Glendale Citywide Pedestrian Plan

Part 1: Taking Stock

September 2016

glendale california | Glendale Walks & Safe Routes to School

NELSON NYGAARD

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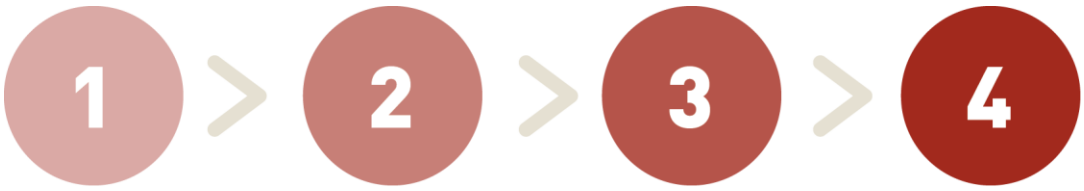
1 Framing the Challenge

The Glendale Citywide Pedestrian Plan will make Glendale a safer, more pleasant, and more convenient place for walking.

The plan is made up of two parts: **Part 1: Taking Stock** (this document), and **Part 2: Taking Steps**. This first document paints a picture of the pedestrian environment in Glendale today, and serves as a benchmarking tool for future planning efforts. Part 1: Taking Stock consists of three elements, which form the basis of the chapters in this report:

- Chapter 2 reviews the current pedestrian planning context, as well as the status of pedestrian planning among peer cities.
- Chapter 3 investigates on-the-ground conditions facing pedestrians from the perspective of demographics, urban form, health, and safety.
- Chapter 4 outlines best practices for pedestrian planning from cities in the United States and abroad.

Chapter 1: Framing the Challenge introduces the report. It explains why walking is important, what walkability is, how the Glendale Citywide Pedestrian Plan fits into existing planning documents in Glendale. It also outlines the plan's vision and goals, which will guide planning efforts in Part 2: Taking Steps.



Framing the Challenge

What is this report? Why are we doing this work?

What does it mean to be a walkable city? What are the drivers of walkability?

How does the Pedestrian Plan fit with other recent work in Glendale?

What's the vision for a walkable Glendale? What are the goals we'll use to measure our success?

Understanding the Context

What do the city's existing plans say about walking and walkability in Glendale?

What have we heard from people about the kind of walking city they want Glendale to be?

What do those other plans say about walking and walkability in Glendale?

What programs and policies to support walking does Glendale have in place today?

What is the policy and planning context of Glendale's peer cities?

Crunching the Numbers

Where are people walking today?

What is pedestrian infrastructure? What exists in Glendale today?

What parts of Glendale are most conducive to walking?

Where are there pedestrian safety concerns?

Where are the demographic groups in need of walking infrastructure?

Where are there health concerns that relate to walking?

Becoming the Best

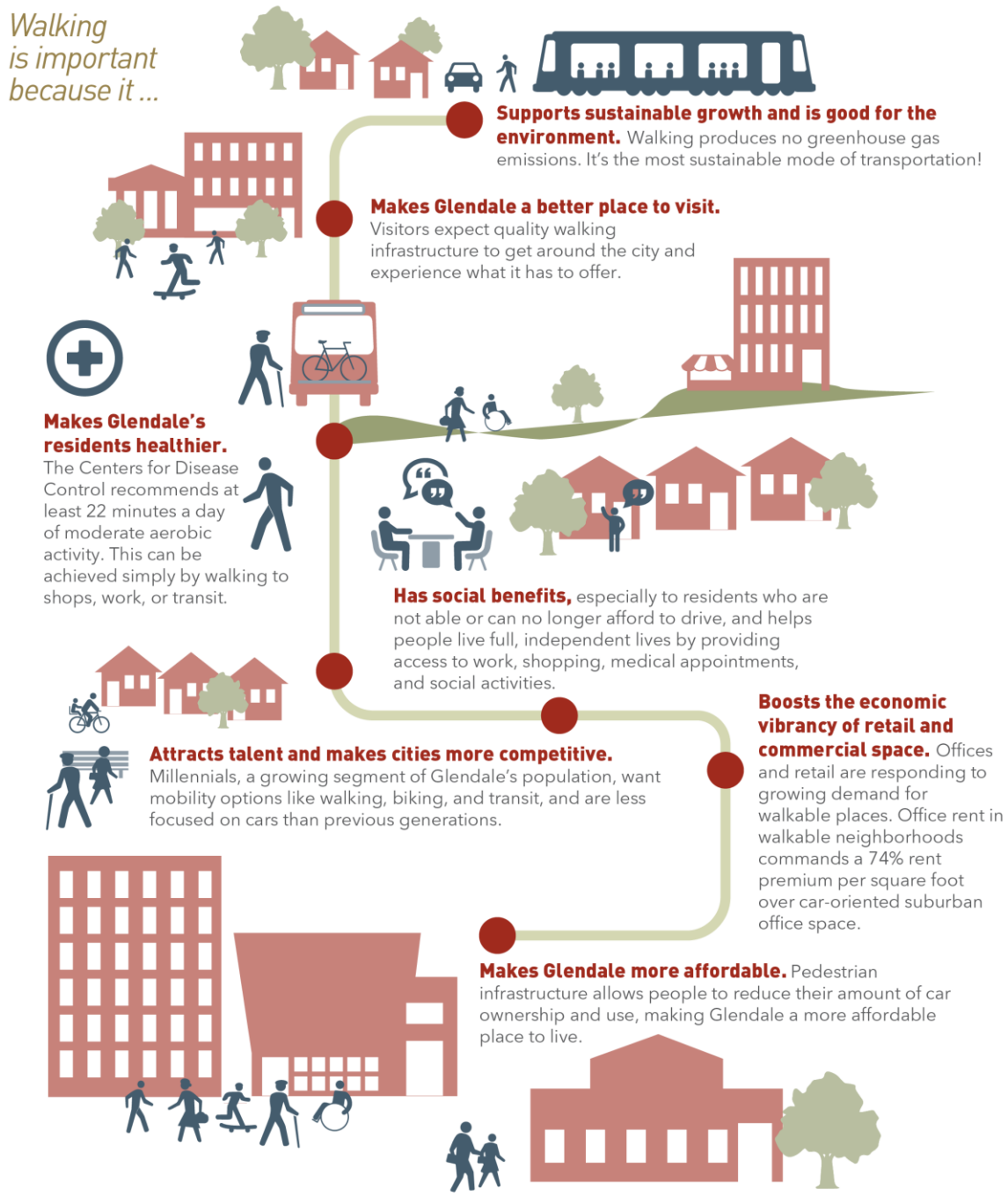
What are other cities doing that can serve as a model for Glendale?

What specific best practices make sense in this context?

Where do we go from here?

Why is walking important?

Walking is the most universal, affordable, healthy, and environmentally-sensitive form of transportation.



Sources: Centers for Disease Control; City Observatory; National Association of Realtors; Smart Growth America and the Center for Real Estate and Urban Analysis; American Automobile Association

Everybody, whether in a wheelchair or on foot, is a pedestrian for some portion of the day. This includes people walking to their car or accessing transit. Good pedestrian planning benefits us all.

While everyone walks sometimes, certain groups may benefit more from good pedestrian planning than others. For example, youth and seniors may not be legally allowed to drive and thus rely heavily on walking; people with low incomes may be unable to afford a car; new immigrants and people with limited English may need to walk and ride transit for logistical reasons. Similarly, people who choose to live close to work or shops may wish to walk in order to meet their daily needs and improve their health.

Why are we doing this work?

The Citywide Pedestrian Plan will establish a comprehensive, centralized, and coordinated approach to improving pedestrian infrastructure, safety, and demand within Glendale.

Developing a Citywide Pedestrian Plan is crucial for Glendale, given that pedestrian collisions are notably high for the region and state. Further, low- and fixed-income residents in Glendale, including the elderly, are disproportionally represented in these collisions.

The Plan will establish improving pedestrian safety as the city's highest priority. Widespread community outreach will directly inform its recommendations. Additionally, the plan will consolidate existing and recommended policies, projects, and programs—including recommendations from the Pedestrian Safety Task Force, the new Pedestrian Safety Advisory Committee, and the existing Pedestrian Safety Action Plan—into a single master plan.

The Citywide Pedestrian Plan will encourage increased use of non-motorized and active transportation by outlining specific pedestrian improvements and projects. These improvements will be identified by systematically prioritizing known origins and destinations, including schools, parks, civic institutions, transit, and residential and commercial areas with high pedestrian use. Particular emphasis will be placed on transit connections and areas with high collision rates.

The Plan is being developed in coordination with other pedestrian initiatives, notably the **Non-Infrastructure Safe Routes to School Program,** and the **Citywide Safety Education Initiative.**

- The Non-Infrastructure Safe Routes to School Program will educate K-9 students about pedestrian safety to prevent injuries and fatalities and to encourage walking and bicycling among school children.
- The Citywide Safety Education Initiative will focus on improving pedestrian safety in Glendale through continuing-education programs that teach residents conscientiousness and the rules of the road for all transportation modes. This program will target all segments of the Glendale population, including older adults.

What makes a place walkable?

A walkable place is one where pedestrian travel is safe, pleasant, and convenient. Walkability is determined by six key factors:

Pedestrian-oriented design.

Walkable streets have dedicated walking infrastructure (sidewalks, signalized crosswalks), as well as buffers between pedestrians and other transportation modes. Further, walkable streets have buildings that engage pedestrians on the ground floor. Dead walls and deep setbacks tend to make space uninviting to people on foot.

Dense networks of streets, trails, and greenways.

When streets networks are dense and grid-like, they allow people to reach destinations more directly on foot. Conversely, curvilinear and cul-de-sac streets increase distances between destinations and decrease legibility.

Mixed land uses.

Walkable places feature a wide array of land uses in close proximity. For example, a neighborhood with grocery stores, restaurants, clothing boutiques, hardware stores, housing and offices, all within walking distance of one another, allows residents to walk to their destinations. Land uses that are separated and far apart make driving necessary..

Understandable and organized around centers.

Walkable places are intuitively navigable. In addition to wayfinding measures like common signage, walkable places have activities that are clustered around axes or nodes.

Easy connections to frequent transit.

Walking and transit go hand in hand. Transit riders typically begin and end their trips with short walking trips. Therefore, making these connections to and from transit more convenient is critical to walkability.

Well-managed parking and right-of-way.

The placement, orientation, and supply of parking plays a key role in walkability. Streets where parking lots separate buildings from sidewalks make them unappealing for walking relative to streets with parking located behind buildings. Similarly, streets with perpendicular parking allow less room for sidewalks than streets with parallel parking.

How does the plan fit into Glendale's broader planning framework?

The Citywide Pedestrian Plan will consolidate existing pedestrian policies, recommend new policies, identify pedestrian corridors, assess intersections with high pedestrian collision rates, and recommend improvements and programs through an action plan.

A number of plans, studies, and efforts have yet to be consolidated and implemented as a cohesive strategy for improving pedestrian access and mobility in Glendale. These include the Glendale Safe and Healthy Streets Plan; the Bicycle Pedestrian Plan; the conceptual Safe Routes to School plan; the 2014 Pedestrian Safety Task Force Recommendations; the 2014 Bicycle and Pedestrian Report; the Downtown Mobility Study; the Downtown Specific Plan; the Circulation Element; and others. While pedestrian policies currently exist across several documents and plans, the Citywide Pedestrian Plan, funded through a Caltrans Active Transportation Program (ATP) grant, is now creating a coherent master plan to coordinate pedestrian safety programs and projects citywide.

What are the vision and goals of the Citywide Pedestrian Plan?

This plan establishes a vision for the future of walking in Glendale, as well as goals that will guide forthcoming pedestrian planning efforts.

The draft vision and goals make an aspirational statement about the walkable city Glendale wants to become in the next 20 years. Achieving these outcomes will require steadfast commitment from the city's leaders, staff, and residents as well as significant resources to support capital and program investments. The vision and goals are derived from stakeholder input, as well as the qualitative and quantitative findings of this report.

VISION

Glendale will be a **great place to walk**, leading to a community that is **safer**, **healthier**, more **sustainable**, and economically **vibrant**.

Goal 1: Make Walking Safer

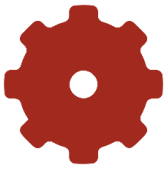
- Reduce the number of crashes and eliminate traffic-related injuries and fatalities
- Use an integrated and multi-pronged approach to reduce vehicle speeds
- Protect vulnerable populations and account for pedestrian needs first in planning and design
- Institute a culture of safety to get more people walking for more trips
- Teach and reinforce safe driving and walking behavior

Goal 2: Create Connected and Complete Communities

- Make connections to the places people need to and want to go
- Provide seamless connections to transit and ensure access to community assets
- Enhance streetscapes to create vibrant public spaces with wide sidewalks, active frontages, and amenities
- Make walking more pleasant by extending trees and landscaping into the street network

Goal 3: Build Walkable Places for All

- Prioritize projects in critical pedestrian areas to meet mobility and safety needs
- Make investments that improve health and promote equity
- Serve people of all ages and abilities
- Make walking a part of everyday life in Glendale



Goal 4: Organize for Implementation

- Maximize impact within existing capital investments and pursue new funding sources
- Pursue opportunities for low-cost, interim solutions as well as creative maintenance solutions
- Communicate, coordinate, and integrate activities across city departments
- Report on progress annually

What does this mean?

This chapter sets the stage for the remainder of the report. It explains the importance of walking and walkability, the purpose of the Citywide Pedestrian Plan, and its place within existing planning documents.

- Walking is important because it is a universal, healthy, and environmentally-sensitive form of transportation. Places that are pedestrian-friendly also yield economic benefits in the form of attracting talent, affordability, and increased commercial viability.
- The purpose of this plan is twofold: (1) to establish a comprehensive, centralized, and coordinated approach to improving pedestrian infrastructure, safety, and use within Glendale; and (2) to prioritize pedestrian safety in the City of Glendale.
- A number of existing city planning documents relate to walking and walkability in various ways. However, the Citywide Pedestrian Plan will consolidate existing policies and plans, providing a coherent action plan for Glendale's pedestrian projects and programs.

2 Understanding the Context

Chapter 2 reviews the plans, policies, programs, and procedures of the City of Glendale and community organizations to identify how they support or create barriers to pedestrian safety and access in Glendale.

The chapter outlines the relevant elements of these plans and policies, as well as any gaps or conflicts between them. It also assesses how successful other Southern California cities have been in implementing pedestrian plans, policies, and programs. Understanding the Context is organized into ten sections:

- Glendale in Focus
- Community Outreach
- Plans and Policies
- Codes and Ordinances
- City Programs
- Community Health Programs
- Economic Development Strategies
- Other Local Efforts
- Key Findings
- Peer City Practices

This policy and program review focuses on City of Glendale and other Glendale-specific documentation, with select mentions of county, regional, and state plans and policies. Final plan recommendations will be reviewed for consistency with local, regional, and state plans and policies, but a comprehensive review of these documents is beyond the scope of the Citywide Pedestrian Plan.

Glendale in Focus

Glendale is a diverse, multilingual city of roughly 200,000 residents located at the foot of the Verdugo Mountains in the eastern end of the San Fernando Valley of Los Angeles County. It encompasses 34 neighborhoods covering 30.5 square miles.

Glendale is bordered to the northwest by the Tujunga neighborhood of Los Angeles, to the northeast by La Canada Flintridge and the unincorporated area of La Crescenta, to the west by Burbank, to the east by Pasadena, and again to the south and southeast by LA. Glendale boasts several forms of transportation infrastructure. It is well connected by public transportation, including Metrolink and Amtrak service at the Glendale Transportation Center in South Glendale, by Metro Rapid and Local buses, and by Glendale Beeline bus service. It is served by limited-access freeways SR-2 and SR-134, as well as I-5 and I-210.

Figure 2-1 shows the geographic location of Glendale, including certain points of interest. Figure 2-2 displays the 34 neighborhoods located within the city.

Figure 2-1 Glendale Overview

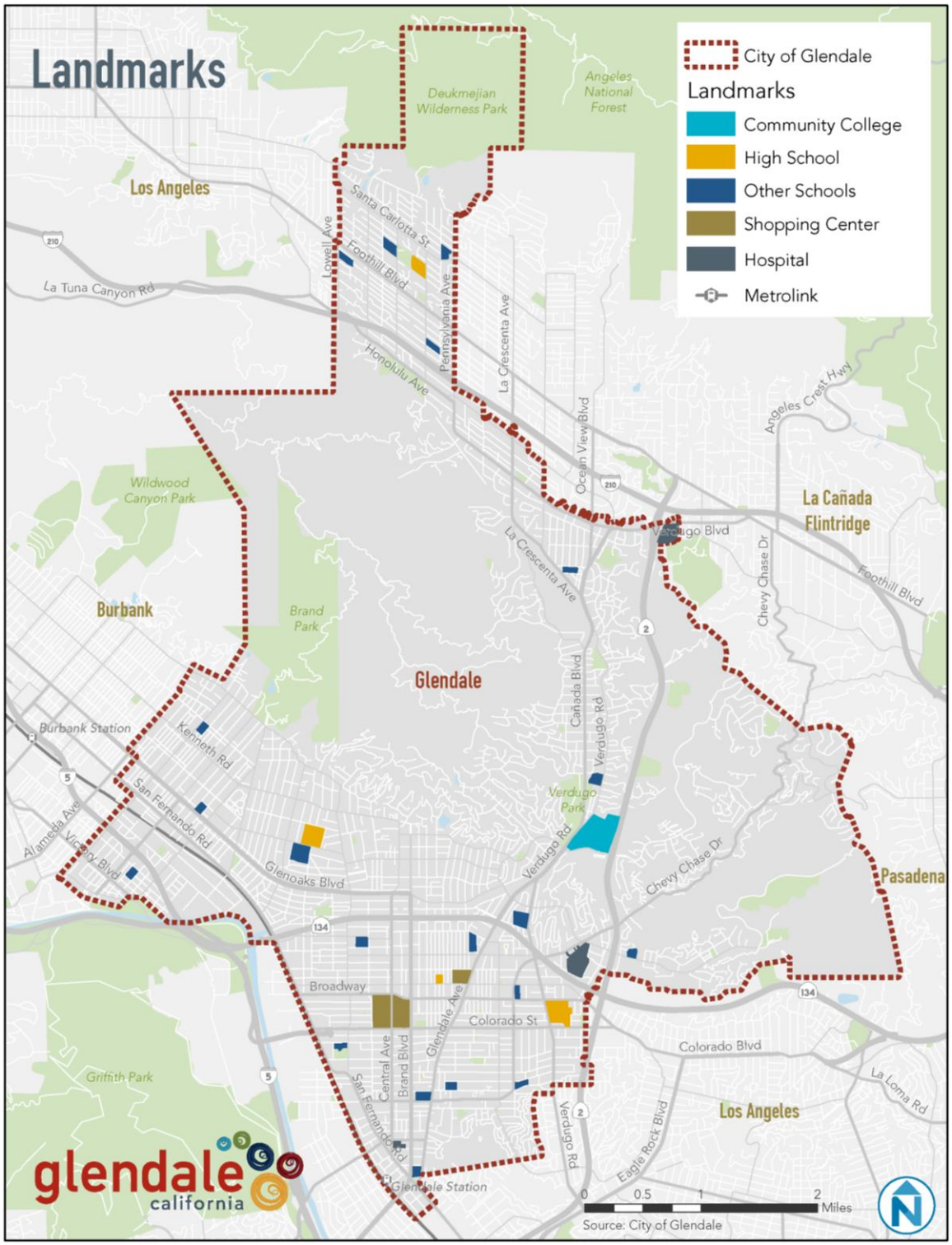
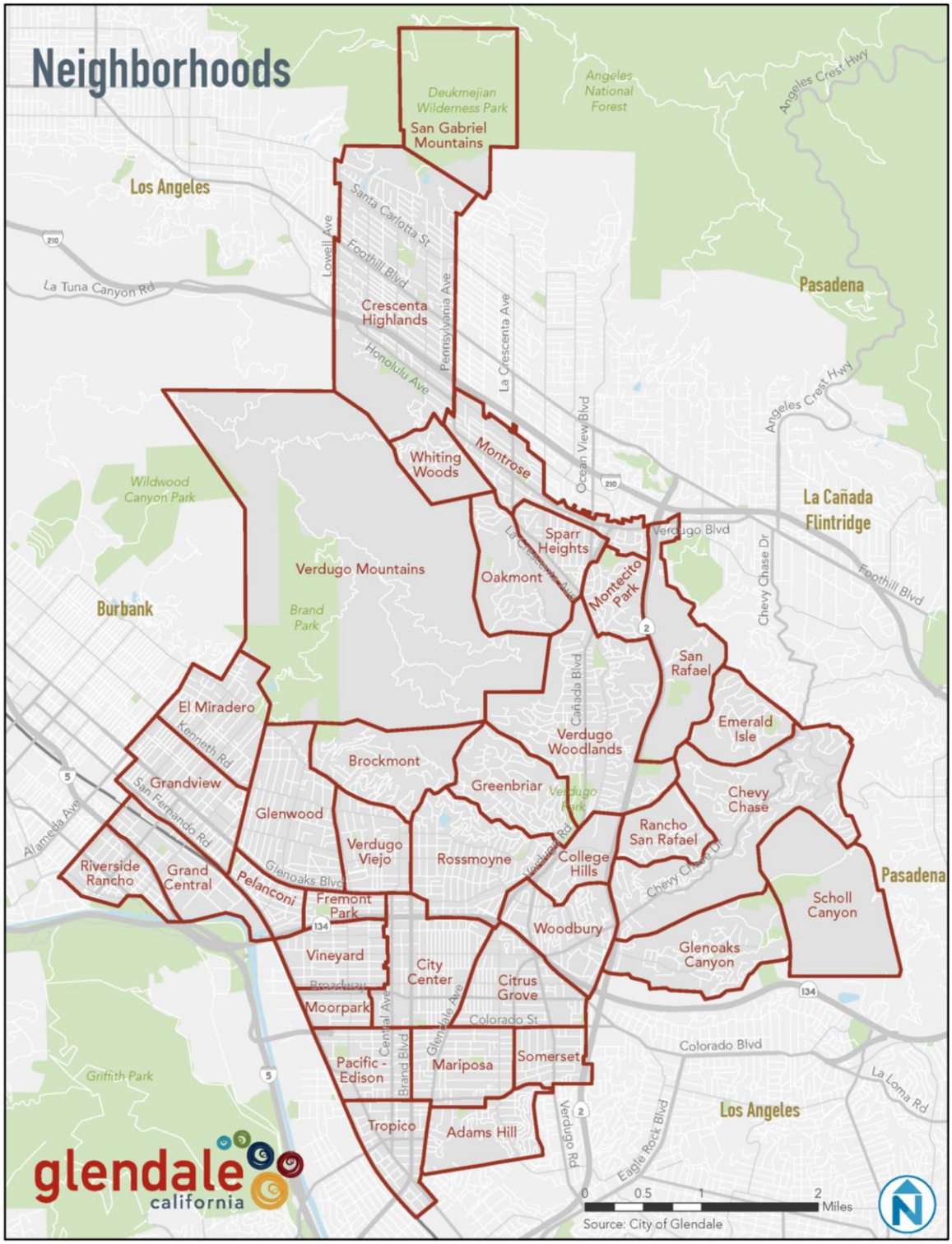


Figure 2-2 Neighborhoods in Glendale



Community Outreach

Over 400 participants helped inform the Pedestrian Plan during four in-the-field "pop-up" community events from April to July 2016.

The events were located around the community and in different settings—Montrose at the Arts and Crafts Festival, Downtown Glendale at Cruise Night event, Central Park for the Earth Day Festival, and Fire Services Day at Fire Station 21.

At each pop-up, the Pedestrian Plan team set up an interactive art activity that creatively solicited feedback about what improvements would encourage participants to walk more in Glendale. Potential answers to the question, "What would make you walk more in Glendale?" were coupled with corresponding fabric triangles. Participants selected colored triangles based on their top three answers and added them to a large-scale community mural. The color densities and frequencies of colors that emerged reflect community sentiment and key issues that the community feels need to be addressed in the Pedestrian Plan.

Glendale residents contribute to the community art mural

Photos from Here Design L.A.

The community pinpointed the need to address speeding vehicles as a top priority. Many people felt unsafe walking or crossing the street; several participants described feeling this way especially when walking with children. At all the events, between 16% and 24% of individual responses identified speeding vehicles as a significant barrier to walking. The next most frequent suggestions for improving walking in Glendale were "More Traffic Enforcement" and "Safer and More Visible Crosswalks," followed by "More Places to Walk." Many people referenced the pedestrian crosswalks and pedestrian improvements on Brand Boulevard as very desirable elements that they would like to see extended throughout the city.

Others said that they wished there were more places within walking distance and that sometimes walks are unpleasant. In the "Other" category, people identified areas of the city without sidewalks as problematic, and expressed a desire for more traffic signals and street lights. Distracted drivers and the importance of signage and education relating to walking were also key topics of discussion, along with the need for shade and trees.

Glendale residents contribute to the community art mural

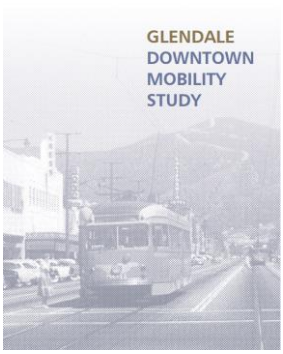
Photos from Here Design L.A.

Community members also shared their own ideas for encouraging walking in Glendale. Suggestions included better transit connections; limiting parking to encourage walking in places where parking is abundant and cheap; issuing citations for drivers who keep their dealer plates on too long or are distracted; providing crossing flags for children at intersections near schools; and building "paseos" (pedestrian cut-throughs) that shorten walking distances and get people walking away from busy vehicle-oriented streets.

Plans and Policies

Policies, programs, and procedures are critical tools for making Glendale a better place for walking. Taking stock of the current policy context allows us to maximize the impact of planning efforts.

The project team reviewed the following City of Glendale pedestrian safety and access plans and policies.



Downtown Mobility Study cover (left) and map showing primary travel corridors by mode in Glendale (right)

Images from City of Glendale

Safe and Healthy Streets cover (left) and photo from the education section of the plan (right)

Image from City of Glendale

Downtown Mobility Study (2007)

The Downtown Mobility Study builds on the vision outlined in the Downtown Specific Plan. It aims to create an efficient, pleasant, multimodal downtown transportation system that supports economic vitality, decreases traffic congestion, and creates a vibrant pedestrian-friendly environment. The study calls for the prioritization of pedestrians in Glendale's planning and engineering decisions to genuinely implement the Downtown Specific Plan. Key concepts for the downtown study area include:

- Creating a street typology designating pedestrian-, transit-, and auto-priority streets and revising level of service (LOS) criteria
- Limiting future road widening to auto-priority streets
- Enhancing connections between local and regional transit service
- Maximizing current parking availability through signs and pricing strategies
- Strengthening transportation demand management
- Creating a downtown transportation fund for transit and streetscape improvements

Safe and Healthy Streets Plan (2011)

Glendale's Safe and Healthy Streets Plan provides direction for the development of the Pedestrian Plan. Through its recommended policies, programs, and resources, the Safe and Healthy Streets Plan seeks a new vision of Glendale where residents live safer, healthier lives by walking and riding a bicycle for both transportation and recreation. This vision promotes the creation a transportation network that meets the needs of pedestrians, bicyclists, and transit passengers of all ages and abilities, as well as motor vehicles.

Recommendations are framed by the 5 Es of pedestrian planning:

- Education
- Encouragement
- Enforcement
- Engineering
- Evaluation

Education, for example, aims to educate and inform residents about pedestrian and bicyclist safety. Policies to achieve this goal include establishing pedestrian and bicycle safety training programs in collaboration with all schools in Glendale and educating motorists through enhanced driver education programs. Recommendations for funding these policies, leveraging resources, and staffing are also made. A full list of the policy recommendations of Glendale's Safe and Healthy Streets Plan is the Appendix of this report.

Circulation Element of the City of Glendale's General Plan (1998)

The Circulation Element addresses both transportation and recreational bicycle and pedestrian travel with an emphasis on the role of bicycling and walking as a general means of transportation.

North Glendale Community Plan (2011)

Since publishing the 1998 plan, the city has been completing updates to the General Plan by geographic region. The North Glendale Plan incorporated a Complete Streets approach and supports a pedestrian-friendly North Glendale through its goals of providing an alternative to automotive transportation by designing healthy, attractive, safe streets for people using all modes.

South Glendale Community Plan (Draft)

The South Glendale Plan is in progress as of 2016. The plan aims to accommodate all people using Glendale's roadways, improving safety, public health, and quality of life. Increasing pedestrian safety is of primary importance, with support to expand Safe Routes to School programs to all schools in South Glendale.

Downtown Specific Plan (DSP) (2006)

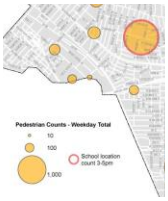
The DSP is a set of policies, incentives, and requirements that establish the desired physical vision for Downtown Glendale. The plan seeks to strengthen downtown Glendale's pedestrian, bicycle, and transit-oriented characteristics while ensuring vehicular access to downtown destinations.

Compass Blueprint Strategic Plan (2003)

The Compass Blueprint is a set of eight strategies from the Southern California Association of Governments' (SCAG) Regional Comprehensive Plan to improve livability and sustainability in Glendale.

Greener Glendale Plan (2012)

The Greener Glendale Plan sets the city's environmental policy direction, including conservation efforts within city government and ways the city can help the community improve livability and conservation.



Bicycle and Pedestrian Report (2013)

The 2013 Bicycle and Pedestrian Report measured bicycle and pedestrian volumes, evaluated collision locations, and provided recommendations to improve safety for all people using Glendale's roadways.

Tropico Center Plan (2015)

The Tropico Center Plan is a neighborhood study outlining design guidelines, zoning designations, and parking standards for the Tropico neighborhood surrounding the Glendale Transportation Center.

Glendale Safe Routes to School Plans (2014)

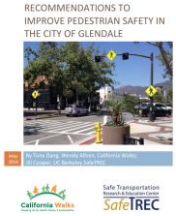
Education, encouragement, and infrastructure improvement efforts are in progress to improve safe access to Glendale Unified School District (GUSD) schools by bike or on foot.

Space 134 Community Outreach (Ongoing)

Space 134 is a concept study for a "freeway cap" park over SR-134/Ventura Freeway between Central and Glendale Avenues and part of a larger Glendale SCAG project. The park would create public open space and pedestrian- and bike-friendly trails and connections in the core of the city.

Glendale Neighborhood Traffic Calming Program

Since 2004, the City of Glendale has implemented a Neighborhood Traffic Calming Program to apply traffic-calming measures and devices in residential areas.



Pedestrian Safety Advisory Task Force Recommendations (2014)

The Pedestrian Safety Advisory Task Force convened in early 2014 and participated in the Pedestrian Safety Action Planning Workshop. Pedestrian safety improvement recommendations from the Task Force were approved by City Council.

Citywide Trails Master Plan (2008)

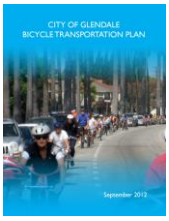
The Citywide Trails Master Plan establishes guidelines for multi-purpose (pedestrian, bicycle, equestrian) trail development, trailhead design, public access to open space and park areas, signage, and volunteer programs. In addition, detailed maps and plans for trails within the Verdugo Mountains, the San Rafael Hills, and the San Gabriel Mountains were approved by City Council in early 2008.

Metro First Last Mile Strategic Plan (2014)

The goal of this plan is to increase ridership by better coordinating infrastructure investments in station areas, extending the reach of transit. The plan introduced a new methodology for evaluating transit access that overlaid station area characteristics with access barriers. In conjunction with in-depth site visits, the analysis was used to develop a county-wide transit access network of routes to and from Metro rail and bus rapid transit stations.

Metro Active Transportation Strategic Plan (2016)

The plan seeks to improve transit access; establish active transportation modes as integral elements of the countywide transportation system; enhance safety; promote clean transportation; improve public health; and foster access and transportation options to reach many destinations.



Glendale Bicycle Transportation Plan

The 2012 Bicycle Transportation Plan proposed measures to improve bicycle facilities in Glendale, including improving existing facilities, constructing new routes, and installing secure parking. The plan also recommends expanding local educational and advocacy programs.

What is a Complete Street?

Complete Streets are designed for safe use by everyone, including pedestrians, bicyclists, motorists, and transit riders, regardless of age or ability. On Complete Streets it is easy to cross the street, walk to shops, push a stroller, bike to work, and access reliable transit.

Example of a complete street

Image from Nelson\Nygaard

Plan and Policy Themes

These plans and policy documents address walking in Glendale in many ways. Strategies and recommendations range from design standards to increasing enforcement of traffic safety laws to education and encouragement efforts.

Elements from these plans and policies can be categorized into eight themes relevant to the development of Glendale's Pedestrian Plan.

Pedestrian-Friendly Places

Modal Priorities

Enforcement

Education and Encouragement

Design Standards

Traffic Calming and Parking

Implementation

Health and Safety

Pedestrian-Friendly Places

Several of the city's plans contain goals or recommendations that support pedestrian-friendly places, such as land use and urban design practices to support pedestrians and requirements to provide pedestrian amenities.

PEDESTRIAN-FRIENDLY PLACES	
Plan	**Supportive Language (Recommendation or Goal)**
Amenities	
Circulation Element of the General Plan	Functional and safe streetscapes that are aesthetically pleasing for both pedestrians and vehicular travel are a primary goal. This is to be accomplished by providing high-quality streetscape and pedestrian amenities (e.g., bus shelters, street trees, street furniture, wide sidewalks).
North Glendale Community Plan	Support flexibility in local street improvements (i.e. sidewalks, lighting, access) to meet neighborhood needs.
Land Use	
Circulation Element of the General Plan	Seeks to enhance to pedestrian quality through land use, urban design, pedestrian and open-space networks, and mobility.
Compass Blueprint	Five of the eight strategies have language supporting prioritization of pedestrians, transit, and increased safety for all modes of transportation. These include creating an urban growth boundary, focusing growth downtown, getting people out of their cars, promoting public health, and strengthening neighborhoods.

PEDESTRIAN-FRIENDLY PLACES	
Plan	**Supportive Language (Recommendation or Goal)**
Greener Glendale Plan	Encourages pedestrian-friendly neighborhood planning, with language that recommends adopting urban planning principles and practices that advance higher density, mixed use, walkable, bikeable, and accessible neighborhoods that coordinate land use and transportation with open space systems for recreation and ecological reconstruction.
South Glendale Community Plan (Draft)	Recommends adding raised porches, stoops, and landscaped buffers to improve the pedestrian experience.
Site Specific	
Space134	Site-specific plans, such as Space134, encourage active transportation and safety for all. Surveys conducted as part of the Space134 plan showed that 50% of people would walk to Space134, and 49% of those surveyed identified walking trails as their top priority for the space. Additionally, 37% believed that economic benefits would come from foot traffic in the space.
Connectivity	
Downtown Mobility Study	Recommendations address sidewalk conditions, intersection and crosswalk conditions, continuity and connectivity of the pedestrian network, and safety.
Circulation Element of the General Plan	Goal is to provide reasonable access to services and goods in Glendale by a variety of transportation modes, ensuring adequate transportation connections to regional systems.
North Glendale Community Plan	Calls for improved connections to community services, parks, and trails by expanding the network of sharrows, dedicated bike lanes, and multi-use trails throughout the Crescenta Valley. The plan identifies parks, community centers, schools, libraries, and other open space within North Glendale. It also identifies current and potential linkages between these amenities, including all existing and proposed bikeways.

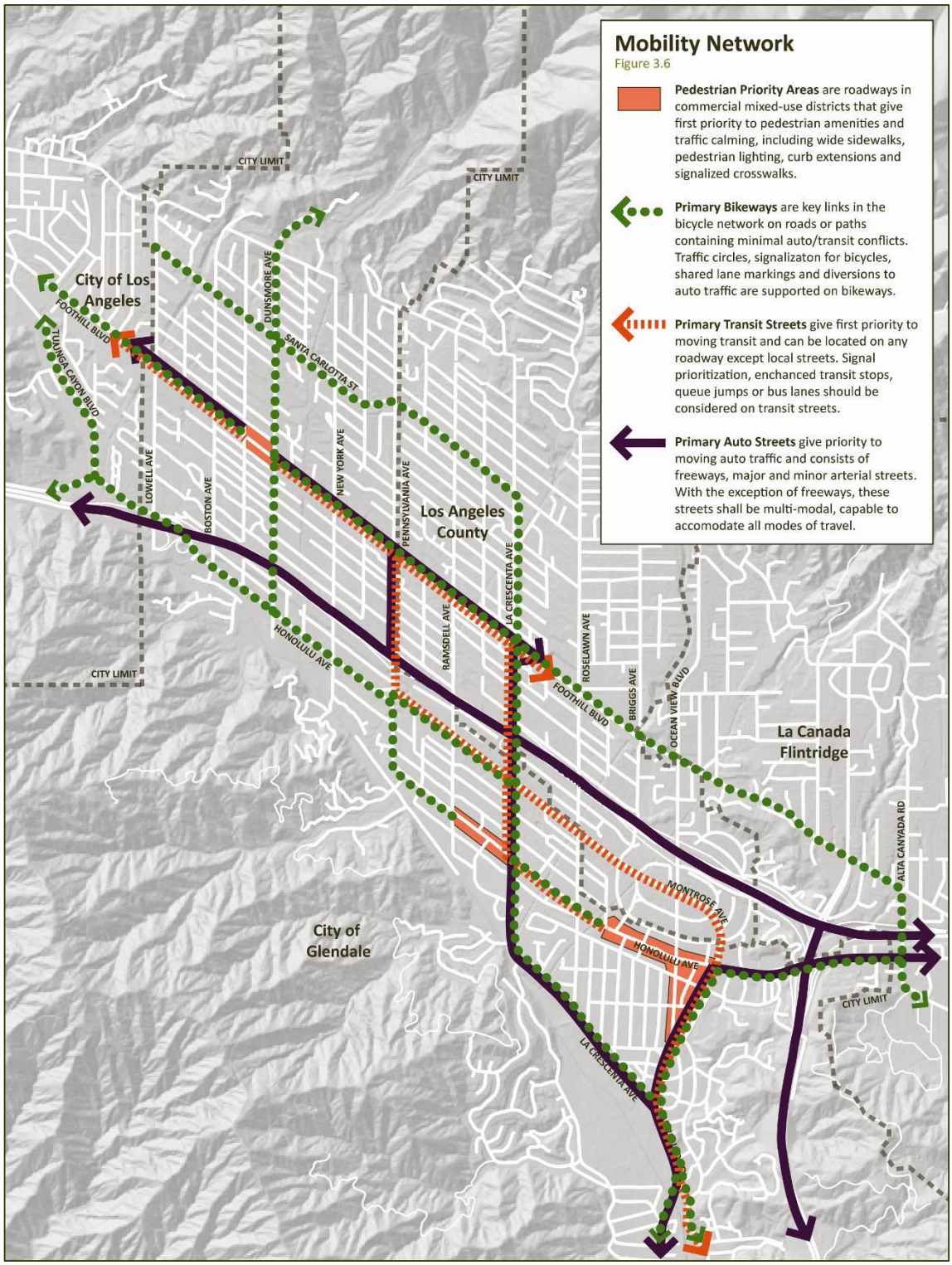
Modal Priorities

Support for designating modal priorities was expressed through concepts such as street typologies, the Complete Streets policy, or designation of pedestrian streets. The following plans, policies, and studies include language or recommendations that support pedestrian priority.

MODAL PRIORITIES	
Plan	**Supportive Language (Recommendation or Goal)**
Street Typologies	
Compass Blueprint	Calls for designation of street types to primarily serve autos, pedestrians, or transit.
Downtown Specific Plan	Calls for the development of a street typology based on functional and urban design considerations, emphasizing connectivity and linkages, pedestrian and cyclist safety and comfort, increasing transit movement and reducing total person delay, and compatibility with adjacent land uses.
Downtown Mobility Study	Recommends adoption of a street typology, stating that each street should have a primary purpose (auto traffic, transit, pedestrian, bicycle) and should be designed to maximize efficiency and comfort of that mode.
Safe and Healthy Streets Plan	Calls for an update to street classifications/typologies to include enhanced pedestrian and bicyclist accommodation.
Complete Streets	
Circulation Element	An amendment includes adding Complete Street provisions to roadway classifications. Complete Streets have four priority types: Primary Pedestrian Areas, Primary Bicycle

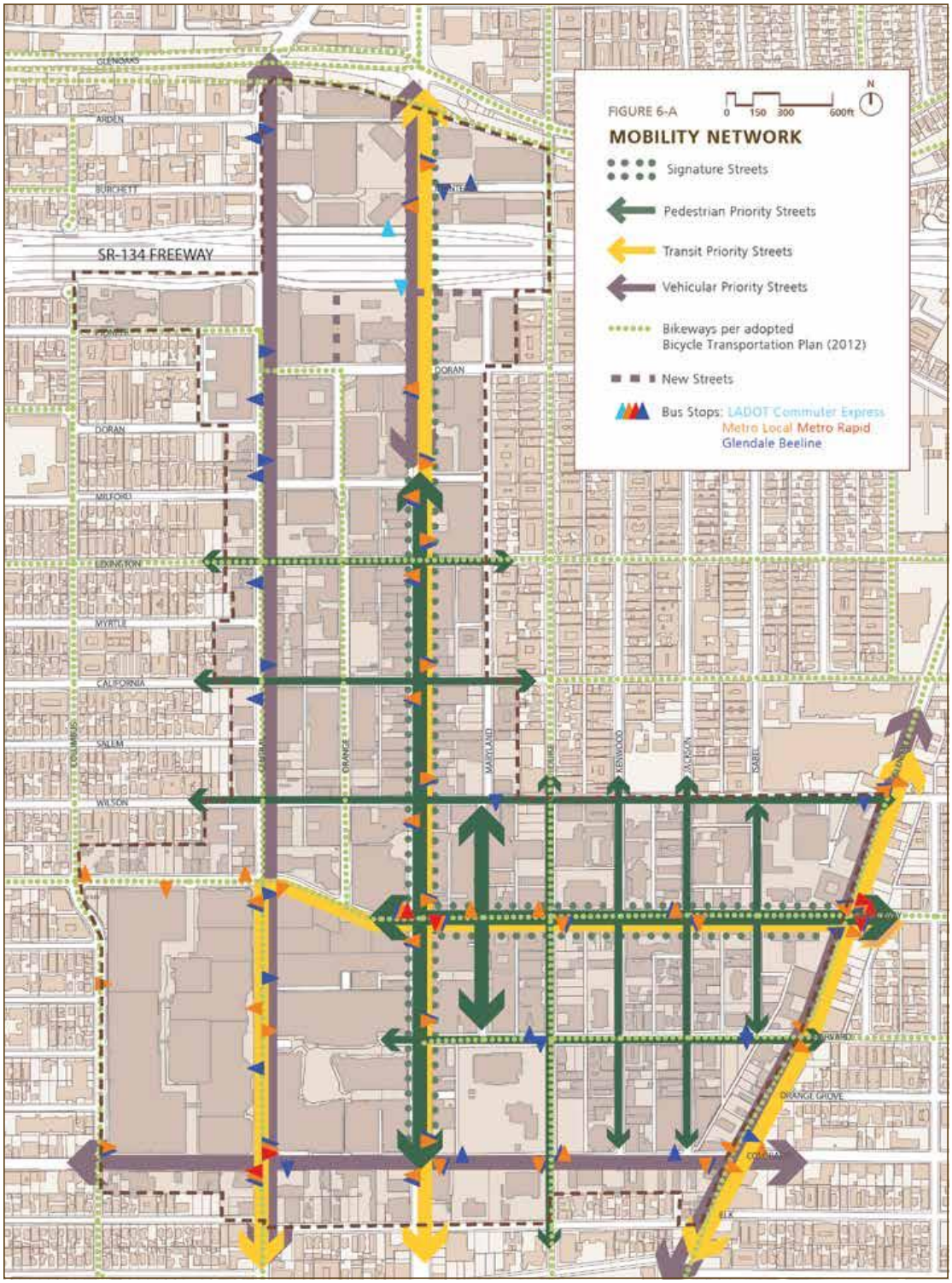
MODAL PRIORITIES Plan	Supportive Language (Recommendation or Goal)
	Routes, Primary Transit Streets, and Primary Auto Network.
Safe and Healthy Streets Plan	Recommends adoption of a Complete Streets policy and design standards in accordance with the California Complete Streets Act of 2008.
North Glendale Community Plan	Goal is to collaborate with other jurisdictions adjacent to North Glendale to assemble a coordinated mobility network in the Crescenta Valley. The network allows for safe, efficient movement for travelers of all modes and provides recreational opportunities for people to become more physically active, with linkages to public facilities including parks and trails. This Complete Streets policy aims to accommodate all people, improving safety, public health, and quality of life.
Pedestrian Priority Streets	
North Glendale Community Plan	Designates two Pedestrian Priority areas: Foothill Boulevard west of Dunsmore Avenue ("Main Street") and Honolulu Avenue in Montrose (see Figure 2-3). These streets prioritize pedestrians by providing wide sidewalks, pedestrian lighting, curb extensions, landscaped buffers, drainage swales, signalized crosswalks, street furniture, and traffic calming.
South Glendale Community Plan (Draft)	Proposes Pedestrian Priority areas, focusing pedestrian improvements on transit and bicycle corridors to support mixed-use and commercial areas.
Circulation Element of the General Plan	Identifies pedestrian-friendly "Signature Streets": Brand Boulevard, Broadway, and Honolulu Avenue.
Level of Service (LOS)	
Downtown Specific Plan	Calls for implementation of multimodal street performance measures based on Pedestrian LOS.
Compass Blueprint	Suggests revising LOS criteria based on movement of people versus cars.
Safe and Healthy Streets Plan	Recommends continuing to implement mobility standards that encourage walking, biking, and transit use, and that the city revise the Circulation Element to include LOS measurements for pedestrians, bicyclists, and transit riders.
General	
Safe and Healthy Streets Plan	Recommends that the city implement detailed pedestrian and bicyclist design guidelines—derived from Federal Highway Administration (FHWA) pedestrian and bicyclist safety guidelines—that exceed minimum state and federal standards. These should be incorporated into the Bikeway Master Plan, Safe Routes to School Plan, and other pedestrian- or biking-related documents.

Figure 2-3 North Glendale Community Plan Mobility Network Map



Source: North Glendale Community Plan, page 23

Figure 2-4 Downtown Specific Plan Mobility Network Map



Source: Glendale Downtown Specific Plan, page 6-5

Design Standards

Some plans and policies contain specific design standards or guidance—elements such as sidewalk widths and pedestrian crossings—to improve the pedestrian environment.

DESIGN STANDARDS	
Plan	**Supportive Language (Recommendation or Goal)**
Sidewalk Widths	
Downtown Mobility Study	Recommends preserving and enhancing current sidewalk widths. The plan states that all Primary Pedestrian Streets should maintain a sidewalk width of at least 12-18 feet (the Downtown Specific Plan calls for setbacks ranging from 12-24 feet). Inadequate sidewalk conditions will undermine any other improvements to pedestrian conditions.
Pedestrian Crossings	
Circulation Element of the General Plan	Specifies that pedestrian crossings should be provided at least every 1,500 feet or every 4 blocks minimum.
Downtown Specific Plan	Specifies that pedestrian crosswalks should be provided at all intersections and additional improvements to promote safety should be considered in key locations with high potential for pedestrian/vehicle conflicts.
South Glendale Community Plan (Draft)	Recommends pedestrian connections and mid-block paths.
Pedestrian Safety Advisory Task Force	Engineering recommendations related to pedestrian connectivity include: ▪ Amend High-Visibility Crosswalk Policy. Current Public Works policy limits placement of high-visibility ladder crosswalks to areas within and adjacent to school zones and un-controlled crosswalks. ▪ Establish/Clarify prioritization process for restriping crosswalks. ▪ Stripe additional advance yield lines and restripe faded advance yield lines citywide. ▪ Develop public prioritization process for implementation of bulb-outs, leading pedestrian intervals, and pedestrian scrambles.
Pedestrian Priority Streets	
Downtown Specific Plan	In alignment with the Mobility Study, creates a new "Pedestrian Priority Streets" classification where: ▪ Pedestrian entrances to new development should be located on designated pedestrian-oriented streets where applicable. ▪ Vehicular access and garage entrances for new development should be located on auto-oriented streets. ▪ Pedestrian entrances should be conveniently located in relation to transit stops and pedestrian crosswalks.

Traffic Calming and Parking

The following are strategies and recommendations regarding traffic calming and parking management in Glendale's existing plans and policies.

TRAFFIC CALMING AND PARKING	
Plan	**Supportive Language (Recommendation or Goal)**
Traffic Calming	
Neighborhood Traffic Calming Program	Ensures traffic calming measures are implemented in neighborhoods with demonstrated traffic-related issues.
Circulation Element of the General Plan	The first goal is the preservation and enhancement of the quality of life in Glendale's unique communities by discouraging high speeds on residential streets through roadway design and traffic enforcement, and developing acceptable thresholds of traffic volume in residential zones based on environmental capacity. References the Neighborhood Traffic Calming Program for assessing and addressing requests for speed humps and other improvements.
Compass Blueprint	Calls for enhanced infrastructure, such as traffic calming and enhanced crosswalks, to promote public health.
Safe and Healthy Streets Plan	Recommends the city maintain and update traffic-calming measures in the Glendale Traffic Calming Program.
Parking	
Safe and Healthy Streets Plan	Includes recommendations for parking management, including the adoption of a comprehensive parking policy.
North Glendale Community Plan	Supports best practices in parking management.
Downtown Mobility Study	Goal is to manage traffic congestion and parking demand downtown through a combination of infrastructure improvements and policies that encourage the use of alternative modes for travel to and within downtown.
Circulation Element of the General Plan	Specifies that off-street parking standards for new development should be evaluated to determine if parking standards can be modified where transit service, bicycle facilities, or pedestrian amenities are available in order to encourage travel by these modes.
South Glendale Community Plan (Draft)	Calls for locating parking access away from pedestrian paths when possible and adding retail uses along parking garages.

Enforcement

Three plans contain suggestions for heightened enforcement of traffic regulations to improve pedestrian safety.

ENFORCEMENT Plan	Supportive Language (Recommendation or Goal)
Enforcement	
Compass Blueprint	Enforcement suggestions include: ▪ Crosswalk "stings" to ticket unsafe drivers ▪ Pedestrian safety reminders on Glendale cable TV
Safe and Healthy Streets Plan	Specific enforcement recommendations are to improve bicyclist and pedestrian safety through targeted enforcement and add ordinances or resolutions that improve safety for bicyclists and pedestrians (ordinances and resolutions are discussed further in the following section on **Codes and Ordinances**).
Pedestrian Safety Advisory Task Force	Enforcement recommendations include: ▪ Citywide implementation of speed feedback signs ▪ Improve public request process for mobile Glendale police department warning signs ▪ Support existing hotspot enforcement and pursue ongoing funding ▪ Explore the feasibility of administrative tickets for pedestrian safety violations ▪ Increase reach of enforcement efforts through media

Education and Encouragement

Several plans and policies made education and encouragement recommendations.

EDUCATION AND ENCOURAGEMENT Plan	Supportive Language (Recommendation or Goal)
Education	
Pedestrian Safety Advisory Task Force	Recommendations include: ▪ Allocate/secure funding to develop suite of professionally designed educational materials ▪ Establish a pilot area for intensive pedestrian-safety education campaign ▪ Cultivate community partnerships and engage local businesses to broadcast pedestrian education messages (include Glendale Unified School District (GUSD) and Glendale Community College (GCC))
Safe Routes to School Plans	Plans include pedestrian safety education and encouragement as part of non-infrastructure recommendations.
Safe and Healthy Streets Plan	Provides specific policy recommendations related to education and encouragement (these recommendations are documented in Appendix A.)
Compass Blueprint	Recommends educational campaigns at schools and senior centers. Also recommends several Safe Routes to School strategies including: ▪ Cooperative effort with GUSD ▪ Citywide International Walk-to-School Day ▪ Walking Wednesdays
Education	
Downtown Specific Plan	Seeks to promote walking for downtown residents and visitors with expanded marketing, promotional/informational events, and financial incentives.

Implementation

Implementation is often a challenge for many plans. Five plans provide specific funding, staffing, and oversight recommendations to support plan implementation.

IMPLEMENTATION	
Plan	**Supportive Language (Recommendation or Goal)**
Implementation	
North Glendale Community Plan	Goals include implementation of the Safe and Healthy Streets Plan, Bikeway Master Plan, Safe Routes to School, and other multimodal policies and programs.
Safe and Healthy Streets Plan	Provides specific recommendations related to resources and staffing, funding, and evaluation to support plan implementation (see Appendix A for additional detail).
Compass Blueprint	Recommends pursuing the PLACE Grant (Policies for Livable Active Communities and Environments).
Downtown Mobility Study	Recommends prioritizing pedestrians in Glendale's planning and engineering decisions to facilitate implementation of the Downtown Specific Plan.
2013 Bicycle and Pedestrian Report	Key recommendations from the report were to: ▪ Conduct pedestrian counts every two years ▪ Utilize count and collision data to prioritize projects, programs, and grants ▪ Supplement count and collision data with other data sources

Public Health and Safety

Pedestrian quality and safety is addressed from a public health perspective in four plans.

PUBLIC HEALTH AND SAFETY	
Plan	**Supportive Language (Recommendation or Goal)**
Safety	
Compass Blueprint	Calls for safe walking and biking opportunities and takes a public-health-based approach, explaining that more connections to parks leads to more activity, and more activity leads to less obesity.
Downtown Mobility Study	States that improving pedestrian conditions is also key to protecting safety and public health. In a statewide traffic report issued in 2011, the City of Glendale was ranked fifth highest for pedestrian fatalities among 45 cities with similar-sized populations (between 100,000 and 250,000).
Pedestrian Safety Advisory Task Force	Recommends implementation and finalization of the draft Pedestrian Safety Action Plan.
Downtown Specific Plan Mobility Strategy	Calls for policies that maximize the accessibility, safety, and efficiency of the downtown transportation system for pedestrians, transit passengers, cyclists, and drivers of both personal and commercial vehicles.
Public Health	
Community Health Improvement Plan	Includes goals supportive of pedestrian activity and public health, including specific goals related to preventing and reducing traffic collisions and reducing exposure to air pollution.
PLACE Program	Leverages funding for pedestrian-related efforts throughout Los Angeles County, including several in Glendale. Helped secure funding for the Safe and Healthy Streets Master Plan and signage design for the Riverdale-Maple neighborhood greenway.

