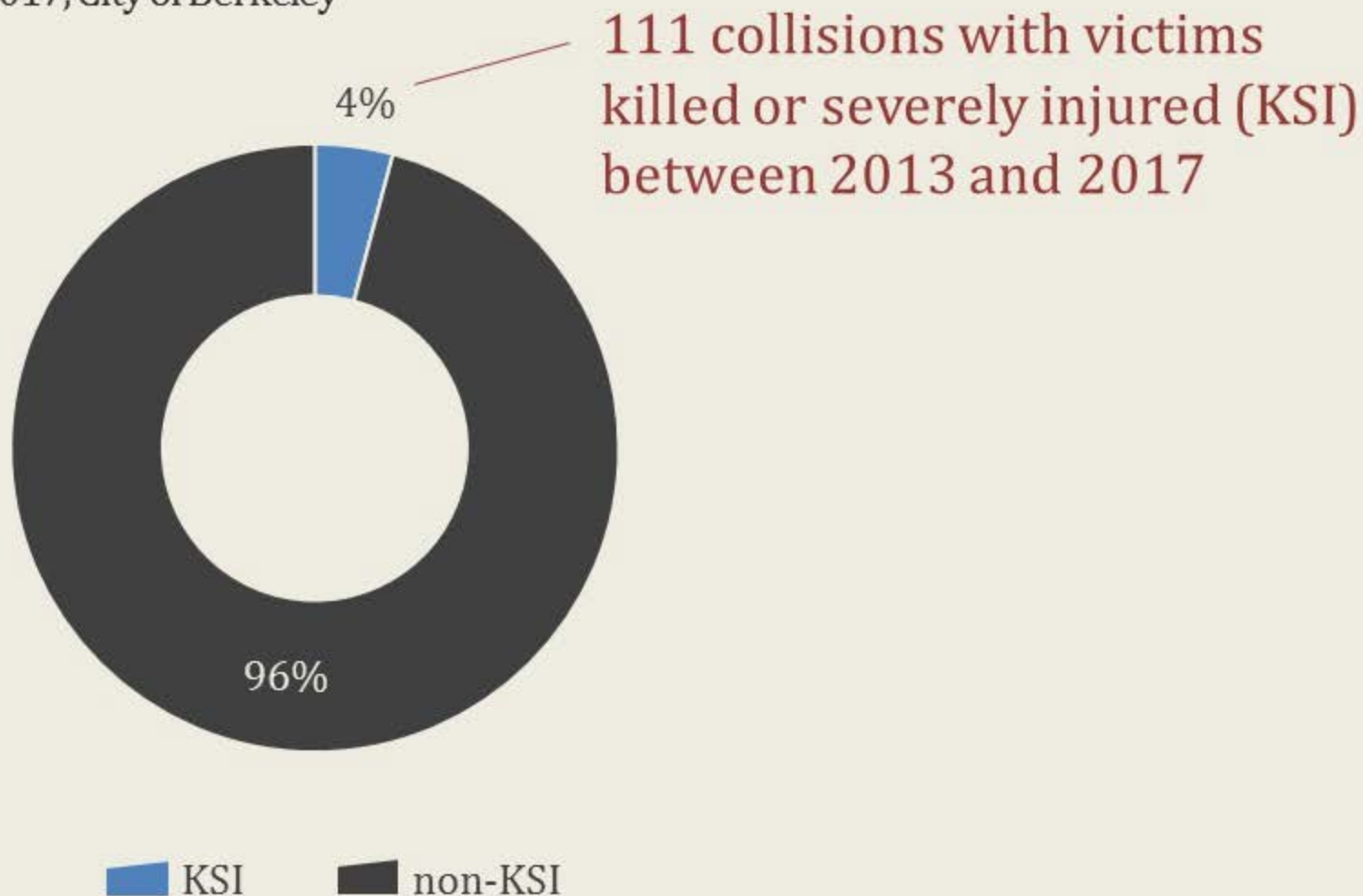
The [Transportation Injury Mapping System \(TIMS\)](#) [#] has been developed by SafeTREC's GIS Program team to provide quick, easy and free access to California crash data that has been geo-coded to make it easy to map out crashes and even view the locations in Google Street View.

