On the Move

Transit Oriented Development Neighborhood Study: Central & Thomas, Phoenix, Arizona

One in an eight-part series of reports for use in a Sustainable Communities and Transit Oriented Development Public Education Project

Prepared for The Arizona Department of Housing

Arizona Department of Housing

Prepared by
Drachman Institute
College of Architecture and Landscape Architecture
The University of Arizona
Tucson, Arizona

July 2012

Drachman Institute
College of Architecture + Landscape Architecture
The University of Arizona
design planning research community outreach

Central and Thomas, Phoenix, Arizona

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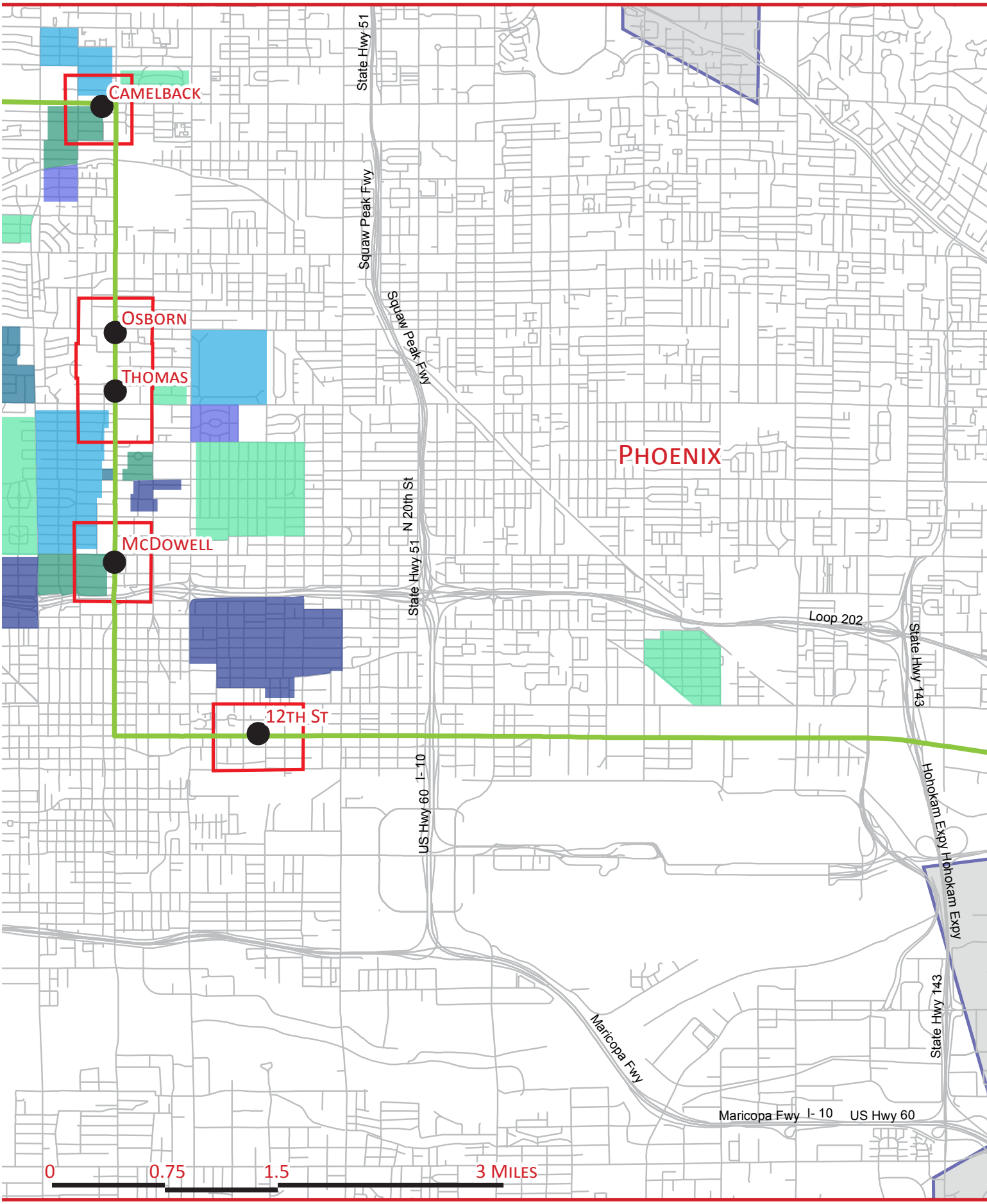
The Drachman Institute is the research-based outreach arm of the College of Architecture and Landscape Architecture (CALA) at The University of Arizona. The Institute is dedicated to environmentally-sensitive and resource-conscious planning and design with a focus on underserved and vulnerable communities. As an interdisciplinary collaborative, we engage students, staff, faculty, and citizens to work towards making our communities healthier, safer, more equitable, and more beautiful places to live. We embrace a service-learning model of education serving the needs of communities while providing an outreach experience for students. This model is a fundamental educational goal consistent with the mission of CALA and The University of Arizona.

The Drachman Institute acts as a nexus between community needs and the College's skills and knowledge in architecture, landscape architecture, and planning with a specific focus on sustainable affordable housing, design-build, community and neighborhood planning, and historic preservation.

All photos, renderings, drawings, charts, GIS layers, or other content were generated by Drachman Institute staff and students unless otherwise noted. Some electronic files have been provided by Maricopa Association of Governments and Metro Light Rail. The contents of this report reflect the views of Drachman Institute which is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of METRO or MAG and have not been approved or endorsed by them.


Camelback
Osborn
Thomas
McDowell
12th St
Phoenix
State Hwy 51
Squaw Peak Fwy
N 20th St
State Hwy 51
Loop 202
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Hohokam Expy
Hohokam Expy
State Hwy 143
US Hwy 60
I- 10
Maricopa Fwy
Maricopa Fwy
I- 10
US Hwy 60
0
0.75
1.5
3 Miles

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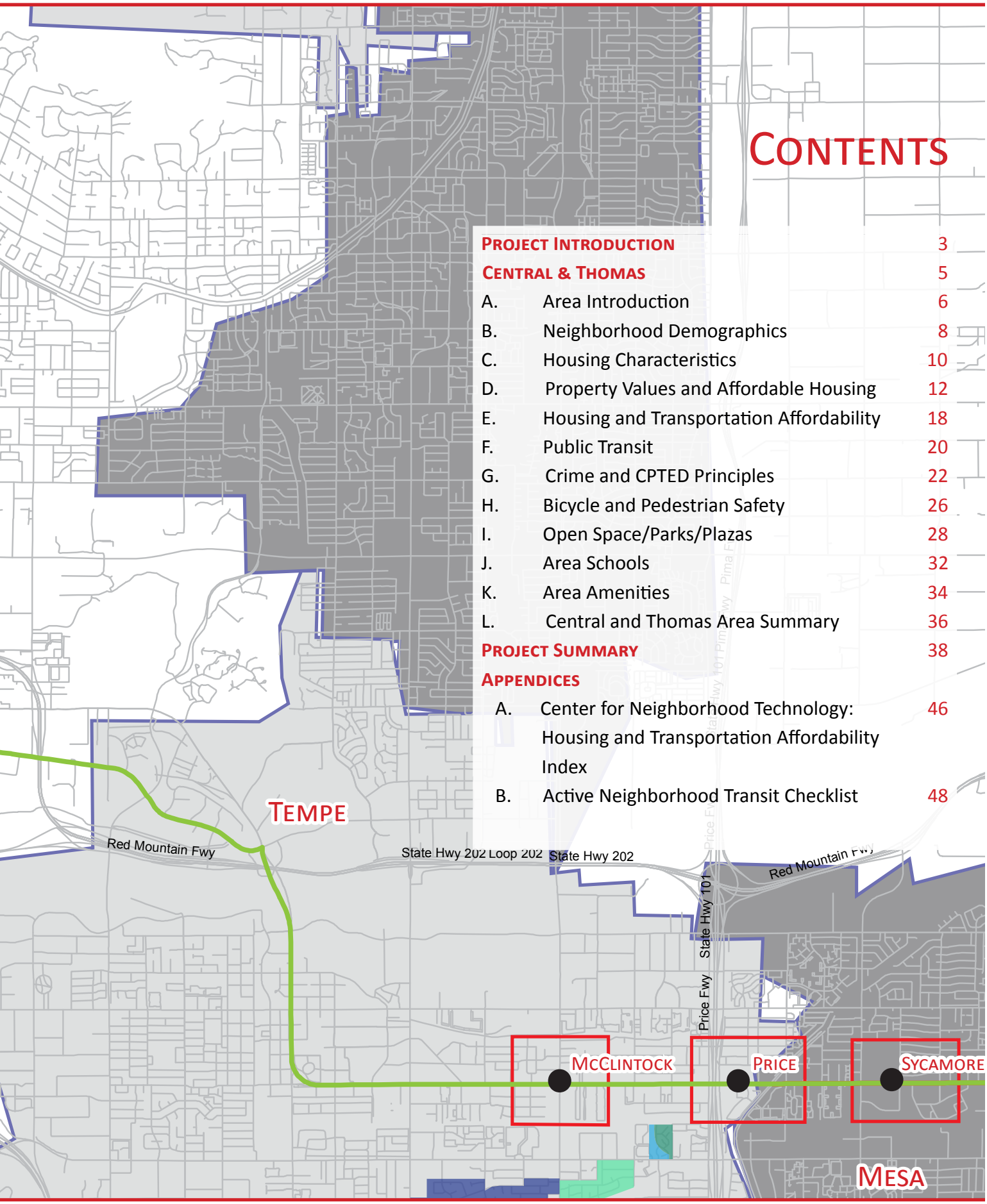


Central Avenue, Phoenix, Arizona

Project Introduction

In the last few years, rising transportation costs, long commutes, congested roadways, and increasing pollution have led to a growing demand for public transportation options and cleaner, more walkable communities.[1] In cities across the country there has been an unprecedented effort towards transit-oriented development (TOD) to support this growing demand. TOD is defined as compact/dense development within walking distance (up to 1/2 mile) of public transportation. This development contains a mix of uses: mix of housing types, jobs, shops, restaurants, and entertainment. The goal of TOD is walkable, sustainable communities for all ages and income levels. Some of the benefits of TOD include the efficient use of land, energy, and resources, cleaner air, and lower transportation costs for families.[2]

While there has been a growing demand across the country for TOD, one of the barriers that city planners must face is the unwillingness of some local residents to support some of the components of TOD. In particular, residents may have concerns about changes in property values, crime, and overburdened infrastructure (such as area schools, roads, and other services).[3]

In 2011, the Drachman Institute contracted with the Arizona Department of Housing (ADOH) to develop a public education project about sustainable communities and transit-oriented development along the Metro Light Rail in Phoenix, Tempe, and Mesa, Arizona. The Drachman Institute conducted both primary and secondary research in order to develop the education materials. In August 2011, the Drachman Institute assisted ADOH with a survey of a random sample of residents living within a one-half mile area around eight stops along the Metro Light Rail.[4] The survey addressed potential concerns and benefits of living along the light rail as well as knowledge about new development. The findings from the survey were used in conjunction with existing local and national studies to direct the gathering of secondary research on issues surrounding TOD such as crime, property values, open space, area schools, and bike/pedestrian safety.

