

Active Transportation System El Paso, Texas

November 13–18, 2016



Active Transportation System El Paso, Texas

Downtown–Chamizal–Medical Center

November 13–18, 2016



About the Urban Land Institute

THE URBAN LAND INSTITUTE is a global, member-driven organization comprising more than 40,000 real estate and urban development professionals dedicated to advancing the Institute's mission of providing leadership in the responsible use of land and creating and sustaining thriving communities worldwide.

ULI's interdisciplinary membership represents all aspects of the industry, including developers, property owners, investors, architects, urban planners, public officials, real estate brokers, appraisers, attorneys, engineers, financiers, and academics. Established in 1936, the Institute has a presence in the Americas, Europe, and Asia Pacific regions, with members in 76 countries.

The extraordinary impact that ULI makes on land use decision making is based on its members sharing expertise on

a variety of factors affecting the built environment, including urbanization, demographic and population changes, new economic drivers, technology advancements, and environmental concerns.

Peer-to-peer learning is achieved through the knowledge shared by members at thousands of convenings each year that reinforce ULI's position as a global authority on land use and real estate. In 2016 alone, more than 3,200 events were held in 340 cities around the world.

Drawing on the work of its members, the Institute recognizes and shares best practices in urban design and development for the benefit of communities around the globe.

More information is available at uli.org. Follow ULI on Twitter, Facebook, LinkedIn, and Instagram.

Cover photo: Katharine Burgess/ULI

© 2017 by the Urban Land Institute
2001 L Street, NW
Suite 200
Washington, DC 20036-4948

All rights reserved. Reproduction or use of the whole or any part of the contents without written permission of the copyright holder is prohibited.

About ULI Advisory Services

THE GOAL OF THE ULI ADVISORY SERVICES program is to bring the finest expertise in the real estate field to bear on complex land use planning and development projects, programs, and policies. Since 1947, this program has assembled well over 600 ULI-member teams to help sponsors find creative, practical solutions for issues such as downtown redevelopment, land management strategies, evaluation of development potential, growth management, community revitalization, brownfield redevelopment, military base reuse, provision of low-cost and affordable housing, and asset management strategies, among other matters. A wide variety of public, private, and nonprofit organizations have contracted for ULI's advisory services.

Each panel team is composed of highly qualified professionals who volunteer their time to ULI. They are chosen for their knowledge of the panel topic and screened to ensure their objectivity. ULI's interdisciplinary panel teams provide a holistic look at development problems. A respected ULI member who has previous panel experience chairs each panel.

The agenda for a five-day panel assignment is intensive. It includes an in-depth briefing day composed of a tour of the site and meetings with sponsor representatives; a day of hour-long interviews of typically 50 to 75 key community representatives; and two days of formulating recommendations. Long nights of discussion precede the panel's conclusions. On the final day on site, the panel makes an oral presentation of its findings and conclusions to the sponsor. A written report is prepared and published.

Because the sponsoring entities are responsible for significant preparation before the panel's visit, including sending extensive briefing materials to each member and arranging for the panel to meet with key local community members and stakeholders in the project under consideration, participants in ULI's five-day panel assignments are able to

make accurate assessments of a sponsor's issues to provide recommendations in a compressed amount of time.

A major strength of the program is ULI's unique ability to draw on the knowledge and expertise of its members, including land developers and owners, public officials, academics, representatives of financial institutions, and others. In fulfillment of the mission of the Urban Land Institute, this Advisory Services panel report is intended to provide objective advice that will promote the responsible use of land to enhance the environment.

ULI Program Staff

Tom Eittler
Senior Vice President, Advisory Services

Beth Silverman
Senior Director, Advisory Services

Daniel Lobo
Senior Director, Awards

Katharine Burgess
Director, Urban Resilience

Paul Angelone
Director, Advisory Services

Steven Gu
Associate, Education and Advisory Group

Leah Sheppard
Intern, Center for Sustainability

James A. Mulligan
Senior Editor

Laura Glassman, Publications Professionals LLC
Manuscript Editor

Betsy Van Buskirk
Creative Director

Deanna Pineda, Muse Advertising Design
Graphic Designer

Craig Chapman
Senior Director, Publishing Operations

About Urban Resilience Panels

LEADERS IN CITIES AROUND the world are thinking about how to become more resilient in the face of climate and extreme-weather challenges. Resilience has taken on many meanings in many different contexts. The Urban Land Institute has joined a number of partner industries to create a shared definition of *resilience*: the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events. Implied in that definition is the ability not just to recover and bounce back but also to bounce forward and thrive.

The Kresge Foundation has provided generous funding support to ULI to undertake a series of Advisory Services panels to assess how cities can better prepare for changes deriving from global climate change. Those changes range from rising sea levels and exacerbated drought and air temperatures to more extreme conditions, such as floods and wildfires.

The objective of such panels is to offer advice and guidance to communities that will assist in their formulation of plans and policies and that will, in turn, create stronger responses to and recoveries from such events. The guidance from these panels is also intended to offer cities strategies to more effectively address the impacts of climate change on a day-to-day basis and make investments which will not only improved preparedness but also strengthen social cohesion, economic development opportunities, and environmental performance.

Acknowledgments

THE URBAN LAND INSTITUTE wishes to thank the city of El Paso for sponsoring this panel, along with partners including the Borderplex Alliance, the El Paso Metropolitan Planning Organization, and the county of El Paso. Special thanks is extended to the city of El Paso's chief resilience officer, Nicole Ferrini, and Sustainability Program Specialist Lauren Baldwin, who facilitated an effective week of work, ensuring the panel's access to critical information and perspectives, and demonstrating their clear commitment to resilience and their city. City Manager Tommy Gonzales also provided excellent support and access to information about El Paso, the Active Transportation System, and the city's current program of work.

Other El Paso staff members who supported the panel's work included Jenny Hernandez, climate preparedness specialist; Candice Heins, sustainable neighborhood specialist; Ricardo Isaias, public affairs coordinator; Javier Jaime, GIS specialist; Lieutenant Thomas Quinn, assistant

emergency management coordinator; Stephanie Santiago, senior economic development specialist; Mariano Soto, GIS specialist and planner; and Mark Weber, neighborhood services coordinator.

The panel would also like to thank the Kresge Foundation for its generous support of ULI's Urban Resilience Program, which has made these panels possible.

The panel also extends its thanks to the many stakeholders from El Paso, including many representing communities in Chamizal and downtown, who participated in the panel through the interview process. This group of interviewees included city community leaders, city staff, elected officials, designers, real estate developers, and active transportation activists. Throughout the week, the ULI panel was continually impressed by El Paso's commitment to resilience and to the active citizens groups at work to strengthen community life.

Contents

ULI Panel and Project Staff.....	8
Introduction and Executive Summary.....	9
The Opportunity of the Active Transportation System	17
Implementing Effective Community Engagement.....	25
Identifying Alternative Transportation Corridors	30
Developing Market-Informed Housing, Financial, and Land Use Strategies	47
Enhancing Partnerships, Cooperation, and Governance.....	60
Conclusion	62
Resources	64
About the Panel.....	65

ULI Panel and Project Staff

Panel Chair

Kamuron Guroi
Former City Manager
City of Burien, Washington

Panel Vice Chair

Ladd Keith
Planning Lecturer and Director of Academic Initiatives
and Student Success
University of Arizona
Tucson, Arizona

Panel Members

Shane Farthing
Senior Adviser
Montgomery County Planning Board
Silver Spring, Maryland

Richard Henderson
Executive Vice President for Real Estate
MassDevelopment
Boston, Massachusetts

Anita Morrison
Founding Principal
Partners for Economic Solutions
Washington, D.C.

Carlos F. Perez
Principal
Perez Planning + Design LLC
Atlanta, Georgia

Jodi Slick
Founder and CEO
Ecolibrium3
Duluth, Minnesota

Alejandro (Alex) Villegas
Principal
Rodgers Consulting
Largo, Maryland

ULI Project Staff

Katharine Burgess
Director, Urban Resilience

Paul Angelone
Director, Advisory Services

Rose Kim
Senior Director, Special Events

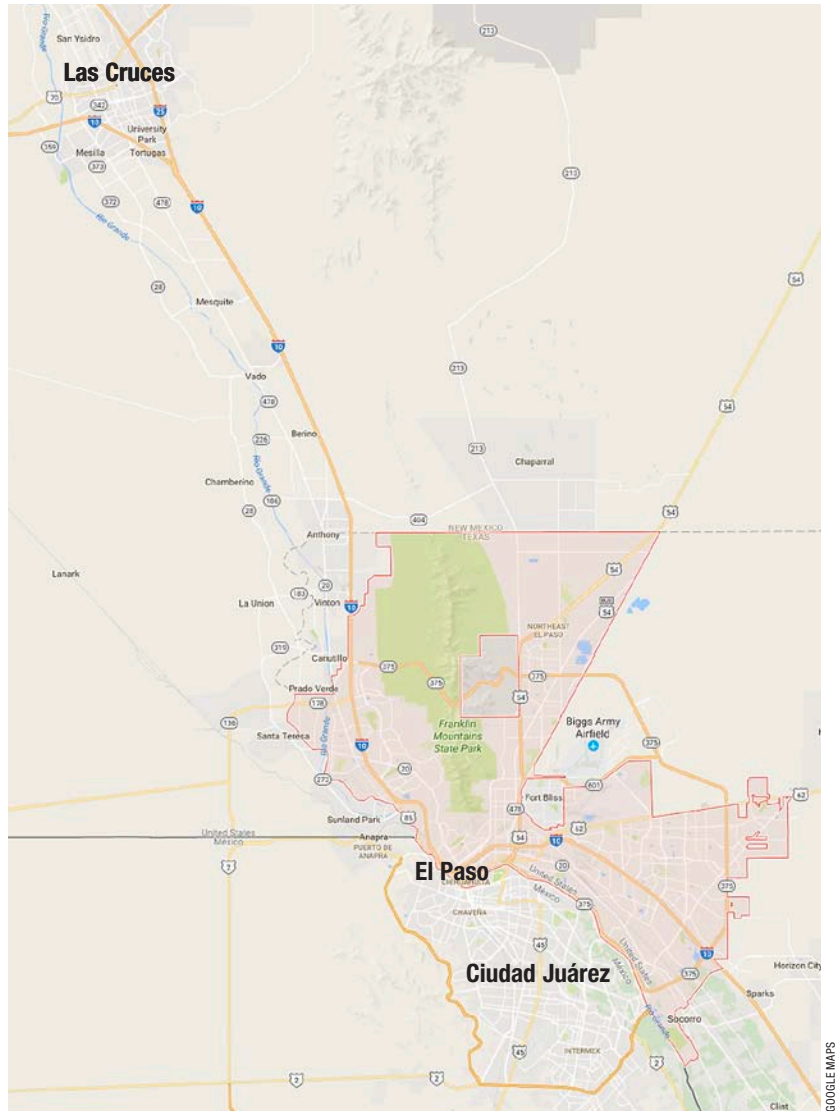
Leah Sheppard
Intern, Urban Resilience

Introduction and Executive Summary

A BINATIONAL CITY set in a dramatic desert environment, El Paso faces challenges of water availability, fragile natural ecosystem, weather extremes, and aging infrastructure. After more than 350 years of continuous settlement, residents and businesses are well versed in adaptation, but environmental challenges likely will become more frequent and severe because of climate change. The city is also addressing a range of other social and economic challenges, including relatively high and chronic poverty rates, high per household costs for energy, and lack of alternative transportation.

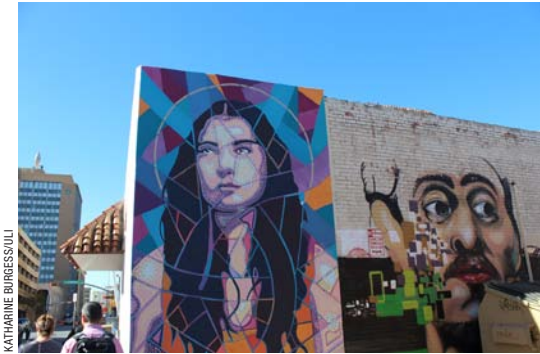
Located in far western Texas on the Rio Grande, El Paso is across the U.S.-Mexico border from Ciudad Juárez, Mexico. As of 2014, El Paso's population numbered about 680,000, located within a larger region of roughly 2.5 million people. Together, El Paso, Ciudad Juárez, and Las Cruces, New Mexico, function as a unique international and bistate borderland area, forming the largest bilingual and bicultural workforce in the Western Hemisphere. The city has a land area of 256 square miles, with a density of 2,500 people per square mile. The El Paso metro area also has five inland ports of entry, three of which are within city limits; the largest military installation in the United States; and the second-largest international trade crossing in the United States.

El Paso has recently invested enormous resources to study catalyst investments, job creation strategies, and downtown revitalization strategies. Voters have favored large tax-supported bond issues for public infrastructure, and encouraging signs of new building and investment exist in downtown and neighborhoods. Some areas continue to struggle, however. As of this writing, El Paso's elected officials continue to discuss the strategy for some of the city's investments that are intended to spur revitalization.



Current revitalization plans build from the blueprints set by a number of impressive recent planning efforts. Through participation in the Rockefeller Foundation's 100 Resilient Cities program, El Paso has formalized and strengthened many of its resilience planning efforts. The city hired a

El Paso forms a broader, binational metropolitan region with Las Cruces, New Mexico, and Ciudad Juárez, Mexico.



KATHARINE BURGESS/ULI

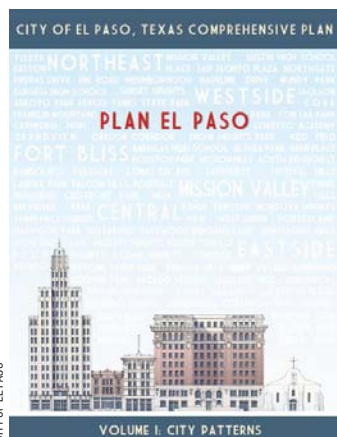


El Paso's downtown is enjoying revitalization; residents and visitors are greeted with street art (above) and local businesses such as the Coffee Box (right) next to San Jacinto Plaza.

chief resilience officer and has integrated resilience thinking into the city's strategic plan. *Plan El Paso*, the city's comprehensive plan, has been lauded as one of the most ambitious smart growth–inspired plans in the country, offering a progressive land use, zoning, and development strategy that prioritizes mixed-use development. The 2016 *City of El Paso Bike Plan* offers a citywide routing strategy for enhanced bicycle infrastructure.

The city of El Paso, the Borderplex Alliance, the El Paso Metropolitan Planning Organization (MPO), and the county of El Paso were partner sponsors for initiating this ULI Resilience Advisory Services panel to help identify a land use strategy that would improve community resilience, address climate risks, build community strengths, and

The panel built from previous planning work in El Paso, including the Plan El Paso comprehensive plan and the recent City of El Paso Bike Plan.



CITY OF EL PASO



promote economic vitality. The panel's assignment focused on identifying resilient route options and a complementary land use strategy for the "International Beltway" portion of the city's new Active Transportation System (ATS), a funded project spearheaded by the local MPO. The ULI Urban Resilience Advisory Services panel sought to apply the priorities and values of El Paso's resilience planning efforts to the ATS site and set a blueprint for future resilience building opportunities.

The Case for Resilience

The city of El Paso defines resilience as a "community's ability to respond positively to change," considering shifts in environmental, economic, and societal circumstances. In addition to the ability to survive a short-term shock, resilience comprises the many linked strengths and capacities that enable a community to overcome longer-term stressors and thrive despite adversity. El Paso's strong identity, cohesive communities, and commitment to planning all contribute to its capacity for resilience.

The city's recent investment in resilience planning signals a commitment to work across the boundaries of municipal departments to address complex challenges. The city's Strategic Plan recognizes core resilience challenges and proposes strategies which will help strengthen the city's adaptability and prosperity.

Individual city projects, such as planning and constructing the Active Transportation System, offer the opportunity to address El Paso's vulnerabilities and challenges, ultimately achieving more resilient outcomes. If the ATS acknowledges the city's shocks and stressors and follows the pillars of resilient design, it could be a model for future city plans and investments, in terms of both design and process, and a replicable example for other communities seeking to build their capacity for resilience and strength.

The Panel's Assignment

The ATS, spearheaded by the MPO, designated a framework for an alternative transportation route through the region that links key destinations and historic assets. *Alter-*

native transportation is defined as human mobility through a self-propelled or otherwise nonmotorized means, typically walking or bicycling. The panel was asked to help identify a land use strategy for a portion of the ATS that would improve community resilience, address climate risks, build community strengths, and promote economic vitality.

Key questions for the panel included the following:

- What ATS route between downtown and Chamizal offers the best connectivity, access, and experience for users? Should the MPO consider any secondary routes?
- What would a resilient ATS trail look like in terms of components such as bike lanes, trees, plantings, storm-water infrastructure, and pedestrian infrastructure? How do these components respond to resource management and climate constraints and create a more bicycle- and pedestrian-friendly environment? Could the panel create a “Toolkit of Parts” for the MPO?
- How can the Salazar Park site, and others currently up for redevelopment in the study area, reflect resilient design principles, address climate risk, public health, and active design, and better incorporate open spaces and links to pedestrian and cycle-friendly transportation resources, like the ATS?
- What private and public sector funding sources can be used for resilience investments along the ATS and on sites like Salazar Park? How can interagency and public/private vehicles be involved in the delivery of resilience investments?

Additional key questions to be considered were the following:

- How can El Paso preserve and enhance cultural and historical assets, which already exist in the community, while enhancing and investing in resilience, mobility, education, health care, open space, and infrastructure?
- Beyond linkage through the new ATS, what are the opportunities to connect Chamizal and downtown?



KATHARINE BURGESS/ULLI

Leaders from the city of El Paso staff and the Housing Authority of the City of El Paso briefed the panelists.



KATHARINE BURGESS/ULLI

The panelists pose at an El Paso bike sharing station.

- How can the design of active transportation infrastructure and public spaces address El Paso’s drought, heat, and nuisance flooding risks?
- How can a system like the ATS, and housing sites such as Salazar, promote active transportation and active, healthy lifestyles in an often hot and arid environment?
- How do the themes and strategies identified during the panel relate to future active transportation projects, such as Mission Trail?
- How can future planning processes broadly consider resilience in environmental, community, and economic terms?

The panel focused on the stretch of the ATS identified as the “International Beltway,” running between El Paso’s downtown, currently experiencing revitalization, through Chamizal, an underinvested and largely residential neighborhood, up to the area known as the Medical Center of the Americas (MCA). The panel explored how the ATS could best link these areas and promote healthy human activity, along with a complementary land use strategy for areas proximate to the trail and the surrounding area. The panel also considered what public and private mechanisms

A Resilient ATS: Opportunities for Mitigation

A resilient ATS would address El Paso’s vulnerabilities in its design, in its development process, and even in its surrounding land uses. The ATS concept addresses some of these vulnerabilities by its very nature, but others require proactive decisions related to design, land use, or the development process.