The following tools are currently available on TIMS:

- [SWITRS Query & Map](#)
- [SWITRS GIS Map](#)
- [California Safety PM Target Setting](#)
- [Collision Diagram](#)
- [SRTS Map Viewer](#)
- [ATP Maps & Summary Data](#)
- [Motorcycle Collision Map](#)

ALL COLLISIONS

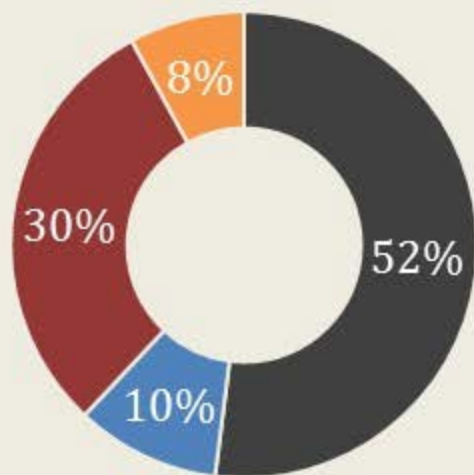
2013-2017, City of Berkeley



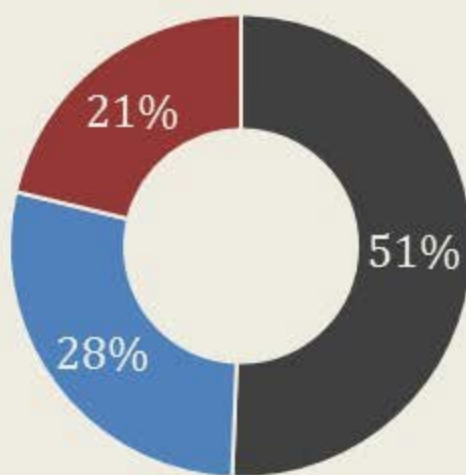
COLLISIONS BY MODE

2013-2017, City of Berkeley

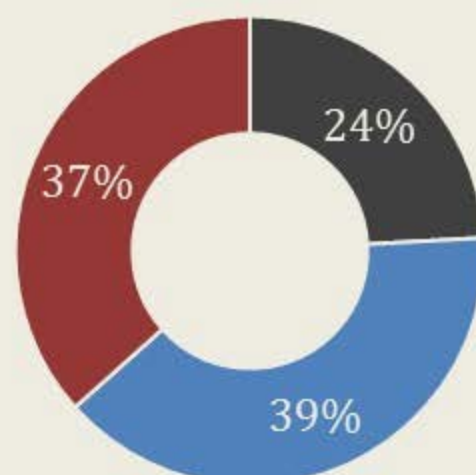
ALL TRIPS



ALL INJURY COLLISIONS



KSI COLLISIONS



■ vehicle

■ bike

■ walk

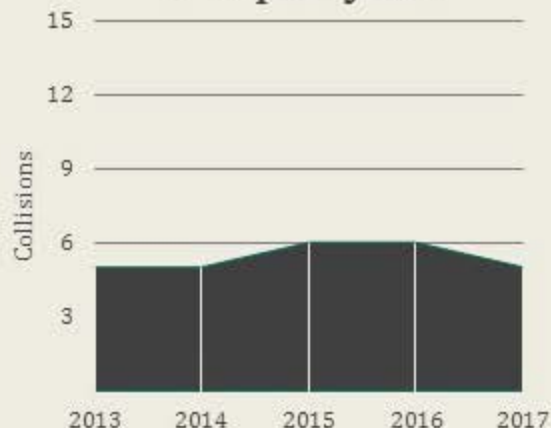
■ transit

All trips source: California Household Travel Survey for City of Berkeley, 2012

KSI COLLISIONS BY MODE

2013-2017, City of Berkeley