The following is one of an eight-part series of reports created for selected light rail station areas. This report presents a neighborhood analysis and TOD issues for the half-mile area surrounding the Metro light rail station at Central and Thomas. A Project Summary is included to provide base information for all of the eight light rail stations covered in this series.

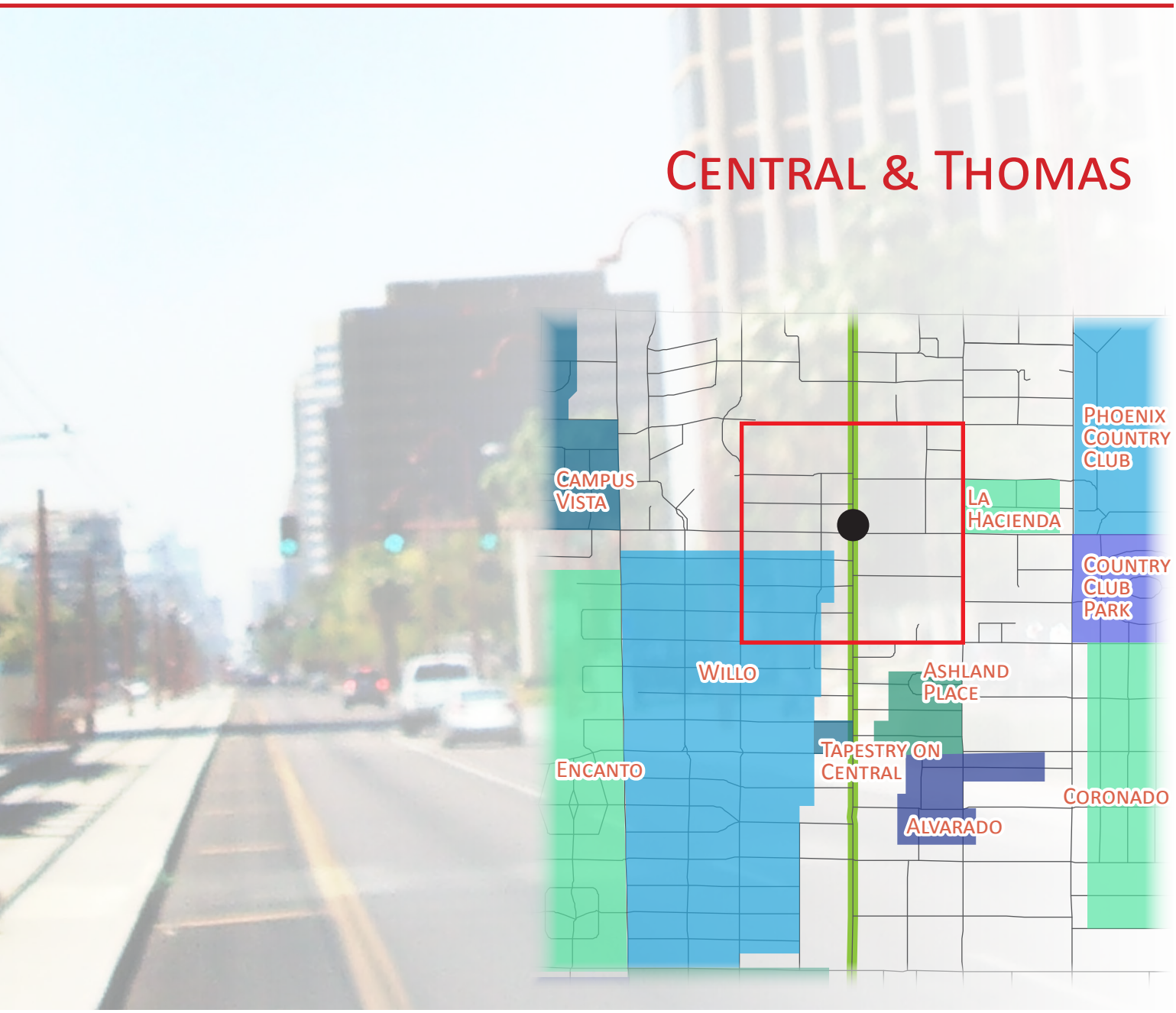
1 Smith, John Robert and Alia Anderson. 2010. "Changing Federal Policy in the U.S. to Promote Livable Communities." PTI (September/October). www.reconnectingamerica.org.

2 www.reconnectingamerica.org.

3 Machell, Erin, Troy Reinhalter, and Karen Chapple. 2009. "Building Support for Transit-Oriented Development: Do Community-Engagement Toolkits Work?" Center for Community Innovation. http://communityinnovation.berkeley.edu.

4 The eight light rail stations included in this project were designated by the Arizona Department of Housing. They include: Central and Camelback; Central and Osborn; Central and Thomas; Central and McDowell; Washington and 12th Street; Apache and McClintock; Apache and Price; and Main and Sycamore.

Central & Thomas



A Introduction

The light rail stop at Central and Thomas is the eighth stop from the northernmost end of the Metro rail line. Central and Thomas is mostly comprised of office towers, hotels, parking lots, a regional mall, strip malls, and vacant land. There is a large hospital facility (St. Joseph's) in the immediate area. The area is located in City of Phoenix Council Districts 4 and 7 and the Encanto Village Planning District.

The half-mile area is bounded by Earll Drive to the North, Virginia Avenue to the South, 3rd Avenue to the West, and 3rd Street to the East. A portion of the City of Phoenix Transit Oriented Zoning Overlay District One (TOD-1) is located within the half-mile area (see Figure 2.1).

The immediate area has active neighborhood associations including the Midtown Museum District Neighborhood Association and Willo Neighborhood Association.

3rd Avenue and Edgemont

Thomas and 3rd Avenue

Thomas and 3rd Street

Thomas and Central

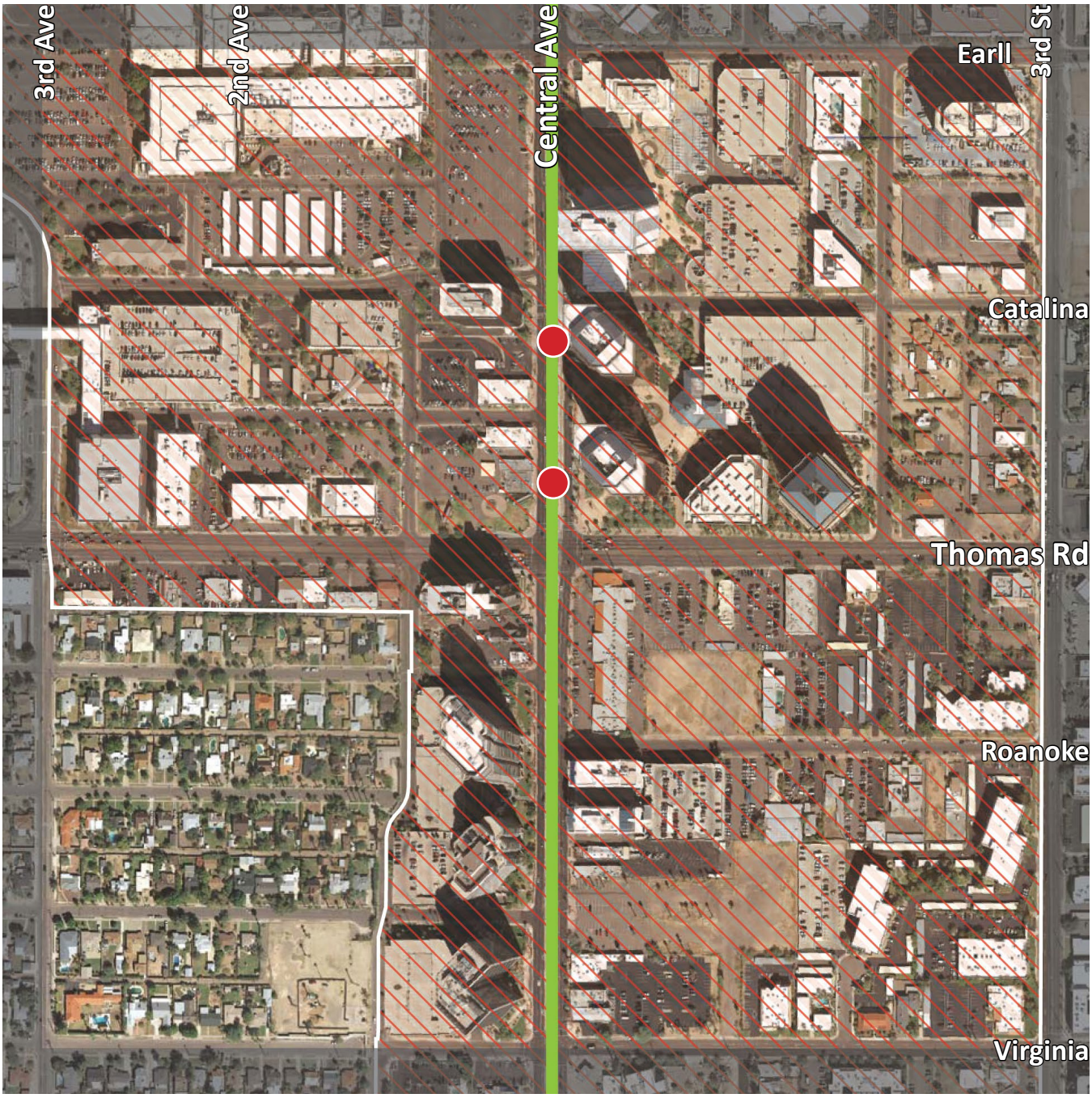


Figure 2.1: Aerial Photograph of 1/2 Mile Area, Central and Thomas

light rail *1/2 mile target area* *light rail stop* *TOD-1 Overlay Zone*

B Neighborhood Demographics

The half-mile area is located within two census tracts: Tracts 1105 and 1118 (see Figure 2.2). Due to geographic changes in the 2010 Decennial Census, the most current demographics available for tract 1105 come from the 2005-2009 American Community Survey, 5-Year Estimates. Statistics for the half-mile target area at Central and Thomas were obtained from the Environmental Systems Research Institute (ESRI), Community Analyst Data Service.

Compared to demographics for the City of Phoenix, the target area is highly educated, with 46.3 percent of the population having a bachelor's degree or higher. In fact, 23.6 percent of the population has a graduate or professional degree, compared to 8.3 percent for the City of Phoenix. The target area is 77.6 percent white and 5.9 percent black, with 22.1 percent identifying as Hispanic. The target area is similar to the City of Phoenix in terms of homeownership and median household income. Their average travel time to work is 17.5 minutes, compared to 24.4 minutes for the City of Phoenix as a whole (see Tables 2.1-2.3).