Topic	Vulnerability	Opportunity for mitigation
Transportation networks	El Paso has a largely car-dependent transportation network. In 2000, 92 percent of El Pasoans commuted to work by car, and the average household owned more than one vehicle. Bike infrastructure is not widely available across the city, and the roads offer an often unsafe environment for cyclists and pedestrians, as exhibited by the city’s high pedestrian and cyclist fatality rate.	The ATS offers El Pasoans the opportunity for pleasant, safe, and convenient bike connectivity and is likely to encourage and increase bike use. A city with multimodal transportation offerings is inherently more resilient, because it provides residents choices for their daily travel patterns and can enable households to save money if they no longer require a car for day-to-day needs.
Human health and preventable disease	The National Equity Atlas found that 69 percent of adults in El Paso were classified as overweight or obese in 2012, and reducing obesity and diabetes through the promotion of healthy living and active living was the local department of health’s top priority in 2013. Much of El Paso also currently lacks sufficient neighborhood green spaces; for example, in 2013, northeast El Paso offered 4.22 acres of parkland for every 1,000 residents, in comparison with the median of 12.5 acres per 1,000 residents in the Trust for Public Land’s 2015 <i>City Park Facts</i> report.	The ATS is designed to encourage exercise, active play, and time in the outdoors. In addition, a resilient ATS could appeal to a broader range of residents and families by including green spaces within the networked transportation route. A resilient ATS would not only offer a safe route for biking and walking but could also include a complementary network of green spaces, thereby enhancing recreational opportunities in currently underserved areas.
Poverty	Over a quarter of El Pasoans have incomes placing them below the federal poverty level, and the residents of Chamizal, along the International Beltway portion of the ATS, are among those with the lowest incomes in the city: 40 percent of households survive on less than \$10,000 a year.	A resilient ATS could connect residents with jobs and represent an investment leading to economic development opportunities for the neighborhood. The ATS could also better address social vulnerabilities in El Paso with a proactive and inclusive community engagement strategy.
Extreme heat	High temperatures occur regularly in El Paso and put the elderly and other vulnerable residents at risk. The city’s extremely hot days, with maximum temperatures over 95 degrees Fahrenheit, are expected to increase from 70 in 2015 to between 105 and 150 by 2100 (Garfin et al. 2016).	A resilient ATS could address the urban heat island effect in its design, mitigating extreme heat through the incorporation of natural materials and fewer hardscapes. Adjacent new housing and development could also address heat in housing design through the incorporation of landscaping, cool roofs, and permeable surfaces.
Flash flooding	El Paso has recently experienced increased frequency of flash floods, which is likely to be further exacerbated by climate change. The flash floods of 2006, which immobilized the city, are one recent memory. Although the city receives an average of only eight inches of rainfall each year, concentrated bursts of rain can cause significant harm, especially in areas with minimal stormwater infrastructure.	A resilient ATS route could be designed to manage stormwater and offer emergency flood relief. For example, the Franklin Canal, which is the strongest candidate for a resilient ATS, could provide El Paso with an additional resource during a flood event. Although the canal is designed for irrigation rather than stormwater management, the Water Authority has the option and capability to open the canal to relieve the risk of the Rio Grande overflowing.
Drought	Drought is a regular occurrence in El Paso and across the desert southwest. The city of El Paso depends on both surface water supply from the Rio Grande and ground sources.	A resilient ATS could be designed to accommodate drought with a native planting palette requiring minimal irrigation and a design that reduces evaporation and supports water supply. A desert landscape could capture visual interest through rocks as well as light desert plantings designed to celebrate the agricultural and landscape history of El Paso.
Challenges of border metroplex	Binational trade and travel is a day-to-day reality in El Paso and an inherent part of the city’s character. Many residents of Chamizal travel frequently to Juárez to visit friends and family. Although these journeys are currently not a challenge for residents, changes in border policies or permeability would present challenges for residents as well as broader economic challenges for the region.	A resilient ATS has an opportunity to address the interrelated nature of El Paso and Juárez by connecting with the border bridges and the complementary transit systems. Although the International Beltway segment of the ATS does not connect directly to Juárez or the border, it will connect to the proposed new bike infrastructure in downtown, which is outlined in detail in the 2016 bike plan.

could be used to fund and deliver future investment. More broadly, the panel explored how El Paso can integrate discussions of climate risk and resource management, promote thoughtful design for conditions of extreme heat and flash flooding, and create inviting landscapes that are well connected and accessible to all.

The panel also addressed two specific sites along the ATS. These nodes were explored as potential exemplars of resilient, healthy design principles and studied as potential connection sites for the ATS.

Downtown, which has experienced revitalization, was one focus area and a key economic development link for Chamizal. The panel provides suggestions for supporting existing uses and businesses and fostering complementary new development that would be beneficial to each area



TEOFILO, FLICKR

The panel focused on how the city could design a vibrant, resilient ATS that responds to local climate and community needs, fostering a “share the road” culture.

and supported by the market. The panel also highlights the opportunity to create a meaningful connection and synergy between downtown, through Chamizal, and connecting to the MCA to support a long-term vision for community development.

El Paso's Vulnerabilities

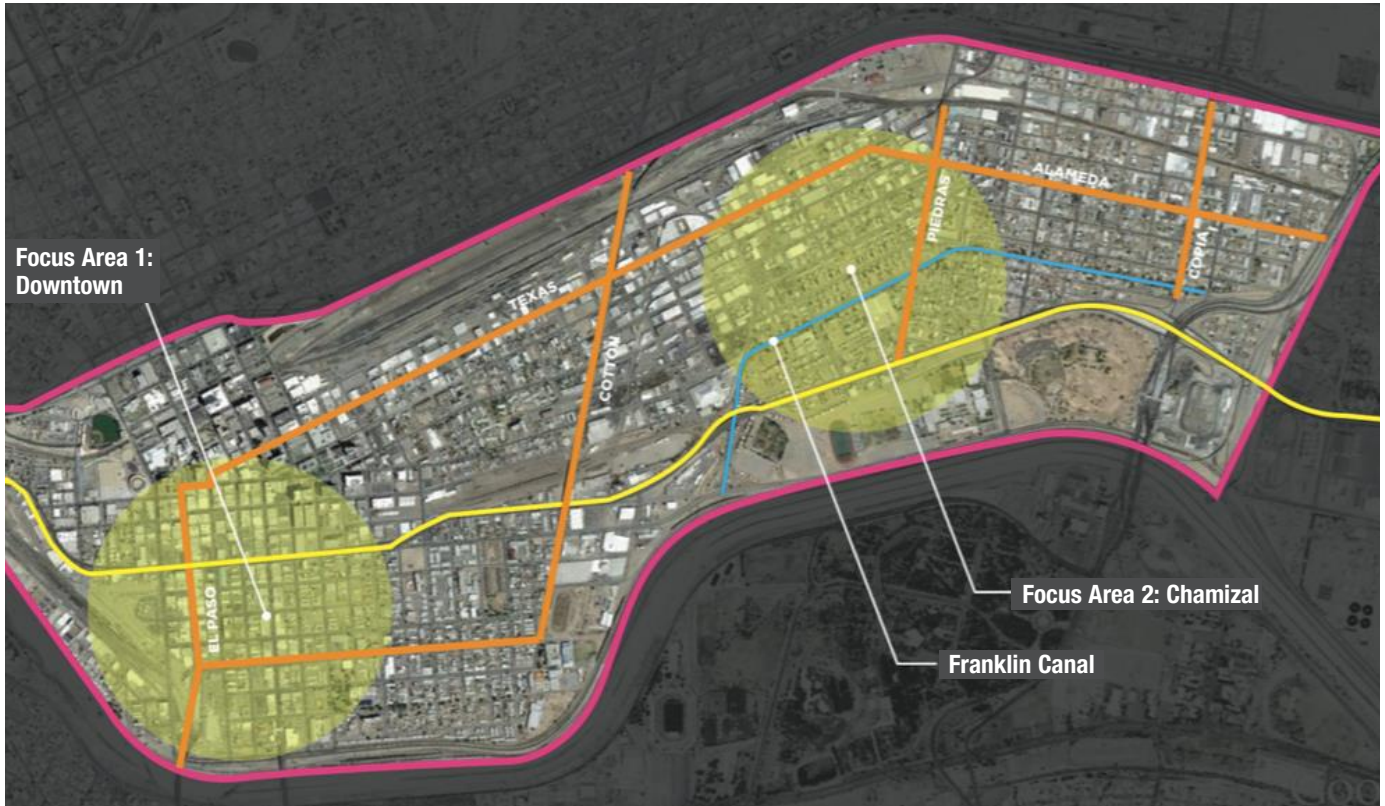
Although El Paso faces a relatively minimal level of environmental shocks, the city is frequently beset by environmental stressors that include predictable weather events, such as extreme heat, flash flooding, drought, and freezing conditions, made increasingly more variable by climate change. Of these stressors, extreme heat has the highest likelihood of occurrence. In a high heat event, temperatures can reach between 105 and 110 degrees Fahrenheit in the midsummer months.

Throughout the year, El Pasoans also cope with an increased risk of longer and more extreme drought and flash flooding crises, which have devastating effects on water supplies and necessitate costly repetitive investments on flood disaster repairs. These weather events have an immense impact on vulnerable community members, such as children and the elderly, those who lack access to air conditioning and transportation, and those who are hindered by communication barriers. Given the scenario of more common severe weather events, the city of El Paso has prioritized mitigating damage caused by such events and improving infrastructure and technologies to provide increased adaptability.

Issues relating to socioeconomic mobility and access to opportunity make up the lion's share of El Paso's social

vulnerabilities. Economic liabilities, health challenges, long-term poverty, and energy and food security are also major concerns for many residents of El Paso. Within communities that are facing high levels of poverty, such as the Chamizal community, the need and ability to survive a variety of shocks and stressors with minimal resources has become an observable cultural trait.

As one of the largest binational metropolises in the Western Hemisphere, El Paso has many characteristics that create potential economic opportunity but also their share of economic vulnerabilities. The border culture thrives in the city: El Paso is home to \$54 billion in binational imports and exports in addition to \$64.7 billion in goods that are transported through the city every year. Friendships, families, and business ventures stretch across the border, and more than two-thirds of the population identifies as Hispanic. But many bilingual residents do not have professional-level fluency in either English or Spanish. Although the cost of doing business in El Paso is 22 percent lower than the national average, and the metro region is home to five universities, the city has historically struggled to build a reputation as a good place to do business and promote private sector investment.



CITY OF EL PASO

The study area for the panel included the portion of the Active Transportation System that stretches from downtown (to the west) to Chamizal (to the east), including the Franklin Canal.

The other area, in Chamizal, surrounding the Salazar and Tays public housing developments, currently under redesign and construction, is adjacent to a recycling center and designed with minimal green space. The Salazar development lacks inviting, healthy outdoor spaces as well as key connectivity supportive of high quality-of-life standards for residents and the surrounding community. The panel also explores what a more connected, resilient, and healthy community could look like, how the project could be funded, how community stakeholders should be

involved, and how other public investments in the area could be leveraged toward broader community benefit.

The bulk of the city's resilience work has emphasized the capacity of the built environment to impact quality of life, urban ecology, human health, and economic growth. The sponsor sought to use the ATS as a case study for this approach through the ULI panel.

The Panel's Primary Recommendations

The panel's recommendations fall into five strategic areas:

- Use strategies to prepare for, and adapt to, the challenges of climate change and its environmental impacts through built infrastructure, innovative strategies, and programmatic means addressing the risks of drought, urban heat, and flash flooding.

The Franklin Canal, which is currently largely inaccessible to the public, was a major focus for the panel as a potential opportunity area for the ATS.



KATHARINE BURGESS/ULI

Responding to Resilience Principles

A resilient ATS should respond to the city's four core principles for building resilience. The result would be more than the sum of its parts: a more active, healthy, and connected Chamizal, linked to the opportunities in downtown and the MCA and connected to a welcoming network of community spaces.

Resilience principle	Opportunity for a resilient ATS
Vibrant desert city	The ATS should be designed to build from El Paso's unique sense of place and assets, recognizing the desert setting. Landscape and infrastructural elements should be designed to accommodate drought and to use minimal water day to day. The ATS must also recognize the barriers to active transportation, particularly in the hotter months, and incorporate ample opportunities for shade.
Environmental economy	A resilient land use and development strategy spearheaded by the ATS should take advantage of El Paso's emerging culture of innovation and entrepreneurship. The panel considered opportunities for new job training programs, premises for small businesses, and other economic development opportunities when examining the opportunities presented by the ATS.
Empowered El Pasoans	A successful ATS plan requires not only planning but also authentic community engagement. The city, MPO, and other agencies involved must work to understand the needs and interests of local residents and develop programs and opportunities that respond accordingly.
Resilient governance	Consistent, transparent, and reliable governance and engagement are critical to the resilience of any city. The development of active and collaborative partnerships and more open communication between citizens and city decision makers are two key goals of El Paso's strategy for building resilience. The panel's proposals for the ATS consider how the site could serve as a case study for this transparent, open, and collaborative approach.

- Create and implement an effective and meaningful community engagement process that can be tailored to local communities and replicated along the ATS.
- Examine the options, benefits, and challenges for alternative transportation corridors and associated community spaces in the study area, such as the example options for the ATS corridor between downtown and Chamizal and a potential new multipurpose trail along the Franklin Canal.
- Make market-informed choices for future land use, employment, and housing options in the focus areas, including opportunities on the Salazar site and a potential relocation strategy for incompatible industrial uses.
- Build on the foundation and enhance partnerships and cooperation across the public sector, community and



The panel team, including the staff from the city of El Paso who hosted the panel, pose at San Jacinto Plaza before the final presentation.

nonprofit agencies, and the private sector to implement these strategies and promote policy continuity and political alignment.

The rest of the report provides more detail about these five opportunity areas.

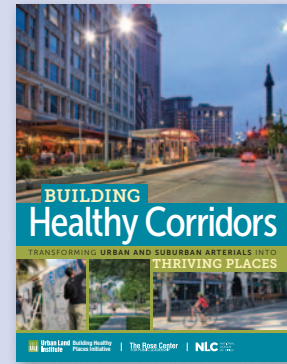
Additional Resources from ULI

Building Healthy Corridors: Transforming Urban and Suburban Arterials into Thriving Places explores how to transform automobile-oriented commercial corridors into more economically vibrant, equitable, and sustainable places that support the people who live, work, and travel along them.

This report lays out strategies for those who are rethinking the future of commercial corridors. It outlines opportunities for integrating health into decision-making processes, for forging partnerships with diverse stakeholders, and for engaging surrounding communities to ensure that urban and suburban arterials enhance health for all.

Active Transportation and Real Estate: The Next Frontier explores the interconnections among walking, bicycling, and real estate development. It showcases the growing synergies between real estate and bicycle and pedestrian infrastructure investments.

As developers around the world seize a competitive advantage by leveraging growing interest in biking and walking among residents and tenants, municipalities are promoting health, equity, and sustainability by investing in active transportation infrastructure projects such as trails, bike lanes, and bike share systems. Together, these multisector investments are producing opportunities to profitably enhance the safety and convenience of nonmotorized travel.



The Opportunity of the Active Transportation System

THE U.S. CENTERS FOR DISEASE CONTROL and Prevention define *active transportation* as “any self-propelled, human-powered mode of transportation, such as walking or bicycling.” An ATS is a network of infrastructure designed for travel powered by people, rather than motorized vehicles. This infrastructure should be scaled for pedestrians and cyclists, considering safety, connectivity, and user experience.

El Paso’s proposed new ATS indicates the MPO’s commitment to healthy transportation and multimodal connectivity across the region. When implemented in conjunction with a broader vision for resilience addressing environmental concerns, land use, and open space, the ATS offers even greater opportunities for El Paso. Inclusive community consultation, compatible land use patterns, and ecologically sensitive design would all contribute to the resilience of the ATS. A resilient ATS would address El Paso’s climate vulnerabilities, enhance quality of life, and present opportunities to residents in underserved communities.

The panel recommends that the city of El Paso and the MPO strive to design and implement a resilient ATS. This report outlines how an ATS, specifically the “International Beltway” segment from downtown through Chamizal to the MCA, could be a resilient system and provide an example for future investment in El Paso.

Preparing for Climate Change

El Paso is in one of the hottest and driest regions in the United States. Natural climate variability has already exposed the city to extreme heat and drought. Climate change adds a new challenge to El Paso and the larger region, with more extreme heat, less snowpack in the mountains that feed many water sources, more extreme rainfall events, and increased climate variability overall (Melillo et al. 2014).

These climate impacts and extreme events will significantly affect the city of El Paso and its residents. In 2015, El Paso County recorded 106 consecutive days above

Benefits of Active Transportation

Recent findings from a nonmotorized transportation pilot program conducted by the Federal Highway Administration to gather statistical information on mode share shifts when new infrastructure and education programs were implemented in four communities showed that:

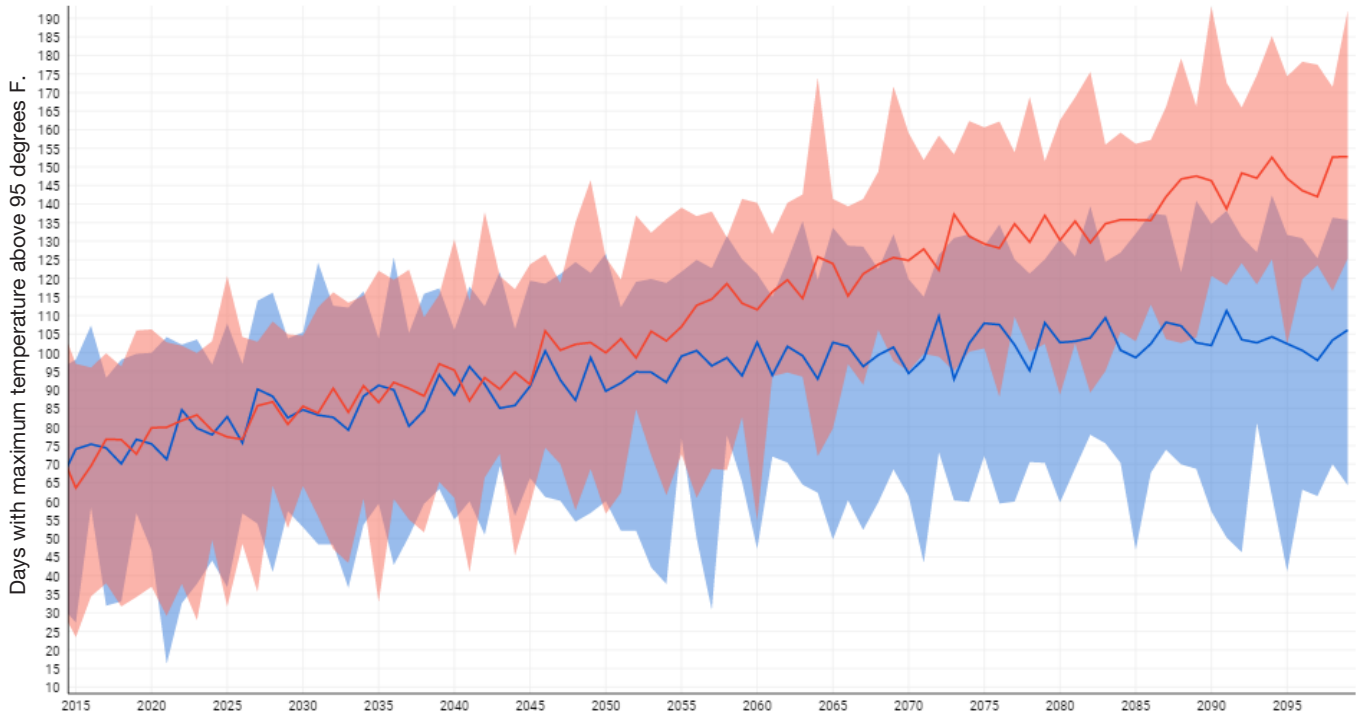
- Roughly, 16 million miles were walked or bicycled that otherwise would have been traveled by driving; bicycling increased by 36 percent and walking increased by 14 percent.
- Emissions decreased by more than 7,700 tons of carbon dioxide; this is equal to saving one gallon of gas per person in the four communities or 1.7 million gallons of gas overall.

- Injuries were reduced: Even with the increased rates of walking and bicycling, fatal crashes remained the same or decreased.
- The communities reduced the economic cost of mortality by \$6.8 million.

Similarly, Safe Routes to School infrastructure has been shown to increase physical activity in children by 20 to 200 percent; also, the safety benefit generates up to a 49 percent decrease in childhood bicycle and pedestrian collision rates.

Source: American Public Health Association/Safe Routes to School National Partnership, *Promoting Active Transportation: An Opportunity for Public Health*, 4.

Extremely Hot Days (Maximum Temperature over 95°F) in El Paso County



Source: Garfin, LeRoy, and Jones, Developing an Integrated Heat Health Information System for Long-Term Resilience to Climate and Weather Extremes in the El Paso-Juárez-Las Cruces Region (2016), figure 1 at 12.

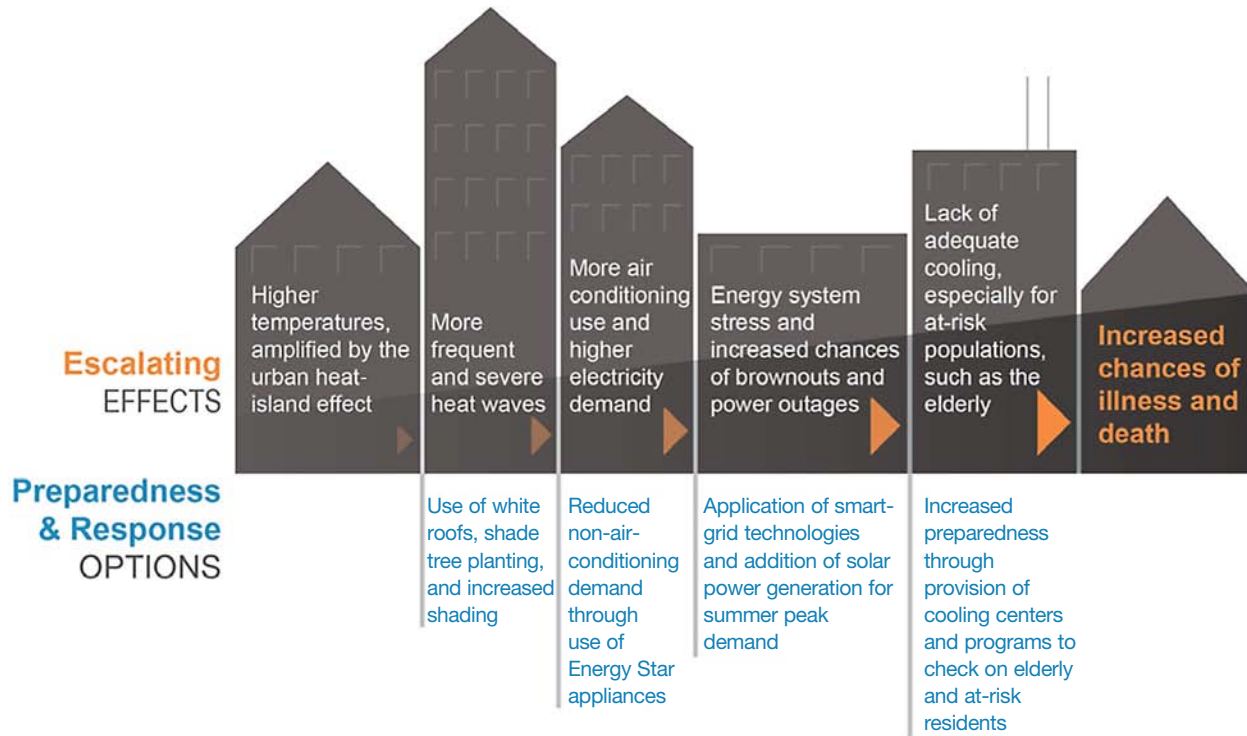
90 degrees Fahrenheit, well above the historic average (Garfin et al. 2016). Coupled with increased heat, El Paso experiences the urban heat island effect, where the built environment and local emissions amplify heat in the urban area. This effect is particularly strong at night and prevents the urban area from cooling down naturally.