Codes and Ordinances

The project team reviewed California statewide regulations, Glendale's Municipal Code, and Glendale's Building and Safety Code for references to pedestrians.

Statewide regulations regarding speed limits have a direct impact on pedestrian safety. Various municipal-level codes—relating to public health and safety, design, construction, land use, pedestrian zones, and parking—also have direct relevance to pedestrians in Glendale. Figure 2-5 summarizes statewide ordinances and city codes pertaining to pedestrian safety and use of the right-of-way.

Figure 2-5 State/City Codes and Ordinances

Topic	Code Section	Law	Pedestrian Context
California Statewide Regulations			
Public Health and Safety	California State AB 529 (2011)	Speed Limit: Downward speed zoning	This bill allows local DOTs to round down the speed limit to the lower 5 miles per hour increment, but then the department or a local authority would be prohibited from reducing the speed limit any further for any reason.
	California State AB 321 (2007)	Vehicles: prima facie speed limits: schools	Limits vehicle speeds to 25 mph on certain highways in school zones when children are going to or leaving school, and during recess.
Glendale Municipal Code			
Public Health and Safety	10.08.040	Annual traffic safety report	The traffic and transportation administrator must prepare an annual traffic report containing information on traffic accidents, signage, and plans and recommendations for future traffic safety.
	10.24.020	Prima facie speed limits on non-local city streets	Allows Glendale to establish special speed zones with higher speed limits than the "prima facie" speed limit specified by state motor vehicle code. Only applies on non-local streets (other than state highways) that do not pass a school or senior center.
	10.64.025	Bicycle riding on sidewalks	Establishes that pedestrians have the right-of-way on sidewalks and prohibits bicycle riding on sidewalks in business districts unless the sidewalk is part of an established route.
Design	10.20.010	Authority to maintain crosswalks	The traffic and transportation administrator shall maintain marked crosswalks: A. At any intersection or portion of intersection where the traffic and transportation administrator determines that there is exceptional hazard to pedestrians crossing the roadway; B. At locations between intersections designated by the council by resolution
	10.20.020	Use of crosswalks in business districts	Prohibits crossing a roadway other than by a crosswalk in any business district
	10.20.040	Obstructing sidewalks	Prohibits excessive or unnecessary obstruction of the free passage of any person along or over any public sidewalk.
	12.04.020	Trees, plants, or shrubs affecting pedestrians and traffic	Establishes clearance and placement regulations for privately owned trees, plants, and shrubs that may impact the public right-of-way.

Topic	Code Section	Law	Pedestrian Context
	12.08.037	Wireless telecommunications facility encroachment permits	Facilities will not physically or visually interfere with pedestrian (and other users') use of streets, intersections, bicycle lanes, driveways, sidewalks, or walkways.
	12.12.030	Construction of street and/or alley improvements	Establishes construction of street, alley, and utility improvements in conjunction with any construction efforts. Specifically includes sidewalks.
	12.36.060	Standards for installation and placement - Newsracks	Newspaper boxes installed in the public right-of-way cannot interfere with or impede the flow of pedestrian traffic.
	Chapter 12.48	Parkway Landscaping	Regulations on parkway landscaping are intended to improve health, safety, and welfare by enhancing pedestrian, bicyclist, and vehicular traffic safety.
	30.26.010	Advertising Signage Overlay Zone	To protect street views and vistas on pedestrian-oriented streets and protect pedestrians and motorists from traffic safety hazards.
	30.32.160	Landscaping of parking and loading areas	The reviewing authority may allow up to two-fifths of the required interior landscaping to be decorative walkways which provide pedestrian paths through the parking lot. Such paths shall be constructed of permeable materials and shall be lined with trees to the satisfaction of the reviewing authority and shall be integrated into the overall design for the lot. Artificial turf shall not be permitted.
	30.33.215	Pedestrian signs	Regulates location and placement of pedestrian signs.
Construction	12.08.130	Protection of public travel and safety requirements	Requires safe crossings be provided at all street intersections and every 300 feet or less during excavations.
Land Use	30.10.070	Zoning districts—Regulations	Development standards are intended to promote the safe and efficient circulation of pedestrian and vehicular traffic.
	30.34.090	Live/work units in the DSP, IND, IMU, IMU-R and SFMU zones	Each live/work unit fronting a public street, and located at street level, shall have a pedestrian-oriented frontage that publicly displays the interior of the nonresidential areas of the structure.
	30.12.010	Purpose – Commercial Districts	Commercial auto zones are to be designed to be attractive and pedestrian-friendly.
Pedestrian Zones	30.32.171	Additional trip reduction and travel demand measures in the DSP zone	Tier 1 and Tier 2 developments shall provide full pedestrian access to the public sidewalk; Tier 3 developments shall provide sidewalks or other designated pathways following direct and safe routes from the external pedestrian circulation system to each building in the development.
Parking	30.32.040	Location of Parking	Parking and loading spaces shall not preclude direct and free access to stairways, walkways, and elevators.
	30.32.090	Parking area design and layout standards	Parking lot and parking garage gates shall not move in a direction that interferes with on-street or pedestrian circulation.

Topic	Code Section	Law	Pedestrian Context
Glendale Building and Safety Code 2014			
 **Design**	3306.2	Walkways	A walkway shall be provided for pedestrian travel in front of every construction and demolition site unless the applicable governing authority authorizes the sidewalk to be fenced or closed. Walkways shall be of sufficient width to accommodate the pedestrian traffic, but in no case shall they be less than 5 feet in width. Walkways shall be provided with a durable walking surface.
 **Construction**	3306.10	Protection of sidewalk excavations	When any portion of a public sidewalk is to be excavated, the holder of the permit shall construct a substantial temporary walkway not less than 5 feet in width for pedestrian travel over the areas to be excavated or around the same.
	R120.1	Protection of Pedestrians	Pedestrians shall be protected during construction, remodeling and demolition activities. Signs shall be provided to direct pedestrian traffic.
	R120.2	Walkways	A walkway shall be provided for pedestrian travel in front of every construction and demolition site unless the applicable governing authority authorizes the sidewalk to be fenced or closed. Walkways shall be of sufficient width to accommodate the pedestrian traffic, but in no case shall they be less than 5 feet in width. Walkways shall be provided with a durable walking surface. Walkways shall be accessible in accordance with the California Building Code.

City Programs

Efforts to improve pedestrian circulation and safety are ongoing in many of the City of Glendale's departments.

City Manager's Office

The City Manager's Office, in conjunction with the police department, has funded multiple efforts to address pedestrian safety going back more than a decade. Recently, they have created pedestrian safety public service announcements in English, Armenian, Spanish, and Korean, targeted to school-age children and seniors.

Walkin' Willie public safety messages promoting pedestrian safety were translated into English, Spanish, and Armenian

Image from APWA

Glendale Police Department

The Glendale Police Department has conducted a "Driven to Distraction" campaign. The department has been conducting specialized enforcement efforts targeting pedestrians, bicyclists, and drivers throughout 2015 and 2016. The police department also organized over a dozen community traffic and pedestrian safety meetings and workshops in 2014-2015.

Still from Driven to Distraction campaign video

Image from City of Glendale

Glendale Beeline

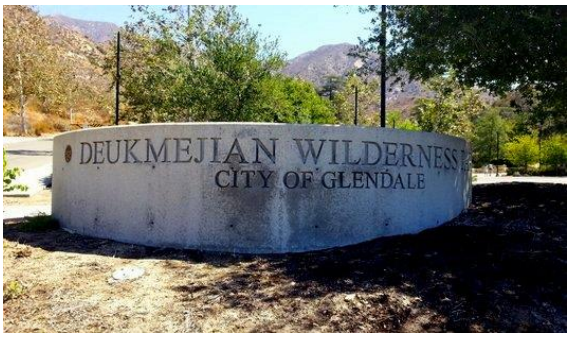
Pedestrian access to transit is encouraged by Glendale's Beeline local bus transit. The agency encourages walking and biking to transit stops. ADA access policies address on-board mobility assistance but do not address transit stop or sidewalk access.

Passengers boarding Glendale Beeline

Image from Friends of Glendale Public Library

Community Services and Parks Department

Glendale's Community Services and Parks Department helps manage 5,034 acres of natural open space. Over 30 miles of fire roads and 7.5 miles of single-track trails are utilized by dozens, even hundreds, of hikers, joggers, dog-walkers, and mountain bikers each day—particularly in Brand Park and Deukmejian Wilderness Park.



Deukmejian Wilderness Park

Image from Wikipedia

Glendale Safe Routes to School

The City of Glendale's Safe Routes to School (SRTS) program conducts safety improvements and educational programs for K-12 schools in the Glendale Unified School District. The program is funded by federal and state SRTS non-infrastructure and infrastructure funds.

Families walk to school in Glendale

Image from Raul Roa/LA Times

Citywide Safety Education Initiative

The Glendale Citywide Safety Education Initiative is a partnership between the Community Development Department, T&T Public Relations, and Safe Moves. The campaign seeks to raise awareness about bicycle and pedestrian safety through continuing education efforts.

Children learning about pedestrian safety in Glendale

Image from City of Glendale

Community Health Programs

The City of Glendale, Los Angeles County, and three local groups are focusing on walkability as part of a larger community health strategy.

Glendale Healthier Community Coalition

Glendale Healthier Community Coalition

The Glendale Healthier Community Coalition worked with the city's Neighborhood Services division to develop quality-of-life indicators and a citywide report in 2009. Traffic safety and transportation and mobility are included as an indicator.

Dignity Health. Glendale Memorial Hospital and Health Center

Glendale Memorial Hospital and Health Center (Dignity Health)

Glendale Memorial Hospital and Health Center (Dignity Health) has funded local non-profits (Walk Bike Glendale, Glendale Healthy Kids) with community benefit grants to conduct pedestrian- and bicycle-safety education programs.

Glendale Adventist Medical Center | Adventist Health

Glendale Adventist Medical Center

Glendale Adventist Medical Center has sponsored and held Senior Pedestrian Safety Workshops with Glendale PD and an ER physician.

glendale california

Economic Development Division

The city's Economic Development Division created a Downtown Health Fitness Guide brochure (below) in 2016. The guide maps health and fitness-related businesses in the downtown core.

Downtown Health Fitness Guide prepared by the City of Glendale Economic Development Division

COUNTY OF LOS ANGELES Public Health

Community Health Improvement Plan

The Los Angeles County Department of Public Health is developing a Community Health Improvement Plan (CHIP). The CHIP is a strategic roadmap to health in the county over five years, and includes specific pedestrian-related goals, including goals to prevent and reduce traffic collisions and to reduce exposure to air pollution.

COUNTY OF LOS ANGELES Public Health

Policies for Livable, Active Communities and Environments (PLACE) Program

The PLACE Program is run by the Los Angeles County Department of Public Health. The program was launched in 2006 to support the development of healthy communities by fostering policy change. In Glendale, PLACE has helped secure funding for the Safe and Healthy Streets Master Plan and funded signage design for the Riverdale-Maple neighborhood greenway.

Economic Development Strategies

Pedestrian programs to improve safety and access can benefit the local economy and are often incorporated into local economic development strategies.

The following economic development organizations are seizing the opportunity to improve livability and economic sustainability in the region by promoting pedestrian policies and programs.

The **Downtown Glendale Association** is a business improvement district in downtown Glendale. No specific pedestrian policies or programs were identified on their website or in executive reports. However, the work of the Sidewalk Operation, Beautification, and Order (SOBO) subcommittee supports the DSP goal of making the area more pedestrian-friendly. The SOBO Committee oversees maintenance and security contracts for public rights-of-way within the business district. They are also responsible for Brand Boulevard's permanent planters, lighting, tables and umbrellas, and seasonal décor. Through their **Downtown Glendale Ambassadors Program**, the group also assists with wayfinding and cleanup of the downtown business district.

Planters in downtown Glendale

Though the **Glendale Economic Development Corporation** identifies no specific pedestrian-related policies or programs in its strategic economic development goals, it refers often to the benefits of a pedestrian-friendly downtown. For example, the General Plan is referred to on their "Top 10 Reasons" marketing webpage promoting "outstanding infrastructure." and as part of their "Healthy Lifestyle – Downtown Fitness Guide" promoting downtown fitness, health, and nutrition businesses. The map of downtown fitness establishments is a missed opportunity to include walking routes.

The **Crescenta Valley Town Council** (CVTC) is within the jurisdiction of Los Angeles County and is the legislative body to work with in unincorporated areas. Though they have no specific pedestrian programs or policies, planning is currently underway for the Foothill Beautification Median, a project that will have a positive impact for pedestrians and cyclists. The Council also recently discussed speeds on certain streets. Though not under purview of City of Glendale, it is politically important that the Council of Governments supports the efforts of CVTC.

Our research did not identify any specific pedestrian policies or programs associated with the following economic development agencies:

- Glendale Chamber of Commerce
- Crescenta Valley Chamber of Commerce
- Brand Boulevard of Cars
- Sparr Heights Business Association
- Kenneth Village Merchants Association
- Adams Square Merchants Association
- Montrose Shopping Park Merchants Association

Other Local Efforts

The following efforts by local non-profit, service, or public organizations seek to improve pedestrian access and safety in Glendale.

Walk Bike Glendale

Walk Bike Glendale, a regional chapter of the Los Angeles County Bicycle Coalition, meets quarterly with city staff to advocate for safer streets for people traveling on foot or by bike; organizes community walking and biking activities and events; and partners with other local organizations on grant funding to deliver educational programs.

GO Glendale

GO Glendale is a Transportation Management Association that encourages alternative modes of transportation to work: transit, walking, biking, and carpooling. They also offer annual educational programs for employees of member organizations.

Glendale Rotary Club

Glendale Rotary Club has conducted several campaigns on traffic safety and distracted driving, including branded traffic safety public service announcements, and sponsored "Watch the Road" banners on Brand Boulevard in 2014.

Glendale United School District

Glendale Unified School District has been a collaborative partner with the city and police department on development of SRTS plans. GUSD took the lead on institutionalizing International Walk-to-School Day in 2010. In 2014, it partnered with the police department to conduct a citywide crossing guard assessment, reallocation, and prioritization process.

International Walk to School Day

International Walk to School Day is a city-funded event that began in 2011. All 29 GUSD Schools and three local private schools have participated. The event is supported by the proclamation by City Council that dedicates October as "Walktober," a Pedestrian Safety Awareness Month.

Metrolink

The Metrolink campaign targets safety at rail stations and crossings. The campaign has featured "Be Track Smart" messaging and a series of events to emphasize safe behavior around rail stations.

AMTRAK

AMTRAK is working with Operation Lifesaver Inc. (OLI), the Association of American Railroads, and other railroads in raising awareness about safety near railroad tracks through a national campaign. "See Tracks? Think Train!" seeks to educate the public about the deadly consequences of trespassing on railroad property and failing to obey grade-crossing signs and signals.

Key Findings

The following is a list of strengths and opportunities regarding pedestrian-related plans and policies in Glendale.

STRENGTHS

- Safe and Healthy Streets Plan provides direction for Pedestrian Plan development
- Mobility and land use policies aligned across current plans
- Plans since 2006 include Complete Streets policies
- Community plans identify pedestrian priority areas and include detailed street standards
- City code protects pedestrians during construction

OPPORTUNITIES

- Create an implementation plan for Safe and Healthy Streets Plan and Pedestrian Safety Advisory Task Force recommendations
- Implement AB 321 to lower speed limits near schools to 15 mph and explore opportunities to lower speed limits on other roadways through AB 529
- Communicate and reinforce mobility goals through economic development plans and strategies
- Overlay mobility and access goals to specific development projects as part of Community Planning and Design Review Board
- Use Metro First/Last Mile Strategic Plan concepts to enhance active transportation modes and provide opportunities for grant funding
- Reference chapters of Glendale Municipal Code to pedestrian safety efforts

Peer City Practices

In order to better understand the state of pedestrian safety practices in the region, the project team interviewed staff from five Southern California peer cities: Burbank, Long Beach, Los Angeles, Pasadena, and Santa Monica.

The interviews were structured to gather more detail on the best practices topics reviewed above, with a focus on understanding how peers are organizing to implement pedestrian plans, projects, and programs. The findings from these interviews not only paint a picture of standard practices in the region, but also provide examples of regional best practices that Glendale can apply within its local context.

Figure 2-6 Peer City Interviewees

City	Interviewee Name and Title
Burbank	David Kriske, Assistant Community Development Director, Transportation
Long Beach	Nathan Baird, Mobility and Health Living Programs Officer
Los Angeles	Margot Ocanas, Pedestrian Coordinator
Pasadena	Jenny Cristales, Associate Planner, Department of Transportation
Santa Monica	Beth Rolandson, Principal Transportation Planner

Topics covered include:

- Adopted pedestrian safety or pedestrian action plan
- Department, action committee, or staff position responsible for implementing the plan
- Mechanism to prioritize locations for safety improvements
- Performance monitoring (plan implementation and/or project effectiveness)
- Inventory of pedestrian-supportive infrastructure
- Strategic maintenance initiatives
- Pedestrian crossing design guidelines and decision-making framework
- Prioritization of connections to transit
- Data-driven enforcement strategies
- Education/encouragement programs that promote safe and healthy travel behavior

Figure 2-7 indicates how well each city performs in a given category. Each practice or policy is rated on a scale of 1 (minimally established) to 4 (well established). Higher ratings were given for documented plans and ordinances over undocumented practices or departmental knowledge, although these were also accounted for during the interview process. Ultimately, the rating system serves as a point of reference as Glendale seeks strategies to guide development and implementation of its Pedestrian Plan. The specific strategies of each peer city are summarized in Figure 2-8.

Figure 2-7 Southern California Scorecard

	Burbank	Long Beach	Los Angeles	Pasadena	Santa Monica
Pedestrian Safety Plan	●○○○	●●○○	●●●●	●●●○	●●●●
Implementation	●●○○	●●○○	●●●●	●●●○	●●●●
Prioritization of Locations	●○○○	●●○○	●●●●	●○○○	●●●●
Performance Monitoring	○○○○	●●●○	●●●●	●●○○	●●●●
Inventory	●○○○	●●○○	●●●○	●●●●	●●●○
Strategic Maintenance	○○○○	●●●○	●●○○	●●○○	●●●○
Pedestrian Crossings	●○○○	●●○○	●●●●	●●●○	●●●●
Connections to Transit	●○○○	●●●○	●●●○	●●○○	●●●○
Enforcement	●●○○	●●●○	●●●●	●●○○	●●●●
Education Programs	●●○○	●●●○	●●●●	●●○○	●●●○

Figure 2-8 Summary of Peer City Findings

City	Pedestrian Plan	Implementation Responsibility	Prioritization of Locations	Monitoring Performance	Inventory	Maintenance	Pedestrian Crossings	Connections to Transit	Enforcement	Programs
Burbank	▪ Mobility Element of General Plan (2013) ▪ Will begin working on pedestrian plan in fall 2016	▪ Development of pedestrian plan will involve multiple departments and agencies: transportation, planning, police, public works, parks	▪ Based on input from the community and the Transportation Commission ▪ City took part in Berkeley Institute of Transportation Studies walk audit, which will help inform priorities in upcoming master plan	▪ City does not typically monitor performance	▪ Private vendor maintains bus shelter and bench inventory ▪ Inventory of pedestrian infrastructure is piecemeal (tied into the regular street infrastructure of each corridor)	▪ No strategic initiatives	▪ Design standards rely on Mobility Element of General Plan and institutionalized strategies within public works	▪ Connections to transit are updated or improved when new development presents the opportunity ▪ Efforts are coordinated between transportation, planning, and public works	▪ Schools and central business district are prioritized locations for enforcement	▪ Bike and Walk to Work Day ▪ Bike and Walk to School Day ▪ Office of Traffic has led bike safety programs in schools
Long Beach	▪ Downtown and Transit-Oriented Development Master Plan (2016) ▪ City plans to adopt a Vision Zero program	▪ Collaborating departments include development services, public works, health, parks	▪ Mainly based on qualitative feedback from agency and community stakeholders ▪ Downtown and TOD master plan prioritizes projects based on five goals (equity; alternative transportation; place-making and economic development; public health, safety, and legibility)	▪ City conducts annual bicycle and pedestrian counts in select locations ▪ City has a coordinated follow-up protocol to investigate pedestrian fatalities	▪ City updating inventory process ▪ Has some inventory on bus stops and sidewalks (ADA compliance)	▪ City has begun infrastructure investment plan that incorporates data from pavement management plan and sidewalk management plan (forthcoming) ▪ City updating crosswalks to continental model as part of general repaving program	▪ Primarily NACTO guidelines and MUTCD standards ▪ Treatments are context-sensitive to pedestrian volumes ▪ Downtown and TOD master plan includes pedestrian toolkit with various treatments and recommends demonstration projects as a means to build support for longer-term investments	▪ Downtown and TOD master plan identifies projects that improve transit access, such as a greenbelt connecting two Metro stations	▪ Police and public works collaborate to target behavior using crash data ▪ In previous efforts targeted wrong-way bicycling	▪ Health department takes the lead on behavior change campaigns (has good relationships with community partners) ▪ Conducted education campaign where police officers handed out "Get Out of Jail Free" cards for unsafe pedestrian/driver behavior around crosswalks ▪ Beach Streets is city's open streets event
Los Angeles	▪ Vision Zero (2015)	▪ Task Force (including mayor's office, transportation, police, engineering, street services, fire, and public health departments) assigned immediate action items to implement plan	▪ Vision Zero plan relies heavily on crash data (High Injury Network) and underserved populations (Community Health and Equity Index Areas)	▪ Transportation and public health database will incorporate collision, health, and land use data to evaluate impacts of projects and programs ▪ Second stage of data-driven strategy will create crash profiles to inform programmatic solutions and a roster of innovative treatments	▪ Sidewalk inventory helps public works staff keep tabs on sidewalks, curb ramps, and their physical characteristics ▪ City has begun crosswalk inventory initiative	▪ City currently exploring options to improve sidewalk maintenance by shifting responsibility to property owners ▪ City has directive to better coordinate installing/repairing crosswalks with repaving efforts ▪ Has adopted continental crosswalk as new standard for updating crosswalks	▪ After completion of NACTO's Urban Streets Design Guide, LADOT invited staff from all departments to help shift culture ▪ Convened LADOT Complete Streets design team to encourage innovative design and write treatment guidelines that did not previously exist in the manuals	▪ Mobility Plan 2035 identifies Transit-Enhanced Streets to receive treatments that will improve comfort and safety for people who walk to access transit	▪ LADOT and LAPD are co-chairs in Executive Steering Committee of Vision Zero Plan ▪ High Injury Network is centerpiece consideration for targeted enforcement ▪ Current focus on school safety zones has required LAPD to update speed surveys where they have expired in target areas	▪ Vision Zero education campaign will launch in 2017 ▪ Working with community-based organizations to spread awareness and conduct focus groups on Vision Zero initiatives ▪ Joint agreement in the works between Mayor and Superintendent to better coordinate safety education

City	Pedestrian Plan	Implementation Responsibility	Prioritization of Locations	Monitoring Performance	Inventory	Maintenance	Pedestrian Crossings	Connections to Transit	Enforcement	Programs
Pasadena	▪ Pedestrian Plan (2006) ▪ Working on walkability plan	▪ DOT has a Complete Streets working group (since 2014) ▪ City has a designated Bicycle Pedestrian Coordinator	▪ City has conducted two walking audits to analyze hot spots and identify locations for improvements (through Berkeley Institute of Transportation Studies and California Walks) ▪ Projects are typically prioritized based on community input/complaints	▪ City occasionally conducts before-and-after studies for safety interventions (e.g., crossing treatments, road diets)	▪ GIS-based inventory of sidewalks and informal pathways ▪ Crosswalk inventory keeps track of location, striping method, and additional features (e.g., paddles, in-roadway lights)	▪ Property owners required to take on the cost of sidewalk repair; city provided 50% of cost during 2015 initiative but requires improvements through changes of use or property sales ▪ Miscellaneous concrete projects (e.g., curb ramps) are funded with a gas tax	▪ City uses flow chart that guides decision-making process for installing marked crosswalks ▪ Pedestrian toolbox informs treatment options ▪ Higher volume crossings rely on MUTCD standards	▪ City has been working with Metro to improve first- and last-mile (mainly bike) connections to transit	▪ Schools and CBD are prioritized locations for enforcement	▪ Most education and encouragement programs are based around schools ▪ City has hosted an Open Streets dry run and a Ciclovia
Santa Monica	▪ Pedestrian Action Plan (2016)	▪ Pedestrian Action Committee composed of representatives from multiple departments (planning and community development, police, public works, parks) ▪ Project Charter Memoranda for capital improvement projects assures that goals, objectives, and communication remain intact through the life of the project	▪ Highest collision corridors ▪ Transit access ▪ Community input ▪ Funding availability	▪ Pedestrian report card includes indicators related to trends in pedestrian activity/mode share, pedestrian safety, perceptions (surveys), and the built environment ▪ Number of projects completed is measure of plan implementation progress	▪ Coordinated between planning and GIS (IT department)	▪ Pedestrian Action Plan calls for a Public Right-of-Way Pedestrian Improvement Program that would apply proactive and systematic planning to public works programs ▪ Crosswalk inventory initiative led to improvement of 405 crosswalks at 130 intersections	▪ Pedestrian Design Toolkit features a Countermeasure Selection Matrix that identifies treatments for different collision types and an Enhanced Pedestrian Treatment Decision Support Matrix that provides guidance for crossing treatments at uncontrolled intersections	▪ Transit First-Last Mile Walkshed Analysis helps identify locations for improvements	▪ As part of Vision Zero goals, primary collision factor data is reviewed to inform monthly directed enforcement efforts	▪ "Be Safe, Be Seen" safety campaign included neighborhood watch meetings, crime prevention presentations at schools, community events, advisory video, and PSA ▪ Recommended safety programs focus on motorist compliance with laws related to crosswalks and yielding to pedestrians (crash data indicates that this is a primary collision factor)

3 Crunching the Numbers

Crunching the Numbers gathers and analyzes walking-related data to paint a picture of pedestrian conditions in Glendale.

This chapter is composed of five sections:

Pedestrian Counts. This section measures how many people are walking at key locations across Glendale. It will also serve as a baseline for future counts of nonmotorized traffic volumes.

Pedestrian Infrastructure and Demand. Pedestrian infrastructure like sidewalks and crossings helps pedestrians walk safely. Similarly, the density of destinations and quality of transit service both help to determine the demand for walking. In addition to identifying pedestrian infrastructure and demand, this section analyzes walking comfort and ease of crossing the street as a pedestrian.

Pedestrian Safety. Pedestrians are especially vulnerable to traffic conflicts with motor vehicles. Pedestrian Safety analyzes the time and location of pedestrian injuries and deaths. It also determines who, demographically, is most likely to be involved in collisions involving pedestrians. This section concludes with a "hot spot" analysis of pedestrian safety.

Walking and Social Equity. While everyone is a pedestrian at various points throughout the day, certain demographic groups are more likely to benefit from walking infrastructure than others. For example, households without access to a vehicle, or individuals with a low income, may rely more heavily on pedestrian infrastructure to reach destinations. This section maps the demographic factors typically associated with increased levels of walking.

Walking and Health. The degree to which a place is walkable has a relationship to public health. This section analyzes (1) rates of death from chronic diseases associated with limited physical activity or poor nutrition; (2) access to healthy foods and recreational facilities within walking distance; and (3) pedestrian collisions.

Pedestrian Counts

This section provides a summary and basic analysis of the pedestrian count data collected for the City of Glendale in spring 2016. In Glendale, pedestrian counts are collected every two to three years at the same locations to provide a snapshot of where people are walking.

Pedestrian counts provide an opportunity to gain a sense of the unique traffic patterns at specific locations and can signal changes in an area. Pedestrian counts are a common approach to measuring overall volumes at a given site and across geographies. Consistent and reliable count data can provide a valuable tool for decision makers. It can be used to identify pedestrian needs, establish areas of high pedestrian demand, guide transportation planning and engineering studies, and drive investment in a city's transportation network.

However, it is important to understand that counts can be impacted by a variety of factors such as construction, changes to roadway layouts, changes in density, weather, and special events. Therefore, the data collected are representative of a snapshot in time.

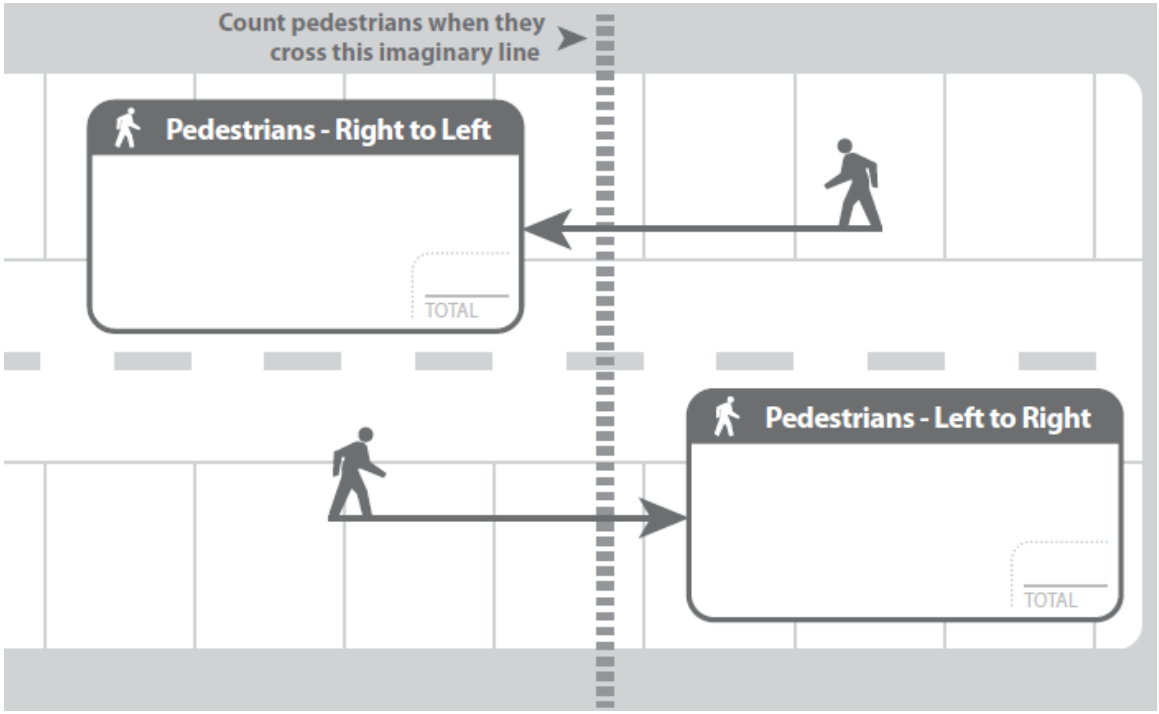
Methodology

Beginning in 2013, the City of Glendale adopted the pedestrian count methodology recommended by Los Angeles Metro and the Southern California Association of Governments to allow for inclusion in the online regional Bike Count Data Clearinghouse. This methodology uses "screenlines" for observation, typically near intersections. During data collection, an invisible screenline is established near a leg of an intersection or at a midblock location; pedestrians are counted as they cross the line in either direction as shown in Figure 3-1.

A total of 92 screenlines near 52 intersections were counted in 2016. For many intersections, two screenlines were used to paint a complete picture of pedestrian activity and direction of travel. For the 2016 counts, the city used video technology in place of volunteers to increase the accuracy of the count information and to allow more locations to be counted.

Cameras were placed in protective casings and installed on traffic signal poles to capture screenline data on adjacent intersection legs

Figure 3-1 Screenline Count Collection Form



Maintaining a consistent methodology between 2013 and 2016 makes it possible to directly compare observations at specific locations. The 2016 screenline locations are shown in Figure 3-2 and Figure 3-3 below, and are listed in Figure B-1 in Appendix B.

Pedestrians were recorded crossing a screenline in either direction during the following two-hour count periods between April 12 and May 21, 2016:

- Weekday Morning: 7 a.m. – 9 a.m.
- Weekday Afternoon: 5 p.m. – 7 p.m.
- Weekend: 10 a.m. – 12 p.m.

The weekday counts occurred on Tuesdays, Wednesdays, and Thursdays, when travel patterns are most consistent. Weekend counts were conducted on Saturdays. Count periods were divided into 15-minute segments to identify peaks in activity. In addition to recording the total volume of pedestrians, staff noted whether pedestrians were children or using wheelchairs, scooters, skateboards, or skates. These values are provided for each screenline in Figure B-1 in Appendix B.

Figure 3-2 2016 Screenline Locations

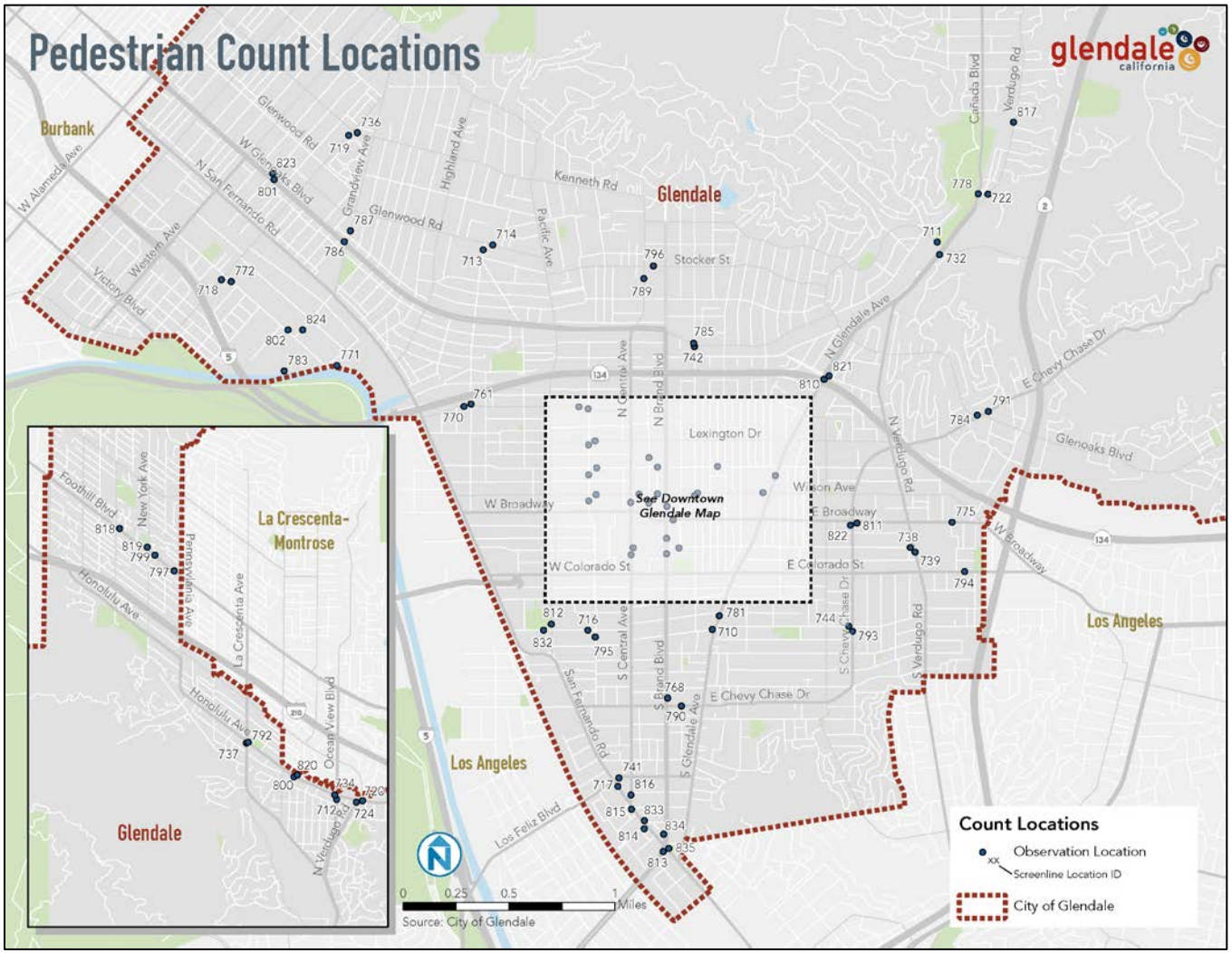
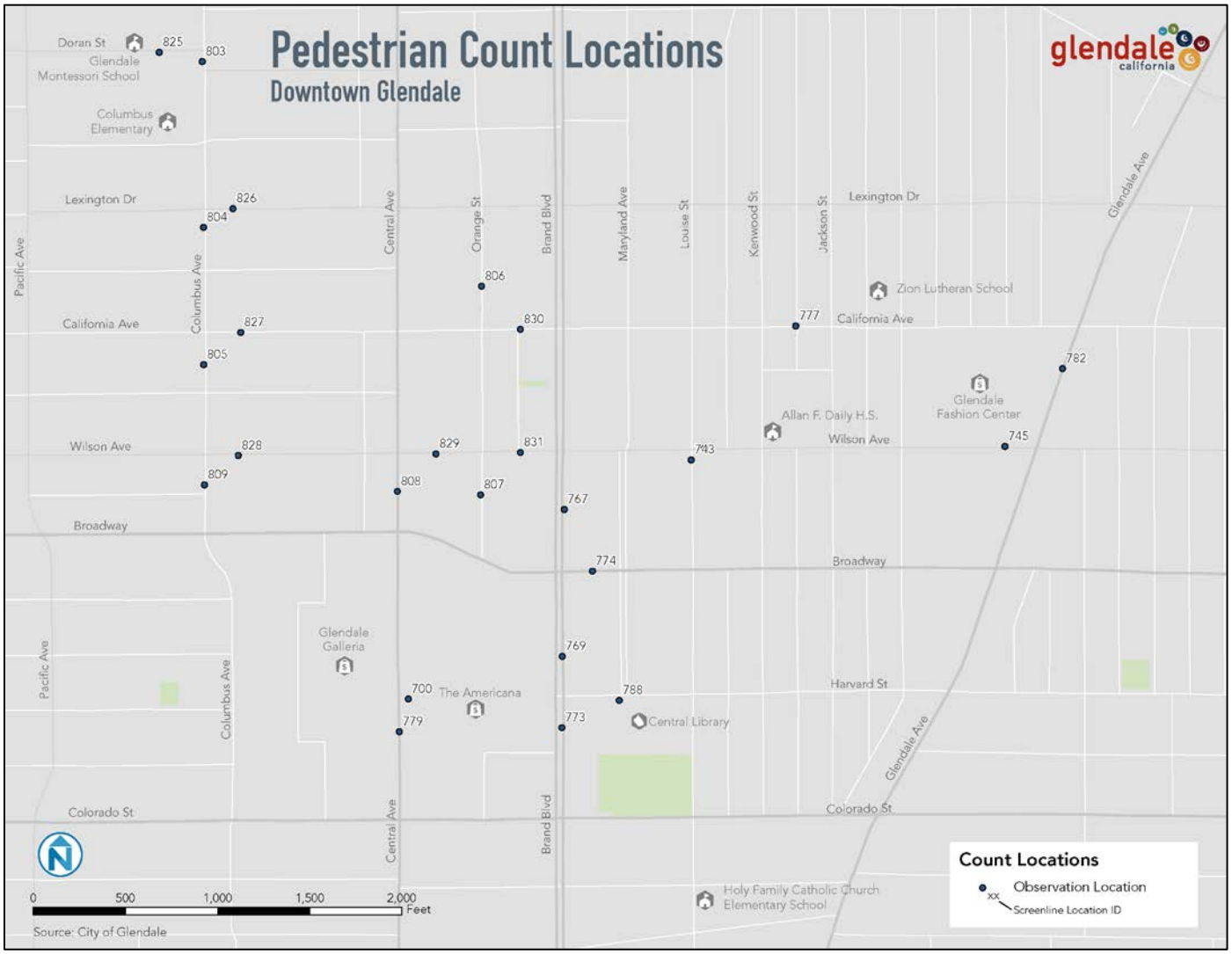


Figure 3-3 2016 Downtown Screenline Locations



Key Findings

The pedestrian count data can be used to identify trends over time and activity nodes. However, it is important to reiterate that count data is just one piece of information that helps tell the story of where people are walking in Glendale. The number of people walking at any one location may vary for a number of reasons, such as weather, individual schedules, special events, or construction detours.

When comparing data from 2013 and 2016, it is possible to look for trends in certain parts of town—there are more people walking downtown in 2016, for example, likely due to recent growth—but it is not meaningful to use small changes at a single location as an indicator of overall pedestrian activity. In short, a change that seems significant may not reflect overall trends, but rather result from a very specific or localized event.

Total Pedestrian Volumes

A total of 44,084 pedestrians were observed across the 92 screenlines over all count periods. The 10 most active screenlines across all count periods are shown in Figure 3-4. The top four screenlines in terms of total volume are located in Downtown Glendale, which is where the highest amount of pedestrian activity would be expected given the land uses and walking destinations. In fact, nearly half (49%, 21,782) of all count observations were made at screenlines in the downtown area.

In general, screenlines hold their rank consistently across count periods, with the exception of morning volumes; several locations near schools had significantly more pedestrians in the morning than in the evening count period (well after school dismissal). The two screenlines with the highest volumes during the morning count period (screenlines 714 and 713, respectively) were located near the Concord and Glenwood intersection, which is adjacent to Toll Middle School and Herbert Hoover High School. Screenline 817, adjacent to Verdugo Woodlands Elementary School, was the third busiest during the morning count period.

Total 2016 pedestrian count volumes are mapped in Figure 3-5 and Figure 3-6. Additional information about pedestrian volumes by count period for all screenlines is provided in Appendix B (Figures B-1 to B-3).

Figure 3-4 Top 10 Screenlines by Overall Pedestrian Volumes

On Street	Between	Total Volume	Weekday AM Rank	Weekday PM Rank	Weekend Rank
Americana Way (#700)	Brand & Central	5,227	22	1	1
Brand (#769)	Broadway & Harvard	3,079	13	2	2
Brand (#773)	Harvard & Colorado	2,508	6	3	3
Brand (#767)	Broadway & Wilson	2,149	4	4	4
Honolulu (#734)	Ocean View & Wickham	1,598	5	6	6
Central (#779)	Americana Way & Colorado	1,539	29	5	5
Broadway (#774)	Brand & Maryland	1,192	12	7	6
Concord (#713)	Glenwood & Stocker	1,006	2	8	63
Glenwood (#714)	Concord & School	888	1	10	62
Harvard (#788)	Brand & Maryland	777	46	9	8

Figure 3-5 Total Observed Volumes (Citywide)

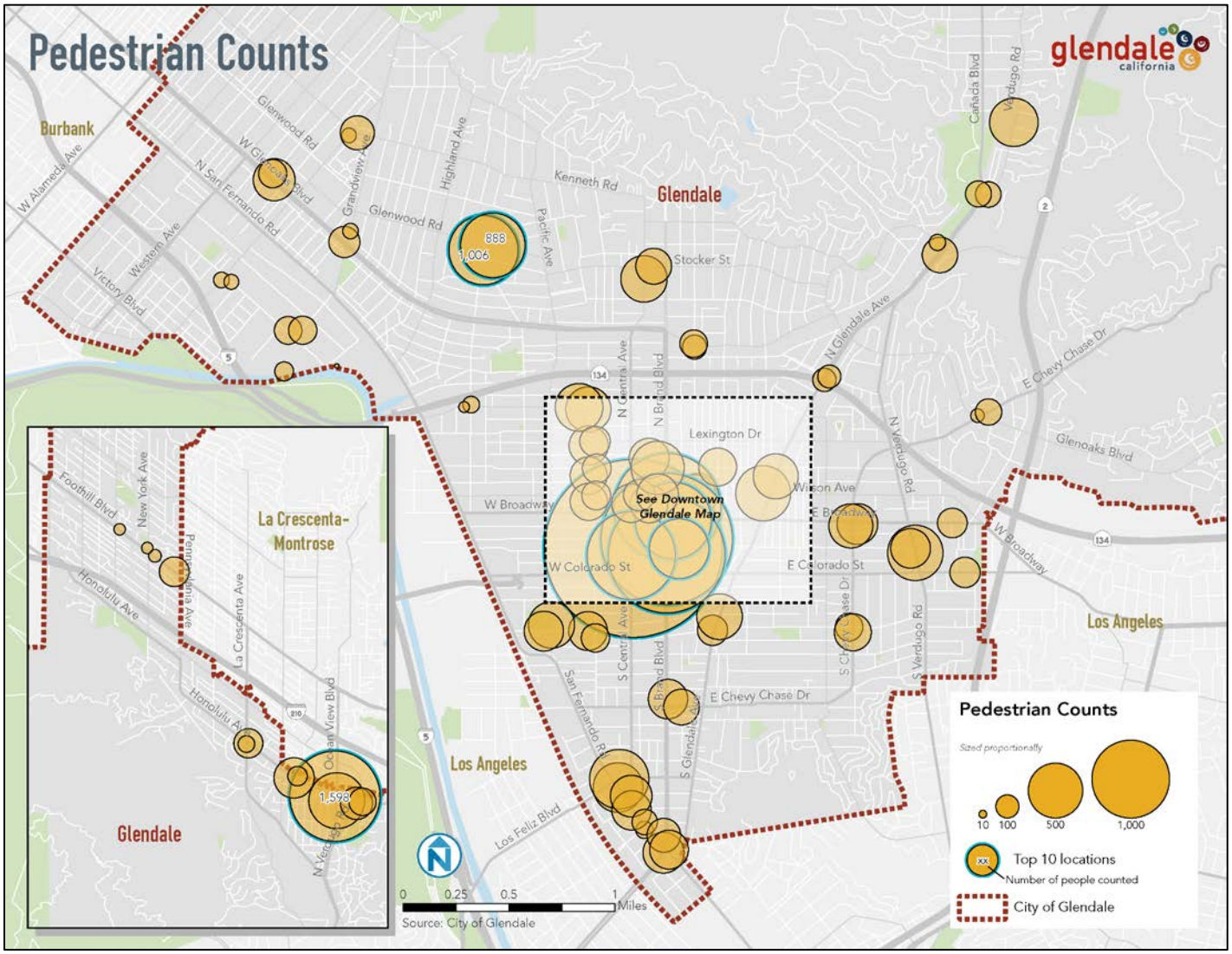
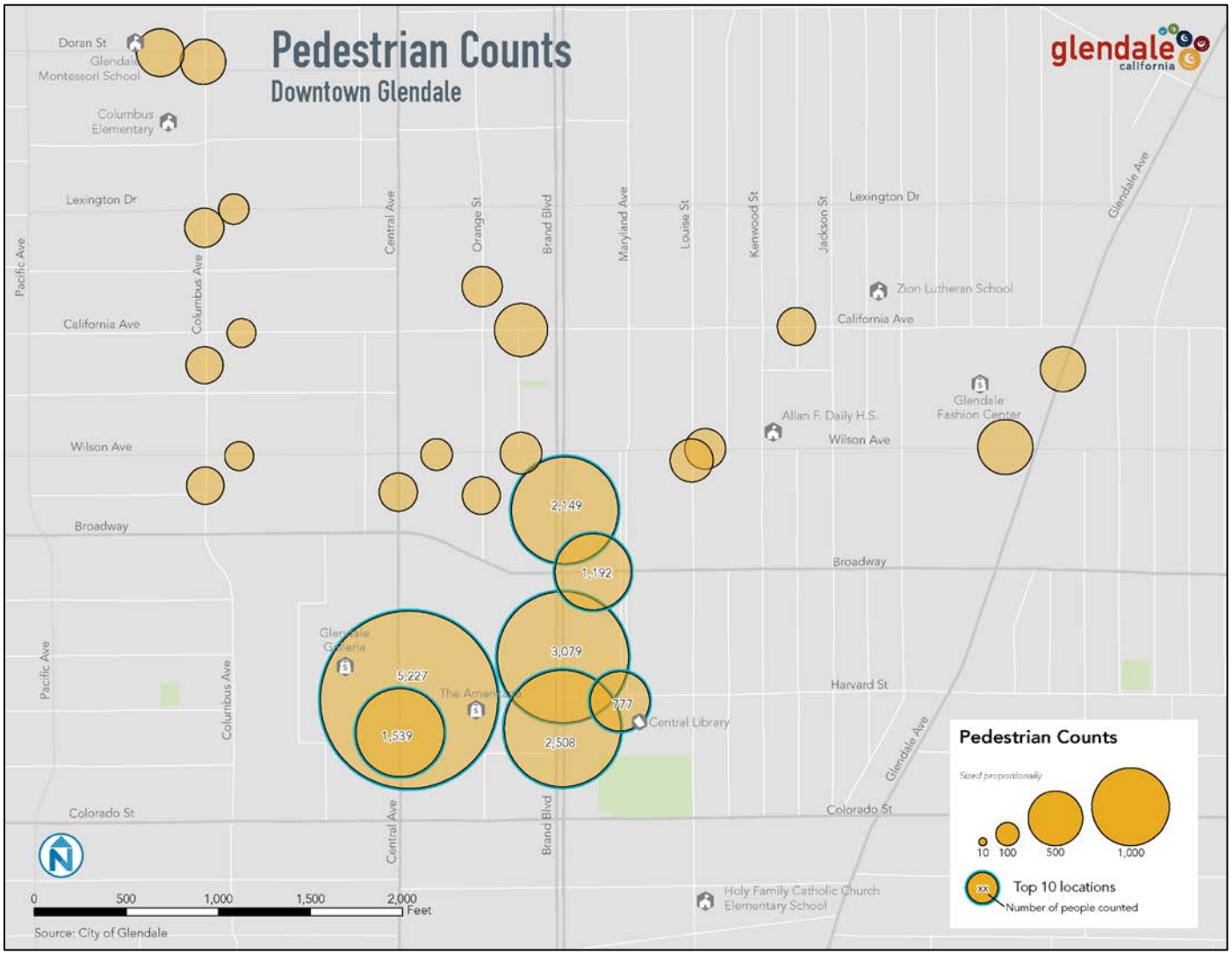


Figure 3-6 Total Observed Volumes (Downtown Glendale)



Comparison to 2013 Counts

As described above, 55 screenlines were observed using the same methodology in both 2013 and 2016, which allows for direct comparison of data between years to identify significant changes in activity.

Across all comparable locations, there was an increase of 6,169 observed pedestrians over all count periods. Locations adjacent to schools were omitted from this comparison because they were only observed during the evening period in 2013.

Figure 3-7 shows the 10 locations with the greatest increases or decreases in pedestrian volumes between 2013 and 2016. The five screenlines showing the greatest increases are in Downtown Glendale, reflecting continued growth in the downtown core.

Changes in volumes across all 55 screenlines observed in both years can be seen in Figure B-4 in Appendix B.

Figure 3-7 Top 10 Changes in Pedestrian Activity by Total Volume (2013 – 2016)

Screenline	Nearest Intersection	Total Volume (2013)	Total Volume (2016)	Change (#)	Change (%)
700	Central & Americana Way	3,091	5,227	2,136	69%
769	Brand & Harvard	1,997	3,079	1,082	54%
773	Brand & Harvard	1,438	2,508	1,070	74%
779	Central & Americana Way	584	1,539	955	164%
774	Brand & Broadway	599	1,192	593	99%
781	Glendale & Maple	614	485	-129	-21%
794	Colorado & Lincoln	366	237	-129	-35%
732	Verdugo & Mountain	447	313	-134	-30%
782	Glendale & Wilson	777	473	-304	-39%
711	Verdugo & Mountain	428	79	-349	-82%

Conclusions and Future Use of Data

As noted above, this pedestrian count data provides a snapshot of major pedestrian patterns and behaviors in Glendale. These counts will be compared with past and future pedestrian volumes, and will be an important consideration in developing the Citywide Pedestrian Plan. Additional uses for the data include the following:

- A "real data" set to check against modeled pedestrian demand (described later in this report).
- An element of context for pedestrian volumes when reviewing high-collision locations.
- An input to high-level analysis of perceived pedestrian behaviors to identify challenges pedestrians face in the urban landscape.

Pedestrian Infrastructure and Demand

Pedestrian infrastructure makes it safer and more convenient to walk; understanding pedestrian demand helps direct investments in pedestrian infrastructure and programs where they are most needed.

This section assesses the following characteristics associated with pedestrian infrastructure and demand.

- **Pedestrian infrastructure,** including sidewalks, crosswalks, curb ramps, and transit stops.
- **Walking comfort,** which combines streetlight spacing, sidewalks, speed limits, traffic volumes, and the number of travel lanes.
- **Pedestrian demand,** including eleven criteria related to population density, employment density, proximity to destinations (e.g., schools, retail), and transit ridership.
- **Ease of crossing** the street as a pedestrian, which takes into account speed limits, vehicle travel lanes, traffic signal distances, and intersection density.

Pedestrian Infrastructure

Basic pedestrian infrastructure includes sidewalks, clearly marked crossings, and accessible curb ramps. Most roadways in Glendale, especially in the denser parts of the city, have sidewalks. Areas without sidewalks include some hillside neighborhoods and undeveloped open space (such as the Verdugo Mountains). Figure 3-8 lists the percent of roadway miles that have sidewalks for each roadway classification. Most of Glendale's arterials and collectors—the streets likely to have higher speeds and more traffic—do have sidewalks on at least one side of the road.

Figure 3-8 Sidewalk Coverage by Roadway Classification

Arterial

95%

lane miles with sidewalks

Collector

93%

lane miles with sidewalks

Local

61%

lane miles with sidewalks

All street types: 68% lane miles with sidewalks

There are approximately 80 intersections with high visibility crosswalks throughout the city. Most of these are located along busy roadways, including Glendale Avenue, Brand Boulevard, and Pacific Avenue. Figure 3-9 shows the locations of high visibility crosswalks and sidewalk coverage throughout the city. Data was not available for the locations of other types of marked crossings throughout the city.

