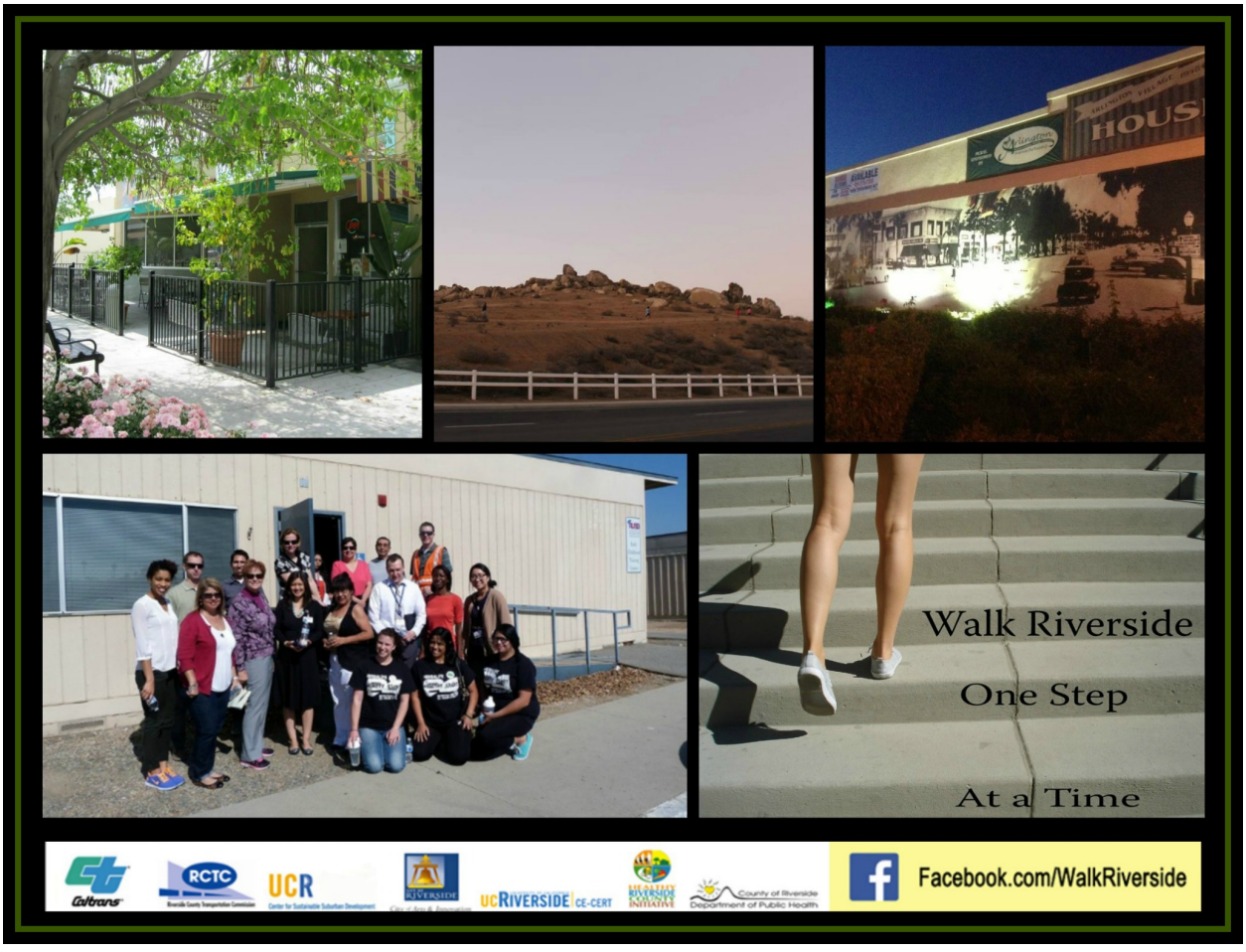
Walk Riverside
New Urbanism in Action

Walkability Plan for the Arlington and Ramona Neighborhoods

California Department of Transportation
Environmental Justice Grant
February 28, 2015



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Prepared by

Center for Sustainable Suburban Development
University of California, Riverside
School of Public Policy

Financial Support Provided by

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Table of Contents

OVERVIEW

Acknowledgements

Researchers affiliated with the University of California, Riverside's (UCR) School of Public Policy's Center for Sustainable Suburban Development and College of Engineering's Center for Environmental Research and Technology are grateful for the support provided by staff and planning experts affiliated with the California Department of Transportation (Caltrans), Riverside County Transportation Commission (RCTC), Riverside County Department of Public Health, the City of Riverside, and Riverside Transit Agency (RTA).

This Walkability Plan is the outcome of discussions with City and County representatives and collaboration with City officials and community leaders and organizations representing the Arlington and Ramona neighborhoods during the project period. The Plan benefited from the support of many individuals, including Councilman MacArthur; former Deputy Director of the City's Community Development Department, Emilio Ramirez; Steve Libring from the City's Department of Public Works; Riverside Police Department's Officer Jerrod O'Farell and Crime Statistics Analyst, Traci Dose; California State Pre-school instructor, Suzanne Armas; and Animal Services Chief, Irene Anderson. It would have been impossible without the welcome and ongoing interaction with area residents and organizations, including the Arlington Business Partnership, the Mount Rubidoux Community Alliance, the Riverside Bicycle Club, the Riverside Community Health Foundation's Community Partners, the Riverside Family Learning Collaborative, and Riverside Neighborhood Partnership.

UCR researchers also acknowledge the willingness of fellow scholars affiliated with California State University, San Bernardino's (CSUSB) Institute for Applied Research and Policy Analysis, Barbara Sirotnik and Lori Aldana to consult on the neighborhood survey. California State University (CSU), Fullerton's Dr. Phillip Kopp also consulted on issues of public safety.

Research Team

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Nancy Jimeno, Ph.D. is a Lecturer in American Government and California Politics at CSU Fullerton. Her research interest in the role of land use decision-making for improving the quality of life in communities derives from her experiences as a fifth generation southern Californian who has experienced the unsettling changes associated with the state's rapid growth.

Kanok Boriboonsomsin, Ph.D. is Assistant Research Engineer (research faculty) position at the UCR's College of Engineering-Center for Environmental Research and Technology. His research interests include the relationship of land use and transportation to energy and air quality, transportation planning, vehicle emissions modeling, traffic simulation, geographic information system (GIS) applications in transportation, and intelligent transportation system (ITS) technology.

Jill Luo is a Ph.D. Candidate in Chemical and Environmental Engineering at UCR. Her research focuses on transportation-related emissions and air quality impacts as part of the "Transportation Systems Research" program at the College of Engineering-Center for Environmental Research and Technology.

Alfredo Lezama is a UCR graduate who earned his BA in Political Science/ International Relations in 2013. His academic and professional interests include: international business, environmental sustainability, and geopolitics. He is currently pursuing a GIS Certificate at Cypress College.

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William Gabriel will complete his BA in Global Studies from UCR in Spring 2015. He plans to pursue graduate studies in Political Science, with a focus on political theory, corporate and government organizational structure, and city governance.

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Advisory Committee

California Department of Transportation
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Tanya Love, Goods Movement Program Manager, is responsible for the efficiency of goods movement across Riverside County. Her work focuses on balancing the needs of the logistics industry with the public's desire to mitigate the negative impact of goods movement related to congestion and air quality.

County of Riverside Department Public Health
Michael Osur, MBA is the Deputy Director of the County of Riverside Department of Public Health. He is responsible for the Community Health Division, which includes the Healthy Riverside County Initiative, Public Health Laboratory and Epidemiology.

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Salomeh Wagaw, MPH is an Epidemiologist with the Riverside County Department of Public Health and Program Manager for the Healthy Riverside County Initiative, working on policies to improve the overall health of all county residents.

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Erin Gettis is the Principal Planner and Historic Preservation Officer for the City of Riverside. She manages and administers the City's historic preservation by helping to develop related public policy and procedures.

Yvette Sennewald is a Senior Planner with the City of Riverside, Community Development Department's Neighborhoods and Urban Design Division. She is responsible for neighborhood programs and for developing Neighborhood Strategies for each of Riverside's 26 neighborhoods.

Riverside Transit Agency
Rohan Anthony Kuruppu is Director of Planning, responsible for short and long range transit planning, conducting comprehensive operational analysis, service planning, transit studies such as bus rapid transit (BRT), express bus services and securing grant funding for transit capital, infrastructure, and operations.

University of California Riverside
Ronald O. Loveridge is Associate Professor of Political Science and Director of the Center for Sustainable Suburban Development at UCR. Prior to assuming his current academic and administrative positions, he served the City of Riverside as a City Councilman, and as its Mayor. He currently focuses his attention on research related to the growth of the suburbs, public policy, urban planning, transportation, air quality and the intersection of cities and natural lands.

Jeffrey McLaughlin received his Ph.D. in Political Science from UCR in 2009 and continues to serve as a resource on planning-related research. This plan is the result of a successful grant he developed in collaboration with administrators and staff at RCTC and the Riverside County Department of Public Health as well as the Center for Sustainable Suburban Development.

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Executive Summary

Walking our Way to Better Health

The Problem: Health Consequences of (Sub)urban Sprawl

Local planning and transportation policy based on the separation of land uses and dependent on auto-based transportation have contributed to urban sprawl and associated negative health consequences for Riverside residents, particularly those living in economically challenged areas nearest downtown. The absence of mixed-use development combined with reliance on automobile transportation, generally discourages walking and other forms of active transportation and increases the likelihood of obesity, which has implications for chronic diseases, including heart disease, high blood pressure, and diabetes.

A Likely Solution: New Urbanist Design Principles for Walkabililty

Walkability is the centerpiece of affordable and equitable ground transportation. Walkable

communities provide well-maintained sidewalks, paths and other means of physical access to a sufficiently diverse set of places that people can fulfill their daily and weekly needs within a 15-minute walk from home. They facilitate social interaction and physical fitness, improve local economies and reduce crime, and support overall wellness and sustainability. New Urbanism provides a set of principles for urban design that encourage the integration of residential, commercial, and recreational/entertainment uses and reliable, accessible public transportation, and is widely regarded as a potential solution to suburban sprawl and the poor health that often follows—especially in lower income areas where residents are less likely to have the time and financial resources necessary to get away.