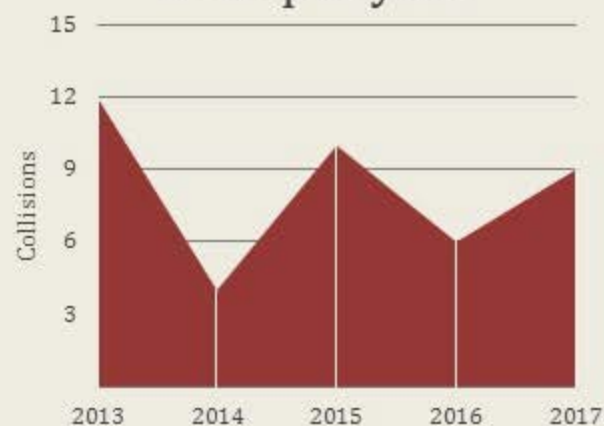
VEHICLE KSI
COLLISIONS
5-6 per year



BICYCLE KSI
COLLISIONS
4-12 per year



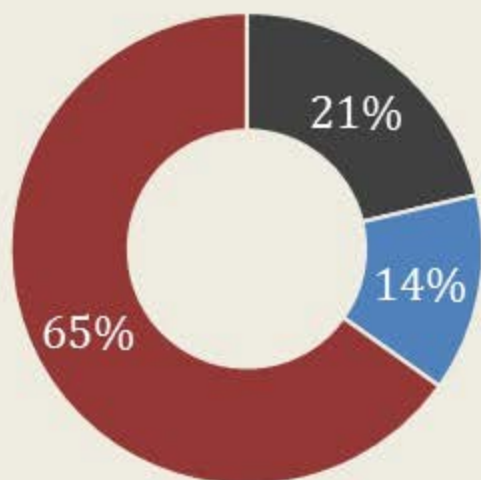
PED KSI
COLLISIONS
4-12 per year



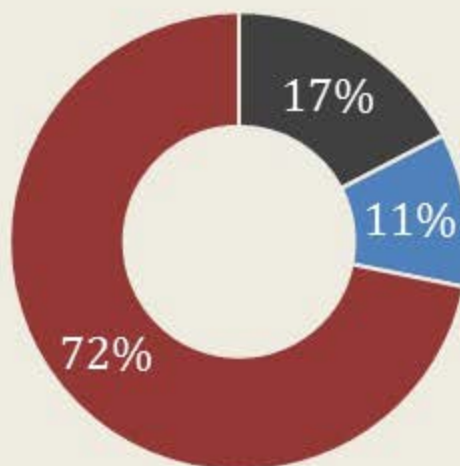
VICTIMS BY AGE

2013-2017, City of Berkeley

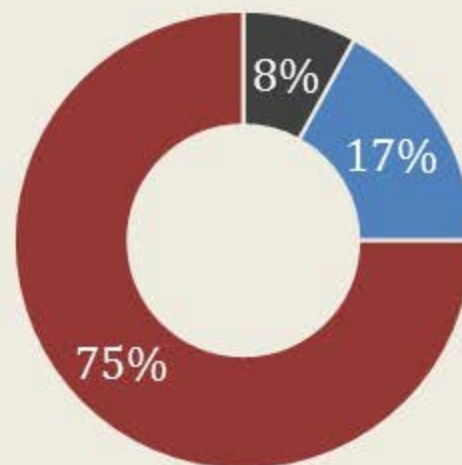
ALL RESIDENTS



VICTIMS IN ALL COLLISIONS



VICTIMS IN KSI COLLISIONS

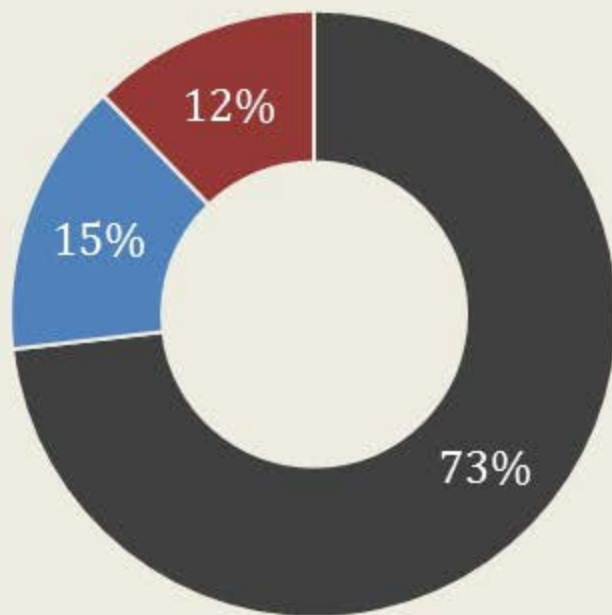


■ 19 and under ■ 20-64 ■ 65+

All residents source: American Community Survey 2017 5-year estimates, City of Berkeley

KSI PEDESTRIAN ACTION

2013-2017, City of Berkeley



■ crossing in
crosswalk

■ crossing outside
of crosswalk

■ other

Other includes In Road, Including Shoulder and Not In Road.