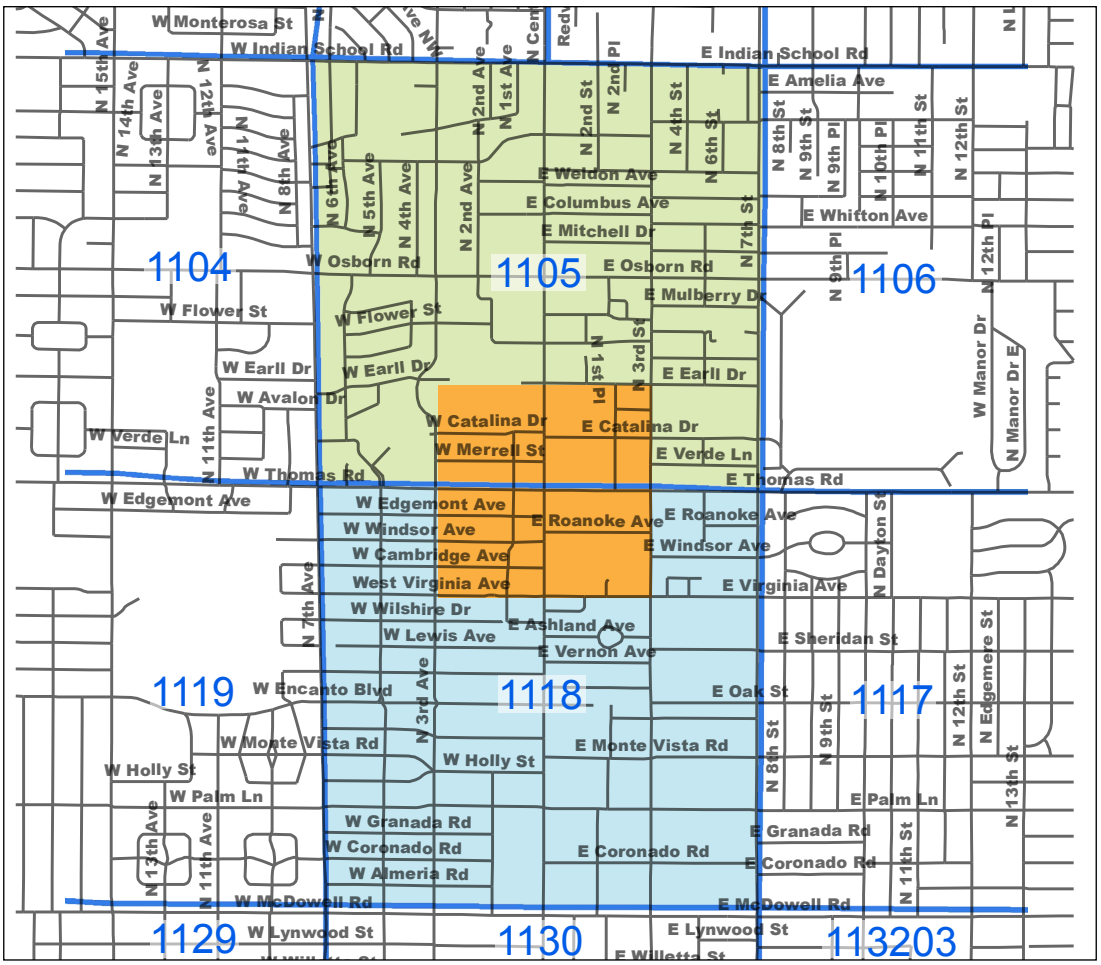


Figure 2.2: Census Tract Map, Central and Thomas

1/2 mile target area *Tract 1105* *Tract 1118*

Educational Attainment, Population Age 25 and Older				
	City of Phoenix	Tract 1105#	Tract 1118	Target Area
Not a High School Graduate	19.0%	12.6%	7.2%	6.0%
High School Graduate or GED	26.1%	24.5%	15.9%	17.8%
Some College	22.8%	22.6%	30.4%	18.2%
Associates Degree	7.2%	6.7%	4.0%	11.5%
Bachelor's Degree	16.6%	17.6%	25.3%	24.5%
Graduate or Professional Degree	8.3%	16.9%	17.8%	21.8%
% HS Graduate or higher	81.0%	87.4%	93.4%	94.0%
% Bachelor's Degree or higher	24.9%	33.6%	43.1%	46.3%
	2010 American Community Survey, 1-Year Estimates	2005-2009 American Community Survey 5-Year Estimates	2010 American Community Survey, 5-Year Estimates	2005-2009 American Community Survey, Provided by ESRI

Table 2.1: Educational Attainment, Population age 25 and older, Central and Thomas

Race/Ethnicity				
	City of Phoenix	Tract 1105#	Tract 1118	Target Area
White	65.9%	71.2%	84.2%	77.6%
Hispanic (any race)	40.8%	21.9%	15.8%	22.1%
Black/African American	6.5%	8.0%	4.4%	5.9%
Asian	3.2%	8.0%	1.7%	2.0%
Native Hawaiian/Pacific Islander	0.2%	0.0%	0.1%	0.0%
American Indian/Alaska Native	2.2%	6.6%	0.9%	1.7%
Two or more races	3.6%	1.9%	3.0%	4.3%
	U.S. Census Bureau, 2010 Summary File 1, provided by ESRI	2005-2009 American Community Survey 5-Year Estimates	U.S. Census Bureau, 2010 Summary File 1, provided by ESRI	U.S. Census Bureau, 2010 Summary File 1, provided by ESRI

Table 2.2: Race/Ethnicity, Central and Thomas

Note: Columns do not total 100%

Miscellaneous Demographics				
	City of Phoenix	Tract 1105#	Tract 1118	Target Area
Population	1,445,632	5,164	3,487	303
Median Household Income	$47,831	$33,802	$50,000	$45,502
Poverty Rate (Individuals)	22.5%*	23.5%	6.2%**	NA
Homeowner Occupied	57.6%	19.9%	64.5%	56.6%
Public Transportation to Work	3.1%*	3.9%	8.4%**	4.2%**
Mean Travel Minutes to Work	24.4*	16.6	19.3**	17.5**
	U.S. Census Bureau, 2010 Summary File 1, provided by ESRI *2010 American Community Survey, 1-Year Estimates	2005-2009 American Community Survey 5-Year Estimates	U.S. Census Bureau, 2010 Summary File 1, provided by ESRI **2010 American Community Survey, 5-Year Estimates	U.S. Census Bureau, 2010 Summary File 1, provided by ESRI **ESRI forecasts for 2010 based on 2000 Census.

Table 2.3: Miscellaneous Demographics, Central and Thomas

 # Due to geographic changes in the 2010 Decennial Census, for all tables, the most recent data available for Census Tract 1105 comes from the 2005-2009 American Community Survey.

In the target area around the Central and Thomas station a small proportion of residents have lived in their home for ten years or more (see Table 2.4). In fact, the median year that the householder moved in (for both homeowners and renters) is 2006.

The target area is almost equally divided between single-family and multi-family homes, with 49.2 percent of the housing stock being single family, either attached or detached (see Table 2.8). The housing characteristics of the target area are similar to census tract 1118. In comparison, in census tract 1105, 86 percent of the housing stock is multi-family. The target area is also split between renters and homeowners, with 44 percent renting their home.

For the following tables, all statistics for census tract 1105 come from the 2005-2009 American Community Survey (the latest available). All data for census tract 1118 come from the 2006-2010 American Community Survey. Unless otherwise noted, data for the target area are from the 2005-2009 American Community Survey, compiled by the Environmental Systems Research Institute (ESRI).

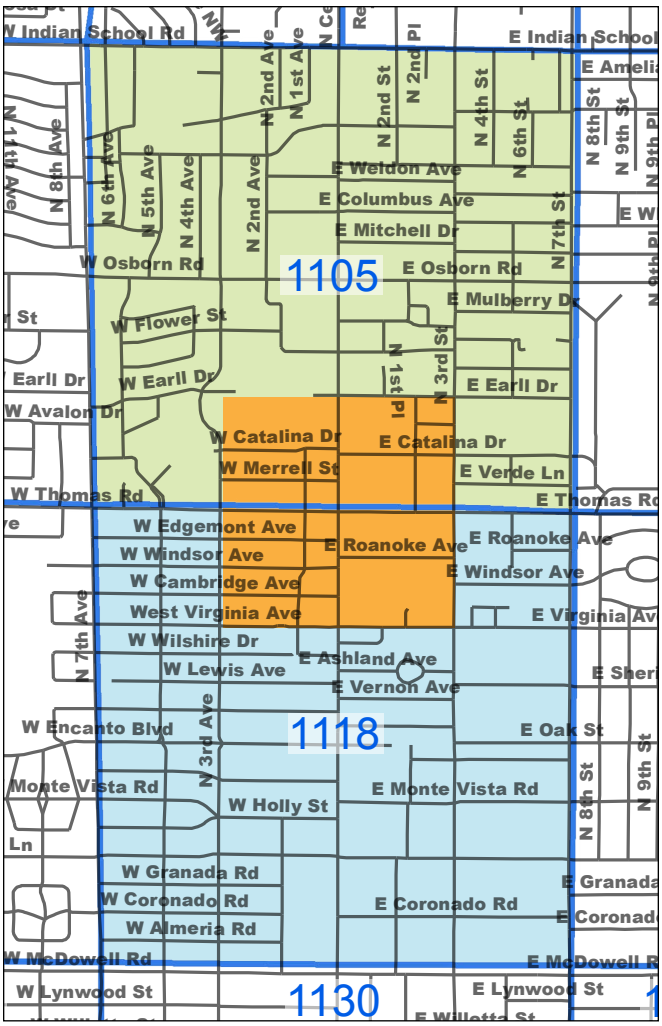


Figure 2.3: Census Tract Map, Central and Thomas

1/2 mile target area *Tract 1105* *Tract 1118*

YEAR HOUSEHOLDER MOVED INTO UNIT				
	TRACT 1105	TRACT 1118	TARGET AREA	
	All Occupied Units	All Occupied Units	Owner-Occupied	Renter-Occupied
2005 or later	1589 (54.9%)	962 (45.8%)	35 (20.2%)	53 (30.6%)
2000-2004	926 (32.0%)	361 (17.2%)	24 (13.9%)	15 (8.7%)
1990-1999	244 (8.4%)	384 (18.3%)	20 (11.6%)	7 (4.0%)
1980-1989	83 (2.9%)	210 (10.0%)	15 (8.7%)	2 (1.2%)
1970-1979	43 (1.5%)	135 (6.4%)	2 (1.2%)	0
1969 or earlier	10 (0.3%)	50 (2.4%)	0	0
Median Year Moved In	NA	NA	2006	

Table 2.4: Year Householder Moved Into Unit, Central and Thomas

Number of Bedrooms			
	Tract 1105	Tract 1118	Target Area
None	7.9%	4.3%	*
1	40.3%	22.6%	*
2	40.5%	46.8%	*
3	9.6%	24.5%	*
4	1.6%	1.7%	*
5+	0	0	*

Table 2.5: Number of Bedrooms, Central and Thomas
**Data not available*

Housing Values			
	Tract 1105	Tract 1118	Target Area
$0-99,999	48 (8.3%)	0	0
$100-149,999	79 (13.7%)	110 (9.2%)	4 (4.2%)
$150-199,999	163 (28.2%)	149 (12.4%)	13 (13.5%)
$200-299,999	185 (32.1%)	182 (15.2%)	10 (10.4%)
$300,000+	102 (17.7%)	763 (63.3%)	70 (72.9%)
Median Home Value	$199,300	$338,500	$363,235

Table 2.6: Owner-Occupied Housing Values, Central and Thomas

Vacancy and Tenure			
	Tract 1105	Tract 1118	Target Area*
Vacancy			
Homeowner Vacancy Rate	27.1%	0%	11.2%
Rental Vacancy Rate	20.6%	5.6%	7.0%
Tenure (all occupied units)			
Owner with a Mortgage	16.5%	38.7%	45.3%
Owner Free and Clear	3.4%	18.4%	10.7%
Renter	80.1%	42.9%	44.0%