Significance: Focus on Lower Income Community

New Urbanism has informed the design of new suburban neighborhoods throughout the nation, including Riverside, making it possible for—frequently new, more affluent—communities to substitute walking, biking, and local public transport for driving *and* enjoy healthier lifestyles and improved community relationships. This Walkability Plan draws on New Urbanist principles conducive to walkability to frame proactive planning in existing lower income, working class suburban neighborhoods where residents may not have the resources necessary to avoid some of the negative consequences of sprawl by taking time away and/or purchasing memberships to gyms or fitness centers. UCR researchers and members of the Advisory Committee used demographic and economic data, proximity to shopping, parks, entertainment and other community amenities, and existing sidewalks, paths, and public transit lines to select two neighborhoods—Arlington and Ramona—that are representative of one of the city's key demographics. These neighborhoods are predominantly working class, suburban areas in western Riverside City.

Building Community Partnerships

The Walkability Plan was developed collaboratively among UCR researchers, and staff representatives from RCTC, the Riverside County Department of Public Health, the City of Riverside, RTA, homeowner and other residents of Arlington and Ramona, the Arlington Business Partnership, the Riverside Neighborhood Partnership, and other community-based organizations, and local retailers, utility and public service providers, and neighborhood schools. Participants maintained a commitment to the concept of community involvement—from the everyday treatment of people as community assets, through the ongoing expansion of participation through on-the-ground, community based problem solving process, to the development of a Walkability Plan that uses the tools of social science to address pressing community needs. The result is a Plan driven by a subset of New Urbanist principles that best suit Arlington and Ramona residents' interests in increasing walkability to improve health and strengthen community ties.

Plan Development

The planning process was designed to engage residents of the Arlington and Ramona neighborhoods in envisioning a community that engenders healthy lifestyles and social payoffs, and developing a Walkability Plan to be implemented over five years in collaboration with Riverside city and county authorities. This process included an analysis of neighborhood assets, advanced traffic and pollution modeling, a survey of residents' attitudes and health indicators, and a series of community-initiated and professional walk audits. Specifically, the initial planning phase consisted of an analysis of neighborhood assets and needs as a basis for initiating engagement with the community and directing the other, more scientific and practical portions of the planning process. The presence of arterial roads that define and cut through the Arlington and Ramona neighborhoods made consideration of traffic-related pollution integral to the planning process.

UCR's College of Engineering-Center for Environmental Research and Technology provided advanced traffic and pollution modeling to identify any significant health concerns associated with automobile emissions.

The neighborhood and traffic analyses provided a socio-economic and scientific snap-shot of the Arlington and Ramona neighborhoods that UCR researchers shared, along with information about the relationship between walkability and health, with residents during community meetings, educational programs, and other events. These meetings and events also provided many and varied venues for gaining input from residents of the Arlington and Ramona neighborhood; however, participants represented only a small fraction of the population in this area. UCR researchers collaborated with survey researchers at CSUSB's Institute for Applied Research to reach a more representative sample of the community. The neighborhood survey documented residents' perceptions of their neighborhoods, areas of concerns that should be addressed in the Plan, and how residents would engage with their community to find solutions. The survey included a number of questions concerning respondents' health used to establish the baseline health status of Arlington and Ramona residents. Finally, UCR researchers worked with planning professionals to facilitate a series of walk audits in study area to assess the area's walkability and identify improvements likely to gain the highest level of community support.

Community Engagement

This planning process intentionally expanded participation to include local business owners, police, educators affiliated with neighborhood schools, church leaders and memberships, residents, and participants in meetings, program, and other activities organized by the research team with input from the project's Advisory Committee. This strategy facilitated a growth of knowledge among Arlington and Ramona residents sufficient to support their assessment of the area in terms of walkability with the intent to identify ways to making walking and other forms of active transportation easier and more attractive. Community meetings provided information about mobility and health as well as venues for interacting with City and county agencies and asking questions about public health and safety. Park events and sustainable planning programs for school children and their families provided hands-on learning opportunities and bilingual walkability training. In addition to ongoing interaction with Arlington and Ramona residents and the organizations that represent them, UCR researchers solicited residents' suggestions for improving walkability through a survey and during a Walkability Workshop that included a walk audit. This overall process provided a foundation for empowering residents, identifying their interests and concerns, and collaborating in the development of a reasonable plan of action articulated in 16 recommendations covering: planning, aesthetics, public safety, and social consciousness.

Recommendations

Our recommendations draw on results of the neighborhood survey, supported by residents' remarks during community meetings and the Walkability Workshop, and the researchers' own experiences as pedestrians and cyclists in the Arlington and Ramona neighborhoods over the past two years. Our research and community engagement suggest that Arlington and Ramona residents are likely to walk more frequently if sidewalks and walkways are physically accessible, safe and well lit, there are places to go, and they experience and overall sense of safety. Accordingly, our recommendations focus on: urban design principles associated with the development of complete streets; residents' desire for nearby shops, restaurants, entertainment options, and open space;

justifiable concerns regarding public safety; and broader social considerations, such as public perception of the neighborhood and the importance of social consciousness about the importance of walkability and environmental health. The major portion of the Walkability Plan is devoted to detailing the following recommendations.

- Invest in High Visibility Crosswalks
- Add Crossing Aids where Pedestrian Traffic is High, and to Encourage Increased Pedestrian Traffic
- Ensure Walkway Continuity and Widen Sidewalks
- Improve Roadway and Pedestrian Scale Lighting
- Increase Bikeways and Connectivity
- Reduce Street Lanes
- Remove and/or Relocate On-Street Parking
- Target Arlington and Ramona for Bicycle Training and Safety Education Programs
- Facilitate Routine Walk Audits
- Introduce or Add Locally Appropriate Streetscape Elements
- Pursue Economic Development with an Eye toward Improving Walkability
- Streamline Permitting Processes for Walkability Improvements
- Collaborate with RTA to make Transit Stops Safer and more Comfortable
- Fix the "Broken Windows Problem" by Regularly Cleaning Up the Neighborhoods
- Enforce Leash Laws and Improve Animal Control
- Change Consciousness through Popular Education for Sustainability

The City: It's Your Turn

Greater knowledge about planning and the health and social benefits associated with walking is likely to increase active transportation among Arlington and Ramona residents. More will be motivated to use their feet for shopping, entertainment, and recreation if the relevant arms of City governance adopt the proposed recommendations. As constitutive of public policy, this Walkability Plan promises to gain credibility and the residents of Arlington and Ramona neighborhoods will have secure a legitimate role in the distribution of City financial and other resources.

VISION AND OBJECTIVES

Walkability to Improve Health in Arlington and Ramona

(Sub)urban Sprawl, Mobility, and Health

Local planning and transportation policy based on the separation of land uses and dependent on auto-based transportation have contributed to urban sprawl and associated negative health consequences for Riverside residents, particularly those living in economically challenged areas nearest downtown.[1] The absence of mixed-use development combined with reliance on automobile transportation, generally discourages walking and other forms of active transportation and increases the likelihood of obesity, which has implications for chronic diseases, including heart disease, high blood pressure, and diabetes. These negative health outcomes should be considered additive in regions and neighborhoods where motorized transportation predominates and residents are subject to asthma and other respiratory conditions aggravated by pollution from auto emissions.

Riverside is an apt example of this relationship between auto-dependence associated with large suburban developments and poor health. A city's average Walk Score—between 0 and 100 that measures the walkability of any city, neighborhood, or address—is a valid means for estimating how well residents and visitors can move about on foot.[2] Riverside's Walk Score is 39, which means that most everyday errands and other excursions in the city require a car. For the sake of comparison, consider that suburban Santa Ana, the Orange County Seat, and greater Los Angeles are both more walkable, scoring 61 and 64, respectively.

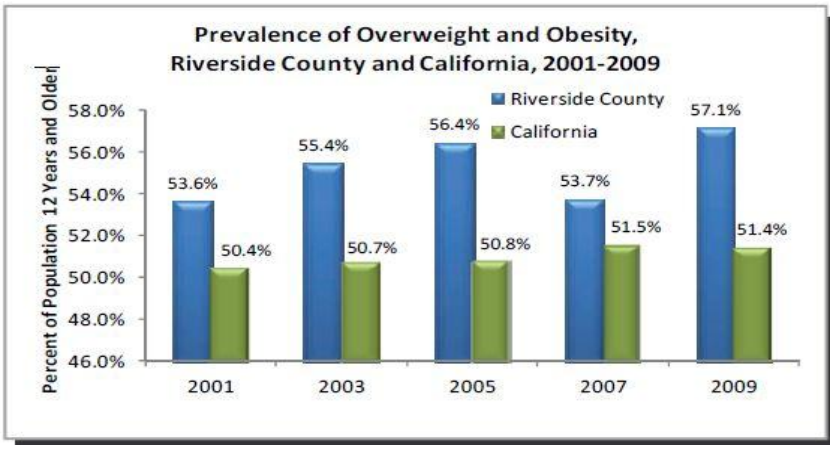

Figure 1: Percent of Population Overweight and Obese in Riverside versus California

Given the well-established relationship between a dependence on automobile transportation and key health indicators,[3] is not surprising that the prevalence of obesity in Riverside is higher than it is in California as a whole (Figure 1). The relationship between obesity and both

[1] Duncan et al. 2011

[2] Duncan et al. 2011

[3] Doyle et al. 2006; Frank et al. 2006; Sallis et a. 2004.

diabetes and heart disease[4] means that residents' car-dependence may arguably be killing them (Figure 2).[5]

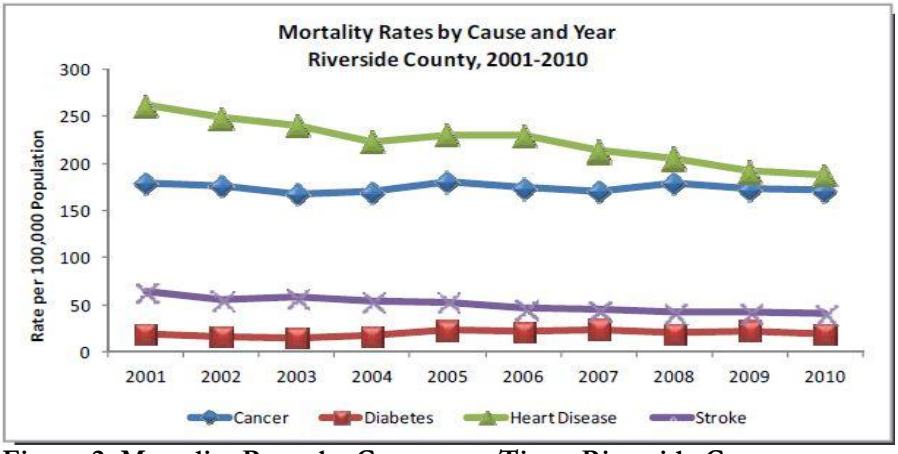

Figure 2: Mortality Rates by Cause over Time, Riverside County

Underlying medical complications notwithstanding, (increased) physical activity is the most straightforward antidote to unhealthy weight gain and obesity, and associated conditions—diabetes and heart disease being chief among them. Walking is a go to form of physical activity because is accessible for nearly all residents—requiring no special skills, equipment, or venues. Moreover, walking yields significant improvements in standard indicators of health at just 30 minutes per day.

