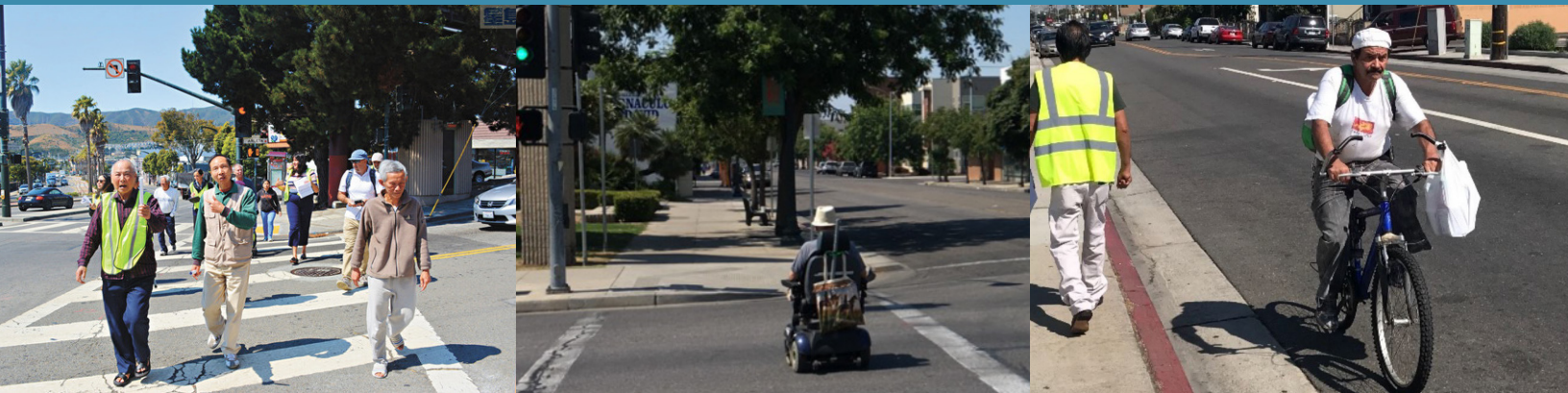# Safe Routes for Older Adults

**Berkeley** **SafeTREC**

SAFE TRANSPORTATION RESEARCH AND EDUCATION CENTER

**OTS**

CALIFORNIA OFFICE OF TRAFFIC SAFETY

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April 2018

## Acknowledgements

# SAFE ROUTES FOR
# OLDER ADULTS

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# Introduction

Whether rural, suburban or urban dweller, transportation is a critical lifeline to meet the needs of daily living, maintain independence and enable social connection.

Walking and bicycling are important transportation alternatives to motor vehicle travel. They are also important sources of physical activity and social connectedness. Creating and/or enhancing environments to be more supportive of walking and bicycling has been a significant initiative within the transportation and health communities for over a decade, with important progress in many locations.  Rates of walking and bicycling are up in California, and active transportation policies have become more institutionalized at the state and local level (e.g., Caltrans' "[Toward An Active California State Bicycle/Pedestrian Plan](#)" and the [City of Los Angeles Complete Streets Design Guide](#)).

With the increased focus on walking and bicycling comes opportunities to improve the safety of the transportation environment for all users. **This guide provides communities with background information on walking and bicycling safety for older adults and tools to make transportation in California communities age-friendly for all.**

## Aging Population Statistics

Making communities age-friendly and transportation systems supportive of all road users is incredibly important as we consider some of the demographic shifts underway. With the aging of the Baby Boomer generation (and Generation X, to a lesser degree), the older adult population will increase significantly over the next few decades in California and the United States as a whole:

- The older adult population in the United States aged 65 and older is expected to almost double between 2012 and 2050, from 43.1 million to 83.7 million.
- The California Department of Aging estimates that by 2050 13.9 Californians will be 60 or older, representing over 25% of the state population. Over 2.5 million of those individuals will be 85 or older.
- This age wave is largely due to the Baby Boomers "coming of age" and increased survivorship rates.
- While Californians are living longer, they are facing health concerns. Over 80% of older adults have at least one chronic condition, and 50% have at least two.
- The growth in population of older adults in California is expected to occur in all but the most rural counties, with the largest increases in the Central Valley and Southern California counties.

The California Department of Finance prepared an interactive population pyramid to demonstrate the growing older adult population (Figure 1).

# Figure 1 Population Projections for the State of California in 2018 and 2050

## Demographic Research Unit - 2016 Vintage Population Projections for California
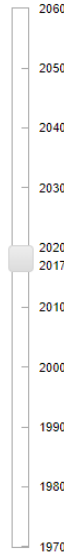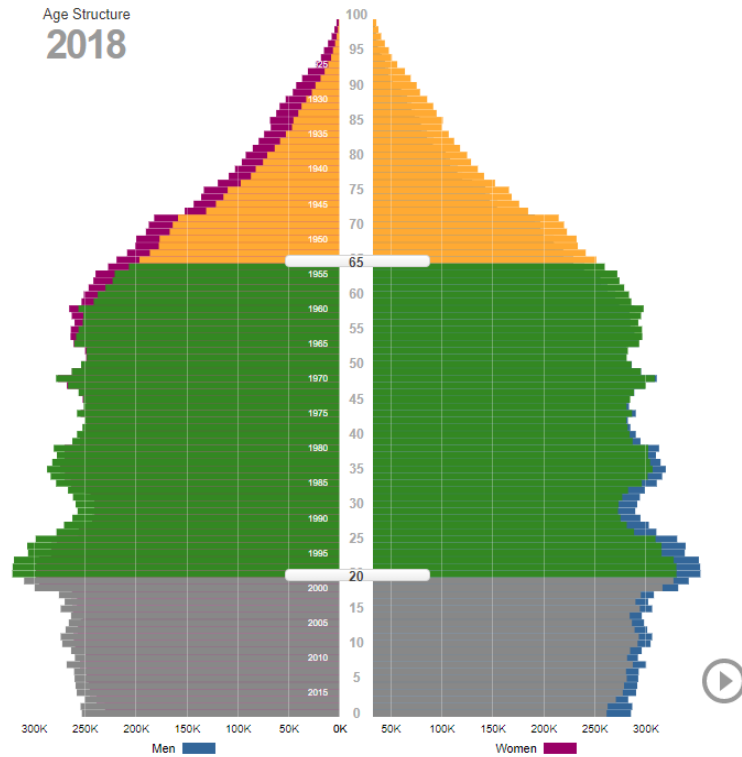
### Age Structure
### 2018