High visibility crosswalk in Glendale, CA

Image from Nelson\Nygaard

Curb ramps (compliant with Americans with Disabilities Act requirements) at intersections provide pedestrians, including those who use mobility devices, a connection from the sidewalk onto the street. Figure 3-10 shows which intersections in Glendale feature curb ramps.[1] There is a relationship between areas of the city that have sidewalks and the locations of curb ramps: most intersections lacking curb ramps are on roads without sidewalks or in parts of the city that have topographic challenges that may make curb ramp installation difficult (e.g., areas with very steep slopes).

Every transit trip begins with a walking trip. Therefore, high quality pedestrian infrastructure near transit stops and stations is essential to support transit ridership and provide mobility options for Glendale residents. Figure 3-11 maps the busiest transit stops in the city (300+ average daily boardings) and identifies streets within a half mile of these stops that lack sidewalks. Additionally, a number of the transit stops (of any ridership level) throughout the city are located along roadways that are difficult to cross. These stops are more than 300 feet from a signalized crossing, often forcing transit riders to cross a wide, high-speed road.

Recently Completed Projects

- The City of Glendale has completed a significant number of pedestrian improvements in recent years, including many Safe Routes to Schools infrastructure projects. Improvements include new sidewalks, enhanced crossings, and traffic calming. Figure 3-12 shows the Safe Routes to School projects completed and underway as of fall 2016. A list of the schools that have received infrastructure improvements is shown in Figure 3-13.

1 This map is based on curb ramp location data provided by the City of Glendale. A spot check of intersections using Google Street View found that some intersections indicated in the data has having missing ramps do indeed have them. Therefore, the map under-represents the presence of curb ramps. Note that this map does not identify which ramps are ADA-compliant.

Figure 3-9 Existing Pedestrian Infrastructure

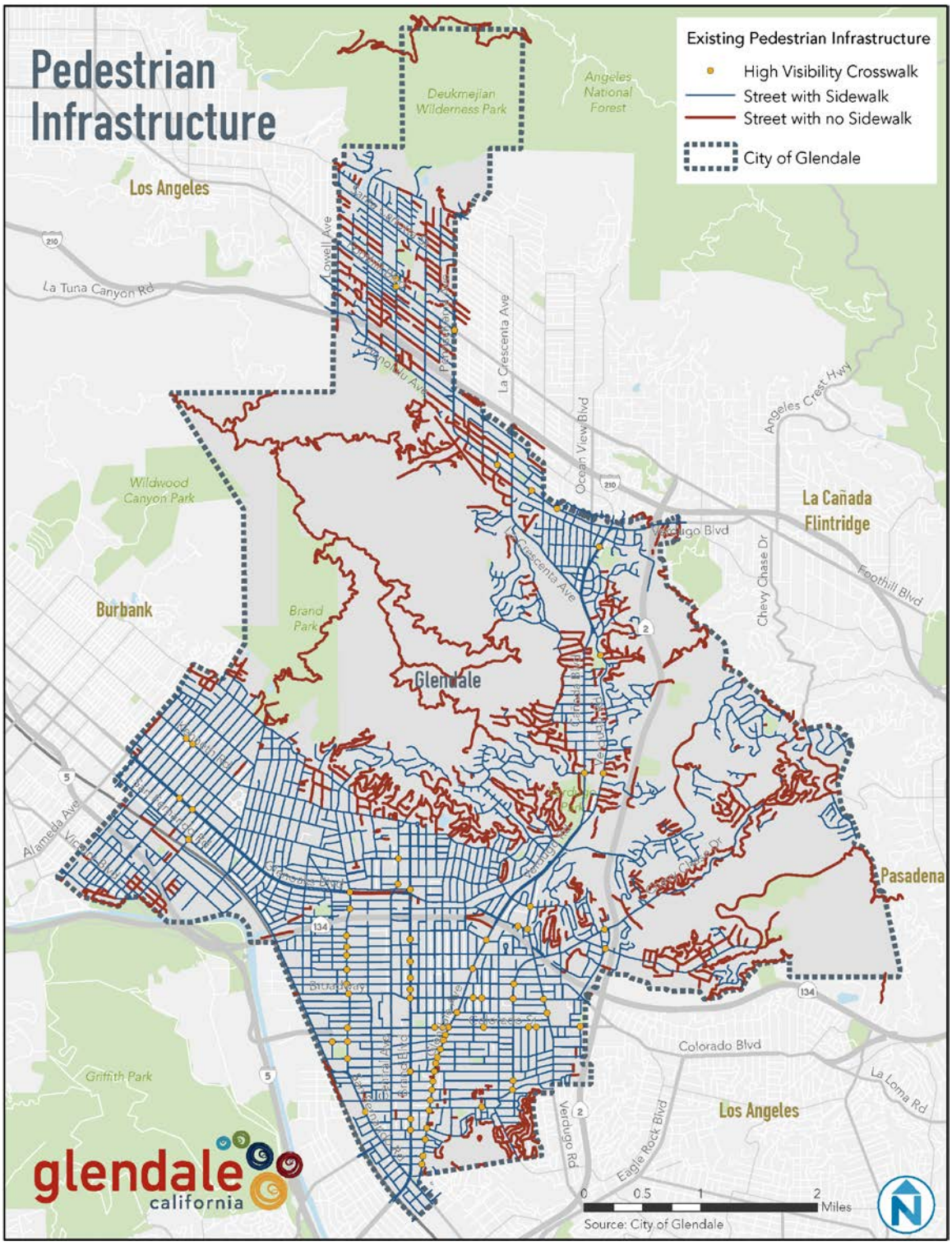


Figure 3-10 Curb Ramps

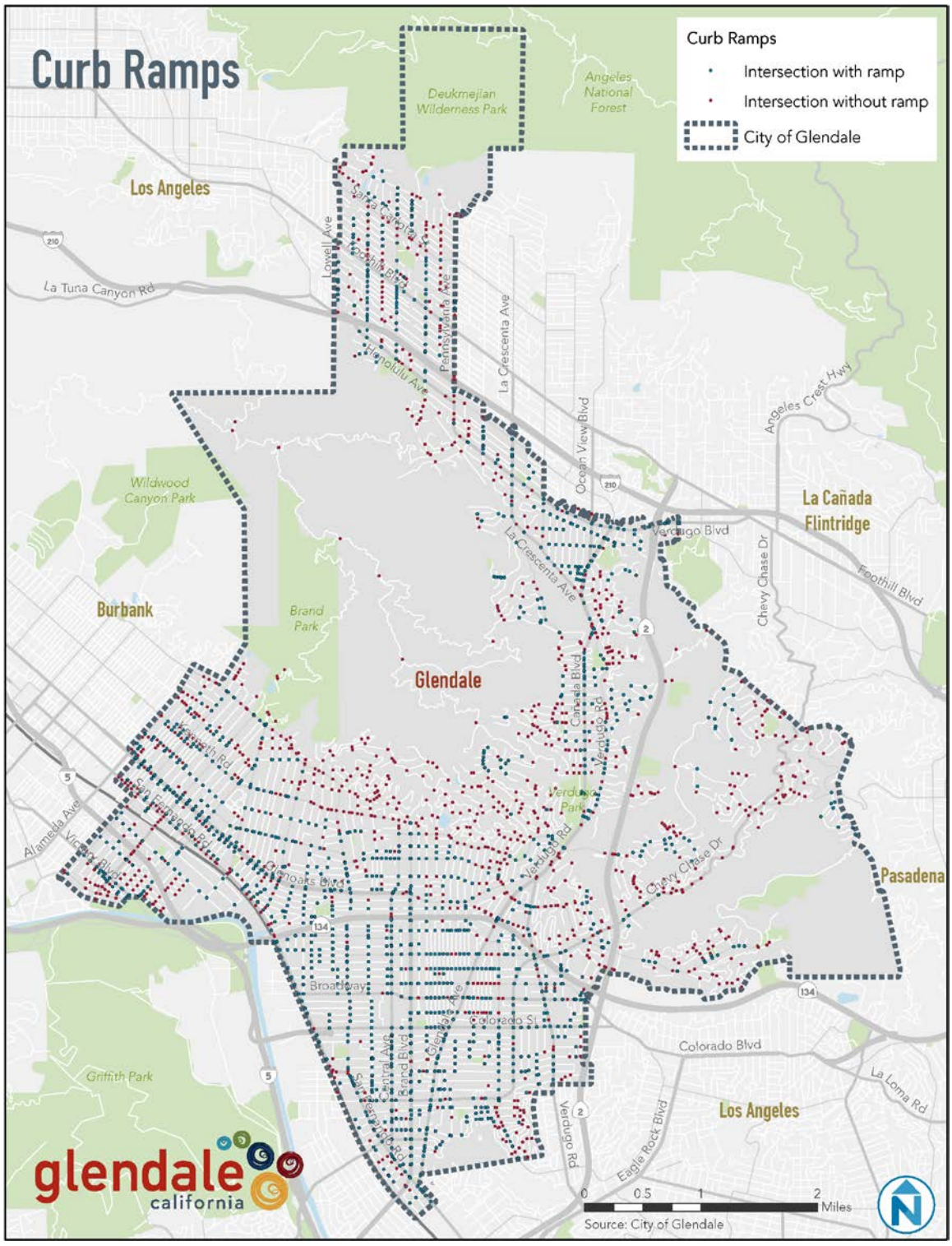


Figure 3-11 Transit Access

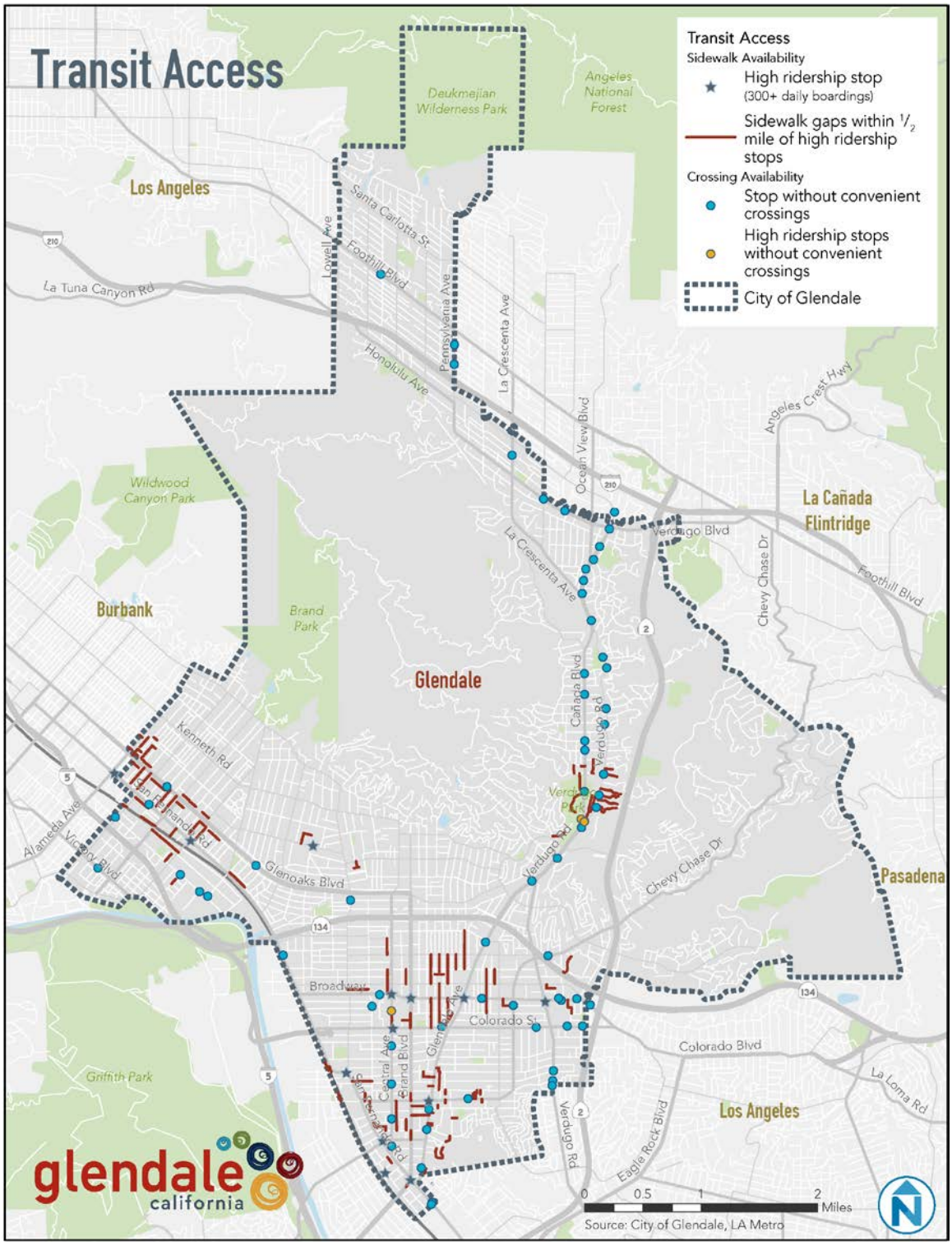


Figure 3-12 Safe Routes to School Infrastructure Projects

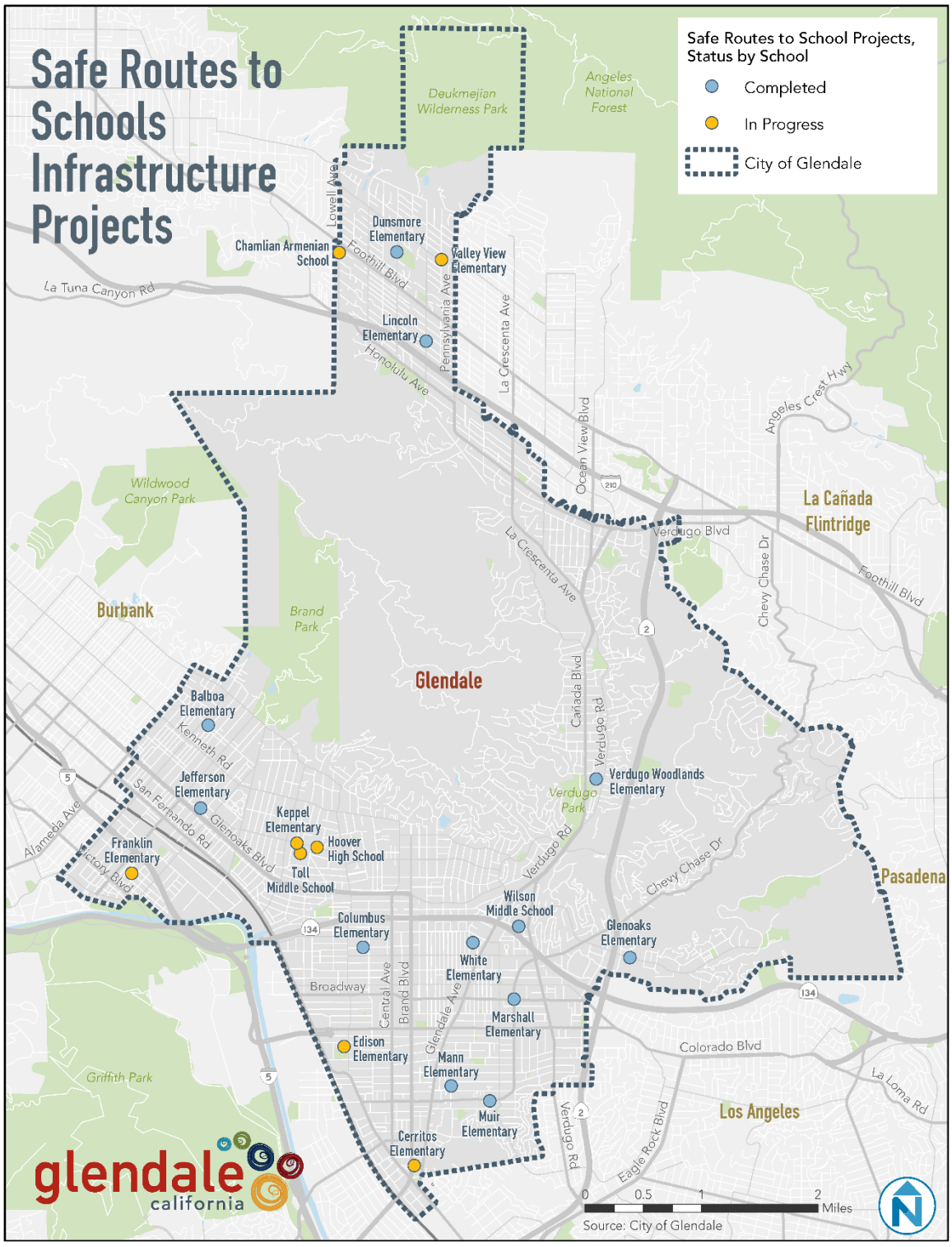


Figure 3-13 Schools with Safe Routes to School Infrastructure Improvements

School	Status
Balboa Elementary	Completed
Columbus Elementary	Completed
Dunsmore Elementary	Completed
Glenoaks Elementary	Completed
Jefferson Elementary	Completed
Lincoln Elementary	Completed
Mann Elementary	Completed
Marshall Elementary	Completed
Muir Elementary	Completed
Verdugo Woodlands Elementary	Completed
White Elementary	Completed
Wilson Middle School	Completed
Toll Middle School	In Progress
Hoover High School	In Progress
Chamlian Armenian School	In Progress
Cerritos Elementary	In Progress
Edison Elementary	In Progress
Franklin Elementary	In Progress
Keppel Elementary	In Progress
Valley View Elementary	In Progress

Walking Comfort

An analysis of walking comfort scores roadways by how pleasant, inviting, and safe they are for walking. People walking or using mobility devices use Glendale's roadway network to connect to businesses, jobs, schools, and recreation. Roadways that have more travel lanes, higher traffic volumes, and vehicles traveling at faster speeds are more likely to be uncomfortable or uninviting for people walking. At night, streets that lack lighting may become even less comfortable, as darker streets make pedestrians less visible to cars and can increase people's concerns about personal safety. However, the presence of sidewalks is the most significant factor in determining how comfortable a roadway is for people walking.

The criteria used to score the walking comfort of Glendale's roadways are illustrated in Figure 3-12. A description of the specific scoring for this measure is available in the Methodology Appendix.

The results are shown in Figure 3-13, with input data shown in the maps on the following pages. The map shows that higher order roadways, like major arterials, are less comfortable for pedestrians, largely due to traffic speeds, number of lanes, and traffic volumes. The roadway with the lowest comfort scores for the greatest distances is Glenoaks Boulevard, which has a "poor" comfort rating from Brand Boulevard west to the Glendale city limits.

Figure 3-14 Walking Comfort Criteria

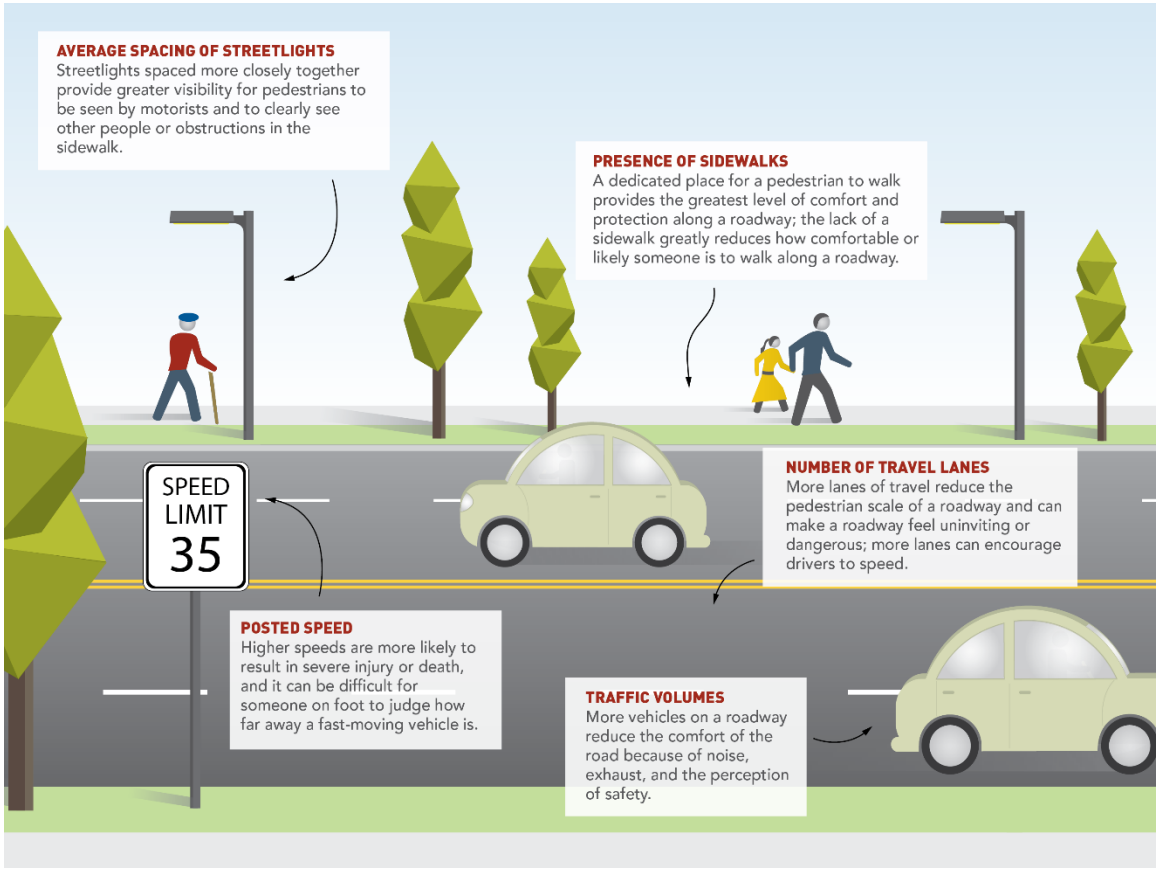


Figure 3-15 Walking Comfort Analysis

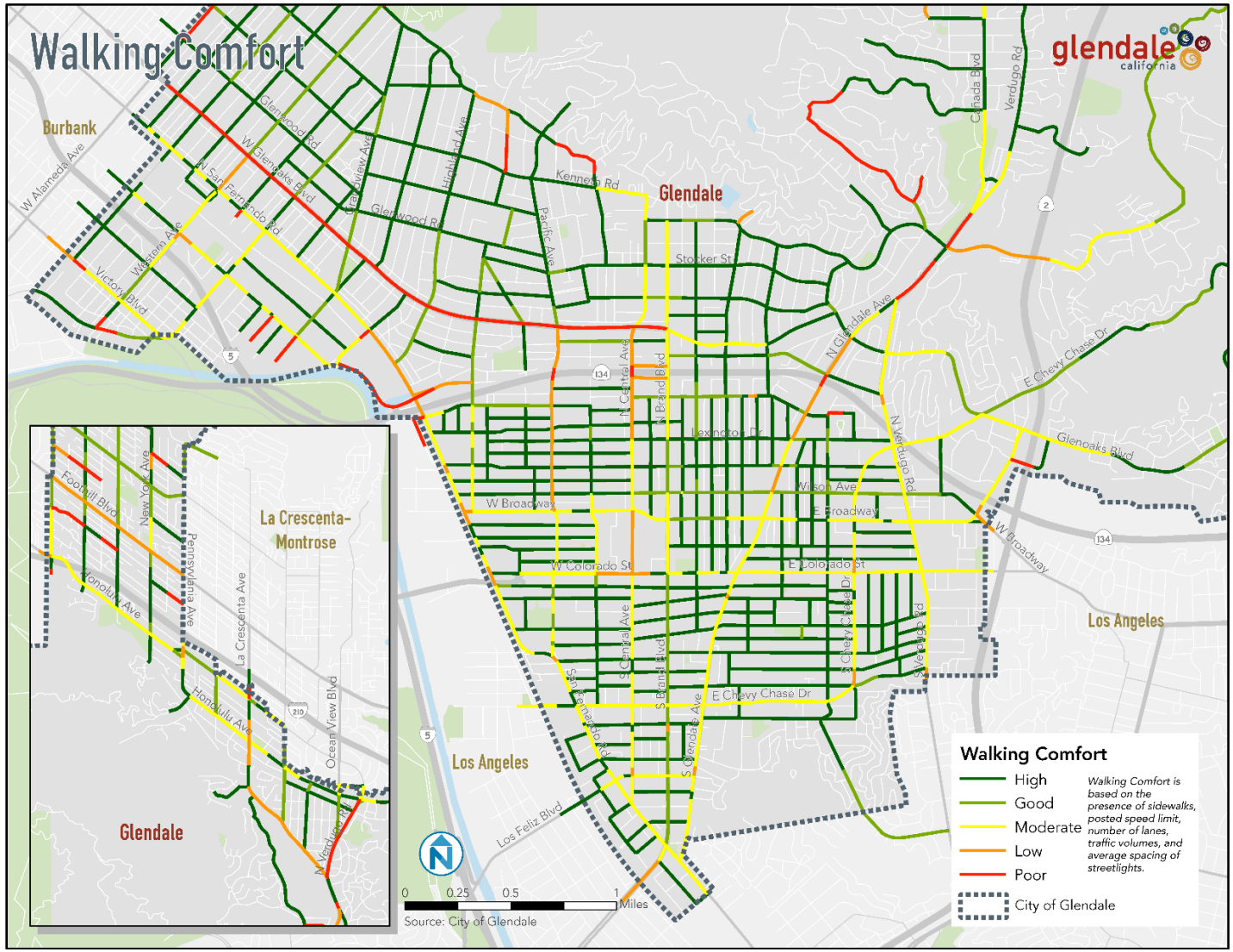


Figure 3-16 Posted Speed Limit

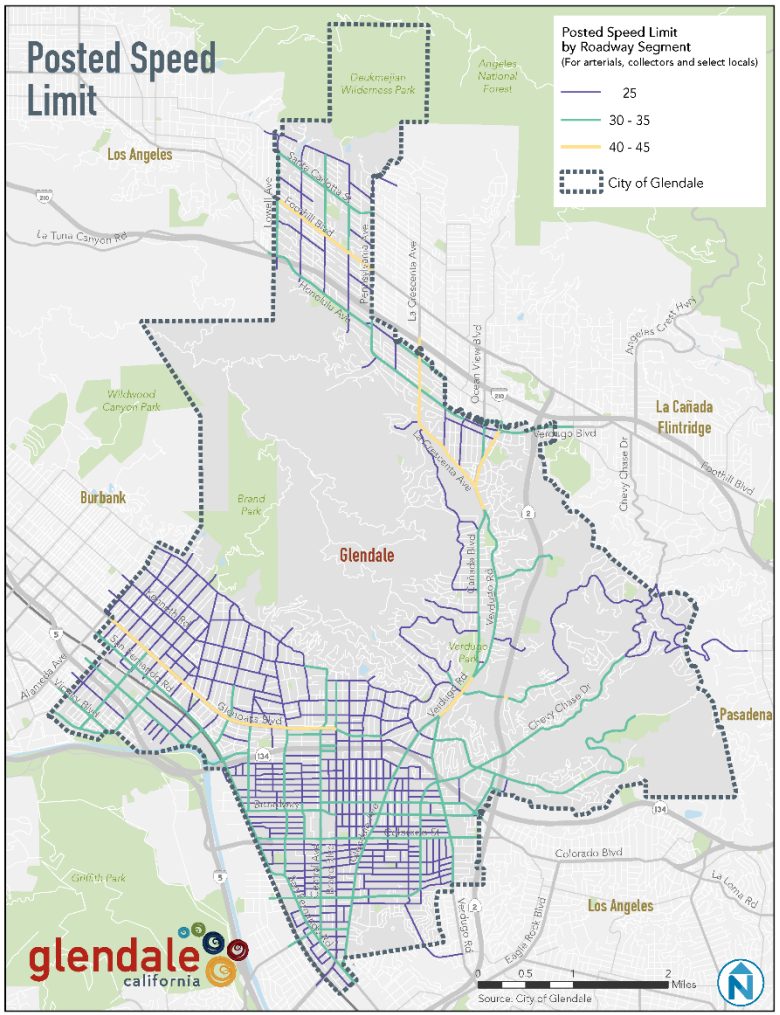


Figure 3-17 Number of Travel Lanes

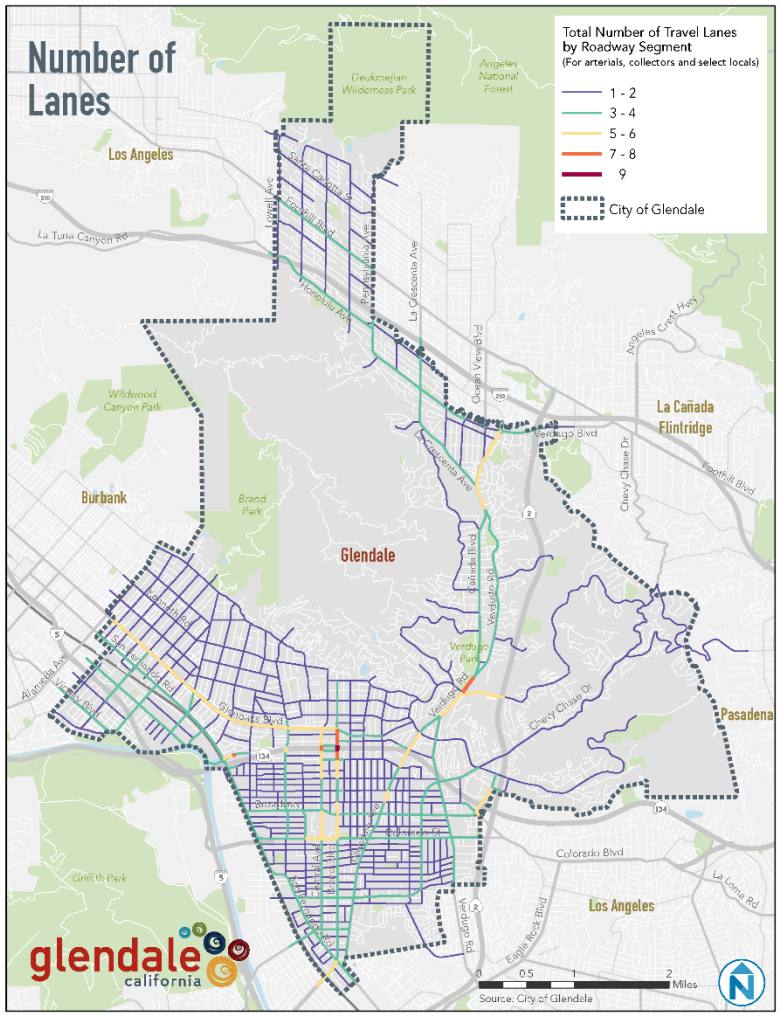


Figure 3-18 Traffic Volumes

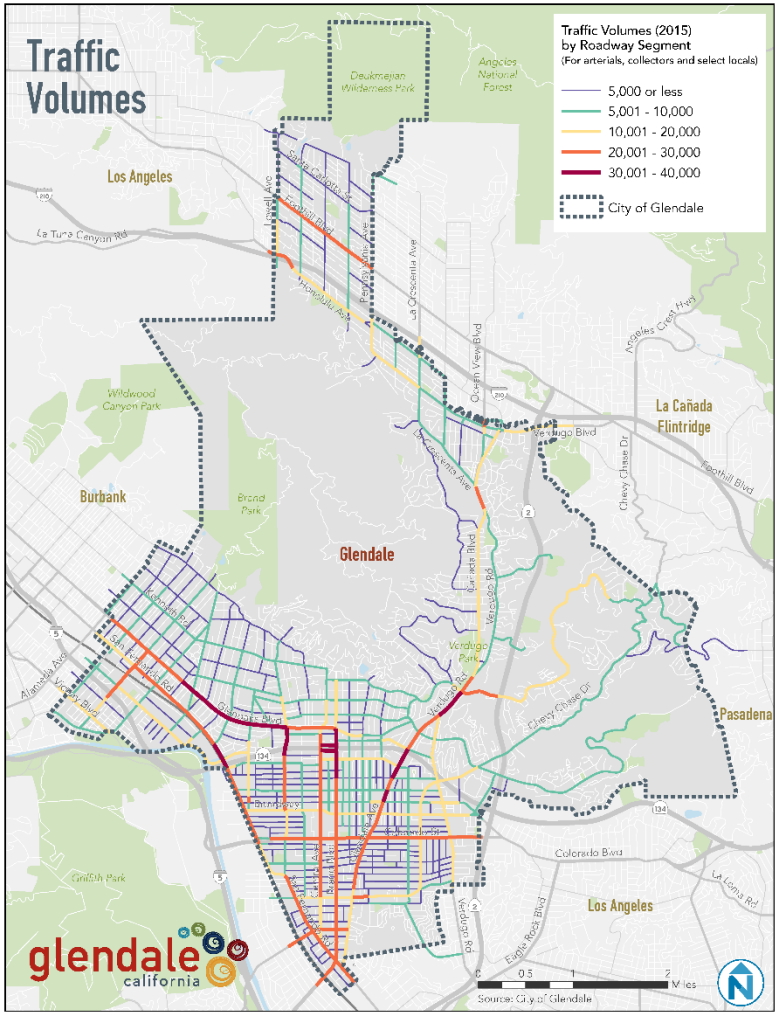


Figure 3-19 Spacing of Streetlights

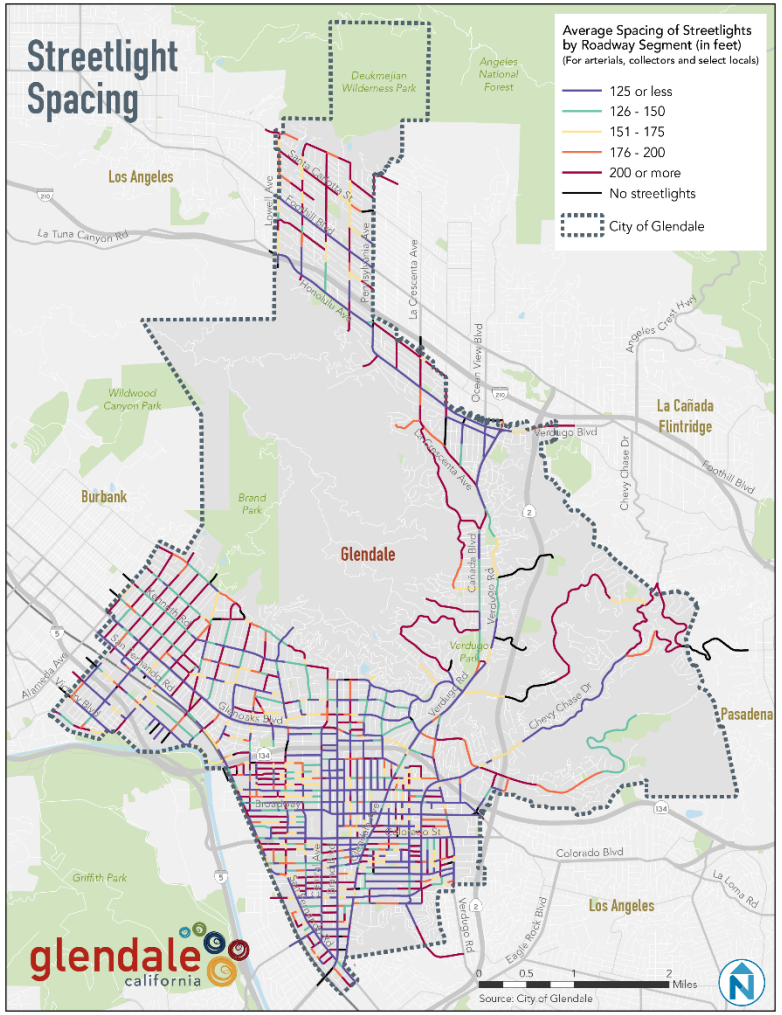
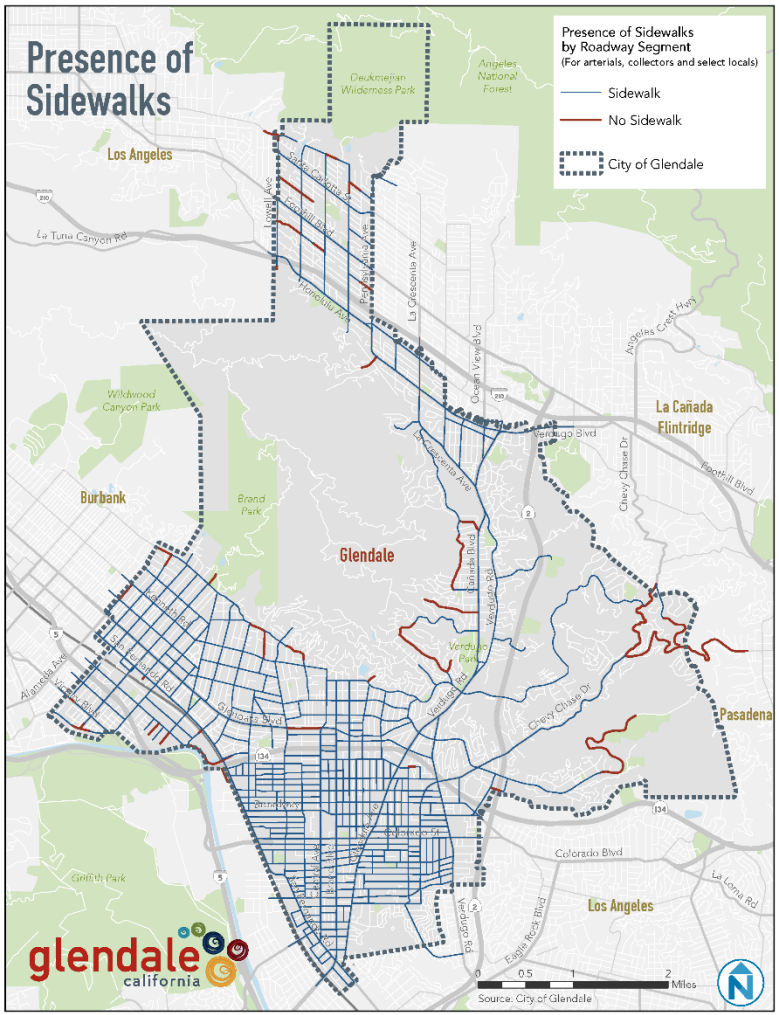


Figure 3-20 Presence of Sidewalks



Pedestrian Demand

The analysis of pedestrian demand indicates the areas of the city more likely to generate walking trips. Eleven criteria were used to calculate demand:

- Population density
- Employment density
- Proximity to schools
- Transit ridership
- Proximity to parks
- Proximity to hospitals
- Proximity to colleges
- Proximity to commercial or retail land uses
- Proximity to mixed-use land uses
- Proximity to the Americana
- Proximity to the Civic Center and the Courthouse

Transit ridership and proximity to the Civic Center and Courthouse received the highest weights. Population density (Figure 3-19), employment density (Figure 3-20), proximity to schools and colleges, and proximity to the Americana and mixed land uses (Figure 3-21) also received high weights relative to the other criteria. See the Methodology Appendix for detailed weighting of criteria.

The results, shown in Figure 3-22, indicate pedestrian demand is greatest in the following neighborhoods: Citrus Grove, City Center, Mariposa, Tropico, Pacific Edison, and Somerset. Other areas with high pedestrian demand include Grandview, Glenwood, Riverside Rancho, Vineyard, Verdugo Viejo, and areas of Crescenta Highlands, Sparr Heights and north of Glendale Community College in Verdugo Woodlands. These areas are highly correlated with population and employment densities, commercial land uses, and proximity to schools and colleges.

Additionally, land uses throughout the city play an important role in generating pedestrian trips and shaping the character of a roadway. Figure 3-23 shows future land uses in Glendale. Future land uses can help predict areas that may not have high pedestrian demand now, but could have a great deal of demand as land uses change and the numbers of destinations increase.

Figure 3-21 Population Density

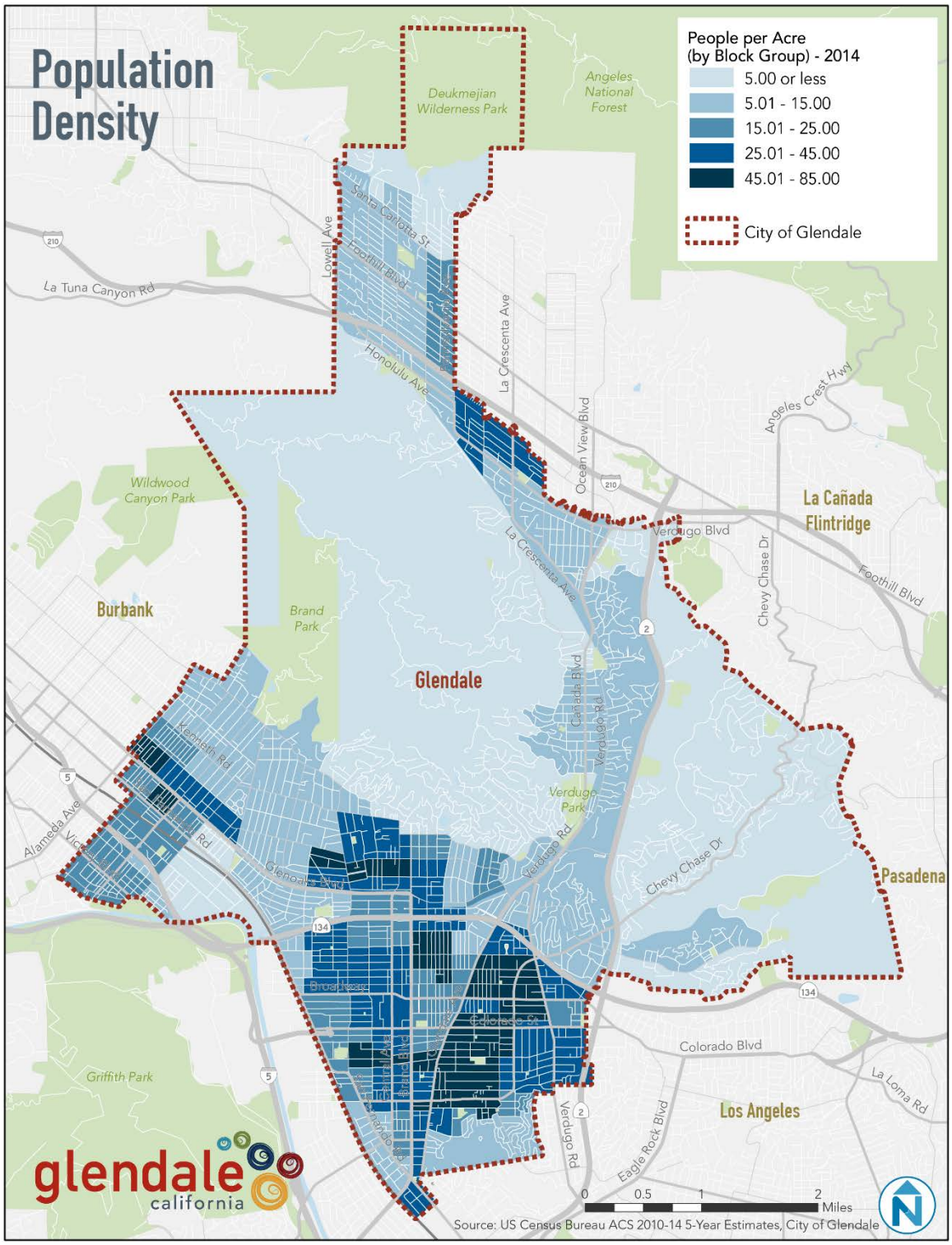


Figure 3-22 **Employment Density**

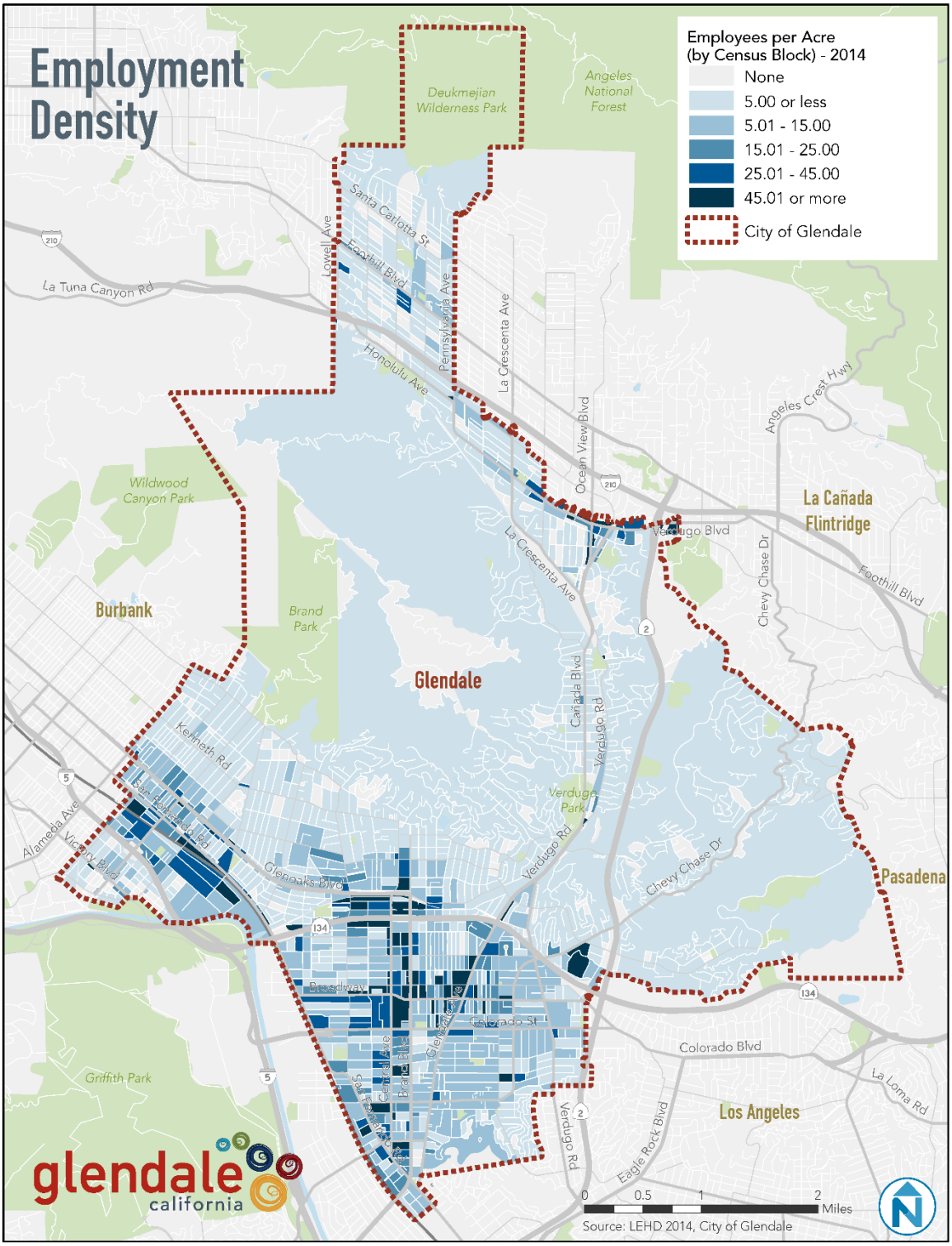


Figure 3-23 Existing Land Use

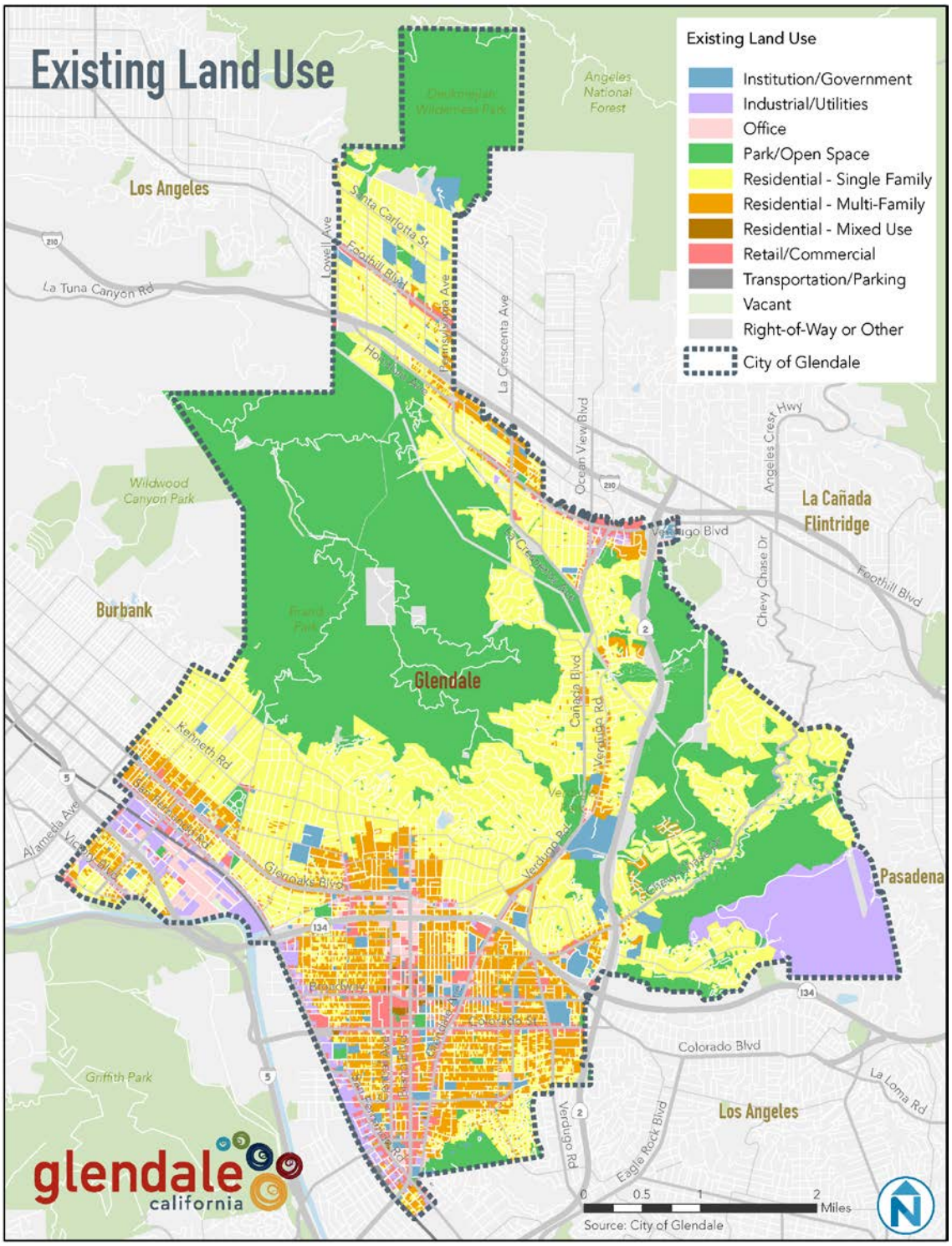


Figure 3-24 Pedestrian Demand

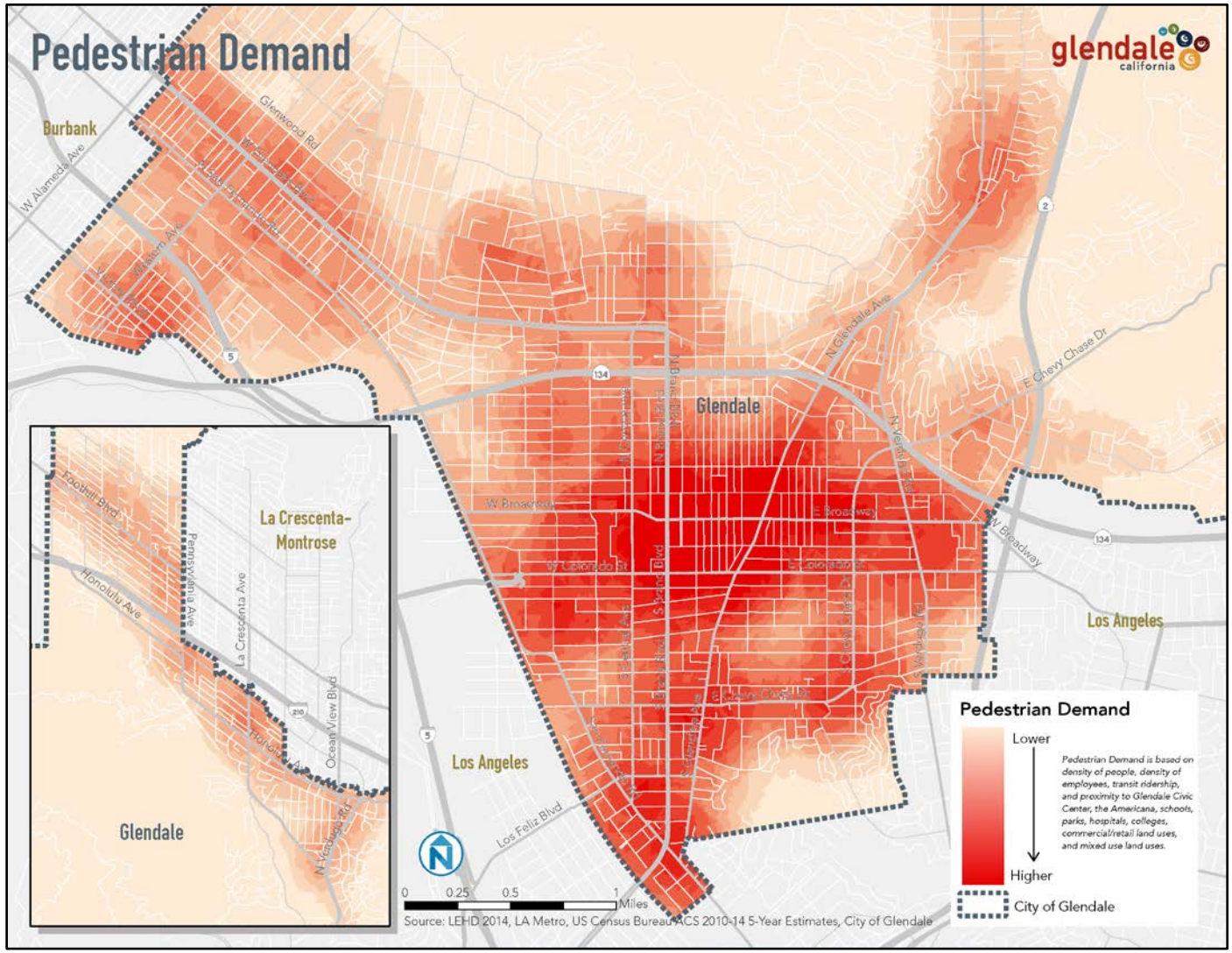
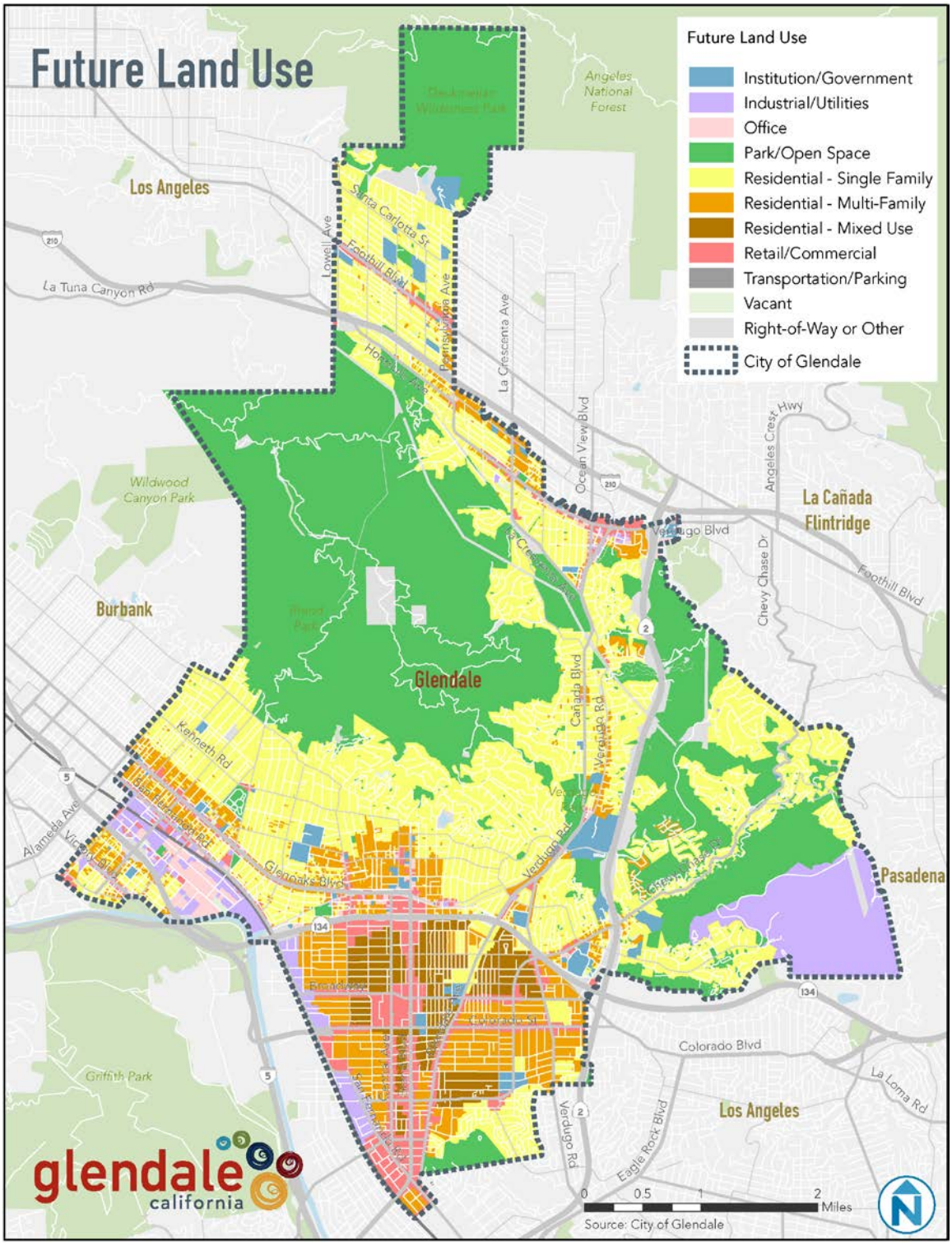


Figure 3-25 Future Land Use



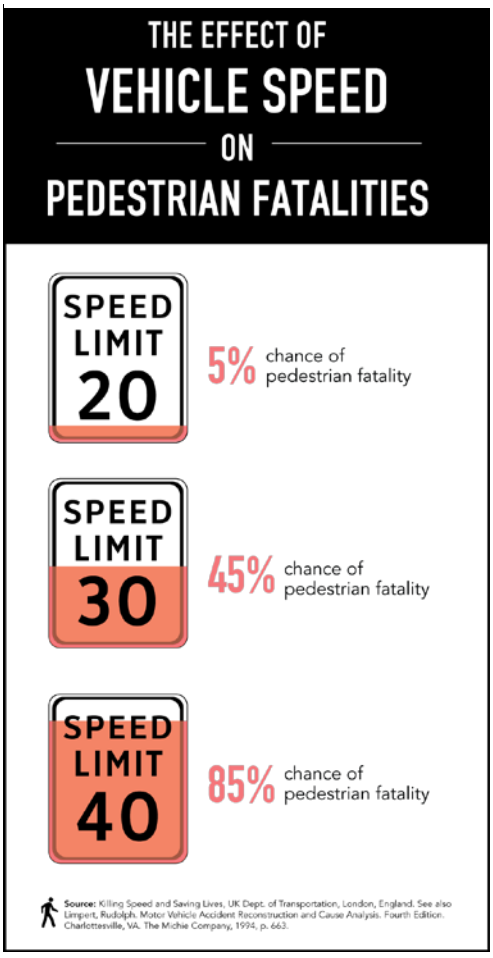
Ease of Crossings

Streets with more travel lanes and higher posted speeds are often more difficult to cross for people walking, particularly when there are long distances between traffic signals. This section presents the results of a crossing analysis that identifies the relative density and ease of pedestrian crossing opportunities throughout Glendale.