KSI TOP VIOLATIONS

2013-2017, City of Berkeley

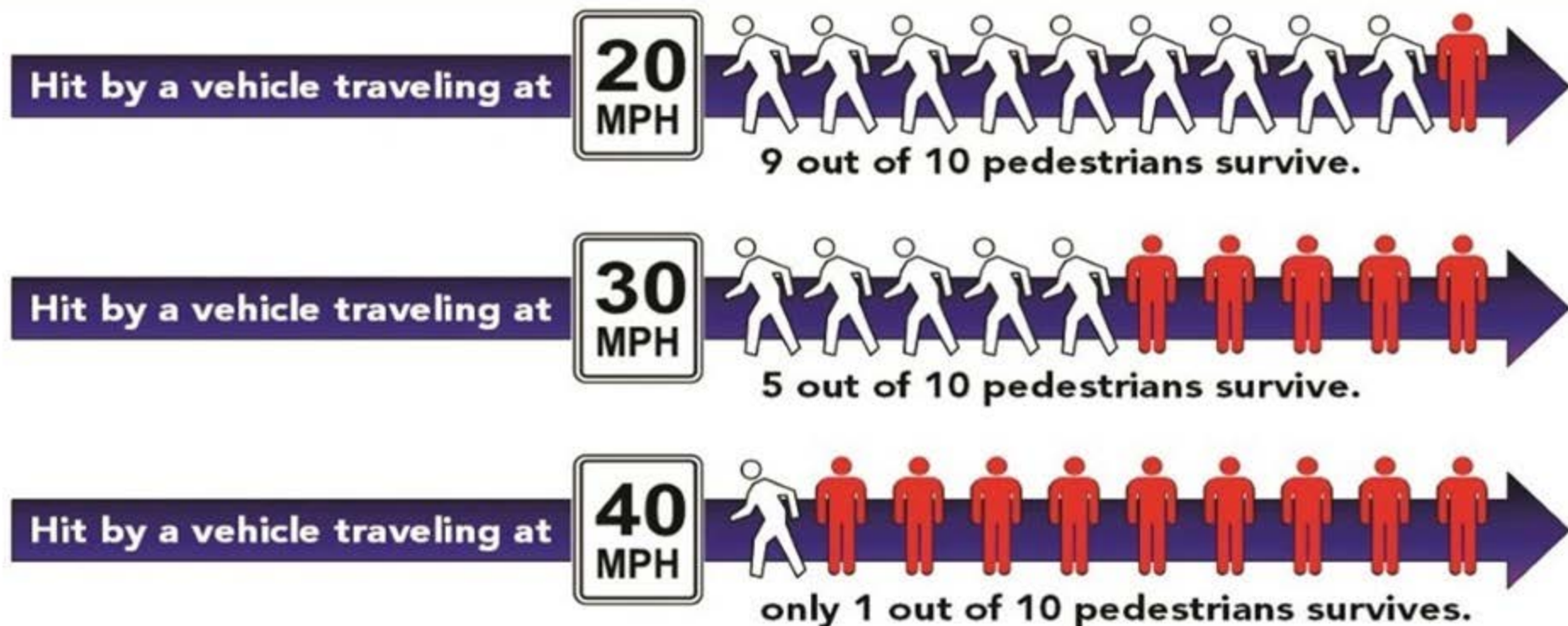
UNSAFE SPEEDS

Was one of the top three primary collision factors for pedestrian-, bike-, and vehicle-related KSI collisions