It is a particular favorite among planners because relatively small changes in land use and urban design can yield significant changes in activity levels and health. Current research on the relationship between walkability and health indicates that just a five percent increase in walkability yields an average 32 percent increase per capita in active transportation and a 0.23-point reduction in body mass index.[6] Planning for walkability that emphasizes reduced distances sources of fresh food, places to exercise, and transit stops as well as neighborhood safety is an even more promising strategy for reducing obesity-related health disparities.[7] Moreover, healthy communities are related to increased community interactions and social capital.[8]

New Urbanist Approach to Walkable Communities

Walkability is the centerpiece of affordable and equitable ground transportation. Walkable communities provide well-maintained sidewalks, paths and other means of physical access to a sufficiently diverse set of places that people can fulfill their daily and weekly needs within a 15-minute walk from home. They facilitate social interaction and physical fitness, improve local economies and reduce crime, and support overall wellness and sustainability.

New Urbanism provides a set of principles for urban design to organize and design the layout of a walkable community, including the buildings and open spaces within and surrounding it,

[4] Mackay and Mensah 2004.
[5] County of Riverside Department of Public Health 2013.
[6] Frank et al. 2006
[7] Lovasi et al. 2009; Morency et al. 2011.
[8] Doyle et al. 2006; Frank et al. 2006; Sallis et al. 2004.

and the transportation networks to service it. In many ways, New Urbanism represents a return to older, more integrated urban neighborhoods where it was possible to live above a shop that you owned, visit the neighborhood grocer, and have all the amenities of life within a walkable distance. This approach to urban planning unites residents' interests in making daily life easier, and broader, public policy interests in the benefits of reducing infrastructure costs for cities, as well as the costs associated specifically with environmental health. It encourages integration of residential, commercial, and recreational/entertainment uses and reliable, accessible public transportation, and is widely regarded as a potential solution to suburban sprawl and the poor health that often follows—especially in lower income areas where residents are less likely to have the time and financial resources necessary to get away.

Many principles of New Urbanism overlap with smart growth guidelines for development to curb urban sprawl and environmental degradation, which guide planning in Riverside as well as statewide. Smart growth seeks to support local economies and protect the environment through the development of urban, suburban and rural communities featuring housing and transportation choices near jobs, shops and schools. New Urbanism likewise features compact, integrated communities, but is typically more concerned with aesthetics and a design philosophy that focuses on mixed housing, human scale architecture to create a sense of place, and traditional neighborhood structures.

Figure 3: Examples of Walkable Places in Riverside[9]

New Urbanist design increasingly plays a roll in the development of new, more walkable and sustainable communities and redevelopment projects intended to make it possible for residents to

[9] Main Street pedestrian mall (top), Riverside Plaza (bottom left), Riverwalk Community (bottom right)

substitute walking, biking, and local public transport for driving *and* enjoy healthier lifestyles and improved community relationships.[10] The redevelopment of downtown Riverside and the iconic Riverside Plaza to increase foot traffic to/from and among the shops, restaurants, and entertainment venues there represent significant, recent examples. The City's *General Plan*[11] *2025* provides a number of provisions intended to promote walking, cycling, and other forms of active transportation by improving "pedestrian walkways, bicycle lanes, equestrian pathways, signing, lighting, noise and air quality" to increase the "livability of residential neighborhoods."[12]

Community Based Participatory Research

Community based participatory research (CBPR) is a collaborative approach to research that stresses campus-community partnerships with the potential to engage faculty and students from multiple disciplines in problem solving with community organizations and those they represent. Including non-professional investigators who will very likely be affected by the research in question in the production of knowledge distinguishes this approach from more traditional, positivist research methodologies. CBPR is particularly well suited to studies that seek both to identify locally specific and culturally sensitive responses to community issues, and to empower and mobilize communities to act.

Figure 4: Interns speak to parents and community members, RUSD's 3rd Annual Parent Educational Summit.

According to Dr. Carol Horowitz and her collaborators:

> Community participation can help ensure that study goals are relevant to the population; that the means of accomplishing them are sensible; that the program

[10] City of Riverside 2005.
[11] City of Riverside 2007a
[12] City of Riverside 2007a, Policy CCM-2.8, 2.9.

> considers the knowledge, attitudes, beliefs, and practices of the target group; and that results are shared, sustained, and used for the good of the community.[13]

As such, CPBR represents a best strategy for investigation and analysis in the policy and health sciences and other fields defined by their responsibility to the public.[14] Accordingly, this Walkability Plan is based on collaboration among UCR researchers, RCTC, the Riverside County Department of Public Health, the City of Riverside, RTA, homeowner and other residents of Arlington and Ramona, the Arlington Business Partnership, the Riverside Neighborhood Partnership, and other community-based organizations, and local retailers, utility and public service providers, and neighborhood schools. Participants maintained a commitment to the concept of community involvement—from the everyday treatment of people as community assets, through the ongoing expansion of participation through on-the-ground, community based problem solving process, to the development of a Walkability Plan that uses the tools of social science to address pressing community needs.

Neighborhood Overview

The city of Riverside is a large and evolving city that has experienced a number of challenges in addressing planning and development issues. With a population of more than 300,000, the City is ranked the sixth largest city in Southern California. It is the seat of the second fastest growing county in the nation and emblematic of Inland Southern California's transition to a truly multi-ethnic population that is more than half Hispanic. Riverside is also aging; the 35-54 year old age group is expected to grow by 24,435 by the end of 2015. The City, characteristic of much of Inland Southern California, continues to be characterized by modest incomes. Most Riverside households earn less than $50,000, which is considerably lower than Riverside County's median income $63,300.[15] The planning and governance challenges associated with these demographic and economic trends has motivated the City to reconsider the importance of quality of life issues and to seek consensus on growth and development priorities.

Selection Criteria.

This Plan identifies two predominantly working class, suburban neighborhoods in the city of Riverside as sites for collaborating with residents to identify a subset of New Urbanist principles that best suit their interest in increasing walkability to improve health and strengthen community ties: Arlington and Ramona. UCR researchers and members of the Advisory Committee used demographic and economic data, proximity to shopping, parks, entertainment and other community amenities, and existing sidewalks, paths, and public transit lines to select neighborhoods that are representative of one of the city's characteristic demographics.

[13] Horowitz et al. 2009.
[14] See Minkler 2005, Viswanathan 2004.
[15] United States Census Bureau 2013

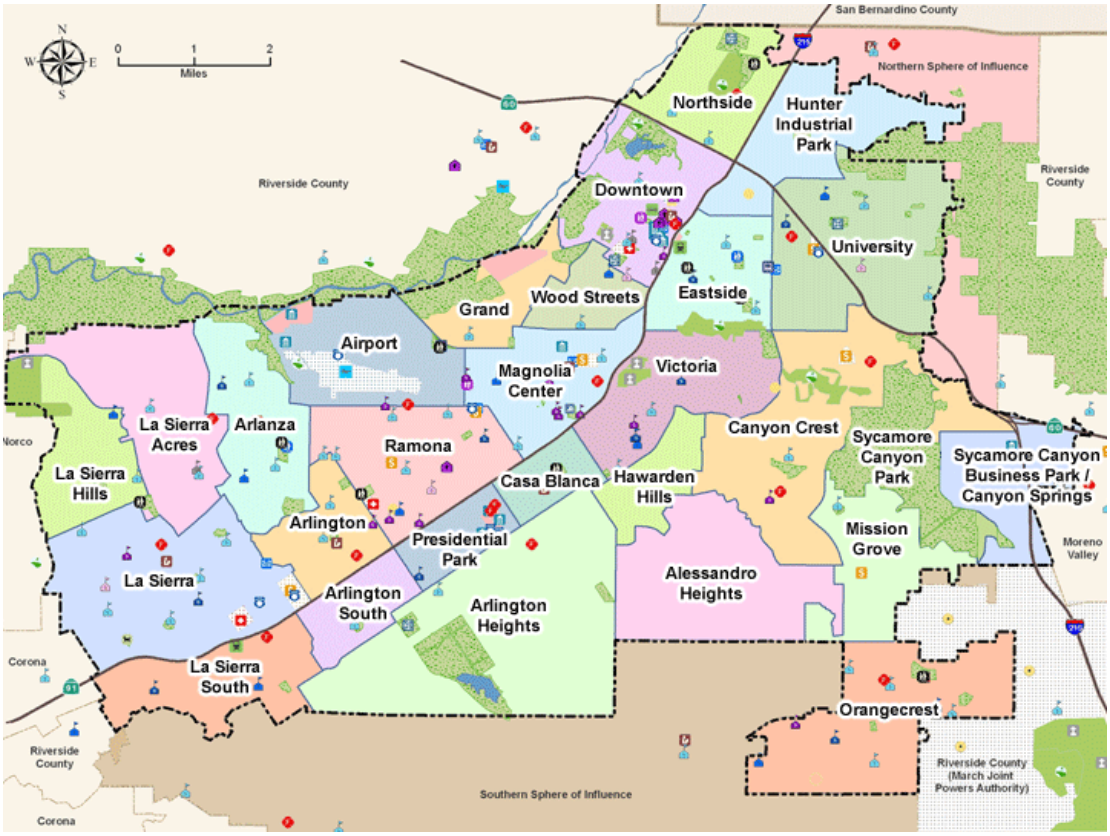

Figure 5: Riverside Neighborhoods

Location

Arlington and Ramona are adjacent neighborhoods (Figure 5), divided by Jackson Street, that abut the 91 freeway between Magnolia Center and La Sierra. Arlington is newer than Ramona and slightly more densely populated. The RTA's busiest Route 1 follows the Magnolia Avenue arterial through both neighborhoods, providing direct access to: government offices and public agencies downtown; shopping centers and entertainment, including the Riverside Plaza and the Tyler Galleria; hospitals and medical services; the community's high school, UCR, Riverside Community College, and California Baptist University; and a number of parks, open spaces, and recreational facilities.

Demographics

The residents of both neighborhoods are young, working class, and Hispanic, as is apparent in Table 1 below. In terms of age, ethnicity, and home-ownership—a traditional gateway to the middle class—they are representative of Riverside as a whole. Arlington and Ramona residents earn less than the median household income for Riverside, and just over the annual income required for a family of four there--$43,000.[16] Residents' lower income and higher unemployment may reasonably be attributable to their significantly lower levels of educational attainment.[17]

[16]Massachusetts Institute of Technology 2015.
[17] United States Bureau of Labor Statistics 2014.