The factors that influence the ease or difficulty of a crossing include the following:

- **Posted speed.** Higher speeds make it more difficult for pedestrians to judge how fast a vehicle is approaching and when it is safe to cross; higher speeds also result in more severe injuries in the event of a collision
- **Number of travel lanes.** More lanes increase the crossing distance and the length of time a pedestrian is exposed to motor vehicles on the street
- **Distance to the nearest signalized intersection.** Traffic signals provide a designated time for pedestrians to cross the street
- **Intersection density.** All intersections are legal crossings in California and drivers may be more likely to expect a crossing pedestrian at an intersection as compared to a midblock location; intersection density is the number of intersections per unit of roadway (e.g., intersections per mile)

Figure 3-26 Speed and Pedestrian Facilities



Narrower roads with low posted speeds receive higher points, as they are often easier for pedestrians to cross even without additional infrastructure, such as a traffic signal. By contrast, wider roads with high posted speeds receive fewer points, as they are generally more difficult to cross. The proximity to a signalized crossing increases the score for a given roadway segment because a signal makes it easier to cross a roadway that might otherwise be challenging for a pedestrian. Street segments with a greater density of unsignalized intersections also receive points—although fewer points than signalized intersections—to highlight that they are legal crossings.

40% of pedestrian collisions in Glendale take place at signalized intersections, suggesting opportunities to both enhance pedestrian accommodations at existing signals as well as to provide additional enhanced pedestrian crossings.

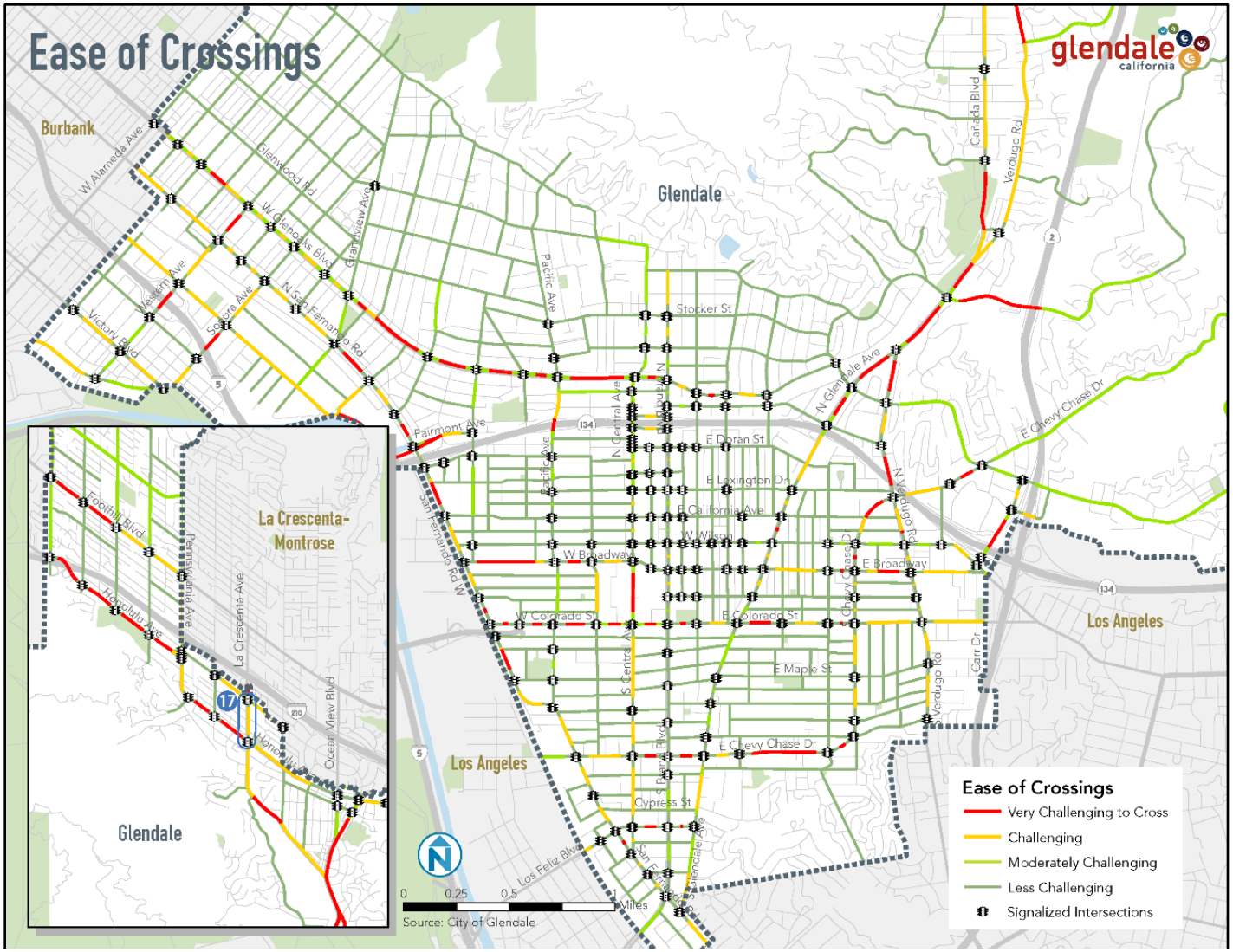
While much of central Glendale is characterized by two lane roads and a high density of signalized intersections, the ease of crossing analysis results (Figure 3-25) highlight larger roads (4-6 lanes) throughout the city where there are long gaps between places for people to cross. The streets highlighted below are among the most difficult to cross; they also have segments identified as high-collision corridors (see Collision Analysis below).

- **W Glenoaks Boulevard.** While there are many signalized intersections, six travel lanes make it difficult to cross elsewhere (Glenoaks at the west end of town is a high-collision corridor).
- **San Fernando Road.** While signals are reasonably spaced along this corridor (every 1/3- to 1/4-mile) at the west end of town, crossing four lanes of traffic at the unsignalized intersections can be challenging.
- **Flower Street.** There are only two signalized intersections on this four-lane road, a much lower density than on San Fernando and W Glenoaks to the north. Upgrading marked zebra crossings in Disney's Grand Central Creative Campus to median refuge islands would be appropriate given the number of lanes. This would improve the availability of appropriately spaced comfortable crossing opportunities along this road. Additional crossing demand is generated at the Glendale Narrows Riverwalk entrance near the large stop controlled intersection where Flower transitions to Fairmont.
- **Colorado Street.** The density of signalized intersections is low on the eastern portion of Colorado, which is a long, high-collision corridor. Additionally, the segment of Colorado west of Brand has six lanes and is a high-collision corridor.
- **Pacific Avenue.** There is a large gap in signalized crossing opportunities between Doran and Glenoaks, which is a high-collision corridor.
- **Central Avenue.** Signalized crossings are spaced far apart south of Broadway.
- **La Crescenta Avenue.** This four-lane road has widely spaced signals and a density of collisions in the segment south of Honolulu Avenue at the northern city limit.
- **Foothill Boulevard** (four lanes) and **Honolulu Avenue** (five lanes) are two of the larger roads in north Glendale that can be difficult to cross away from signalized intersections, but the history of collisions is relatively low.
- A number of other roads, such as **N Glendale Avenue**, are highlighted on the map as being difficult to cross, but have few generators of pedestrian activity.

A history of pedestrian collisions along the length of Central Avenue may suggest a need for additional crossings, though the highest density of collisions is north of Broadway where there is a greater density of signalized intersections.

Image from Nelson\Nygaard

Figure 3-27 Ease of Crossing Analysis Results



Pedestrian Safety

This section presents the results of a statistical pedestrian collision analysis to identify collision trends and locations that may need special attention.

The majority of the analysis is based on the most recent 10 years of data (2004-2013) available from the Statewide Integrated Traffic Records System (SWITRS). The dataset includes all reported collisions that resulted in a pedestrian injury. The Hot Spot Analysis presented at the end of this section incorporates 2014 and 2015 data available from the Glendale Police Department but not yet in the SWITRS database. Compared to SWITRS data, this more recent local data has many fewer details attached to it; however, it does include location information needed for the Hot Spot Analysis, which allows that work to reflect the most recent spatial trends.

Summary of Key Findings

More than 40% of the people killed in traffic collisions in Glendale are pedestrians.

What are the year-over-year trends?

- **Pedestrian collisions have remained relatively constant over time.** There are an average of 97.5 reported injury collisions per year.
- **More than 40% of the people killed in traffic collisions in Glendale are pedestrians.**
- **Motorists are deemed at fault for 70% of pedestrian collisions.**

When do collisions occur?

- **Many collisions happen in the afternoon and early evening.** Collisions happen throughout the day, with more collisions in the afternoon when the most people are traveling. The peak period for pedestrian collisions is 5 p.m. to 7 p.m.
- **Collisions are more likely to be severe or fatal in off-peak periods.** Collisions are increasingly likely to result in a severe or fatal injury as the evening progresses, likely because less traffic on the roads means that drivers are traveling at higher speeds.
- **There are more collisions in winter.** The winter months (October through January) experience the highest number of pedestrian collisions. The increase tends to be in nighttime collisions, perhaps a result of more hours of darkness.

Who is involved in pedestrian collisions?

- **Younger and older pedestrians are over-represented in the collision data,** as compared to their share of the total population. Assessing the speed and distance of oncoming cars is difficult for children and older adults.
- **Young adult and male drivers are also over-represented.** Drivers 20-24 years of age represent 6% of the driving age population but 12% of drivers in pedestrian collisions. Drivers in pedestrian collisions are more likely to be male (approximately 60%).
- **Approximately 16% of pedestrian collisions are hit-and-runs,** limiting what is known about driver age, gender, intoxication, or distraction.

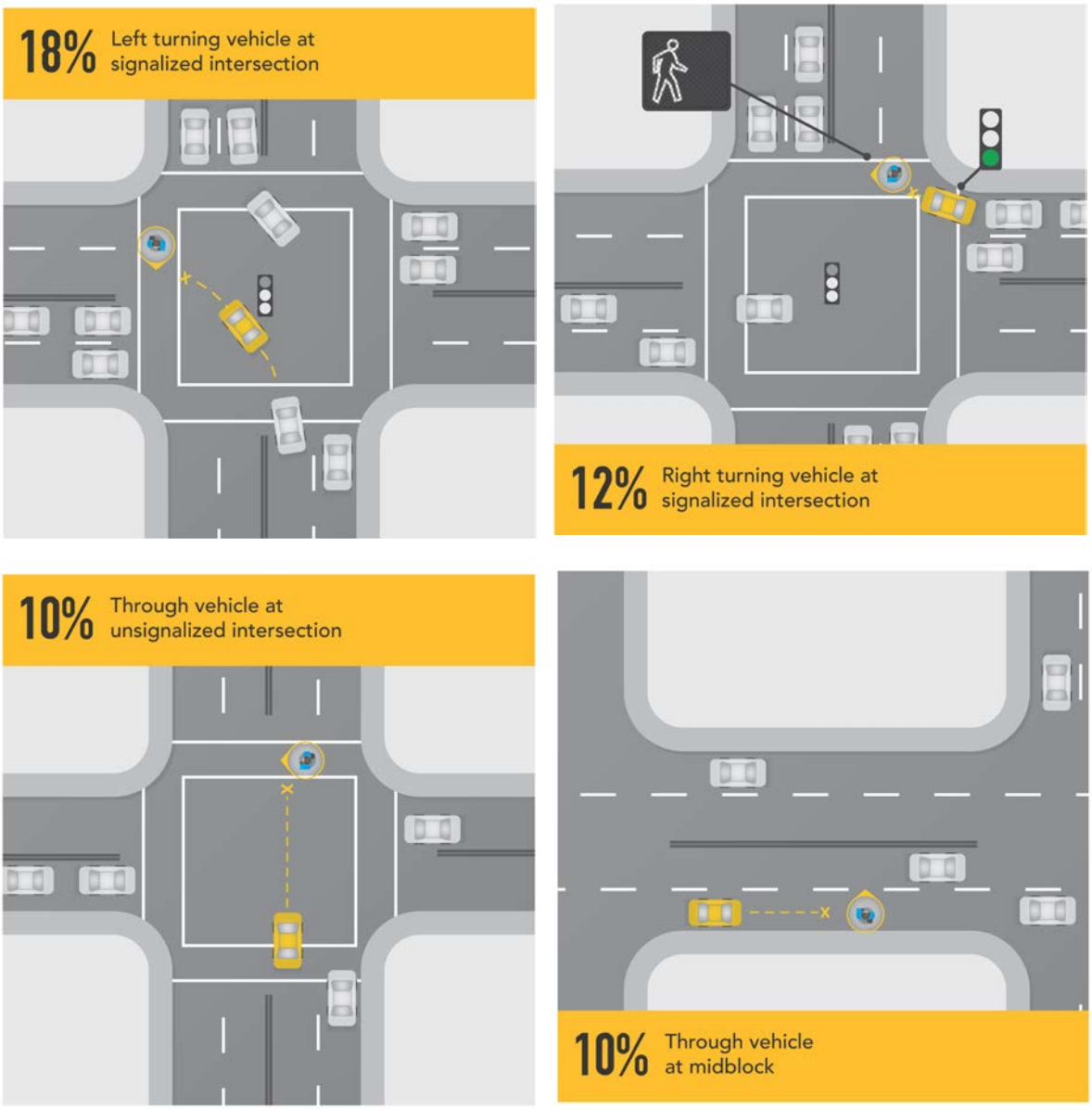
Where do pedestrian collisions occur?

- **Arterials.** Over 60% of pedestrian collisions take place on arterial roadways, which make up only 12% of the roadway network in Glendale.
- **High-collision corridors.** 40% of all pedestrian injury collisions occur on 17 high-collision corridors that represent just 2% of the city's street network (9 miles). High-collision corridors are listed in Figure 3-42 and mapped in Figure 3-43.
- **Turning vehicles at signalized intersections.** 30% of collisions involve a turning vehicle at a signalized intersection; the motorist is usually at fault, indicating a failure to yield the right-of-way to people in the crosswalk.
- **Midblock and unsignalized locations.** Signalized intersections (40% of collisions) are the most common location for pedestrian collisions, but many take place midblock (31%) and at unsignalized intersections (28%) as well.

Top collision types

- **Left turning vehicle at signalized intersection (18%)**
  - Motorists almost always at fault
- **Right turning vehicle at signalized intersection (12%)**
  - Motorists almost always at fault
- **Through vehicle at unsignalized intersection (10%)**
  - Motorists usually at fault—every intersection is a crosswalk in California
- **Through vehicle midblock (10%)**
  - Pedestrians usually at fault for failing to yield to vehicles outside of a crosswalk

Figure 3-28 Top Collision Type



What are the trends in the number of pedestrian collisions?

The number of pedestrian-involved collisions has remained relatively constant over time. However, there was a notably high number of collisions as recently as 2013. Pedestrians are extremely vulnerable to injury in the event of a collision. Between 2004 and 2013, there were 97.5 reported pedestrian injury collisions on average each year, of which 11.3% resulted in a severe injury or fatality. Over the same time period, 41.5% of all traffic fatalities in Glendale were pedestrians. Of the 22 pedestrian fatalities, six occurred in 2013; there was also a significant increase in pedestrian-involved collisions in 2013, up 30% from the previous year. Collisions were back down in 2014 (93), but 2015 had nearly 140 collisions; there were two fatalities each year.

Figure 3-29 Pedestrian Collisions by Year

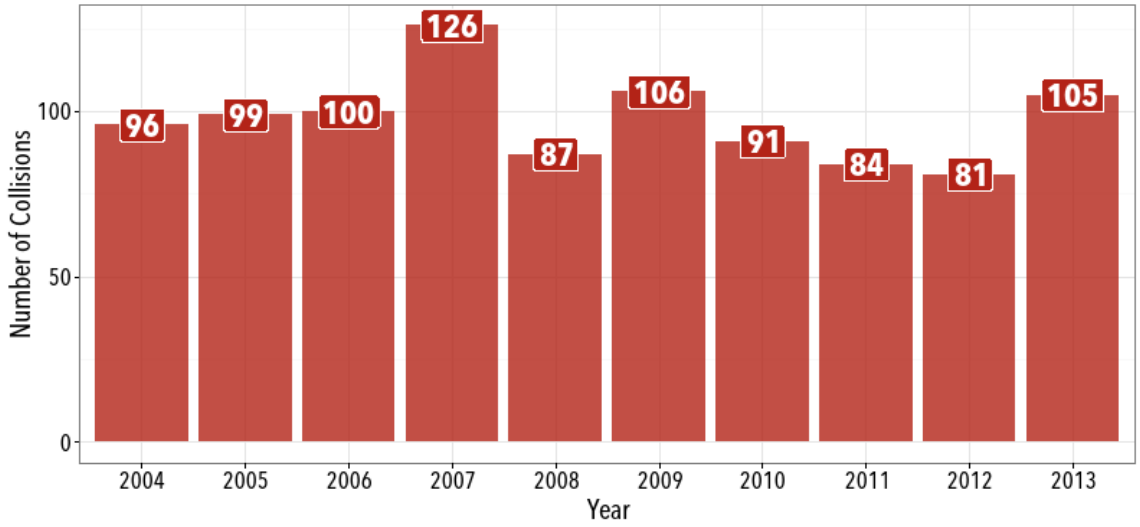
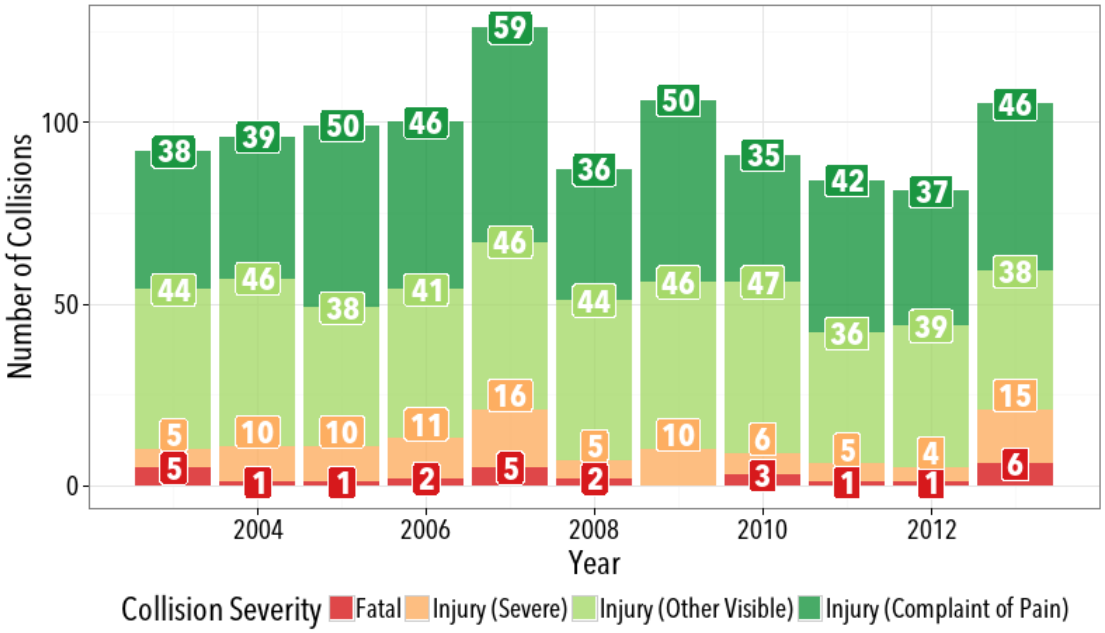


Figure 3-30 Pedestrian Collisions by Year and Severity



When do pedestrian collisions occur?

Time of Day

Similar to general traffic patterns, there is a small morning peak (starting around 7 a.m.) in pedestrian collisions and an increasing number of collisions in the afternoon when more people are traveling by all modes for work, school, shopping, or other purposes. The afternoon peak for pedestrian collisions is 5 p.m. to 7 p.m. The third highest hour for pedestrian collisions is 3 p.m. to 4 p.m., which corresponds to the time that many children are getting out of school; all collisions during this hour (whether involving a child or an adult) occurred within a half mile of a school. Youth are most prominent in the collision data from 3 p.m. to 7 p.m. (see Figure 3-30).

While collisions are most frequent when more people are on the roads, the likelihood of a collision resulting in a severe or fatal injury to the person walking increases as the roads become less busy in the evening and late evening hours. Less traffic on the roads allows drivers to travel at higher speeds. Fewer numbers of pedestrians, darkness, and alcohol impairment may all contribute to motorists failing to notice a person crossing a street in time to stop or slow, resulting in collisions at higher impact speeds.

Figure 3-31 Pedestrian Collisions by Time of Day

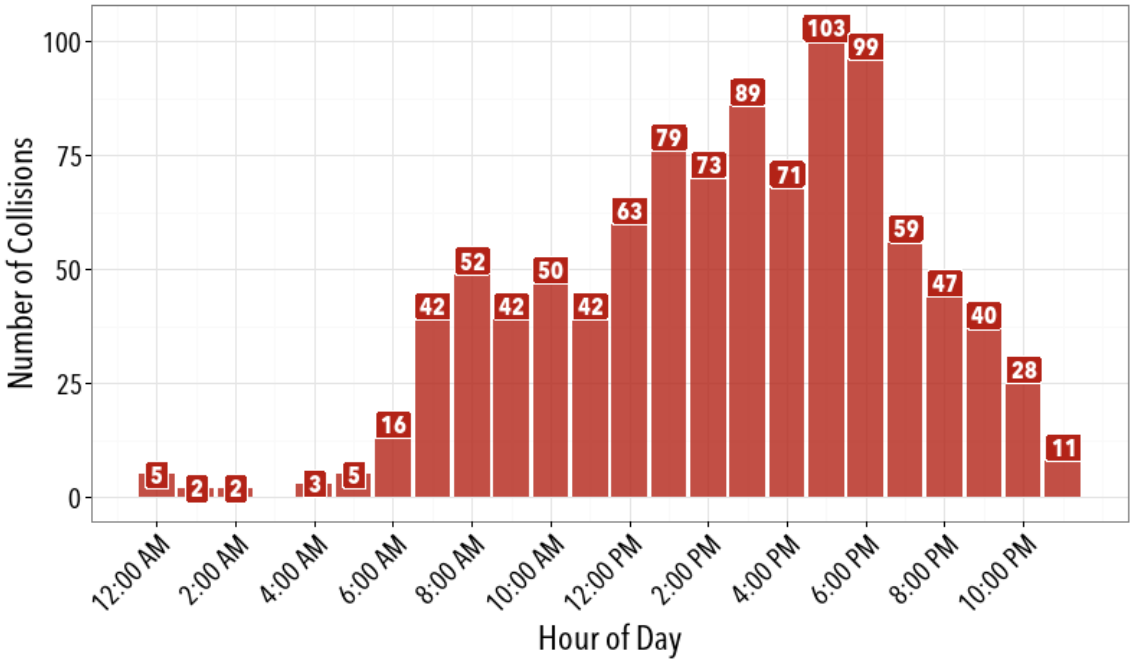
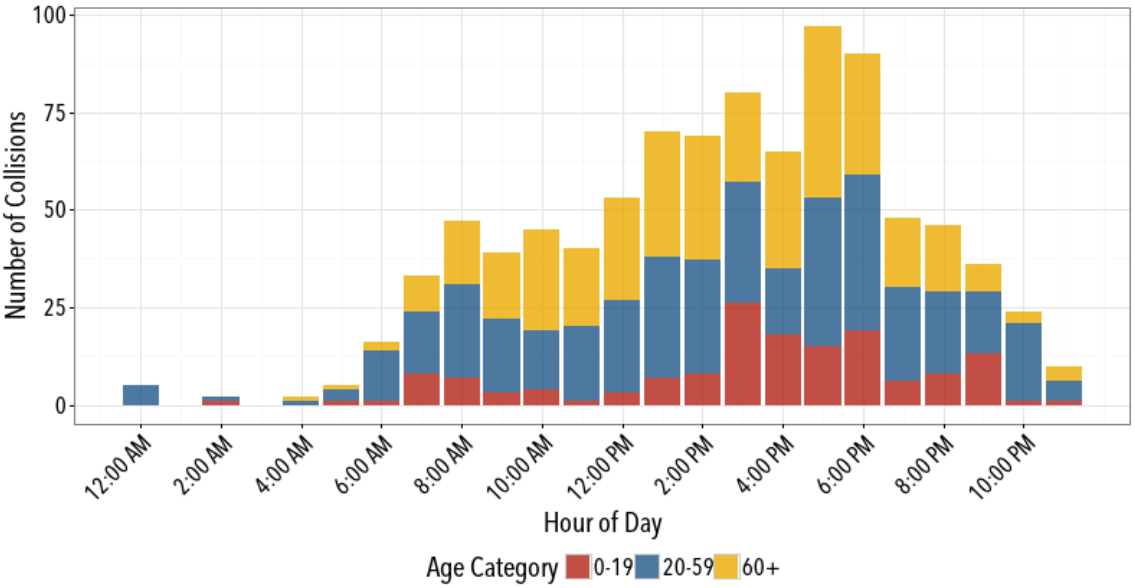
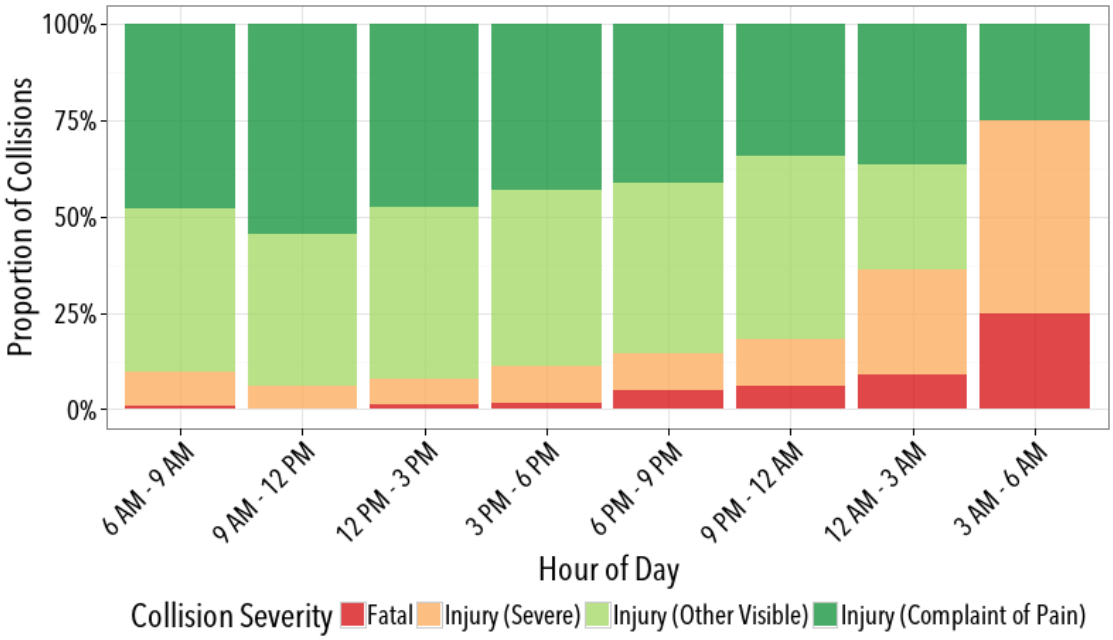


Figure 3-32 Pedestrian Collisions by Time of Day and Age



Between 2 p.m. and 6 p.m., 65% of the 86 youth collisions took place within 1/4 mile of a school compared to 54% of the 251 adult collisions. During that same time period, no collision involving a youth (age 0-19) occurred further than 1/2 mile from a school.

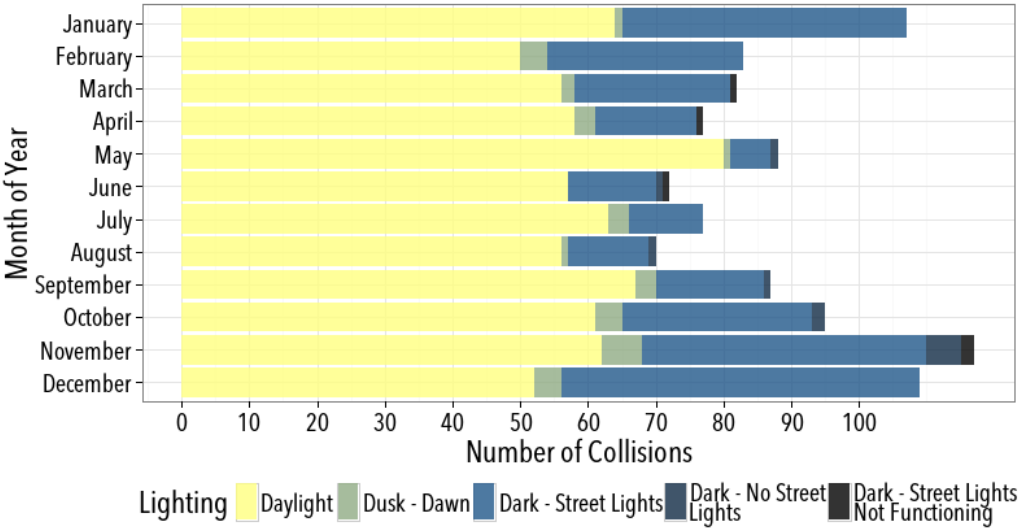
Figure 3-33 Pedestrian Collisions by Time and Severity



Month of Year

In Glendale, there are an average of 81 pedestrian injury collisions per month, with more collisions in the winter months (October through January). Visibility appears to be a factor, as the number of daylight collisions is relatively constant throughout the year, while the number of collisions occurring in dark conditions increases in the winter months. Sunset in December is before 5 p.m., while it's after 8 p.m. in June. The sun also rises more than an hour earlier in June. The additional hours of daylight during the summer months provide increased visibility during the afternoon and early evening periods when the most people are traveling.

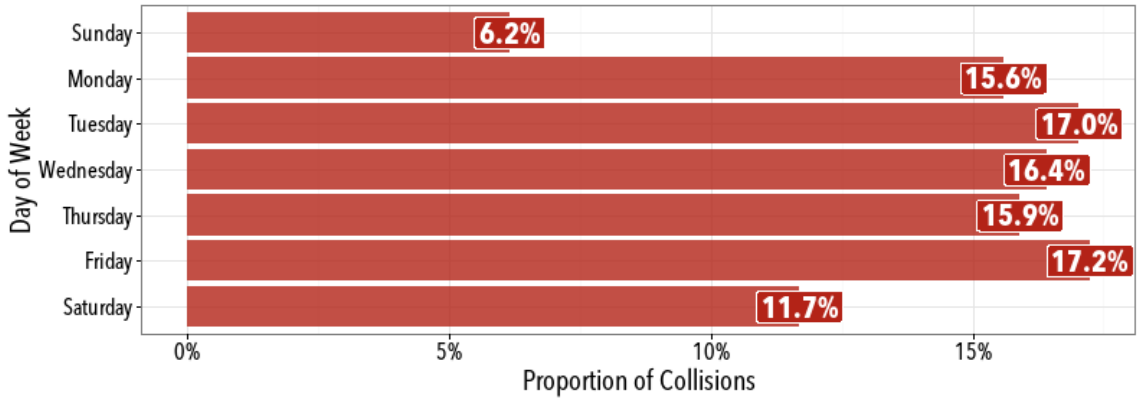
Figure 3-34 Pedestrian Collisions by Month and Lighting



Day of the Week

Pedestrian collisions are more frequent during the week as compared to the weekend. The number of collisions is similar for each weekday. Collisions are notably lower on Sunday.

Figure 3-35 Pedestrian Collisions by Day of the Week

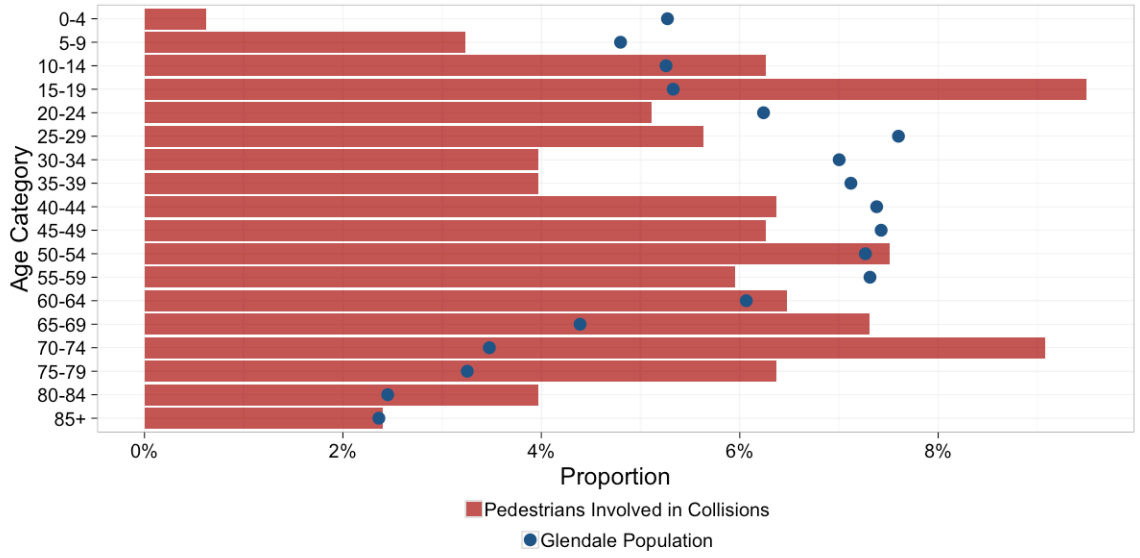


Who is involved in pedestrian collisions?

Age of Pedestrians

Younger and older pedestrians are both over-represented in the pedestrian collision data compared to their share of the total population. Children below driving age are more reliant on walking, while older adults may no longer be able to drive or lack access to a vehicle.

Figure 3-36 Age of Pedestrians Involved in Collisions



Beyond an increase in the numbers of children and younger adults who may be walking, judgment to assess speed and distance is not fully developed in children, and these abilities decline as we age. Speed is a critical factor in collisions involving children and older adults, as

faster moving vehicles require more time and distance to stop, making avoiding collisions more difficult and resulting in more severe injuries.

Race/Ethnicity of Pedestrians

Hispanic and Black pedestrians are over-represented in collisions compared to their share of the population. These two groups make up approximately 18% of Glendale's population, but accounted for 31% of the pedestrians involved in collisions between 2004 and 2013. There is not data available to establish the ancestry or language spoken of the people involved in the collisions.

Figure 3-37 Race/Ethnicity of Pedestrians Involved in Collisions

Race/ Ethnicity	Number of Collisions	% of Collisions	% of Collisions (excluding Not Stated)	Glendale Population
Asian	27	3%	5%	16%
Black	21	2%	4%	1%
Hispanic	147	15%	27%	17%
White	340	35%	61%	63%
Other	18	2%	3%	3%
Not Stated	427	44%	-	-
Total	**980**	**100%**	**100%**	**100%**

Age of Drivers

Young adults are somewhat over-represented as drivers in pedestrian collisions, with the 20-24 age group representing 6% of the driving-age population but 12% of drivers in pedestrian collisions. Drivers in pedestrian-involved collisions are also more likely to be male (60%), whereas the pedestrians are equally likely to be male or female.

Of the pedestrian collisions in 2014 and 2015, 62% of the drivers were Glendale residents, while 38% of drivers were residents of other cities.

Figure 3-38 Driver Age in Pedestrian Collisions

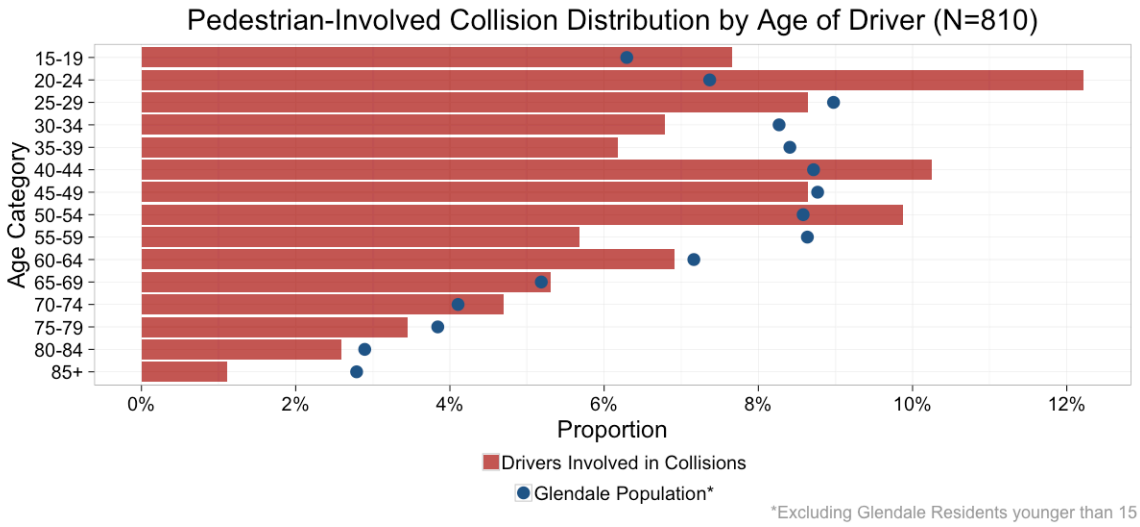
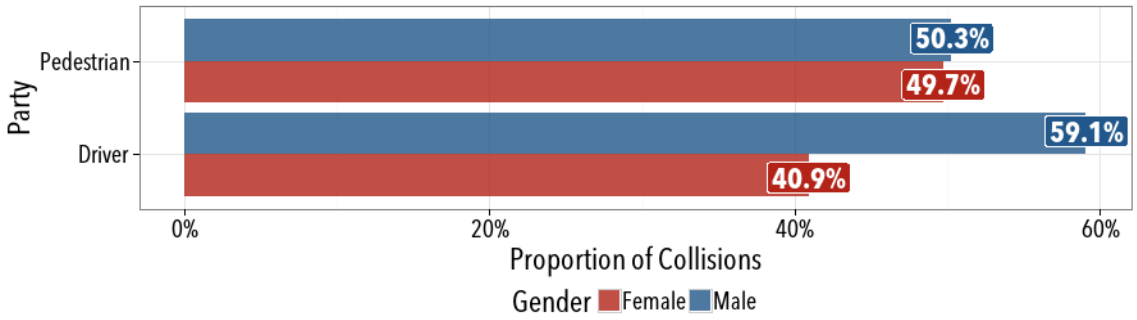


Figure 3-39 Gender of Drivers and Pedestrians



Hit-and-Run

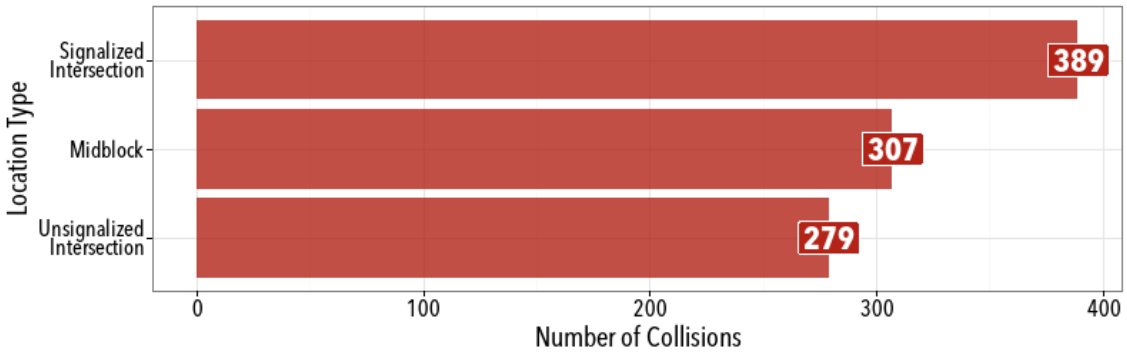
Over 15% of pedestrian-involved collisions are hit-and-runs, which is a similar rate to other California cities. Hit-and-runs result in a lack of driver data, including factors such as age and sobriety. Dedicating additional resources to apprehend hit-and-run violators may be necessary to reduce their frequency and to fully understand the impact of intoxication by the driver on pedestrian collisions.

Where do pedestrian collisions happen?

Location Type

Signalized intersections are the most common location for pedestrian collisions (40% of collisions), followed by midblock (31%) and unsignalized intersections (28%). The distribution of pedestrian collisions between these location types is relatively consistent year to year.

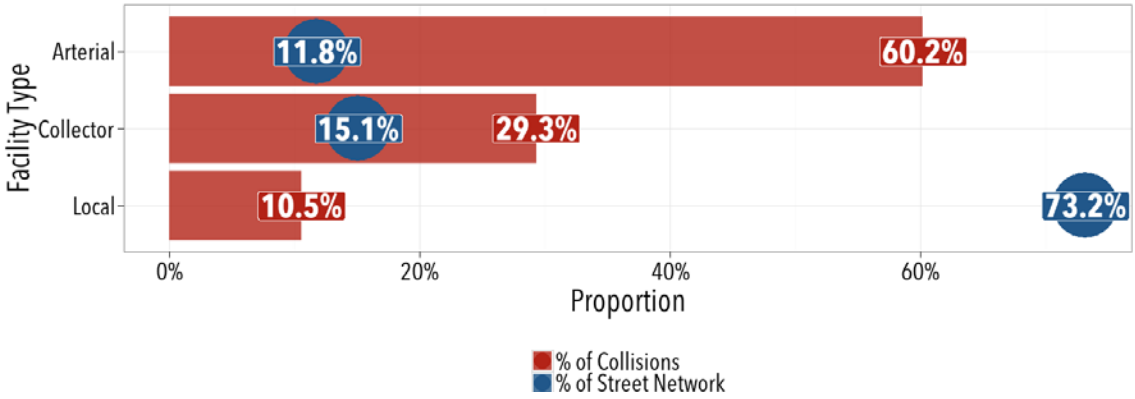
Figure 3-40 Location of Pedestrian Collisions



Roadway Classification

Over 60% of pedestrian collisions occur on arterial streets, most of which have four or more lanes and which constitute only 12% of the roadway network in Glendale. Local streets with two travel lanes, by contrast, account for only 11% of pedestrian collisions but make up more than 70% of the roadway network.

Figure 3-41 Roadway Classification of Pedestrian Collisions



Collision Types

Figure 3-40 identifies the most common collision types in Glendale based on location and the actions of the pedestrian and motorist. **Motorists are deemed at fault for 70% of pedestrian collisions** (the officer completing the collision report assigns fault to the motorist or pedestrian, based on the type of violation that contributed to the collision).

- **30% of collisions involve a turning vehicle at a signalized intersection;** the motorist is usually at fault, indicating failure to yield the right-of-way to people in the crosswalk.
- **Left turning vehicle at signalized intersection** is the most common collision type (18%), followed by right turning vehicle at signalized intersection (12%).
- **Through vehicle at unsignalized intersection** is the third most common collision type (10%); motorists are usually at fault since every intersection is a crosswalk in California.
- **Through vehicle midblock (no crosswalk)** is the fourth most common collision type (10%); pedestrians are usually at fault for failing to yield to vehicles outside of a crosswalk.

Figure 3-42 Common Collision Types and Fault

Type of Collision	Driver Fault	Ped Fault	No Fault	Total
Signalized Intersection				
Left turning vehicle at signalized intersection	15.8%	1.0%	1.1%	**18.0%**
Right turning vehicle at signalized intersection	9.7%	0.8%	1.3%	**11.8%**
Through vehicle at signalized intersection	3.0%	3.0%	0.2%	**6.3%**
Unsignalized Intersection				
Through vehicle at unsignalized intersection	9.4%	0.6%	0.4%	**10.4%**
Left turning vehicle at unsignalized intersection	6.1%	0.1%	0.2%	**6.4%**
Right turning vehicle at unsignalized intersection	4.6%	0.1%	0.4%	**5.1%**
Midblock				
Through vehicle midblock	1.1%	8.1%	0.4%	**9.7%**
Through vehicle at midblock crosswalk	2.6%	0.4%	0.0%	**3.0%**
In roadway[2]	4.6%	3.3%	0.3%	**8.2%**
Not in roadway[3]	5.0%	0.1%	0.3%	**5.4%**
Others				
Others[4]	8.5%	5.9%	1.3%	**15.7%**
Total	**70%**	**24%**	**6%**	**100.0%**

[2] In-roadway collisions are where a pedestrian was struck in the road but was not attempting a crossing. This could include walking along the roadway, entering the road to retrieve an object, etc.

[3] Not-in-roadway collisions are where a pedestrian was struck when not in the roadway, such as parking lots, driveways, private roads, sidewalks, service stations, yards, etc.

[4] Approximately 85% of pedestrian collisions fall into the 10 collision types identified in this table. The remaining 15% represent a variety of types of collisions that do not have a prominent pattern.

Hot Spot Analysis

This analysis used the last 10 years for which collision data is available (2006-2015) to identify corridors and intersections with the highest concentration of pedestrian-involved injury collisions. A buffer was drawn around each collision, associating nearby collisions with each other to identify high-collision roadway segments (using an analysis method known as kernel density and a 300-foot buffer). High-collision intersections were identified by measuring the number of collisions within 50 feet of each Glendale intersection.

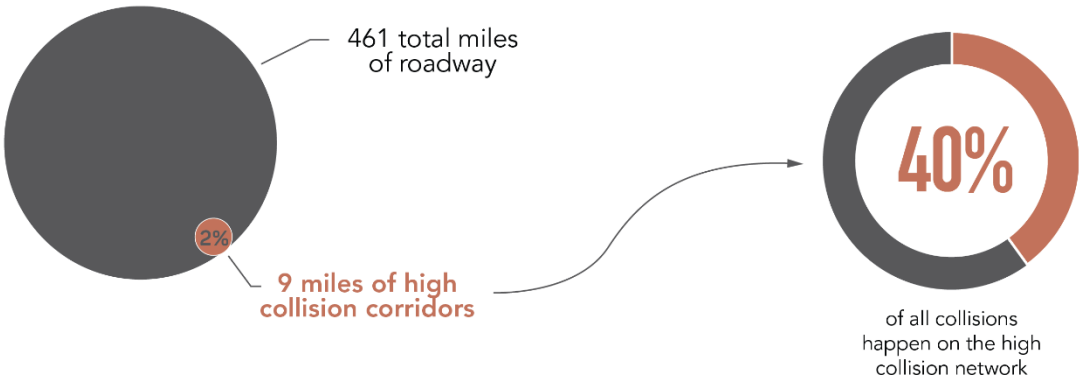
Individual maps and corresponding tables were developed for each of the following:

- High-Collision Corridors for Pedestrian Collisions (Figure 3-42 and Figure 3-43)
- High-Collision Intersections for Pedestrian Collisions (Figure 3-44 and Figure 3-45)

High-Collision Corridors

The corridors with the highest concentration of collisions in Glendale are major and minor arterials, along with E. Doran Street. (an urban collector). Some roadways had multiple high-collision corridors. These 17 corridors total nine miles and represent approximately 2% of the non-freeway roadway network; they account for 40% of pedestrian collisions. This suggests an opportunity to focus investments for improved pedestrian safety.