**Assumptions**

- 1970-2009:
  DRU Population Estimates
- 2010-2060:
  DRU Population Projections
- Total Fertility Rate:
  1.67 children per woman in 2060
- Life Expectancy at Birth:
  89 years for women; 86 years for men
- Net migration:
  +100,000 per year (2020-2030)
  +150,000 per year (2030-2060)
- Details on Projections Methodology:
  Click Here

| Age | | Persons | Pct. |
|-----|---|---------|------|
| 65+ | | 5,896,807 | 15% |
| 20–64 | | 23,606,390 | 59% |
| <20 | | 10,449,286 | 26% |
| Total | | 39,952,483 | 100% |

Median age 37.2   |   Old-age dependency ratio 25

## Demographic Research Unit - 2016 Vintage Population Projections for California
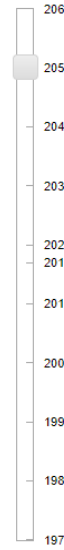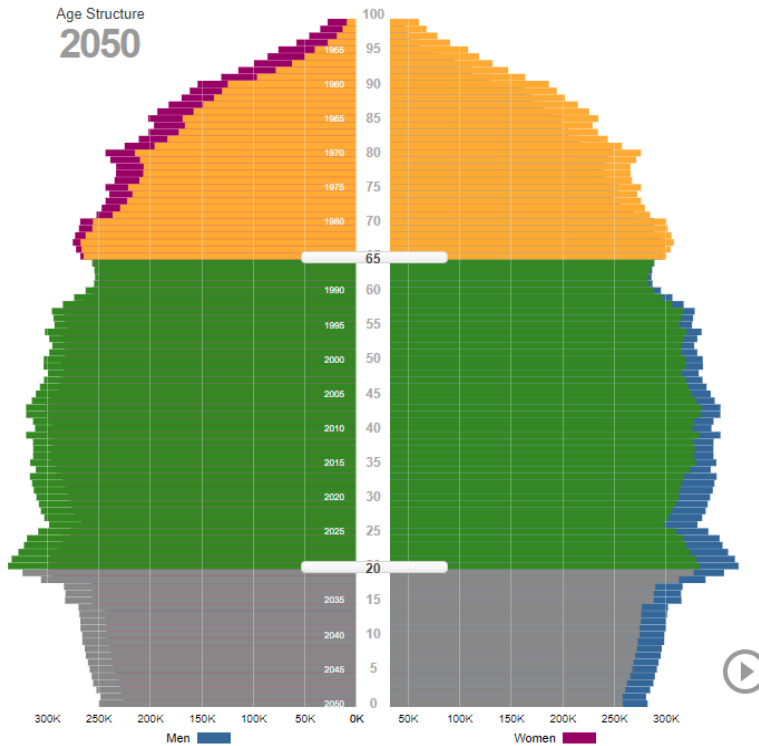
### Age Structure
### 2050



**Assumptions**

- 1970-2009:
  DRU Population Estimates
- 2010-2060:
  DRU Population Projections
- Total Fertility Rate:
  1.67 children per woman in 2060
- Life Expectancy at Birth:
  89 years for women; 86 years for men
- Net migration:
  +100,000 per year (2020-2030)
  +150,000 per year (2030-2060)
- Details on Projections Methodology:
  Click Here

| Age | | Persons | Pct. |
|-----|---|---------|------|
| 65+ | | 12,434,336 | 25% |
| 20–64 | | 26,358,989 | 54% |
| <20 | | 10,284,476 | 21% |
| Total | | 49,077,801 | 100% |

Median age 43.6   |   Old-age dependency ratio 47

Source: CA Department of Finance

## Older Adult Transportation Statistics

**15%** of all licensed drivers are over 65 (2011)

**61%** of Californians over 75 hold a driver's license (2015)

**8.5%** of all trips made by persons 60 and older are walking trips (2004)

According to the 2016 California Health Interview Survey, twenty four percent of individuals sixty and over in California live in one-person households. Females sixty and over live in one-person households more frequently than males (28.7% vs. 19%).

Transportation constraints such as unsafe places to walk or bicycle or limited transit or auto access, can contribute to social isolation, which negatively impacts mental and physical health.

While the current pattern of travel indicates that the majority of trips taken by older adults are by automobile (as driver or passenger), the second most frequent mode of travel is walking. Future expectations mirror current patterns. Additionally, it is important to note that every motorized trip (auto or transit) begins and ends on foot.

The benefits of walking for older adults are many: increased physical activity, travel independence, and social connection are but a few. However, older adults are disproportionately represented in pedestrian injuries and fatalities both nationally and in California:

- Nationally, older adult pedestrian fatalities occur at 2-3 times the rate of the general population.