	Riverside	Arlington	Ramona
Size	81.53 square miles	1.69 square miles	3.22 square miles
Population	303,871	10,683	25,153
Median Age	35.4	30-34	30-34
Hispanic Population	51.3%	58%	58%
Educational Attainment	77.7% H.S. or higher 22% BA or higher	57.7% H.S. or higher 11.5% BA or higher	59.1% H.S. or higher 15.2% BA or higher
Median Household Income	$57,736	$47,431	$48,216
Home Ownership	63.8%	65.2%	65.2%
Unemployment	8.6%	9.7%	10%

Table 1: Demographic Summary.[18]

Purpose of Plan

Focus on Lower Income Suburban Neighborhoods

Figure 6: Ron Loveridge, former Riverside City Mayor, addresses community meeting.

New Urbanism has informed the design of new suburban neighborhoods throughout the nation, including Riverside, making it possible for communities, often more affluent ones, to substitute walking, biking, and local public transport for driving *and* enjoy healthier lifestyles and improved community relationships. Yet New Urbanism can also be used to frame proactive planning in existing suburban areas, including relatively low income neighborhoods where residents frequently do not have the resources necessary to avoid some of the negative consequences of sprawl by taking time away and/or purchasing memberships to gyms or fitness centers.

[18]City of Riverside 2010; United States Census Bureau 2013.

Develop Community-Supported Walkability Plan

UCR researchers and members of their Advisory Committee sought to engage residents of the Arlington and Ramona neighborhoods in the process of envisioning a community that engenders healthy lifestyles and social payoffs. Their intention was to draw on community assets and insights to develop a Walkability Plan for the area that would be implemented under the auspices of appropriate Riverside city and county offices and agencies. The planning process incorporated an analysis of neighborhood assets, advanced traffic and pollution modeling, a survey of residents' attitudes and health indicators, and a series of community-initiated and professional walk audits. This process encouraged in situ walkability training and more formal educational programming to inform residents of all ages about New Urbanism and planning to improve walkability. Individual residents and the community organizations that represent their interests assisted UCR personnel and collaborating institutions and agencies with their research and outreach activities.

Planning Objectives

Raise Awareness

Planning for healthy, walkable communities requires listening to voices other than those normally heard in a City's planning process, which can be limited by reliance on recognized and visible community leaders. Our planning process intentionally expanded participation to include local business owners, police, educators affiliated with neighborhood schools, church leaders and memberships, residents, and participants at meetings, program, and other activities organized by the research team with input from the project's Advisory Committee. This strategy facilitated a growth of knowledge among the residents of the Arlington and Ramona neighborhoods sufficient to support their development of this Walkability Plan.

Identify and Articulate Community Interests

Given the general problem of poor urban design as a potential contributor to negative health impacts in lower income neighborhoods, the planning process prepared participating residents to assess their neighborhoods in terms of walkability with the intent to identify ways to making walking and other forms of active transportation easier and more attractive. Community meetings provided information about mobility and health as well as venues for interacting with City and county agencies and ask questions about public health and safety. Park events and sustainable planning programs for school children and their families provided hands-on learning opportunities and bilingual walkability training. In addition to ongoing interaction with Arlington and Ramona residents and the organizations that represent them, UCR researchers solicited residents' suggestions for improving walkability through a survey and during a Walkability Workshop that included a professional walk audit. This overall process provided a foundation for empowering residents, identifying their interests and concerns, and collaborating in the development of a reasonable plan of action articulated in 16 recommendations covering: planning, aesthetics, public safety, and social consciousness.

Solicit City's Consideration and Support

Greater knowledge about planning and the health and social benefits associated with walking is likely to increase active transportation among some Arlington and Ramona residents. More will be motivated to use their feet for shopping, entertainment, and recreation if the relevant arms of City governance adopt the proposed recommendations. As constitutive of public policy, this plan will gain credibility and the residents of Arlington and Ramona neighborhoods will have secure a legitimate role in the distribution of City financial and other resources.

PLAN DEVELOPMENT

Neighborhood Analysis

The initial phase of the planning consisted of developing an analysis of neighborhood assets and needs as a basis for initiating engagement with the community and directing the other, more scientific and practical portions of the planning process.

The Arlington neighborhood is bounded on the east by Jackson Street, California Avenue to the north and by Tyler Avenue and Hole Avenue to the west. The Ramona neighborhood is bounded on the east by Madison Street, the north by Arlington Avenue, the west by Van Buren Boulevard, California Avenue, Duncan Avenue, and by the 91 Freeway on the south side. Magnolia Avenue is an important commercial, residential and institutional corridor acts as the "backbone" of the two neighborhoods.

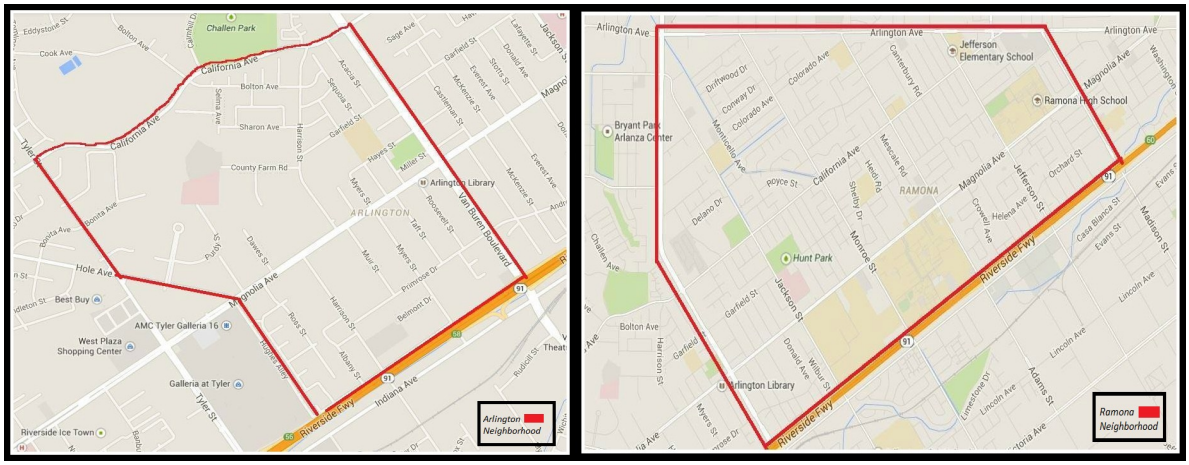

Figure 7: Maps of Arlington (Left) and Ramona (Right) Neighborhoods with Major Streets.

Considered together, the Arlington and Ramona neighborhoods appear, at first glance, to represent typical midcentury suburban neighborhoods; in fact, the neighborhoods include a mixture of early twentieth century, midcentury and twenty-first century architectures, planning elements, and urban design principles that reflect the area's economic and social history. Overall, Arlington and Ramona possess a number of positive attributes with respect to walkability that are immediately evident to residents, researchers and other visitors, and planning professionals. Chief among these are:

- A well-connected network of streets with relatively short blocks
- Residential streets with good tree canopies
- Street rights-of-way that provide room, in some cases, for adding bicycle lanes
- Truly great streets, like Magnolia Avenue, with mature tree canopies, medians, and, in some sections, sidewalks wide enough to accommodate both pedestrian and bicycle traffic
- Traditional pattern of development in some sections of the two neighborhoods that incorporate mixed-use planning and walkable destinations—schools, parks, Arlington Library, retail outlets, and dining, in particular.

These features and amenities provide a more than adequate foundation for improving walkability. In fact, Arlington is "somewhat walkable," according to its Walk Score (57), in comparison to Ramona's marked car-dependence (Walk Score—41). Increased walkability will only foster economic growth, and improve public health.

The Arlington-Ramona neighborhoods were both hard hit during the recent recession, but there are signs of a recovery. For example, businesses that were forced to close are being sold, renovated, and re-opened. The area is also characterized by the presence of thriving strip malls, chain stores, and fast food restaurants. Both community organizations and the City have committed to improving walkability to these venues as well as the area's schools, entertainment hubs, and parks and recreation facilities. The Arlington Business Partnership, a coalition of more than 800 local business owners, has joined the City's Business Improvement District and the Office of Economic Development in their combined efforts to enhance the area's physical appearance, create jobs, and grow businesses. The Arlington Business Partnership's vision embraces New Urbanism's emphasis on walkability and encourages compact commercial centers. The City and the County Department of Public Health have adopted New Urbanist principles as well, in the interest of promoting healthy lifestyles.

Yet, the Arlington and Ramona neighborhoods still lack sidewalks in areas that are critical to walkability—for example, the south side of Magnolia Avenue across the street from Ramona High School. This stretch of the neighborhood's central arterial recently made the news in connection with our planning process.[19] In addition, many neighborhood businesses lack bike racks, which are important for encouraging residents to bicycle—a laudable goal for Arlington and Ramona which are both "bikable"—62 and 53, respectively—in terms of their Bike Scores, which are comparable to Walk Scores and determined by bike infrastructure sufficient to support cycling as an alternative to automobiles for everyday activities.

Community Engagement

Community engagement was the backbone and heart of the project's planning process. In addition to UCR researchers and members of the Advisory Committee, planning included local business owners, police, educators affiliated with neighborhood schools, church leaders and memberships, residents, and participants in meetings, program, and other activities organized in conjunction with the project.

UCR researchers, CSUSB partners, and walkability experts created an ongoing presence in the Arlington and Ramona neighborhoods, punctuated by a series of more than 30 community meetings, educational programs, walkability trainings, and other events. Project Manager, Nancy Jimeno and UCR student interns, Jenny Ning and Alfredo Lezama, were charged specifically with establishing working relationships with community leaders and residents, and maintaining the personal and professional networks that were critical to a successful Walkability Plan.

Jimeno, Ning, and Lezama immersed themselves in the community, taking the time necessary to get to know local officials and community leaders. Although the City Council's ward boundaries do not align with the Arlington and Ramona Neighborhood boundaries, most of the study area is located in Ward 5, with a small section in the West located in Ward 6. City Councilman

[19] Wall 2014.

for Ward 5, Chris MacArthur, maintained an "open door" for UCR researchers and provided contact information and introductions to community leaders. UCR researchers also established working relationships with the City's Public Works Department and the Riverside Police Department.