Figure 3-43 High-Collision Corridors



The high-collision corridors are presented in order of collisions per mile in Figure 3-42 and are mapped in Figure 3-43. The corridors with the highest number of pedestrian collisions per mile are:

- E Broadway from N Jackson St to N Cedar St
- N Pacific Ave from W California Ave to Ivy St
- S Glendale Ave from E Maple St to E Cypress St
- E Colorado St from S Brand Blvd to S Kenwood St
- N Glendale Ave from E Doran St to E Broadway

Figure 3-44 High-Collision Corridors

Rank	Street	Length (miles)	Collisions	Fatalities	Collisions per mile
1	E Broadway from N Jackson St to N Cedar St	0.34	23	0	67
2	N Pacific Ave from W California Ave to Ivy St	0.29	19	0	65
3	S Glendale Ave from E Maple St to E Cypress St	0.65	42	1	65
4	E Colorado St from S Brand Blvd to S Kenwood St	0.22	14	0	65
5	N Glendale Ave from E Doran St to E Broadway	0.58	32	0	56
6	E Wilson Ave from N Central Ave to N Adams St	0.92	51	1	55
7	E Colorado St from S Adams St to Lincoln Ave	0.73	40	2	55
8	Glenoaks Blvd from Linden Ave to Sonora Ave	0.71	38	1	54
9	N San Fernando Rd from Raymond Ave to Davis Ave	0.38	20	0	53
10	N Brand Blvd from E Doran St to E Colorado St	0.84	44	0	53
11	N San Fernando Rd from Hawthorne St to W Colorado St	0.19	9	0	47
12	N Pacific Ave from W Stocker St to Burchett St	0.42	19	0	45
13	San Fernando Rd from W Garfield Ave to W Los Feliz Rd	0.58	26	0	44
14	S Brand Blvd from E Maple St to E Garfield Ave	0.19	8	0	43
15	N Central Ave from W Glenoaks Blvd to W Wilson Ave	0.79	34	2	43
16	E Doran St from N Central Ave to N Glendale Ave	0.84	29	0	35
17	La Crescenta Ave from Montrose Ave to Honolulu Ave	0.34	11	0	32

High-Collision Intersections

Twenty-two intersections had six or more pedestrian-injury collisions between 2006 and 2015. All but five of these intersections fall within a high-collision corridor. The intersections with the highest number of pedestrian collisions are:

- W Glenoaks Blvd & Western Ave
- W Chevy Chase Dr & San Fernando Rd
- E Chevy Chase Dr & S Glendale Ave
- N Central Ave & W Stocker St
- E Cypress St & S Glendale Ave

Figure 3-45 Map of High-Collision Corridors

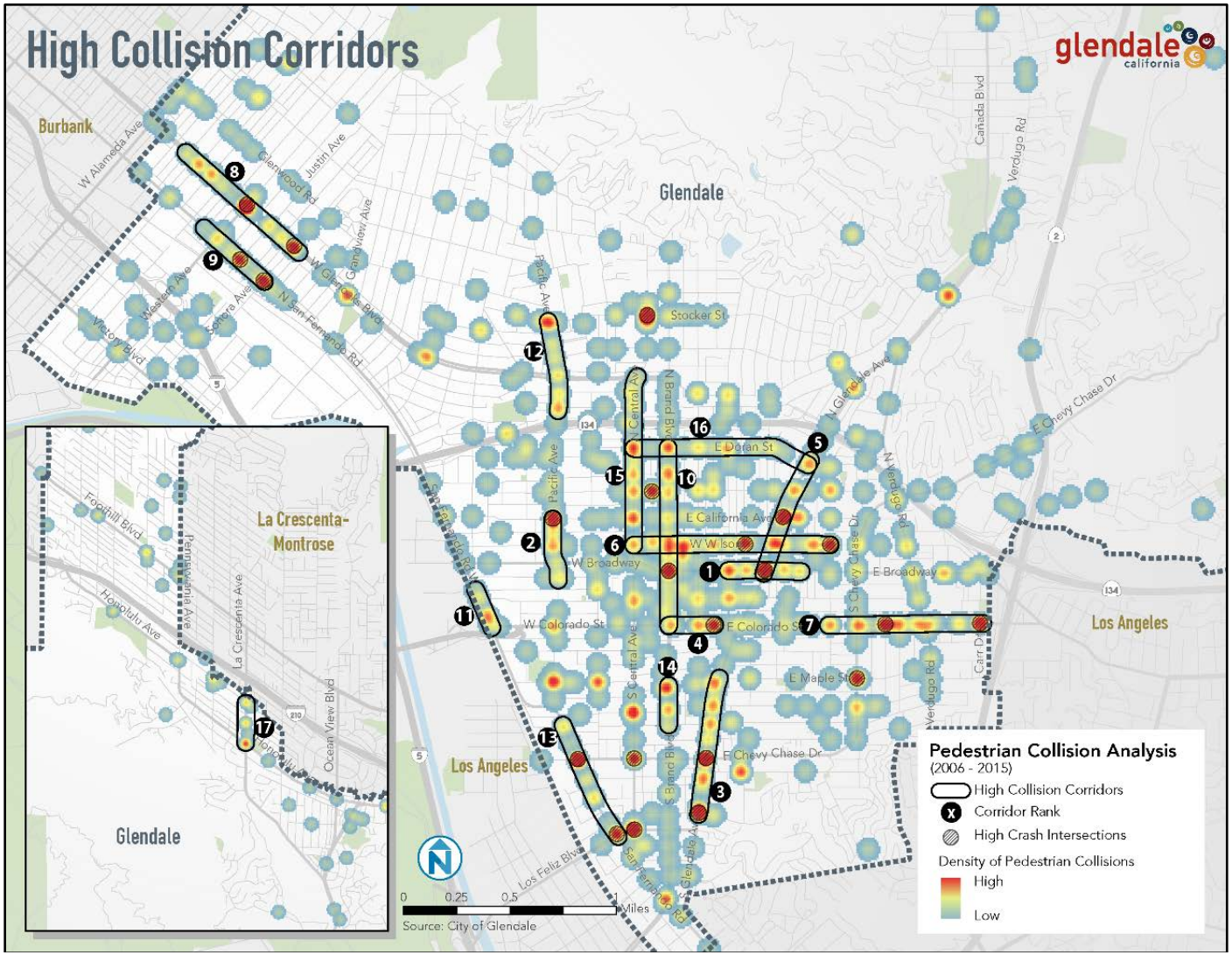
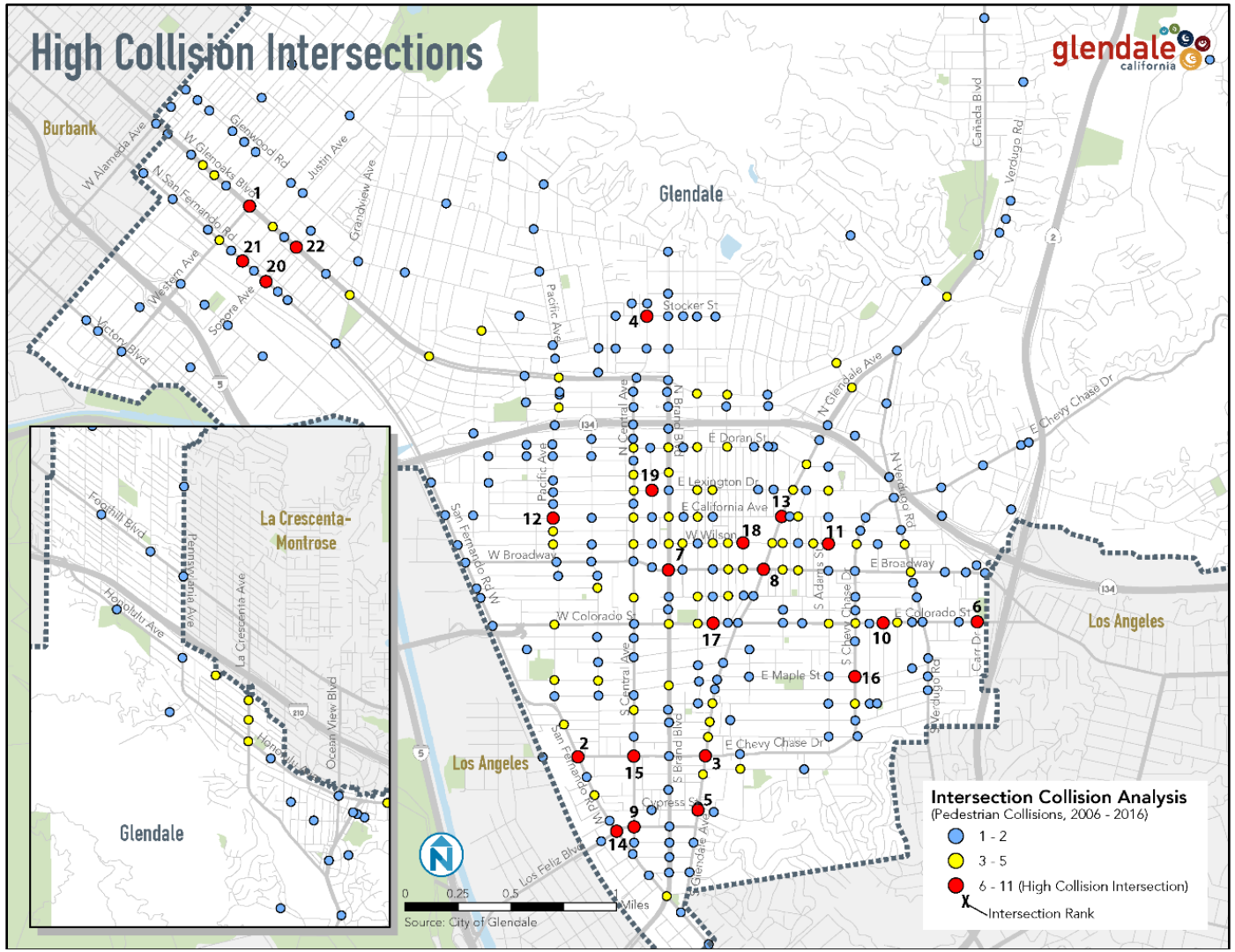


Figure 3-46 High-Collision Intersections

Map ID	Intersection	Total Collisions (high to low)	Fatalities
1	W Glenoaks Blvd & Western Ave	10	1
2	W Chevy Chase Dr & San Fernando Rd	10	0
5	E Cypress St & S Glendale Ave	9	0
3	E Chevy Chase Dr & S Glendale Ave	8	0
4	N Central Ave & W Stocker St	8	0
6	E Colorado St & Lincoln Ave	8	0
8	E Broadway & S Glendale Ave	8	0
7	N Brand Blvd & E Broadway	7	0
9	S Central Ave & W Los Feliz Rd	7	0
10	E Colorado St & Porter St	7	0
11	Wilson Ave & Adams St	7	0
12	W California Ave & N Pacific Ave	7	0
13	E California Ave & N Glendale Ave	7	0
14	W Los Feliz Rd & San Fernando Rd	6	0
15	Central Ave & Chevy Chase Dr	6	0
16	S Chevy Chase Dr & E Maple St	6	0
17	E Colorado St & S Kenwood St	6	0
18	N Isabel St & E Wilson Ave	6	0
19	Orange St & Lexington Dr	6	0
21	San Fernando Rd & Justin Ave	6	0
22	W Glenoaks Blvd & Sonora Ave	6	0
20	San Fernando Rd & Sonora Ave	5	0

Figure 3-47 High-Collision Pedestrian Intersections



Walking and Social Equity

The equity analysis identifies areas of Glendale where people may have a greater need for walking infrastructure and programs.

This is either because they do not have access to a car, cannot drive, or are simply more likely to take transit (and therefore walk) due to demographic characteristics.

Documenting areas where residents have a greater need for walking helps inform the prioritization of investments. There are two components to this analysis: a Composite Equity Analysis and an Equity Frequency Analysis.

Composite Equity Analysis

The Composite Equity Analysis identifies densities of the following populations at the census block group level:

- Individuals with a disability
- Youth (17 or younger)
- Older adults (65 or older)
- No vehicle households
- People of color
- Limited English proficiency
- People below 200% of federal poverty level

The percent of people in each demographic group is presented in Figure 3-46. Following are individual maps for each factor. Figure 3-54 illustrates the composite equity map which aggregates each of the above factors. Areas of Glendale with the highest concentration of people who may have a greater need for walking projects and programs include the Citrus Grove, Mariposa, and Pacific-Edison neighborhoods. Smaller concentrations exist in Verdugo Viejo, Glenwood, Grandview, and in the Montrose neighborhood.

Figure 3-48 Summary of Demographic Factors

Demographic Factor	Number	Percent
Total Population	195,380	100%
Individuals with a disability	9,998	8%
Youth (0-17)	36,313	19%
Older adults (65+)	31,133	16%
People of color	72,804	37%
Limited English proficiency	67,977	37%
People below 200% of federal poverty level	73,229	38%
No vehicle households	8,591	12%

Note: Not all demographic factors are calculated based on the total population. Disability is based on people 16 to 64 years old. English proficiency is based on people who are 5 years or older. Poverty is based on the population for whom poverty status was determined by the US Census Bureau. No vehicle households are based on occupied housing units. Therefore the percent value for these factors will not match the total population.

Source: US Census Bureau ACS 2009-2013 & 2010-2014 5-Year Estimates

Figure 3-49 Density of People with a Disability

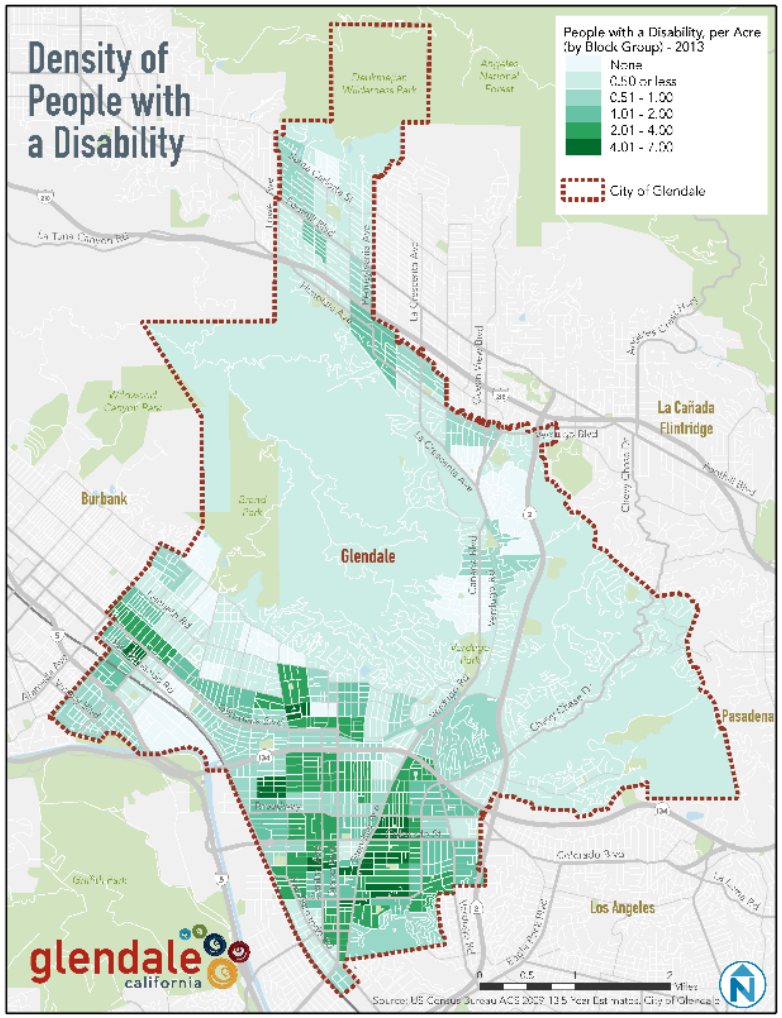


Figure 3-50 Density of Youth

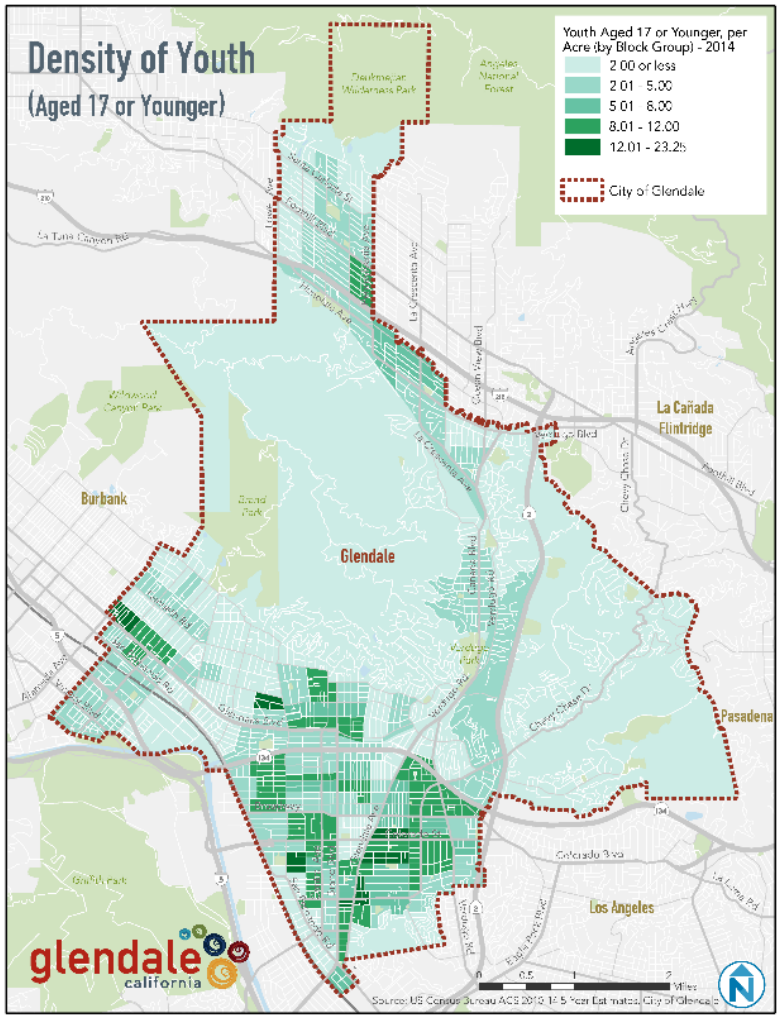


Figure 3-51 Density of Older Adults

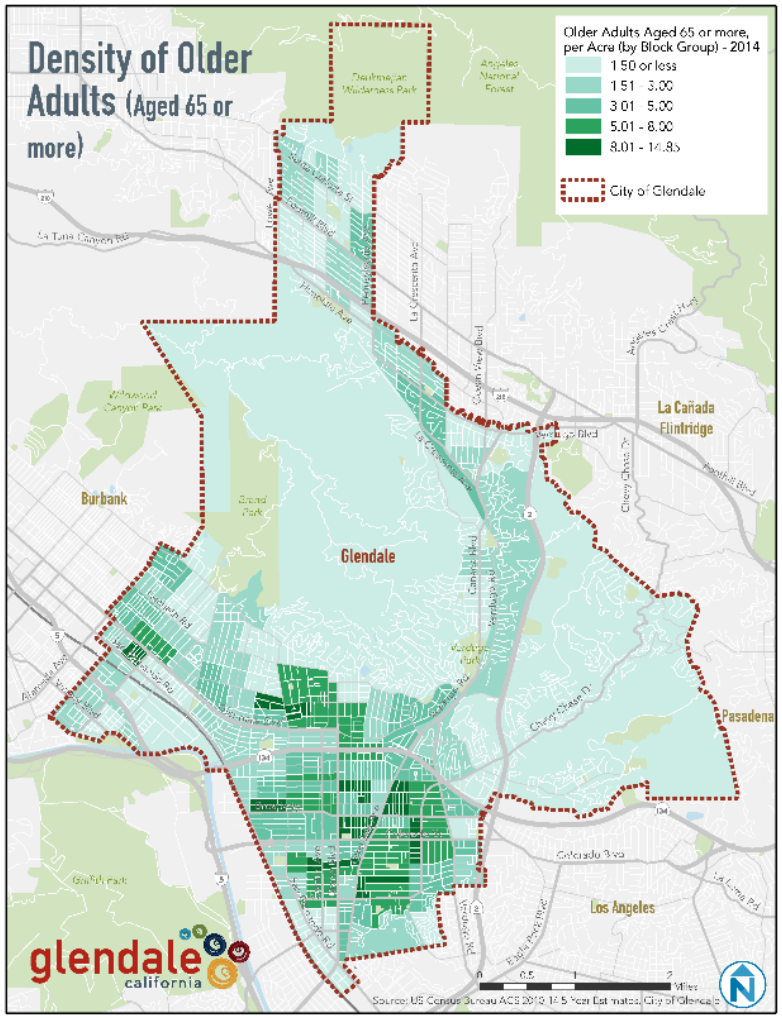


Figure 3-52 Density of People of Color

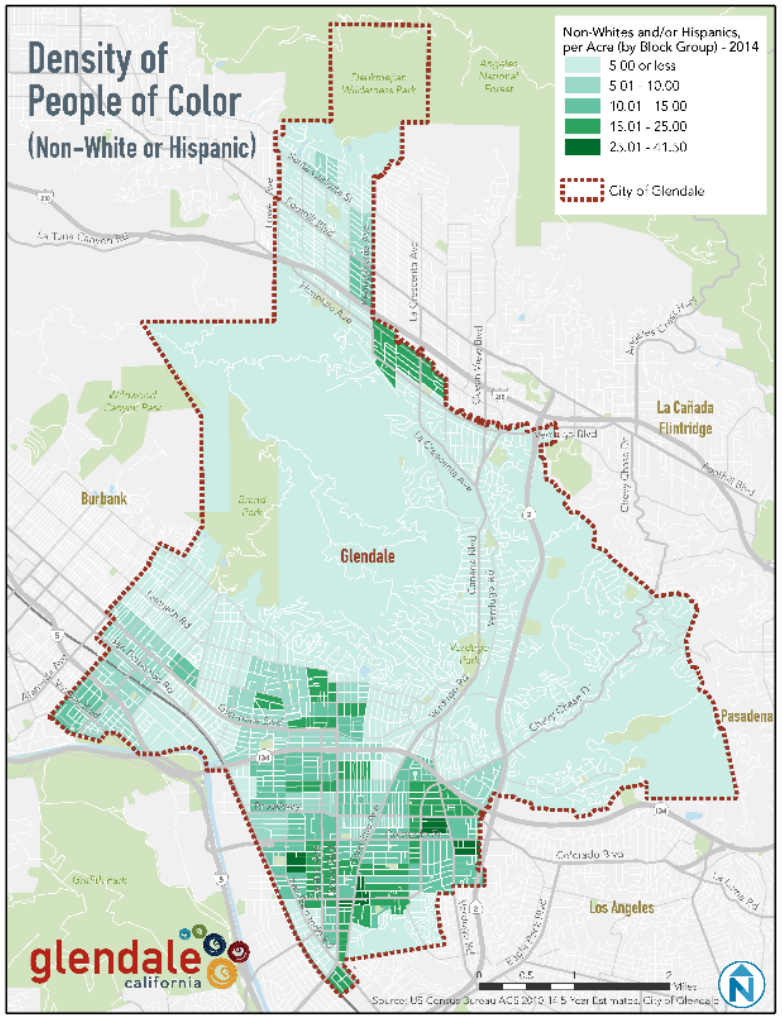


Figure 3-53 Density of People with Limited English Proficiency

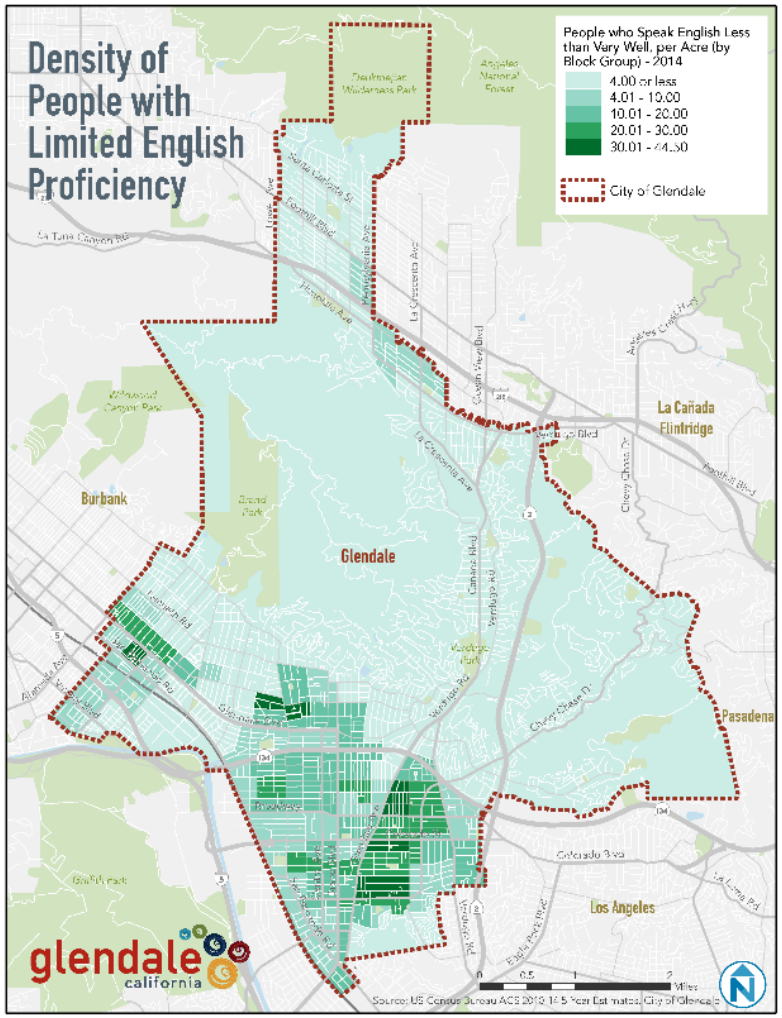


Figure 3-54 Density of People in Poverty

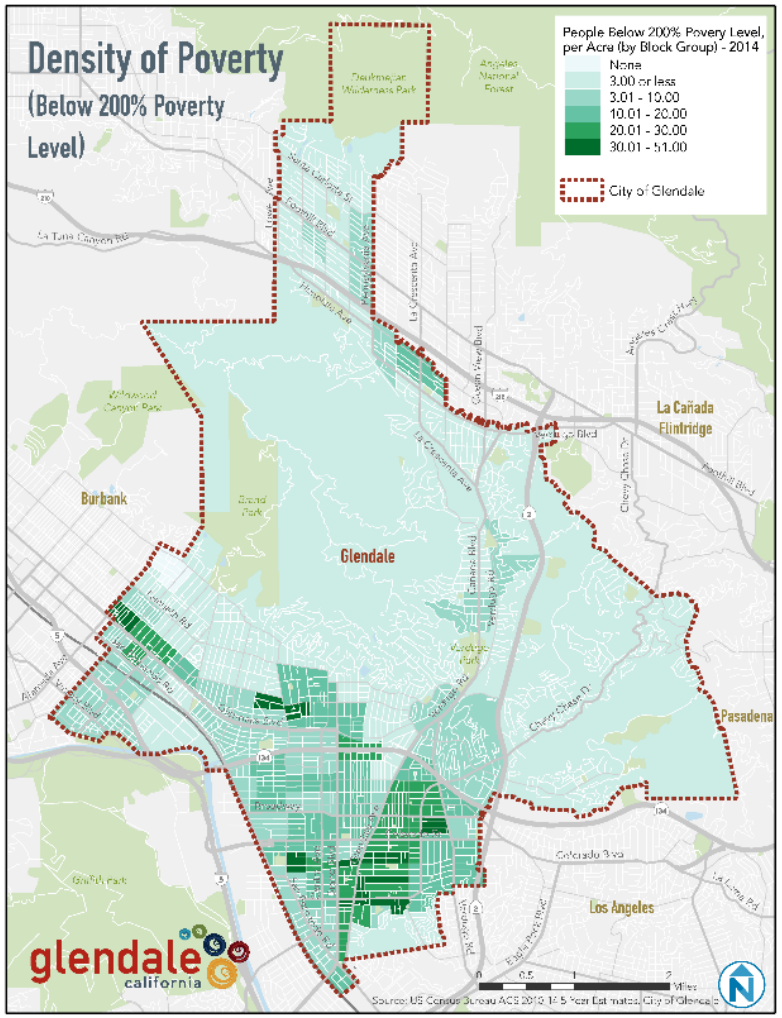


Figure 3-55 Density of No Vehicle Households

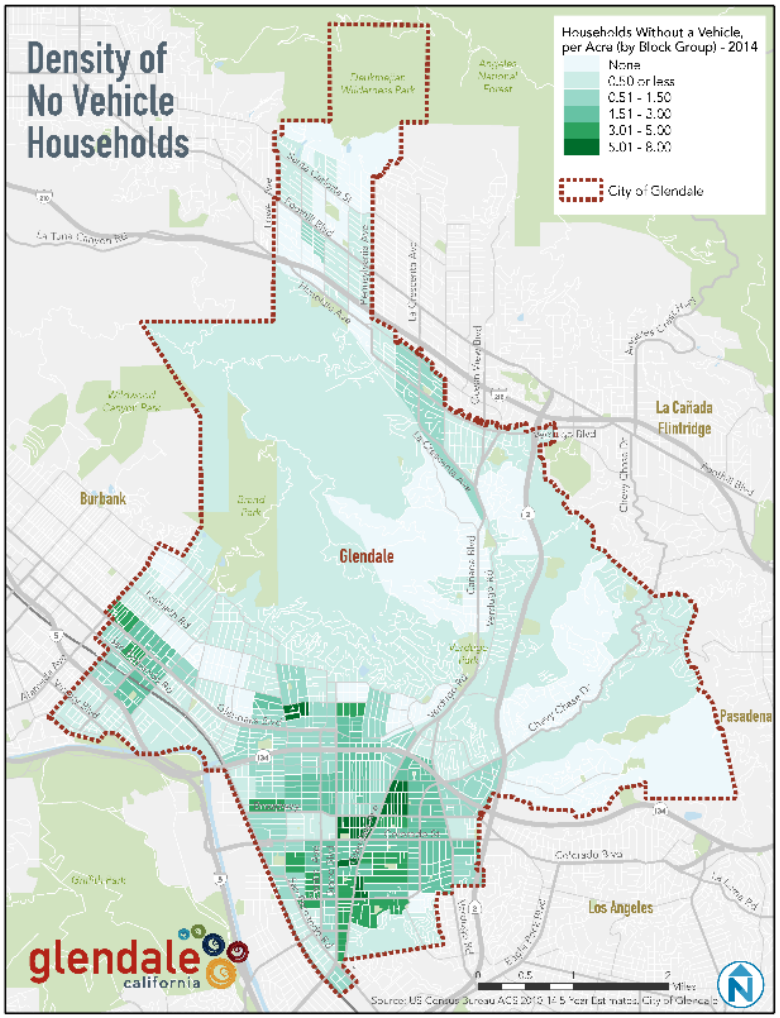
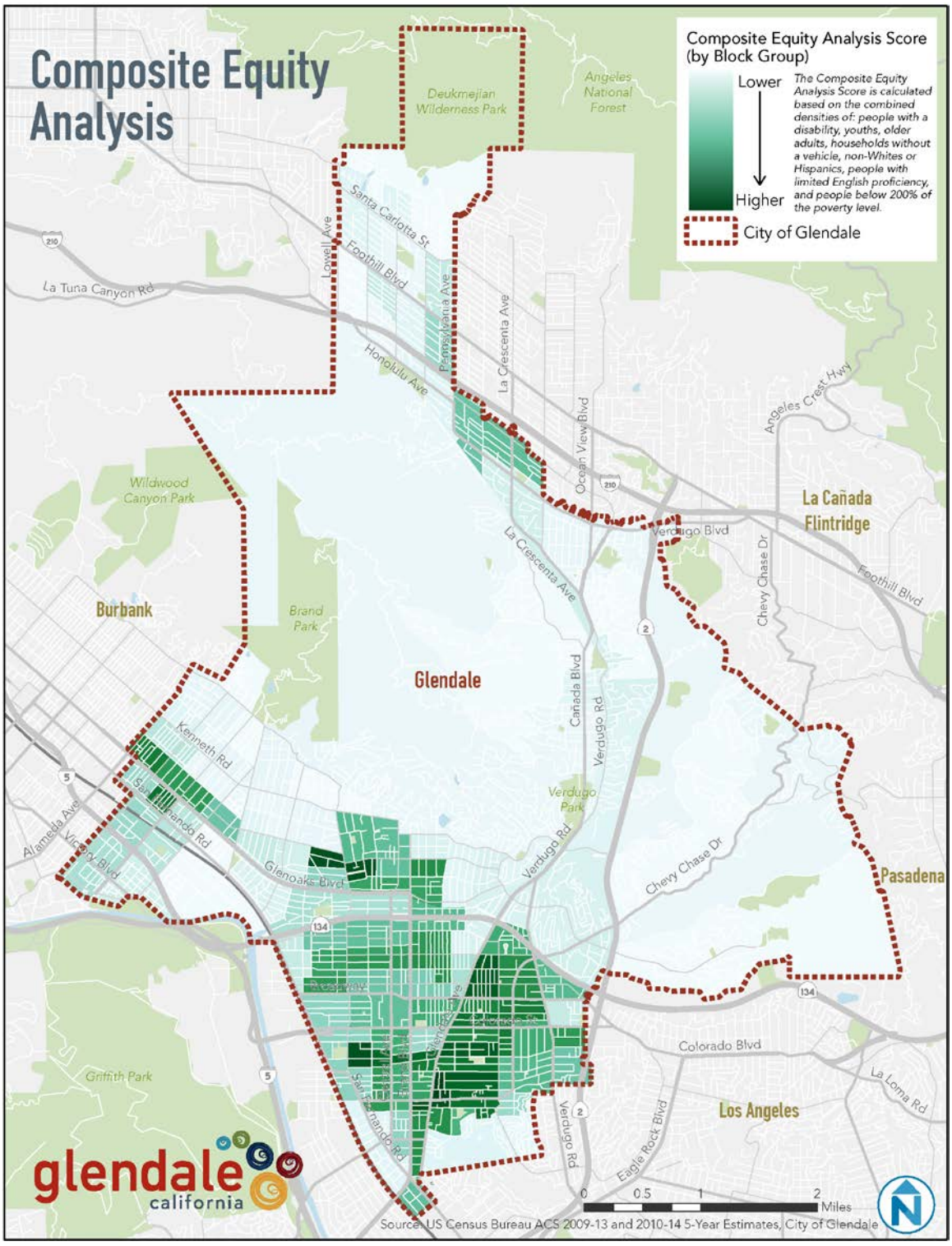


Figure 3-56 Composite Equity Analysis



Equity Frequency Analysis

The Equity Frequency Analysis explores whether any factors from the Composite Equity Analysis are associated with an increased frequency of pedestrian collisions. All collisions were assigned to a census block group and the demographic characteristics of each block group were compared to the frequency of collisions. This was done to test for statistically significant correlations between two variables; if the correlation is positive, then an increase in one variable (e.g., the number of low-income households) corresponds to an increase in another (e.g., the number of pedestrian collisions).

The analysis identified six variables that had a statistically significant correlation with the frequency of pedestrian collisions (listed in order of the strength of the correlation):

- Limited English proficiency
- Households with no vehicles
- Low incomes
- People of color
- Older adults (65 or older)
- Youth (0 to 9)

The number of people with limited English proficiency and the number of households without vehicles were most strongly correlated with pedestrian collisions. This means that block groups with more people with limited English skills and block groups with more households that do not have a vehicle are more likely to have pedestrian collisions than other block groups.

The Methodology Appendix provides the value of correlation for each variable, as well as scatter plots displaying the relationship between the frequency of collisions and the number of people or households that match each demographic variable.

The analysis indicates that pedestrian collisions are distributed inequitably across Glendale. The lack of a safe and complete pedestrian network places people with limited English proficiency, households with no vehicles, people with low incomes, people of color, older adults, and youth at risk. These findings can be used to develop priority project areas that can help to address health and wealth disparities in Glendale.

Walking and Health

The health analysis identifies areas of Glendale where people are likely to experience negative health outcomes as a result of inactivity, areas that lack access to recreation or healthy foods, locations where pedestrian collisions are more prevalent, and areas where residents have a greater likelihood of death from hypertension, diabetes, or heart disease.

In the areas with negative health outcomes and more limited access to recreation and healthy foods, greater pedestrian access could play an important role in improving health outcomes.

In most communities, walking is part of the solution. Walking on a regular basis has been shown to reduce rates of cardiovascular disease, risk of coronary artery disease, and risk of stroke while improving quality of life and mental health.

Following are individual maps for each health factor noted above. Figure 3-61 illustrates the composite health map, which combines these factors into a single index. Darker purple on the map indicates conditions that are worse for health. Areas of Glendale with the highest likelihood of poor health outcomes include City Center, Mariposa, Somerset, Chevy Chase, and Woodbury.

Figure 3-57 Deaths from Hypertension

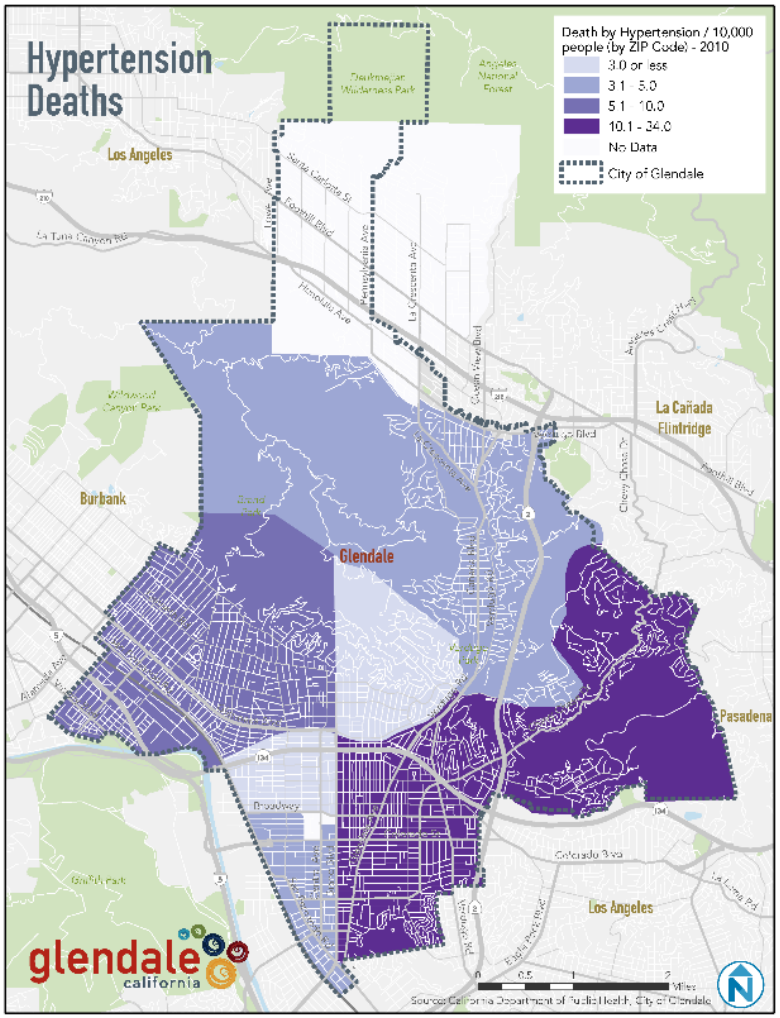


Figure 3-58 Deaths from Diabetes

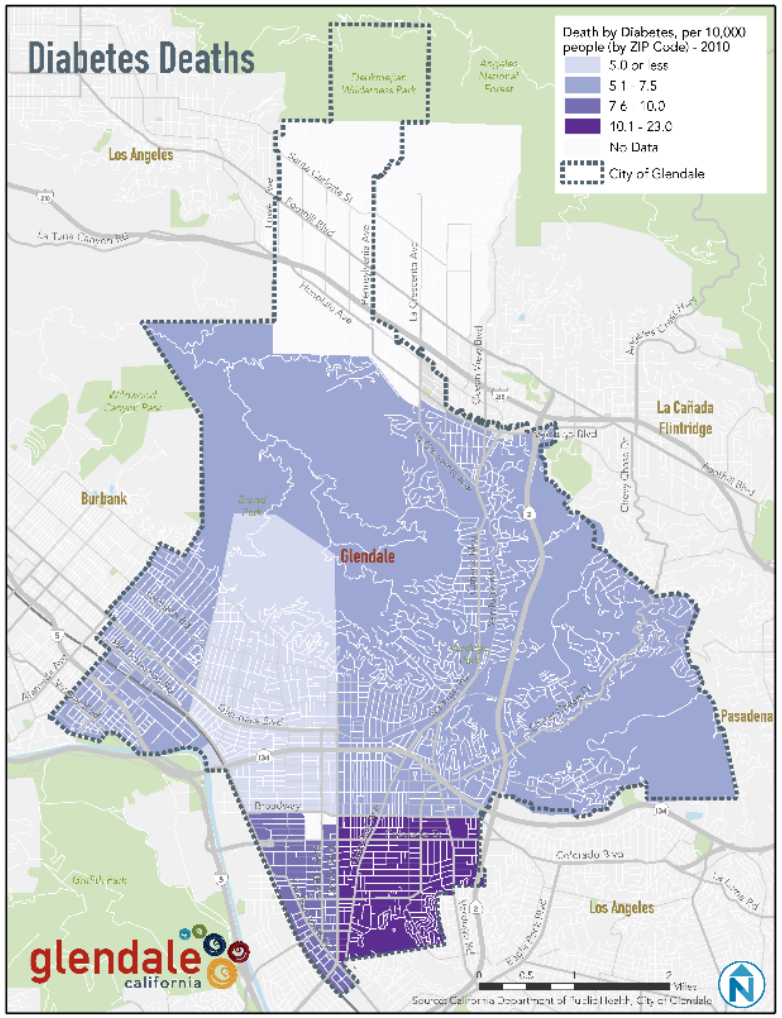


Figure 3-59 Death from Heart Disease

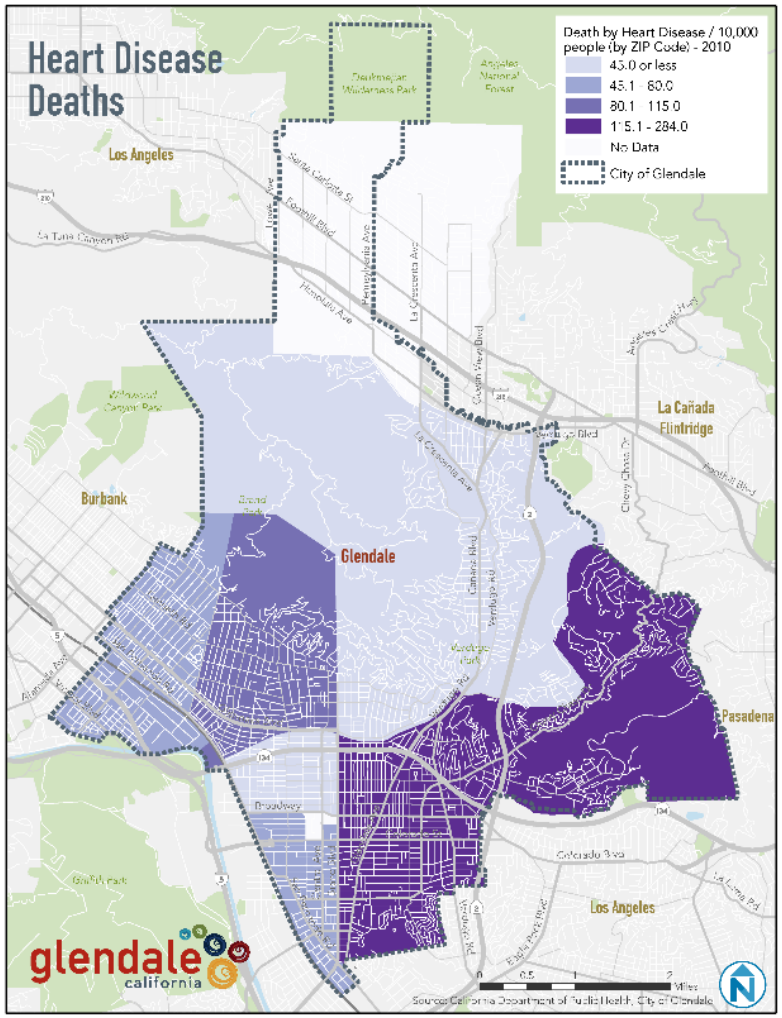


Figure 3-60 Density of Pedestrian Collisions

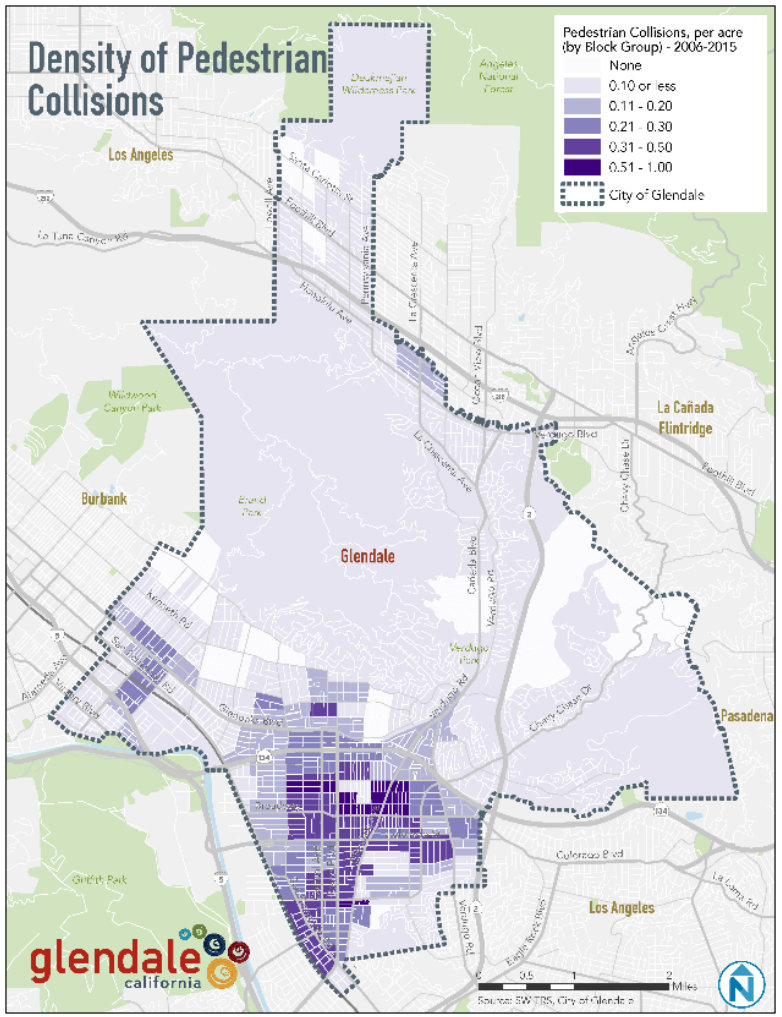


Figure 3-61 Access to Grocery Stores

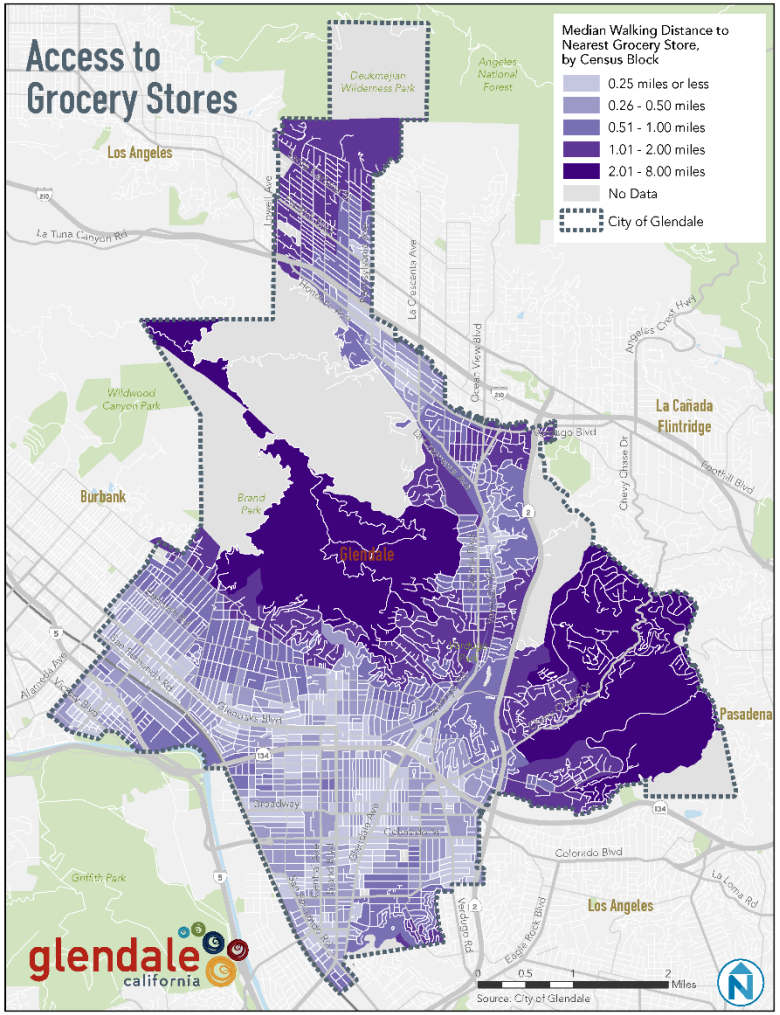


Figure 3-62 Access to Parks

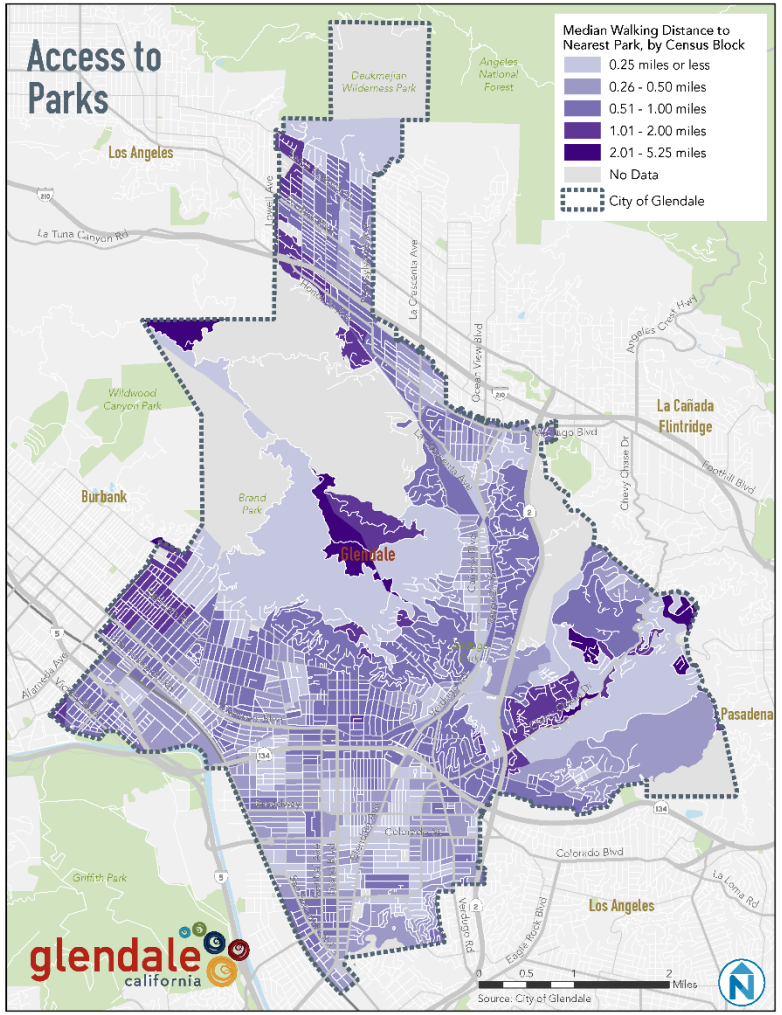
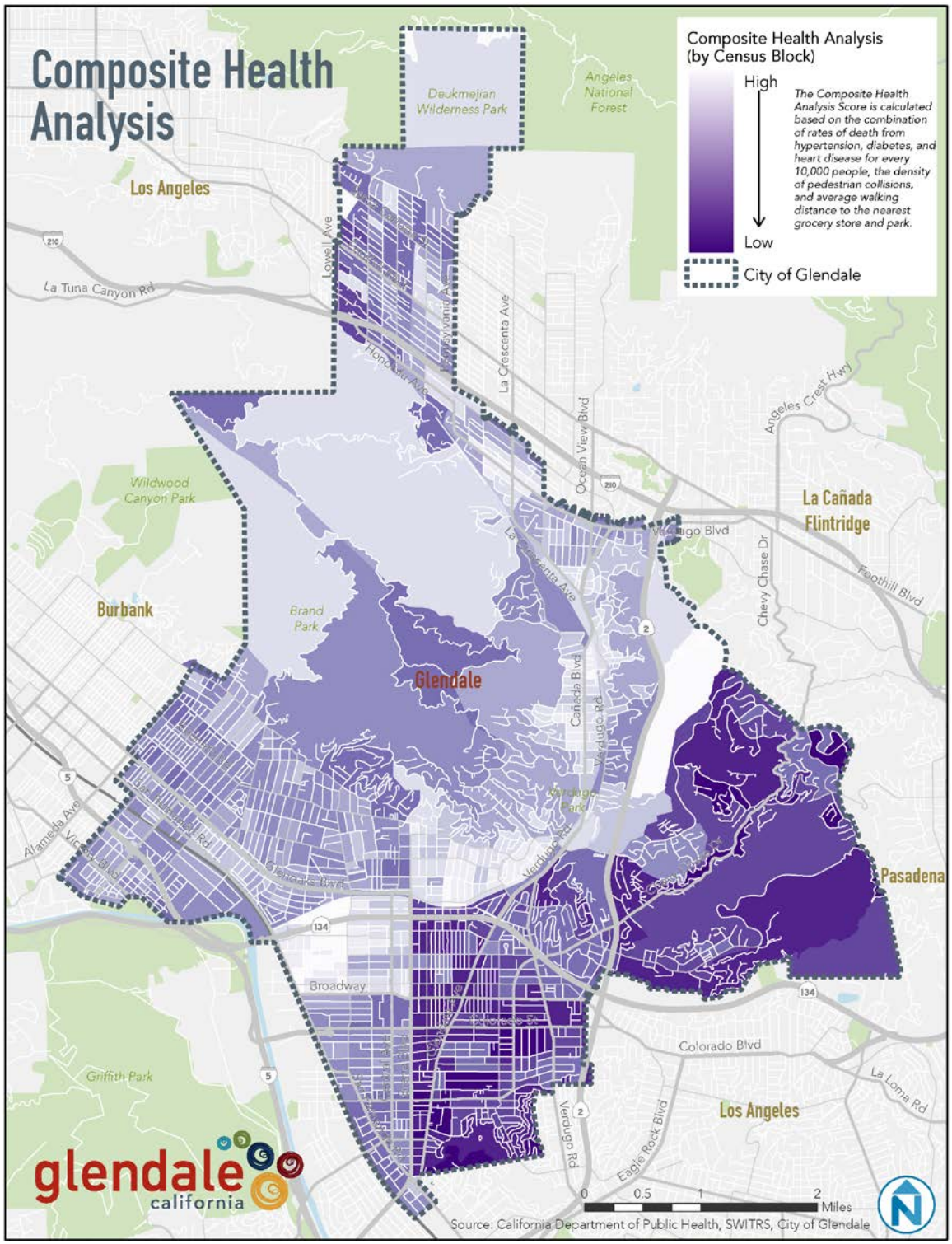


Figure 3-63 Composite Health Analysis



Summary

Chapter 3 provides an overview of existing pedestrian conditions in Glendale. It includes an analysis of (1) pedestrian counts, (2) pedestrian infrastructure and demand, (3) pedestrian safety, (4) walking and social equity, and (5) walking and health.