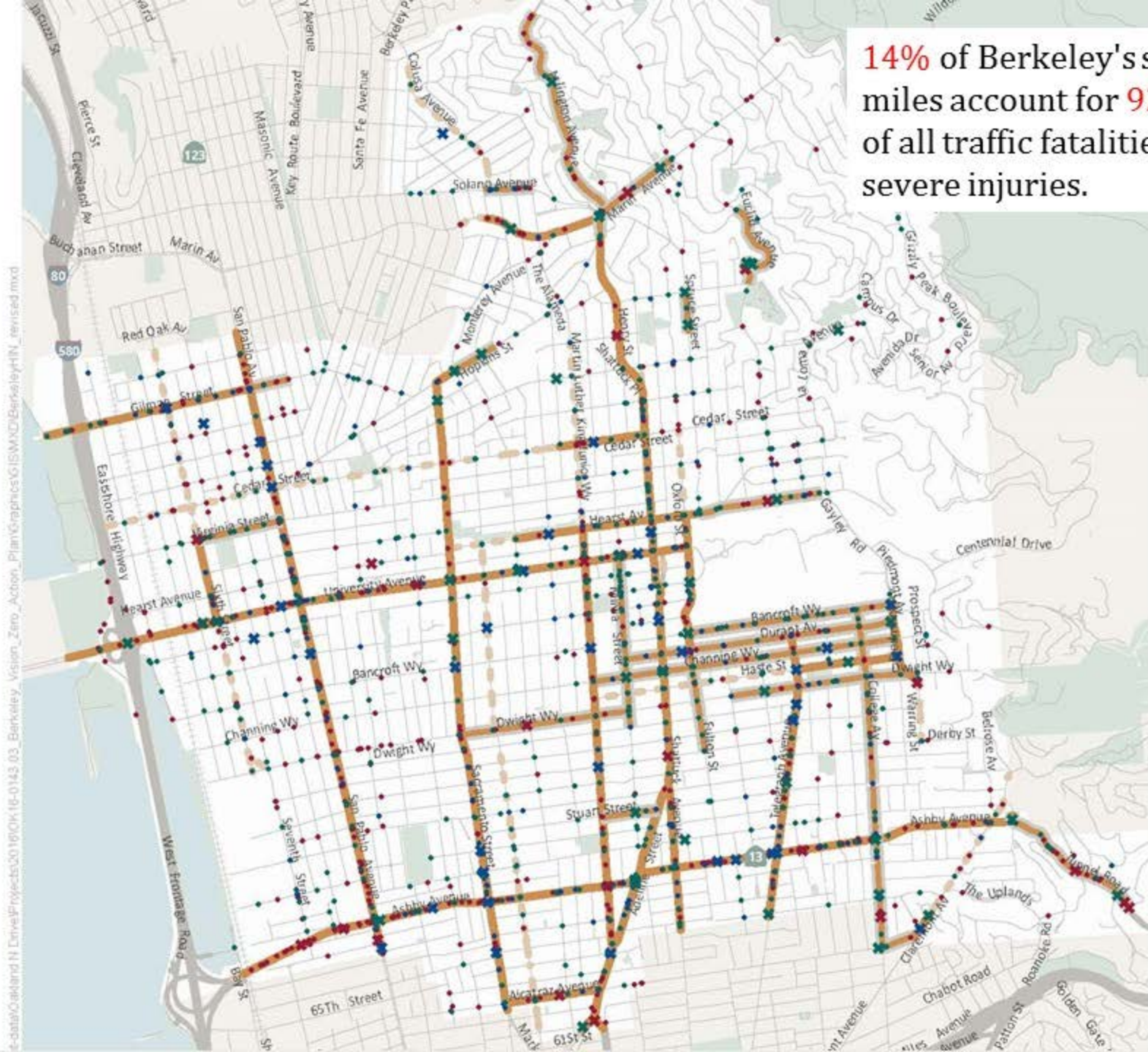
SPEED MATTERS MOST

Key Principles for Vision Zero in Berkeley

High speeds are more deadly



14% of Berkeley's street miles account for 92% of all traffic fatalities & severe injuries.



PED PLAN - FOCUS ON SEVERITY

Consistent with Vision Zero approach



Pedestrian Collisions, 2008-2017

- Fatalities
- Severe Injuries

PEDESTRIAN HIGH INJURY STREETS



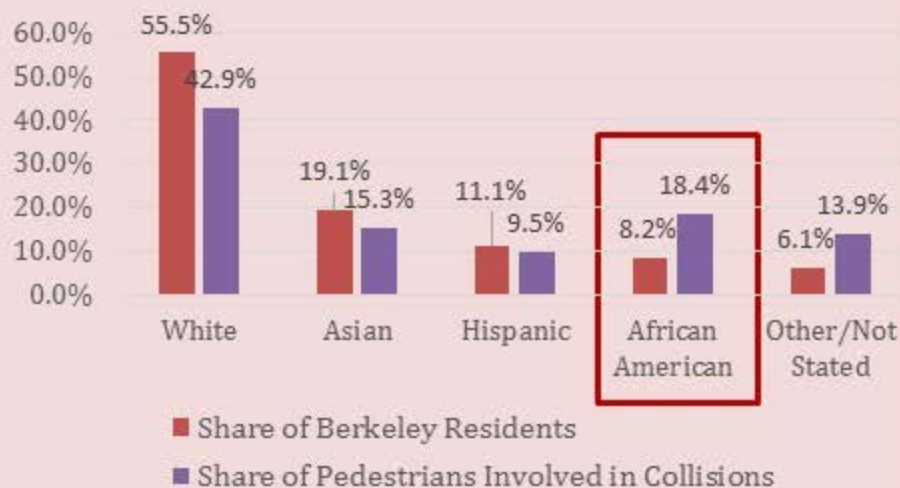
Pedestrian Collisions, 2008-2017

- Fatalities
- Severe Injuries
- High Injury Corridors

14% of Berkeley's street miles account for **93%** of pedestrian fatalities & severe injuries.

WHO IS MOST AFFECTED?