- In California, pedestrian fatalities age 65 and older increased 19.8 percent from 202 in 2015 to 242 in 2016.

- More emergency department visits and hospitalizations in 2014 for non-fatal pedestrian-related injuries were seen among Black Californians 65 and older than other race/ethnicities.

Two primary factors behind these high rates of older adult pedestrian injury and fatality are: 1) increased susceptibility of injury and risk of death when collisions occur; and 2) a transportation infrastructure poorly designed for pedestrians, particularly more vulnerable pedestrians. The California Manual of Uniform Traffic Control Devices (CA MUTCD) recommends using a walking speed of 3.5 ft/s (~1.07m/s) as the standard at most signalized pedestrian crossings. Since the walking speed of many older adults (as well as other road users) is slower than that, the potential for conflict and anxiety between road users is high (Figure 2). Given this, the CA MUTCD was updated in the past several years with the recommendation of a walking speed of 2.8 ft/s (~0.85 m/s) in locations where older or disabled pedestrians routinely use a crosswalk.

## Can You Make the Light?

1.0 m/s    1.2 m/s

**Speed** (metres per second) ▶ 0    0.2    0.4    0.6    0.8    1.0    1.2    1.4

**No.**
At least not according to the CCMTA's 2013 report, which notes that "it is clear that a significant proportion of pedestrians will find it difficult or impossible to cross streets at the 1.2 m/s expected of them at most signalized intersections⁹."

*Toddler (0-2 Years)*
0.52 m/s

*Cane/Crutch*
0.80 m/s

*Preschooler (3-6 Years)*
0.84 m/s

*Senior*
0.67 -1.20 m/s

*Walker \**
0.63 m/s

*Rheumatoid Arthritis*
Knee: 0.75 m/s
Hip 0.68 - 1.12 m/s

*Wheelchair\**
1.08 m/s

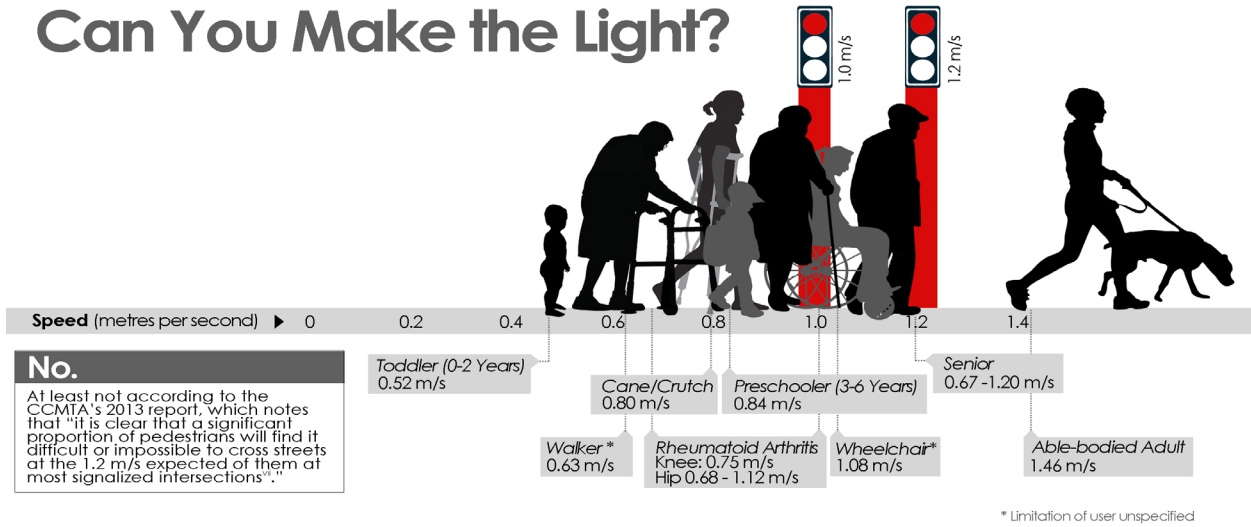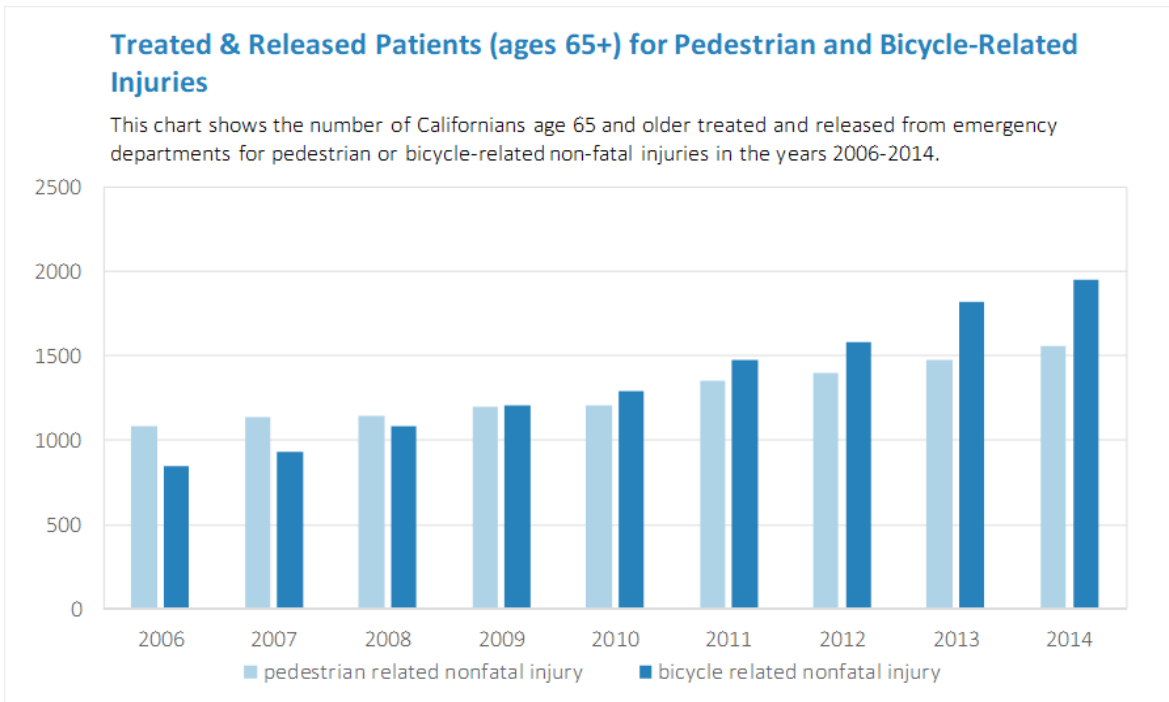*Able-bodied Adult*
1.46 m/s