The chapter began by looking at how many people were observed walking at 52 locations in Glendale, and highlights areas of the city that do and do not have walking infrastructure today. This helps us understand where demand may exist today or in the future. As a corollary, it identifies potential mismatches between supply and existing or future demand. The safety analysis provides information about the people and places involved in pedestrian collisions in Glendale and begins to identify targets for future improvements. Finally, the equity and health analyses add another lens through which to view areas and populations that are over-represented in the collision data—populations that may have a greater need for pedestrian infrastructure and programs.

4 Becoming the Best

Becoming the Best bridges the gap between Part 1: Taking Stock, which focuses on the conditions facing pedestrians today, and Part 2: Taking Steps, which will make walking safer and more enjoyable for Glendale residents in years to come.

To make the connection between the parts, this chapter is made up of two elements: **Best Practices**, which discusses leading practices in pedestrian planning from other cities; and **Next Steps**, which outlines how this report will lead into Part 2.

Best Practices

This section describes best pedestrian planning practices from other cities. These practices, which can inspire Glendale, include:

- Vision Zero plans
- Pedestrian access to transit
- Pedestrian street crossing and traffic calming
- Frameworks for inventorying, assessing, and prioritizing pedestrian investments
- Innovative pedestrian programs including outreach for non-English speakers
- Enforcement
- Funding sources

Vision Zero Plans

Vision Zero is a data-driven approach to improve road safety for all, with the goal of eliminating traffic fatalities. It aims to prevent collisions, which are largely caused by poor road design and unsafe travel behavior. While the concept originated in Sweden in 1997, Vision Zero plans have been adopted in cities across the nation, including New York, Chicago, Boston, San Francisco, Seattle, Portland, Austin, Los Angeles, and San Diego. Vision Zero plans are a collection of strategies that can be implemented over time, providing a way to brand a comprehensive road safety program and clearly identify the end goal.

New York City's program has been incredibly successful—in 2014, the city had its lowest number of pedestrian deaths in over 100 years after lowering speed limits, launching an education campaign, and implementing safety engineering treatments. While New York's program is a national model, this section explores Vision Zero plans in Los Angeles and Austin to provide examples from cities that are better peers to Glendale.

Los Angeles' Vision Zero Program

Image from Empower LA

Every year, over 200 people are killed in collisions in Los Angeles; nearly half of these are people on foot or bike. Collisions often involve children and older adults, making traffic crashes the leading cause of death for children in Los Angeles. In 2014, the Los Angeles Department of Transportation (LADOT) released its first Vision Zero strategic plan, with the goals of reducing traffic deaths by 20 percent by 2017, and eliminating traffic fatalities citywide by 2025. In 2015, the plan was adopted by the City Council as a core objective under "Safety First" in its Mobility Plan 2035.

The action plan includes the following approaches to implementation:

- **Engineering and Planning.** Focusing on high priority intersections and corridors in its High Injury Network, the city will increase visibility of the most vulnerable people on the road, such as pedestrians and bicyclists, children, and older adults; reduce conflicts; and set speed limits that protect human life. Safety projects will be prioritized based on crash profiles, cost effectiveness, and proven countermeasures (see Safety Countermeasures call-out box).
- **Enforcement.** Enforcement will focus on high-crash locations and target unsafe travel behavior (e.g., driving under the influence, distracted driving, failure to yield to people in crosswalks). Enhanced reporting, including expanding pedestrian collision reporting by LAPD and developing strategies based on long-term collision trends, will assist in directing safety efforts to high-injury areas.
- **Education and Outreach.** The city will partner with community and neighborhood groups (especially in areas with high collision rates) and will develop safety campaigns to encourage safe travel behavior and draw attention to the most vulnerable people.
- **Evaluation and Monitoring.** The city will continue to collect and analyze collision, public health, and land use data to prioritize locations for (and evaluate results of) engineering, enforcement, and education efforts.
- **Partnerships.** Partners include Los Angeles County Department of Public Health, Los Angeles Unified School District, and the city's police, fire, and public works departments. The city is also partnering with the Vision Zero Alliance, a group of community-based non-profits including AARP, Advancement Project, Los Angeles Walks, Los Angeles County Bicycle Coalition, Multicultural Communities for Mobility, Youth Policy Institute, and many others. The city will continue to work with community partners to improve safety at the neighborhood level.
- **Equity.** Safety initiatives will focus on communities with high levels of collisions and poor health outcomes.

In order to ensure proper implementation of the action plan, LADOT created an Executive Steering Committee to coordinate, implement, and evaluate near- and long-term strategies. As shown in Figure 1, action items are assigned to specific leads, with participating agencies and target dates for completion.

Safety Countermeasures

A toolbox of safety countermeasures that can be applied to "crash profiles"—collisions with similar contributing factors—is currently under development as part of the Los Angeles Vision Zero program. Safety countermeasures include (select examples provided):

- **Signalization countermeasures** such as pedestrian countdown heads and flashing beacons
- **Road design or geometric countermeasures** such as intersection conversion to roundabout and installation of pedestrian safety islands
- **Signs, markings, and operational countermeasures** such as right turn on red restriction and high-visibility crosswalks
- **Speed control measures** such as speed limit reductions and speed tables and humps
- **Miscellaneous countermeasures** such as shared space or visual narrowing

Additional information about the effectiveness of safety countermeasures are found in the Federal Highway Administration's Crash Modification Factors Clearinghouse, a database of studies on safety countermeasures: http://www.cmfclearinghouse.org/

Figure 4-1 Los Angeles Vision Zero Executive Committee Immediate Actions

Action Item	Lead Agency	Participating Agency	Target
Define roles and responsibilities of Executive Steering Committee	Mayor's Office, Transportation, Police	-	2015
Develop framework and accountability measures for Task Force	Mayor's Office, Transportation, Police	Engineering, Street Services, Fire, Public Health	2015
Implement communications strategy and progress reporting	Mayor's Office, Transportation, Police	Public Health	Ongoing
Address immediate traffic safety conditions through identifying priority corridors and implementing related safety improvements, education campaigns and enforcement strategies	Transportation, Police, Engineering, Street Services, Fire, Public Health	Street Lighting, Contracts, Defense, Administration, Planning, Neighborhood Empowerment, Schools, School Police, METRO, County Sheriff	2017
Develop uniform process for interdepartmental data collection and sharing	Mayor's Office	Transportation, Police, Public Health	2017
Develop and coordinate long-term funding	Mayor's Office, Transportation, Police, Public Health	Task Force	2017

Source: City of Los Angeles

Austin's Vision Zero Program

Pedestrians cross a busy thoroughfare in Austin, Texas.
Image from KUT

The City of Austin is committed to eliminating traffic deaths and serious injuries. The city amended its comprehensive plan in 2015 to include Vision Zero as a goal and adopted a Vision Zero Action Plan in 2016. The plan is the result of a two-year effort by the Vision Zero Task Force, a City Council-created group comprised of over 60 members from city departments, agencies, and community groups.

Austin's plan lays out ambitious recommendations for reducing traffic injuries and fatalities over the next two years and sets the framework for the longer-term goal of eliminating all traffic deaths by 2025. The plan treats traffic fatalities as a preventable public health issue. Key strategies include changes to the design and safety of the transportation system and improved enforcement, education, and engineering. The critical actions in the next two years are:

- **Evaluation:** collection and analysis of crash data and factors contributing to crashes
- **Enforcement:** efforts will focus on collision hot spots and increase funding for red-light cameras and a driving while intoxicated (DWI) unit
- **Engineering:** street design, engineering, and planning efforts
- **Education:** a targeted, branded education and media campaign will raise awareness
- **Policy:** changes to multiple policies will be necessary to support the vision

The Action Plan identifies 60 action items within these key areas and the existing initiatives, responsible agencies, estimated costs, and available funding for each item. Implementation will be led by a new Vision Zero Program within the City of Austin and by the Vision Zero Task Force, and will be tracked and published in annual reports. Figure 4-2 shows a sample of the responsible agencies and estimated costs for near-term Vision Zero actions.

Figure 4-2 Austin Vision Zero Actions, Responsible Agencies, and Costs

Action Item	Responsible Agency	Cost
Evaluation Actions		
Integrate state and local tools into a common crash analysis tool	Transportation, TxDOT	$350,000 for Vision Zero Program Team (3 FTEs); future costs TBD
Develop better method of collecting information on the ground at crash locations	Police	Conceptual action; cost TBD
Enforcement Actions		
Target enforcement on high-injury roadways, expand DWI unit, and fund new Highway Enforcement positions	Police	$1,153,258 in annual salaries for 11 new FTEs and overtime; $1,418,341 in one-time expenses for new vehicles
Design assurances against racial profiling and target enforcement of top contributing factors	Health and Human Services, Police, African American Resource Advisory, Asian American Quality of Life Advisory, Hispanic/Latino Quality of Life Advisory, Join Inclusion	$5,000 in initial outreach
Engineering Actions		
Implement at least five safety engineering projects at top crash-prone locations annually	Transportation, Police, Development, Public Works, TxDOT	$16,500,000 for engineering improvements over 5 years; $732,000 for 6 FTEs; $1,500,000 annually for pedestrian crossing program; $100,000 for speed feedback warning signs
Assess feasibility of using existing CCTV cameras to monitor intersections for near misses	Transportation	$150,000 for pilot project
Set Safe Routes to School goal and invest in infrastructure improvements to support active transportation goals	School District, Public Works, Transportation	$330,000 for 4 FTEs in first year plus $20,000 annually
Education Actions		
Create a cross-departmental safety education team; train	Police, Transportation, Health and Human Services,	$175,000 for FY16 campaign and $1M for FY17-18 mass

Action Item	Responsible Agency	Cost
staff to interface with media on Vision Zero messaging	Emergency, Fire,	media campaign
Policy Actions		
Work at state and local level to adopt lower default speed limits	Task Force	Coordination is underway; additional resources to be identified.

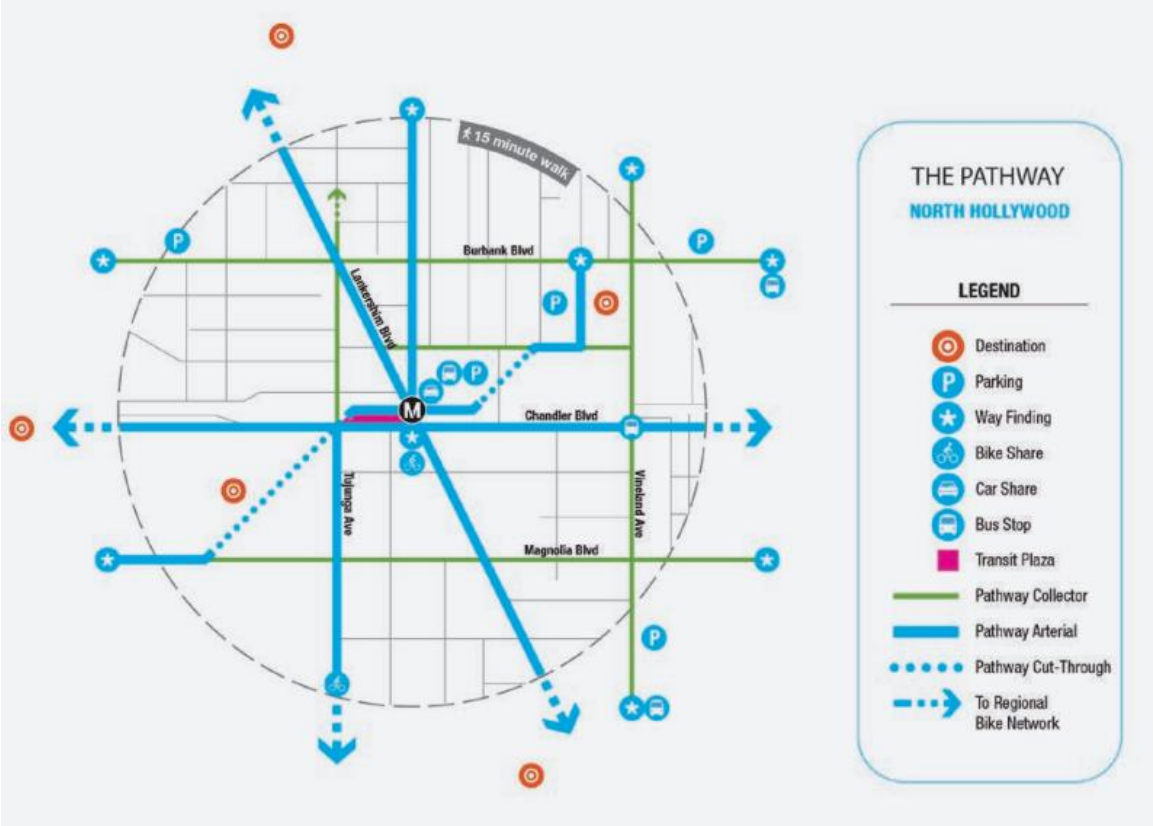
VISION ZERO IN GLENDALE

City of Glendale has strived to improve pedestrian safety in Glendale consistent with Vision Zero goals and policies. Vision Zero will be discussed while developing the Pedestrian Plan with city officials and the Pedestrian Safety Advisory Group for possible future implementation in the city. Setting interim goals for reducing traffic fatalities as well as long-term zero fatality goals can help with implementation. Glendale Vision Zero efforts can also benefit from strong partnerships with community-based organizations such as those in the Vision Zero Alliance in Los Angeles.

Pedestrian Access to Transit

Glendale is served by both local and regional transit; Beeline operates nine fixed routes providing local circulation, and Metro provides regional connections on the Antelope Valley and Ventura County Lines. Every transit trip begins or ends with a walking trip, the first/last mile. Therefore, high-quality pedestrian infrastructure near transit stops and stations is essential to support transit ridership and provide mobility options for Glendale residents. Well-designed, pedestrian-oriented infrastructure increases the safety, comfort, and enjoyment of the entire transit trip and also benefits pedestrians in the area who are not transit riders. There are many approaches to improving pedestrian connections to transit. The following case studies from Portland, Oregon, Boston, and New York provide examples of approaches that may be applicable in Glendale.

Metro First Last Mile Strategic Plan (Los Angeles)



North Hollywood Station Pathway network map (prototype)

Image from Metro

Metro's First Last Mile Strategic Plan provides one approach for developing safe routes to Metro transit stations in Glendale. The plan and its guidelines outline how walking connections to Metro transit can be made safer, easier, and more efficient. The plan is also supported by Metro's Active Transportation Strategic Plan, which describes implementation of first/last mile treatments and offers existing-conditions analysis and case studies for locations around Los Angeles County, including Glendale.

The plan introduces "the Pathway," a series of improvements that help people connect to Metro rail and BRT stations (see illustration below). The Pathway includes several strategies to expand and improve the quality of pedestrian access to transit. One strategy is to increase average pedestrian speeds by decreasing wait times at intersections through prioritized signal timing, reduced crossing distances, and improved walking routes. A second strategy is to shorten point-to-point walking distances by inserting strategic shortcuts through large parking lots and parks, and by adding midblock crossings.

The First Last Mile Strategic Plan features a toolbox of connection strategies that can be applied at any given station. Toolbox components include crossing enhancements and connections, signage and wayfinding, safety and comfort, allocation of street space, and add-on components such as car share, bike share, neighborhood elective vehicles, and kiss-and-ride areas.

TriMet Pedestrian Network Analysis (Portland, OR)

High-quality pedestrian and transit environment in downtown Portland, OR

Image from Nelson\Nygaard

By improving pedestrian connections to transit, TriMet has also enhanced the pedestrian environment for everyone on foot. TriMet's Pedestrian Network Analysis identified key bus stops lacking pedestrian infrastructure or connections. This process identified 66 clusters of stops with the greatest need, and prioritized 10 areas for improvement. Staff walked each area and inventoried the pedestrian needs around each stop. The resulting improvements have been beneficial for TriMet (by facilitating connections for riders) but also for pedestrians who may not ride transit.

The project developed a prioritization process based on the following three factors:

- **Transit supportiveness of an area.** Areas where improvements would have the most impact on pedestrian and ridership activity.
- **Deficiencies and opportunities near stops.** Deficiencies made a place unsafe or uncomfortable for walking. Opportunities included improved connections and reducing the need for TriMet's paratransit service, which has a higher per-person operating cost than fixed-route service.
- **Composite scores.** Using scores from the previous two categories, clusters of high-scoring stops were identified and compared to census tract maps showing areas with above average numbers of minority and low-income residents.

MBTA System-Wide Accessibility Department and Key Bus Route Improvement Program (Boston, MA)

MBTA bus stop with curb extension

Image from MBTA

By requiring that transit facilities, infrastructure, and equipment be accessible to all people, the Americans with Disabilities Act ensures that a certain baseline of accessibility must be met. However, many cities and transit authorities are working together to provide higher-quality pedestrian amenities and greater levels of accessibility than required by ADA to create transit-supportive environments.

The Massachusetts Bay Transportation Authority (MBTA) established the System-Wide Accessibility Department to ensure that all stations and bus stops are universally accessible. As part of this effort, MBTA developed the Key Bus Route Improvement Program, which prioritizes pedestrian and passenger improvements along 15 bus routes with high levels of service. After extensive public outreach—with participation from riders, community stakeholders, and municipalities served by the routes—the program provided improvements that enhance pedestrian connections to transit. Enhancements include bus stop relocation, curb extensions, accessibility enhancements, and bus stop amenities.

Safe Routes to Transit Program (New York, NY)

The New York City Department of Transportation's (NYCDOT) Safe Routes to Transit program identifies locations with poor access, especially for the most vulnerable populations: youth and older adults. The program implements pedestrian facilities to foster safer, more comfortable access to transit. Sidewalks to bus stops and crossing treatments near transit are prioritized for improvement to calm traffic and improve pedestrian safety. The program focuses on improving pedestrian access at three key points:

- **Sidewalks to Buses:** The Sidewalks to Buses program focuses on bus stops where pedestrians are most likely to encounter higher traffic volumes and speeds. This initiative implements sidewalk and other pedestrian improvements to improve access to bus stops. It includes the installation of new sidewalks, crosswalks, and bus waiting areas to facilitate walking and transit use. NYCDOT has already completed one pilot program and

will install up to a quarter mile of new sidewalk or other infrastructure improvements at up to 15 bus stops per year through 2030.

- **Subway/Sidewalk Interface:** These projects improve sidewalks, crosswalks, and other parts of the walking environment around bus stops where walking is currently difficult. NYCDOT selected 23 priority subway stations to receive improvements after examining stations for narrow sidewalks and corners, inadequate signal timing, and traffic congestion.
- **Bus Stops at Els (elevated subway structures):** Bus stops under elevated subway structures pose unique challenges as many buses are unable to get to the curb and pedestrians are forced to wait, board, and exit the bus in the middle of the street. At these locations, NYCDOT is altering the road geometry to improve pedestrian visibility, bus stops are being raised behind a new curb line, and signage is improving traffic navigation.

PEDESTRIAN ACCESS TO TRANSIT IN GLENDALE

Glendale can prioritize pedestrian improvements near Beeline and Metro transit stations and stops and pedestrian access to transit. Partnerships with local transit agencies to improve pedestrian connections to transit can be beneficial to all pedestrians while improving the transit experience.

Pedestrian Crossings

Streets with more travel lanes and higher posted speeds are often more difficult to cross for people walking, particularly when there are long distances between traffic signals. In Glendale, 40 percent of pedestrian collisions take place at signalized intersections, 31 percent take place midblock, and 28 percent take place at unsignalized intersections, suggesting opportunities to both enhance pedestrian accommodations at existing signals and to provide additional enhanced pedestrian crossings. The following section provides best practices for improving pedestrian crossings. More information about these street design concepts can be found in the NACTO Urban Street Design Guide.

Curb Extensions

Curb extensions can improve safety for everyone using streets, sidewalks, and crossings by narrowing the roadway and increasing space for pedestrian- and transit-friendly infrastructure. Curb extensions shorten the distance required to cross the street, thereby reducing the amount of time a pedestrian is exposed to traffic. They can also be used to slow traffic and provide additional space for amenities. Curb extensions can also be installed on a temporary basis with minimal effort and cost. Figure 4-3 describes different types of curb extensions.

Figure 4-3 Types of Curb Extensions

Type of Curb Extension	Example
Conventional. Conventional curb extensions should be incorporated wherever there is on-street parking to increase visibility and reduce crossing distances (recommended width is 1-2 feet narrower than the parking lane).	 A conventional curb extension in Glendale Image from the City of Glendale
Conventional curb extensions can be created using **temporary, low-cost materials** or as part of a pilot project to study the final design before making changes with more expensive materials. The NACTO Urban Street Design Guide recommends using temporary curbs, bollards, planters, or striping to demarcate the curb and roadway.	 A temporary, low-cost curb extension in Austin, TX Image from Austin Mobility  Potted plants and colored gravel epoxy serve as a short-term pedestrian-friendly makeover for Lincoln Avenue in Chicago, IL Image from Lakeview Chamber

Type of Curb Extension	Example
Midblock. Also known as pinchpoints or chokers, midblock curb extensions reduce the width of the roadway at midblock locations, slowing traffic speed and increasing public space. In combination with crosswalks, they shorten the crossing distance and make pedestrians more visible. They can reduce the amount of on-street parking in some cases, and may be best used on streets that do not have a shortage of parking. They have been found to reduce 85th percentile speeds[1] by an average of 7%.[2]	 A midblock curb extension in Glendale Image from the City of Glendale
Gateway. Often applied at the mouth of an intersection, gateway curb extensions can also mark the transition to a slower speed street. They should be at least equal to the width of a crosswalk (but preferably extended to the advance stop bar).	 A gateway curb extension in Glendale Image from the City of Glendale
Offset. Also known as chicanes, offset curb extensions alternate from one side of the street to the other, creating S-shaped curves. They slow traffic speeds by forcing vehicles to move in a lateral motion. They can also be created by alternating on-street parking spaces. They discourage speeding and can be a better option than speed humps and cushions on roadways where large vehicles travel. They should be accompanied with signs warning drivers of curves ahead.	 A set of chicanes slows speeds in Glendale Image from Nelson\Nygaard

[1] 85th percentile speeds refer to the speed that 85% of vehicles do not exceed, and is used as a starting point for determining actual operating speed and setting speed limits on a roadway.

[2] Fehr & Peers

Type of Curb Extension	Example
Bus bulbs. Bus bulbs align bus stops with the parking lane, allowing buses to pick up and drop off passengers without having to merge in and out of traffic.	 A bus bulb in Glendale Image from the City of Glendale
Neckdowns are curb extensions that reduce the width of the roadway at an intersection. When placed at the entrance to a neighborhood street, they are sometimes called **Gateways** (see above). Both treatments encourage slower driving and reduce turning speeds by tightening the curb radius. In combination with crosswalks, they shorten the crossing distance and make pedestrians more visible.[3]	 A neckdown in Glendale Image from Nelson\Nygaard

Pedestrian Safety Islands

Pedestrian safety islands narrow the roadway with a raised island. Narrower lanes encourage people driving to slow down. Pedestrian safety islands reduce exposure to vehicles for people crossing a busy street or intersection. They are recommended for locations where pedestrians must cross three lanes of traffic in one direction (but can also be installed on narrower streets, space permitting). They should be at least 6 feet wide (preferably 8-10 feet) with a cut-through accessible ramp equal to the width of the crosswalk. Islands should have a "nose" extending past the crosswalk and curbs and/or bollards to protect waiting people.[4]

[3] NACTO Urban Street Design Guide

[4] NACTO Urban Street Design Guide

A center island with crosswalk in Glendale

Image from the City of Glendale

A center island with crosswalk in Glendale

Image from the City of Glendale

Signals

Most collisions occur at intersections, which are the "mixing zones" where turning vehicles create multiple points of conflict with people walking. Pedestrian safety at intersections can be improved through changes to signals.

Leading Pedestrian Intervals

Leading pedestrian intervals (LPIs) typically give pedestrians a three to seven second head start before vehicles are permitted to proceed at an intersection. This makes pedestrians more visible in the intersection and reinforces their right-of-way over turning vehicles. LPIs can be relatively low cost to install because they typically only require adjustments to the existing signal timing. LPIs have been shown to reduce pedestrian-involved collisions by as much as 60 percent.

Marked Scramble Crossings

Marked scramble crossings allow pedestrians to cross in any direction—including diagonally—while vehicles from all directions are stopped. For example, Los Angeles installed a scramble crossing at Hollywood Boulevard and Highland Avenue, a high collision intersection that had 19 crashes and 13 injuries during the first 11 months of 2015. After installing the scramble crossing, there was only one crash between November 2015 and March 2016. Confusion may arise among pedestrians when scramble crossings are not marked diagonally, leaving such crossings less effective than they could otherwise be.

Before and after at the intersection of Hollywood and Highland in Los Angeles

Image from LADOT

Pedestrian Countdowns

Pedestrian countdowns show the number of seconds remaining to cross the street. Providing people with information about how much time they have to cross allows them to adjust their speed if they are already in the intersection. The 2012 California Manual on Uniform Traffic Control Devices (MUTCD) requires pedestrian countdowns at all new signal heads when the "DON'T WALK" signal is displayed for greater than seven seconds.

Pedestrian countdown signal examples

Images from FHWA

Pedestrian countdown signals have been shown to reduce pedestrian injury collisions by 25 percent[5]. They are particularly recommended for improving crosswalk safety for older adults who have slower average walking speeds[6]. A recent study on countdown signals in Toronto indicated that some drivers accelerate when they see the countdown, increasing the number of vehicle collisions; however the City of Toronto found that the number of vehicle-to-vehicle collisions remained constant before and after installation. Additionally, research has shown that both pedestrians and drivers are more compliant with these signals. A recent study in San Diego found that pedestrians were better able to increase their walking speed to finish crossing before red in intersections with the countdown.[7] In San Francisco, the number of pedestrian injury crashes declined by 52 percent.[8]

Restricted Right-on-Red

Prohibiting vehicles from turning right-on-red helps to prevent collisions in the intersection. Such collisions often occur when a turning motorist is looking left at traffic and is not alert to pedestrians approaching on the right. Restricted right-on-red should be considered for intersections with high pedestrian volumes, exclusive pedestrian phases, at crossings with limited sight distances, and at school crossings. Time-of-day restrictions may be also appropriate for locations where restriction is only needed during peak hours.

One concern with right-turn-on-red restrictions is that they may increase conflicts during right-turns on green between pedestrians and vehicles. This can be mitigated by a leading pedestrian interval. Together with leading pedestrian intervals, restricted right-on-red can improve conditions for pedestrians with minimal impacts on traffic.

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[5] SF Better Streets Online Guide, "Pedestrian Signals" (2015). http://www.sfbetterstreets.org/find-project-types/pedestrian-safety-and-traffic-calming/pedestrian-signals/

[6] AAA Foundation for Traffic Safety, "Pedestrian Signal Safety for Older Persons" (2007). https://www.aaafoundation.org/sites/default/files/PEDsigtiming.pdf

[7] Supernak, Verma, and Supernak, "Pedestrian Countdown Signals: What Impact on Safe Crossing?" (2013). http://file.scirp.org/pdf/OJCE_2013101114534324.pdf

[8] Markowitz, Sciortino, Fleck, and Yee, "Pedestrian Countdown Signals: Experience with an Extensive Pilot Installation" (2006). http://www.bikewalk.org/2006conference/vconference/presentations/PedestrianandBicycleTrafficSignalIssuesandDirections2.pdf

Beacons

Long blocks or gaps between signalized intersections can create a challenging crossing situation for pedestrians. The following additional tools can increase visibility at non-signalized crossings or notify drivers that a crossing is ahead.

Rectangular Rapid Flashing Beacons

Rectangular rapid flashing beacons alert drivers to a pedestrian crossing. These are most commonly installed at locations with medium to high traffic volumes at otherwise uncontrolled crossings. Rapid flashing beacons have been shown to increase yield rates to between 74 percent and 100 percent. Beacons have been used successfully on both low- and high-capacity arterial streets. Research has shown that the beacons are effective on streets that carry between 8,000 and 30,000 vehicles per day.[9]

A solar-powered rectangular rapid flashing beacon in Glendale

Image from the City of Glendale

Pedestrian Hybrid Beacons

Pedestrian hybrid beacons allow pedestrians to alert drivers to their presence by pushing a button that activates an overhead warning light. The signal is dark until activated by the button. Once activated, the signal flashes a yellow warning light notifying oncoming vehicles that a pedestrian is crossing or preparing to cross. A study on the safety effects of hybrid beacons showed a 69 percent reduction in pedestrian-involved collisions.

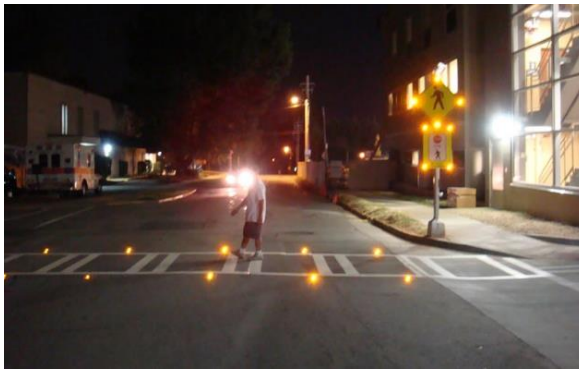
[9] Federal Highway Administration, "Effects of Yellow Rectangular Rapid-Flashing Beacons on Yielding at Multilane Uncontrolled Crosswalks" (2010). http://www.fhwa.dot.gov/publications/research/safety/pedbike/10043/10043.pdf

A hybrid beacon in Salt Lake City, UT helps a family cross a major intersection

Image from NACTO

In-Roadway Flashing Lights

In-roadway flashing lights are embedded in the pavement in front of crosswalk lines. Before entering the roadway, pedestrians activate the flashing lights by pushing a button (or in some applications, just by standing at the crossing ramp). In Pasadena, a before-and-after study found that drivers yielded for pedestrians significantly more often—80 percent of the time instead of just half the time—after the installation of in-roadway flashing lights at crosswalks.



Flashing lights that are triggered by pedestrian movement can be installed in crosswalks to help ensure that drivers will see pedestrians. Here, a man crosses a street in Honolulu, HI

Image from GP Roadway Solutions

A man crosses the street at an intersection in San Diego equipped with in-road motion-activated lights

Image from Nelson\Nygaard

Freeway On/Off Ramp Crossing Treatments

Caltrans provides guidance for improving pedestrian safety and mobility at highway on/off ramps in the **2010 Complete Intersections Guide**. An on/off ramp that intersects the crossroad at a 90-degree angle and is controlled by a stop or signal is the easiest and safest for pedestrians to navigate. This design slows vehicles as they approach the turn, improving a driver's ability to see crossing pedestrians.

On/off ramps that are designed to encourage high-speed, free-flowing turning movements onto and off a freeway are less favorable for pedestrians, as vehicle speeds are faster, visibility is limited, motorists are not required to yield, and pedestrian crossings are typically absent. Treatments that can help to improve pedestrian crossings at freeway on/off ramps include:

- **Striping and signs to make drivers more aware of and more likely to yield to pedestrians.** Striping high-visibility crosswalks helps to improve the visibility of pedestrians, while pedestrian warning signs, yield lines, and pedestrian-actuated beacons help define and draw attention to the pedestrian crossing.
- **Adding pedestrian infrastructure.** Sidewalks on both sides of the road and pedestrian signals coordinated with adjacent traffic signals can improve ramp crossings. Pedestrian underpasses or overpasses should be considered at very large interchanges with high volumes of pedestrians where crossings are especially difficult.
- **Reconstructing the intersection to eliminate free-flow turning movements.** Ramps can be reconstructed to have single, rather than dual, right-turn lanes to minimize pedestrian exposure. If warranted according the California or FHWA Manual on Uniform Traffic Control Devices (MUTCD), stop or signal control should be added.

Caltrans also provides guidance for accommodating pedestrians in the design phase for new on/off ramps in the 2010 guide.[10]

Other Crossing Treatments

Advanced Stop Lines

Advanced stop lines are stop or yield signs for vehicles that are placed 20 to 50 feet ahead of a crosswalk. They are often used for midblock crossings. Advanced stop lines can be especially helpful for multilane roadways, as the stop line encourages drivers to stop far enough back that pedestrians can see past the first car to see if a second vehicle is coming. Parking between the stop line and crosswalk should be prohibited to maintain clear lines of sight between drivers and pedestrians.

The lines should be accompanied by "Stop Here for Pedestrian" signage. Studies have shown that while "Stop Here for Pedestrian" signage can reduce conflicts by 60 percent, adding an advanced stop line can reduce conflicts by 90 percent[11]. Advanced stop lines can be particularly effective treatments in combination with other treatments such as pedestrian hybrid beacons or rectangular rapid flash beacons.

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[10] Caltrans 2010 Intersection Guide http://www.dot.ca.gov/hq/traffops/engineering/investigations/docs/intersection-guide-bicycles-pedestrians.pdf

[11] AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2004

PEDESTRIAN CROSSINGS IN GLENDALE

Glendale can use a data-driven approach to identifying high-priority crossings for pedestrian improvements. Pedestrian crossing treatments including curb extensions, pedestrian safety islands, and safety restriping projects should be considered. Upgraded signals can enhance crossings and increase pedestrian visibility at crossings.

On/Off ramp crossing is a particular challenge in Glendale on Brand Ave, Glendale Ave, Pennsylvania Ave, and Pacific Ave. The City of Glendale can work with Caltrans to add signage, striping, and reconfigure intersections to improve pedestrian mobility and safety in places where SR 2, SR 134, and the Glendale Freeway connect with local streets.

Traffic Calming

Traffic calming refers to a variety of roadway and intersection design treatments that make streets safer by encouraging drivers to observe the speed limit. Many traffic-calming measures enhance the comfort of people walking (and bicycling as well). Traffic-calming tools range from temporary devices such as cameras and radar speed signs to redesigned streets. Many of the tools used for improving pedestrian crossing safety discussed earlier are useful for calming traffic, particularly pedestrian safety islands and curb extensions.

Radar Devices

Traffic cameras use radar to identify and photograph drivers exceeding the speed limit or running red lights. They are often combined with signs warning drivers that traffic laws are photo enforced. Traffic cameras are usually implemented on major arterials with a history of crashes attributed to high speeds or red-light violations. In Portland, Oregon, red-light cameras have been found to reduce total crashes at intersections by an average of 40 percent and injuries by an average of 48 percent.[12]

Red light camera

Photo from Riverfront Times

Radar speed signs are permanent or mobile signs that detect and display the speed of automobiles as they drive past. The signs raise the awareness of people driving and encourage them to slow down if they are above the speed limit. They are best used on busy streets where people are frequently observed driving above the speed limit. Portable speed signs have been found to reduce speeds by up to 6 mph[13].

Radar speed sign, Glendale, CA

Image from Nelson\Nygaard

[12] https://www.portlandoregon.gov/transportation/article/372795

[13] FHWA, San Francisco PedSafe Phase II, 2008. http://safety.fhwa.dot.gov/ped_bike/tools_solve/ped_scdproj/sf/pedsafety_sf.pdf

Speed Humps, Tables, and Cushions

Speed humps, tables, and cushions are raised areas placed across the roadway perpendicular to the direction of travel. These devices encourage motorists to slow down.

- **Speed humps** are rounded and extend uninterrupted across the street.
- **Speed tables** are distinguished from speed humps by their flat tops.
- **Speed cushions** have flat wheel cutouts that are spaced so that large vehicles, such as buses and emergency vehicles, can pass through them.

Speed humps and tables are best used on neighborhood streets, at an interval of about 400 feet. Speed cushions can be used on busier streets where buses and emergency vehicles need to drive. Speed humps have been found to decrease speeds by 22 percent (on average) and decrease collisions by 11 percent.[14]

A speed hump in Glendale

Image from Nelson\Nygaard

Pavement Treatments

Textured or colored pavement can be used to emphasize an intersection or pedestrian crossing. These can include the use of alternate paving materials, such as brick, and are best used in areas where there is substantial pedestrian activity.

Textured crosswalk in Glendale

Image from Nelson\Nygaard

[14] Fehr & Peers

Roadway Rechannelization

Roadway Rechannelization can mean reducing the total number of lanes or reducing the width of existing lanes. Both options encourage people to drive more slowly and free up space for landscaping and other types of facilities. Lane reduction is recommended for busier multilane streets, especially those that have excessively wide lanes, excess capacity, or large numbers of pedestrians and bicyclists[15]. Roadway rechannelization or restriping projects can improve safety by repurposing vehicle travel lanes to space for people walking and riding bicycles. A typical rechannelization involves the conversion of a four-lane road segment to a three-lane road segment, with two through lanes and a center turn lane.

A key benefit of rechannelization is the creation of additional space in the roadway for pedestrian and bicycle features such as pedestrian safety islands, bike lanes, and wide sidewalks. Reducing the number of vehicle travel lanes shortens the crossing distance for pedestrians, which plays an important role in increasing pedestrian safety. Roadway rechannelization projects can also accommodate temporary lane uses like peak-period parking restrictions or reversible lanes. These location-specific approaches can help reduce traffic delays while still maintaining a high-quality pedestrian environment.

A curb-adjacent lane is transformed into public space on South Broadway in Los Angeles, CA

Image from Bringing Back Broadway

It is important to note that not all arterials are well suited for rechannelization. Key factors in decision making include the number of average daily trips (ADT) in the corridor, the frequency of left-hand turns, and the needs of freight and transit in the corridor. The Federal Highway Administration suggests that arterials with fewer than 10,000 ADT are strong candidates for rechannelization. However, cities across the United States have successfully rechannelized arterials that accommodate as many as 25,000 ADT without increasing traffic delays.

[15] http://www.nyc.gov/html/dot/html/pedestrians/traffic-calming.shtml

Error! Reference source not found. shows summary statistics for roadway rechannelization projects in American cities.

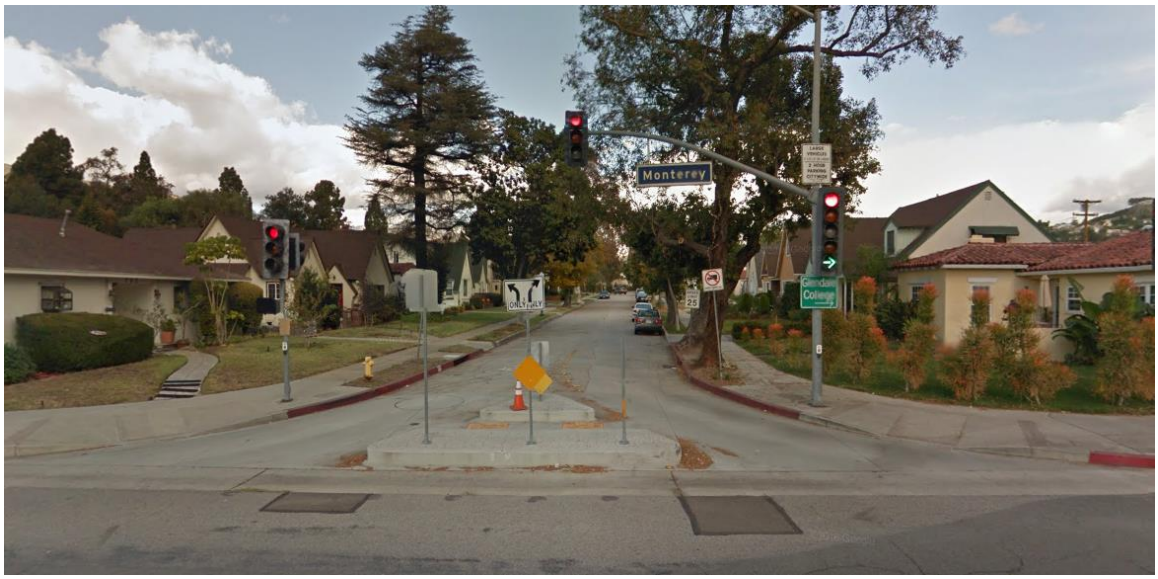
Figure 4-4 Roadway Rechannelization and Average Daily Trips

City	Average Daily Trips	Peak Hour Trips[1]	Conversion	Effect on Speed	Effect on Crashes
Billings, Montana	9,200	736	4 lane to 3 lane	No increase in delays	Decreased collisions
Helena, Montana	18,000	1,440	4 lane to 3 lane	No increase in delays	Decreased collisions
Oakland, California	24,000	1,920	4 lane to 3 lane	No noticeable change in vehicle speeds	No data available
San Leandro, California	19,300	1,544	4 lane to 3 lane	Minor increases in delays	Decreased collisions
Seattle, Washington	25,000	2,000	4 lane to 3 lane	No data available	Decreased collisions

[1] Peak hour volumes were assumed to be 8% of average daily trips when data was not available.

Intersection Treatments

Traffic diverters are used to slow, redirect, or block motor vehicles. They are primarily used at intersections and are recommended on neighborhood streets that experience speeding or shortcutting[16]. They can be used on neighborhood greenways to create a physical barrier for all types of traffic other than bicycles and pedestrians.



A traffic diverter in Glendale

[16] New York DOT Traffic Calming Design Guidelines

Image from the City of Glendale

Traffic circles are installed at intersections to direct the flow of traffic around a central island. Drivers slow down as they proceed through the intersection. Traffic circles also reduce collisions at intersections. They are best used on neighborhood streets. Considerations when installing a traffic circle include rights-of-way availability, pedestrian and bicycle volumes, the design vehicle, and the number of travel lanes. Approximately 15 feet of clearance between the corner and the widest point on the circle is recommended. Traffic circles have been found to reduce 85th percentile travel speeds by an average of 11 percent, and to reduce collisions by an average of 73 percent[17].

A traffic circle in Glendale

Image from Nelson\Nygaard

Neighborhood Traffic Calming Programs

Monterey, CA

The City of Monterey initiated its comprehensive neighborhood traffic-calming program in 2013, and the city now has neighborhood traffic-calming plans for the majority of its neighborhoods. The planning process includes neighborhood surveys, public meetings, traffic data analysis, and city staff review. Projects are funded by the Neighborhood Improvement Program, grants, or other sources.

Design treatments in neighborhood traffic-calming plans include center islands, gateways, neckdowns, chicanes, traffic circles, and traffic diverters. Traffic calming measures that are not as infrastructure intensive, such as radar speed signs and pavement treatments, can be implemented without being included in a neighborhood plan.

[17] Pedestrian and Bicycle Information Center

Seattle, WA

The Seattle Department of Transportation's (SDOT) Neighborhood Traffic Calming Program prioritizes traffic calming where speeds are highest (generally streets with no curbs) and near schools, parks, and other generators of pedestrian activity.

The first step for residents to request traffic calming improvements on their streets is to borrow a radar gun from the city. If 15 percent or more of the traffic on a street is exceeding the speed limit by 5 mph, SDOT will order a traffic study and work with the neighborhood to identify a funding source and appropriate traffic-calming devices. Local funding sources include the SDOT Neighborhood Traffic Operations program and the Seattle Department of Neighborhoods Neighborhood Park and Street Fund and Neighborhood Matching Fund[18].

Portland, OR

Portland's neighborhood greenway program prioritizes walking and bicycling along a citywide network using common traffic-calming techniques (currently more than 70 miles). In order to improve safety and comfort for non-motorized travel, the city has incorporated design and operational performance guidelines, including:

- Speed limits of 20 mph or less
- An upper limit of 2,000 cars per day
- At least 50 arterial roadway crossing opportunities (such as signals, safety islands, two-way cycle tracks, and bike boxes) for bicycles and pedestrians per hour, with 100 being preferable

To limit the number of vehicles using greenways as cut-through routes, the city typically installs speed bumps and traffic diverters. As shown in the image below, traffic diverters also can be used as pedestrian/cyclist safety islands where greenways cross busy intersections. It is also common practice to reorient stop signs away from the greenway and towards intersecting local streets to improve ease of travel for cyclists and pedestrians. Additionally, consistent signage—both designating a street as greenway and displaying the reduced speed limit—is an important element for wayfinding and to alert motorists to drive with caution.

Neighborhood greenway crossing an arterial street, Portland, OR

Image from City of Portland

Neighborhood greenway signage, Portland, OR

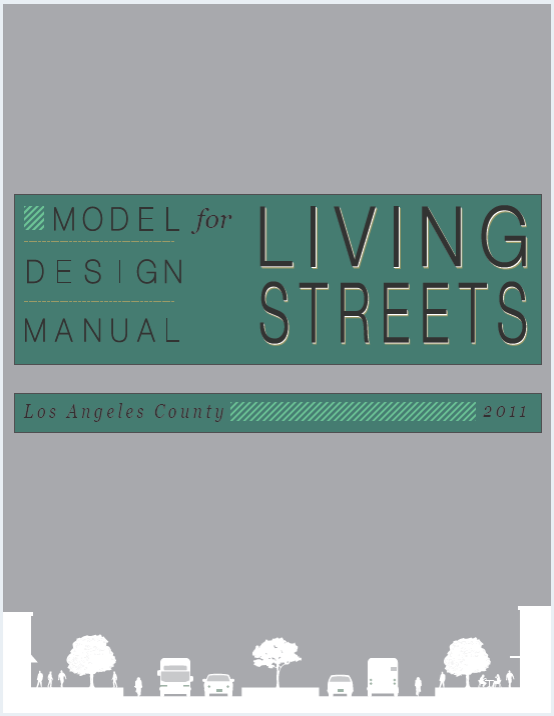
Image from PBOT

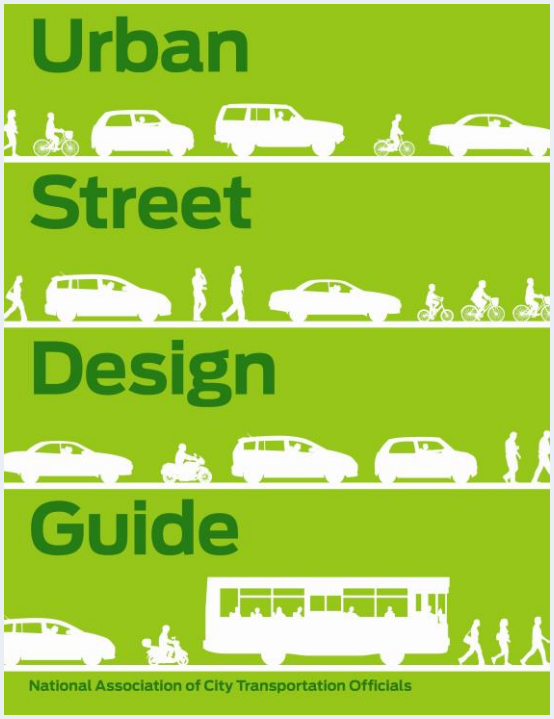
[18] http://www.seattle.gov/transportation/ntcp_calming.htm

Los Angeles Complete Streets design guidance

As part of the city's Vision Zero efforts, a LADOT Complete Streets design team was convened to encourage innovative design and write treatment guidelines (where, when, why, how) that did not previously exist in the manuals.

Design guidance for complete streets is also found in the County of Los Angeles Model Design Manual for Living Streets and the NACTO Urban Street Design Guide.





Arterial Traffic Calming Programs

Seattle, WA

Seattle established an Arterial Traffic Calming (ATC) Program in 2012. The program uses a variety of treatments to encourage drivers to observe the speed limit. The most common treatments are speed cushions and radar speed signs.

Community members can request traffic calming for an arterial street. If a speed study has not been conducted recently, SDOT will conduct one. Every winter, SDOT prioritizes arterials for the ATC program, taking into account observed speeds, recommendations from the city's pedestrian and bicycle master plans, and the history of collisions on the street. Around 30 streets are selected for a temporary radar speed sign. The data gathered by the sign is used to determine if traffic calming treatments are needed. A roadway is considered to have a speeding problem when 15 percent of the drivers exceed the speed limit by 5 mph or more.

Radar Speed Sign, Seattle, WA
Image from SDOT

Funding for the ATC program comes from the SDOT Neighborhood Traffic Operations budget. Additional funding sources include the Seattle Department of Neighborhoods Neighborhood Park and Street Fund and Neighborhood Matching Fund[19].

Portland, OR

Portland established its Arterial Traffic Calming Program in 1992. Staff performed an initial survey of neighborhood collector streets to identify segments that were primarily residential. These segments are prioritized by average speed, volume, residential density, absence of sidewalks, proximity to schools and other pedestrian generators, and street width. Potential projects are assessed for potential negative impacts to emergency vehicles. The program conducts public outreach to assess the level of community support for proposed projects.

Midblock pedestrian refuge is used to calm traffic near an elementary school in Portland, OR

Image from PBOT

Over 60 traffic calming projects have been completed by the Traffic Calming Program. Treatments commonly used on arterial streets include curb extensions, medians, and speed cushions.

TRAFFIC CALMING IN GLENDALE

Glendale is already implementing many measures to calm traffic on city streets. The City of Glendale Neighborhood Traffic Calming Program includes a ten-step process for the implementation of traffic calming measures.

1. Identify candidate street
2. Conduct screening evaluation
3. Conduct preliminary engineering study
4. Meet with residents
5. Develop traffic calming project alternatives
6. Meet with residents
7. Circulate petition
8. Conduct public hearing with Transportation and Parking Commission
9. Include traffic calming project on city-wide traffic calming priority list
10. Install traffic calming project

The program currently utilizes the following traffic calming treatments:

- Speed Humps and Lumps
- Traffic Circles
- Chokers and Diverters

[19] http://www.seattle.gov/transportation/ntcp_arterial.htm

Frameworks for Inventorying, Assessing, and Prioritizing Pedestrian Investments

Cities have limited capital improvement budgets, which requires prioritizing projects to ensure that funds are allocated in ways that will have the greatest impact or meet the most significant needs. Maintaining an inventory of pedestrian infrastructure, including the presence and condition of sidewalks, can help prioritize maintenance and construction of new pedestrian facilities. Often, project requests from residents and business owners or inspections by city staff are the primary tools used to determine where new pedestrian projects or improvements will be located. Some cities have developed additional tools for prioritization, using established city values and goals to guide the prioritization process. This section describes common sidewalk inventory and assessment methods and provides case studies from Peterborough, Ontario, and Los Angeles.

Walk Audits

Pedestrian safety assessments, or walk audits, assess the walkability of an area and engage local residents in pedestrian safety. There are many different walk audit tools available, and they are typically tailored to meet the needs of a specific community or neighborhood.

Community Tools to Evaluate Pedestrian Safety

Community tools to evaluate pedestrian safety allow residents to take ownership of their streets by becoming involved in the data collection and prioritization processes that inform the often complex and expert-driven decisions related to city infrastructure. Furthermore, this community-driven tool can also be an asset to local governments that do not have enough resources to take stock of every sidewalk, crosswalk, and intersection in the city.

An example of this tool was developed and tested by researchers from the University of New Orleans Transportation Institute. The methodology incorporates a pedestrian sidewalk and intersection audit tool which assigns points to sidewalk segments and intersections based on the presence or absence of pedestrian attractors/detractors (e.g., shade, obstructions, levels of repair/maintenance, curb widths, buffers, painted crosswalks, etc.). Each segment is then assigned a score indicating the quality of a given segment or intersection (from very poor to very good).[20]

Using this tool to assess the quality of sidewalks and intersections at crash clusters, the researchers were able to draw attention to the physical factors that contribute to pedestrian hazards and discomfort. The local MPO subsequently used this data to prioritize local infrastructure improvements.