The increase of heat through climate change and the urban heat island effect directly affects public health. Infants and young people, as well as those over 65, are age groups most at risk for heat-related illnesses. Other populations at risk include those who are overweight, those who physically overexert during exercise and outdoor work, and those who suffer from compounding illnesses (Garfin et al. 2016). Vulnerable populations in energy-inefficient housing, lacking access to air conditioning, and who experience electronic communication or language barriers are particularly at risk during extreme heat events.

Increased heat also affects local and regional rainfall in several ways. One is that warmer winters regionally will result in drastically decreased mountain snowpack, which historically slowly melted and fed local El Paso water supplies throughout the year. Streamflow totals in the southwestern basins, including the Rio Grande, were between 5 and 37 percent lower from 2001 to 2010 than the 20th-century average flows (Melillo et al. 2014). Overall, the potential for droughts that are extreme and longer in nature is increased by climate change. The heat also dries out the ground and soil more quickly, which affects the water required for urban landscaping and nearby agriculture. It also increases the risk for dust and dust storms, which can have a significant health impact on those with asthma and other breathing conditions.

Whereas El Paso is at greater risk of drought, the warmer atmosphere also increases the probability of extreme rain-

Urban Heat and Public Health



Source: Melillo, Richmond, and Yohe, *Climate Change Impacts in the United States: The Third National Climate Assessment (2014)*, figure 20.6 at 470.



A dust storm in nearby New Mexico decreases visibility for travelers and presents health risks.

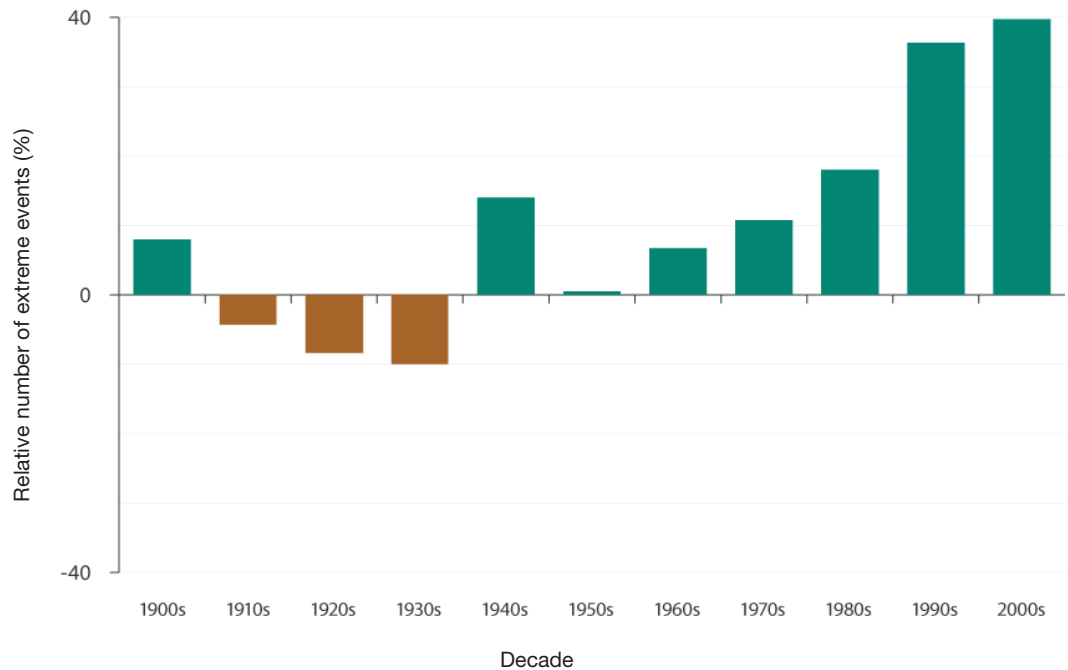
fall events, because the heat enables the atmosphere to hold more moisture. Such an event would be similar to the July 2006 flood, which caused an estimated \$200 million in damage to homes and businesses and \$100 million in damage to the city's infrastructure (KVIA 2016). During the storm, the city received 15 inches of rain over four days,

with at least one intensive period of four to six inches in 15 hours. The heavy rains and mountain terrain led to significant water runoff and more intense flooding than the city had seen in 100 years. The numerous raised canals, rails, and hardscapes such as roadways and parking lots in the city have put particular areas at increased risk for these flood events. After the flooding, the city earmarked \$115 million of bond funding for reconstruction and repairs.

This change in weather has other effects, including the potential for an increase in mosquito population in El Paso as the warm season grows longer because of climate change and the urban heat island effect (Brown et al. 2015). This potential for increased vector-borne diseases, such as the existing West Nile virus and the threat of Zika virus, could have additional negative public impacts.

Additional environmental considerations include the following:

Observed U.S. Trend in Heavy Precipitation



Source: Melillo, Richmond, and Yohe, *Climate Change Impacts in the United States: The Third National Climate Assessment (2014)*, figure 2.16 at 36.



Standing water, not properly drained, presents a potential public health risk, particularly from vector-borne diseases such as the Zika virus.

KATHARINE BURGESS/ULI

- Local pollution sources (air quality);
- Environmental contamination (brownfields); and
- Complex border problems.

Vulnerable populations will be affected first and most severely by climate change and other environmental challenges.

“Most of the Southwest border population is concentrated in eight pairs of fast-growing, adjacent cities on either side of the U.S.-Mexico border (like El Paso and Juárez) with shared problems. If the 24 U.S. counties along the entire border were aggregated as a 51st state, they would rank near the bottom in per capita income, employment rate, insurance coverage for children and adults, and high school completion” (Quoted in Melillo et al. 2014, 465).

Resilient Design Strategies for the Active Transportation System

A resilient ATS for El Paso is not only one that withstands and rebounds from extreme climate events, but also one that thrives and brings the quality of life in the surrounding community and region to a higher level. Resilience through this lens includes consideration of social, economic, and environmental factors and examination of the broader land use patterns around the proposed ATS. Planning and design strategies for the ATS should achieve stacked benefits

if possible and accomplish multiple social, environmental, and economic benefits for local neighborhoods, the city of El Paso, and the broader El Paso–Juárez–Las Cruces region. This result not only increases the return on the investment in the ATS for the city, but also strengthens the positive impacts of the ATS for the residents.

The ATS itself is a resilient response to numerous challenges facing the city. The ATS promotes safe and inclusive modes of alternative transportation such as walking and bicycling, improves public health, decreases carbon emissions, increases resident mobility, and has the potential for economic development. Many resilience design strategies also lower greenhouse gas emissions as an added benefit. Encouraging walking and bicycling for local trips means fewer car trips are made, thus reducing emissions from cars. Through the planting of native drought-tolerant trees and landscaping, pollutants are removed from the air and otherwise-present dust from the currently barren area is minimized. The use of green infrastructure, which helps decrease flooding risk, also promotes water conservation by using rainfall instead of other scarce water sources.

Specific resilience planning and design strategies for the ATS include the use of green infrastructure, shading, cooling centers, and drinking water availability.

■ **Incorporate green infrastructure.** The landscape and design strategy for the ATS should incorporate green infrastructure to wisely manage El Paso’s limited water resources and create a more inviting public realm. These investments are likely to lead to the conservation of precious water resources and have the potential for decreased maintenance and gray infrastructure costs for the city. A landscape should include drought-tolerant plantings appropriate to the local climate. Local grants may be available for investment of this kind; for example, the Border Environment Cooperation Commission may be a potential source because of recent efforts in the Mexican state of Nuevo Leon. Design elements could include



KATHARINE BURGESS/OLI

San Jacinto Plaza offers an excellent precedent for new parks in El Paso, including attractively designed spaces for stormwater capture.

- Rainwater basins;
 - Street-side curb cut-outs; and
 - Drought-tolerant planting.
- **Decrease hardscape to mitigate the urban heat island effect.** Reductions in hardscape are proven to decrease the urban heat island effect. Hardscapes can be replaced with plantings, as well as with permeable surfaces that absorb less heat. Breaking up hardscapes can also lead to a reduction in urban heat.
- **Include the community in the design process.** Involving neighbors in the design process can increase community interest in the scheme and ensure that culturally appropriate design elements, likely to be valued



CAROLYN TORRES, APA IMAGE LIBRARY

A xeriscaping landscape scheme for a median in Tucson addresses local climate through its resource-efficient design.



KATHARINE BURGESS/ULI

A trellis offers an example of an elegant shade structure in front of a multifamily residential building.

by nearby residents, are included. Engagement in the design process is also an opportunity for outreach and education on water conservation. Strategies for involving the community in ATS planning and the bigger picture for such an engagement effort are detailed later in this report.

- **Incorporate ample shade, including manufactured structures and tree canopy.** Given the high number of triple-digit heat days, El Paso is not always a welcoming environment for pedestrians and cyclists. Accordingly, the ATS must include ample shade structures to encourage use and make the system viable during times of extreme heat, particularly at key stops and respite points. Shade should include the following:

- **Tree shade:** Deciduous trees that lose leaves in the winter would be a wise investment. Because the city is relatively cool in the winter, respite spots may function better with sunshine.
- **Manufactured shade structures:** Shade structures can be designed as memorable design elements of the ATS and should be multifunctional, including other potential elements such as solar panels, plugging stations, and trellises. These shade structures could also offer opportunities for public art and placemaking, engaging communities in design and selecting motifs and themes that resonate with and inspire local residents.

- **Identify “cooling centers” and incorporate them along the route and in citywide strategies.** Cooling centers are public spaces with air conditioning, designed to temporarily provide relief during heat waves. The Chamizal Community Center could be a pilot for a cooling center, located along the ATS in a neighborhood hub. The cooling center could include elements of resilient design, such as the ability to function off-grid (preferably with renewable energy) to withstand extreme heat scenarios, particularly as peak demand is increasing, which could lead to more blackouts and brownouts. The ATS could be a useful tool for identifying other cooling center or safe haven locations for neighbors during heat waves.
- **Ensure drinking water availability.** Drinking water availability is critical for ATS summer use. Unfortunately, drinking water availability could be improved in El Paso’s parks, although drinking fountains have been included in some recent park investments such as San Jacinto Plaza. Ideally, the system should include tamper-resistant designs for drinking fountains that can also function as bottle fillers. Water stations should be marked well and coordinated with cooling centers for a wider benefit to the neighborhood.
- **Increase use of solar energy.** El Paso is fortunate to have one of the best solar resources in the United States. Panelists heard a desire for additional solar installations but concern over the current cost of solar energy. In the past seven years, solar panel costs have decreased by

Energy, Health, and Jobs: Considering the Impact of Climate Change

As climate change impacts are felt, El Paso's lowest-income residents are most at risk of health issues and financial instability. Currently, a significant gap exists between affordable energy and the ability of El Paso's poor to pay. This situation will only be exacerbated as additional cooling is needed to deal with extreme heat. The panel heard from residents of Segundo and Chamizal barrios an interest in improving the energy efficiency of homes. The city of El Paso is addressing some of these issues through its recently formed Regional Renewable Energy Advisory Council, an ad hoc committee well positioned to address some of these needs and consider models that have been effective elsewhere. The Border Environmental Cooperation Commission also indicated funding opportunities for this type of work on the El Paso side of the border. Currently, it is funding a similar program in Ciudad Juárez.

According to the Home Energy Affordability Gap model, the "affordable burden" for home energy bills is considered 6 percent of gross income with 2 percent related to heating and cooling. Although the federal Low Income Home Energy Assistance Program is able to help residents at 200 percent of the federal poverty level or less, not enough resources are available to help all households in need. El Paso County alone is home to 22,272 households with incomes below 50 percent of the federal poverty level. In just looking at this extremely low-income population, El Paso is underfunded by \$44 million per year (or \$1,968 per household) to make energy affordable. This represents an average energy burden of 29.8 percent, meaning that almost a third of a family's household income is being spent on its energy bills.

Developing policies and programs to address energy affordability increases individual and community energy and financial resilience and could provide multiple cobenefits. Nationally recognized models to consider include the following.

Duluth Energy Efficiency Program

The Duluth Energy Efficiency Program (DEEP) is a one-stop-shop model for energy auditing, scope of work development, financial bundling, contractor management, and quality assurance. DEEP has used U.S. Department of Energy, U.S. Environmental Protection Agency, and U.S.

Housing and Urban Development Community Development Block Grant funds along with local philanthropic dollars, utility rebates, private investment, and earned income to accomplish more than a thousand retrofits. The third-party project management program was used to help northeastern Minnesota recover from flooding in 2012. DEEP partnered with the Fond du Lac Tribal and Community College to train and mentor home performance workers and now includes a volunteer-based program to assist low-income, disabled, elderly, and veteran/active military personnel.

Green and Healthy Homes Initiative

The Green and Healthy Homes Initiative (GHHI) model is similar to DEEP in its efforts to have a coordinated assessment and implementation of interventions. It advances the DEEP model by layering efficiency and healthy building improvements to reduce asthma and other health conditions affected by the built environment. GHHI leverages housing, energy, and health funding while implementing targeted data-supported interventions, which increases financial and health resilience while lessening carbon emissions. GHHI has used pay-for-performance funding models, and many states are exploring waivers to be able to use Medicare funding for interventions that show improvement in health indicators. GHHI's eight elements of a green and healthy home are dry, clean, safe, well ventilated, pest free, contaminant free, well maintained, and energy efficient.

Grid Alternatives

Grid Alternatives is a nonprofit organization working throughout the United States to provide solar energy to low-income families. The Solar Affordable Housing Program is Grid Alternatives' core program. It uses a barn-raising model that gives volunteers and job trainees hands-on experience they can use to get jobs in the growing solar industry. Each project has a triple impact: energy cost savings that help struggling families put food on the table or pay medical expenses; a classroom-in-the-field for solar aspirants that supports local employment and the growing solar industry; and a reduction in greenhouse gas emissions that helps local governments reach their emissions targets and contributes to cleaner air for everyone. The federal government also has programs to encourage training of veterans for the solar industry.

over 80 percent. Through 2020, a 30 percent federal investment tax credit (ITC) exists. The panel recommends El Paso explore opportunities to increase solar installations to take advantage of the ITC. Current program offerings through the Solar Foundation could provide a free SolSmart Advisor to assist the city of El Paso in expanding solar opportunities and further reducing system costs. In addition, the panel recommends targeting solar production to reduce energy costs to low-income families.

- **Incorporate resilient power solutions.** The new community center has the opportunity to be a local and regional model for resilient power supply, incorporating the use of renewables to ensure preparedness for power outages. A combination of solar and battery storage could be an effective model and could be operated by a nonprofit organization although the facility will be owned by the city. The use of battery storage or battery backup will permit community charging when the grid is down to ensure communication in time of emergency.
- **Consider alternatives to traditional materials.** Given its long-term durability and aesthetic potential, concrete has been recommended for use in the ATS route, including in the panel's primary proposal along the Franklin Canal. Unfortunately, modern concrete has a high carbon footprint, in large part because of the production methods for Portland cement. Portland cement is the "glue" that binds rocks together in concrete. The calcination of limestone, the main raw ingredient in Portland cement, and the high temperatures at which Portland cement must be produced (2,000 degrees Centigrade) are the two main reasons for this high carbon footprint.

Options being explored to reduce this footprint include the use of supplementary cementitious materials, such as fly ash or slag, which are industrial byproducts that can replace portions of Portland cement in concrete. In

addition, many new binder systems are being investigated, including geopolymers, or inorganic polymer binders. These binders contain zero Portland cement and are based primarily on waste materials such as fly ash, slag, or waste glass. These novel, new binders have shown great promise in terms of mechanical and durability performance in comparison with Portland cement.

Research on these binders is being led by Dr. Mary Christiansen at the University of Minnesota Duluth under a model that could be adopted by the University of Texas at El Paso (UTEP) School of Engineering. Dr. Christiansen currently has a research team made up of undergraduate and graduate students working to further develop geopolymer binders and has installed demonstration projects to test materials on campus. This area of research has potential to capture a variety of industrial waste products for local reuse. UTEP could become a center of research and application for lower-carbon concrete most applicable to the southwest climate with the ATS as a demonstration site.

- **Avoid maladaptations to climate change.** One important consideration for the ATS and resilience of the community in general is to avoid maladaptations to climate change. Maladaptations are resilience strategies that initially appear to provide a benefit but that may have hidden costs that actively promote more greenhouse gas emissions or decrease community viability in another way. One example of a maladaptation would be green infrastructure planted with nonnative trees that increase demands on water supply during a drought when rainfall is limited. Another example would be water-harvesting basins that are not maintained and become mosquito and vector-borne disease growth mechanisms. Another example would be patio water-misting systems that run all day and cool the surrounding air but waste valuable water resources.

Implementing Effective Community Engagement

A MAIN GOAL OF ATS PLANNING and development should be establishing an authentic community engagement model that not only achieves successful routing and design but also builds longer-term partnerships, expands capacity of neighborhood residents and organizations, and creates a sense of ownership that can lead to public/private opportunities for ongoing maintenance of the ATS.

The panel heard repeatedly that the process for community engagement for large-scale projects in El Paso could be improved, and the ATS offers an opportunity to address this issue. Foundational elements of community engagement should include identifying adjacent neighborhoods and commercial districts as key stakeholders, committing to robust engagement opportunities that “meet people where they are,” and establishing clear communications and roles. Communities with high social vulnerability need additional support to effectively participate, but the potential rewards of bringing in the neighborhood are high.

Social vulnerability refers to the resilience of communities when confronted by external stresses and threats. As the city of El Paso focuses on resilience, numerous stresses and threats have related to the social inequities and low incomes in the community. Chamizal has some of the highest social vulnerabilities in the United States, so any planning initiative must seek to address these issues, particularly given that communities with high social vulnerability need additional support in preparing for hazards and recovering from major events. Low-income residents are also likely to have more barriers to participation than higher-income households, meaning that additional efforts may be needed to achieve a welcoming and inclusive process.

A mismatch in expectations often exists when community engagement is discussed. Public entities often check the engagement box through one-way distribution of informa-

tion or by hosting limited public meetings to gather input on preconceived strategies or projects. Residents and business owners who could be affected by decisions often find this method inadequate and are more likely to define true engagement as the opportunity to collaborate or be the true decision makers. Not designing opportunities to cocreate results in a reduced willingness to engage in the future or establishment of strong oppositional voices, costing projects time and money or resulting in projects being abandoned.

The International Association of Public Participation has created a continuum of engagement that assists communities in understanding the variable definition of engagement and move toward deeper, more authentic processes and increased social capital. The continuum ranges from distribution of information and limited engagement (outreach and consultation) to formation of partnerships and trust building through bi-directional communication and shared decision making (collaboration and shared leadership). The panel recommends that ATS planning be conducted as a collaboration with opportunities for shared leadership.

In short, to become a successful, resilient, and well-used part of the community, the ATS must respond to the needs of nearby residents. Accordingly, the city should more proactively engage residents in the planning process and in events and programs associated with the ATS after its completion. A thorough community engagement process will also make any project more efficient and effective by

- Engaging more people, more efficiently, for less money;
- Unearthing what matters most to the community to build synergistic solutions;
- Identifying issues in the design phase to reduce costly changes later;



KATHARINE BURGESS/ULI

Local public art, such as the murals in Lincoln Park, celebrate El Paso's character: they emerged as a result of strong community cohesion and engagement.

- Expanding potential in-kind and financial contributions to a project;
- Building trust over community decisions and greater project ownership;
- Developing long-term stewardship commitments, thereby reducing operations and maintenance costs; and
- Managing the conversation before it manages the project.

The panel recommends the following strategies to achieve a more inclusive process for the International Beltway portion of the ATS.

Café Mayapan: A Local Example of Social Resilience

La Mujer Obrera is an El Paso–based nonprofit organization that supports local women and advocates for workers' rights and human rights in the disadvantaged communities of El Paso County. Café Mayapan is one of the organization's social enterprises: a traditional Mexican restaurant that provides job training for local women and strengthens the local economy in the South Central neighborhood through employment and contracts with local businesses.