Understanding the social fabric of the Arlington and Ramona neighborhoods and the interests of its business community was integral to establishing a level of trust necessary for productive relationships with Arlington and Ramona residents. Jimeno and the interns gained the requisite trust by participating in the activities that are important to this community. This engagement included giving presentations to, and seeking input, from locally-based organizations such as the Arlington Business Partnership, the Mount Rubidoux Community Alliance, the Riverside Bicycle Club, the Riverside Community Health Foundation's Community Partners, the Riverside Family Learning Collaborative, and, Riverside Neighborhood Partnerships. UCR researchers organized and or participated in more than 30 formal events, including a lively kick-off event, educational presentations at parks and in schools, and a Walkability Workshop that included a guided walk audit by urban planning professionals.

In addition, UCR researchers not only joined the organizations themselves—i.e., the Riverside Bicycle Club—but could also often be found having coffee with local business owners, talking to teenage skateboarders at parks, approaching residents waiting at bus stops, and conferring with Riverside Unified School District (RUSD) teachers at local high schools, middle schools and elementary schools.

Walkability is central to (sub)urban sustainability. Thus, throughout the project period, UCR researchers consistently promoted the idea of walkability. These efforts included "walkable neighborhood" presentations to elementary school children who were encouraged to work with a three dimensional mock-up of the neighborhoods to create their ideal community as they envisioned it. Such activities enhanced UCR researchers' close ties to the Riverside Unified School District officials, and they were invited to participate in district-wide events, such as the RUSD's annual Educational Parent Summit. The summit provides information and resources to the parents of high school students who hope to send their children to college. UCR researchers took this opportunity to speak at length with parents about encouraging their children to walk to school, and listened to parents as they discussed barriers to walkability in the area.

Baseline Health Assessment

In the absence of neighborhood-level epidemiological statistics, UCR researchers collaborated with Barbara Sirotnik and her team of survey researchers at CSUSB's Institute of Applied Research and Policy Analysis IAR to establish the baseline health status of Arlington and Ramona residents.

The neighborhood survey included a series of questions that dealt with respondents' assessments of their own health and wellness. Each respondent was asked to indicate whether, in general, his/her health is excellent, good, fair, or poor. Only 23 percent of respondents rated their health as "excellent," and another 47 percent evaluated it as "good." Somewhat surprising, the evaluation of health status was not related to a person's age group. That evaluation *was* related to the response to the next question: "Thinking about the kinds of activities you do for exercise, about

how many days do you go outside to walk or run each week?" Whereas 17 percent of those whose health is excellent say they never go outside to walk or run for exercise, that figure is ten percent higher for those whose health is fair or poor. This result suggests that income may play a role in residents' physical activity and other health-related choices; residents who consider themselves healthiest arguably have the resources necessary to exercise at a gym or fitness center, consume more nutritious food, and secure medical treatment when necessary.

Respondents were also asked if they suffer from high blood pressure, which is associated with immobility and obesity; 36 percent said "yes." Regarding behaviors and medical conditions that might hinder a person's ability to walk, run, or ride outdoors, nearly 12 percent reported smoking; 10 percent said they have asthma.

Assessment of Pollution in High Traffic Areas

The presence of arterial roads that define and cut through the Arlington and Ramona neighborhoods made consideration of traffic-related pollution integral to the planning process. Researchers from UCR's College of Engineering-Center for Environmental Research and Technology provided advanced traffic and pollution modeling to identify any significant health concerns associated with automobile emissions.

Given that walking is one the most sustainable modes of transportation as well as the easiest way to regularly exercise, engineers began with the presumption that increasing urbanization and traffic expose pedestrians to potentially dangerous emissions. Ultrafine particulates and $PM_{2.5}$, which can lead to a wide range of respiratory and circulatory problems. Their analysis focused on the concentration of these pollutants in traffic emissions for morning, midday, afternoon and nighttime periods in the Arlington and Ramona, neighborhoods.

Figure 6 below illustrates the multi-step framework used to model traffic-related air pollutant concentrations. Traffic activity, in terms of traffic flow and speed, were obtained from the Riverside County's transportation model (RIVTAM) for the analysis area. Traffic emissions were estimated using EMFAC2007 and used as input for the CALINE4 dispersion model that predicted $PM_{2.5}$ concentrations in the neighborhoods.[20]

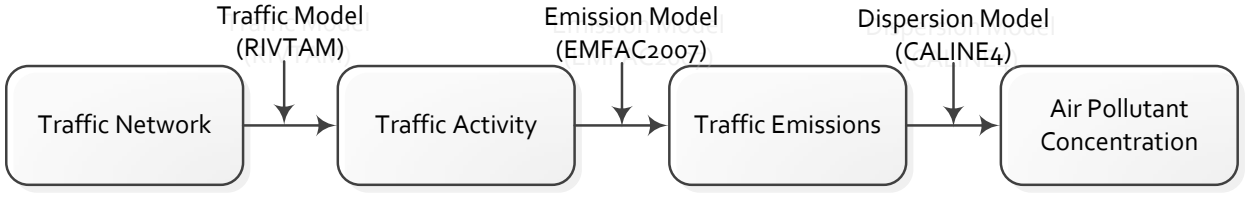

Figure 8 Modeling framework used in this study

Modeling traffic-related air pollutant concentrations in the Arlington-Ramona area provides convincing evidence that the levels of ultrafine particle and $PM_{2.5}$ pollution were "satisfactory" according to the Environmental Protection Agency's Air Quality Index (AQI) during the project period, and likely so as a rule. The $PM_{2.5}$ concentration is higher in the morning from 6-9 AM than other times of the day, but still remains within the "moderate" level according to the AQI. This

[20] Luo 2014.

outcome is partly due to prevailing, favorable wind directions away from the neighborhoods, especially from the 91 freeway. Along with this freeway, the study identified Arlington Avenue and Van Buren Boulevard as the roadways contributing most to particulate pollution.

Neighborhood Survey

Although community meetings, educational programs, and other events provided many and varied venues for gaining input from residents of the Arlington and Ramona neighborhood, participants represented only a small fraction of the population in this area. UCR researchers collaborated with Barbara Sirotnik and her team of survey researchers at CSUSB's Institute for Applied Research and Policy Analysis to reach a more representative sample of Arlington and Ramona residents. Interviewers surveyed residents' perceptions of their neighborhoods, areas of concerns that should be addressed in the Walkability Plan, and how residents would engage with their community to find solutions.

The survey methodology insured, to the extent possible, that each resident of the Arlington and Ramona neighborhoods with a telephone—land line or cellular—had an equal chance to be included in the survey. The resulting sample size of 510 reflects an accuracy rate of plus/minus approximately 4.3 percent and a 95 percent level of confidence. Over half of the sample (59 percent) came from the Arlington neighborhood, while 23 percent reported that they live in the Ramona neighborhood (18 percent were unable to list the name of their neighborhood, but assured the interviewer that they do live in the area by identifying their homes' proximity to key neighborhood landmarks).[21]

Survey results are overall consistent with those of previous surveys of Riverside City residents. A 2013 a survey of City residents conducted for Seizing Our Destiny found that one the things deemed "best" about living in Riverside is its small town atmosphere and feeling…the sense that it is a clean community which engenders a sense of belonging, a town where you can make friends and where neighbors know each other. In that survey, nearly 85 percent of respondents indicated that they felt a sense of belonging to their community. Similarly, more than four out of five Arlington and Ramona residents (81 percent) either "strongly agreed" or "agreed" that they feel a sense of belonging to the community. Further, 86 percent agreed that they are proud to live in their neighborhood, and 84 percent rated their neighborhood as an attractive place. This is good news for the community input and engagement so important to creating a walkable and sustainable community.

When primed to think specifically about walkability and associated concerns and opportunities available in the community, survey respondents reported that want to walk more often than they do. The data from this survey show that the car culture is alive and well in Arlington and Ramona, where 82 percent of employed people report driving a car alone to get to work, with another nearly nine percent saying they carpool. Similarly, more than half of the adults who go to school reported that they drive alone to get to get there, with 12 percent saying they carpool; just under 16 percent said they take the bus, and 12 percent report that they are close enough to walk to school. These results are consistent with both a recent RTA study, and the outcome of UCR researchers' informal analysis of questionnaires distributed at community events, which suggest walking, including to/from public transit, may be increasing among students.[22]

[21] Sirotnik and Aldana 2014.
[22] Riverside Transit Agency 2014.

Though roughly a third of survey respondents (33 percent) said that they never walk when going places like shopping, dining, to church, for entertainment, or for children's activities, well over half (58 percent) walk to these places at least once a week. These results reflect the existing walkability of the Arlington and Ramona neighborhoods identified in UCR researchers' analysis of the area and residents' inclination to walk more frequently as sidewalks and walkways become more physically accessible, safe and well lit, there are places to go, and they experience an overall sense of safety.

Walkability Assessment

A walk audit is an active, typically community-based, way to assess the walkability or pedestrian access of an external environment intended to promote active transportation. UCR researchers partnered the Local Government Commission (LGC)[23] *to organize two Walkability Workshops that included walk audits in the Arlington-Ramona neighborhoods to identify the areas of for improvement that are most critical to residents.*

Following an instructional session, walk audits were conducted along two distinct routes in the Arlington-Ramona area—near Don Jones Park and adjacent to Ramona High School (Figure 9). Afterward, participants had the opportunity to write directly on large-scale aerial images to provide input about challenges and opportunities for improving conditions for walking in their neighborhoods. Trainings, walk audits, and community participation portions of the exercise focused on developing compete streets to accommodate active and motorized transportation for all users.

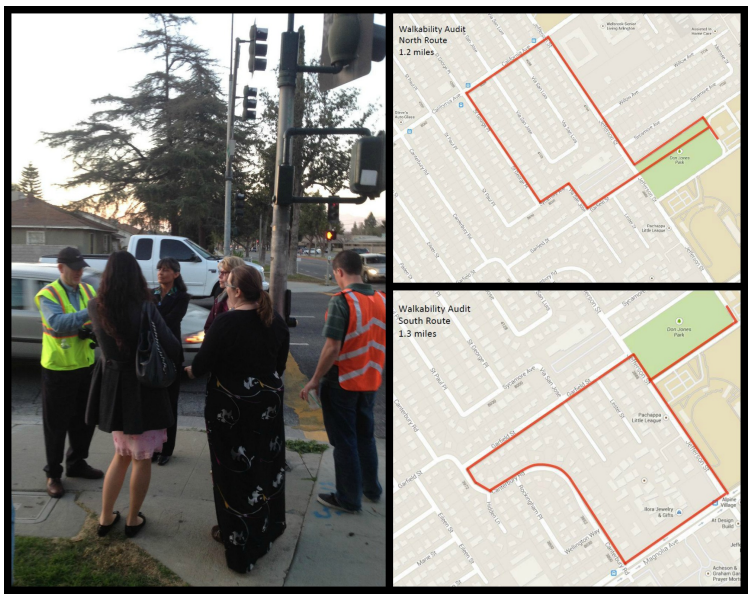

Figure 9: Walkability Workshop – Walk Audit Training and Routes

[23] LGC is a nonprofit organization fostering innovation in environmental sustainability, economic prosperity and social equity.