Pedestrian Race



Pedestrian Age



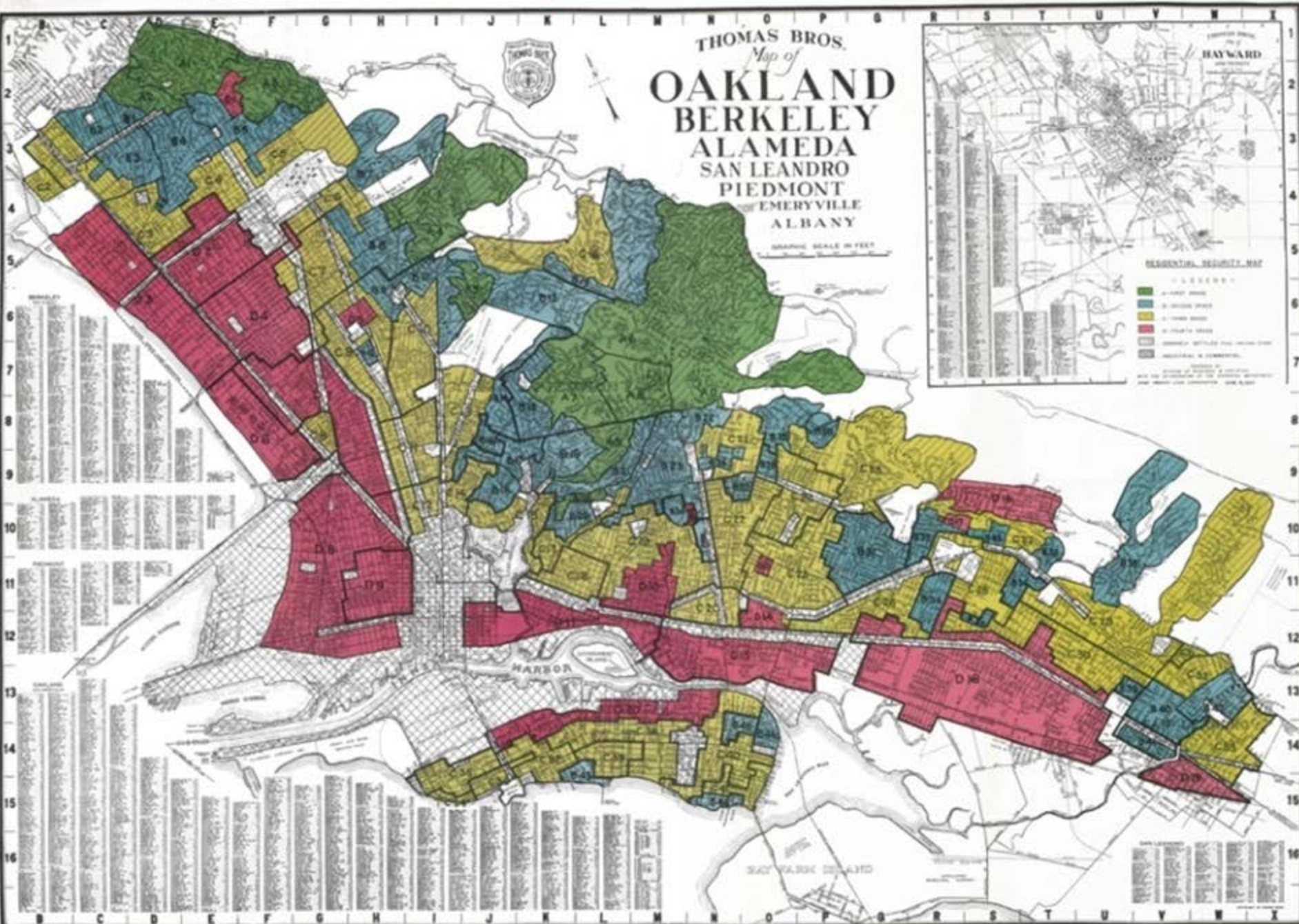
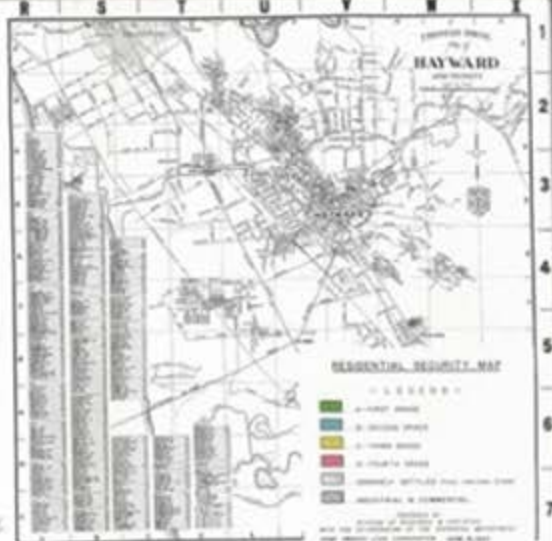
Table 1: Proposed Prioritization Factors and Criteria