Café Mayapan also supports local food production and responsible resource use, having provided more than 300 pounds of compost to local community gardens since 2012. The café is adjacent to Lum Metik, a fair-trade shop featuring artisanal products made by women, including partners from indigenous communities in Mexico.

Beyond their commercial functions, Café Mayapan and Lum Metik serve as a hub for community organizing and educational programming led by La Mujer Obrera. In doing so, they are excellent examples of social resilience, skill building, community cohesion, and personal connections among local people, including the disenfranchised. Having strong social organizations and civic spaces such as Café Mayapan and Lum Metik provides communities with connections, knowledge, and networks to handle both shocks and day-to-day stressors.



KATHARINE BURGESS/ULI

The ULI panel team enjoys a meal at Café Mayapan.

■ **Build from the existing social cohesion in the community.** Although the demographics in Chamizal suggest high social vulnerability, a major mitigating factor is strong social cohesion. Residents, community groups, and others reiterated the strong familial and multigenerational connections in the community, some of which are endangered as the most recent generation may be struggling with housing. Neighbors and families have a system of social ties and interdependence. Many families also appreciate the convenient and walkable access to Juárez because of family and community ties between the sister cities.

The Chamizal community has a number of strong civic institutions that connect the community. The panel found a strong desire in the community to build from these connected networks to create authentic partnerships with the city and inform processes. Some examples are Bowie High School, which is well recognized and respected, including a tremendous amount of alumni pride, and Café Mayapan, which offers the community a fantastic resource as both a gathering place and a hub for social enterprises.

■ **Work with existing neighborhood groups to design the participation process.** Strong social cohesion demonstrated in the study area neighborhoods is an asset that can be leveraged to get the word out. Resident-led organizations such as Familias Unidas del Chamizal and the Southside Neighborhood Association can serve as trusted messengers to residents and have demonstrated their desire to enable neighborhood action for greater resilience. The panel recommends pursuing efforts that can build neighborhood capacity and leadership.

The El Paso cycling community and Bicycle Advisory Committee can also work with the city to find ways to support resident-led neighborhood organizations. The cycling advocacy group Velo Paso Bicycle Pedestrian Coalition is already doing fantastic work in El Paso. A comprehensive community engagement strategy would ensure that Velo Paso is able to assist local residents'

groups and provide cycling educational materials, events, and more.

■ **Acknowledge the many projects underway in the Chamizal area.** Although establishing engagement processes that increase the level of community involvement, impact, trust, and communication flow are important for all stakeholders, they are even more imperative to build individual and community resilience for traditionally marginalized populations with high social vulnerability. Currently, members of the Chamizal and Segundo barrios are being affected by multiple public projects that have had variable commitment and success in engaging the neighborhood. Interviews have made clear that public entities strongly desire to include the neighborhood perspectives in planning and projects; however, because of staff capacity, scheduling limitations, and budget constraints—or a limited framework of engagement—these community engagement activities have not been as robust as they could be.

It should be noted that each public agency's project is just one of many being pursued within the study area. Residents are concurrently dealing with major highway projects, reconstruction and removal of different public housing projects, potential closure of schools, and multiple quality-of-life projects, including the Chamizal community center and the new multipurpose arena. Seek to streamline communications and acknowledge the many stresses and unknowns in the community. Imposing projects without good engagement can result in reduced resiliency demonstrated through feelings of powerlessness, increased complication to individual lives, and channeling local activism away from important challenges toward less important ones.

“What we would like is commitment, communication, and consideration.”

—Resident of Chamizal, responding to questions regarding engagement by public entities



The ATS is one of many projects currently underway in Chamizal. Others include major highway projects, housing redevelopments, school closures, and projects addressing toxicity concerns and quality of life. Any engagement strategy needs to acknowledge both the extent of change underway and residents' likely fatigue from past planning efforts.

During panel interviews, a resident of Chamizal stated in response to questions regarding engagement by public entities, "What we would like is commitment, communication, and consideration." Residents from both Chamizal and Segundo Barrio also discussed neighborhood priorities that should be considered when making infrastructure investments and creating engagement processes. These included the following:

- Addressing current infrastructure deficiencies such as poor lighting and deteriorating sidewalks and roadways;
- Assisting residents in home efficiency and improvement projects;
- Developing community gardens and access to healthy food;
- Reducing toxic load on the community from industrial and trucking activities;

- Increasing safety for children and elderly or disabled residents on pedestrian routes;
- Maintaining housing within walking distance to international bridges; and
- Expanding job and educational opportunities for residents.

- **Use neighborhood input to provide insight into potential cobenefits.** A resilient ATS will not only provide a new active transportation connection but also successfully leverage cobenefits related to the needs and interests of the community. Some of these cobenefits may directly address the needs articulated by community residents, whereas others would address future areas of opportunity. Essentially, resilient strategies look for value-added propositions where a primary goal can be met, with additional cobenefits developed. Investments in the ATS that may be beneficial and of interest to the local community could include the following:

Principles of Community Engagement

El Paso should use the ATS project as a “best in class” case study for community engagement and leadership. In addition, the panel recommends creation of a process that begins at the design phase and follows community engagement principles (CTSA 2011, chap. 2):

- Clearly determining the goal of the engagement effort and the populations that will be engaged. Recognize that traditionally marginalized communities may need additional support to participate. Efforts should be made to avoid tokenism in which working with one individual or organization is seen to represent all.
 - Building knowledge about the culture, norms, economic condition, history, and demographic trends. This knowledge is important for the engagement process sponsor but can also be a step in the process that creates an option to establish a common context for subsequent steps.
 - Understanding the community’s perceptions of those initiating and participating in the engagement activities. This step may include identifying past engagement attempts successes and failures. From this information, effective strategies can be developed to connect without defaulting to “they weren’t interested” when the issue may be initial lack of trust in agency, intentions, or process.
 - Establishing relationships with the formal and informal leadership, and seeking commitment from community organizations and leaders to create processes for mobilizing the community. Providing in-kind or direct resources to organizations to accomplish mobilization strategies may be important. The level of involvement needed may vary depending on perceptions identified in the preceding guideline.
 - Remembering and accepting that collective self-determination is the responsibility and right of all people in a community. Good engagement design can augment the sense of empowerment and build capacity for residents to participate in future actions to strengthen their community.
 - Recognizing that all aspects of community engagement must understand and respect the existing social fabric of the community. Awareness of the cultural context must be paramount in planning, designing, and implementing approaches to engaging a community.
 - Releasing control and establishing a flatter power structure than currently exists is necessary for shared decision making. Establishing greater power equity through training, information sharing, and balanced representation may be necessary.
 - Establishing true community collaboration will increase project success and better future opportunities but requires a long-term commitment. Each engagement process can either build or destroy relationships and trust. Committing to good process and community collaboration will create the highest chance of successful project implementation and long-term dedication by residents in use, operations, maintenance, and programming of the ATS.
- Shade structures providing energy for emergency charging. In this case, a primary need to mitigate heat along the ATS provides the opportunity to improve community access to energy and information via smartphones and the Internet.
 - Height barriers designed to keep trucks off the ATS, thereby providing space for creative placemaking or public art projects. In this case, an effort to improve air quality and reduce toxins could also provide opportunities as a creative community outlet that highlights neighborhood identity and involves local young people.

Identifying Alternative Transportation Corridors

A RESILIENT ATS MUST BE MORE THAN just a transportation network: ideally, the ATS can link a series of parks, open spaces, and community spaces that are meaningful destinations for community members and encourage active, healthy outdoor activities.

Parks and Open-Space System

Parks and open-space systems are critical to a community's quality of life. Over the last two decades, communities across the country are realizing the multiple social, environmental, and economic benefits that these systems provide. For example, in addition to addressing the varied recreation and leisure needs and desires of residents, parks and open-space systems help strengthen social bonds, improve public health, promote environmental stewardship, and generate economic development.

In addition, parks and open-space systems can play a critical role in supporting and reinforcing a city's strategy for resilience. Flooding, health, and alternative transportation are examples of a few of the resiliency challenges that many cities throughout the country are addressing through the parks and open-space window. The city of Lenexa, Kansas, for example, established a multipronged flood mitigation, water quality, environmental conservation, and recreation strategy branded as Rain to Recreation after the



KATHARINE BURGESS/ULI

San Jacinto Plaza is a popular open space downtown that has provided a place for gathering and community activities.

Key Needs

- Community recreational space along the International Beltway
- Parks with clean air, particularly for current housing adjacent to the recycling center
- Safe pedestrian spaces, including a safe route to school
- Open spaces to better manage water in the event of flash flooding

city experienced a catastrophic flood that nearly crippled the city in 1998. Washington, D.C; Portland, Oregon; and Baltimore, Maryland are just a few of the cities that have implemented park prescription strategies to help decrease the impact of noncommunicable chronic diseases such as obesity, asthma, and mental health disorders. Atlanta, Georgia, is currently implementing the Atlanta BeltLine, an ambitious linear green-space system that includes a network of public parks, multiuse trails, and transit along a historic 22-mile railroad corridor that circles the downtown and connects directly to 45 of the city's neighborhoods. These are just a few of many examples from across the country of how a park and open-space system can play a vital role in a city's long-term resilience. Common to all these cities, however, is the *unintentional but still important* role that the city's park and open-space system is playing in the city's long-term resilience.

This is not the case with El Paso. El Paso is in a unique and enviable position in that it has staff and resources dedicated to enhancing resilience and creating a roadmap toward a more resilient El Paso. As such, it has the unique opportunity to *intentionally* integrate the city's park and open-space system into the city's goals for enhancing resilience.

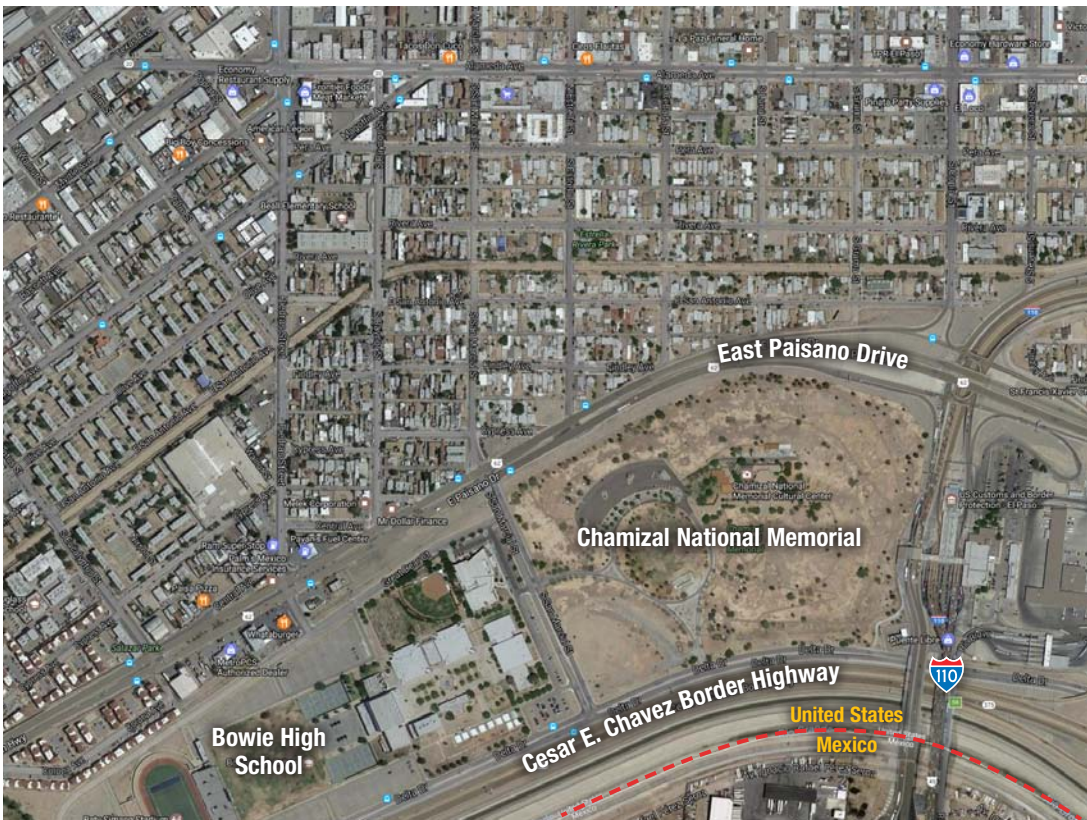
Furthermore, El Paso's park and open-space system can play a vital role in mitigating the shocks that challenged the city's resiliency in 2006, notably, flash flooding. Critical to achieving all these strategies is working collaboratively with all the city's departments, stakeholders, and residents.

The city of El Paso completed its most recent *Parks and Recreation Master Plan* in 2014. This plan built from a prior master plan in 2006, incorporating the changes to the city and the goals embedded in the *Plan El Paso Comprehensive Plan*. The recent parks and recreation plan offers a sound methodology to improve park access in the city, with a time frame from 2012 to 2024. The plan categorizes parks, including local or "close to home" space, regional space, and unique space, such as El Paso's heritage parks, and integrates the park classifications from *Plan El Paso*, which focus on development of lively urban public spaces.

Seven Measures of an Excellent City Park System

1. A clear expression of purpose
2. Ongoing planning and community involvement
3. Sufficient assets in land, staffing, and equipment to meet the system's goals
4. Equitable access
5. User satisfaction
6. Safety from physical hazards and crime
7. Benefits for the city beyond the boundaries of the parks

Source: Peter Harnik, The Excellent City Park System (San Francisco: The Trust for Public Land, 2003), included in El Paso's Parks and Recreation Master Plan.



Chamizal National Memorial is the largest green space in the neighborhood. However, it is separated from residential areas by a high-speed thoroughfare to the north and the border to the south.

Paseo de los Heroes is a neighborhood greenway, linking Armijo Park and Hart Elementary School.



Despite this ambitious planning, today's El Paso does not offer a park system that caters to all residents. Today, the city ranks 75th of 100 in the Trust for Public Land's ParkScore. The 2016 ParkScore index for El Paso estimates that 51 percent of city residents are not served by the current parks. Although nearly 20 percent of the city is parkland, much of this is Franklin Mountains State Park—a magnificent resource, but a site that unfortunately is not easily accessible to all El Pasoans. Compared with other cities across the country, El Paso also ranked relatively low in terms of facilities, with average or below average access to basketball courts, dog parks, playgrounds, and

recreation centers. For example, El Paso has only 0.8 recreation or senior centers per 20,000 residents; highly ranked cities such as Minneapolis, Washington, D.C., and Cincinnati have roughly three times as many.

While El Paso as a whole could have a more accessible park system, the area around the International Beltway is particularly underserved. Chamizal is a low-income area with no significant public parks aside from the Chamizal National Memorial. The Chamizal National Memorial is a 55-acre National Park Service–managed memorial park, commemorating the peaceful settlement of a 100-year border dispute between Mexico and the United States. The park features ample green spaces and a cultural center including an amphitheater, visitor center and museum, galleries, and a theater. Although the park is a fantastic resource, its location between the high-speed East Painesano Drive and the border is not safely walkable from the surrounding residential area. Within the residential areas, few formal green spaces exist aside from Estrella Rivera Park and some informal green spaces within the Housing Authority's Salazar development.

Creative Placemaking

The Kresge Foundation, the primary funder of ULI's Urban Resilience Program and a supporter of ULI's Building Healthy Places program, defines *creative placemaking* as a comprehensive community development approach that intentionally embeds arts, culture, and community-engaged design into strategies to stabilize communities.

The panel believes many opportunities exist to use creative placemaking approaches to advance vibrancy and address issues along the ATS corridor. For example, during the panel's interviews, residents of Chamizal expressed ongoing concerns regarding truck traffic in and around their neighborhood. The concerns included air quality issues as trucks idle during backups at the border crossings and safety concerns as trucks use neighborhood roads to try to gain an advantage in line. Residents

stated that attempts to reduce truck travel through the neighborhood with bumpouts have not been successful because trucks just drive over the curbs.

One potential solution is the strategic installation of truck-height bars at the entrance to roads most frequently used by trucks to avoid traditional highway routes. The panel observed integration of art at the nexus of transportation and green space in Chamizal's Lincoln Park. Installation of height bars could serve as another opportunity to address a neighborhood concern while increasing neighborhood identity and social cohesion. A creative placemaking approach that combines art, culture, and resident engagement could be developed around the installation of height bars. The resulting project could provide public art and an environmental solution.

In short, Chamizal lacks community green spaces, and the ATS offers an opportunity to enhance the existing green-space network, both creating new community spaces and linking existing assets. To be resilient, these green spaces should be designed to be drought-ready, to manage water in the event of flash flooding, and to respond to community needs and interests.

Numerous precedents exist within El Paso for integrating water management, active transportation, and public spaces, although no such space exists within the study area. One relatively local example is Paseo de los Heroes Park, a green link that is in fact a capped canal, running between Armijo Park and Recreation Center and Hart Elementary School. This linear green park, which is bordered on both sides by low-speed, one-way streets, connects two neighborhood civic buildings and offers a safe route to school for neighborhood kids. The park includes historic trees, seating at benches and tables, and a central walkway. The park is not an example of cutting-edge design, and ample opportunities for improved stormwater capture and native plantings exist. However, the park is well used by the community and indicates that a space need not be too elaborate to capture community interest and encourage pedestrian activity.

Chamizal Community Active Transportation Corridor Alternatives

The development of El Paso's ATS provides an opportunity to add to the region's mobility while improving numerous other aspects of the city's resiliency. The International Beltway segment of the ATS proposes linking two areas of El Paso experiencing renewed investment: downtown and the Medical Center of the Americas. However, the connection of these two areas will involve a route through the traditionally underserved Chamizal neighborhood, which presents its own set of exciting opportunities to bring major improvements and address numerous chronic stressors related not only to mobility, but also to health, environmental justice and sustainability, economic development, and various limitations to community resiliency.



Austin's Rio Grande Street cycle lane, which is part of the city's larger Green Lane Project, is celebrated at a ribbon cutting with city council members.

The following section discusses two potential International Beltway routing opportunities for the ATS to be considered by the Chamizal community and local and regional governments. The first option presents a lower-cost solution that builds from El Paso's *Bike Plan*. The second option, which includes a revitalized Franklin Canal, offers a more holistic, ambitious, and resilient design solution that will require coordination between the MPO, the city of El Paso, and the Housing Authority of the City of El Paso (HACEP). Although more costly and time intensive, the second option offers the opportunity for an infrastructural investment and land use approach that will build the community's resilience for the long term. However, success will require engagement with the residents of Chamizal to determine community interest and vision.

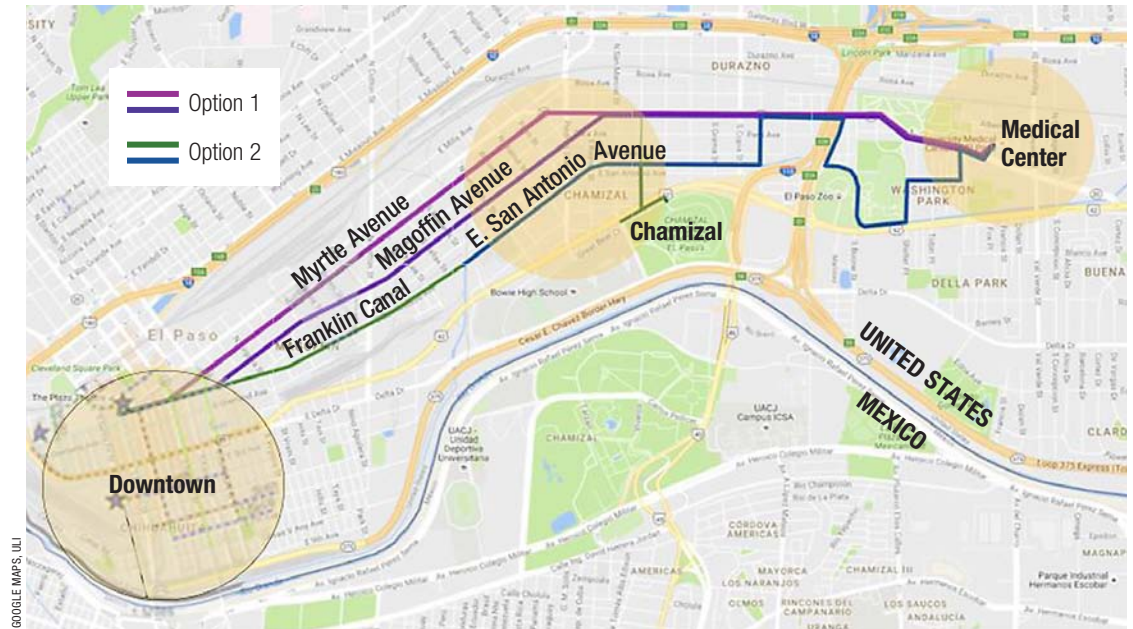
The panel's recommendations include the following:

- Investing in pedestrian and cyclist infrastructure along either Myrtle or Magoffin Avenue, for a lower-cost solution;
- Investing in ATS infrastructure along the Franklin Canal for a more comprehensive and resilient solution;
- Designing a Salazar-Chamizal community trailhead; and
- Connecting to Bowie High School.