The final report[24] includes three sets of walkability recommendations—pedestrian concepts, bicycle concepts, and site specific recommendations that should be understood as indicative of the kinds of improvements LGC would encourage the City to consider throughout Arlington and Ramona. Recommendations intended to facilitate pedestrian transit include: widening sidewalks and ensuring sidewalk continuity; increasing the use of high visibility cross walks, stop lines, and yield lines; adding crossing aids, such as curb ramps and warning beacons; introducing road diets where appropriate; increasing and improving lighting; adding pedestrian amenities and regionally appropriate landscaping to create and enhance walkways as public spaces; and examining landscaping and signage to improve visibility for pedestrians, cyclists, and motorists.

Recommendations for facilitating and encouraging bicycling include: road diets to reduce traffic speeds and increase visibility; additional bikeways; removal or relocations of on-street parking to make space for bikeways and improve cyclists' safety; the additional of bicycling amenities, such as bike racks and directional signage; and making bicycle skills training and safety education more accessible to Arlington and Ramona residents, especially students and those who might be amenable to bike commuting. Site specific recommendations apply the more general pedestrian and cycling concepts to exemplary locations throughout the Arlington and Ramona neighborhoods, emphasizing high traffic areas, the streets leading to and from schools, and points at which additional measures are needed to ensure the safety and comfort of pedestrians and cyclists.

Figure 10: Paul Zykofsky, Associate Director, LGC, with Walkability Workshop participants

[24] Martin 2014.

RECOMMENDATIONS

Introduction

The walk audit process and report, results of the neighborhood survey, and residents' comments during community meetings and other events organized in conjunction with this project collectively support a number of standard urban design principles intended to create streets that are safe and enjoyable places to walk, in addition to providing avenues for efficient walking, biking, and other means of active transportation. The following recommendations reflect the professional assessment by the LGC that the city's planning intentions with respect to mobility as expressed in the *Walkable Communities Task Force Report*[25]*, General Plan*[26] *2025* and the *Magnolia Avenue Specific Plan*[27] have not yet adequately improved walkability or increased opportunities for safe bicycling in the Arlington and Ramona neighborhoods.

Our recommendations draw on results of the neighborhood survey, supported by residents' remarks during community meetings and the Walkability Workshop, and the researchers' own experiences as pedestrians and cyclists in the Arlington and Ramona neighborhoods over the past two years. Our research and community engagement suggest that Arlington and Ramona residents are likely to walk more frequently if sidewalks and walkways are physically accessible, safe and well lit, there are places to go, and they experience and overall sense of safety. Our recommendations, therefore, focus on: urban design principles associated with the development of complete streets; residents' desire for nearby shops, restaurants, entertainment options, and open space; justifiable concerns regarding public safety; and broader social considerations, such as public perception of the neighborhood and the importance of social consciousness about the importance of walkability and environmental health.

Complete Streets

Complete streets are intentionally designed to enable safe access and use by pedestrians, bicyclists, motorists and transit riders by making it easy to cross the street, walk to work, shops, and recreational and entertainment locations, and reduce automobile use by switching to bicycling or efficient public transit. Adoption of complete streets policy requires transportation agencies and (sub)urban planners to consider all potential users, regardless of age, ability, or mode of transportation. Walkways and street crossings should be designed to promote safety and comfort, encouraging people to walk by creating an inviting environment for pedestrians. The minimization of pedestrian crossing distances and maximization of pedestrian visibility while slowing vehicle speeds is particularly important in urban areas as well as in suburban neighborhoods intersected by arterial roads. Attention to the clear delineation of space and careful design at conflict points affecting the level of stress experienced by cyclists traversing these environments is likewise critical. Such an approach is consistent with both the City's overall support for improved walkability[28] and its specific commitment to restore Magnolia Avenue, which crosses both the Arlington and Ramona neighborhoods, to its "historical role as a scenic, showcase roadway"[29] and transit corridor.

[25] City of Riverside 2005.
[26] City of Riverside 2007a.
[27] City of Riverside 2009.
[28] City of Riverside 2007a.
[29] City of Riverside 2009.

Pedestrian Safety

There is a strong consensus among those who participated in community meetings and events, including the Walkability Workshop, that high-speed traffic discourages walking, bicycling, and other forms of active transportation in the Arlington and Ramona neighborhoods. In addition, 15 percent of neighborhood survey respondents said that traffic and speeding cars are their primary concern with respect to walkability. Although we encourage the City's engineering staff to revisit speed limits throughout Arlington and Ramona as appropriate and consistent with standards in the field, our specific recommendations focus on improving pedestrian safety, given existing limits and suggested speeds.[30]

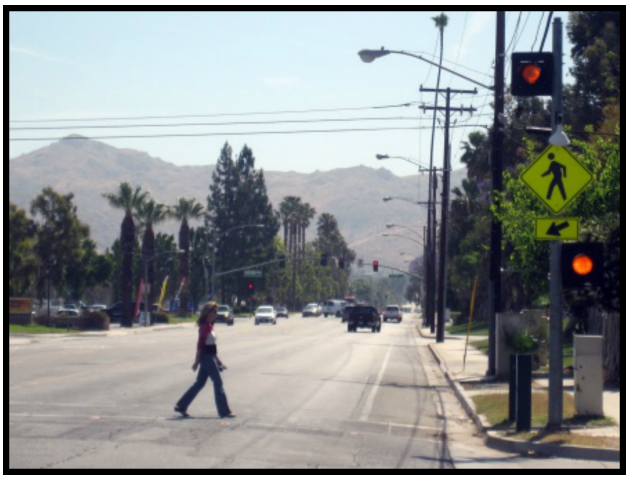

Figure 11: Pedestrian Crossing, Third St./Anderson Avenue in Riverside

Recommendation 1: Invest in High Visibility Crosswalks

Well-marked, highly visible crossings like the one at the Jefferson Street/Garfield Street intersection near Ramona High School alert drivers to the fact they are approaching a location where they may encounter pedestrians. We recognize the City's position that high visibility crosswalks are most effective at uncontrolled intersections. We also appreciate the recent installation of pedestrian signals at Jefferson Street/Arlington Avenue and Colorado Avenue/Texas Street to increase the safety of school children and other pedestrian traffic near Jefferson Elementary School and Adams Elementary School, respectively, and the City's plan to upgrade the uncontrolled crosswalk at Farnham Street/Magnolia Avenue to a high visibility crosswalk. Still, we encourage the further addition of high visibility crosswalks for locations near schools and heavily used transit stops.[31]

Recommendation 2: Add Crossing Aids where Pedestrian Traffic is High, and to Encourage Increased Pedestrian Traffic

Stop and yield lines, curb ramps, truncated domes, and special crossing treatments, such as warning signs or beacons, make pedestrian facilities accessible to all and increase pedestrian safety by warning drivers to watch for foot traffic when approaching crossings. We appreciate the City's financial limitations with respect to the implementation of adequate crossing aids at all intersections

[30] Marshall and Garrick 2011.
[31] Martin 2014, Site Specific Recommendations 7 and 8.

in the Arlington and Ramona neighborhoods; however, we urge the City to prioritize intersections nearest schools and heavily used transit stops.[32]

Figure 12: Examples of Safe Crosswalks in Riverside[33]

Recommendation 3: Ensure Walkway Continuity and Widen Sidewalks

Well-designed walkways, especially sidewalks serving a neighborhood's central shopping, dining, and entertainment areas and recreational facilities are the building blocks of a quality pedestrian environment. Sidewalks should be present on both sides of all (suburban) streets and sufficiently wide to accommodate a space buffer between street and pedestrian traffic as well as streetscape elements, such as shade trees, benches and other seating, and recycling bins. We understand that the City's Public Works Department is currently addressing pavement and related deficiencies on a section of Magnolia Avenue. We support this project as well as the *Magnolia Avenue Specific Plan*[34] as it concerns the Arlington and Ramona neighborhoods, more generally. Maintenance of a continuous sidewalk that is also useful and attractive is essential to strengthening and supporting walking and many other forms of active transportation on Magnolia Avenue and cross streets. In addition, we strongly recommend that the City also identify and address street repair and maintenance issues throughout Arlington and Ramona.[35]

[32] Martin 2014, Site Specific Recommendations 4, 8, and 18.
[33] High visibility crosswalk near school in Ramona (top left); curb extension to shorten distance on Brockton Avenue (top right); Mid-block crosswalk with advance yield line in downtown area.
[34] City of Riverside 2009
[35] Martin 2014, Site Specific Recommendations 1-3 and 6.

Recommendation 4: Improve Roadway and Pedestrian Scale Lighting

Street lighting defines the nighttime visual environment and supports nighttime activities. Moreover, adequate street and pedestrian lighting is critical for both traffic and pedestrian safety and security. Although lighting in the Arlington and Ramona neighborhoods complies with current ordinances,[36] residents and business owners in both neighborhoods consistently note that lighting is inadequate, especially on residential streets and in designated parking areas, such as Miller Street. Results of the neighborhood survey suggest that Insufficient light is a more general concern for Arlington and Ramona residents. Less than half (45 percent) of survey respondents said that they feel safe walking at night; poor lighting or absence of any street lighting at all, is among the top three specific reasons—in addition to crime and gang activity—provided as reasons for feeling unsafe. We recommend that the city consider increasing the number of light sources and/or the intensity of existing sources in the Arlington and Ramona neighborhoods, especially in areas that are, or are likely to become, high traffic.