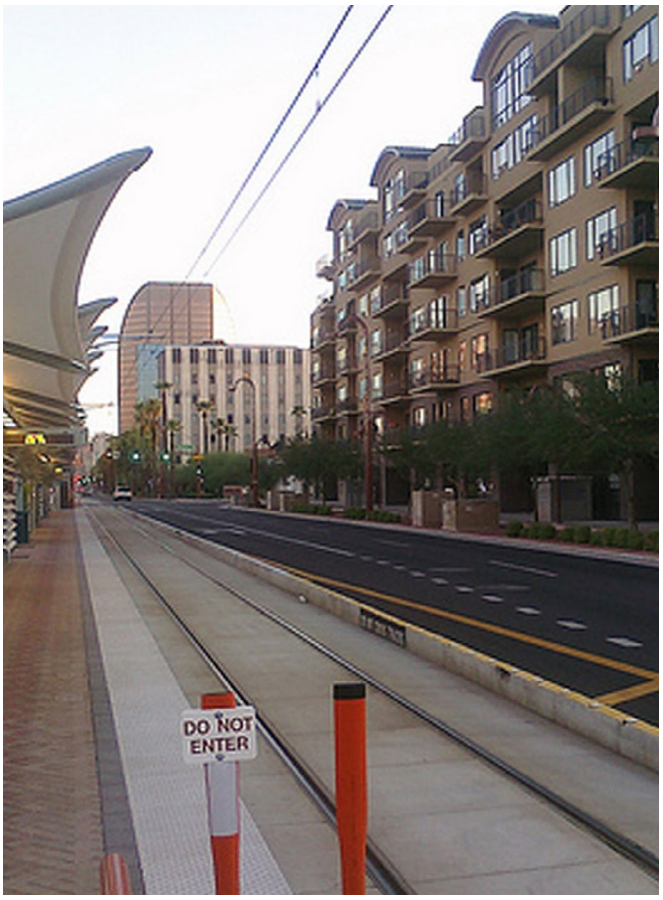
Table 2.7: Vacancy and Tenure, Central and Thomas
**Source: 2010 U.S. Census, Summary File 1 (ESRI)*

Units in structure			
	Tract 1105	Tract 1118	Target Area
Single Family, attached or detached	549 (14.0%)	1087 (45.7%)	96 (49.2%)
Multi-Family, 2-19 units	1616 (41.2%)	627 (26.3%)	29 (14.9%)
Multi-Family, 20 or more units	1755 (44.8%)	626 (26.3%)	63 (32.3%)
Mobile Home	0	40 (1.7%)	7 (3.6%)
TOTAL	3920 (100%)	2380 (100%)	195 (100%)

Table 2.8: Units in Structure, Central and Thomas

D Property Values and Affordable Housing

A primary concern residents may have about TOD is the impact on property values in the area. Consistent with studies across the country, a study conducted in 2011 at Arizona State University found that property values have risen since the introduction of the light rail.[1] The study utilizes property value information from the W.P. Carey repeat sales database to analyze the impact of distance from light rail on property values during five distinct phases of light rail development and operation. For single family, condominium, and commercial properties, the study found that property values have increased over time; however, the largest increases were found near the light rail stations. The impact to property value diminishes the further away from the station a property is located.



Tapestry Luxury Condominiums, Central and Encanto Blvd. Phoenix, Arizona
Source: http://raillife.com

1 Golub, Aaron, Subjrajit Guhathakurta, and BharathSollapuram. 2011. "Light Rail Economic Impact Analysis: Task 1 Final Report to the Maricopa Association of Governments."

The study also addressed the impact of the City of Phoenix Transit Oriented Development Overlay Zone on property values and found a greater increase in value in areas with this TOD designation.

Increased property values lead to an increase in property taxes; as the taxes continue to rise with property values, some businesses and residents may find themselves priced out of a neighborhood. This is a real concern as median household incomes decreased by 14.6 percent in the city of Phoenix between 2000 and 2009.[2] Additionally, as the Phoenix area has been impacted by the economic recession and foreclosure crisis, a growing number of families and individuals find themselves in need of more affordable housing. As property values increase around transit stations the cost of housing often will displace those in need of more affordable options. Those who may choose to live adjacent to light rail in order to reduce their transportation costs may be unable to find housing they can afford unless special efforts are made to ensure housing for a range of income levels.

AFFORDABLE HOUSING

While the term "affordable housing" has several definitions, many associate the term with housing for "low income" people or even "public housing." The US Department of Housing and Urban Development (HUD), which provides subsidies for housing including public housing, uses the term in referring to housing for households earning 80 percent or less of the area median income (AMI). A more general use of the term is in reference to housing, including rent or mortgage, taxes, and utilities, that doesn't cost more than 30 percent of the total household income.

According to a 2011 market demand study conducted by BAE Urban Economics, there is significant demand for mixed-income TOD housing along the Metro light rail. On average, they predict a market demand of approximately 3,700 new housing units per light rail station area through

2 BAE Urban Economics. 2012. "TOD Mixed-Income Housing Market Demand Study." Online: wwwbae1.com.

2040. In terms of affordable housing, they project that in the next thirty years there will be a need for more than 100,000 new affordable TOD housing units in Phoenix, Mesa, and Tempe to meet the needs of those earning 80 percent or less of the area median income.[3]

Communities across the country have addressed the need for TOD housing affordability in various ways. The methods utilized depend heavily upon the regulations within that state, the needs of the community, and the opportunities available prior to the rise in prices. The following sections present examples of some strategies used to promote the integration of affordable housing opportunities in a TOD plan.

This affordable housing complex in Berkeley, California serves seniors with household incomes less than 30%, 50%, or 60% of the area median income.
Source: bbiconstruction.com

Sustainable Communities Fund

In Maricopa County, the Local Initiatives Support Corporation (LISC) in conjunction with the Sustainable Communities Working Group (SCWG) recently established a fund to provide assistance to transit-oriented development projects including affordable housing and related amenities near light rail stations in Phoenix, Tempe, and Mesa.[4] The *Fund* is anticipated to reach $50 million dollars worth of various resources for the area. Partnered with other organizations in Maricopa County, the group's goal is to leverage different funding sources and capitalize on partnerships to provide equitable transit-oriented development along the light rail corridor. Ultimately, SCWG hopes to more closely integrate housing and transportation policy to provide for more effective TOD strategies.

Mercantile Square in Denver, Colorado is a mixed-use space with a bookstore, restaurant, office space, and affordable rental housing funded through LIHTC.
Source: Denver Urban Renewal Authority

Low Income Housing Tax Credits (LIHTC)

LIHTC is a competitive tax credit that developers can use to raise capital for the acquisition, rehabilitation, or construction of affordable housing. LIHTC is the single largest source of funds for the preservation of existing affordable housing nationwide.[5] States are required by HUD to give preference to projects that provide for the lowest income families and will remain affordable for the longest period of time. Funds are allocated to State agencies through the IRS, and funds are then awarded to developers. Forty-six states provide incentives for the preservation of affordable housing in their competitive LIHTC programs. Qualifying projects must meet State-identified goals as well as the following federal requirements:[6]

- Must be a residential property
- Must control rent/utilities in low-income units based on one of two possible low income occupancy threshold requirements
- Restrict rent/utilities in low-income units
- Rent and income restrictions will be in place a minimum of 30 years.

3 BAE Urban Economics. 2012. "TOD Mixed-Income Housing Market Demand Study." Online: wwwbae1.com.
4 http://www.lisc.org/phoenix/images/what_we_do/asset_upload_file963_15918.pdf.
5 Enterprise Community Partners. 2010. "Preserving Affordable Housing Near Transit: Case Studies from Atlanta, Denver, Seattle and Washington, D.C. Online: http://preservingaffordablehousingneartransit2010.pdf.
6 Department of Housing and Urban Development. 2012. Online: http://www.hud.gov.

LIHTC are awarded in Arizona by the Arizona Department of Housing. A project can be awarded points for "Transit Oriented Design" if it is located within specified distances of a Frequent Bus Transit System or a High Capacity Transit Station. This includes within a half mile (2,640 feet) straight line radius of all existing light rail transit stations in Phoenix, Tempe, and Mesa.[1]

Employer Assisted Housing[2]

Employer-assisted housing is one way the private sector can contribute to affordable housing. By providing housing allowances or other monetary forms of assistance, employers can help attract and maintain employees who would otherwise live too far away to reasonably commute daily. Businesses hoping to locate—or already located—within the TOD Overlay Zone and surrounding areas can provide assistance to workers in order to encourage them to locate near the business and within the community.

1 Low Income Housing Tax Credit Program 2012 Qualified Allocation Plan. http://www.azhousing.gov/azcms/uploads/REPORTS/2012%20QAP%20FINAL%201-6-12.pdf.
2 http://www.aztownhall.org/pdf/93rd_background_report.pdf page 73-74.

REACH Illinois Employer-Assisted Housing for public school teachers in Chicago
Source: http://reachillinois.org

Employer-assisted housing options are widely varied, ranging from providing designated housing at reduced cost through a non-profit partner, offering direct monetary contributions toward housing costs or other expenses such as discounted transit passes, to providing options such as housing counseling assistance. There are various resources or strategies for companies to establish a program that works for them including tax benefits and non-profit partnerships that allow for the non-profit to provide services to employees based on a tax-exempt contribution from the employer. Additional options may be available through local government and non-profit organizations.

Rendering of an employer-assisted housing development in Seattle, Washington
Source: Seattle Children's Hospital

Haddon Township, NJ is part of the "Live Where You Work" Program which offers low-interest mortgages and down-payment assistance to encourage people to live close to their place of employment
Source: http://www.haddontwp.com

An example of employer-assisted housing comes from Seattle, where the University of Washington and Seattle Children's Hospital are partnering to develop 184 housing units in Seattle's University district, an urban neighborhood that serves university students. Aligned with the principles of the larger University District Livability Partnership which aims to encourage a walkable, mixed-use neighborhood near a planned light rail station, the project is believed to be one of the first employer-sponsored housing developments in the city since the early 20th century. According to the initial proposal, approximately 20 percent of the units will be made available to residents earning less than 75 percent of the area median income, and employees of both the university and hospital will be given first priority to lease available units.[3]

Land Trusts[4]

Land trusts allow for the acquisition and retention of land and structures to be held for future use. Land acquired through the private land trust model allows for land to be utilized for numerous purposes, including affordable housing. A Community Land Trust (CLT), however, is primarily dedicated to the long-term preservation of affordability, especially in regard to housing. The CLT is administered by a private, non-profit organization but often works in conjunction with the local government. After acquisition, the CLT continues to own the land and leases it, at a minimal rate, to the owners of the physical improvements on the land.

The long-term goal of affordability is achieved through several tactics. First, if the homeowner elects to sell the home, the CLT has the right of first refusal for the property. Second, the resale price reflects only the value of the home since the land is held separately; the CLT may have guidelines in place to control appreciation of the home value. This allows for greater long-term affordability of the home that does not expire.

CLT provides one method to acquire land and structures for affordable housing that would otherwise be susceptible to speculation. Acquiring properties near existing and proposed transit lines will help preserve the affordability of that property and make it available for affordable housing development—either in the present or at a future time when resources may be more readily available. Additional benefits of the CLT model include preventing the displacement of low-income residents as well as greater local control of the land.