\* Limitation of user unspecified

Photo Credit: Kristin Agnello, Plassurban.com

CCMTA. Countermeasures to Improve Pedestrian Safety in Canada. (CCMTA: 2013), pp. 26-29.
http://ccmta.ca/images/publications/pdf//CCMTA_Pedestrian_Report_Eng_FINAL.pdf

Lárusdóttir A. R. and Dederichs, A. "Evacuation Dynamics of Children: Walking Speeds, Flow Through Doors in Daycare Centres." Ph.D. Research, Technical University of Denmark, 2016, http://www.kias.org.uk/wp-content/uploads/2016/02/Walking-speed-children.pdf.

Hospital data (i.e., emergency department and hospitalizations) plays an important role in the traffic safety system, as a complementary data source to police-reported crash data and fatality data for comprehensive reporting on traffic collisions. For example, while there were 183 pedestrian fatalities in 2014, hospital data shows that in 2014 1,561 pedestrians age 65 and older were treated for injuries in emergency departments (ED) (Figure 3). Since 2006, the rate of older Californians treated in ED for pedestrian and bicycle-related injuries has been growing, with larger increases seen among ED visits due to bicycle-related injuries than pedestrian related injuries.

Figure 3 Hospital Data

### Treated & Released Patients (ages 65+) for Pedestrian and Bicycle-Related Injuries

This chart shows the number of Californians age 65 and older treated and released from emergency departments for pedestrian or bicycle-related non-fatal injuries in the years 2006-2014.

■ pedestrian related nonfatal injury    ■ bicycle related nonfatal injury

Source: California Department of Public Health's EpiCenter

## Building a Stakeholder Network

Building a stakeholder network is about bringing together the right people to work towards a solution to a given problem. Who are the organizations or leaders who share an interest and concern over Safe Routes for Older Adults (SRFOA)? Are there existing groups where a SRFOA program fits naturally, such as a local coalition on adult falls? Or are there no obvious groups to take on this issue? If the latter is the case, this is the time to form a coalition of likeminded stakeholders and to identify a program champion. A group of stakeholders and organizations with the same goal but diverse expertise can create a well-rounded team capable of addressing multiple issues. Hold a kick-off meeting to focus the group, set priorities, and assign responsibilities.

Potential coalition members include:

- AARP
- Area Agencies on Aging (AAA)
- Senior living facilities
- Veterans Affairs
- Meals on Wheels
- County or city Department of Public Health
- Aging services/independent living programs within local government
- Senior community centers
- Health care providers
- City Planning
- Law enforcement
- Public works
- Transportation officials
- City or county pedestrian coordinator
- Local businesses
- Neighborhood or community associations
- Faith-based organizations
- Local non-profit organizations
- Disability groups
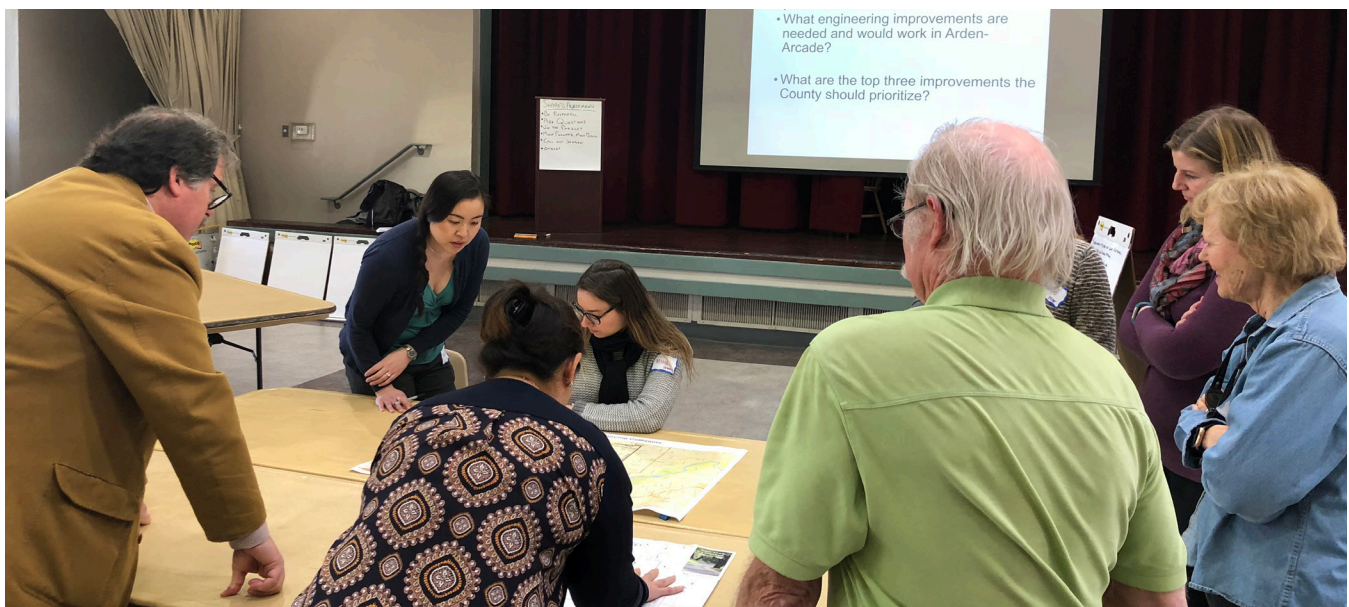