Safe Cycling

As a rule, complete streets must accommodate cyclists, who are vulnerable to injury and death in the absence of bikeways. Though the vast majority of neighborhood survey respondents (81 percent) reported that they never ride a bike when going shopping, out to eat or to the movies, or for other everyday or occasional outings, their children and grandchildren very likely do rely on bicycles, scooters, skateboards and other wheeled forms of active transportation for commuting to/from school and practices as well as for recreation. Our recommendations reflect a specific concern for the safety of children and other young people riding in Arlington and Ramona. In addition, we expect that the City's investment in cycling infrastructure will encourage adults to consider riding more often, even if they do not swap their cars for bicycles. This expectation is supported by studies at the municipal, national, and cross-national levels[37], many of which indicate that planning and policy interventions are essential in areas characterized by ethnic or racial diversity and/or relatively low socio-economic status.[38]

Recommendation 5: Increase Bikeways and Connectivity

Bicycle lane treatments such as shared lane markings, conflict zone striping, and on-street striping are useful for both cyclists and motorists. Where sidewalk riding is permitted, as is the case for portions of Magnolia Avenue, pavement marking and/or texture can be introduced to define the area for cyclists and to alert pedestrians that the sidewalk is multi-use.[39] We appreciate the City's intention to extend a standard Class II bike lane along the entire length of the Magnolia Avenue; however, for optimal safety and increased cycling on this arterial, we would encourage City planners to consider upgrading to a Class I bike path, which would provide a completely separated right of way for the exclusive use of bicycles and pedestrians with minimal cross flow by motorists. Such an upgrade would better respond to residents' concerns and neighborhood survey respondents desire for clearly demarcated bikeways, which they say would make them more likely to ride a bike.

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[36] Riverside, California Municipal Code § 19.556.020. Web. i. http://www.riversideca.gov/municode/pdf/19/article-8/19-556.pdf

[37] See Dill 2009; Dill and Carr 2004;Pucher et al. 2010.

[38] See Lugo 2013; Powell et al. 2004; Rietveld and Daniel 2004.

[39] Martin 2014, Site Specific Recommendation 9.

Recommendation 6: Reduce Street Lanes

A "road diet" intended to reduce the number of travel lanes is often a practical way to reduce travel speeds, increase visibility of bicyclists and pedestrians, shorten crossing distances for pedestrians, and provide space for bikeways. We encourage the City to consider reducing lanes where appropriate, especially on California Avenue, which we understand is currently under review by the Public Works Department in this context.[40]

Recommendation 7: Removal and/or Relocation of On-Street Parking

Removing on-street parking, perhaps by relocating these areas to adjacent side streets, represents a simple way to provide space for bikeways. We support the City's intention to initiate such modifications this year, and encourage its consideration of extending this practice where practicable throughout the Arlington and Ramona neighborhoods.[41]

Figure 13: Riverside Bicycle Club, Walk Riverside Park Event

Recommendation 8: Target Arlington and Ramona for Bicycle Training and Safety Education Programs

The American League of Bicyclists' "Essential Elements of a Bicycle Friendly America"[42] recognize that infrastructure investments to encourage bicycling and ensure the safety of cyclists are more effective when paired with successful training and education programs. The Riverside Police Department and Safe Routes to School program (previously through the Riverside County Department of Public Health) provide bicycle training and safety instruction; however, Arlington and Ramona residents indicated little, if any, awareness of this programming. We encourage to the City to support such bicycle training and safety education, and to consider additional civic partners, such as the Riverside Bicycle Club, which has offered to collaborate in providing cycling instruction at parks and other public venues the Arlington and Ramona neighborhoods. City assistance with publicizing and otherwise communicating details regarding opportunities for bicycle training and safety education specifically to residents of Arlington and Ramona would enhance its role in creating a bike culture in Riverside.[43]

[40] Martin 2014, Site Specific Recommendation 11.
[41] Martin 2014, Site Specific Recommendation 13.
[42] League of American Wheelmen, Inc. 2013.
[43] City of Riverside 2007b

Recommendation 9: Facilitate Routine Walk Audits

The Walkability Workshop, which featured a professionally-coordinated walk audit was popular, informative, and useful for educating residents about the health and community benefits associated with walkability, and collaborating with residents to identify impediments to walking, riding, and other forms of active transportation in their neighborhoods. Community engagement in the walk audit process is most effective among small groups and when fully supported by city or local officials who are positioned to respond quickly and appropriately to participants' concerns. The City's willingness to relocate a limit line at the Van Buren Boulevard/Duncan Street intersection within a few weeks of receiving the walk auditor's site-specific recommendations is case in point. We encourage the City to facilitate walk audits in the Arlington and Ramona neighborhoods regularly, or upon resident request. Although the costs of a professional walk audit organized by an outside consultant can be prohibitive, the process itself is relatively simple and could be internalized by the City's planning staff, who might be charged with developing a training program for community leaders, who could take responsibility for the walk audits themselves.

Aesthetics and Venues

The neighborhood survey indicates that most (82 percent) of the employed residents of the Arlington and Ramona neighborhoods drive a car alone to get to work. More than half (53 percent) of the adults who attend school likewise drive alone, though nearly 28 percent ride the bus or walk to school—due in most cases to lack of a drivers license or access to an automobile.[44] While transportation decisions concerning commuting are often constrained by distance and available travel time,[45] individuals often experience greater flexibility with respect to how they get to and from the market and other shopping destinations, dining and entertainment, recreational facilities, children's activities, and religious services—especially during weekends. About a third (33 percent) of respondents to the neighborhood survey said that they never walk or ride to any of these places; yet well over half (58 percent) reported that they do so, at least, once a week. More importantly, from a planning perspective, they explained that they might forego non-commuting driving more often if there were "better places" to walk in the neighborhood. When interviewers probed, respondents' answers ranged from generalizations, such as "there should be closer places to walk to" and "better destinations" to quite specific recommendations, including: parks, restaurants, shopping centers and businesses, grocery stores, and trails or paths. These community insights support an emphasis on streetscapes and community development that encourages walkability

Streetscapes

"Streetscape" refers to how a street or walkway looks and the feelings that it engenders, recognizing that urban and suburban streets are public places where people congregate and should support the various activities of relevance to them. Its design should seek to achieve aesthetic as well as practical goals. In this sense, urban and suburban streets, walkways, and bikeways should be aesthetically pleasing as well as safe, especially for pedestrians, cyclists, and other unmotorized users. Cracked and crumbling sidewalks, potholes, inadequate or hidden signage, and poor lighting compromises the beauty of a street or walkway as well as its safety of. The presence of dead trees or plants, or the wrong ones, if there is any landscaping at all, can be ugly and uninspiring; insufficient or uncomfortable seating, rubbish due to absent trash and recycling containers, iron grills or boards

[44] Riverside Transit Agency 2014.
[45] Beacon Economics 2011.

on windows, and transients similarly can prove uninviting and even contribute to a sense of fear. Our recommendations for improving the way that streets and walkways in the Arlington and Ramona neighborhoods look and feel represent site specific applications of he aesthetic principles evident in the City's *General Plan 2025*[46] and the *Magnolia Avenue Specific Plan*.[47]

Figure 14: Poorly Landscaped Street in Arlington Neighborhood without Sidewalk

Recommendation 10: Introduce or Add Locally Appropriate Streetscape Elements

Trees and shrubs, seating and other pedestrian-oriented amenities, and unified, accessible paving should characterize commercial areas, in particular, to enhance the character and quality of build environment and contribute to residents' and visitors' sense of place. Given the region's climate, which historically includes very hot summers, and the current drought, we recommend that landscaping choices balance pedestrians' and cyclists' natural desire for shade with the City's need to conserve water. Selection of amenities should suit pedestrians' and cyclists' needs for seating, news, waste disposal, directions, and bicycle parking. In many cases, the City's role might focus on providing financial incentives and institutional support for residents' and business owners' initiatives. For example, the City should encourage improvements such as the sidewalk seating, improved lighting, and rear parking that have made Olivia's Mexican Restaurant a successful enterprise and a pleasant place to meet and eat in the Arlington neighborhood.

Community Development

Arlington and Ramona residents' desire for additional shops, restaurants, entertainment venues, and recreational destinations located within easy walking distance of their homes or transit stops is supported in principle by the City's Community Development Department, whose mission includes advancing the quality of life in Riverside. The Department's commitment to pursue investment and economic development that conforms to the City's *General Plan 2025*[48] and the

[46] City of Riverside 2007a.
[47] City of Riverside 2009.
[48] City of Riverside 2007a.

Magnolia Avenue Specific Plan,[49] in particular, has the potential to align community needs and City resources to yield economic growth and environmental health in Arlington and Ramona. The following recommendations focus on attending carefully to the relationship between the City's decisions with respect to planning and investment and residents' abilities to create healthy and successful lives in these particular Riverside neighborhoods.

Figure 15: Olivia's Restaurant in Arlington Neighborhood Features Sidewalk Seating

Recommendation 11: Pursue Economic Development with an Eye toward Improving Walkability

Shops, restaurants, theaters, parks and other essential and recreational destinations located within walking distance of residential areas and transit stops provide significant everyday opportunities for walking and riding. We understand that construction of Walgreens pharmacy and retail store and a Sonic Drive-in have been approved for the Magnolia/Van Buren intersection and appreciate the City's efforts to bring new businesses to the Arlington and Ramona neighborhoods, which will increase economic activity in the area. Yet neither of these enterprises is likely to encourage walking and riding; in fact, both are designed specifically for automobile traffic—Walgreens will have a drive-through pharmacy and Sonic is a classic 1950s era diner that features drive-in dining as well as a drive through window for take-out service. We recommend that the City—it's Community Development Department, in particular—seek to balance such developments with investments in street-front businesses nearby or within residential areas[50] to facilitate walking, riding, and other forms of active transportation in the Arlington and Ramona neighborhoods.

Recommendation 12: Streamline Permitting Processes for Walkability Improvements

Business owners in the Arlington and Ramona neighborhoods understand walkability in the broadest sense, and some have exerted considerable effort to ensure safe pedestrian access to their establishments and to improve the aesthetics of their businesses and the spaces around them. Olivia Cabral's successful addition of outdoor seating to Olivia's Mexican Restaurant near the Magnolia Avenue/Van Buren Boulevard intersection is a perfect example; however, Ms. Cabral and other

[49] City of Riverside 2009.
[50] Riverside Municipal Code § 19.120. Web. http://www.riversideca.gov/municode/pdf/19/article-9/19-660.pdf

members of the Arlington Business Partnership report that such efforts are made unduly complicated and time-consuming by the current permitting process. We fully understand the many reasons—from development engineering and utilities management issues to planning prerogatives, land use considerations, and social concerns—that securing permits for building improvements can require long time frames and financial and other resources. Yet there is both statutory precedence and substantive evidence to support the development of a streamlined process for approving building and related permits and zoning variances pursuant to community and other private interests in creating walkable communities.[51] We recommend that the City review the processes businesses face when seeking to make walkability improvements with the intention to simply and streamline it.