ATS Option 1: Multiuse Trails on Existing Roadways—Myrtle or Magoffin Avenue

The Chamizal neighborhood is served by a network of relatively wide (70-foot) east–west roadways. Of those, the one-way pair of Myrtle Avenue and Magoffin Avenue

Active Transportation System Options



provides the best opportunity to create an on-road, two-way, shared-use path that is safe and comfortable, fully buffered from traffic. Both roadways experience relatively low traffic volumes and speeds in their existing forms and were identified by both community stakeholders and current bicyclists as preferred routes even in their existing conditions.

El Paso's 2016 *Bike Plan* recommends the Myrtle Avenue corridor for the addition of a shared-use path, though it contains no discussion of the rationale for selecting Myrtle over Magoffin. With no obvious difference in the level of

opportunity presented by these two roadways, the decision of which roadway would be most appropriate for active transportation investment would be best left to the neighborhoods, who have better and more localized understanding of the effects on local mobility and patterns. Either choice for an on-road shared-use path approach presents a strong opportunity to improve mobility for those who walk and bike in Chamizal.

However, the constraints of marrying such a path to an existing roadway corridor limit other opportunities to address nontransportation resiliency factors. Thus, this on-road

An ATS segment along Myrtle or Magoffin Avenue would incorporate additional pedestrian and cycle infrastructure to improve safety and overall experience while still providing a clear thoroughfare for drivers.



The Need for Safer Routes for Cyclists and Pedestrians

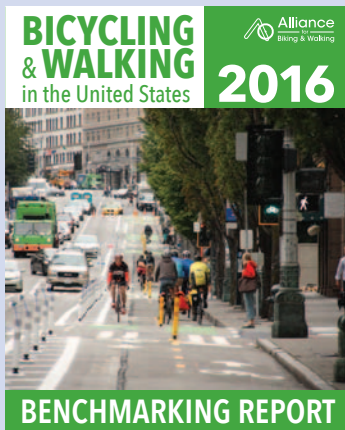
The Alliance for Biking and Walking's *2016 Benchmarking Report* found that few El Pasoans commute by bike or foot but highlights the need for improved facilities. According to the report, 2 percent of El Pasoans walk to work and 0.1 percent of El Pasoans bike to work—a number that has in fact decreased since the last measurement in 2007–2013, despite national trends toward increased bike use. The report also notes that 66 percent of adults are overweight or obese, highlighting the need for increased active transportation and recreation facilities as well as facilities that cater to “typical” citizens rather than seasoned athletes.

The *Benchmarking Report* also notes the current lack of safety for pedestrians and cyclists in El Paso, a factor that may contribute to the low percentage of active transportation enthusiasts. El Paso had 47 pedestrian

fatalities in 2011–2013, a number that had increased from 36 in 2008–2010 and 28 in 2005–2007. This represents 23 fatalities per 10,000 walking commuters and 25 percent of all traffic fatalities. In comparison, Boston has two fatalities per 10,000 walking commuters and Washington, D.C., Minneapolis, and Seattle have three fatalities per 10,000 walking commuters. El Paso also sees about ten fatalities per 10,000 biking commuters.

The ATS represents a chance for investment in enhanced cycling and pedestrian infrastructure that will make roads safer for those on foot and encourage active transportation in a city where it is not currently popular.

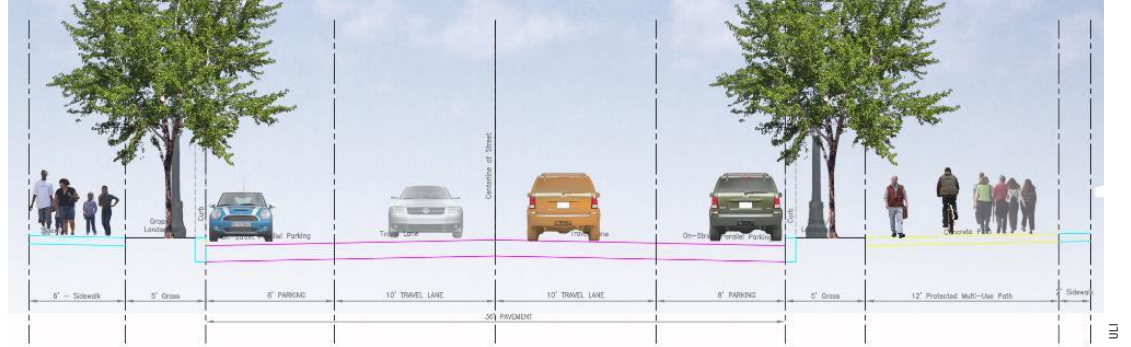
Many of El Paso's major roads, such as Paisano Drive, are currently inappropriate for pedestrians or cyclists, in terms of both safety and lack of vegetation and pedestrian-scaled infrastructure.



approach might best be viewed as a low-cost or short-term alternative to the more robust and resilient Franklin Canal Park Trail approach discussed below. If the Franklin Canal Park Trail is ultimately pursued, the on-road alternative will continue to provide access to the adjacent community and adds resiliency by providing a safe route during flooding, construction, or other events that might require temporary rerouting of pedestrians and bicyclists from the Canal Park Trail.

An ATS portion on Myrtle or Magoffin would provide direct connection to the downtown area of El Paso. Downtown is already well planned for bicycle facilities and bike sharing as part of the existing bicycle master plan. Both Myrtle and Magoffin are comfortable to ride on portions of the street; for example, Alameda Avenue has a sharrow and sidewalks. However, beginner cyclists are likely to feel uncomfortable on portions of either street in their current conditions.

An ATS along San Antonio Avenue offers another option, which would then connect to the Franklin Canal.



A link from either shared-use path to the MCA is a more challenging proposition. Connecting from either street would likely require bicyclists and pedestrians to negotiate the crossing of the Interstate 10 right-of-way. This could be done by using Alameda Avenue or by seeking an alternate crossing beneath the interstate south of Alameda.

Alameda Avenue provides a potential on-road option to make this crossing. It is a state roadway with relatively limited opportunities to improve bicyclist and pedestrian facilities unless El Paso pursues taking jurisdiction, with the accompanying capital and maintenance responsibilities. Although this option presents an interesting set of possibilities, the needs of most pedestrians and experienced bicyclists could be served by the addition of wayfinding signage and shared-use markings for the small segment of Alameda that would be necessary to pass below the interstate.

Although parts of Magoffin Avenue, particularly through the historic district, are already pleasant to bike, other portions would make a beginner cyclist feel exposed.



KATHARINE BURGESS/ULI

Recognizing that the use of Alameda Avenue is not ideal because of the inability to provide dedicated bicycling space and adequate buffering along portions of the street, El Paso should also seek opportunistic easement opportunities to allow a connection beneath the elevated portion of I-10, wherever right-of-way can be secured.

ATS Option 2: Investing in Infrastructure along Franklin Canal Park Trail

The Franklin Canal is an irrigation canal that runs through the heart of Chamizal. The panel's study area in Chamizal contains about two miles of the canal, which is largely inaccessible to the community because of fencing. The canal is an underused resource that could offer great recreational, connectivity, and environmental benefits for those who live nearby and lack neighborhood green space or safe cycling routes. This linear corridor presents a vari-

Today's Franklin Canal is fenced off and largely inaccessible, although it has potential to be a great amenity for nearby residents, including those in high-density housing, such as the Tays North redevelopment.



KATHARINE BURGESS/ULI

ety of public-serving opportunities that could strengthen El Paso's resilience.

Although the Franklin Canal is designed to function solely as a water management facility, it could be an ideal transportation and recreation corridor, providing a high-quality trail and linear park for Chamizal and the region. The 28-mile-long canal draws its water from the Upper Rio Grande Valley and has a flow capacity of 325 cubic feet per second. The canal alignment follows East San Antonio Avenue, providing the opportunity for a direct connection to downtown.

For much of its length in Chamizal, the canal is bordered on both sides by sites entirely owned by HACEP that are currently under redevelopment. Considering these sites holistically—including the canal, the ATS project, and the current housing redevelopment—offers the opportunity to integrate the ATS into a broader land use, water management, and recreational project. Improving the canal structure to support active transportation, its varying 60- to 100-foot right-of-way can improve resiliency in a variety



ERIC FISCHER, FLICKR

Indianapolis's Cultural Trail is an eight-mile bike trail connecting downtown to other neighborhoods and cultural destinations. The trail includes segments through busy downtown streets and stretches along a canal.



JAMES SCHWAB, APA IMAGE LIBRARY

The Cape Cod Canal, which is an artificial waterway in Bourne, Massachusetts, features an eight-mile bikeway, maintained by the U.S. Army Corps of Engineers and used as an Army access road.

Key Franklin Canal Opportunities

- Linear park
- Recreational spaces
- Connectivity between neighborhoods and employment hubs
- Connectivity between neighborhoods and community resources, such as the cooling center
- Trail promoting active transportation
- Stormwater management facility
- Space for drought-tolerant landscape pilot projects
- Emergency flood control
- Irrigation
- Potential for economic development and job training

of ways and directly serve the public while enhancing its performance and economic value as a water management facility.

Chamizal Neighborhood Trail (South Dallas Street to South Latta Street)

Although the full trail corridor would run from downtown to the MCA with a mix of on-road and off-road infrastructure, the true transformation of the present Franklin Canal would begin near its intersection with South Dallas Street and continue to its intersection with South Latta Street.

Given width variations in the canal's right-of-way, the linear park and trail design would alternate between a side-by-side trail-and-canal design, similar to the Indianapolis Cultural Trail, and a box culvert design in which the trail sits atop the canal itself. Each configuration has its advantages: side-by-side design presents aesthetic and design opportunities to provide an attractive water feature to the public when flow is sufficient, and the box culvert

Signs along the canal demarcate it as off limits.



design allows the opportunity to limit water loss through evaporation.

Both alternatives would involve the installation of a concrete channel but would eliminate or significantly decrease ongoing maintenance costs for regular sediment removal. The box culvert option is estimated to have an upfront cost of \$350 to \$450 per linear foot. With about 7,500 linear feet of canal in the study area, the total cost of installing a concrete channel would be \$2.6 million to \$3.3 million. But this work could pay for itself over time in water savings and decreased maintenance costs for the water utility.

Salazar-Chamizal Community Trailhead

The Franklin Canal offers the opportunity to create not only a linear greenway but also a network of active open spaces. The initial access point on San Antonio Avenue offers one great opportunity for a gateway site for the ATS, featuring a number of resilient design conditions. The gateway site is close to the Salazar apartment complex, an HACEP property slated for redevelopment.

This high-visibility site would connect the neighborhood to the canal and offer an attractive and convenient space for gathering and for higher-profile resilience investments. In short, this trailhead provides an opportunity for community engagement, recreation, and activity and provides an ideal opportunity for expansion of the bike-share system.

Franklin Canal and Salazar Housing

Today, the Salazar apartment complex sits on 21.42 acres, containing 286 units zoned A-2, medium density (density 13 dwelling units/acre). The A-2 Apartment District is

A New Use for Playa Drain

El Paso Water Utilities is setting a model for the study area by creating a two-mile park along the Playa Drain. This \$2.75 million endeavor will formalize and legalize a corridor that already is used for walking and riding bikes. The Playa Drain project will create a healthier and more active community as well as beautify a barren-looking strip. It will also better connect Ascarate Park to Riverside High School.

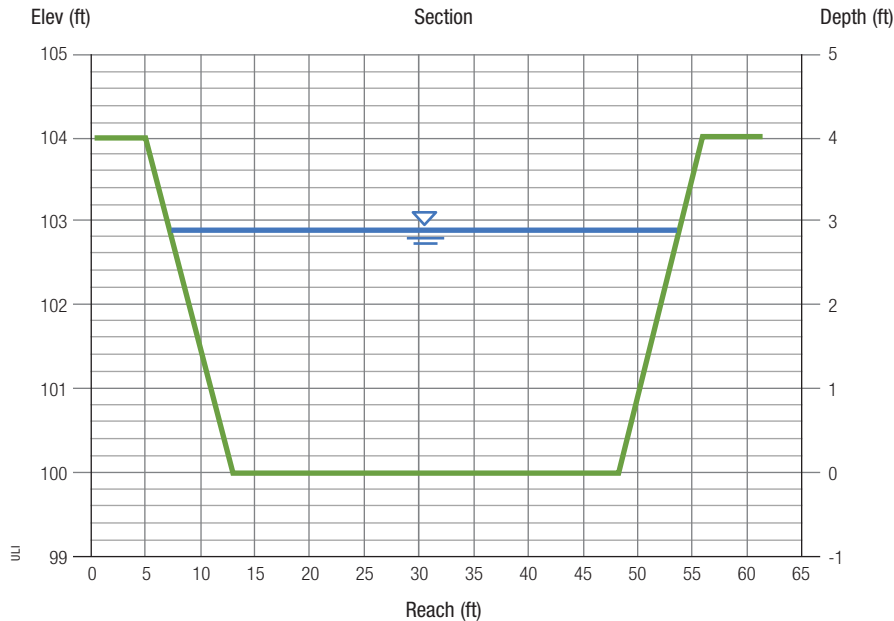
defined as “Medium densities of dwelling units supported by higher intensity land uses located at the periphery of single-family neighborhoods providing that the overall character and architectural integrity of the neighborhood is preserved. Permit building types designed for transition from areas of low density residential neighborhoods to other residential areas, and certain nonresidential uses and support facilities.”

With HACEP’s plans to possibly relocate the apartment complex from this site and the investment in the ATS adjacent to the site, an opportunity exists to create a more resilient land use pattern incorporating active transportation, green space, and enhanced housing. Incorporating green space—and finding a relocation and site reclamation plan for the adjacent recycling center site—would improve local air quality and environmental conditions. Within this broader land use plan, the ATS segment would include both the midtrail gateway marking the transition from downtown into the Chamizal community and from the canal trail to an on-road shared-use path along the existing roadway network.

The city of El Paso has an infill development incentive program with lower impact fees and faster review and approval times. As the city considers working on amending the infill development guidelines to encourage more development, especially along the streetcar corridor, the panel recommends applying incentives to properties along the ATS route as well.

HACEP could take advantage of the incentives when envisioning a future Salazar and may redevelop with a higher

Franklin Canal Section



Culvert 1 data summary

Barrel shape: Concrete box
 Barrel span: 7.00 feet
 Barrel rise: 7.00 feet
 Barrel material: Concrete
 Barrel Manning's n: 0.0120
 Culvert type: Straight
 Inlet configuration: Square edge (90°) headwall
 Inlet depression: None

Source: ULI.

Channel Report

Trapezoidal		Highlighted	
Bottom width (ft)	= 35.00	Depth (ft)	= 2.89
Side slopes (z:1)	= 2.00, 2.00	Q (cfs)	= 300.00
Total depth (ft)	= 4.00	Area (sq ft)	= 117.85
Invert elev (ft)	= 100.00	Velocity (ft/s)	= 2.55
Slope (%)	= 0.02	Wetted perim (ft)	= 47.92
N-value	= 0.015	Crit depth, Yc (ft)	= 1.29
		Top width (ft)	= 46.56
		EGL (ft)	= 2.99
Calculations			
Compute by:	Known Q		
Known Q (cfs)	= 300.00		

Source: ULI.

density (typical medium density with three- to four-story apartments can range from 15 dwelling units per acre to 20 dwelling units per acre, or 300 to 400 units) or replace the same number of units in a smaller footprint. Such one-for-one replacement with higher density would require only

14 to 19 acres, leaving the remainder of the property for trailhead open space or park.

East San Antonio Avenue Connection to Downtown

West of South Dallas Street, the Franklin Canal turns southward, away from downtown and toward several



KATHARINE BURRESS/ULI

Green spaces within today's Salazar are tired and not designed to withstand extreme heat.



KATHARINE BURRESS/ULI

Addressing the location of the recycling center should be part of the broader efforts to create a resilient ATS and a comprehensive green-space plan in Chamizal.



KATHARINE BURRESS/ULI

Paisano Drive bisects Salazar Park, leaving numerous residents with dangerous proximity to speeding traffic and car emissions and making a large portion of the area undesirable public space.

barriers. East San Antonio Avenue provides a seamless east–west connection toward downtown. The bicycle master plan proposes a standard bike lane for this roadway segment. However, as a connector to a robust trail and park segment, it has the potential for higher volumes of people playing, walking, and biking and therefore merits a more protective and inviting form of improvement.

Bowie High School–Chamizal Park Connector

Providing safe routes for students to reach schools and for neighborhood residents to reach Chamizal Park is important to improve safe mobility. Douglass and Zavala



NACTO

This example from NACTO's Urban Bikeway Design Guide illustrates how a cyclist crossing can be clearly marked on a high-volume road.

NACTO
 Intersections
 Median Refuge Island

Current Canal Gateway



Today, San Antonio Plaza dead ends at the canal, which is surrounded by fenced-off portions of the recycling center plant.

Future ATS Gateway



The canal gateway would welcome cyclists and pedestrians to the trail and could include community facilities such as a shade structure that doubles as photovoltaic-powered charging station.

Current Canal



The Franklin Canal is currently largely inaccessible, although it offers a potentially convenient route through Chamizal and borders two multifamily housing developments that could benefit from green space.

Future Canal ATS



A resilient ATS would not only provide a trail, but also connect the two housing developments, offering amenities such as attractive landscaping, community art, and water management features potentially using reclaimed water for recreational use.

Elementary Schools and Bowie and Father Yermo High Schools are located near the proposed Canal Park Trail.

Unfortunately, Bowie High School and Chamizal Park are separated from the proposed trail by a wide, high-speed segment of East Paisano Drive with no safe crossing. To

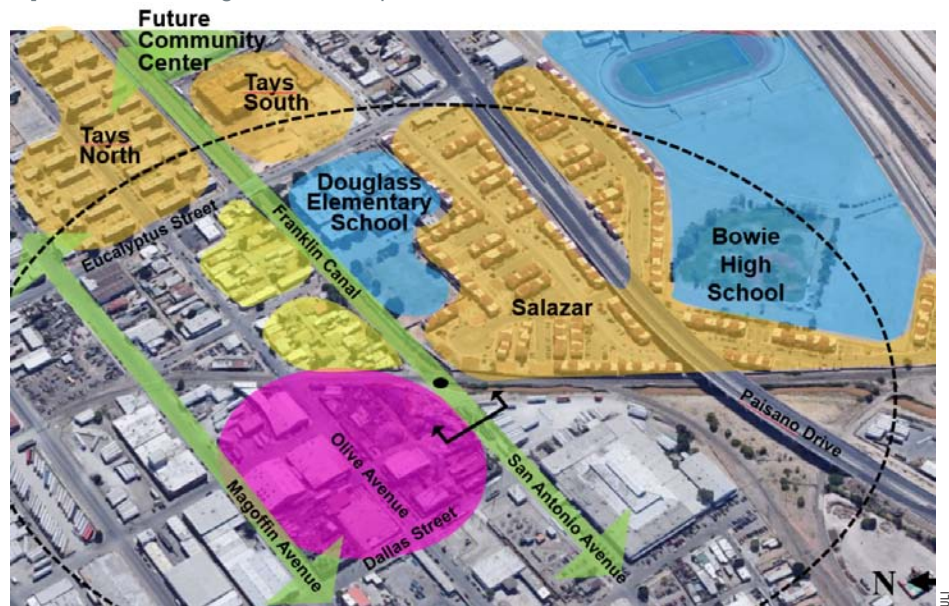
rectify this lack of safety and access, Estrella Street could be converted into a low-speed bicycle boulevard as recommended in the bicycle master plan. Given roadway speed and anticipated bicyclist and pedestrian volumes, the intersection of Estrella and Paisano should be treated as an urban-style intersection, using National Association of

Salazar Land Use Concepts

The following land use plans propose general concepts for redeveloping Salazar and integrating the new ATS along the Franklin Canal. All of these proposals incorporate an improved network of green space, connecting residents to the ATS and creating broader recreational opportunities.

This land use plan places the ATS through Chamizal, along the Franklin Canal, with additional active transportation infrastructure along Magoffin Avenue. The plan indicates the location of the recycling center, which currently threatens air and environmental quality at Salazar. The recycling center site also sits between the proposed transportation investments along the Franklin Canal and Magoffin Avenue, presenting an opportunity for connectivity.