[20] University of New Orleans Transportation Institute http://transportation.uno.edu/images/documents/bike-pedestrian/PBRI-Auditing-Neighborhoods-Streets-and-Intersections-for-Pedestrian-Safety.pdf

A walk audit in Glendale

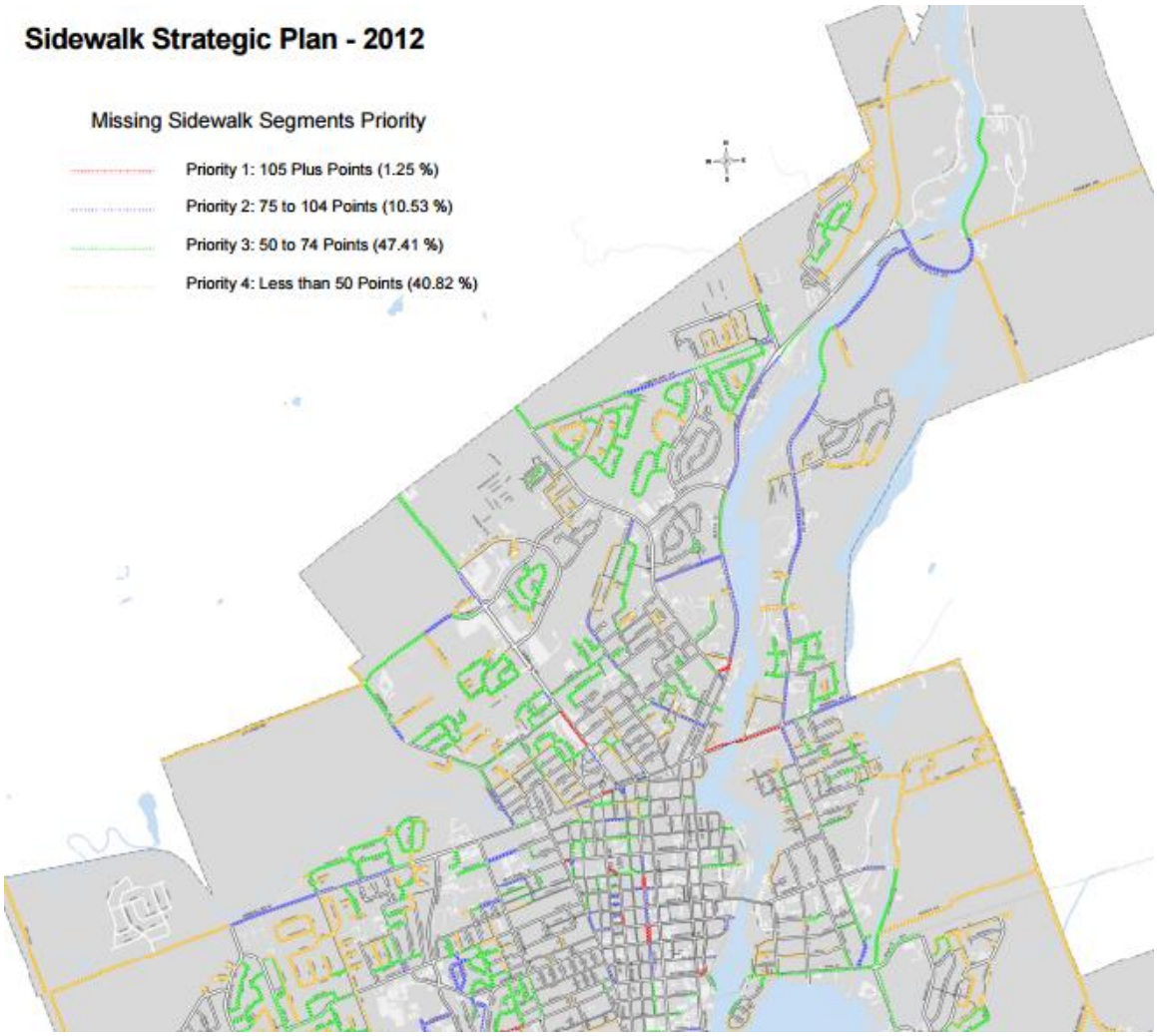
Image from the City of Glendale

Inventory and Maintenance Frameworks

Sidewalk Repair Inventory (Peterborough, Ontario)

In Peterborough, Ontario, sidewalks with heaves or cracks more than half-an-inch wide are marked with orange paint, and their location is marked using GPS. This creates an inventory of sidewalks in need of repairs and helps the city identify areas with the highest density of maintenance needs. The inventory is saved as a matrix.

The city also has a Sidewalk Strategic Plan that identifies where new sidewalks should be provided. The plan ranks missing sidewalks according to a set of criteria, including the type of streets, the number of students in the area, proximity to high-density housing, and whether the location is on a transit route.



Map of sidewalks showing priority ratings in Petersborough, Ontario

Image from City of Peterborough

Broken Sidewalks Repair Program (Los Angeles, CA)

As part of a legal settlement, the City of Los Angeles has agreed to spend $1.4 billion over the next 30 years to repair existing sidewalks. As part of this effort, city officials have recommended reinstating a sidewalk inspection program to systematically evaluate the condition of the city's sidewalks and issue citations when necessary. The city will prioritize sidewalk repair outside of city buildings and facilities, followed by transportation corridors, medical facilities, commercial areas, places of employment, and residential areas.

Uniquely, the city will pay for sidewalk repairs adjacent to single-family properties and turn over maintenance responsibility to the owner. Repairs made to residential properties will have a warranty of 20 years. Commercial property owners, on the other hand, will have a warranty of five years. Rebates will be made available to property owners who fix their own sidewalks.

This buckled sidewalk in Los Angeles is part of a growing problem in the city; 40% of the city's sidewalks are impassable for people with mobility challenges.

Image from Hoa Law Blog

INVENTORY, ASSESSMENT, AND MAINTENANCE IN GLENDALE

The City of Glendale participated in a UC Berkeley Community Pedestrian Safety Training workshop in 2014 which included a walk audit on a combination of arterial and local streets (Brand Boulevard, Colorado Street, Glendale Avenue, Harvard Street, Wilson Avenue, Jackson Street, and Louise Street). Participants completed a qualitative walkability checklist asking:

- Did you have room to walk?
- Was it easy to cross streets?
- Did drivers behave well?
- Was it easy to follow safety rules?
- Was your walk pleasant?

Members of the Glendale Pedestrian Safety Task Force then crafted engineering, enforcement, and education recommendations that were approved by City Council to. Glendale received $2.1 million in 2014 Active Transportation Grant funding to implement the recommendations along with other pedestrian safety education and improvement efforts. The Pedestrian Plan is one of the projects that the 2014 Active Transportation Grant funded.

Prioritization Frameworks

This section describes the sidewalk project prioritization methods used in Austin, Nashville, and Seattle.

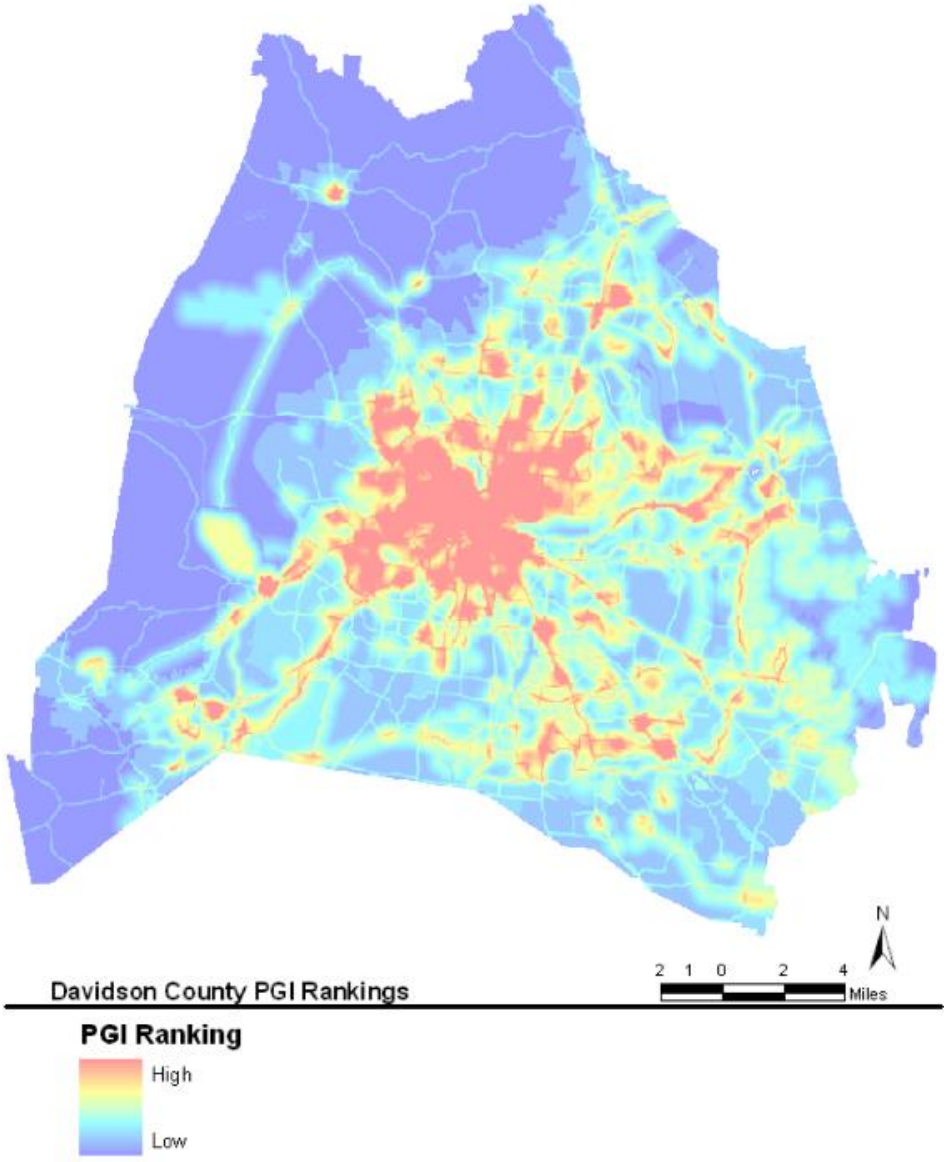
Interactive Software Tools (Austin, TX)

The City of Austin developed an interactive software tool to more objectively identify and prioritize potential sidewalk projects. In the past, Austin prioritized sidewalk projects based on input from neighborhood groups, business owners, and maintenance crews. As part of the 2009 Sidewalk Master Plan, the city developed a more objective prioritization process that takes into account the existing condition of the sidewalk as well as ADA accessibility standards. Austin's 2009 Sidewalk Master Plan contains a full inventory of sidewalks in the city as well as a prioritization matrix for

maintenance and construction. Data on the presence and condition of sidewalks, curb ramps, driveways, and crosswalks was gathered from field work, aerial imagery, and existing data resources from other agencies.

Decision Matrix (Nashville, TN)

The City of Nashville's Public Works department conducts field assessments to maintain an inventory of sidewalk conditions. Projects are then prioritized using a decision matrix that scores sidewalks based on current conditions, a Pedestrian Generator Index (PGI), and coordination with other projects. The PGI prioritizes sidewalk segments based on their proximity to pedestrian trip generators, such as parks, schools, and bus stops. The figure below shows the results of the PGI rankings across Davidson County.



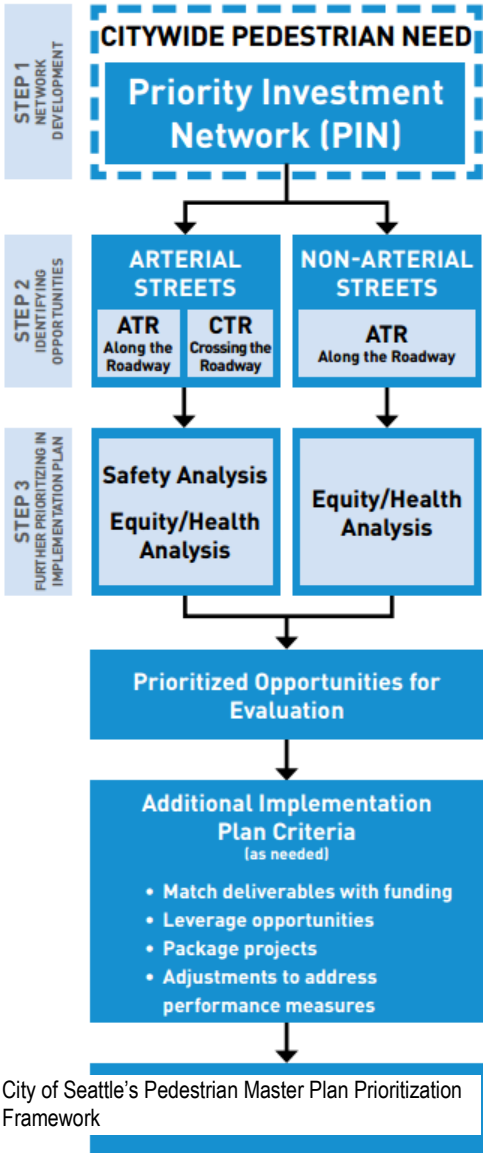
Pedestrian Generator Index rankings for Davidson County

Image from Nashville Public Radio

Core Values (Seattle, WA)

The City of Seattle prioritizes a set of core values when implementing its modal plans, including the Pedestrian Master Plan and the Bicycle Master Plan. The four values—Community, Environmental Stewardship, Social Equity, and Economic Opportunity and Security—are set forth in the city's Comprehensive Plan. In turn, the Transportation Element of the Comprehensive Plan informs the goals, policies, and strategies for the individual modal plans through two broad goals:

- Increase walking and bicycling to help achieve city transportation, environmental, community, and public health goals.
- Create and enhance safe, accessible, attractive, and convenient street and trail networks that are desirable for walking and bicycling.



City of Seattle's Pedestrian Master Plan Prioritization Framework

In support of the city's core values, Seattle's Pedestrian Master Plan aims to make Seattle the most walkable city in the nation and establishes four goals of safety, equity, vibrancy, and health. To prioritize projects, the city collects data related to these goals and assigns scores based on the following criteria:

- **Along the Roadway.** Quantifies safety and comfort for road segments by assigning points for characteristics that may affect a pedestrian's experience walking along a given roadway. Data accounts for the presence of sidewalks and physical buffers and the volume and speed of traffic.
- **Crossing the Roadway.** Same as "Along the Roadway" but assigns scores to intersections instead of road segments. Data accounts for the presence of curb ramps, crosswalks, traffic signals, and stop signs, along with road width and traffic volumes.
- **High Priority Areas.** Identifies levels of walking need based on:
  - *Potential Pedestrian Demand Map:* Identifies strong trip generators (including areas where people will be living and working in the future)
  - *Equity Map:* Identifies populations with greatest need (due to being traditionally underserved or for having high health risks)
  - *Corridor Function Map:* Prioritizes streets based on character and role in the transportation network, reflecting physical character of the street along with adjacent land uses; streets with higher scores are provide the most important links in the pedestrian network

PRIORITIZATION IN GLENDALE

Establishing a data-driven prioritization process (driven by community-supported values and goals) would allow the city to prioritize projects in areas of greatest need and areas where new walking projects and programs can have the biggest benefit. Using an objective scoring system combined with results from community-led walkability audits could help to allocate limited funding for projects.

As part of the current Pedestrian Plan effort, the project team will develop a prioritization framework for the entire city, taking into account needs on all types of streets.

Innovative Pedestrian Programs

Glendale has many programs to encourage pedestrian travel in the city, including multi-language public safety messages, targeted enforcement efforts, and Safe Routes to School, and is seeking new ways to encourage walking, promote safety, and engage with its diverse residents. The city wants to promote access to parks and transit for all ages and abilities as part of its pedestrian programs. Examples of innovative pedestrian programs in the U.S. and Europe are discussed in the following sections.

Safe Streets for Seniors (New York, NY)

An elderly woman crosses a busy street in New York City

Image from Streetsblog

As part of New York City's Vision Zero program, Safe Streets for Seniors aims to improve pedestrian safety and comfort for the city's growing senior population. In response to a disproportionate number of senior pedestrian traffic fatalities (four times the rate of younger New Yorkers), the city began an effort in 2008 to map problem areas and sought input from seniors to inform strategies for improving walking conditions. Using historical data, observation, and community input, the city determined that the following factors contribute to pedestrian crashes involving seniors:

- Insufficient pedestrian signal time
- Missing or broken pedestrian ramps
- Faded street markings
- Poor drainage in crosswalks
- Turning vehicles not yielding to pedestrians

A toolbox of safety improvements was established, including "daylighting" (improving driver-pedestrian visibility), countdown signals, safety islands, roadway rechannelization, sidewalk extensions, accessible pedestrian signals (for people with visual impairments), repaired pedestrian ramps, extended walk signal timing, simplified intersection movements (such as banning low volume left turns that conflict with high volume crosswalks), close slips (creating safer vehicle turn movements), and shortened crossing distances. Since it began implementing these improvements, the city has seen senior pedestrian fatalities decrease by 17 percent from 2008 to 2012.

A group of people cross a recently refurbished intersection in New York City

SAFE STREETS FOR SENIORS IN GLENDALE

Older pedestrians are over-represented in pedestrian collisions in Glendale as compared to their share of the total population. Older adults (65+) represent 16% of the population of Glendale, but are involved in more than 25% of pedestrian collisions. Assessing speed and distance of oncoming cars is difficult for children and older adults.

Make Way for Play (Chicago, IL)

Make Way for Play event in Chicago

Image from City of Chicago

Make Way for Play is a Safe Parks Access Plan developed for the City of Chicago through a collaborative partnership with the Chicago Park District, the Chicago Department of Transportation, and Healthy Places (an initiative that targets obesity). Recognizing the importance of active transportation as a tool for healthy living, the guide made the following program recommendations:

- Education and outreach to increase people's enthusiasm about active transportation, ranging from individualized outreach to large-scale campaigns
- Encouraging creative uses of the public right-of-way, such as block parties, Play Streets, Open Streets/Ciclovia events, mobile playgrounds, and private running and cycling events to "bring parks to the people"

A variety of innovative programs for creatively using public space and the right-of-way are already in place that support the Make Way for Play program, including Play Streets and block parties, Open Streets events, wheel-friendly spaces, vacant lot greening, creative alley reuse, home zones (shared streets), and a Make Way for People project that supports innovative uses of the right-of-way.

The Make Way for Play guide[21] also suggests infrastructure improvements to support the program. The guide outlines a prioritization process for improving pedestrian and bicycle access to parks based on an equity index (analysis of elderly and youth populations, families under the poverty level, and minority groups) to identify vulnerable populations throughout the city.

[21] City of Chicago's Make Way for Play Guide: http://www.cityofchicago.org/content/dam/city/depts/cdot/MakeWayforPeople/MakeWayforPlayToolkit_Feb2013.OL.pdf

No Ridiculous Car Trips (Malmö, Sweden)

Bicyclists in orange ride together in support of the No Ridiculous Car Trips campaign in Malmo, Sweden

Image from City of Malmo

The city of Malmö, Sweden developed a creative public awareness campaign urging people to re-examine their travel habits. After discovering that 50 percent of all car trips in the city were under three miles, the city's bicycle office and transport departments began an effort to get people out of their cars for short trips. The annual campaign invites people to submit their "most ridiculous" car trip and uses those trips as examples to encourage walking and biking. Ridiculous car trips are defined as less than three miles—easily made by bike in about the same time. During the event, cyclists in orange vests with a bag that says "here rides a car-driver" ride around in big groups during rush hours to promote cycling. The campaign is considered a success and (along with steady increases in infrastructure) has resulted in a steady increase in the city's bicycle mode share.

Heads Up, Boulder! (Boulder, CO)

Heads Up, Boulder! is a crosswalk safety campaign designed to increase safety and awareness of crosswalk-related ordinances, common collision types, and people's rights and responsibilities. It is funded by the City of Boulder and a Safe Routes to School grant and is a joint campaign of the City of Boulder, Boulder Police, University of Colorado officials, local businesses, and nonprofits. The city launched the initiative after the 2012 Safe Streets Boulder report revealed that 68 percent of pedestrian collisions occurred in crosswalks. Using crash data from the Safe Streets Boulder report, the initiative targets high-collision locations to conduct education and enforcement activities.

Heads Up, Boulder! messaging at crosswalks

Image from City of Boulder

The citywide outreach campaign includes age-appropriate messaging to students through events at schools and citywide engagement activities. Heads Up promotional materials for elementary school students feature a mascot named "CW," while middle school students are encouraged to "expect the unexpected."

Heads Up, Boulder! educational materials are tailored to K-5 and middle school audiences

Images from City of Boulder

The campaign has grown to include Crosswalk Safety Week to raise public awareness of high-collision locations and to increase enforcement at these intersections. Three new crosswalk safety laws were passed in 2012 to address travel behavior that frequently results in bicycle and pedestrian crashes (see Enforcement).

Play Streets (Seattle, WA)

Kai Semke, 3, kicks a soccer ball during a Play Street event.
Image from KPLU.org

A young girl colors a chalk mosaic during a Play Street event.
Image from KPLU.org

The Play Streets program is part of the City of Seattle's ongoing efforts to ensure that residents can use their streets in new and creative ways. A play street closes a neighborhood street to traffic so that children and adults can have more space for play and physical activity. Each play street is sponsored by a school or community member and is permitted for a specific period of time on a recurring basis. Play streets organized by schools are often used as extra space for recess, while community groups tend to use the play street for summertime or after school recreational activities.

The program launched in the spring of 2014 and has been extended through the summer of 2016. Community groups and schools have been enthusiastic about the opportunity to use streets as public gathering and play spaces. Temporarily using a residential street as a safe play space is good for kids and the community, especially in neighborhoods where backyards are small and open space is limited. Seattle's program is based on a century-old New York City program to allow temporary play spaces on residential streets.

Open Streets

Open streets events temporarily close streets to vehicle traffic, allowing people to use them for walking, running, biking, playing, and socializing. The Open Streets Project publishes a guide and an online inventory of open streets initiatives[22]. The guide highlights over 100 initiatives in North America and details various funding and organizational structures. Cities from Austin (Viva! Streets) to Boulder (Boulder Green Streets), Long Beach (Beach Streets), and Los Angeles (CicLAvia) have hosted open streets events. The Open Streets Project describes several open streets models adaptable to local social, political, economic, and physical contexts.

[22] The Open Streets Guide
http://www.bikewalkalliance.org/storage/documents/reports/OpenStreetsGuide.pdf

Metro Open Streets Funding

Grant money is available from LA Metro for local communities like Glendale to host open streets initiatives; Metro has funded open streets events in nine cities and unincorporated LA County since 2014In their budget for FY 2015-16, Metro allocated $2 million for two years to fund additional open streets events in the region.

CicLAvia (Los Angeles)

Bicyclists take to the streets for a ride on a Los Angeles street temporarily closed to cars

Image from CicLAvia

Los Angeles' open streets initiative, CicLAvia, is organized by a nonprofit group by the same name, with support from the Mayor's office, Los Angeles County Bicycle Coalition, and Metro. CicLAvia launched in 2010 and in the years since has drawn more than a million people to explore hundreds of miles of open streets. The 2011 event was attended by nearly 100,000 people and cost approximately $325,000, 60 percent of which came from the City of Los Angeles and 40 percent from sponsors and donors. Due to permitting requirements, the event includes only transportation-related activities (walking, biking, jogging, rollerblading, skateboarding, etc.).

Beach Streets (Long Beach)

2016 Beach Streets in downtown Long Beach

Image from City of Long Beach

Beach Streets is characterized by an organizational coalition of nonprofits and the public; funding from a combination of private donations and public sources; a wide scope of supportive activities; and event locations in different parts of the city. The first Beach Streets event was held in 2015 and was funded largely by a $260,000 grant from Metro. The intention behind Beach Streets is to invite the public to consider using local transit to get around, explore local businesses, learn about healthy eating and recreation, and explore the city by walking or biking. Neighboring businesses are encouraged to participate. In addition to transportation-related outreach, activities include entertainment stages, food trucks, climbing walls, and community workouts.

EDUCATION AND ENCOURAGEMENT PROGRAMS IN GLENDALE

Creative public campaigns like No Ridiculous Car Trips, programs like Make Way for Play, and Open Streets events an bring visibility to important initiatives and encourage and support safe and healthy travel behavior. Metro funding for Open Streets events in the region presents an opportunity for Glendale to expand its Open Streets program or create a play streets program of its own and foster community involvement.

Outreach for Non-English Speaking or Low-English Proficiency Populations

In communities with high numbers of non-English speakers, tailored education and outreach efforts are required to reach these populations and share information about pedestrian safety, the value of walking, and pedestrian projects and programs. In the U.S., people for whom English is not the primary language typically travel more frequently on foot than native English speakers. Improving the ability of non-English speakers to travel safely by walking is essential to achieving an equitable transportation system. Translation of material and bilingual speakers are good ways to communicate with limited English proficiency (LEP) populations.

The following examples from Martin County, Florida, Seattle, and Santa Ana, California, provide examples of strategic outreach to limited English proficiency populations.

Martin County Bike/Ped Safety Action Plan (Martin County, FL)

The countywide Bicycle and Pedestrian Safety Action Plan was adopted in Martin County in 2016. While gathering public input to inform the plan, Martin County created targeted outreach materials for LEP population groups in specific neighborhoods. Educational and outreach materials were developed for the primary languages spoken in the area other than English (Mayan, Creole, and Spanish) and distributed through local faith-based organizations. Language barriers and demographics were found to be two of the contributing factors to bicycle and pedestrian crashes in the area. To address these factors, targeted outreach to vulnerable populations will be a key education and encouragement countermeasure going forward, in addition to a widespread general outreach campaign.

Link Light Rail Public Outreach (Seattle, WA)

Zap on Board!

When Link light rail began running from downtown Seattle to Sea-Tac Airport in 2009, Sound Transit recognized that pedestrian safety education was needed in conjunction with this new mode of transit in the city. The train runs at street level through Columbia City and Rainier Valley, two of Seattle's busiest, most diverse neighborhoods, and the protective fencing around the train is very low in many places. Sound Transit was particularly worried about children and teenagers being injured by trains, creating a three-pronged education and outreach strategy to encourage safe behavior. The program included a student film competition, a safety board game, and a public service announcement designed to appeal to teenagers.

A screenshot of student-made movies from the Zap on Board! campaign.

Image from teamsoapbox.com

The program was successful because it used several different techniques to appeal to youth of all ages and ethnicities. The "Stay Safe and Sound Student Film Competition" was geared towards teenagers, with student groups from five high schools submitting original entries to the contest. Participating students used their films to speak to their peers in ways that were serious, funny, artistic, and perceptive.

The public service announcement "Don't Become a Train Wreck" was designed to catch the interest of both adults and children and communicate important safety policies in a short amount of time. The video shows how easy it is be to be hit by a train if you're not paying attention, telling viewers: "Listen. Look. Live."

Finally, the "Zap on Board!" board game is directed toward a younger audience. The game features local destinations and schools. Players travel from school to school, teaching the eight rules of safety while avoiding the oncoming train. The eight rules are:

- Obey all signs
- Look both ways
- Use the crosswalk to go
- Push the button and stay
- Take your earphones out
- Put your cellphone away
- Don't lean over the rails
- Because tracks aren't for play

A screenshot of a typical Zap on Board! board game.
Image from teamsoapbox.com

Zap, the Link light rail mascot, high-fives riders.
Image from Sound Transit

By repeating the eight rules of safety during gameplay, participants learn how to avoid collisions in real life. The key to the board game is that it is easily understood by people of any age who speak any language, making it an excellent tool for reaching a population that has limited English proficiency. Training younger audiences to behave safely around public transit is a good way to reach their parents as well, as children can become the educators and translators at home. Over the course of the education initiative, over 8,000 board games were distributed. Sound Transit made presentations at all 40 schools in the region and led multiple community engagement efforts targeted at students.[23]

[23] Sound Transit Link Light Rail Program. "Stay Safe and Sound Around Link Light Rail" (2011). http://teamsoapbox.com/_storage/504e7831e9ee8.pdf

Accessible Mt. Baker

Accessible Mt. Baker is a study to identify access and safety improvements near Link light rail stations in Seattle's Mount Baker neighborhood. The neighborhood is home to many different cultural groups that are historically under-represented due to language or other barriers. As part of the Accessible Mt. Baker study, Seattle's Department of Transportation (SDOT) implemented a successful inclusive outreach and public engagement process. To engage with community groups, the outreach team researched demographics of the neighborhood and developed strategies to reach everyone in the community. Groups identified were: youth, East African language speakers, and East and Southeast Asian language speakers.

The Accessible Mt. Baker project utilized Public Outreach and Engagement Liaisons (POELs) in their outreach strategies. POELs are independent contractors who are available to assist city departments during culturally-specific outreach and engagement events. They are bilingual in a variety of languages and serve as a liaison between the community and the city. Specific outreach methods to bridge cultural differences included:

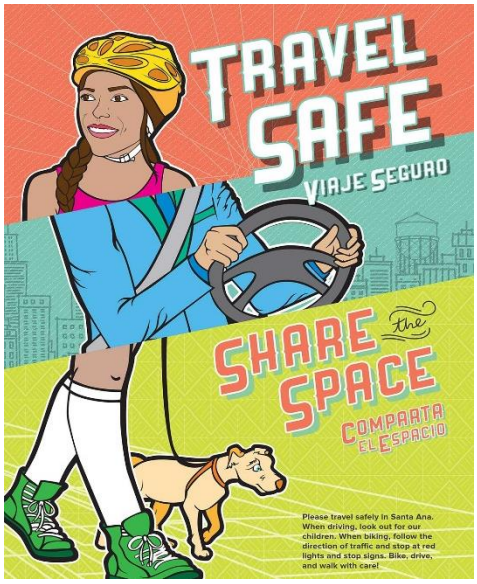
- Engaging with ethnic groups and organizations at workshops and meetings through a POEL appointed by the city as well as local community-based multicultural outreach specialists
- Making outreach specialists and community POELs available at community events

These events were successful in encouraging a total of 130 East and Southeast Asian community members and 56 East African community members to participate.

"Travel Safe, Share the Space" Campaign (Santa Ana, CA)

Santa Ana is launching a campaign in 2016 to improve pedestrian and bicycle safety in the city. One of the primary goals of the campaign is to educate pedestrians about how to cross a street safely and where to walk in high-conflict areas, where there is a greater chance of vehicle-bicycle or vehicle-pedestrian conflict. The city also wants to educate motorists about high-conflict areas and encourage awareness of bicyclists and pedestrians on city streets.

Messages were targeted to specific audience groups—including youth and young adults, bicyclists, motorists, pedestrians, and transit riders—through different tactics tailored to those groups. Campaign materials were created in English and Spanish to reflect the city's diverse identity.



Travel Safe / Viaje Seguro safety campaign messaging

Image from City of Santa Ana

LEP OUTREACH IN GLENDALE

Pedestrian safety outreach to Glendale's diverse communities is ongoing. Engagement efforts for Glendale's Safety Education Initiative have included focus groups with LEP members of the community, including Armenian and Spanish speakers. A pedestrian safety survey was translated into Armenian and Spanish and distributed at community events, through local organizations, and posted online. A TV interview with a City Council member and Glendale Police Department officer ran on USArmeniaTV to generate awareness for the survey. As part of the initiative, BE STREET SMART GLENDALE education and awareness materials will be distributed in English, Armenian, and Spanish to educate residents and visitors about safe behaviors when walking, biking, and driving in Glendale. Advertising also will be directed at Armenian-speaking seniors (a high-risk population) with print ads in a local Armenian-language newspaper.

The current efforts build on recommendations from Glendale's Pedestrian Safety Task Force, which identified outlets for engaging the LEP community on pedestrian safety issues:

- Local Armenian TV channels
- Churches
- Armenian National Committee - Glendale Chapter
- Incorporating educational materials into paperwork at health centers and hospitals
- Local businesses

As these examples show, there are a variety of tactics that can be used to reach target audiences. Individualized approaches or eye-catching and culturally relevant material at high impact locations can be effective. Moving forward, pedestrian safety education and outreach materials should be developed in languages native to Glendale's LEP populations. Materials should be highly visual to communicate graphically, using a few strategic words in English and other locally relevant languages such as Armenian and Spanish.

Enforcement

Prioritizing Locations and Behaviors (Chicago, IL)

The Chicago Department of Transportation (CDOT) and the Chicago Police Department are partnering to improve pedestrian safety through a series of crosswalk enforcement initiatives. The crosswalk awareness initiative involves an off-duty, plainclothes police officer posing as a pedestrian at a crosswalk. Motorists who fail to yield to the pedestrian are pulled over by a second police officer and issued a warning or a citation. Citations range from $50 to $500 for failure to stop for a pedestrian in a crosswalk. Enforcement locations are selected based on recent crash locations or proximity to sensitive areas such as schools, senior housing, or retail areas. The crosswalk enforcement schedule is posted online, and signs are posted at each location to inform the public of the enforcement activities. The CDOT website notes that the initiative is staffed by off-duty officers and therefore does not divert police resources.

Chicago's crosswalk enforcement signage

Image from City of Chicago

Safe Streets Boulder (Boulder, CO)

The first Safe Streets Boulder Report was published in 2012 and analyzed bicycle and pedestrian collision trends, locations, types, and behaviors from 2008 to 2011. The report identified collision types, the behaviors that cause them, and top collision locations. A follow-up report was published in 2016 with an expanded scope to include vehicle collisions along with a progress report of work implemented since the 2012 report. Observed trends will inform future goals and efforts to move toward Vision Zero in the city.

Example of collision trends tracking from 2016 Boulder Safe Streets Report (left); pedestrian crossing signal with flashing yellow lights in Boulder (right)

Images from City of Boulder

In 2012, crosswalks were the most common location for collisions involving pedestrians. In response to that finding, three pedestrian-safety amendments were added to the Boulder Revised Code:

- "Stop at crosswalk required" stipulates that when one vehicle stops to yield for a person in a crosswalk, another vehicle cannot overtake and pass that vehicle.
- "8 mph speed limit for bicycles in a crosswalk" establishes a speed limit for bicyclists during the immediate approach, entry, and traversal of any crosswalk that spans a roadway.
- "Pedestrian obedience to traffic signal required" targets the proper use of flashing crosswalks (those with yellow flashing lights)—pedestrians and bicyclists are required to activate the flashing lights at crosswalks, where available, before entering the road.

Penalties for violating the laws include a $50 fine for pedestrian disobedience to traffic signals, a $100 fine for speeding bicycles in crosswalks, and a $300 bond plus $125 fine for vehicles not stopping at a crosswalk.

These stricter regulations were coupled with an extensive crosswalk safety outreach and education campaign (see Programs section). Using data from the report, police now target enforcement activities at the most frequent collision locations. The Boulder Police Department and the Municipal Court are working together to monitor the effectiveness of alternative sentencing methods, such as restorative justice, for offenders of crosswalk-related ordinances. A restorative justice curriculum is in development that would provide an additional opportunity for pedestrian safety education.

Innovative Enforcement Strategies

"Get Out of Jail Free" Traffic Safety Operation (Long Beach, CA)

Get out of Long Beach Jail, Free traffic safety awareness materials

Images from Long Beach Post

In 2012, the Long Beach Police Department's Traffic Section conducted a pedestrian safety operation in areas with high volumes of pedestrian traffic. The campaign was a partnership between the city, Walk Long Beach (a collaborative group of city and community organizations), and City Fabrick (a nonprofit urban design group). The goal of the enforcement operation was to educate the public about the rules of the right-of-way. Instead of issuing citations, police gave a verbal warning and handed out Monopoly-themed educational materials with safety tips to both drivers and pedestrians violating the vehicle code.

Positive Reinforcement (Seattle, WA)

SDOT staff handing out educational materials and gift cards to reward good behavior

Image from Seattle Bike Blog

In 2012, a Seattle police officer decided to reward good behavior at pedestrian crossings—he handed out 34 gift cards in one hour to motorists and bicyclists who stopped to let people on foot

cross the street. Inspired by his actions, the City of Seattle has incorporated positive reinforcement in the city's Vision Zero initiative. After the initiative was launched in 2015, police officers, safety advocates, and Seattle Department of Transportation (SDOT) staff members distributed gift cards to promote safe driving, bicycling, and walking at several locations throughout the city, including an elementary school, a bridge crossing, and a protected bike lane. Rewards were given for stopping at the signal, properly using a turn signal, and dropping off kids in the designated school zones. SDOT staff and police officers also provided information about Vision Zero. Funding for the gift cards was provided by a state grant for pedestrian and bicyclist safety.

ENFORCEMENT IN GLENDALE

The Glendale Police Department has been involved with several enforcement efforts to improve pedestrian safety, including a "Driven to Distraction" campaign, specialized enforcement efforts targeting pedestrians, bicyclists, and drivers, and community traffic and pedestrian safety meetings and workshops.

Glendale can use a combination of data-driven and creative enforcement tactics to encourage safe behavior on its roads. Pedestrian safety can be strengthened through changes to city code as seen in Boulder. Any updates to the city code should be coupled with public education campaigns and targeted enforcement.

Dedicated Funding

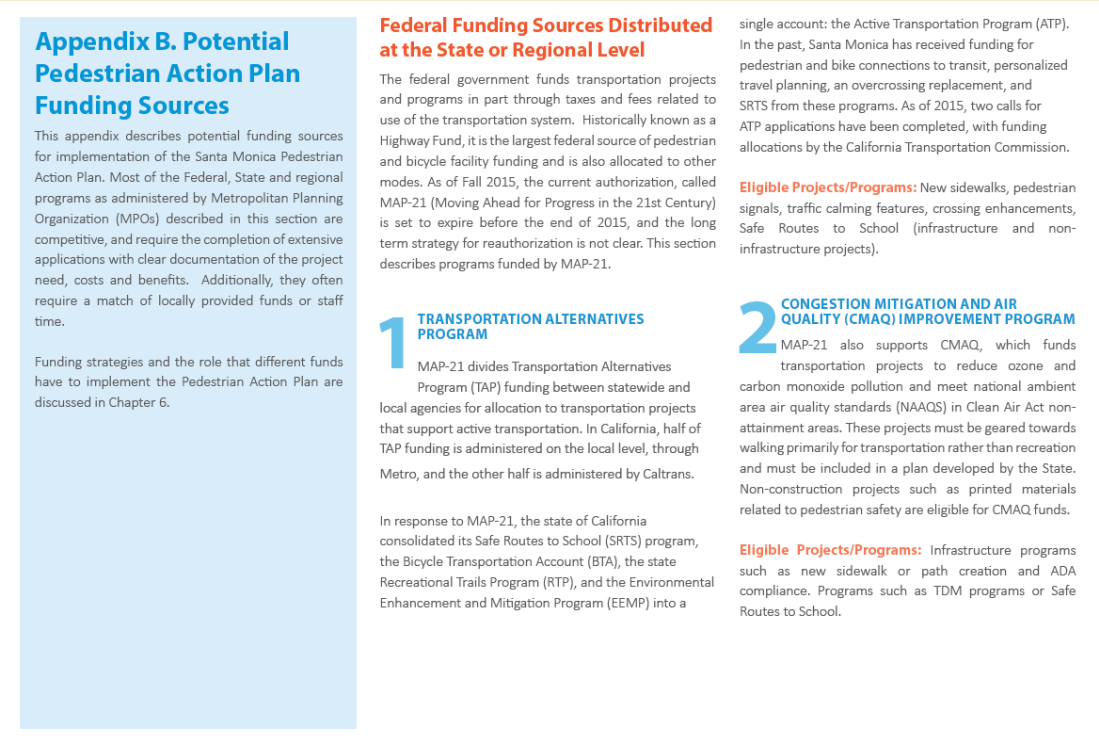
The project team interviewed Southern California cities to gain an understanding of the funding sources that are supporting pedestrian projects and programs in the area. This research revealed that jurisdictions largely use the same sources of funding, including dedicated revenues and competitive grant programs:

- **Active Transportation Program (ATP)** funds projects through the consolidation of existing federal and state transportation programs, including the Transportation Alternative Program (TAP), Bicycle Transportation Account (BTA), and the state's Safe Routes to School program (SR2S).
- **California Office of Traffic Safety (OTS) grants** are supported by federal funding and are used to establish new traffic safety programs and to expand or address deficiencies in ongoing programs.
- **Caltrans Sustainable Transportation Grant Program** provides grants for bicycle and pedestrian project planning and construction and requires a 20 percent local match.
- Highway Safety Improvement Program (HSIP) funds are nationally available for the purpose of reducing fatalities and serious injuries on public roads. In California, HSIP funds are managed by the Division of Local Assistance (DLA) and focus on projects that incorporate proven crash reduction factors.
- **State Highway Operations and Protection Program (SHOPP)** is a Caltrans-funded program with the purpose of maintaining the State Highway System; local jurisdictions have leveraged these funds to build bicycle and pedestrian facilities.

- **Measure R** provides funding for transportation projects in Los Angeles County using revenue generated from a half-cent sales tax, 15 percent of which is allocated for local return.
- Metro Call for Projects is a competitive process where Metro distributes discretionary capital transportation funds to regionally significant projects in eight modal categories, including pedestrian improvements. The funds are allocated by Metro through the Los Angeles County Transportation Improvement Program. Eligible projects include: sidewalk construction, extensions, and widening; curb ramps; enhanced pedestrian crossing features; landscaping; signage; lighting; and street furniture. Improvements must be for public use.
- **Proposition C** primarily funds transit-related projects in Los Angeles County using revenue generated from a half-cent sales tax. However, being that eligible projects include Transit Related Improvements to Streets and Highways, cities in the area have been able to apply funds toward pedestrian projects along transit corridors.
- **State Transportation Improvement Program (STIP)** funding mainly prioritizes capital improvement projects or safety and education programs that reduce auto trips and provide intermodal connections. In order to be eligible for funding, projects must be identified in either the Interregional Transportation Improvement Plan (prepared by Caltrans) or the Regional Transportation Improvement Plan. Programs are administered through Caltrans, the State Resources Agency, and regional planning agencies.
- **TIGER** is a federal discretionary grant program that supports multimodal capital investment projects that are otherwise difficult to fund with federal funding. Funding is limited and competitive.
- **Transportation Levy Initiatives** have been passed recently in Los Angeles County ($120 billion) and the City of Seattle ($930 million) to address growth, congestion, and safety-related issues. The Move Seattle transportation levy passed by voters in November 2015 is a nine-year transportation funding package paid by property taxes. The levy provides funding for street operations and maintenance as well as investments in the multimodal transportation system. Investment priorities articulated in the levy legislation addressed all modes of transportation, but provided dedicated funding for walking infrastructure, including citywide pedestrian infrastructure along and across the roadway, Vision Zero investments for walking, biking, and driving safety, and neighborhood transportation projects.
- **Transportation Impact Fees** have emerged as a way to finance transportation infrastructure by having a developer pay to mitigate the impact of development on nearby infrastructure. Due to legal challenges, there must be a clear nexus between the impact of the development and the fee, and fee charged must be proportional to the impact of the development. The City of Santa Monica adopted an ordinance in 2013 that establishes a Transportation Impact Fee for new development and intensified land uses. Funds can be used for transportation improvements such as new sidewalks, crosswalks, traffic signal upgrades, and transit or bicycle facilities.

DEDICATED FUNDING IN GLENDALE

Moving forward, the city should identify specific funding sources that can be applied to projects and programs identified in the Pedestrian Plan. Santa Monica provides a good example of this application in their Pedestrian Action Plan, which has a chapter devoted to funding sources that could be applied toward plan implementation and identifies the different types of programs they would support.



Appendix B. Potential Pedestrian Action Plan Funding Sources

This appendix describes potential funding sources for implementation of the Santa Monica Pedestrian Action Plan. Most of the Federal, State and regional programs as administered by Metropolitan Planning Organization (MPOs) described in this section are competitive, and require the completion of extensive applications with clear documentation of the project need, costs and benefits. Additionally, they often require a match of locally provided funds or staff time.

Funding strategies and the role that different funds have to implement the Pedestrian Action Plan are discussed in Chapter 6.

Federal Funding Sources Distributed at the State or Regional Level

The federal government funds transportation projects and programs in part through taxes and fees related to use of the transportation system. Historically known as a Highway Fund, it is the largest federal source of pedestrian and bicycle facility funding and is also allocated to other modes. As of Fall 2015, the current authorization, called MAP-21 (Moving Ahead for Progress in the 21st Century) is set to expire before the end of 2015, and the long term strategy for reauthorization is not clear. This section describes programs funded by MAP-21.

1 TRANSPORTATION ALTERNATIVES PROGRAM

MAP-21 divides Transportation Alternatives Program (TAP) funding between statewide and local agencies for allocation to transportation projects that support active transportation. In California, half of TAP funding is administered on the local level, through Metro, and the other half is administered by Caltrans.

In response to MAP-21, the state of California consolidated its Safe Routes to School (SRTS) program, the Bicycle Transportation Account (BTA), the state Recreational Trails Program (RTP), and the Environmental Enhancement and Mitigation Program (EEMP) into a single account: the Active Transportation Program (ATP). In the past, Santa Monica has received funding for pedestrian and bike connections to transit, personalized travel planning, an overcrossing replacement, and SRTS from these programs. As of 2015, two calls for ATP applications have been completed, with funding allocations by the California Transportation Commission.

Eligible Projects/Programs: New sidewalks, pedestrian signals, traffic calming features, crossing enhancements, Safe Routes to School (infrastructure and non-infrastructure projects).

2 CONGESTION MITIGATION AND AIR QUALITY (CMAQ) IMPROVEMENT PROGRAM

MAP-21 also supports CMAQ, which funds transportation projects to reduce ozone and carbon monoxide pollution and meet national ambient area air quality standards (NAAQS) in Clean Air Act non-attainment areas. These projects must be geared towards walking primarily for transportation rather than recreation and must be included in a plan developed by the State. Non-construction projects such as printed materials related to pedestrian safety are eligible for CMAQ funds.

Eligible Projects/Programs: Infrastructure programs such as new sidewalk or path creation and ADA compliance. Programs such as TDM programs or Safe Routes to School.

Funding sources and eligible projects and programs identified in the Santa Monica Pedestrian Action Plan

Funding opportunities for Glendale include allocation of some local returns from Proposition C and Measure R local returns and highway operational funds for pedestrian safety improvements or creation of a traffic impact fee.

Next Steps

The vision and goals will be refined following final Phase 1 outreach activities and in partnership with the new Pedestrian Safety Task Force.

Glendale Citywide Pedestrian Plan

Appendix A: Programs and Policies Summary Matrix

September 2016

glendale california | Glendale Walks & Safe Routes to School

NELSON NYGAARD

Figure A-1 Programs and Policies Summary Matrix

Plan/Policy/Program	Recommendation
Circulation Element of the General Plan	Discourage high speeds on residential streets through roadway design and traffic enforcement.
	Develop acceptable thresholds of traffic volume in residential zones based on environmental capacity.
	Meet special transportation needs of the physically challenged.
	Provide / maintain high quality streetscape and pedestrian amenities.
	Support enhancement of existing and creation of new pedestrian-oriented retail centers.
	Evaluate off-street parking standards for new development to determine if parking standards can be modified where transit service, bicycle facilities or pedestrian amenities are available in order to encourage transit uses, bicycling, or walking.
North Glendale Community Plan	Implement the Safe and Healthy Streets Plan, Bikeway Master Plan, Safe Routes to School and other multi-modal policies and programs.
	Support best practices in parking management.
	Support flexibility in local street improvements (i.e. sidewalks, lighting, access) to meet neighborhood needs.
	Designates Pedestrian Priority areas: Foothill Blvd west of Dunsmore Avenue ("Main Street") and Honolulu Avenue in Montrose.
South Glendale Community Plan (Draft)	Proposed designation of Pedestrian Priority Streets: Central Ave from Glenoaks to San Fernando Rd; Brand Blvd from Colorado Ave to north of Glenoaks Blvd; Broadway from San Fernando Rd to Verdugo Rd; Colorado Ave from San Fernando Rd to Glendale Fwy; Downtown Glendale and Tropico TOD.
Downtown Specific Plan (DSP)	Strategically encourage ground floor uses that will contribute to creation of primary and secondary pedestrian activity streets.
	New development should enhance pedestrian activity by improving the physical attractiveness of the street and providing places for relaxation, shopping, etc.
	Reuse of existing buildings - ground floor should be redesigned to attract and encourage pedestrian traffic and/or accommodate pedestrian uses.

Plan/Policy/Program	Recommendation
	Set-backs - There shall be a minimum average setback on the ground floor of 12 feet from the curb to the building frontage on public streets.
	Buildings should address the street in ways that reinforce pedestrian activity.
	Develop street typology based on functional and urban design considerations, emphasizing connectivity and linkages, pedestrian and cyclist safety and comfort, increasing transit movement and reducing total person delay, and compatibility with adjacent land uses.
	Cluster housing and employment around shared parking and major transit corridors and transfer nodes, connected by pedestrian streets.
	Emphasize diversifying modal choices, increasing number of downtown trips by transit, bicycle, and on foot, and improving pedestrian comfort and safety.
	Provide a high level of pedestrian amenities throughout downtown area. Minimize interruptions in sidewalks designated for pedestrian priority.
	Provide pedestrian crosswalks at all intersections and consider additional improvements to promote safety in key locations with high potential for pedestrian/vehicle conflicts.
	Consider special mobility requirements of the young, elderly, and wheelchair/mobility impaired people.
	Promote increased walking for downtown residents and visitors with expanded marketing, promotional/informational events, and financial incentives.
	Develop a new street classification for Pedestrian Priority Streets (aligned with Downtown Mobility Study).
Downtown Mobility Study	Street Typology - Each street should have a primary purpose (auto traffic, transit, pedestrian, bicycle) and should be designed to maximize efficiency and comfort of that mode.
	Improving pedestrian mobility and ensuring safe and fluid interface between pedestrians and other modes. Recommendations address: sidewalk conditions, intersection and crosswalk conditions, continuity and connectivity of the pedestrian network, and safety.
	Sidewalk Widths**:** Preserve and enhance current sidewalk widths. All Primary Pedestrian Streets should maintain a sidewalk width of at least 12-18 feet.

Plan/Policy/Program	Recommendation
	Use pedestrian and bicycle performance measures.
	Implement a multimodal transportation and parking wayfinding system.
	Create a pedestrian-friendly environment that is easily navigated by downtown residents, employees, and visitors (especially first-time visitors).
	Create a Downtown Transportation and Management District.
8 Points for Compass Blueprint	Create an urban growth boundary.
	Designation of street types to primarily serves autos, pedestrians, or transit.
	Revise level of service (LOS) criteria based on movement of people versus cars.
Safe and Healthy Streets Plan	Establish education and safety programs and partnerships to educate residents on how to safely walk and ride a bike.
	Establish pedestrian and bicyclist safety training programs in collaboration with all schools in Glendale.
	Establish a pedestrian and bicyclist safety training program through the Community Services & Parks Department.
	Work with the Glendale Police Department and the Los Angeles Superior Court system to establish a bicycle/pedestrian traffic school curriculum in lieu of other penalties for bicycle/pedestrian related traffic law violators.
	Educate motorists on how to correctly and safely interact with cyclists and pedestrians.
	Incorporate enhanced bicycle/pedestrian safety training into driving school and driver education programs in Glendale.
	Launch a motorist education campaign focused on speeding, aggressive behavior, and cell phone use.
	Publish and broadcast information regarding proper pedestrian and bicyclist safety and make this information readily available throughout the Glendale community.
	Provide free pedestrian and bicyclist maps, with safety information printed on back of the maps.
	Launch and maintain a City website with bicycle/pedestrian safety info, maps, and resources.

Plan/Policy/Program	Recommendation
	Formulate public/private partnerships for safety/education campaigns for cyclists, pedestrians, and drivers (public service announcements, brochures, events).
	Continue ongoing bicyclist and pedestrian education for City Staff through free or paid webinars.
	Establish programs and partnerships that will encourage the Glendale community to walk or ride a bike for recreation and transportation.
	Establish City-organized rides and walks, including those that may include periodic street closures.
	Adopt City-sponsored ongoing promotions (Bike to Work Day/Bike to Work Month, Car Free Fridays, Walking Wednesdays).
	Maintain and expand partnerships with all schools in Glendale to support/promote Safe Routes to School programs (International Walk to School Day, Bike to School Day, Walking School Buses, Bike Trains, Walking Wednesdays).
	Encourage citywide employee incentives for bicyclists and pedestrians.
	Improve bicyclist and pedestrian safety through targeted enforcement.
	Report all bicyclist, pedestrian and bike/ped-related automobile crashes resulting in injuries or worse, and report all lower severity crashes, whenever possible. Publish a regular report of bicyclist and pedestrian related crashes compiled from the Statewide Integrated Traffic Records System. Include potential improvement goals and strategies for the future.
	Continue to place a high priority on enforcement of motorist, bicyclist, and pedestrian violations that most frequently cause injuries and fatalities among bicyclists and pedestrians.
	Create a simple pocket guide of bicycle/pedestrian laws for Glendale.
	Use the National Highway Traffic Safety Administration videos “Enforcing Laws for Pedestrians” and “Enforcing Laws for Bicyclists.”
	Produce bicycle/pedestrian information/education videos for Police officers and for the public.
	Add ordinances or resolutions that improve safety for bicyclists and pedestrians.
	Pass a resolution supporting change of state law regarding speed surveys and 85th percentile.

Plan/Policy/Program	Recommendation
	Pass a resolution adopting provisions of AB 321 to lower speed limits near schools.
	Maintain and update design standards that reduce vehicular speeds.
	Maintain and update traffic calming measures in the Glendale Traffic Calming Program.
	Incorporate best practices in pedestrian and bicycle facility design.
	Strive to implement detailed pedestrian and bicyclist design guidelines, derived from FHWA pedestrian and bicyclist safety guidelines, that exceed minimum state and federal standards, and to be incorporated into the Bikeway Master Plan, Safe Routes to School Plan, and other pedestrian or bicyclist related documents.
	Continue with implementation of mobility standards that encourage walking, biking, and transit use.
	Incorporate pedestrian and bicyclist project review into all capital improvement projects. Continue referring to the Bikeway Master Plan and FHWA Pedestrian Safety Guidelines for all Capital Improvement projects.
	Pursue inexpensive and experimental pilot projects for pedestrians and bicyclists that can be made permanent whenever a pilot project is successful or dropped when it is not.
	Adopt a Complete Streets Policy and design standards in accordance with the California Complete Streets Act of 2008 so that transportation improvements in the City of Glendale will accommodate all modes of transportation.
	Create land use policies that encourage biking and walking.
	Establish regular updates to City policies and documents related to bicyclists and pedestrians.
	Recommend that current and future pedestrian and bicyclist related policies and policy documents such as the Bikeway Master Plan and the Safe and Healthy Streets Plan be updated regularly with specific timelines and measurable goals.
	Establish regular, on-going evaluation and monitoring of engineering projects.
	Incorporate pedestrian/bicyclist project implementation in the regular review of Capital Improvement Projects.
	Create an official [Transportation and Parking Commission] Pedestrian and Bicyclist Advisory Committee and a Pedestrian and Bicyclist Technical Advisory Team dedicated to the review and implementation of Pedestrian and Bicycle policies.

Plan/Policy/Program	Recommendation
	Officially create a Pedestrian and Bicyclist Technical Advisory Team composed of City Staff to evaluate pedestrian and bicycle policies.
	Create a [Transportation and Parking Commission] Pedestrian and Bicyclist Advisory Committee composed of representatives from the Transportation and Parking Commission, Planning Commission, Parks Commission and Glendale Residents.
	City Pedestrian and Bicyclist Technical Advisory Team to conduct regularly scheduled updates to the [Transportation and Parking Commission] Pedestrian and Bicyclist Advisory Committee on the implementation of pedestrian and bicycle policies and the Safe and Healthy Streets Plan.
	Assess pedestrian/bicycle programs, events and infrastructure improvements as recommended by the Safe and Healthy Streets Plan.
	Conduct regular bicycle/pedestrian counts in September.
	Conduct a review of pedestrian/bicycle collision reports on a regular basis. Establish safety goals.
	Adopt performance measures and benchmarks for the implementation of education, encouragement and enforcement programs.
	Support and coordinate with outside agencies and consultants to assist the City in evaluation programs.
	Support alternatives for measuring level-of-service.
	Once a framework has been established funding and implementing pedestrian and bicyclist policies, programs, and infrastructure, seek promotional opportunities.
	Apply for a Walk Friendly Community Designation.
	Allocate City Staff to coordinate and to implement pedestrian and bicyclist policies, programs, and facilities.
	Expand staff resources from various City departments to incorporate pedestrian and bicyclist programs, policies and infrastructure to City transportation projects currently in progress.
	Allocate City Staff to incorporate pedestrian and bicyclist programs, policies and infrastructure to future and unfunded City transportation projects.