CLTs can utilize HOME and CDBG funds and other sources of government funding as well as private

3 Pryne, Eric. 2011. "UW, Seattle Children's Hospital Plan to Build Employee Housing." *The Seattle Times* (Dec 20). http://seattletimes.nwsource.com/html/businesstechnology/2017058160_childrens21.html.
4 http://www.aztownhall.org/pdf/93rd_background_report.

donations. In partnership with local governments and nonprofit organizations, the goal for community affordable housing can be furthered. For example, Newtown Community Development Corporation is a Tempe-based nonprofit organization that operates a community land trust program to provide access to homeownership for homebuyers that are priced out of the housing market.[1] They offer ongoing support for homebuyers through homebuyer education and homeownership counseling. Newtown currently has one single family home within walking distance of a light rail stop and is interested in exploring the feasibility of developing a condominium CLT as part of transit oriented development.

Land Banking

Land banking is the practice of purchasing land for future resale and can allow for the acquisition and retention of tax-foreclosed property by a designated public authority. Often used as a method for acquiring run-down, vacant structures and/or land otherwise susceptible to speculators, land banking can be used to promote the development of affordable housing units. In Atlanta, the Land Bank Authority gives development priority to agencies seeking to develop affordable housing. Many options are available under Land Banks, and they can assist in balancing the needs of the community.[2]

Regulatory Measures

In addition to property acquisition, regulatory measures can be put in place to promote the development of affordable housing. Density bonuses and other techniques can promote the inclusion of affordable units within larger projects. Inclusionary zoning requires that a certain number of units be available for low-to-moderate income households. This is often used in conjunction with density bonuses or reduced parking requirements, which allow for a developer to build more units and fewer parking spaces within a complex if certain conditions are met; in this case, the condition would relate to the number of units reserved for affordable housing. Some states have found inclusionary zoning methods to be most effective. For more information on zoning and other regulatory measures see the City of Phoenix Planning Department.[3]

Property Tax Abatement Programs

Property tax abatement programs are designed to prevent displacement of low and very low income households due to increasing property taxes. These programs take different forms across the country to focus on different income and age brackets. Many states have provisions for the elderly, but others also include a wide-range of low and very low income households (see Table 2.9 for examples).

In addition, property tax abatement programs can be used to support affordable housing development on vacant or underutilized sites along transit corridors by reducing costs for developers through a limited property tax exemption. For example, the Portland (Oregon) Transit Oriented Development (TOD) Property Tax Abatement was established to support high density housing and mixed-use developments affordable to a broad range of the general public on vacant or underutilized sites along transit corridors whose design and features encourage building occupants to use public transit.

1 http://newtowncdc.org.

2 Land Bank Authorities. 2008. Online: http://www.reconnectingamerica.org/assets/Uploads/bestpractice008.pdf.

3 http://phoenix.gov/PLANNING/index.html

Source: http://www.buyersagentportland.com

The exemptions support TOD projects by reducing operating costs through a ten-year maximum property tax exemption. See the following website for more information: http://www.portlandonline.com/phb/index.cfm?c=53036.

Summary

In many cases, timing can be a critical aspect in creating an effective affordable housing strategy within a mixed-income housing component as part of TOD. Recognizing the projected need of the Metro light rail corridor (~3,700 new mixed-income housing units per light rail station area through 2040)[4] and working to provide a framework to address this need will provide for the greatest opportunities. For example, a local government or nonprofit agency may acquire property in a transit area prior to a significant rise in property values. This can be done through the use of several of the programs described above and can allow for the creation of housing without the added expense of increased property costs. Targeting of vacant, abandoned, or blighted properties in the area can contribute to this effort. According to a 2012 study, in 2011 there were 21 acres of vacant land in the target area around the Central and Camelback station, making the area a prime target for the aforementioned programs.[5] Developers and others interested in creating affordable housing opportunities should contact the Phoenix Housing Department or the Arizona Department of Housing for more information.

Encore on Farmer Street between 6th and 7th Streets, Tempe Arizona, offers low-income housing for seniors 55 and older. Source: http://www.raillife.com

4 BAE Urban Economics. 2012. "TOD Mixed-Income Housing Market Demand Study." Online: wwwbae1.com.

5 Kittrell, Katherine. 2012. "Vacant Land Value Impacts: Comparing Phoenix Metro Light Rail Station Areas." Paper presented to the Transportation Research Board of the National Academies, 91st Annual Meeting, Washington, D.C.

Property tax Abatement Programs		
Location	**Who it helps**	**What it does**
Tucson, AZ	• Low-income residents (80% AMI) within designated Rio Nuevo District	• Reimburses qualifying residents for the difference between their property tax rate and that of the larger city
Portland, OR	• Developers	• Reduces operating costs for a maximum of 10 years through property tax exemptions • Encourages development of new housing opportunities on vacant/underutilized land or through improvement to some qualifying existing structures • Requires low-income housing set-asides for all complexes • Encourages new low-income housing opportunities

Table 2.9: Property Tax Abatement Programs

Sources:
Tucson: City of Tucson. Rio Nuevo Neighborhoods Property Tax Assistance Program. 2008. Brochure
Portland: http://www.portlandonline.com/phb/index.cfm?c=53036

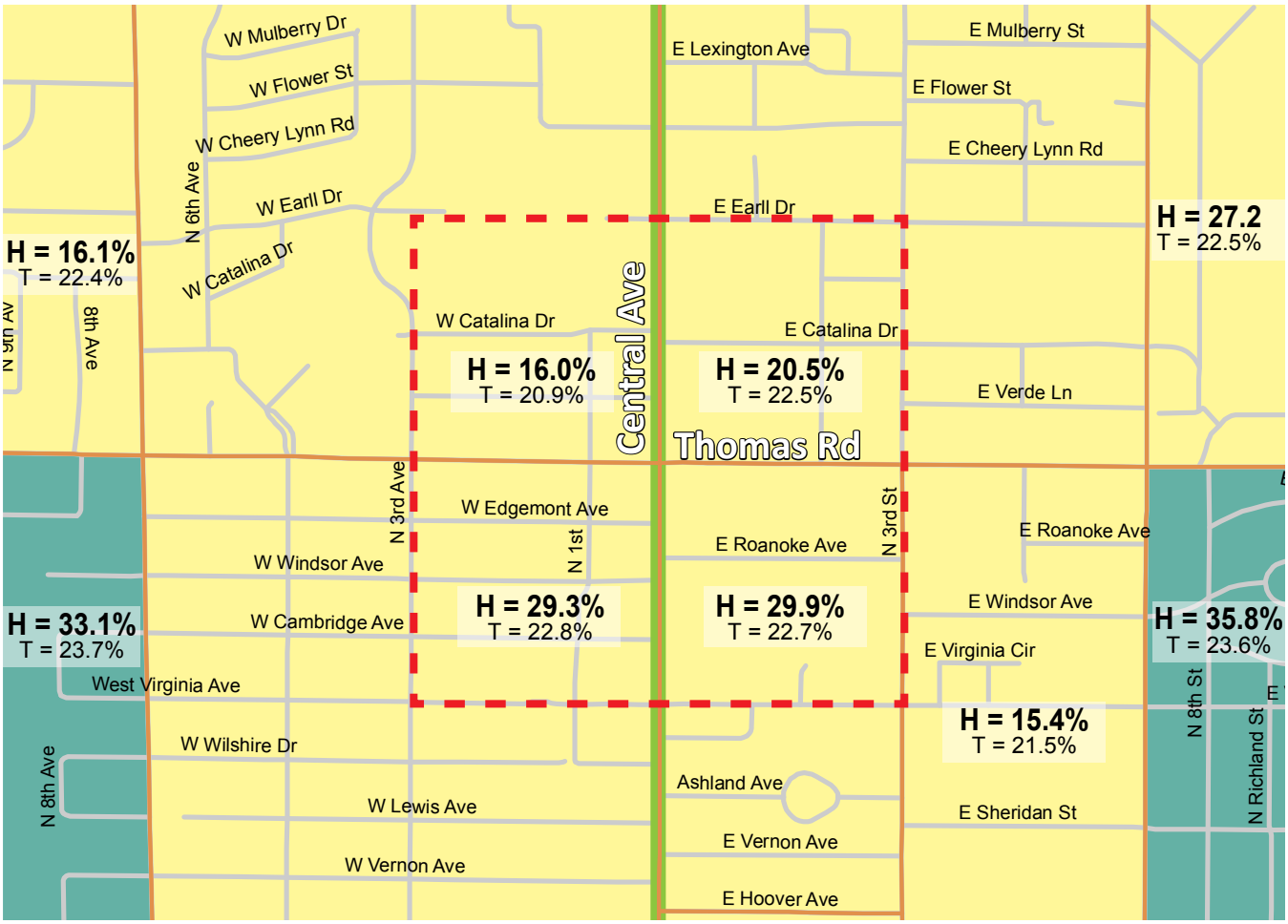


Figure 2.4: Housing and Transportation Cost as a Percentage of Income, Central and Thomas

Source: CNT.org H+T Affordability Index Accessed April 2012

light rail *1/2 mile target area* *Affordable Housing: 30% and Less* *Unaffordable Housing: Greater than 30%*

Defining Housing + Transportation Affordability

Housing costs factored as a percent of income has widely been utilized as a measure of affordability. Traditionally, a home is considered affordable when the costs consume no more than 30 percent of household income. Using this measure, the half-mile area around the Central and Thomas station is considered affordable, as residents spend on average less than 30 percent of their income on housing (see Figure 2.4). However, in the southeast and southwest quadrants, residents are very close to the 30 percent figure.

Housing and transportation costs together make up the two largest expenses for most households, so measures of affordability should also consider costs for transportation.

According to the Center for Neighborhood Technology, less than one in three American communities (28 percent) are affordable for typical regional households when transportation costs are considered along with housing costs ("affordable" means that housing and transportation costs consume no more than 45 percent of income).[1] In fact, on average households in auto-dependent neighborhoods spend 25 percent of their income on transportation, whereas households in walkable neighborhoods with good transit access

1 Center for Neighborhood Technology. 2012. "National Index Reveals Combined Housing and Transportation Affordability Has Declined Since 2000." Online: http://www.cnt.org.