Stakeholders discuss infrastructure concerns at the Community Pedestrian and Bicycle Safety Training (CPBST) in Arden-Arcade
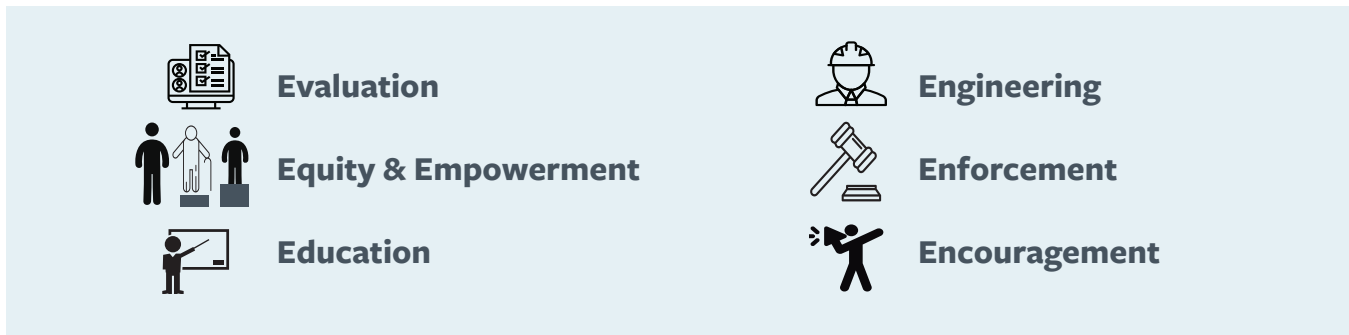
Photo Credit: Ana Lopez, UC Berkeley SafeTREC

# The 6 E's

There is no "one size fits all" or single solution to make communities and neighborhoods more attractive and safe for older adults to walk and bike. The most successful and sustained efforts at increasing the safety and desirability of walking and bicycling in communities involve a focus on the "Six E's." The E's can help communities develop a plan based on need, opportunity, readiness for change, and budget.

| | |
|---|---|
| Evaluation | Engineering |
| Equity & Empowerment | Enforcement |
| Education | Encouragement |

## Evaluation

Evaluation is often thought of as something to be done after a project is completed. However, it is a critical tool to use before, during and after changes are made and/or programs are implemented in a community.

- Before: Identify overall issues and problem spots for older adults within communities;

- During: Determine the best solutions that fit the issues as well as the community's readiness and budget realities; and

- After: Measure the impact of the solutions once implemented (ideally done immediately after and then again several months later to see if the impact has changed/sustained).

Quantitative and qualitative data are both important to assess transportation safety within the community. Some of this data may already exist (e.g., municipalities may have traffic speed and volume data), while other data may need to be gathered (e.g., walking audits).

Examples of data sources are provided below and in the resource list at the end of this guide.

### Quantitative Data
- Police reported crash data, such as SWITRS
- Injury data (e.g., ED and hospitalization data ftrom California Department of Public Health's EpiCenter & ED)
- Land use and geographic information system (GIS) data from municipalities
- Traffic speed and volume reports for pedestrian, bicycle and motor vehicle traffic

### Qualitative Data
- Interviews or focus groups with community members, health professionals, law enforcement and local government
- Analysis of community plans (regional/ general/neighborhood plans)
- Walking audits to observe the street environment for all users, all abilities, all ages

Walking audits done in various community neighborhoods.

Community members are key partners in the evaluation effort. They often know where trouble spots exist and can provide a unique perspective on possible solutions. For example, interviews with community members may show that there is one intersection near a community center and park with a high amount of pedestrian/ automobile near misses. Further data on traffic speed and volumes, along with observations of street crossings, may point to a reduction in the pedestrian crossing distance in order to 1) decrease speeds and 2) reduce the potential for conflict between vehicles and pedestrians because the pedestrian is in the intersection for less time.

As another example, a walking audit may show that the walking environment is well designed, yet very few older adults are walking. This would suggest more investigation into barriers to walking for older adults and potential programming opportunities to promote walking. For example, if older adults do not feel safe walking alone, a walking group or walking buddy program may be a good solution.

Evaluation is sometimes seen as expensive and, therefore, not a priority; however, it is an important investment in determining what works, and what does not, to improve transportation safety and promote walking and bicycling in communities.