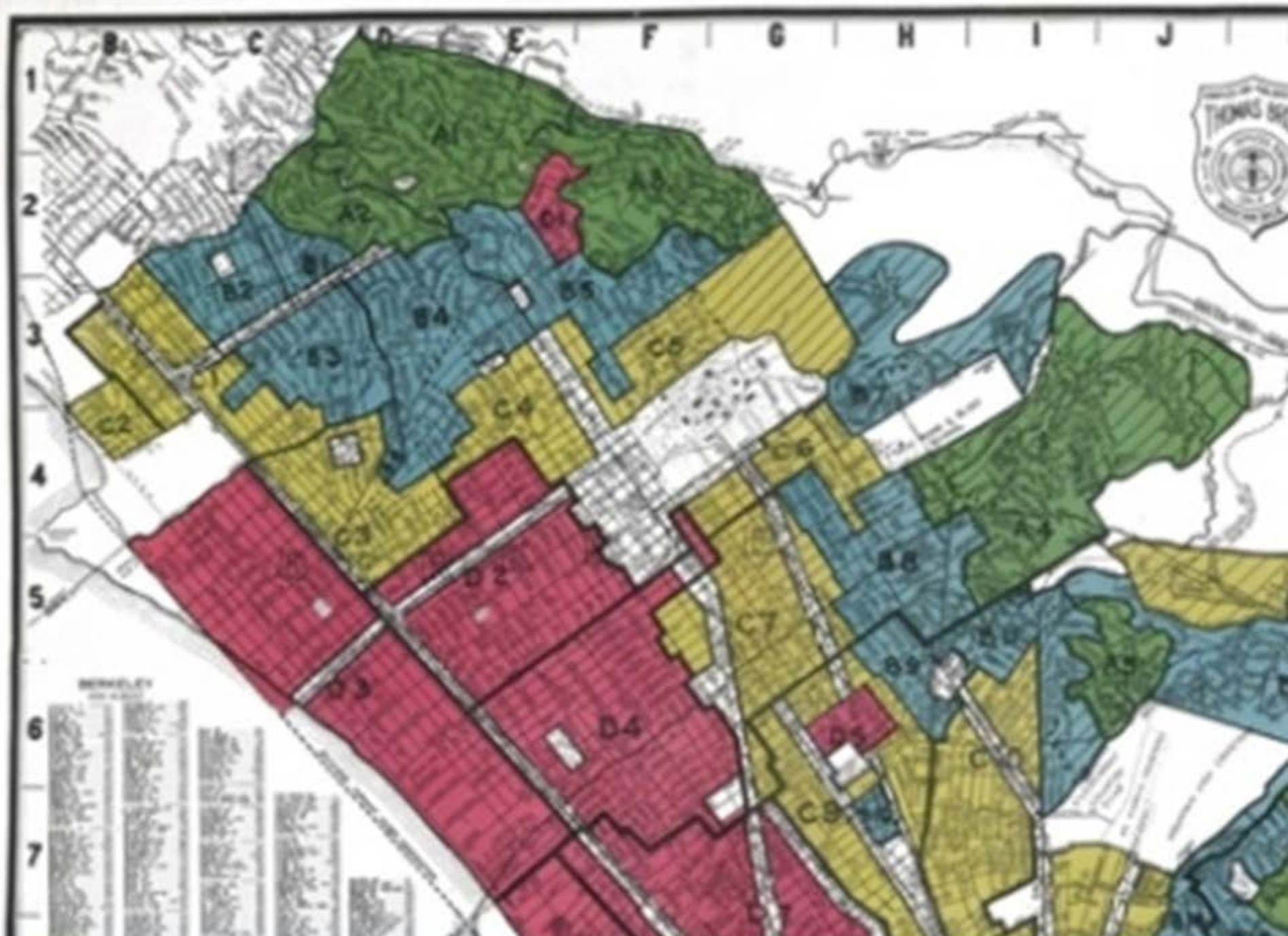
FACTOR	CRITERIA	NOTES
Safety	Concentration of fatal and severe collisions	Captures locations with a high concentration of pedestrian fatalities, injuries, and collisions, as noted City priority. The high injury street analysis was completed in Task 2 of the Plan.
Equity	Locations in traditionally underserved neighborhoods	Uses historic redlining maps with adjustments based on most recent (2010) Census data, current property values, and locations of community centers serving historically redlined neighborhoods.
Connectivity	Pedestrian Demand: Land uses attracting most pedestrian trips including BART and Amtrak stations (High Demand Intersections)	Uses pedestrian demand model from Task 2 of the Plan to identify where pedestrians are walking. Top 30% of intersections will be used, with each top 10% intersection group by demand receiving a different weight.
	Transit Access: Proximity to major bus stops	Uses distance of 0.25-mile from major bus stops. Major bus stops are defined as bus stops with the highest ridership.
Existing Plan	Carried over from 2010 Pedestrian Master Plan	Recognizes existing work from the 2010 Berkeley Pedestrian Master Plan.