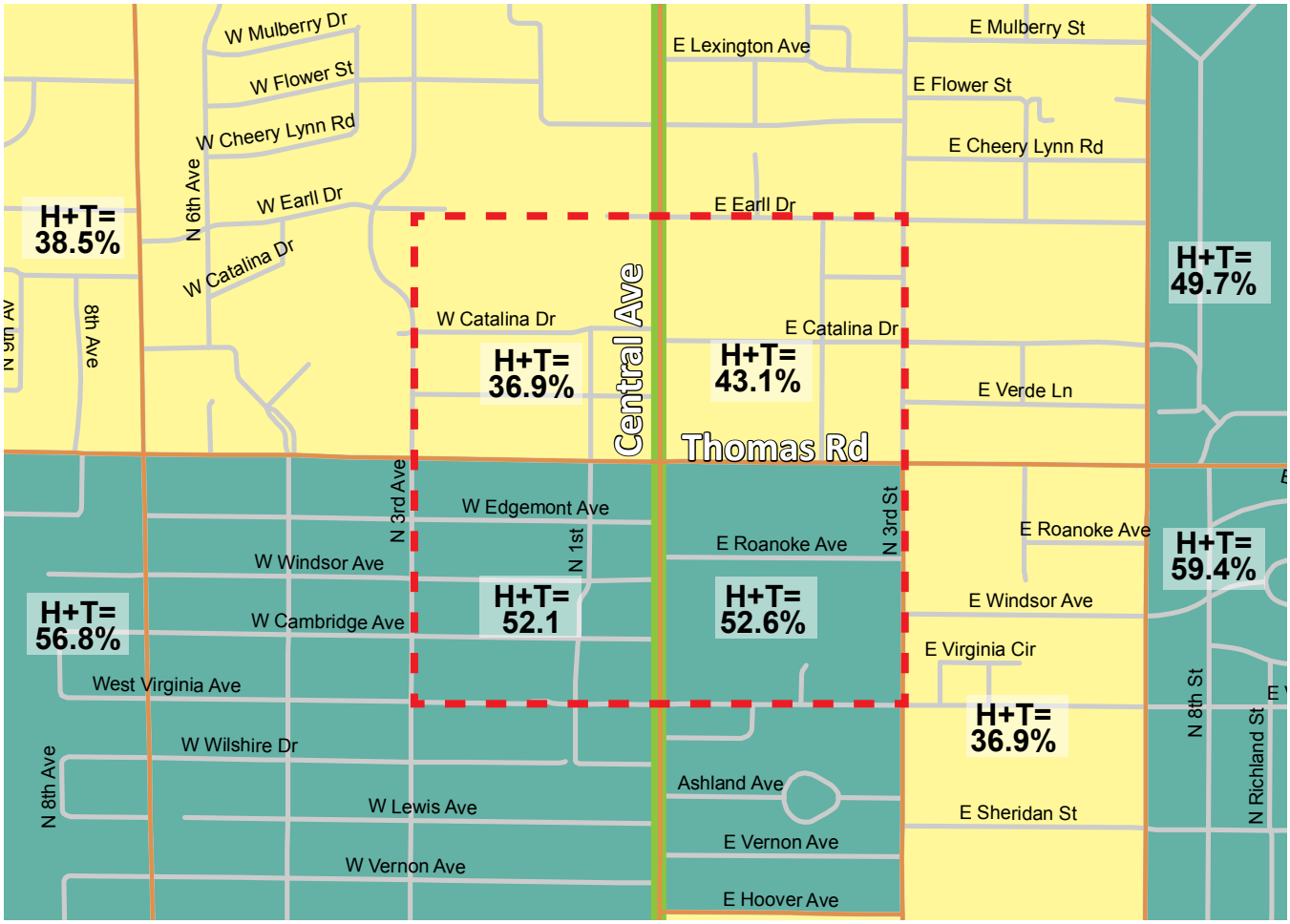


Figure 2.5: Combined Housing and Transportation Cost as a Percentage of Income, Central and Thomas

Source: CNT.org H+T Affordability Index Accessed April 2012

light rail *1/2 mile target area* *Affordable H+T: 45% and Less* *Unaffordable H+T: Greater than 45%*

and a mix of housing, jobs, and shops spend just 9 percent.[2] These are referred to as "location efficient" neighborhoods because they require less time, money, and greenhouse gas emissions for residents to meet their everyday travel needs.[3]

Figure 2.5 shows what happens to "affordability" when transportation costs are taken into account along with housing. In our target area, those homes that were "affordable" in Figure 2.4 become unaffordable when transportation costs are included.[4] In fact, the southeast and southwest quadrants of the target area are well over the 45 percent figure. Note that these figures are averages and depend heavily upon public transit use; the more an individual uses public transportation for their travel needs, the more affordable their neighborhood becomes.

See Appendix A for Housing + Transportation Affordability maps for the entire region as well as an explanation of the Center for Neighborhood Technology's Housing and Transportation Affordability Index.

2 Center for Transit-Oriented Development. 2009. "Mixed-Income Housing Near Transit: Increasing Affordability With Location Efficiency." Online: http://www.reconnectingamerica.org/assets/uploads/091030ra201mixedhousefinal.pdf.

3 Center for Neighborhood Technology. 2012. "http://www.cnt.org/tcd/location-efficiency.

4 The statistics provided for Figures 2.4 and 2.5 follow the Center for Neighborhood Technology's recommendations for using the regional typical household for comparison when the median income of the target area is not less than 80 percent of the regional median income. In this case, the regional typical median income is $54,713 and the median income for our half-mile target area is $45,502.

Light Rail Ridership

Ridership figures provided by Metro light rail indicate that 829,377 individuals got on and off at the Central and Thomas station in 2011. In fact, between April 2009 and April 2011, ridership increased at the Central and Thomas station by 22%.[5]

In spite of these increasing numbers, data for the residents of the half-mile area show low ridership rates. 4.2 percent report using public transportation to get to work, 5.7 percent walk to work, and 68.2 percent drive alone to work.[6]

5 BAE Urban Economics. 2012. "TOD Mixed-Income Housing Market Demand Study." Online: www.bae1.com.
6 Environmental Systems Research Institute (ESRI) forecasts for 2010 based on US Bureau of the Census, 2000.

Household Transportation Costs

On average, transportation costs constitute the second largest household expenditure (after housing) for households across the country.[7] Figure 2.6 demonstrates that households in the half-mile target area pay, on average, between $954-1,040 per month on transportation.

The use of public transit can greatly reduce these monthly transportation costs. Currently, rates for the Metro light rail or local bus are $1.75 per ride; $3.50 per day; or a 31-day pass for $55.00. In addition to special rates for ASU students, Metro also offers a reduced rate for youth, seniors (age 65+), persons with a disability, and Medicare card

7 Center for Neighborhood Technology. 2012. "National Index Reveals Combined Housing and Transportation Affordability Has Declined Since 2000." Online: http://www.cnt.org.

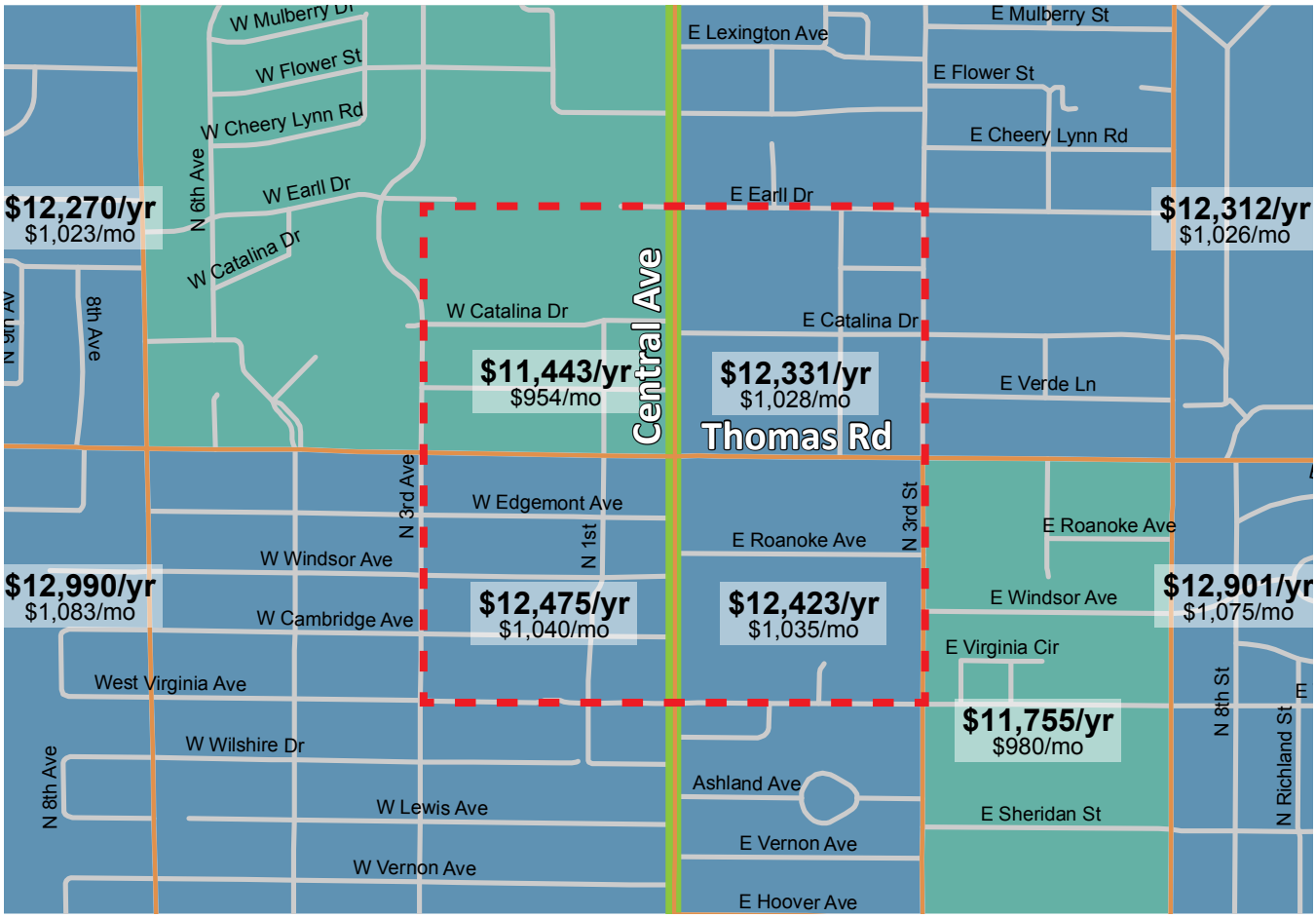


Figure 2.6: Annual and Monthly Transportation Cost per Household, Central and Thomas

Source: CNT.org H+T Affordability Index Accessed April 2012

light rail | *1/2 mile target area* | *<$11,000/yr* | *$11,000 - $12,000/yr* | *$12,000 - $13,000/yr* | *$13,000+/yr*

holders. Children under five ride for free. The reduced rate for a 31-day pass is $27.50.

Local Public Transit

There are also multiple bus options in the Central and Thomas area. Figure 2.7 demonstrates the available bus lines near the light rail station as of April 2012. Currently there are three bus routes in the area: Routes 0, 29, 512, and Grand Avenue Limited. The full bus transit map can be found on the Metro website at http://www.valleymetro.org/planning_your_trip/bus_rail_link/.

The Metro website contains many tools to help riders understand the transit system. For example, Metro offers an online trip planner where an individual can enter their travel date, start and end points, how far they are willing to walk, and their preference for light rail, bus or express bus routes, and their trip will be mapped for them.[8] Metro also offers commuting alternatives like a carpool matching service, and vanpool for groups of 6-15 commuters.

Metro also provides detailed instructions on how to safely ride the light rail or bus. The Metro school outreach program offers free classroom presentations about the Metro transit system as well as field trips using the bus, light rail, and LINK bus systems.

Metro's community outreach program also offers public presentations to any group that is interested in transit education such as new residents and refugees. They also offer mobility training for senior citizens and persons with a disability, as well as monthly sessions at the Disability Empowerment Center.[9]

8 http://trips.valleymetro.org/pages/full_trip.

9 http://www.valleymetro.org/transit_education/community_outreach/.