Recommendation 13: Collaborate with RTA to make Transit Stops Safer and more Comfortable

If public transportation systems are not convenient and efficient to use, the public will find other ways to travel. Although most Arlington and Ramona residents rely on personal automobiles to get to work and school, some do use public transportation—the bus, in particular (42 percent)—regularly for other trips. This result is significant in terms of the City's efforts to increase walking because the vast majority of these bus-riders (77 percent) walk to the bus stop; even more (85 percent) walk from the bus stop to their final destinations. Though neighborhood survey respondents ranked route changes, frequency of stops, and transfer services top among the changes that would encourage them to ride more often, a small number (about two percent) did identify ambience of their walk or comfort of the transit stop. This response reflects the sentiment of those researchers interviewed at bus stops along Magnolia in both the Arlington and Ramona neighborhoods; these individuals consistently expressed a desire for additional benches and covered stops. Such amenities are particularly important for elderly riders and those who have no other way to get to work or school—destinations that require a neat appearance, which is difficult to maintain when forced to wait at a stop in triple digit heat or a downpour. We understand that RTA is responsible for benches and other bus stop amenities; however, the City's commitment to walkability, particularly in the Magnolia Avenue corridor, warrants our recommendation that the City consider partnering with RTA to improve bus stop comfort.

Public Safety

Walkability and safety are central to the success of communities that seek to promote physical activity and health.[52] If residents feel safe enough to walk in their neighborhood, their level of physical activity is likely to increase, yielding improved individual and collective health, increased interactions among residents and visitors to the neighborhoods, and, potentially, greater social cohesion. The neighborhood survey results indicate that most Arlington and Ramona residents (90 percent) generally feel safe enough to walk outside during the day, but only half that many (45 percent) feel the same way about going out at night. The primary reason provided for this striking difference is crime (76 percent, including gang problems and drugs), which prompts consideration of additional police protection to reduce the incidence of criminal activity. The catch is that most Arlington and Ramona residents (76 percent) consider police protection in their neighborhood to be "excellent" or "good." This result is consistent with professional assessments of the area. Traci Dose, a Riverside Police Department crime analyst,[53] explained that crime is not that bad—

[51] See, for example: Georgia Department of Community Development 2014; Massachusetts Association of Regional Planning Agencies 2007; Partnership for Smarter Growth 2010, A and B2.
[52] Doyle et al. 2006.
[53] Dose 2014.

predominantly theft and vandalism occurring near businesses and along arterial roads. Consequently, while we would support any effort to improve community satisfaction with police protection, our recommendations focus on improving residents' and public perceptions of the Arlington and Ramona neighborhoods.

Figure 16: Graffiti and Poorly Maintained Streets in Arlington Neighborhood[54]

Managing Perceptions

It is increasingly clear that urban design principles, like those that govern complete streets and improve streetscapes, can be used effectively to create physically safe environments. Fear of crime no doubt negatively affects (sub)urban walkability; yet the reverse is also true—"improving the walkability of a street can reduce the number of crimes in the area."[55] Dr. Phillip Kopp, Visiting Professor in CSU Fullerton's Division of Politics, Administration and Justice,[56] concurs. Consistent with contemporary research on the relationship between neighborhood disorder and fear of crime,[57] Kopp argues that the accumulated effect of vagrants and loose dogs in the area, poor lighting, and deteriorated streets and broken down sidewalks, etc. is a sense of social disorder that leads to the reasonable perception of the Arlington and Ramona neighborhoods as a high crime area.

Recommendation 14: Fix the "Broken Windows Problem" by Regularly Cleaning Up the Neighborhoods

The walk audit process and report, results of the neighborhood survey, and residents' comments during community meetings and other events organized in conjunction with the planning process emphasize the relevance of the broken windows problem—"if the first broken window in a

[54] Graffiti on sign near Jefferson Elementary School (left), trash and leaves accumulated at bus stop on Arlington Avenue (right).
[55] Davies 2012; see also Foster et al. 2011.
[56] Kopp 2015.
[57] Ross and Jang 2000.

building is not repaired, then people who like breaking windows will assume that no one cares about the building and more windows will be broken. Soon the building will have no windows."[58] 25 years ago, this insight prompted a significant redefinition of police work that is currently enjoying a resurgence—worldwide.[59] In one much-touted case, Rotterdam police committed 16 hours each week responding to residents' most pressing issues, nearly all of which involved improving city streets and making neighborhoods more walkable. Within a two-year period, traffic violations, vandalism, theft and burglary, and drug-related crimes dropped by ten to 30 percent.[60] Elsewhere—New York City, in particular—this level of success has required cooperation among a wide range of public and private entities, from parks and recreation departments and transit agencies to business partnerships and neighborhood associations.[61] We are aware of the many volunteer and community-initiated clean up programs operating in Riverside and encourage their presence in the Arlington and Ramona neighborhoods; however, evidence that such programs are effective with respect to reducing (fear of) crime is sparse. Consequently, we recommend a City-sponsored initiative to include the Riverside Police Department aimed at providing regular trash pick up, graffiti removal, landscape maintenance, and street and sidewalk repair[62] in Arlington and Ramona.

Recommendation 15: Enforce Leash Laws and Improve Animal Control

That dog ownership begets walking is well documented[63]; however, the presence of loose and stray dogs is a potent source of fear—justified or not. Six percent of neighborhood survey respondents said that loose or stray dogs in the neighborhood often prevented them from walking; many more individuals who participated in the community events that were a part of the planning process reported that dogs and the associated expectation that uncontrolled animals may chase or bite make them afraid to walk outside. Intake and disposition statistics provided by the Riverside County Department of Animal Services indicate that the average number of dogs impounded by the City each month during the last year (estimated at 316) is about the same as it is in Los Angeles (2400), controlling for geographic size and population.[64] This impound rate is arguably problematic to the extent that it is concentrated in a single region or neighborhood—South Central in Los Angeles,[65] Ramona in Riverside. Although impound statistics for Arlington and Ramona are not available, Animal Services Chief, Irene Anderson,[66] said that most of dogs are picked up south of the Airport on Arlington Avenue—very likely in the Ramona neighborhood. Given this situation and the City's commitment to improving walkability, we recommend collection and analysis of data concerning loose and stray dogs in Ramona to be followed by a review of animal control practices to reduce the threat of harm due to dog charges or bites.

Social Consciousness about Walkability

Perhaps the most important, if most elusive, route to walkability is the development of a consciousness in favor of walking and riding rather than driving whenever possible. Unenlightened individualism and unmitigated resource use have contributed to unsafe, unhealthy, and unsustainable

[58] Wilson and Kelling 1989. See Sampson and Raudenbush 1999 for important limitations.
[59] Davies 2012; Pete et al. 1986.
[60] Davies 2012.
[61] Kelling 2009.
[62] Martin 2014, Site Specific Recommendations 14-16 and 19.
[63] See Sehatzadeh et al. 2011.
[64] Los Angeles Animal Services 2014.
[65] Gruber 2013.
[66] Anderson 2015.

suburbs that arguably demand "sprawl repair" initiatives[67] to support a paradigmatic shift away from contemporary auto-centrism toward communities that accommodate pedestrians and cyclists, and are safer and more enjoyable for everyone. In this sense, developing walkable neighborhoods is akin to building a "field of dreams"—if you build it, they will come.

Figure 17: Examples of Educational Programs[68] During Planning Process

With respect to the use of the built environment to shape individual and social behavior, though, the truth is often much closer to, "if you build it, they *might* come":

> Many factors influence [walkability] besides just the built environment, including individual preferences, attitudes, and behaviors; societal norms; the global economy; geography, climate and topography, etc. Not to mention that the city is faced with numerous other…issues including poverty, inequity, crime, disinvestment, unemployment etc. – that cannot be addressed by the built environment alone.[69]

A review of the psychological and social theories relevant to developing sustainable, walkable communities is beyond the scope of this planning exercise.[70] That said, the use of community meetings, events, and educational programs to inform Arlington and Ramona residents about sustainability and the social and health benefits of walkability were incredibly successful. This outcome is consistent with the results of community-based, education-oriented initiatives to

[67] Duany Plater-Zyberk and Company. 2014.

[68] Ramona High School Health and Bioscience Academy Students volunteers at Walk Riverside park event (top); Monroe Elementary School students create their ideal neighborhood (bottom left); Alfredo Lezama, UCR intern, leads session on "Sustainability, Safety, and Walkability" at RUSD Educational Parent Summit (bottom right).

[69] Whyte 2013.

[70] See Milbraith 1989.

improve walkability in economically and socially diverse communities elsewhere in nation,[71] and suggest that popular education can provide effective means of encouraging and reinforcing walking and other forms of active transportation.

Recommendation 16: Changing Consciousness through Popular Education for Sustainability

Popular education refers to an empowering strategy of co-learning and capacity building aimed at groups lacking socio-economic power and full access to political decision-making. The process of joining with others to solve a common problem is arguably transformative; participants sacrifice fear in favor of confidence, self-esteem, and direction.[72] Unfortunately, community-based and classroom education for a sustainable future—one that features a much heavier reliance on walking—faces stiff competition from economic, physical, and time constraints on pedestrian-oriented transit as well as habitual resistance to active and public transportation, when a car is available.[73] We, therefore, recommend the adoption of a long-term, high-visibility campaign intended to change public perceptions, attitudes, and behaviors and decision-makers' will. Such a campaign would ideally incorporate walk audits, political advocacy and any training required to ensure its success, sustainability education and walkability training in the public schools, and ongoing social media and marketing to keep walkability and its social, ecological, and health benefits front of mind among Arlington and Ramona residents.

[71] See Deehr and Shumann 2009.
[72] Macaulay et al. 1999.
[73] Deehr and Shumann 2009; Jucker 2002.

Conclusion and Next Steps

Historically, land use and transit planning to accommodate automobile-dependence has contributed to increases in obesity and related chronic health concerns, especially in low-income communities. The project that motivated this Plan emerged from the idea that "new" planning mechanisms can recreate the "old" neighborhoods characteristic of New Urbanism. Hence, the premise of this project and planning exercise is that community-based planning informed by New Urbanist principles to improve walkability can have a proactive impact on land use and transit planning, by building a groundswell of support for more integrated, pedestrian and cyclist friendly neighborhoods whose residents suffer from fewer health problems associated with immobility.

This Walkability Plan elucidates sixteen recommendations that require a number of structural changes, financial investments, personal commitments, and improvements in communication. We anticipate that measurable improvements in residents' health as a consequence of implementing the proposed plan will be evident within a five-year time frame. We encourage the City to solicit or support a follow-up study at that time to assess changes in the built environment and residents' health. The results of such a study will both verify the utility of urban planning to improve public health, and contribute to our overall knowledge about the effectiveness of community-based planning and the relationships between walkable neighborhoods and health in lower income communities.

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