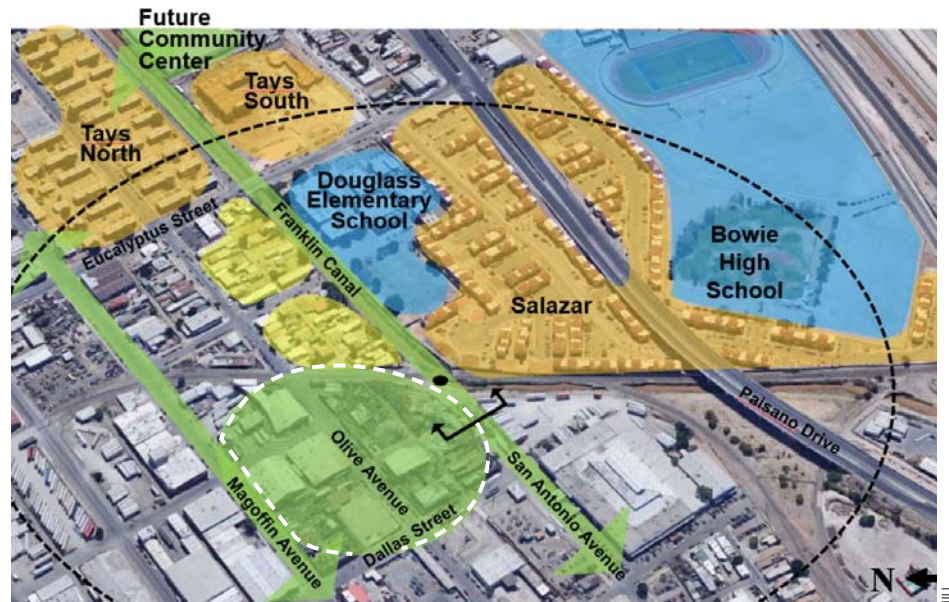
Option 1: Existing Conditions plus the ATS



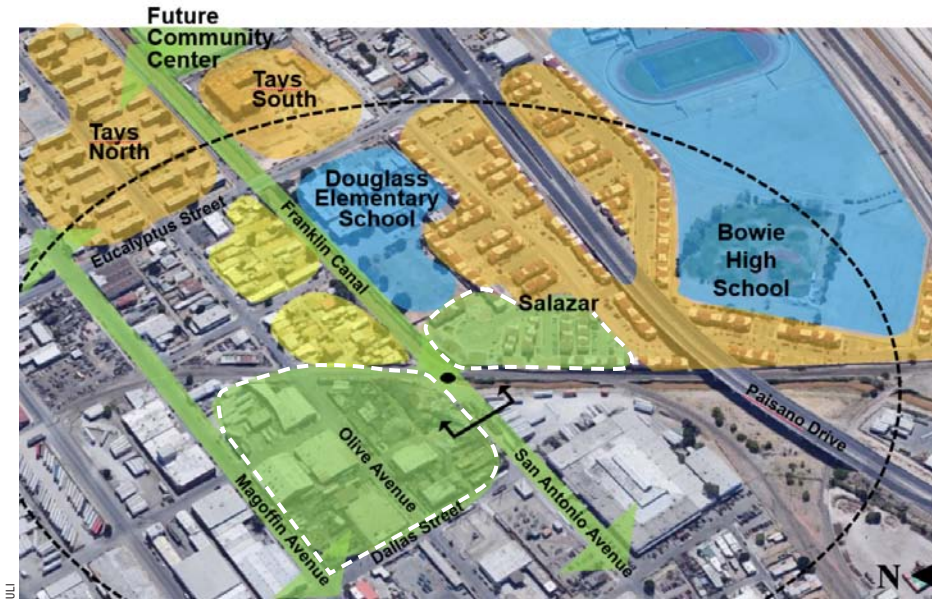
- Park space and ATS
- Educational facility
- HACEP housing
- Recycling center
- Residential

This concept proposes the development of a green space at the former recycling center, linking the Franklin Canal with Magoffin Avenue. This green space would be of sufficient size to include sports fields and larger recreational spaces, which are currently lacking in Chamizal. Capping the existing site would address contamination, keeping residents away from hazardous materials, controlling the release of gases from waste-containing chemicals, and ensuring that stormwater does not carry previously contaminated soil off site.

Option 2: Option 1 plus Recycling Center Relocation



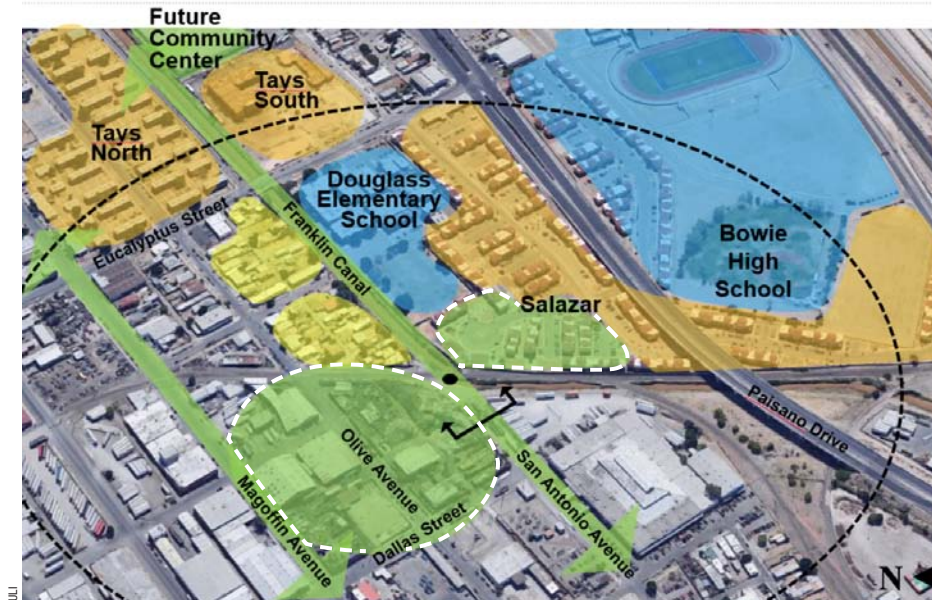
Option 3: Option 2 plus Expanded Green Space



- Park space and ATS
- Educational facility
- HACEP housing
- Recycling center
- Residential

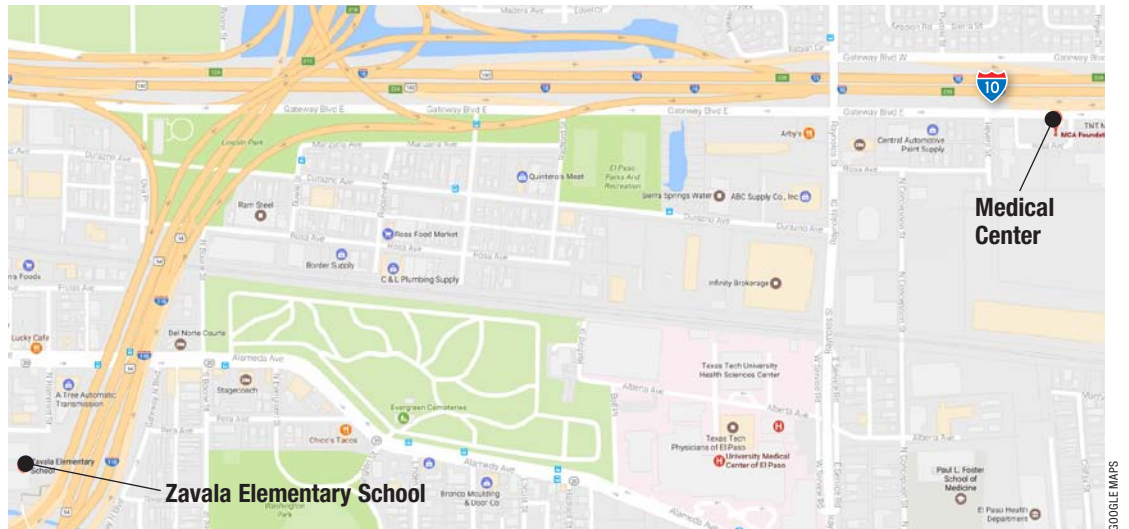
This follow-up concept extends the green space across the Franklin Canal, introducing some new green space into the redeveloped Salazar property. Salazar could then be redeveloped at a higher density with links to the canal and green network.

Option 4: Option 3 plus Expanded School Campus



This final concept includes maximum green space, as well as an expanded campus for Bowie High School, further reducing the size of the Salazar housing site.

Facilities such as Zavala Elementary School and the Medical Center of the Americas are located on high-speed thoroughfares, putting pedestrian and bicyclists traveling to these destinations at risk.



City Transportation Officials (NACTO)-protected intersection design standards and high-visibility approaches such as colored markings and lighting.

Connection Alternatives to the Medical Center of the Americas (I-10 Barrier Issues)

Interstate 10 presents a significant barrier to creating a continuous, off-road trail experience eastward to the MCA. Currently, a grade-separated pedestrian overpass of the interstate serving Zavala Elementary School provides an acceptable route for pedestrians, but it is unlikely to be suitable for people on bikes.

People on bikes can currently detour northward along Hammett Street to Alameda Avenue, which is a state route with no bicycling accommodations but a relatively wide sidewalk allowing travel beneath the interstate bridges.

Each of these alternatives should be considered interim options because both provide a substandard experience for trail users. Ultimately, a grade-separated crossing should be improved either by retrofitting the pedestrian bridge to bicycle- and ADA-accessible standards, or by creating multiuse trail conditions on Hammett Street and along Alameda Avenue beneath the bridges.



Bicyclists traveling to MCA resort to using Hammett Street rather than riding on the busy interstate highway.

Once past the interstate, bicyclists can return to the canal as it emerges from beneath the roadway by traveling southward along Gateway Boulevard. From there, the canal trail can continue along the zoo to Washington Street, where trail users can turn northward to Dunne Avenue, and along Hadlock Street to Alameda—where another protected intersection allows access to the MCA.

Engaging Underserved Communities in Biking

In many U.S. cities, biking is assumed to be a recreational activity for the wealthy and healthy. Moreover, some demographic groups are assumed to be uninterested in biking.

Cities that have strategically sought to expand bicycling beyond its traditional participants have proven both assumptions untrue. A city that wants to expand the reach of bicycling to broader social, economic, and demographic groups can do so.

Community events and outreach programs are key to raising awareness about biking and should be implemented alongside investment in improved physical infrastructure and cycling.

Bike repair facilities offer another key means of both encouraging biking and developing skills relevant to the job market. Bike repair facilities are to biking as gas stations are to driving; they are necessary for biking culture. Where communities lack repair options, biking will not thrive. So cities can do the following:

- Invest in outdoor DIY repair stands, such as the DeRo fix-it;
- Provide grants to support mobile bike clinics at gathering places; for example, the Washington Area Bicycling Association cohosted bike repair clinics in D.C.'s Anacostia neighborhood in partnership with the local library, matching up participants with mechanics and fixing as many as 50 bikes per clinic;
- Encourage the formation of nonprofit bike co-ops and earn-a-bike programs that build community and repair bikes at low cost; Phoenix Bikes offers a fantastic example of a nonprofit that provides youth with training in bike repair and helps participants earn a bike by participating in a training program and gaining proficiency in bike repair; and
- Ultimately—seek to foster brick-and-mortar bike shops as small business opportunities for local residents.



Trail Safety Tips

New trails attract new riders who may not be familiar with trail safety rules and etiquette. Governments should work to share information and, in areas of low income or limited access to bike shops, provide safety equipment such as lights and bells.

Key tips for signage and community trail programs include the following:

1. Pedestrians have the right of way.
2. Everyone—bicyclist and pedestrian—should walk or bike to the right and pass only on the left. Watch for oncoming traffic when passing.
3. Bicyclists should pass pedestrians and other cyclists only when there is room to do so on the left and should ring a bell or say “passing” to notify the person being passed.
4. Keep pets on a leash and under control on your side of the path.
5. Bicyclists should have working lights (white in front, red in back, just like a car), and angle the front light so it shines on the trail in front of you—not in the eyes of people coming the opposite direction.
6. Be predictable.
7. Be visible.
8. Ride at a pace that allows you to see and avoid hazards.

Developing Market-Informed Housing, Financial, and Land Use Strategies

ALTHOUGH THE MPO HAS IDENTIFIED funding for implementation of the ATS, a more ambitious and resilient approach such as the Franklin Canal proposal, including some of the land use concepts explored for Salazar, would require additional resources. This need for additional funding should not deter the MPO and the city from approaching the project in a more resilient way, given the potential for community cobenefits and long-term environmental performance and cost savings. In particular, the ATS project offers the opportunity to address deteriorating housing and suboptimal land use patterns across Chamizal, emerging with a more resilient and connected land use pattern including the ATS.

A big-picture vision for the ATS in Chamizal would also include improved housing. Although an ATS is likely to improve quality of life and increase housing value, housing within Chamizal will probably continue to require subsidization, and many of the sources of such funding are constrained or declining. Regardless, the ATS has the potential to be a key part of any revitalization strategy, offering improved active transportation access, recreational space, and neighborhood links. Given that the Franklin Canal portion of the ATS borders two wholly owned HACEP sites in transition, the city has the opportunity to leverage future redevelopment plans to create more active and appreciated public spaces for housing residents and enhanced neighborhood connectivity via the ATS.

Despite El Paso's relatively affordable housing market compared to other parts of the country, a substantial need exists for affordable units. Some 40,000 people in El Paso currently live in housing provided by the Housing Authority, or about 6 percent of the city's population. The inadequacy of the supply of good-quality affordable housing is indicated by the 13,500-household waiting list for public housing. Given the health consequences of living in



KATHARINE BURGESS/ULI



KATHARINE BURGESS/ULI

The affordable housing located adjacent to the proposed Franklin Canal portion of the ATS should be integrated into the design of the trail, providing an integrated recreational resource for residents.

substandard and overcrowded housing, the lack of access to good-quality affordable housing is a major stressor that tests the area's resilience.

The tools currently available to fund affordable housing are limited by federal budget resources and state allocation policies. Federal funding for housing has been declining for many years in spite of population growth and trends of increasing rental and sales prices. The allocation plan for low-income housing tax credits in Texas emphasizes placement of new affordable housing in areas of economic opportunity, defined by access to high-performing schools and lack of other low-income housing in the area. That formula operates against accessing funds to rebuild or expand the supply of assisted housing in Chamizal and other barrios.

Many low-income homeowners are struggling to maintain and update their existing houses. Preservation of existing affordable housing through rehabilitation efforts has been constrained greatly by the scale of public funding available to local providers.

The RAD Program

HACEP recently began participating in the Rental Assistance Demonstration (RAD) program. This voluntary program, which is offered by the U.S. Department of Housing and Urban Development (HUD), is intended to provide public housing agencies with more stable funding for improvements to properties. The program is available on a limited basis for 60,000 units of the total 1.3 million public housing units in the United States. HACEP is the largest participant in RAD with about 6,100 units, or over 10 percent of the federal allotment.

Through RAD, HUD has given ownership of the city of El Paso's public housing to HACEP. This move enables HACEP to leverage the value of these assets to invest in housing rehabilitation using low-income housing tax credits and other types of private financing. Rehabilitation is a priority for HACEP, given that housing properties are aging, including some properties from the 1940s, and many are plagued with asbestos. The program is intended to revitalize public housing units rather than expand supply. Rehabilitations will seek to provide safer living conditions and improve energy efficiency.

HACEP estimates that RAD could bring as much as \$500 million of investment to El Paso with no cost to local taxpayers. The program also aligns with citizen feedback and strategic housing objectives outlined in the *Plan El Paso* comprehensive plan update.

For more information, visit www.elpasorad.org.

Market for New Housing Development in Chamizal

The economics of new private-market housing development in the nondowntown portions of the study area are still quite difficult. Market rents do not yet generate sufficient revenues to cover operating costs, repay mortgage debt, and provide an adequate return on private investment. Expansion of downtown housing, development of additional amenities, and transportation improvements to downtown and the MCA will increase the interest and willingness of market-rate renters to consider near-downtown

housing options. With growing market demand, rents will increase to support development costs. In the meantime, development incentives are needed to close the gap between development costs and the private investment justified by future rental income.

To avoid gentrification and displacement of current residents from Chamizal, Segundo Barrio, and other historic neighborhoods, policies and projects encouraging market-rate development should be approached cautiously. As discussed later in this report, renovation and stabilization of existing barrio housing coupled with public space improvements could preserve these communities while enhancing tourism.

New housing development outside downtown should be focused near the Magoffin Avenue neighborhood and possibly the Texas Avenue corridor, emphasizing replacement or adaptive use of industrial and commercial structures, and infill development rather than replacement of existing housing.

A major challenge of developing market-rate housing in the area will be reconciling continued industrial and warehouse activities with housing.

HACEP Developments in Chamizal: Now Is the Time

Housing in Chamizal varies greatly in condition and could be improved to enhance residents' quality of life and health. Longitudinal studies have demonstrated the importance of good-quality housing conditions and children's health in long-term academic achievement. Priorities for enhancing housing conditions include improving residential energy and water efficiency, creating access to alternative energy sources, and improving access to open space.

The HACEP developments in Chamizal directly border the proposed ATS route along the Franklin Canal and are both at different stages of redevelopment. They present a rare opportunity to consider the development of the ATS, adjacent land uses, and surrounding public spaces holistically, aiming for a resilient approach that will foster better resident quality of life and environmental performance. The

city's ownership of the HACEP sites also presents a rare opportunity to advance this vision and catalyze a bigger-picture land use strategy along the Franklin Canal, creating a district with better access to open space and easier connectivity to jobs downtown and at the MCA.

Whereas the strategy for Tays South is already underway, plans for Tays North and Salazar have not yet advanced to construction. Now is the time to incorporate the ATS and broader resilience objectives, perhaps seeking additional funding sources to do so.

The HACEP developments include the following:

- **Tays:** Renovation of HACEP's Tays North community is planned to begin soon, and redevelopment of the Tays South community is already underway. If located along the Franklin Canal, the ATS will bisect the Tays development, providing direct walking and biking connections to downtown, the MCA, and other destinations. As part of the resilience strategy for Chamizal, these developments should include investment in high-quality landscaping with native plants that will contribute to and enhance the public realm in conjunction with the adjacent ATS. Renovation plans should incorporate high-efficiency fixtures and appliances, insulation, and other improvements wherever possible.



The Tays South redevelopment is nearly complete.

- **Salazar:** HACEP is likely to call for closure of the Salazar development, replacing the units with new construction in a high-opportunity area in East El Paso. HACEP has indicated its intention to restructure or replan the property.

The community may prefer to see the affordable housing units renovated and preserved rather than demolished for creation of open space or other uses. Review of area demographics, particularly the low household incomes, suggests that private renovation as market-rate units would not be successful. The community's relative isolation and the impact of proximity to the elevated portion of Paisano Drive (U.S. 62) would depress achievable market rents below the level needed to support investment in renovation.

The panel recommends the following approaches for a land use strategy including the ATS and the housing and adjacent industrial sites along the International Beltway:

- **Ensure that Tays redevelopment and landscape strategy incorporates the ATS along the Franklin Canal.** El Paso is in the unique and enviable position of owning both large sites along the Franklin Canal, which is likely to become the future International Beltway portion of the ATS. Both sites—Tays North and Tays South—are fully owned by the Housing Authority and are in different stages of redevelopment. Rather than planning the Franklin Canal redesign on its own, the city should ensure that HACEP is fully engaged and able to leverage its funds for landscape and public realm improvements for the canal. Safety and access to the canal must also be a key portion of discussions, because the canal is currently separated from both Tays sites and walled off. The future ATS would be an open, connected route punctuated with parks and must be designed to benefit the residents.
- **Consider working with a nonprofit partner for the Salazar redevelopment.** By tapping several different funding sources, a nonprofit organization with solid experience in developing affordable housing might be able to bridge the gap between required investment to bring the units up to code and the amount of investment supported by future rents if the Salazar property could be contributed at little or no cost. This would likely entail use of 4 percent low-income housing tax credits, which are allocated automatically to projects that use multi-family revenue bond financing rather than through the

competitive process used to allocate the more valuable 9 percent credits. That would not be enough to cover the total development costs. Filling the remaining gap would require creative combination of multiple loans and grants from local foundations, city-controlled HOME Investment Partnership Program funds, and other programs.

- **Address proximity to metal-recycling industry and begin a relocation strategy.** The Salazar housing site, adjacent to portions of the ATS, suffers from proximity to a large recycling site. A recent study by a UTEP researcher found contamination in a number of public spaces in the housing site, including toxic levels of copper in the adjacent playground. Copper in the playground soil measured 1,110 parts per million, or 22 times the levels in normal soil, according to the U.S. Centers for Disease Control and Prevention. This constitutes a serious environmental and social justice issue. Leaving a site of this nature adjacent to a children's outdoor play area is inappropriate. The site is currently closed to local children, meaning they have lost their place to play outdoors.
- **Continue to take advantage of federal, state, and local incentive programs for home rehabilitation.** HACEP's initiatives to renovate or replace its entire portfolio by 2020 promise significant upgrades to conditions for public housing residents. Other nonprofit organizations also develop affordable housing using a variety of federal and state incentives and funds. The private market provides a range of affordable units, primarily in older buildings; however, many of the rental units located in the study area are aging, deteriorating, and not in good repair.
- **Engage with local nonprofits to examine the potential for rehabilitation of homes in Salazar.** El Paso has



The playground is inappropriately located next to the recycling center and recently tested positive for contaminants.