## Equity and Empowerment

Social equity is about all people--regardless of age, race, gender, ability or income-- being considered in planning and decision making processes to ensure that all have access to the programs, facilities, places and spaces that make their lives and communities healthy and livable. Social equity is an explicit goal and objective for the California Office of Traffic Safety and California Department of Transportation (as noted in the California Transportation Plan 2040 and "Toward an Active California Statewide Bicycle and Pedestrian Plan"). As stated in the Bicycle and Pedestrian Plan, "Caltrans will work to provide equity in mobility and accessibility to meet the needs of all community members regardless of age, race, gender, ability or income."

Communities can take steps to make planning and decision-making more inclusive and equitable for older adults by:

- Conducting outreach to the older adult population via community centers, healthcare settings, and caregiver networks.
- Including equity (i.e., addressing socio-economic factors such as age, race, gender, ability, income)  as a metric to determine project prioritization and funding decisions.
- Encouraging municipal transportation advisory groups to include older adults on their committes.

Community Story

At a California Pedestrian Bicyclist and Safety Training (CPBST), an older participant described her everyday experience living in the rural community of North Shore, CA. A limited public transit schedule forced people to rely on driving, and the lack of ADA crosswalks and sidewalks made it much more challenging to get around. The lack of infrastructure increased barriers for older adults, but also had similar impacts on their caregivers. Getting community members involved in the decision making process can inform decision makers, as they gain insight on how the lack of pedestrian facilities are experienced by older adults and their caregivers.

Older adults at an educational workshop in San Francisco.

Photo credit: Natasha Opfell, Walk San Francisco

## Education

Walking and bicycling rates for recreation and transportation have increased in recent years. However, the importance, rights, needs and opportunities for older adults traveling by these modes may not be well known to community policy-makers, local law enforcement and even older adults themselves. Education about the benefits of and safety strategies for walking and bicycling can help to encourage and increase these activities.

Communities have used some of following methods to increase education about older adult walking and bicycling:

- Public relations campaign targeting media, public, and/or decision makers to increase awareness of the benefits of safe multi-modal transport for older adults and the laws related to pedestrian and bicycle safety (e.g., senior speed zones, yielding, turning actions).
- First person video and VideoVoice: older adults can film a video about their travel experience as a pedestrian to share with city officials.
- Walk audits with older adults and decision-makers.
- Signage directed at drivers (e.g., senior speed zone) and pedestrians (e.g., wayfinding).
- Seminars for older adults on the benefits of safety strategies for walking and bicycling.

**Our health may change as we age:**

- 43% of Californians 60 and over live with a disability
- Gait changes (changes in one's walking manner)
  - slower walking
  - reduced balance/stability
  - reduced foot lift
- Visual impairments
- Auditory impairments
- Cognitive impairments
  - judging distance
  - familiarity and legibility of environment

## Engineering

There are many physical changes that can be made to the street environment to increase the safety, legibility and appeal of the walking and bicycling environment for older adults. It is also important to note that these changes can increase safety for all road users.

Two main issues that can be improved at intersections are: 1) reducing points of conflict between vehicles, pedestrians and bicyclists; and 2) increasing the visibility at intersections so that road users can better see one another. Here are a few engineering changes that address these issues:

- Reduce the physical crossing distance via curb extensions/bulb-outs or pedestrian median islands.
- Extend the time given for a pedestrian to cross a street; in particular, crossings with high older adult density (e.g., near senior centers, medical buildings) could be set for slower walking speeds.
- Give pedestrians a head start to cross a street. In technical terms, this is called a Leading Pedestrian Interval (LPI), which allows pedestrians to be further across the intersection before vehicles start moving and are allowed to turn. This both increases visibility and reduces conflict.
- Remove parking close to the crosswalk or intersection to increase visibility of the crossing point for both pedestrian and driver (also called daylighting). This can be done either via red-striping the curb (lower-cost solution) or adding curb bulb-outs (higher-cost solution). Bulb-outs have the added benefit of decreasing the crossing distance at the intersection and increasing space on the sidewalk for utilities or street furniture such as benches and trash receptacles.

Intersections are not the only part of the street environment where changes can be made in order to increase the safety and appeal of walking and/or bicycling. Here are some examples of improvements that can be done on streets, sidewalks, bicycle facilities and multi-use paths so that they are easier to navigate and safer for pedestrians, bicyclists and motor vehicles:

- Install pedestrian ramps at intersections with a tactile treatment for the visually impaired.
- Install pedestrian crossing devices that are accessible from a wheelchair with countdown timers and auditory cues.
- Install visible signage that helps pedestrians, bicyclists and motor vehicles understand each other's presence and actions (e.g., senior zone, 25 mph) and assist with navigation.
- Improve the condition of sidewalks. Is the sidewalk:
    - Present?
    - Continuous?
    - Free of severe uplifting due to ground shifts, tree roots, etc?
    - Free of obstructions such as vegetation, light poles, meters, electrical boxes, cars?
- Provide:
    - Street trees for shade
    - Lighting oriented toward the pedestrian
    - Elements such as benches, game tables and landscaping for resting, softening of hardscapes and social connectedness
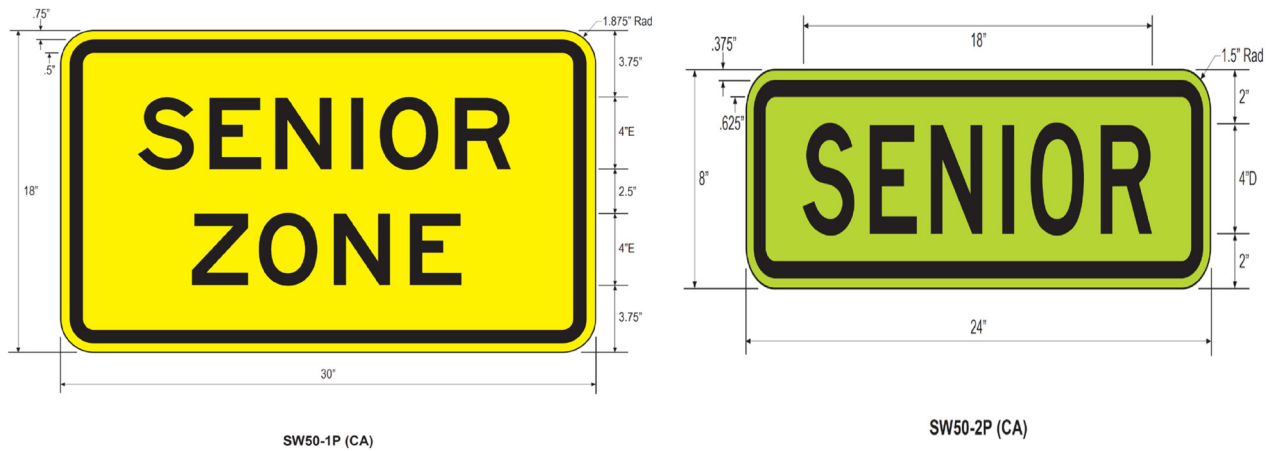