Plan/Policy/Program	Recommendation
	Recommend a percentage of transportation dollars allocated to the City of Glendale to be spent on pedestrian and bicyclist related projects.
	Establish a Pedestrian and Bicyclist Technical Advisory Team consisting of City Staff to coordinate all Pedestrian and Bicyclist Programs for the City of Glendale.
	Support to fund a currently vacant City staff position that directly contributes to pedestrian and bicyclist programs, including traffic safety and calming programs.
	Create organizations and work with existing organizations that will assist in the implementation of pedestrian and bicyclist policies, programs and facilities.
	Establish a [Transportation and Parking Commission] Pedestrian and Bicyclist Advisory Committee for the city.
	Receive assistance from consultants and not-for-profit organizations to fund positions or programs that directly benefit pedestrians and bicyclists in the City of Glendale.
	Create a Pedestrian and Bicyclist Coordinator position to be the primary point of contact for the Pedestrian and Bicyclist Technical Advisory Team and the [Transportation and Parking Commission] Pedestrian and Bicyclist Advisory Committee.
	Continue to identify and pursue funding sources for the purpose of implementing pedestrian and bicycle projects and programs, including those recommended in the Safe and Healthy Streets Plan.
	Adopt a resolution allocating a portion of Glendale Measure R local return funds for bicyclist and pedestrian projects.
Greener Glendale Plan	Facilitate the provision of alternative transportation infrastructure.
	Incentivize community provision and funding of transit and bicycle, pedestrian, and multimodal infrastructure.
	Adopt a comprehensive parking policy to encourage the use of carpooling and alternative modes of transportation.
2013 Bicycle and Pedestrian Report	Conduct pedestrian counts every two years.
	Utilize count and collision data to prioritize projects, programs, grants.
	Supplement count and collision data with other data sources.

Plan/Policy/Program	Recommendation
Pedestrian Safety Advisory Task Force Recommendations	Amend high-visibility crosswalk policy. Current Public Works policy limits placement of high-visibility ladder crosswalks to areas within and adjacent to school zones and uncontrolled crosswalks.
	Establish/clarify prioritization process for restriping crosswalks.
	Stripe additional advance yield lines and restripe faded advance yield lines citywide.
	Make spot improvements.
	Develop public prioritization process for implementation of bulb-outs, leading pedestrian intervals, and pedestrian scrambles.
	Implement and finalize the draft Pedestrian Safety Action Plan.
	Implement speed feedback signs citywide
	Improve public request process for mobile Glendale Police Department warning signs.
	Support existing hotspot enforcement and pursue ongoing funding
	Explore the feasibility of administrative tickets for pedestrian safety violations.
	Increase reach of enforcement efforts through media.
	Allocate/secure funding to develop suite of professionally designed educational materials.
	Establish a pilot area for intensive pedestrian safety education campaign.
	Cultivate community partnerships and engage local businesses to broadcast pedestrian education messages (include [Glendale Unified School District] and [Glendale Community College]).
California State AB 321	Vehicles: prima facie speed limits: schools
California State AB 529	Speed Limit: downward speed zoning

Glendale Citywide Pedestrian Plan

Appendix B: Pedestrian Count Locations and Volumes

September 2016

glendale california | Glendale Walks & Safe Routes to School

NELSON NYGAARD

Figure B-1 Count Locations and Volumes

Screen-line	Nearest Intersection	On Street	Between	Weekday AM Volume	Weekday PM Volume	Weekend Volume	Total Volume	Wheelchair/ Special Needs	Skateboard/ Scooter/ Skates	Children
767	Brand & Broadway	N Brand Blvd	E Wilson Ave & E Broadway	405	1062	682	2,149	1	2	14
774	Brand & Broadway	E Broadway	S Brand Blvd & N Maryland Ave	231	484	477	1,192	2	0	21
768	Brand & Chevy Chase	S Brand Blvd	W Acacia Ave & W Chevy Chase Dr	101	118	159	378	1	0	8
790	Brand & Chevy Chase	E Chevy Chase Dr	S Brand Blvd & S Glendale Ave	123	83	112	318	0	0	4
769	Brand & Harvard	S Brand Blvd	W Broadway & E Harvard St	230	1,645	1,204	3,079	1	4	38
773	Brand & Harvard	S Brand Blvd	E Harvard St & Caruso Ave	284	1,332	892	2,508	1	0	24
788	Brand & Harvard	E Harvard St	S Brand Blvd & S Maryland Ave	89	397	291	777	2	3	0
811	Broadway & Chevy Chase	E Broadway	N Chevy Chase Dr & Olive St	199	138	65	402	1	0	2
822	Broadway & Chevy Chase	S Chevy Chase Dr	E Broadway & Carlton Dr	219	129	110	458	2	1	3
775	Broadway & Maynard	E Broadway	Sinclair Ave & Maynard St	116	68	46	230	0	0	4
805	California & Columbus	N Columbus Ave	W California Ave & Salem St	115	105	117	337	3	0	4
827	California & Columbus	W California Ave	N Columbus Ave & N Central Ave	56	83	79	218	3	0	0
806	California & Orange	N Orange St	W Lexington Dr & W California Ave	75	107	207	389	0	0	16
830	California & Orange	W California Ave	N Orange St & N Brand Blvd	96	275	265	636	1	0	6
700	Central & Americana Way	Americana Way	N Central Ave & S Brand Blvd	168	2805	2254	5,227	1	1	133

Screen-line	Nearest Intersection	On Street	Between	Weekday AM Volume	Weekday PM Volume	Weekend Volume	Total Volume	Wheelchair/ Special Needs	Skateboard/ Scooter/ Skates	Children
779	Central & Americana Way	N Central Ave	W Broadway & Americana Way	127	750	662	1539	0	4	29
789	Central & Stocker	N Central Ave	W Stocker St & W Dryden St	106	201	195	502	1	1	0
796	Central & Stocker	W Stocker St	N Central Ave & N Brand Blvd	59	128	132	319	1	0	3
808	Central & Wilson	N Central Ave	W Wilson Ave & W Broadway	81	140	138	359	0	0	2
829	Central & Wilson	W Wilson Ave	N Central Ave & N Orange St	47	127	82	256	0	0	3
794	Colorado & Lincoln	Colorado Blvd	W Campus St & Lincoln Ave	54	108	75	237	0	1	0
716	Columbus & Riverdale	Riverdale Dr	S Pacific Ave & S Columbus Ave	141	124	99	364	0	2	9
795	Columbus & Riverdale	S Columbus Ave	Riverdale Ave & W Maple St	74	76	60	210	2	1	6
809	Columbus & Wilson	N Columbus Ave	W Wilson Ave & W Broadway	67	130	144	341	3	0	19
828	Columbus & Wilson	W Wilson Ave	N Columbus Ave & N Central Ave	46	72	101	219	0	0	18
761	Concord & Doran	Concord St	Fairmont Ave & W Doran St	34	35	14	83	1	0	0
770	Concord & Doran	W Doran St	State St & Concord St	14	8	17	39	0	1	4
713	Concord & Glenwood (HS)	Concord St	Glenwood Rd & W Stocker St	481	470	55	1,006	0	0	21
714	Concord & Glenwood (HS)	Glenwood Rd	Concord St & School St	517	315	56	888	1	1	16
803	Doran & Columbus	N Columbus Ave	W Doran St & W Doran St	151	190	138	479	1	0	0
825	Doran & Columbus	W Doran St	N Pacific Ave & N Columbus Ave	267	162	96	525	0	1	3

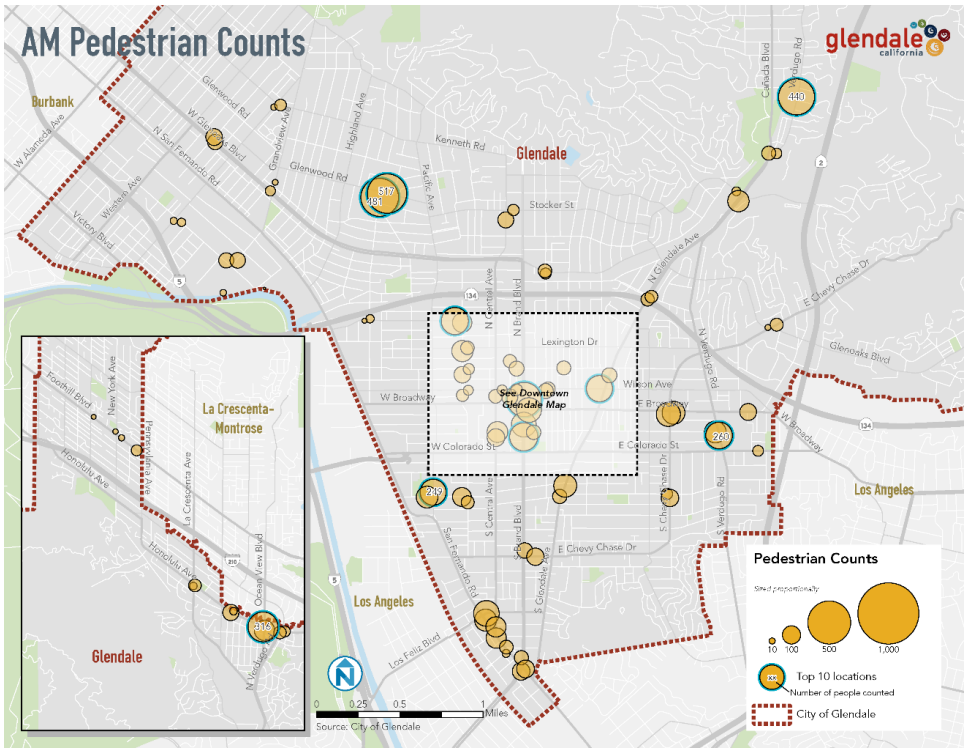
Screen-line	Nearest Intersection	On Street	Between	Weekday AM Volume	Weekday PM Volume	Weekend Volume	Total Volume	Wheelchair/ Special Needs	Skateboard/ Scooter/ Skates	Children
771	Fairmont & Flower	Fairmont Ave	Flower St & Air Way	4	2	3	9	0	0	0
718	Flower & Sonora	Sonora Ave	Lake St & Flower St	26	32	18	76	1	0	0
772	Flower & Sonora	Flower St	Sonora Ave & Davis Ave	34	28	7	69	0	0	0
818	Foothill & Dunsmore	Foothill Blvd	Dunsmore Ave & Willalee Ave	13	5	25	43	0	0	0
799	Foothill & New York	Foothill Blvd	New York Ave & Maryland Ave	20	14	18	52	0	1	1
819	Foothill & New York	New York Ave	Thelma St & Foothill Blvd	16	16	11	43	0	0	0
797	Foothill & Pennsylvania	Foothill Blvd	Maryland Ave & Pennsylvania Ave	55	101	74	230	0	0	4
710	Glendale & Maple	E Maple St	S Louise St & S Glendale Ave	88	84	63	235	1	0	0
781	Glendale & Maple	S Glendale Ave	E Chestnut St & E Maple St	202	169	114	485	3	1	1
810	Glendale & Monterey	N Glendale Ave	Monterey Rd & Ventura Fwy On Ramp	76	50	22	148	0	0	0
821	Glendale & Monterey	Monterey Rd	N Glendale Ave & N Adams St	71	56	19	146	0	0	0
745	Glendale & Wilson	E Wilson Ave	N Isabel St & N Glendale Ave	252	224	199	675	0	0	3
782	Glendale & Wilson	N Glendale Ave	E Wilson Ave & E California Ave	95	213	165	473	0	0	1
783	Glendale Riverwalk Bicycle Path	Glendale Riverwalk Bike Path	Riverside Dr & Golden State Fwy	22	18	64	104	0	2	0
784	Glenoaks & Chevy Chase	E Glenoaks Blvd	Lynglen Dr & E Chevy Chase Dr	19	19	20	58	0	0	0
791	Glenoaks & Chevy Chase	E Chevy Chase Dr	E Glenoaks Blvd & Glenmore Blvd	73	66	48	187	1	0	2

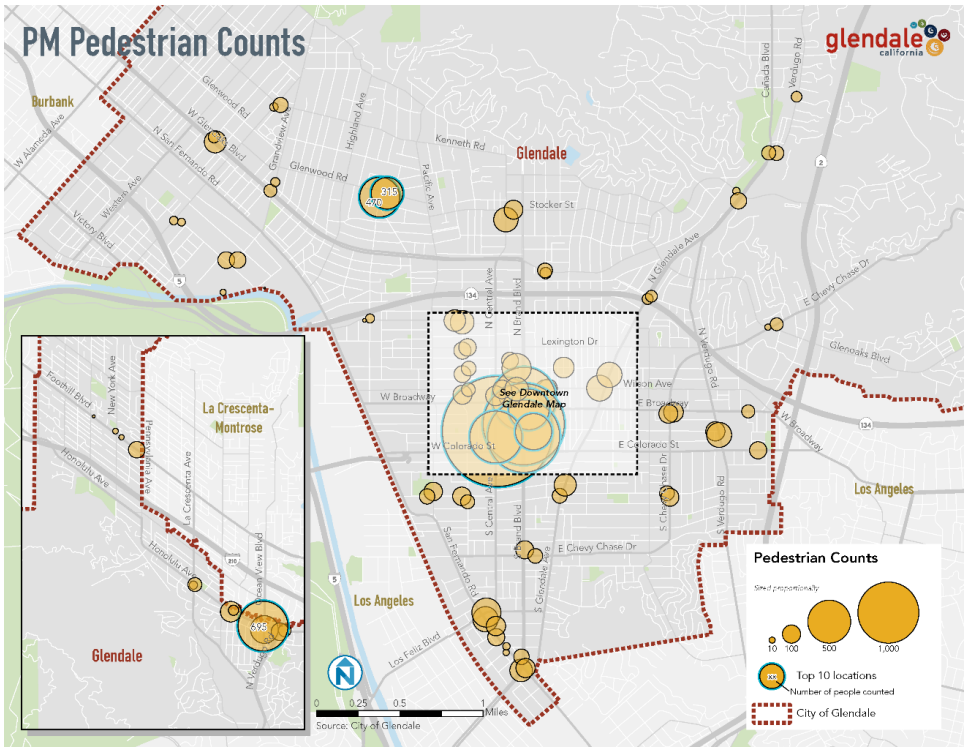
Screen-line	Nearest Intersection	On Street	Between	Weekday AM Volume	Weekday PM Volume	Weekend Volume	Total Volume	Wheelchair/ Special Needs	Skateboard/ Scooter/ Skates	Children
786	Glenoaks & Grandview	W Glenoaks Blvd	Willard Ave & Grandview Ave	48	65	136	249	1	0	6
787	Glenoaks & Grandview	Grandview Ave	Glenwood Rd & W Glenoaks Blvd	18	36	20	74	0	0	1
801	Glenoaks & Justin	W Glenoaks Blvd	Justin Ave & Ruberta Ave	99	167	152	418	2	0	5
823	Glenoaks & Justin	Justin Ave	W Glenoaks Blvd & 5th St	115	55	39	209	0	0	1
742	Glenoaks & Louise	N Louise St	E Glenoaks Blvd & Monterey Rd	56	53	50	159	1	0	0
785	Glenoaks & Louise	E Glenoaks Blvd	N Brand Blvd & N Louise St	79	84	37	200	0	0	0
802	Grandview & Flower	Flower St	Circle 7 Dr & Grandview Ave	96	104	2	202	0	0	0
824	Grandview & Flower	Grandview Ave	Grand Central Ave & Flower St	101	102	5	208	0	0	0
737	Honolulu & La Crescenta	La Crescenta Ave	Honolulu Ave & Sycamore Ave	28	30	25	83	0	0	1
792	Honolulu & La Crescenta	Honolulu Ave	La Crescenta Ave & Pleasure Way	71	76	75	222	0	0	3
712	Honolulu & Ocean View	Ocean View Blvd	Honolulu Ave & Broadview Dr	162	250	278	690	0	0	9
734	Honolulu & Ocean View	Honolulu Ave	Wickham Way & Ocean View Blvd	316	695	587	1,598	0	0	30
800	Honolulu & Sunset	Honolulu Ave	Rosemont Ave & Sunset Ave	109	150	129	388	0	0	2
820	Honolulu & Sunset	Sunset Ave	Hermosa Ave & Honolulu Ave	29	43	37	109	0	1	1
720	Honolulu & Verdugo	Verdugo Blvd	Montrose Ave & Park Pl	56	62	79	197	2	0	1

Screen-line	Nearest Intersection	On Street	Between	Weekday AM Volume	Weekday PM Volume	Weekend Volume	Total Volume	Wheelchair/ Special Needs	Skateboard/ Scooter/ Skates	Children
724	Honolulu & Verdugo	N Verdugo Rd	Honolulu Ave & Broadview Dr	70	113	81	264	1	1	5
777	Jackson & California	E California Ave	N Kenwood St & N Jackson St	85	153	112	350	2	1	4
719	Kenneth & Sonora	Sonora Ave	Glenwood Rd & W Kenneth Rd	21	31	15	67	1	0	0
736	Kenneth & Sonora	W Kenneth Rd	Sonora Ave & Grandview Ave	62	87	143	292	0	0	10
804	Lexington & Columbus	N Columbus Ave	W Lexington Dr & Myrtle St	177	110	84	371	0	0	3
826	Lexington & Columbus	W Lexington Dr	N Columbus Ave & N Central Ave	79	112	48	239	0	0	0
733	Louise & Wilson	E Wilson Ave	N Louise St & N Kenwood St	85	125	190	400	0	2	14
743	Louise & Wilson	N Louise St	E Wilson Ave & E Broadway	97	162	181	440	2	0	20
744	Maple & Chevy Chase	E Maple St	S Adams St & S Chevy Chase Dr	57	83	62	202	0	1	4
793	Maple & Chevy Chase	S Chevy Chase Dr	E Maple St & Raleigh St	124	116	96	336	0	0	5
807	Orange & Wilson	N Orange St	W Wilson Ave & W Broadway	109	166	76	351	0	0	2
831	Orange & Wilson	W Wilson Ave	N Orange St & N Brand Blvd	60	189	164	413	0	0	7
812	Riverdale & Pacific	S Pacific Ave	Vine St & Riverdale Dr	249	124	125	498	0	0	7
832	Riverdale & Pacific	Riverdale Dr	San Fernando Rd & S Pacific Ave	182	89	107	378	0	0	9
813	San Fernando & Brand	S Brand Blvd	San Fernando Rd & Vassar St	127	176	100	403	0	0	7
834	San Fernando & Brand	S Brand Blvd	W Cerritos Ave & San Fernando Rd	86	91	111	288	0	1	1
835	San Fernando & Brand	San Fernando Rd	S Brand Blvd & S Glendale Ave	129	133	104	366	1	0	0

Screen-line	Nearest Intersection	On Street	Between	Weekday AM Volume	Weekday PM Volume	Weekend Volume	Total Volume	Wheelchair/ Special Needs	Skateboard/ Scooter/ Skates	Children
815	San Fernando & Central	San Fernando Rd	S Central Ave & El Bonito Ave	162	108	103	373	0	2	2
816	San Fernando & Central	S Central Ave	W Laurel St & San Fernando Rd	161	134	118	413	1	0	2
814	San Fernando & Cerritos	W Cerritos Ave	San Fernando Rd & Gardena Ave	32	19	38	89	0	0	4
833	San Fernando & Cerritos	San Fernando Rd	El Bonito Ave & W Cerritos Ave	82	25	66	173	0	0	0
717	San Fernando & Los Feliz	San Fernando Rd	W Los Feliz Rd & S Central Ave	185	212	164	561	1	0	8
741	San Fernando & Los Feliz	W Los Feliz Rd	San Fernando Rd & S Central Ave	244	275	247	766	0	4	3
738	Verdugo & Harvard	E Harvard St	S Chevy Chase Dr & S Verdugo Rd	181	132	66	379	0	0	7
739	Verdugo & Harvard	S Verdugo Rd	E Harvard St & Orange Grove Ave	260	210	210	680	2	5	70
711	Verdugo & Mountain	E Mountain St	Royal Blvd & N Verdugo Rd	38	25	16	79	0	0	0
732	Verdugo & Mountain	N Verdugo Rd	E Mountains St & Cll Vaquero	176	100	37	313	0	2	0
817	Verdugo & Sherer	N Verdugo Rd	Crestmont Ct & Sherer Ln	440	47	52	539	0	0	3
722	Verdugo/Cadada/ Towne	N Verdugo Rd	Campus Way & Towne Ave	53	83	40	176	0	0	0
778	Verdugo/Cadada/ Towne	Canada Blvd	Towne Ave & N Verdugo Rd	84	77	21	182	0	0	0

Figure B-2 Observed Volumes by Period (Citywide)





Weekend counts shown on next page.

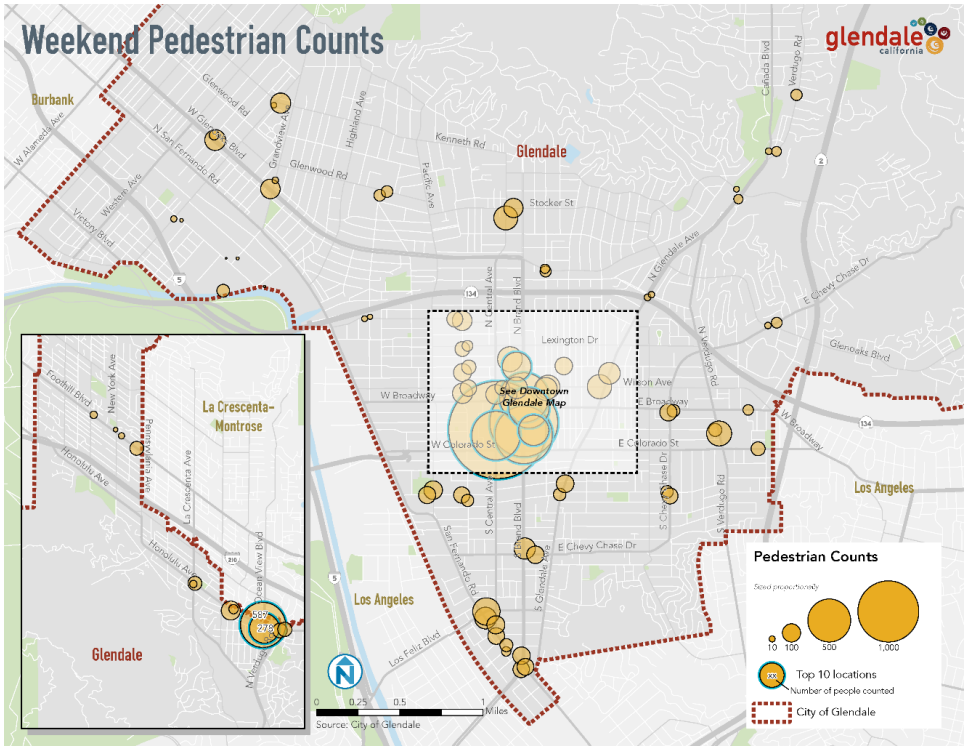
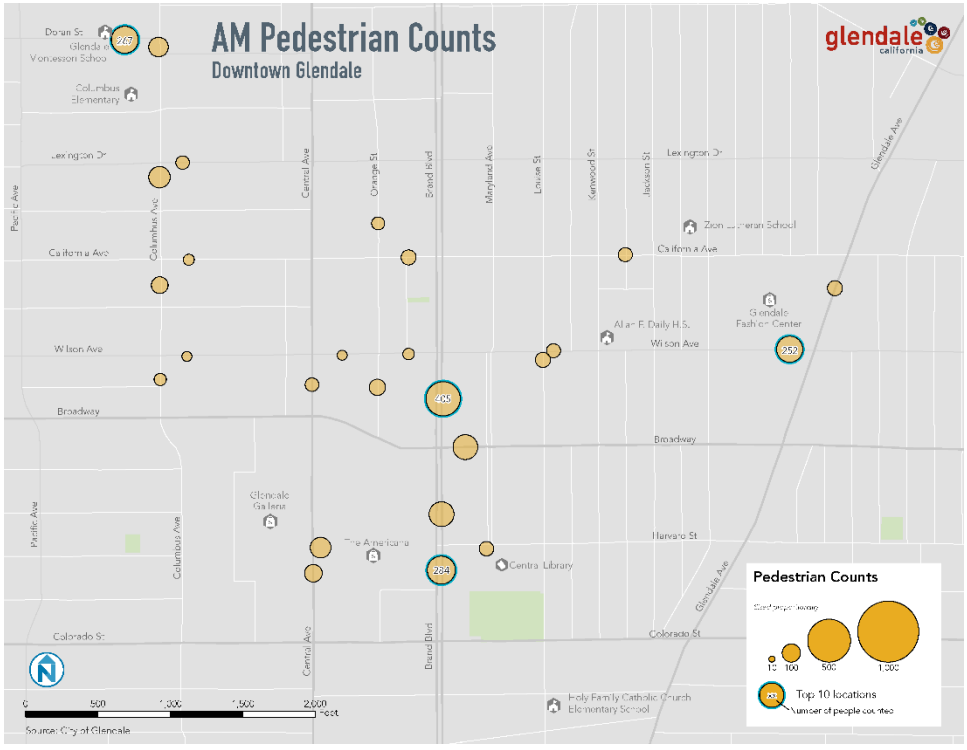
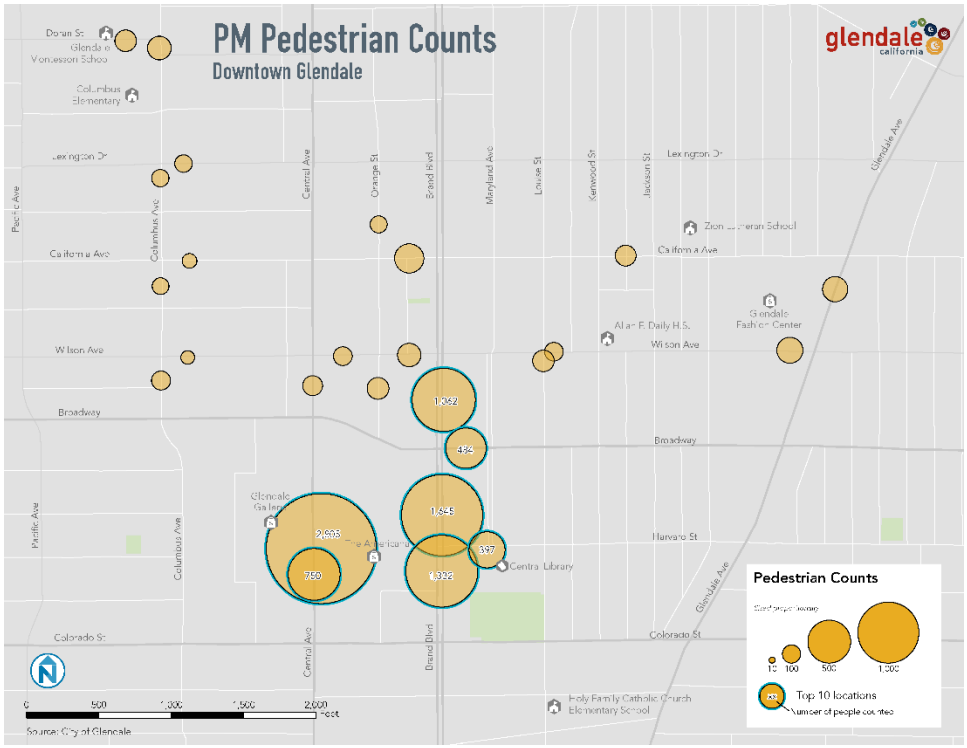


Figure B-3 Observed Volumes by Period (Downtown)



PM and weekend counts shown on next page.


PM Pedestrian Counts
Downtown Glendale
glendale california
Broadway
Wilson Ave
California Ave
Lexington Dr
Colorado St
Harvard St
Central Library
Glendale Fashion Center
Alex E. Daily H.S.
Columbus Elementary
Holy Family Catholic Church Elementary School
1,362
474
1,645
2,933
750
1,322
397
Pedestrian Counts
Top 10 locations
Number of people counted
Source: City of Glendale

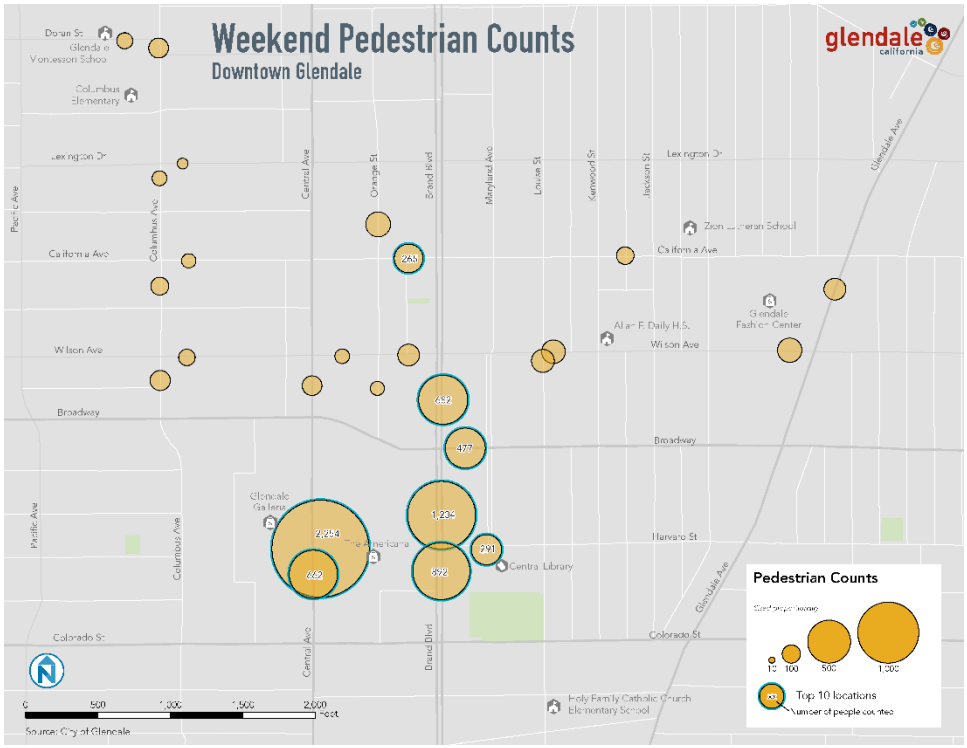

Weekend Pedestrian Counts
Downtown Glendale
glendale california
Broadway
Wilson Ave
California Ave
Lexington Dr
Colorado St
Harvard St
Central Library
Glendale Fashion Center
Alex E. Daily H.S.
Columbus Elementary
Holy Family Catholic Church Elementary School
265
492
477
1,234
2,234
662
291
892
Pedestrian Counts
Top 10 locations
Number of people counted
Source: City of Glendale

Figure B-4 Changes in Pedestrian Activity by Volume (2013 – 2016)

Screenline	Nearest Intersection	Total Volume (2013)	Total Volume (2016)	Change (#)	Change (%)
774	Brand & Broadway	1,192	599	593	99%
767	Brand & Broadway	2,149	1,638	511	31%
790	Brand & Chevy Chase	318	296	22	7%
768	Brand & Chevy Chase	378	369	9	2%
769	Brand & Harvard	3,079	1,997	1,082	54%
773	Brand & Harvard	2,508	1,438	1,070	74%
788	Brand & Harvard	777	721	56	8%
775	Broadway & Maynard	230	216	14	6%
700	Central & Americana Way	5,227	3,091	2,136	69%
779	Central & Americana Way	1,539	584	955	164%
789	Central & Stocker	502	351	151	43%
796	Central & Stocker	319	320	-1	0%
794	Colorado & Lincoln	237	366	-129	-35%
795	Columbus & Riverdale	210	319	-109	-34%
716	Columbus & Riverdale	364	481	-117	-24%
761	Concord & Doran	83	67	16	24%
770	Concord & Doran	39	80	-41	-51%
714	Concord & Glenwood (HS)	888	343	545	159%
713	Concord & Glenwood (HS)	1,006	577	429	74%
771	Fairmont & Flower	9	31	-22	-71%
718	Flower & Sonora	76	59	17	29%
772	Flower & Sonora	69	114	-45	-39%
797	Foothill & Pennsylvania	230	111	119	107%
710	Glendale & Maple	235	252	-17	-7%
781	Glendale & Maple	485	614	-129	-21%
745	Glendale & Wilson	675	389	286	74%
782	Glendale & Wilson	473	777	-304	-39%
783	Glendale Riverwalk Bicycle Path	104	112	-8	-7%

791	Glenoaks & Chevy Chase	187	128	59	46%
784	Glenoaks & Chevy Chase	58	104	-46	-44%
786	Glenoaks & Grandview	249	152	97	64%
787	Glenoaks & Grandview	74	64	10	16%
742	Glenoaks & Louise	159	114	45	39%
785	Glenoaks & Louise	200	176	24	14%
792	Honolulu & La Crescenta	222	164	58	35%
737	Honolulu & La Crescenta	83	67	16	24%
734	Honolulu & Ocean View	1598	1,271	327	26%
712	Honolulu & Ocean View	690	555	135	24%
724	Honolulu & Verdugo	264	161	103	64%
720	Honolulu & Verdugo	197	169	28	17%
777	Jackson & California	350	385	-35	-9%
719	Kenneth & Sonora	67	68	-1	-1%
736	Kenneth & Sonora	292	344	-52	-15%
743	Louise & Wilson	440	323	117	36%
733	Louise & Wilson	400	402	-2	0%
744	Maple & Chevy Chase	202	178	24	13%
793	Maple & Chevy Chase	336	359	-23	-6%
741	San Fernando & Los Feliz	766	349	417	119%
717	San Fernando & Los Feliz	561	381	180	47%
739	Verdugo & Harvard	680	596	84	14%
738	Verdugo & Harvard	379	303	76	25%
732	Verdugo & Mountain	313	447	-134	-30%
711	Verdugo & Mountain	79	428	-349	-82%
722	Verdugo/Cadada/Towne	176	262	-86	-33%
778	Verdugo/Cadada/Towne	182	280	-98	-35%

Glendale Citywide Pedestrian Plan

Appendix C: Methodology

September 2016

glendale california | Glendale Walks & Safe Routes to School

NELSON NYGAARD

Walking Comfort

The criteria and scoring used in the Walking Comfort analysis are described in Figure C-1. The maps illustrating the results are found in Chapter 3 of this report.

Figure C-1 Walking Comfort Scoring

Criteria	Score
A. Posted Speed	
<=25 mph	15
30 – 35 mph	9
>35 mph	3
B. Number of Travel Lanes	
2 lanes	10
3-4 lanes	6
5+ lanes	2
C. Traffic Volume	
5,000 or less	10
5,001 to 10,000	8
10,001 to 20,000	6
20,001 to 30,000	4
30,001 or greater	2
D. Spacing of Streetlights	
<= 125 feet	5
126 – 150 feet	4
151 – 175 feet	3
176 – 200 feet	2
>200 feet	1
No streetlights	0
E. Presence of Sidewalks	
Sidewalk present	20
No sidewalk	0
Scores range from 7 to 60	

Pedestrian Demand

The criteria and scoring used in the Pedestrian Demand analysis are described in Figure C-2. For each area, the scoring considered the value of each demand criteria as well as its proximity. Higher scores were given to areas within shorter distances of the various destinations (e.g., parks, schools), areas with higher population and employment densities, and to transit stops with higher ridership. The scores for transit ridership and proximity to the Civic Center and Courthouse received the highest weighting to account for their greater likelihood to generate walking trips. The maps illustrating the results are found in the body of this report.

Figure C-2 Pedestrian Demand Scoring

Criteria	Weight Factor
Transit Ridership (Beeline 2013 and Metro 2015)	3
Proximity to Civic Center and Courthouse	3
Population Density (2014)	2
Employment Density (2014)	2
Proximity to Schools	2
Proximity to the Americana	2
Proximity to Mixed Use Land Uses	2
Proximity to Colleges	2
Proximity to Parks	1
Proximity to Hospitals	1
Proximity to Commercial or Retail Land Uses	1
Scores ranges from 18 (low score) to 130	

Ease of Crossing

The criteria and scoring used in the Ease of Crossing analysis are described in Figure C-3. The maps illustrating the results are found in the body of this report.

Figure C-3 Ease of Crossing Scoring

Criteria		Score
A. Roadway Characteristics		
A1. Posted speed		
<=25 mph		40
30 – 35 mph		20
>35 mph		10
A2. Roadway width / Number of lanes		
2 lanes		40
3-4 lanes		20
5+ lanes		10
B. Intersection Type		
B.1 Distance between signalized intersection		
Within 300 feet from signalized intersection		50
More than 300 feet	**B2. Intersection Density**	
	25+ per mile	20
	10-25 per mile	10
	<10 per mile	0
Scores ranges from 20 (low score) to 100+		

Health Analysis

The criteria and scoring used in health analysis are shown in Figure C-4. The maps illustrating the results are found in the body of this report.

Figure C-4 Health Scoring

Criteria	Score
A. Hypertension Deaths per 10,000	
3.0 or less	4
3.1 to 5.0	3
5.1 to 10.0	2
10.1 to 34.0	1
B. Diabetes Deaths per 10,000	
5.0 or less	4
5.1 to 7.5	3
7.6 to 10.0	2
10.1 to 23.0	1
C. Heart Disease Deaths per 10,000	
45.0 or less	4
45.1 to 80.0	3
80.1 to 115.0	2
115.1 to 284.0	1
D. Pedestrian Collisions per Acre	
None	6
0.10 or less	5
0.11 to 0.20	4
0.21 to 0.30	3
0.31 to 0.50	2
0.51 to 1.00	1

E. Average Walking Distance to Nearest Grocery Store	
0.25 miles or less	5
0.26 to 0.50 miles	4
0.51 to 1.00 miles	3
1.01 to 2.00 miles	2
2.01 to 8.00 miles	1
F. Average Walking Distance to Nearest Park	
0.25 miles or less	5
0.26 to 0.50 miles	4
0.51 to 1.00 miles	3
1.01 to 2.00 miles	2
2.01 to 5.25 miles	1
Normalized scores range from 43 to 100	

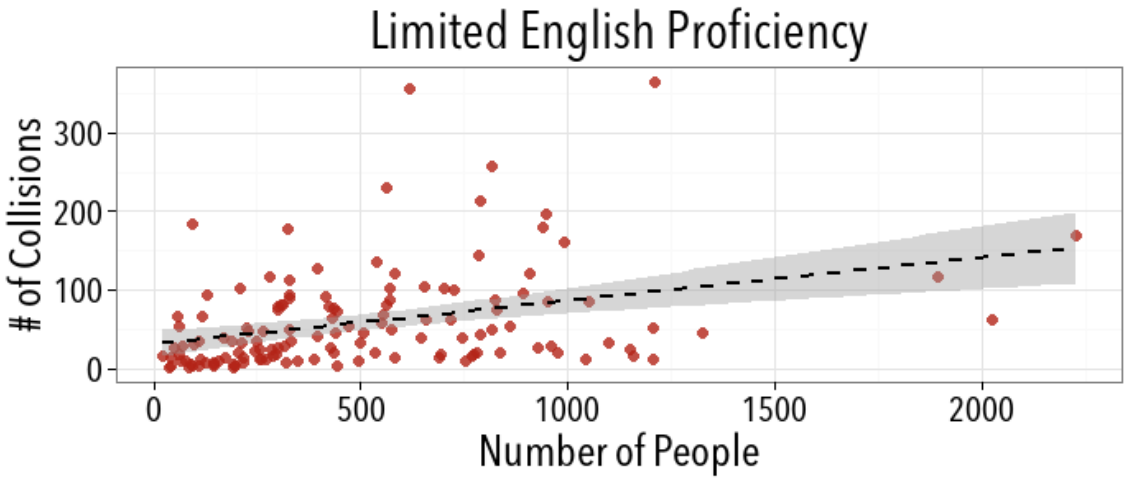
Equity Frequency Analysis

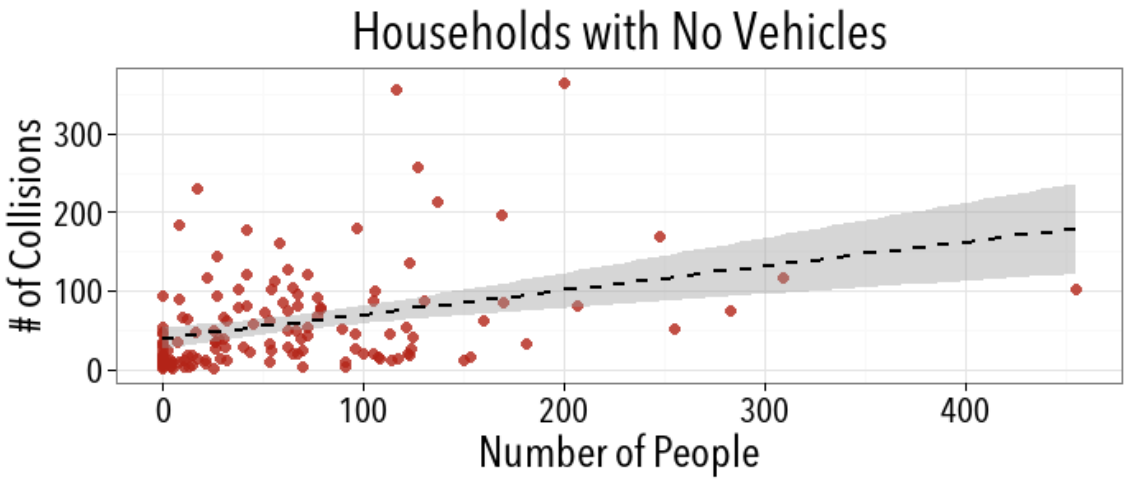
The results of the correlation analysis conducted as part of the equity frequency analysis are presented in Figure C-5. All indicators with a numerical value were statistically correlated with the number of pedestrian collisions in Glendale. Higher numbers indicate a stronger correlation. Individual plots illustrating the relationship between the frequency of collisions and the number of people or households that match each demographic variable are found in the figures that follow.

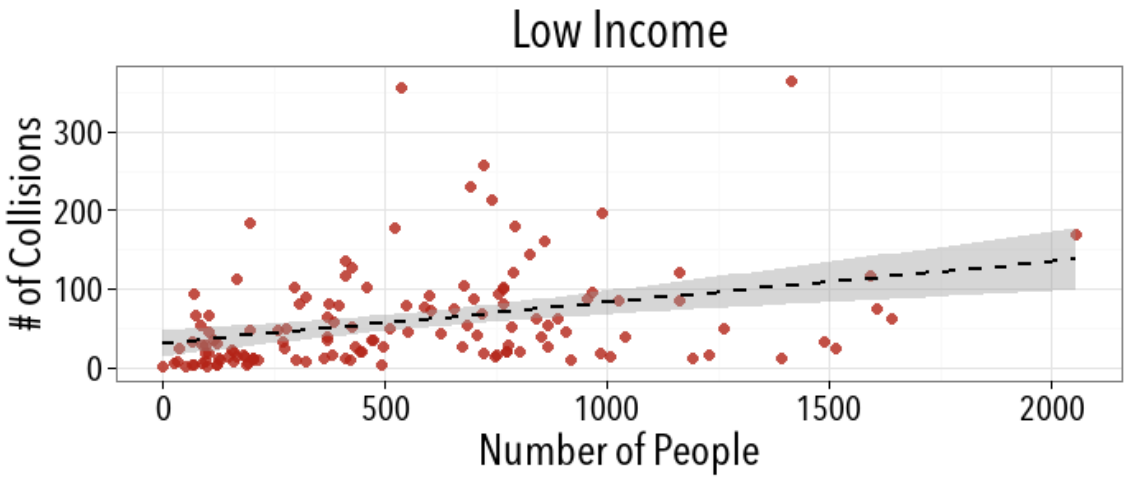
Figure C-5 Correlation of Demographic Indicators to Number of Crashes (per Census Block Group)

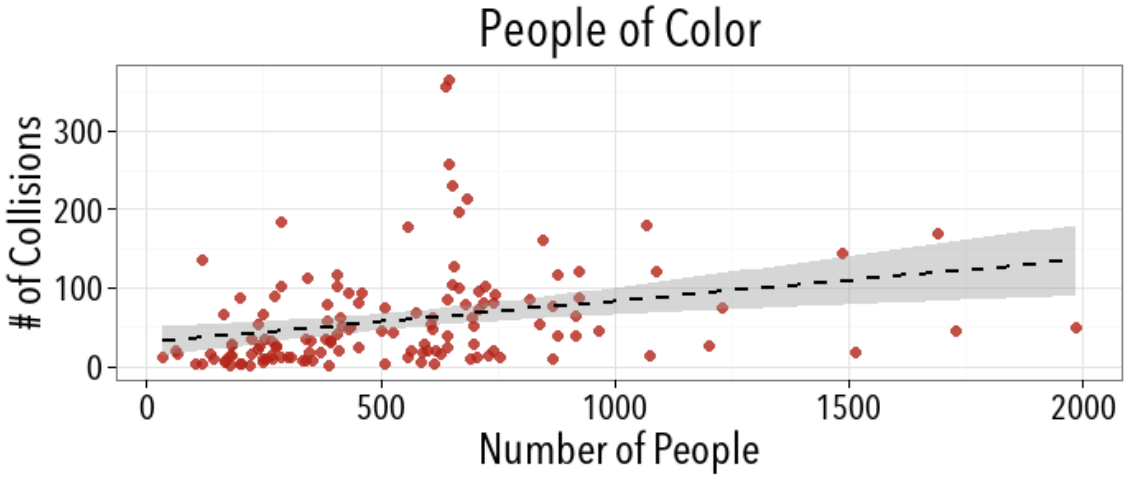
Demographic Indicator	Correlation
Limited English Proficiency	0.343
Households with No Vehicles	0.341
Low Income	0.338
People of Color	0.285
Older Adults (65 or older)	0.206
Youth (0 to 9)	0.170
Youth (10 to 17)	NA
Youth (0 to 17)	NA
Persons with Disabilities	NA

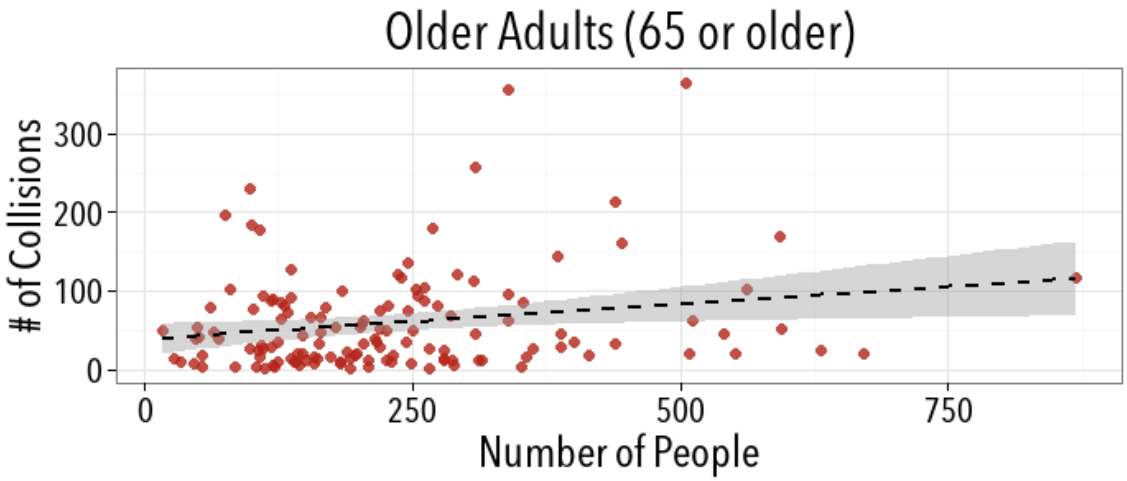
Note: 'NA' indicates correlation insignificant at the p<0.05 level

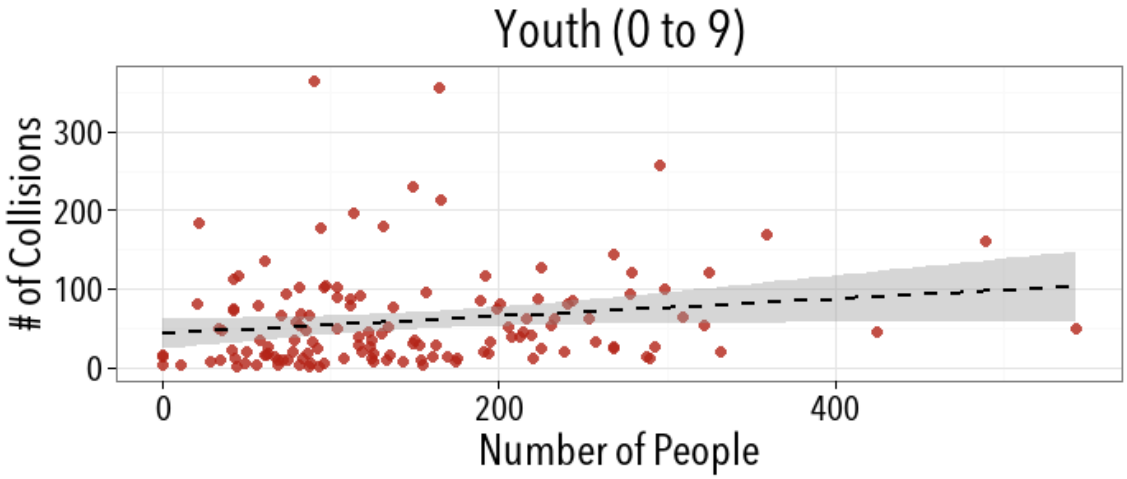


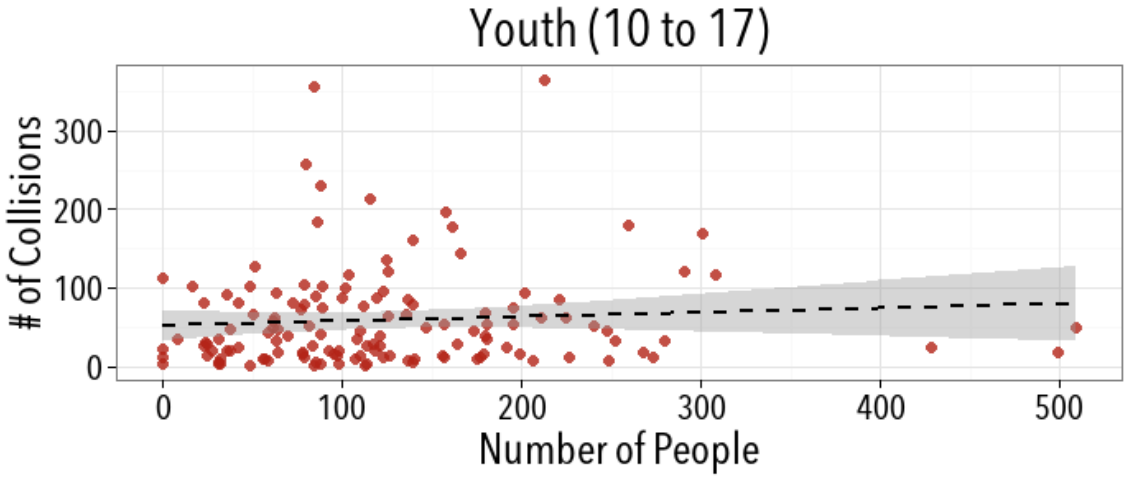

Households with No Vehicles
# of Collisions
0
100
200
300
0
100
200
300
400
Number of People

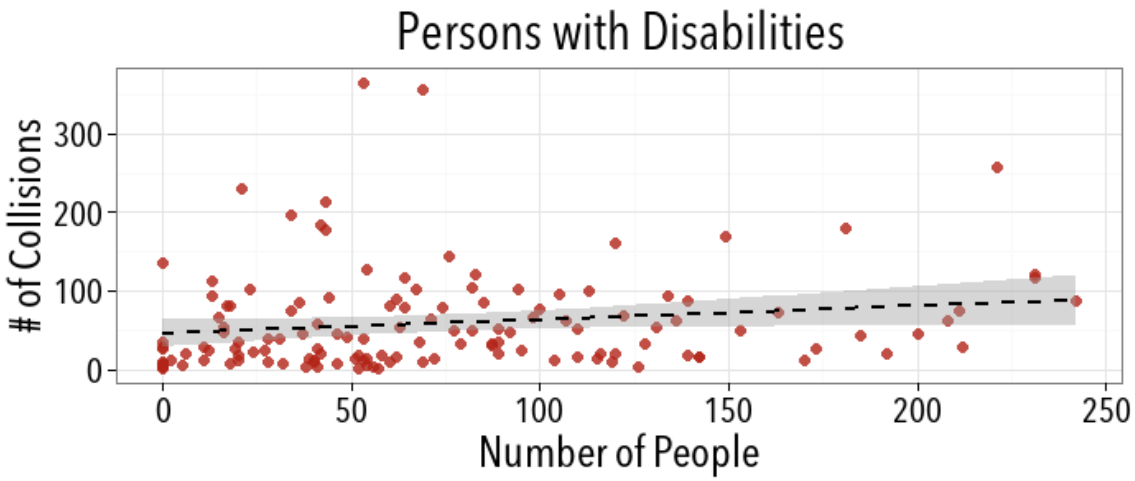

Low Income
# of Collisions
0
100
200
300
0
500
1000
1500
2000
Number of People


People of Color
# of Collisions
0
100
200
300
0
500
1000
1500
2000
Number of People


Older Adults (65 or older)
# of Collisions
300
200
100
0
0
250
500
750
Number of People


Youth (0 to 9)
# of Collisions
300
200
100
0
0
200
400
Number of People


Youth (10 to 17)
# of Collisions
300
200
100
0
0
100
200
300
400
500
Number of People


Persons with Disabilities
# of Collisions
300
200
100
0
0
50
100
150
200
250
Number of People