KATHARINE BURGESS/ULL

Recycling Relocation

The recycling business is a pillar of the local community and has been on its current site for generations. The business occupies a number of sites throughout Chamizal, a convenient location because of its access to the highway and two different rail lines.

However, although the business has been well served by its location for a long time, ownership sees potential for relocation in the next decade, given the likely increased value of the land because of its proximity to downtown and unsuitability for this type of use through the next generation. With an increasingly revitalized downtown nearby, metal recycling may no longer be the highest and best use of the land.

The city has an opportunity right now to be proactive in assisting the recycling center with a full or partial relocation. Relocation would benefit the residents of Chamizal and Salazar, given the environmental concerns, particularly regarding air quality. The city should focus on finding potential alternative sites, prioritizing those with access to rail, and craft an incentives package. Relocation could then open up some of the previously industrial sites for redevelopment and create opportunities for open spaces along the ATS.

an extremely strong civic and cultural community with engaged residents' groups, many of whom participated in the panel. HACEP should look into the opportunity to work directly with local nonprofits to examine the potential for the homes in Salazar.

- **Consider selling Salazar land at nominal value, but require standards for reuse consistent with public purposes.** HACEP has planned to redevelop Salazar and is likely to sell the site. For example, HACEP could require rehabilitation to code or require demolition within two years. HACEP could also ensure that land is reused in ways consistent with public purposes, such as open space.
- **Capitalize on the convenient, rail-served location for future industrial tenants.** Chamizal's location close to

rail, highways, bridges, and the border offers numerous advantages in terms of connectivity and logistics. The location is likely to become increasingly desirable and convenient for businesses as downtown and the MCA continue to grow and draw more employers. The city should promote this area as a convenient place to do business, particularly given these proximities. The ATS will offer further connection of these two centers and a convenient option for employees.

- **Work with businesses on upgrading energy efficiency and renewable energy with the PACE program.** Physically, many of the smaller industrial and warehouse buildings that occupy the area north of Chamizal are not as critical to the city's economic fabric as they have been in the past. Many likely lack modern, efficient heating and ventilation and other building systems. PACE (Property Assessed Clean Energy) financing allows a business to finance energy and water efficiency improvements or alternative energy equipment through assessments on property tax bills, processed the same way as other benefit assessments, such as sidewalks and sewers. Few small businesses are aware of this funding mechanism or how to access it, though local efforts are underway to promote the relatively newly adopted program. Focused outreach to area businesses to guide them through the process could be an effective strategy for improving their operational efficiency. Property owners could also use PACE financing to help prepare their buildings for new uses.
- **Reduce trucking impacts in area.** Given the presence of light industrial and metal recycling in Chamizal, the area already has a significant trucking presence, which has led to air quality concerns. The Texas Department of Transportation closure of the Paisano Drive ramp should reduce cut-through traffic and idling problems by orienting trucking toward the I-10 corridor. To reduce trucking impacts overall, the city should establish clear truck routes focused on keeping trucks off neighborhood streets. This can be accomplished using both signage and policy changes.

Local Hiring Practices

Developers receiving city and county incentives should be required to commit to hiring local residents and local businesses. Several cities urge developers whose activities may affect local communities to negotiate a community benefits agreement that defines specific actions the developer will take to ensure the community receives commensurate benefits, often including apprenticeships or use of local businesses.

Although the ATS will provide low-cost, safe access to the downtown and MCA employment centers, the project could also be an exemplar of economic development and opportunity on its own. The new community center and local schools should also incorporate additional job training and mentoring programs, in partnership with MCA and major downtown employers. Trail maintenance also could become a new business opportunity, with training offered on managing the resilient and drought-tolerant landscape.

- **Incorporate local hiring preferences into public housing rehabilitation.** Resilient futures will depend on improving the economic strength of neighborhood residents. Public investments that affect the communities, such as the future ATS facilities, should bring with them explicit commitments to employ local residents in their development, maintenance, and operation. This goal can be accomplished through required contractor participation in apprenticeship or internship programs, local hiring requirements, and contracting with locally based community organizations and small businesses.

Possible Avenues for Locating Funding

The panel recommends considering the following approaches to identify funding for the ATS that will assist with the open-space strategy:

- **Investigate Water District savings and consider options for bonds.** Savings from reduced maintenance and reduced water loss could potentially be bonded or service a loan to help pay for the Franklin Canal portion of the ATS.

- **Leverage local and national alternative funding sources, including open-space and conservation grants.** A plethora of federal, state, local, and philanthropic programs support the creation and maintenance of high-quality open space, particularly in underserved areas. The city of El Paso should investigate options relating to active transportation, transportation beautification, land conservation, recreational trails, and other relevant topic areas. Funders such as the local El Paso Community Foundation or the Paso Del Norte Health

Foundation may be interested in the project if executed holistically, such as the redevelopment proposal for Playa Drain. National nonprofits specializing in parks and open spaces, such as the Trust for Public Land and Rails to Trails, may also offer guidance and resources.

Economic Development

As a border city, El Paso has an economy that is subject to a number of potential shocks and stressors, many of which are totally beyond local control—the national economy, the

Alternative Funding Sources for Parks

Funding opportunity*	Funding source type	Facilities requirement
American Academy of Dermatology Shade Structure Grant Program	Nonprofit (American Academy of Dermatology)	Permanent shade structures
Broadband Technology Opportunities Program	Federal government (U.S. Department of Commerce)	Broadband and technology facilities
Clean energy grants	Federal government (DOE)	Renewable and energy-efficient facilities
Community development block grants	Federal government (HUD)	Community development
Economic Development Administration grants	Federal government (Economic Development Administration)	Economic development
Energy Efficiency and Conservation Grant Program	Federal government (DOE)	Renewable and energy-efficient facilities
Environmental Justice Small Grants Program	Federal government (EPA)	Environmental justice activities
Every Body Walk! Micro Grants Program	Nonprofit organization (America Walks)	Pedestrian improvements
FHA Bicycle and Pedestrian Program	Federal government (U.S. DOT FHA)	Bicycle and pedestrian facilities
Historic preservation grants	Federal, state, local governments	Historic preservation
KaBOOM! playground grants	Nonprofit organization (KaBOOM!)	Playground equipment
Kids Gardening Grant Program	Nonprofit (Kids Gardening)	Youth gardening facilities
Land and Water Conservation Fund	Federal government (National Park Service)	Recreation and conservation
Lowe's Foundation grants	Corporate (Lowe's)	Neighborhood stabilization
Major League Baseball's Baseball Tomorrow Fund	Sports organization (MLB)	Baseball facilities
Playground grants	Corporate (Play&Park Structures/Playcore)	Playground equipment
Recreation grants	State government (Texas Parks + Wildlife)	Recreation facilities
Recreational Trails Program	Federal government (U.S. DOT FHA)	Trails and trail-related facilities
Skatepark grants	Nonprofit (Tony Hawk Foundation)	Skate parks
Transportation Enhancement Program	Federal government (U.S. DOT FHA)	Facilities related to surface transportation, including pedestrian and cycling infrastructure
Urban and Community Forestry grants	Federal government (USDA & U.S. Forest Service)	Urban forestry
U.S. Tennis Association Facility Assistance grant	Sports organization (USTA)	Tennis facilities

*These programs were in place at the time of the Advisory Services panel. Although funding availability may change in the future, this list is intended to illustrate the range of resources available for different types of park facilities.

exchange rate, U.S. Immigration and Customs Enforcement controls at the border, trade policy, energy costs, and the U.S. Department of Defense policies affecting Fort Bliss. Economically, the region's resilience lies in its ability to respond and adapt to these external shocks. Developing more local jobs within reach of area residents is one important strategy for helping individual communities adapt to such economic shocks.

Future opportunities for Chamizal, Segundo Barrio, and intervening neighborhoods will be driven by strategies to improve the economic strength of their residents: giving them the skills to compete for future higher-wage jobs and supporting the creation and growth of local businesses. Market opportunities for new investment and development will respond to improved earning capacity and financial health of area households. Each investment and strategy should be evaluated, in part, by how well it contributes to that goal. Forging stronger and long-lasting partnerships among institutions, businesses, foundations, and community organizations is key to the long-term success of resilience strategies.

A resilient ATS offers the opportunity to promote economic development and support a range of initiatives already underway in the city. Beyond the ATS, the panel considered two focus areas, including downtown. Many downtown redevelopment and economic development initiatives will affect the success of the ATS and have the potential to make the project more successful, impactful, and resilient.

For low-income residents, convenient access to jobs is often a key barrier, particularly for those who do not own cars. The ATS, Brio, and streetcar investments will have important economic consequences as they improve public-transit connectivity. Their value will be even greater if designed to maximize connections to job centers, including the MCA, downtown, and cross-border opportunities.

Workforce Development

Looking to the future, the region is emphasizing growth in life sciences, advanced logistics, advanced manufacturing, defense and aerospace, business services, and tourism.

The rapid expansion of the MCA promises to create 8,000 to 9,000 jobs in the area just east of the study area. The MCA could be an excellent partner to guide, advise on, or develop an effective job training program to help community residents qualify for and access some of those jobs. Meanwhile, the U.S. census reports that residents of Chamizal and Segundo Barrio are most often employed in grounds maintenance, construction and extraction, and food service industries.

Improved job skills and job readiness could expand local residents' access to future higher-wage jobs. The panel's recommendations for enhanced workforce development opportunities to be carried out in conjunction with the ATS include the following:

- **Create additional job training programs for existing and new businesses.** Customized job training for existing and new businesses is a powerful economic development incentive used by Workforce Solutions Borderplex that could be expanded within El Paso. It is a regional workforce development organization that serves six counties, including El Paso. A publicly funded nonprofit organization, it establishes relationships with stakeholders within the region to improve education, employment, and economic development. Programs focus on job training based on expressed need and matching employees with jobs.

As or more important is early childhood education, continuing through elementary, middle, and high school, to provide children with a vision of the opportunities potentially available to them with educational achievement. Business and institutional partnerships that encourage collaboration and mentoring can change a child's life through practical skills about navigating life and the workplace as well as encourage them to aspire to a better future. One local school, the El Paso Leadership Academy, focuses on helping underserved populations prepare themselves to go to college and take future leadership positions, helping its students envision and achieve a different future for themselves.

■ **Include job training programs in the facilities investments from the Quality of Life bond program.** The existing building proposed to house the new recreation center in the Chamizal neighborhood funded by Quality of Life bonds is expected to have additional space beyond that which can be improved for recreational uses. Job training activities close to the community could be an appropriate use for that additional space.

■ **Provide assistance to small businesses.** Entrepreneurs and small businesses abound in the Chamizal community. Helping these entrepreneurs succeed can involve assistance to meet bonding and insurance requirements, business finance, marketing, and compliance with the many licenses and regulations that affect the running of a business. The Hispanic Chamber of Commerce, the UTEP Small Business Development Center, and the Women’s Business Development Center of the U.S. Small Business Administration (SBA) all assist local businesses.

Building a track record of success is one of the most important steps in establishing and growing a business. Programs to link these small businesses to subcontracting opportunities with larger general contractors can create meaningful partnerships and long-term relationships for future collaboration.

Access to capital is typically the most difficult hurdle in developing a successful business. Additional sources of revolving loan funds targeted to companies in underserved communities could be very helpful in supporting business expansion and their ability to tackle larger projects. Foundations and local financial institutions could be approached to invest in a revolving loan fund with SBA guarantees.

■ **Consider models for ATS maintenance that would facilitate the creation of small businesses ready to participate in the “resilience economy.”** The city should encourage established community organizations to create service businesses that could participate in

development and maintenance of the ATS and related public spaces.

Downtown

The International Beltway portion of the ATS will link Chamizal with downtown, which is currently experiencing a revitalization that presents a strong opportunity for Chamizal residents to better access employment opportunities as well as the shopping and recreational amenities of downtown.

New housing development will be critical to the long-term success of downtown development because it provides a base of customers and pedestrian activity that will enliven the downtown seven days a week, in the evening and on weekends. Downtown residents support local restaurants, retailers, and service providers while contributing to the pedestrian activity critical to creation of places for work, live, and play.

The downtown housing market has gained substantial momentum in the past year. Beginning with several rehabilitation projects such as the Martin Lofts and Essex Alley Apartments, the market has recently seen two new construction projects that are nearing completion. ArtSpace is a tax credit–supported affordable housing project meant to spur the creative economy by providing a downtown location for artists to live, while 501 South Campbell Avenue is an 87-unit market-rate apartment complex. Both new and rehabilitated market-rate units are reportedly filling rapidly



Downtown El Paso comprises a number of walkable retail and office districts that are currently experiencing a wave of new development.

KATHARINE BURGESS/ULI

Key Themes

- A downtown in transition
- High vacancies in retail spaces and historic buildings
- Major private investments in new and renovated hotels and housing
- Growing demand for downtown and near-downtown housing
- Retail demand likely to follow hotel and housing development
- Continued public/private partnerships for near-term and medium-term market-rate housing

and achieving rents up to \$1.65 to \$1.80 per square foot, attracting more interest from the private development market.

Interest is growing in downtown and near-downtown housing, although private developments still need public assistance to close the financial gap. Current market conditions do not yet support strictly private sector development of market-rate housing, though those conditions are improving continually. Public/private partnerships will be key to the near- and medium-term development of additional market-rate housing until the point where market rents cover the costs of developing and operating the housing.

The panel's recommendations for continuing this momentum include the following:

- **Continue to offer incentives for downtown residential development.** The city has been aggressive in its provision of incentives for housing development. That approach will need to continue for some time as the market improves and developers can demonstrate the potential for successful operations to their lenders and investors. In 2015, Texas established a 25 percent historic tax credit that can be used in combination with 20 percent federal tax for rehabilitation of historic structures. El Paso



ArtSpace is one of the high-profile redevelopment projects underway downtown and will soon provide affordable apartments for artists.

County is currently conducting an architectural survey that will inventory downtown's historic structures; this may lead to a national historic district designation that allows building owners to more easily qualify for the tax credits.

- **Focus housing development in areas close to downtown's attractions, such as San Jacinto Plaza.**

As downtown struggles to develop a critical mass of housing, retail, and other uses that create a 24-hour environment, it will be important to focus housing development initiatives in the parts of downtown close to San Jacinto Plaza and the cluster of new attractions, including the stadium, the Museum of History, and the Children's Museum. Focused development will reinforce these investments as well as the major downtown hotel developments already underway or planned. Development should also build on the connectivity provided by the ATS, the trolley to downtown, UTEP, and MCA.

Downtown redevelopment projects are likely to be most successful if clustered, given the relatively early phase of downtown revitalization.



■ **Consider developing one or more municipal parking garages, as well as shared use public parking garages, to unlock additional development potential.**

The lack of convenient parking is inhibiting the renovation and adaptive use of historic towers and other downtown buildings. The city should consider building one or more municipal parking garages in key locations to unlock the potential of these historic structures. The city's current search for a development partner to build a mixed-use development with structured parking at the corner of East Mills Avenue and North Campbell Street is a good first step. The city's program to offer downtown residents a year-long parking pass for metered spaces also is helpful, but significant growth in the housing stock would overwhelm the metered supply and depress the availability of spaces for retail activity.

The city and county should also develop strategies to support housing development through shared use



San Jacinto Plaza is already seeing development momentum, which additional investment will reinforce.

KATHARINE BURGESS/ULI

of public parking garages. For example, Sun Metro's Union Plaza Transit Terminal garage provides spaces for residents of the nearby Essex Alley Apartments. Several potential development sites exist in the immediate vicinity of the County Courthouse Garage at East First Avenue. The county should consider offering long-term overnight or weekend spaces to residents of new development projects who may live in downtown but drive to work elsewhere in the city, and 24-hour spaces to the extent availability exists.

■ **Replace or reuse obsolescent buildings no longer well suited to industrial use.** The city's suite of incentive programs should address the opportunities presented by many of the downtown-area buildings that are no longer well suited for industrial use. Meanwhile, mixed industrial and commercial development remains appropriate between Paisano Drive, Overland Avenue, Oregon Street, and Virginia Street.

■ **Preserve and enhance the character of existing historic neighborhoods while seeking to help prevent gentrification pressures.** The city should take care to not incentivize projects that encroach into the historic Segundo Barrio residential neighborhood. Numerous underused sites exist for new construction proximate to the new streetcar line and the main employment, retail, and cultural centers. City incentives should be tied to performance metrics that include retention of existing tenants and historic structures. With the growth in heritage tourism, visitors are seeking authentic settings and experiences. Segundo Barrio and Chamizal, with their long histories and cultures, could showcase El Paso's past.

In several cities across the southwest, barrios have benefited from major public investments to preserve and improve historic structures and the Chicano experience. They have evolved into major tourist destinations while still protecting local residents and ensuring their ability to stay in their neighborhoods. Balancing new development, heritage tourism, and existing communities and homes is a delicate challenge. However, the city should

strive to achieve this goal and support Segundo Barrio to evolve as a cultural district where families have lived for generations.

- **Ensure that gateway improvements build on historic character.** The Paso Del Norte International Bridge is the key gateway to El Paso for visitors from Mexico, a major source of market support for El Paso retailers, but it lacks the sense of arrival and grandeur that one might expect. The city proposes investing in signage and lighting to enhance the entry and shopping experience along



Downtown's Plaza Theatre is a recent revitalization project that stayed true to downtown's historic character, preserving the theater facade that frames a key downtown public space.

Precedent: Barrio Preservation in Tucson

The preservation of barrios requires a multidimensional strategy and a strong appreciation of culture to support the area's economic and social vitality. Tucson, Arizona, offers an excellent example of historic preservation of barrios, where the mixed-vintage blocks' historic character was maintained while contributing to economic vitality. Key strategies for Tucson barrio preservation included the following elements.

- **Conduct careful research and inclusive data collection.** The city of Tucson used a life-cycle assessment analysis to compare the relative environmental impacts of building reuse and renovation versus demolition and new construction. The results, published in a series of reports titled *Older, Smaller, Better*, explains the value of older, smaller structures and their positive associations with social, economic, and cultural diversity and vigor, effectively valuing historic preservation of barrios.
- **Celebrate unique culture and history of barrios.** Barrios are home to many communities that have faced devastating social and economic issues while retaining rich unique culture. The perseverance of these at-risk communities should be celebrated to emphasize community strengths while recognizing devastation. A local theater company in Tucson tells the story of the barrios' troubled times by literally walking theatergoers through history. The celebration of the barrios' culture and history tells a story of social resiliency and could inspire others to aid in adaptive use.
- **Use city-offered incentives for adaptive use.** Historically designated properties tend to experience both increased costs and benefits. To aid property owners in covering these costs during the preservation and redevelopment of barrios, the city offered and identified financial resources at the city, state, and federal levels. The Tucson historic preservation office offers its services in finding the right incentives for adaptive use.



Barrio Libre (Spanish for "Free District") is one of the preserved historic districts in downtown Tucson.

- **Encourage overlay zones.** Tucson's Historic Preservation Zones date to the early 1970s. Since its inception, this zoning overlay requires compliance with specific development standards and design guidelines to preserve historical exterior alterations and culture of the areas. To further protect historic structures, the city also created Infill Incentive District overlay zones to encourage creation of high-density neighborhoods that are not only pedestrian- and transit-oriented, but also offer development incentives permitting modification of development requirements.
- **Seek nonprofit advocacy.** Local nonprofit organizations tend to have strong connections with community groups and stakeholders. Through events such as the Tucson Historic Preservation Foundation's walking tours, local culture is promoted in a way bound to encourage community development and raise awareness. A ULI Advisory Services panel recommended to further involvement with community members by appointing a citizen representative, given Tucson's complicated past with urban development.

El Paso Street, using leftover parking meter funds. Any investments should build from the existing character and not seek to “sanitize” or transform the distinctive retail along El Paso Street. As is the case with the plans for the future ATS, community engagement in this initiative will be key.

The Border and Its Impact on the Study Area

Delays and congestion at the border crossings heavily affect the study area. Miles-long backups of trucks and other vehicles waiting to cross the border create significant pollution that directly affects the health and well-being of study area residents. Truckers seeking to shorten their time in line routinely cut through residential neighborhoods, further disrupting daily life and creating safety hazards for local children. The delays also impose major

economic costs on the businesses and individuals using the border crossings.

Economically, cross-border movements are one of the most important drivers of the El Paso economy. Therefore, the city and the business community are pursuing a number of initiatives in cooperation with the federal government to speed processing and reduce border delays. The city directly contributes to the U.S. Customs and Border Protection’s overtime budget to ensure that as many lanes as possible are open. Other technological investments are speeding inspection times, and many large businesses have invested in the certifications that allow them trusted traveler passes to bypass the lines.

Continued focus on border-crossing improvements will be critical to reduce wait times and the resulting air pollution. Police enforcement of truck routes that prohibit trucks from driving through residential neighborhoods is unlikely

Emerging Downtown Markets: Office and Hotel

Spurred by strategic public investments in transportation, open space, sports, and culture, as well as the city’s Sustainable Cities Incentives, downtown El Paso is starting to see significant new private investment and redevelopment. The redevelopment of the Anson Mills Building in 2012 has been followed by several other historic building restorations for hotel, residential, and mixed uses, such as the Martin Lofts apartments and the Hotel Indigo.