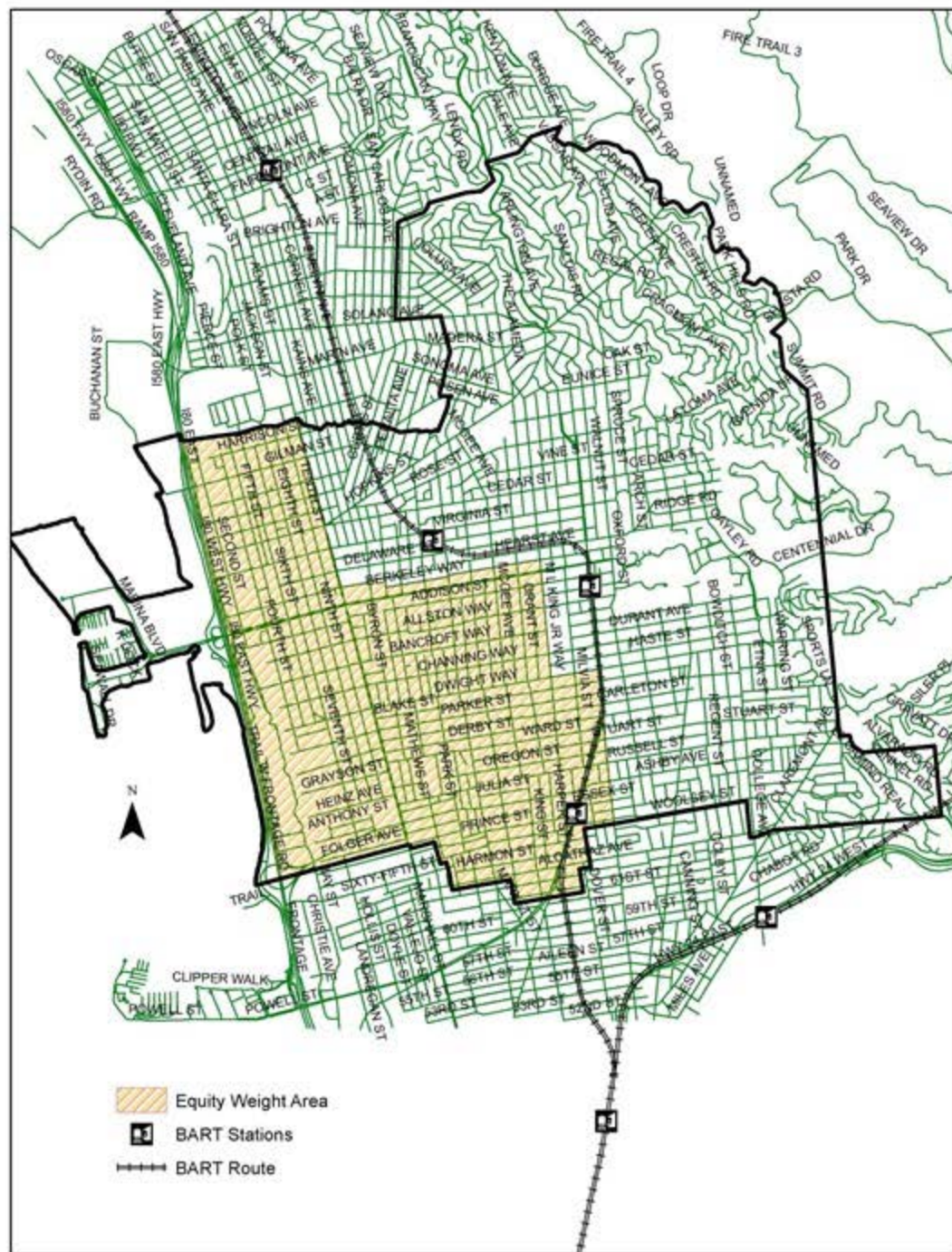


THOMAS BROS.
Map of
**OAKLAND
BERKELEY
ALAMEDA
SAN LEANDRO
PIEDMONT
EMERYVILLE
ALBANY**

GRAPHIC SCALE IN FEET







VISION ZERO NEXT STEPS

NEAR-TERM

- Hire a Vision Zero Coordinator
- Complete and begin implementation of the Vision Zero Action Plan
- Complete the Pedestrian Plan Update & Pedestrian Vision Zero Strategy

LONGER-TERM

- Update the Berkeley Bicycle Plan with a Bicycle Vision Zero Strategy

SAFE. COMFORTABLE. ENJOYABLE. ACCESSIBLE.

**CITY OF BERKELEY
PEDESTRIAN MASTER PLAN**



THANK YOU

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