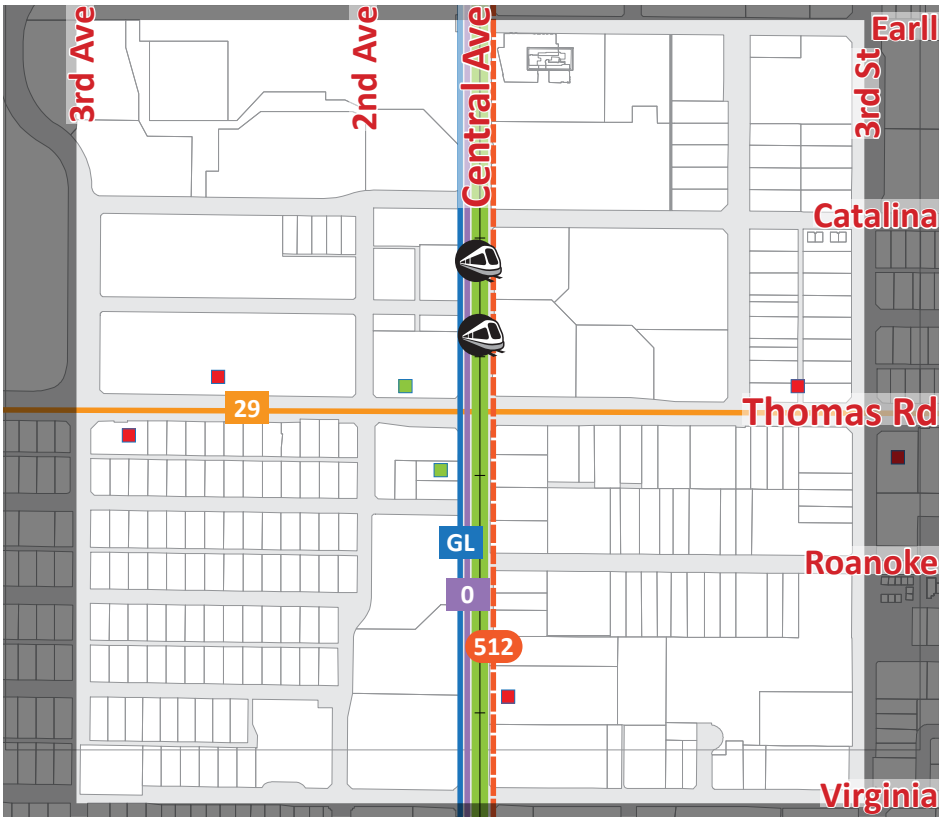


Figure 2.7: Area Bus Routes and Transit Centers, Central and Thomas

light rail *transit center* *light rail stop* *park-and-ride* 17 *local bus route* 512 *express bus route*
sheltered bus stop *unsheltered bus stop*
1/2 mile area is served by routes:
0,29, 512 Express Service, Grand Avenue Limited (GL), METRO Light Rail

One of the goals of transit-oriented development is to create walkable, bikeable communities where the public can safely utilize the surrounding amenities. In order for communities to succeed as sustainable places, it is necessary to address issues of perceived safety. The ADOH target area survey found that residents within the one-half mile area surrounding the selected light rail stations identified crime as their primary concern. This is consistent with a recent national Gallup poll revealing that four in ten Americans fear walking alone at night.[10]

This fear of crime contrasts sharply with federal crime statistics revealing that crime has actually been decreasing and is now at its lowest level in recent history. Federal Bureau of Investigation Statistics show that U.S. crime rates are down in every category: From 2001-2010 violent crimes are down 13.4 percent and property crimes are down 13 percent.[11]

Studies around Light Rail

A common fear surrounding the introduction of mass transit systems is the potential increase in crime it may bring. In Atlanta, Georgia, opposition to extending MARTA rail and bus lines into surrounding suburbs was strongly influenced by the fear that crime would increase in these areas.[12]

In reality, most studies of crime and light rail have found either a decrease in crime or no change after the opening of the station. In Charlotte, North Carolina, researchers measured crime statistics before and after the opening of the Charlotte light rail line. They found that light rail did not increase crime around the stations and in fact, property crimes decreased.[13]

10 Saad, Lydia. 2010. "Nearly 4 in 10 Americans Still Fear Walking Alone at Night." Gallup. Online: http://www.gallup.com.
11 Federal Bureau of Investigations. 2010. "Uniform Crime Reports." Online: www.fbi.gov.
12 Poister, Theodore H. 1996. "Transit-Related Crime in Suburban Areas." *Journal of Urban Affairs* 18(1):63-75.
29 Billings, Stephen B., Suzanne Leland, and David Swindell. 2011. "The Effects of the Announcement and Opening of Light Rail Transit Stations on Neighborhood Crime." *Journal of Urban Affairs.* 00(0):1-17.

In San Diego, California, the San Diego Association of Governments analyzed crime patterns before and after the implementation of light rail as well as a comparison of neighborhoods with and without a transit station. They found that the presence of transit did not lead to more neighborhood crime.[14]

Local Statistics

Locally, crime statistics for the greater Phoenix area indicate that crime has decreased as it has across the nation. Furthermore, data provided by the Phoenix Police Department indicate that crime has not increased in station areas since the introduction of the Metro light rail.

The Phoenix Police Department provided crime statistics for the one square mile area surrounding the Central and Thomas light rail station (see Figure 2.8). Figure 2.9 demonstrates that crime has in fact decreased significantly in the area between 2006 and October of 2011. The data obtained from the Phoenix Police Department is reflective of the statistics reported annually to the FBI. It contains

14 Sandag. 2009. "Understanding Transit's Impact on Public Safety." Online: www.sandag.org.

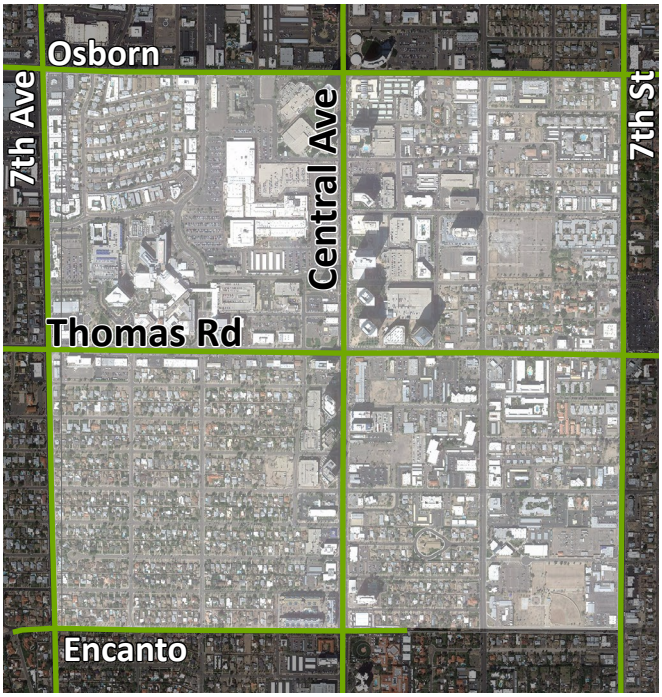


Figure 2.8: Approximate One Square Mile Area of Crime Data, Central and Thomas

categories for violent crime (homicide, rape, robbery, and aggravated assault) and property crime (burglary, larceny/theft, automobile theft, and arson). The reduction in crime around the light rail station is consistent with studies conducted around the country.

Crime Prevention Through Environmental Design

One of the ways that transit-oriented development can contribute towards lower crime rates is through creating more "eyes on the streets," based on the principle that the greater the risk of being seen or challenged, the less likely people are to commit a crime. There are several principles that landlords, property owners, business owners, and developers can follow in order to reduce crime and disorder on their respective properties. These principles are known collectively as "Crime Prevention Through Environmental Design," or CPTED.

CPTED design principles are typically implemented during the planning phase of an area; however, CPTED principles can be integrated into existing communities. The transition into a TOD community serves as an ideal time for integration of these concepts.

Although there are many approaches to CPTED including the number of concepts, the evaluation of their effectiveness, and so forth, five main concepts are most commonly utilized:

- Natural Surveillance
- Natural Access Control
- Territorial Reinforcement
- Maintenance and Management
- Activity Support

These five CPTED principles and examples of how to utilize them in practice are explained in detail on the following pages 24-25.

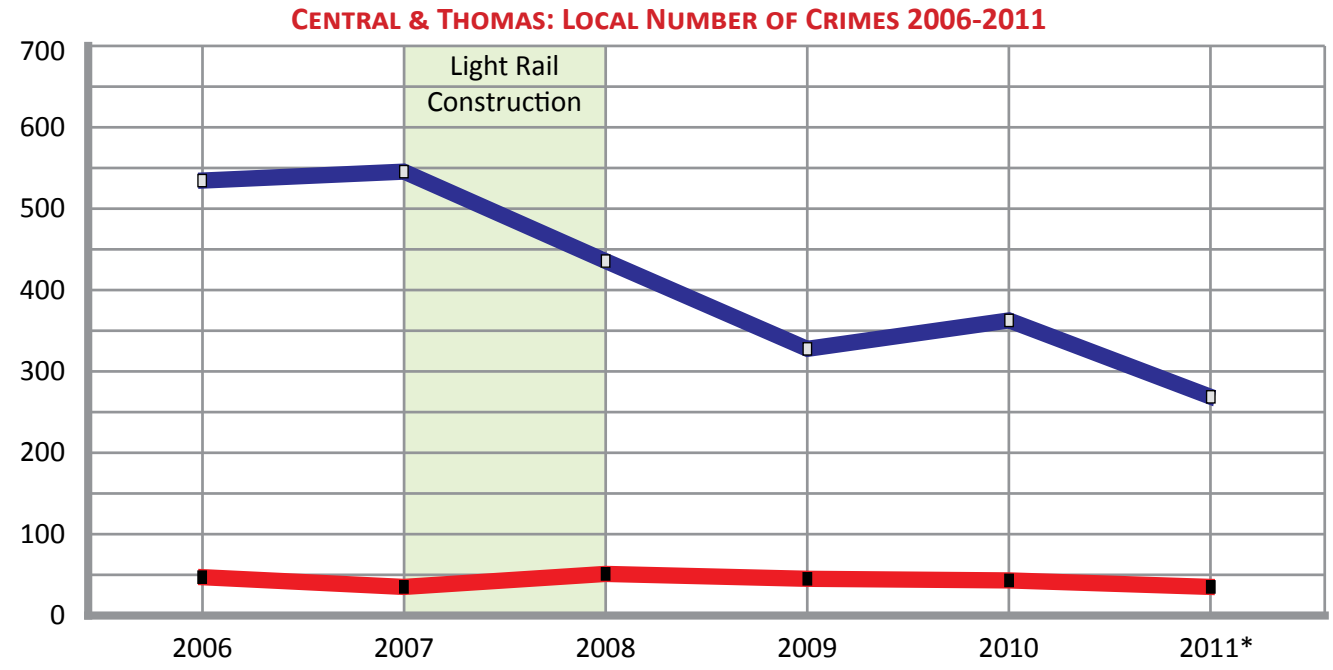


Figure 2.9: Local Number of Crimes 2006-2011, Central and Thomas

property crime *violent crime*

Source: Phoenix Police Department
Data Received December 2011
**Data Through October 2011*

- **Natural surveillance**

As previously mentioned, more "eyes on the street" increases a criminal's perception of being caught and thus deters crime. Natural surveillance can be supported through the use of fences instead of solid walls to promote visibility through areas. Increased lighting allows for greater nighttime visibility. The installation of benches and other gathering places encourages the use of public spaces.