Office Market

The downtown office market is lagging behind other sectors, with limited demand and weak rents that will not support significant reconstruction or new development except for specific needs. Gross rents range from the low to mid-teens, even in Class A buildings, because many of El Paso’s main economic drivers, such as manufacturing and back-office support, require a suburban footprint.

The panel does not see substantial near-term growth prospects for this market; however, with the increased

amenity of downtown, potential exists for limited growth from relocation of professional services or other civic-minded corporate players. The Hunt Companies is planning a new tower that will serve as its corporate headquarters and has had some success in securing other tenants willing to pay a premium for modern space.

Hotel Market

Driven by cultural events and cross-border tourism, several projects are transforming the downtown hotel market. The 119-room boutique Hotel Indigo opened downtown in January 2016, and conversion of the 15-story downtown Bassett Tower into a 100-room Starwood Aloft hotel has begun. Both projects were assisted by city incentives, as will be the planned \$70 million renovation of the Camino Real Hotel. A 42-room independent boutique hotel is under development and has already attracted an eclectic group of eating and drinking establishments to its ground floor.

Addressing an Environmental Injustice: The Greening of the Port of Los Angeles

As part of a \$60 million settlement, the port and city of Los Angeles agreed to reduce air pollution by trucks and ships transferring intermodal flow within the cities of San Pedro and Wilmington. Funds, paid entirely by port revenues, focused on the following:

- Creating incentives to clean up independently owned trucks serving the port;
- Reducing air pollution from port operations;
- Offsetting aesthetic impacts in Wilmington and San Pedro;
- Replacing four 16-story cranes with lower-profile cranes to reduce visual impact; and
- Creating a traffic plan for the terminal and other parts of the port.

To ensure the settlement was enacted, the port created the Healthy Harbor Program, which brought the environmental activities under one umbrella and led to the 2005 Green Port Policy. This policy includes program elements protecting and restoring wildlife, reduces harmful

air emissions, improves water quality, treats polluted soil and sediments, better engages the community, and implements sustainable practices and design. In 2010, the port further enhanced its program by setting the goal to be a zero-emission port complex. As of 2016, over \$200 million has been spent toward correcting an environmental injustice. Financing has included the issuance of green bonds through a sustainability market.

By implementing a green port policy, El Paso could build trust and lead by example.



given the myriad of other demands on police resources. One option is height bars at major road entrances to the neighborhoods to prevent truck passage. Coupled with public art, these could enhance and celebrate the community while reducing a significant nuisance.

Enhancing Partnerships, Cooperation, and Governance

PUBLIC AGENCIES HAVE UNIQUE and important responsibilities and opportunities to address community challenges, promote economic vitality, and improve quality of life. El Paso's strategy for enhancing resilience includes goals to enhance the city's internal knowledge, culture, and practice of resilience principles. Because of its natural assets and track record of success, El Paso has every reason to set its vision and expectations high. To keep the success going, the panel defined several areas that are worth attention, including the following:

- Emphasizing implementation of the city's adopted plans and policies;
- Enhancing community trust and relationships;
- Enhancing partnerships and collaboration with local and state partners;
- Defining and implementing a future land use strategy to address key opportunities; and
- Focusing leadership on the future.

The panel was impressed with the high degree of experience, commitment, and subject matter knowledge among the public staff leaders and managers. However, some erosion has occurred with loss of expertise and opportunities for improved coordination across departments and agencies. The highest-performing agencies ensure that departments have the resources and tools they need and that policy direction and operations are aligned consistently.

Ensure Policy Continuity and Political Alignment

Elected public leaders have a critical function to establish a vision for the future and to guide the city organization to

implement that vision. Why is vision important? If policy direction swings dramatically, or if leaders struggle to find consensus, the performance of public organization can deteriorate. Therefore, policy continuity and political alignment genuinely help ensure that taxpayer resources and time are spent wisely and effectively.

A vision is also key to aligning implementation efforts. By working together with public agency, private sector, and community partners, the city will achieve more than it can on its own. El Paso has the skills and experience to work collaboratively and to fulfill its role to lead, organize, and implement the efforts to create a resilient community. By setting and articulating a clear vision and by aligning the efforts across public, private, and nonprofit sectors, results are not just possible but likely.

Elected leaders have many demands and little time, so they should focus on policy making, long-term goals, and building relationships with other agencies and stakeholders to help the city be successful. If the council can serve its policy-making role well, the city manager and staff can better focus on implementation and administration. Council members are wise to think long term and citywide in making policy decisions and to think "big picture." In addition to budgeting for staff training and professional development, high-performing councils have invested in time and training to improve the working relationships among themselves and with other public agencies.

Promote Partnerships

El Paso has opportunities to build upon and create new partnerships. For example, the panel heard that the relationship and coordination between the city and El Paso Independent School District could be enhanced. This could involve a review of student enrollment projections and

opportunities to examine facility needs, open space and recreation programming, and transportation patterns.

El Paso has many city streets that are actually state highways, owned, controlled, and maintained by the Texas Department of Transportation. Although doing so has cost implications, the city may need to consider assuming control of key corridors to better reflect local transportation goals and respond to a broader array of local needs, especially those related to resilience, such as along the ATS. Exploring this option with peer cities, the Texas Municipal League, and the MPO would be useful to see if the added maintenance cost would be outweighed by the benefits of control.

Build on and Implement Past Policy Work

El Paso's adopted comprehensive plan (*Plan El Paso*) is intended to limit sprawl and focus new growth in a more compact pattern that is easier and cheaper to serve with public facilities and services. The panel heard that implementation of that goal has been inconsistent and that well-intentioned tools to promote the desired land use pattern are not consistently used or applied. When new development furthers the adopted plan, the city should make the permit process fast and predictable.

In the study area, the panel saw an opportunity to undertake a future land use discussion for Chamizal and nearby industrial areas to reconcile the significant land use conflicts that have existed for many years and develop relocation strategies for incompatible uses. For example, if a new home for the industrial uses could be found, an

Mobilizing Stakeholders to Achieve a Vision

Most people think that leadership means getting people to follow and to do what you want them to do. But the bigger challenge is to help people recognize those needs themselves and to take the necessary actions to change their own values, practices, and priorities. To give their communities the best chance at success, leaders must have difficult conversations about tough issues, and they must mobilize people to confront reality, solve problems, and make progress.

Adapted from Dean Williams, *Orienteering Concepts for the Exercise of Leadership*, Center for Public Leadership, Kennedy School of Government, Harvard University.

opportunity would be created to further protect the unique and valuable barrio-style residential uses in the neighborhoods and better serve them with infrastructure. In addition, since HACEP may divest the Salazar site, the chance to reenvision that area arises.

The panel heard that El Paso would benefit from developing a specific capital plan to help guide new investments. Although finding new revenues is always a challenge, the panel heard how the city successfully made the business case for new street investments by restoring a Saturday parking fee, something the business community supported because they could see the nexus between the source and use of the funds.

Conclusion

THE ATS STUDY AREA IS COMPLEX, with competing and sometimes conflicting land uses, incomplete transportation networks, little usable open space, and communities of residents with lesser means. El Paso as a whole also both enjoys and is challenged by a significant international border with several busy crossing bridges connecting El Paso to Juárez, Mexico. The natural environment, local communities, and public infrastructure in El Paso are strongly linked and interdependent. Therefore, traditional and siloed solutions are less likely to be effective.

Resilient land use strategies will not just help better prepare El Paso to handle the challenges of flash flooding, drought and water supply shortages, urban heat island issues, and potential human-caused stressors and shocks, but will also continue the community's path toward healthy living and help implement the vision and goals of El Paso's award-winning comprehensive plan. In fact, the panel observed that El Paso has many such plans and that focusing on plan implementation may yield more benefits in the near term than additional planning.

The importance of making future land use decisions through consultation, involvement, and collaboration with residents and businesses also bears emphasis. Ensuring the community feels its voice is heard and its input is valued will make any decision more durable and promote shared ownership.

After studying the opportunities of the ATS and the resilience challenges and opportunities in El Paso, the panel identified some bigger-picture opportunities that would require cross-agency collaboration, enhancing resilience and reducing siloed planning. For instance, if El Paso chooses to protect and nurture the unique residential barrios of Chamizal and Segundo, to make investments in sustainably designed trails and community spaces responsive to



The panel focused on proposing strategies both for low-cost improvements to bike infrastructure, such as sharrows, and for more ambitious proposals, such as the creation of the Franklin Canal ATS as part of an integrated recreation, housing redevelopment, and land use strategy.

El Paso's unique climate vulnerabilities, and to relocate the industrial uses to a better place with adequate rail and multimodal service, then a valuable opportunity arises to create a truly more resilient and delightful community in the study area.

The panel heard from local groups and associations who have long-term knowledge and history with these neighborhoods. Their involvement in this and other planning processes is both necessary and valuable. Landowners and businesses also have a stake in these decisions, and their input should be sought along with that of residents and neighborhood groups. The panel believes considering these issues together with the routing planning for the ATS is a big idea that deserves more analysis and community comment.

The panel's recommendations should also help promote local assets and strengths, leverage El Paso's unique market advantages, and address potential weaknesses. The opportunity exists to better tell the story of El Paso, inform and improve the community's self-perception, and communicate the opportunity El Paso presents to the outside

world. El Paso has many strengths and valuable assets, and opportunities exist to leverage those even better to further enhance community resilience.

Finding and using effective ways to better coordinate public sector agencies and decision making, and exploring ways to share and leverage public facilities and resources will be one key to success. The panel heard that relationships between the city of El Paso and other public agencies could be improved. Historical and current reasons may exist for this situation, and overcoming those hurdles may not be easy. But by deliberately promoting better political alignment and policy continuity across political and organizational lines, by setting a common course through an inclusive process, and by actively implementing the vision through tangible actions informed by local voices, El Paso has the opportunity to serve as a national model of resilience and success.



Colorful murals and signs punctuate the streetscapes of El Paso.

Resources

- Brown, Heidi E., Alex Young, Joceline Lega, Theodore G. Andreadis, Jessica Schurich, and Andrew Comrie. 2015. "Projection of Climate Change Influences on U.S. West Nile Virus Vectors." *Earth Interactions* 19 (18).
- CTSA (Clinical and Translational Science Awards Consortium, Community Engagement Key Function Committee). 2011. *Principles of Community Engagement*. 2nd ed. NIH Publication No. 11-7782. Washington, DC: U.S. Government Printing Office.
- Garfin, Gregg, Sarah LeRoy, and Hunter Jones. 2016. *Developing an Integrated Heat Health Information System for Long-Term Resilience to Climate and Weather Extremes in the El Paso-Juárez-Las Cruces Region*. Tucson, AZ: Institute of the Environment.
- KVIA News. 2016. "10 Years Ago Storm 2006 Damaged Hundreds of Homes, Caused Hundreds of Millions in Damage." August 1, updated September 21. <http://www.kvia.com/news/10-years-ago-storm-2006-damaged-hundreds-of-homes-caused-hundreds-of-millions-in-damage/89182130>.
- MacAdam, James. 2012. *Green Infrastructure for Southwestern Neighborhoods*. Tucson, AZ: Watershed Management Group.
- Melillo, Jerry M., Terese Richmond, and Gary W. Yohe, eds. 2014. *Climate Change Impacts in the United States: The Third National Climate Assessment*. Washington, D.C.: U.S. Global Change Research Program.

About the Panel

Kamuron Gurol

Panel Chair
City of Burien, Washington

Gurol has served as Burien city manager since April 2014. Burien is a city of 50,000 residents bounded on the west by environmentally valuable Puget Sound shorelines and on the east by Seattle-Tacoma International Airport. He is leading a lean and nimble city organization to leverage the city's unique locational assets, walkable and charming downtown, and strong residential neighborhoods to promote new economic development.

Before Burien, Gurol served as community development director for the city of Sammamish for nearly nine years where he successfully navigated an innovative Town Center plan (using a hybrid of performance and traditional zoning tools) and new Shoreline Master Program (using an incentive-based strategy to improve habitat while recognizing property rights) through the rough waters of state agency approval and city council adoption. Sammamish also received a 2009 Governor's Smart Community award for its over-the-counter permit approval process.

Gurol also worked as a corridor planning manager for the Washington state Department of Transportation Urban Planning Office, where he oversaw corridor improvement plans for several large state highways in the greater Seattle area. As director of the Kitsap County Department of Community Development, he was responsible for all aspects of a community development department (building plan review and inspections, land use permits, long-range planning, and a Community Development Block Grant program) serving about 250,000 residents.

As manager of the Snohomish County Planning Division, he was responsible for successful policy development for

the county comprehensive plan and various subarea plans, for planning policy issues with 20 cities, and for county GIS and demographic work products. He began his work in public administration, planning, environmental and natural resources with King County where he created a nationally recognized transfer of development rights program.

He holds a BS in geology from the University of Washington and an MPA from the Kennedy School of Government at Harvard University.

Ladd Keith

Panel Vice Chair
Tucson, Arizona

Keith is a planning faculty member and director of academic initiatives and student success at the University of Arizona's College of Architecture, Planning, and Landscape Architecture. He leads the Sustainable Built Environments degree program and other strategic initiatives related to the college's academic programs. His research interests are in the integration of climate change science for the planning and design of more resilient cities. He has taught several courses on topics including sustainable design and planning, public participation, and planning theory.

An active member of the Urban Land Institute, Keith currently serves on the Center for Sustainability Advisory Board and is a member of the Sustainable Development Council. He was previously the chair of ULI Southern Arizona and was a founding member of both the ULI Southern Arizona Young Leaders Group and ULI NEXT. In 2016, Keith was recognized as one of the ULI's 40 under 40, who represent the best young land use professionals from around the globe, as selected by members of ULI.

Keith also serves on the city of Tucson's Planning Commission, where he led the commission's public participation process for the General & Sustainability Plan, which will guide planning policy for the next decade.

Shane Farthing

Silver Spring, Maryland

Farthing is an attorney, policy professional, entrepreneur, and nonprofit leader who works at the intersection of economic development, sustainability, and transportation. He currently serves as senior adviser to the Planning Board of Montgomery County, Maryland. In that role, he assists the board in master planning for new transit-oriented communities; placemaking and urban park activation; economic attraction and revitalization; and transportation network improvements.

He also leads the public policy practice at Four Sparrows LLC, focusing on issues of nonprofit management and program design, advocacy strategy, and urban policy. Previously, Farthing served as executive director of the Washington Area Bicyclist Association and director of the District of Columbia's Office of Green Economy.

A believer in the benefits of urbanism to both the urban areas served and the undeveloped areas preserved, Farthing has participated in several ULI Technical Assistance Program panels and spoken at many ULI events. He holds degrees in religious studies, law, and public policy.

Richard Henderson

Boston, Massachusetts

Executive vice president for real estate at MassDevelopment in Boston, Massachusetts, Henderson advances planning and redevelopment projects and manages real estate assets in communities throughout Massachusetts. His projects at MassDevelopment have included 100 Cambridge Street, a rehabilitation of a former state office building into a 600,000-square-foot mixed-use complex; large-scale land redevelopment projects including the

former Army base at Devens and several former state hospital sites; the Transformative Development Initiative, focused on revitalization of urban neighborhoods; and Boston's new General Electric headquarters.

Henderson has long been on the forefront of economic development in Massachusetts. As director of planning and development for the Massachusetts Port Authority, he played an instrumental role in planning and developing Boston's Innovation/Seaport District and other sites around Boston Harbor. Before his work at MassPort, Henderson was assistant secretary of economic affairs for the Commonwealth and principal author of the state's economic strategy, *Choosing to Compete*. Henderson earlier served as director of policy planning for the Boston Redevelopment Authority.

He graduated Phi Beta Kappa from Williams College and holds a master of philosophy in urban design and regional planning from the University of Edinburgh in Scotland.

Anita Morrison

Washington, D.C.

Morrison founded Partners for Economic Solutions after more than 30 years of economic and development consulting. During her career, she has specialized in public/private partnerships, real estate advisory services, redevelopment strategies, and economic impact analysis. From large cities to small towns, she applies her understanding of real estate economic fundamentals to questions of development, redevelopment, and smart growth. She helps decision makers and the community to understand how economics and land planning interact. She prepared workforce development strategies for the Sustainable DC Plan.

Her work with major transit-oriented development (TOD) spans three decades, including analysis of alternative corridors for extension of Washington, D.C.'s transit network, the economic and fiscal impacts of Metro's Green Line, the economics of developing major downtown and neighborhood transit stations, market and financial feasibility of TOD at commuter-rail stations, and potentials for intermo-

dal transit stations. She has been involved in a wide variety of TOD feasibility analyses and development strategies for station area and corridor plans for the District of Columbia, the Washington Metropolitan Area Transit Authority, and various Maryland and Northern Virginia jurisdictions.

Morrison's redevelopment planning experience encompasses large and small business districts, corridors, and neighborhoods, including Dickinson Avenue corridor in Greenville, North Carolina; Liberty Heights corridor in West Baltimore, Maryland; Washington, D.C.'s Georgia Avenue and Rhode Island Avenue; Hull Street in Richmond and Chesterfield County and Crescent District plan in Leesburg, all in Virginia; Howard County, Maryland's U.S. 40 corridor; West Savannah, Georgia, neighborhood; and U.S. 11E in Birmingham, Alabama.

She has served on multiple ULI panels. Morrison earned a master of public policy from the University of Michigan.

Carlos F. Perez

Atlanta, Georgia

Perez is the founding principal of Perez Planning + Design LLC. He specializes in planning and designing active transportation systems and comprehensive parks, open spaces, and recreation systems. He has worked with more than 40 agencies nationwide, including Seattle; Raleigh, North Carolina; Washington, D.C.; Atlanta; and Miami. In addition, Perez is the principal trails planner for the PATH Foundation, a nonprofit organization that has built over 200 miles of trails in the Atlanta Metro area.

An active member of the Urban Land Institute, Perez is a graduate of the Atlanta Urban Land Institute Center for Leadership Class of 2014.

Born in San Juan, Puerto Rico, Perez received a bachelor's in landscape architecture from the University of Florida; a master's in city and regional planning from the Georgia Institute of Technology; and a master's in urban design from the Georgia Institute of Technology. He is also a board member and vice chair of the Atlanta nonprofit organization Park Pride—a parks and green-space advocacy

organization that promotes more and better parks. He is fluent in spoken and written Spanish.

Jodi Slick

Duluth, Minnesota

Slick is the founder and chief executive officer of Ecolibrium3, a nonprofit organization with a mission to lead and inspire community change toward an equitable and sustainable future. Ecolibrium3 focuses on developing community resilience in economic and environmental systems in the low-income neighborhoods of Duluth, Minnesota.

She was named a White House Champion of Change for Building Resilient Communities and coordinated Minnesota's application to the National Disaster Resilience Competition. She served as the chair of regional flood recovery efforts after a 500-year rain event in 2012 and developed a new model for resilient recovery. Slick serves as the principal investigator for the U.S. Department of Energy's Local Energy Matters Solar Market Pathways Project, is the facilitator for Duluth's participation in the federal Clean Energy for Low Income Communities Accelerator, and administers the nationally recognized Duluth Energy Efficiency Program. As chair of the Duluth Energy Systems board, she is leading efforts to convert a downtown district heat system to regionally derived fuels.

In addition to energy work, Slick works on urban food system development, community-informed resilient housing design, and neighborhood-integrated transportation. Her past experiences include community organizing with homeless individuals, training of state inmates in construction trades, administration of a county solid waste and recycling department, facilitating a green jobs action planning process, and serving as both a housing authority commissioner and as a school board president. She founded Common Ground Construction, a green affordable housing social enterprise that completed more than 125 projects, including national demonstration projects for the U.S. Department of Housing and Urban Development.

Slick received her master of educational administration and BS in broad field science (chemistry and physics) from the University of Wisconsin Superior. She has also completed training with the Graduate School of Business at Stanford University in Social Entrepreneurship.

Alejandro (Alex) Villegas

Largo, Maryland

Villegas is a principal at Rodgers Consulting Inc., a legacy land development, planning, and engineering consulting firm that is guided by its core values and clients' needs. Villegas is focused on advancing the firm's strategic objectives of delivering a consistently exceptional client experience and geographic diversification.

He earned his bachelor's degree in engineering and a master's degree in management from Pontifical Bolivarian University in Colombia and the University of Maryland, University College, respectively. His career in real estate development started in 2002 as an entry-level engineer.

Over 15 years, he has emerged as a regional and national leader and is well respected in the fields of land development, planning, and engineering. He is a member of the board of directors for the Maryland Home Building Industry Association and an active member of the Urban Land Institute; NAIOP, the Commercial Real Estate Development Association; and the Independent Council of Shopping Centers.

He has lived and worked in Maryland for more than 17 years and is intimately familiar with zoning regulations, county codes, and plan processing in Prince George's County.

A ULI Advisory Services Panel Report



2001 L Street, NW
Washington, DC 20036
www.uli.org

 Printed on recycled paper.