Both severely uplifted and obstructed sidewalks can limit mobility.

Photo credit: Tracy McMillan, UC Berkeley SafeTREC

## Examples of Signage Helpful for Increasing Visibility of Older Adult Pedestrians



SW50-1P (CA)



SW50-2P (CA)

CA vehicle code Sec 22352 sets "prima facie" speed limits in particular zones, such as near schools and senior facilities. Speed is presumed to be 25 mph but is not enforceable unless signs are posted.

## Example of a Midblock Crossing



A midblock crossing can provide safety benefits to all road users.

Photo credit: California Walks

## Enforcement

Enforcement is an important component to increase the real and perceived safety of the transportation environment for more vulnerable road users, such as older pedestrians. Common areas of focus for enforcement are:

- Senior speed zones (shown on pg.12)
- Proper yielding
- Vehicle turning actions
- Safe street crossing behavior
- Safe bicycling behavior (e.g., riding on the right side of the street)
- Media campaign re: "It's the law."

To determine where additional enforcement may be helpful, consider using an analysis tool like the SafeTREC Transportation Injury Mapping System (TIMS). TIMS, which is free to use, allows users to query and map police-reported crash data in California communities. The tool can help a community identify where collisions occur and whether there are apparent behaviors that can be addressed via enforcement, such as failure to yield or unsafe speeds, along with complementary actions via the other E's.

SafeTREC's TIMS Useful for Analyzing SWITRS Crash Data



https://tims.berkeley.edu

## Encouragement

Encouragement activities focus on increasing the opportunity and appeal of walking and bicycling. Activities like those listed below can affect seniors' physical health by increasing physical activity. Equally important, these activities may affect older adults' mental health through increased social connectedness and community engagement, and decreased social isolation and personal safety concerns. The following are some examples of encouragement activities successfully used in communities:

- Walking groups and walking buddies
- Street furniture strategically placed to provide for social interaction and a resting spot (e.g., City of Edmonton Buddy Benches Program)
- Neighborhood watch
- Crossing guard partnership between older adults and schools
- Participation in municipal advisory groups
- Temporary installations/pop-ups/parklets of engineering solutions to encourage pedestrianism and provide social gathering spots
- Walking maps/guides focusing on points of interest in a community and/or services, e.g., healthy and interesting walking routes to and from senior/community center

### Maintaining Momentum

Maintaining community connections and support through on-going older adult pedestrian activities can prove key in maintaining momentum and focus on the issue. Promote your success! Create visibility around your efforts and use both local media and social media to let the community know of the positive impacts being made toward creating a safer community for people of all abilities.

Continue to press your case with local officials to implement safer policies. Successful safety policies have included lengthening crossing times at key intersections.

The future of your efforts may depend on the story that evolves from your activities. Establishing evaluation metrics to measure your success and substantiate your progress will become pivotal to maintain program endurance. While the ultimate goal is to decrease the number of older adult pedestrian fatalities and injuries, the benefit of measuring interim outcomes can help your efforts gain recognition and support continued intervention. Examples of interim outcomes include increasing stakeholder involvement, creating a coalition, increasing the number the partners who can speak about this issue, expanding awareness, and completing a SRFOA-focused project. Be creative in how you view your progress and take advantage of promoting these successes.

Change must include your community's older adult population. Their input, along with the contributions of the right of stakeholders, can generate the momentum needed to create positive change.

## Safe Routes for Older Adults Resources

While this list is by no means exhaustive, it provides a good starting point for communities interested in promoting safe walking and bicycling for older adults (and people of all ages and abilities).

1. A Technical Guide for Conducting Pedestrian Safety Assessments for California Cities: http://www.techtransfer.berkeley.edu/tse/psa_handbook.pdf

2. AARP How to Create a Parklet: http://www.aarp.org/livable-communities/livable-in-action/info-2015/how-to-create-a-parklet.html

3. AARP Livability Index: livabilityindex.aarp.org

4. AARP Livable Communities Initiative: http://www.aarp.org/livable-communities/

5. AARP Walk Audit Toolkit: https://www.aarp.org/content/dam/aarp/livable-communities/docu-ments-2016/Walk-Audit-Tool-Kit/AARP-Walk-Audit-Leader-Guide-100416.pdf

6. AARP's Network of Age-Friendly Communities: aarp.org/agefriendly

7. American Planning Association Policy Guide on Aging in Community: https://www.planning.org/pol-icy/guides/adopted/agingincommunity.htm

8. California Department of Aging, State Plan on Aging: http://www.aging.ca.gov/docs/About_CDA/California_State_Plan.pdf

9. California Department of Public Health Active Transportation Safety Program: https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/SACB/Pages/ActiveTransportationSafetyProgram.aspx#

10. California Department of Public Health EpiCenter – California Injury Data Online: http://epicenter.cdph.ca.gov/

11. California Department of Public Health's Pedestrian Safety Campaign: tinyurl.com/cdphwalksmart

12. California Highway Patrol Programs and Services: https://www.chp.ca.gov/programs-services

13. California Manual of Uniform Traffic Control Devices: http://www.dot.ca.gov/trafficops/camutcd

14. California Office of Traffic Safety: http://www.ots.ca.gov

15. California Vehicle Code, Section 22352: http://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=VEH&division=11.&title=&part=&chapter=7.&article=1

16. California Walks: http://californiawalks.org/

17. Caltrans Complete Intersections Guide: https://nacto.org/docs/usdg/complete_intersections_cal-trans.pdf

18. Caltrans Complete Streets: http://www.dot.ca.gov/transplanning/ocp/complete-streets.html

19. Caltrans Highway Design Manual: http://www.dot.ca.gov/design/manuals/hdm.html

20. Caltrans Main Street, California Guide: http://www.dot.ca.gov/hq/LandArch/mainstreet/main_street_3rd_edition.pdf

21. Caltrans: Smart Mobility Framework http://www.dot.ca.gov/transplanning/ocp/sm-framework.html

22. Caltrans: Toward An Active California State Bicycle + Pedestrian Plan: http://www.dot.ca.gov/active-california/theplan.html

## Safe Routes for Older Adults Resources

23. City of Edmonton "Hello, How Are You?" Social isolation public awareness campaign: https://www.edmonton.ca/programs_services/for_communities/hello-how-are-you.aspx?utm_source=virtualaddress&utm_campaign=hello City of Edmonton Buddy Bench program: https://www.edmonton.ca/programs_services/for_communities/buddy-benches.aspx

24. City of Los Angeles Complete Streets Design Guide: https://planning.lacity.org/documents/policy/CompleteStreetDesignGuide.pdf

25. Federal Highway Association (FHWA) Pedestrian and Bicycle Safety Information: https://safety.fhwa.dot.gov/ped_bike/

26. FHWA – How to Develop a Pedestrian Safety Action Plan: https://safety.fhwa.dot.gov/ped_bike/ped_focus/docs/fhwasa17050.pdf

27. Go Human: http://gohumansocal.org/Pages/Home.aspx

28. National Association of City Transportation Officials (NACTO) Designing for All Ages & Abilities: Contextual Guidance for High-Comfort Bicycle Facilities: https://nacto.org/wp-content/uploads/2017/12/NACTO_Designing-for-All-Ages-Abilities.pdf?mc_cid=9a942b490d&mc_eid=%5BUNIQID%5D

29. NACTO Urban Bikeway Design Guide: https://nacto.org/publication/urban-bikeway-design-guide/

30. NACTO Urban Street Design Guide: https://nacto.org/publication/urban-street-design-guide/

31. National Complete Streets Coalition: https://smartgrowthamerica.org/program/national-complete-streets-coalition/

32. National Highway Traffic Safety Association (NHTSA) Pedestrian Safety Information and Tips: nhtsa.gov/road-safety/pedestrian-safety

33. Pedestrian and Bicycle Information Center – Educating Older Pedestrians: pedbikeinfo.org/programs/education_ped_older.cfm

34. Plan4Health Resource Library: http://plan4health.us/resources-by-topic/

35. Proven Countermeasures- Leading Pedestrian Intervals: https://safety.fhwa.dot.gov/provencountermeasures/pdfs/fhwasa17063.pdf

36. Safe Routes to School National Partnership: At the Intersection of Active Transportation and Equity: http://www.saferoutespartnership.org/resources/report/intersection-active-transportation-equity

37. Safe Transportation for Every Step (STEP): https://www.fhwa.dot.gov/innovation/everydaycounts/edc_4/step.cfm

38. San Francisco Parklet Program: http://pavementtoparks.org/parklets/

39. Streetfilms' Daylighting:  http://www.streetfilms.org/daylighting-make-your-crosswalks-safer/

40. Transportation Injury Mapping System (TIMS): https://tims.berkeley.edu

41. University of North Carolina Highway Safety Research Center – Conducting a Pedestrian Safety Workshop for Older Adults: rsa.unc.edu/psw

42. Vision Zero Network: visionzeronetwork.org/

## Examples of Safe Routes for Older Adults Projects

1. California Walks – San José STEPS: californiawalks.org/projects/steps/

2. City of Weymouth, Massachusetts – Safe Routes for Seniors: weymouth.ma.us/planning-community-development/pages/safe-routes-for-seniors

3. Coalition for Sustainable Transportation (COAST) – Safe Routes for Seniors: coast-santabarbara.org/santa-barbara-walks/safe-routes-for-seniors/

4. Los Angeles Walks – Safe Routes for Seniors: http://www.losangeleswalks.org/safe_routes_for_seniors

5. New York Department of Transportation – Safe Streets for Seniors: nyc.gov/html/dot/html/pedestrians/safeseniors.shtml

6. San Joaquin County Public Health Services – Making Safe Strides: tinyurl.com/SafeStrides

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