Photo 1: Windows and balconies provide "eyes and ears" for areas of potential unwanted activities.

- **Natural access control**

Natural access control refers to the means by which one enters and exits a space. The flow of traffic through a space is directed, and opportunities for quick or unexpected entry or exit are low. This concept promotes appropriate and legitimate use of space. Natural access control can take the form of fences and doors or gates, but it can also utilize other landscaping elements such as vegetation and sidewalks to create a natural flow through the area. Entrances and exits are selectively placed so as to promote visibility both from outside and within the space.

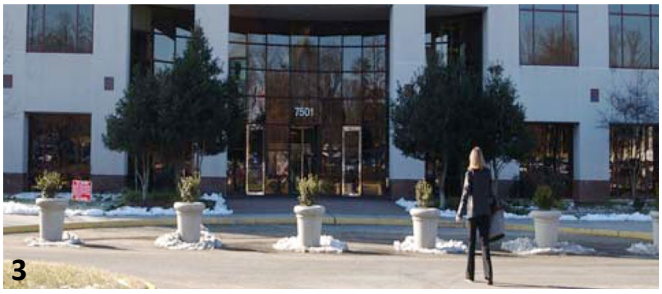


Photo 2: Raised wall area serves as a defined access control to the shops and apartments above; Photo 3: Planters serve as natural access control for pedestrians and prevent vehicles from coming too close to the building.

- **Territorial Reinforcement**

Territorial reinforcement refers to, in part, the definition of public and private space. If disrepair and poor landscaping confuse lines between a private property and a public open space, the lack of territorial reinforcement may invite unwanted activity. Territorial reinforcement builds on the idea that people will protect what they feel to be their own. The creation of quality public spaces will promote a sense of community ownership and encourage users to protect their space. Territory may be reinforced through signage, fencing, and landscape elements. In design concepts, the incorporation of elements that a community identifies with will lend to the creation of pride in a community space.

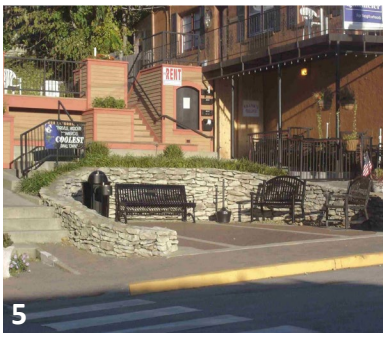


Photo 4: Community bulletin board creates a sense of community; Photo 5: Bench area is a clear definition of public space; Photo 6: Personalized signage creates a sense of ownership for the community

- **Maintenance and Management**

An area that is not well-maintained does not communicate pride or ownership and may signal a lack of supervision on the site. An area that is well-maintained and cared for indicates frequent use of the site, and also encourages the appropriate use of the site. This is particularly an issue with vacant or abandoned properties. Frequent upkeep of landscape maintains a clean appearance on the site and prevents the creation of visual barriers and hiding places. Maintaining the physical elements of the site (such as fixing broken windows) prevents the perception of non-use. Selection of materials in the design phase should give preference to those that are easiest to maintain and most resistant to vandalism. For example, porous materials should be sealed or have anti-graffiti coating.

Photos 7 & 8: Well maintained areas create a sense of safety and show that the property is cared for. The painted mural serves to discourage graffiti.

- **Activity Support**

Without individuals using the site, the other principles of CPTED lose their strength. It is important to encourage use of the site, especially during non-work hours. The common scenario today consists of individuals leaving their homes to go to work; while at work, their homes remain empty and very few people are around to act as natural surveillance. After leaving work to return home, their work areas are now vacant and lack natural surveillance.

The TOD model of encouraging mixed-use development allows for use at all hours of the day. Examples of this include mixing housing, work, and retail options within close proximity or even in the same building.

Sidewalk patios for restaurants and cafes as well as more windows on a building frontage provides for greater visibility and more "eyes on the street." Open spaces could also be used to host organized community events.

Image Credits

1: www.pwcgov.org; 2: www.pegasusnews.com; 3: www.pwcgov.org; 4: Drachman Institute; 5: http://estudarque.blogspot.com 6: Drachman Institute; 7: www.pwcgov.org; 8: Drachman Institute; 9: www.ebbc.org/vrf; 10: www.mass.gov

Photos 9& 10: Vibrant urban spaces attract people which can aid in natural surveillance and deter unwanted activities.

Pedestrian and bicycle mobility and safety are significant components of creating successful TOD. In the 2002 General Plan, the City of Phoenix identified the need to encourage pedestrian-oriented development and to increase bicycle connections in the city.

Evaluation tools

A task force formed by the Safe Routes to School Program of the Arizona Department of Transportation has created an Active School Neighborhood Checklist (ASNC) to be used as a tool for assessing school sites' walkability and bikeability.[15] This tool can be used to evaluate any neighborhood or TOD area on issues of bike and pedestrian safety. The checklist includes items such as: speed limits, number of traffic lanes, number of vehicles, and curb radius (larger curb radii encourage drivers to turn faster around corners). The checklist also includes questions such as: Does the area have adequate bicycle lanes, designated bicycle routes, and multi-use paths? Are there sidewalks present, and if so, in what condition? Are there marked crosswalks at and between intersections, and what type of crossing signals are present?

In the half-mile area around Central and Thomas there are seven striped pedestrian crossings and three designated bike lanes (see Figure 2.10). To further evaluate the area in terms of bike and pedestrian safety around transit, please see Appendix B: The Active Transit Neighborhood Checklist (ATNC). This is an abbreviated checklist modifed from the ASNC that is centered around transit rather than schools.

15 http://www.azdot.gov/srts/PDF/Documents_Active_School_Neighborhood_Checklist.pdf

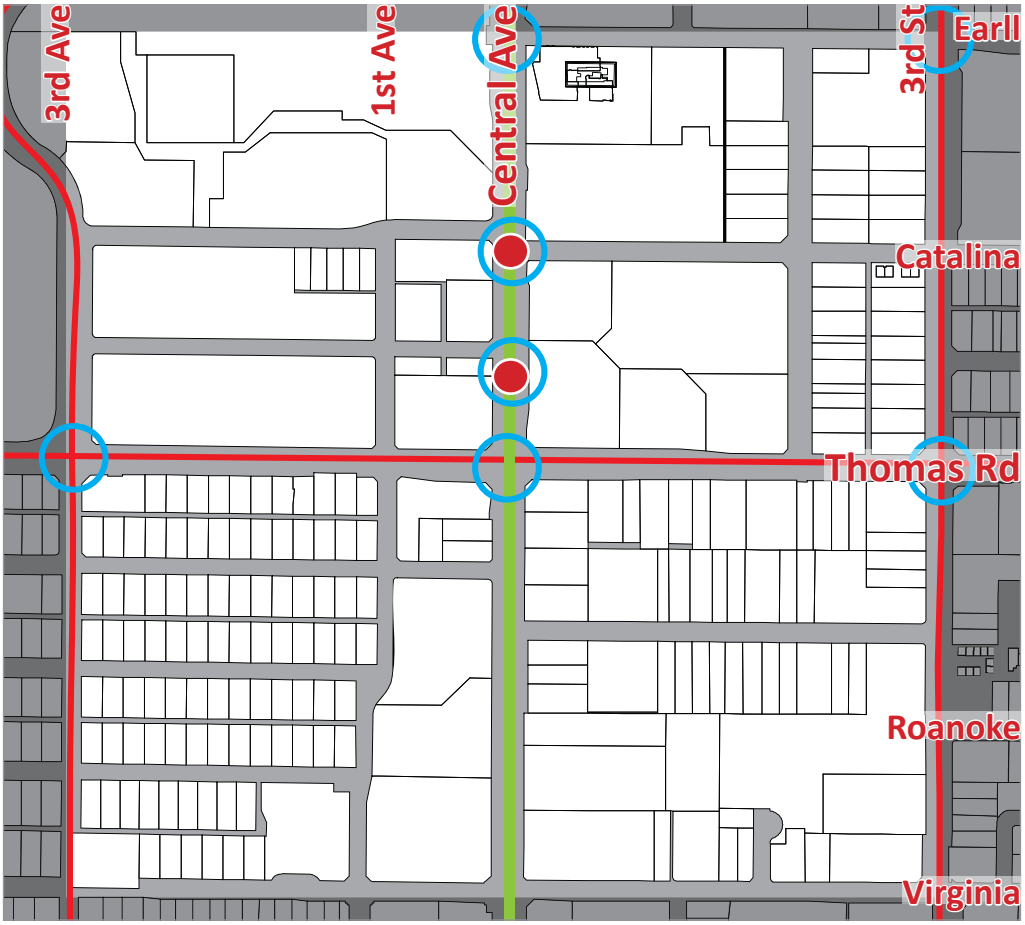


Figure 2.10: Pedestrian/Bike Map of 1/2 mile Area, Central and Thomas

light rail *striped pedestrian crossing* *light rail stop* *bicycle lane*

Resources for Bicyclists and Pedestrians			
Tempe	**Phoenix**	**Mesa**	**State/Maricopa**
Tempe in Motion <http://www.tempe.gov/Tim/> **Tempe Bicycle Action Group** <http://www.biketempe.org/>	**Phoenix Metro Bicycle Club** <http://pmbcaz.org/> **Arizona Bicycle Club** http:\\www.azbikeclub.com	**City of Mesa, Mesa Rides! Program** <http://www.mesaaz.gov/mesarides/>	**Coalition of Arizona Bicyclists** <http://www.cazbike.org/> **ADOT Bicycle/Pedestrian Program** <http://azbikeped.org/> **Maricopa DOT Bicycle Program** <http://www.mcdot.maricopa.gov/bicycle/bike-program.htm> **Maricopa Kids Coalition** <http://www.maricopa.gov/PublicHealth/Programs/SafeKids> **Maricopa Safe Routes to School** <http://www.maricopa.gov/publichealth/Programs/SRTS> **Metro** <http://www.valleymetro.org>

Table 2.10: Bicycling Resources

RESOURCES

There are numerous bicycle groups that promote both walkability and ease of bicycling throughout the Phoenix area and Maricopa County (see Table 2.10).

The Federal Highway Administration provides a detailed list of relevant bicycle and pedestrian safety information.[16] Additional resources include materials to help guide officials in designing systems that are safe and comply with regulations.[17]

Effective designation of rail lines and crossings can substantially increase pedestrian safety. Table 2.11 delineates several methods of track crossing warning mechanisms in use at light rail stations across the country.

16 http://safety.fhwa.dot.gov/ped_bike/ped_transit/ped_trans-guide/.
17 http://katana.hsrc.unc.edu/cms/downloads/PedRSA.reduced.pdf.

Signage along the Phoenix Sonoran Bikeway Route

Light Rail Bicycle Safety Devices	
Type	**Device/Method of Warning**
Active Warning Devices	Low-rise flashing pedestrian sign
	Fencing
	Bells/other noises
Passive Warning Devices	Lit signs for nighttime safety
	Signage
	Warning on ground
	Channelization devices (such as gates)
Other Considerations	Change in ground texture--physical and/or visual--to indicate upcoming change
	Location of gate arms in relation to pedestrian platform (provides enough space for pedestrians)
	Selection of method based on collision experiences at that stop
	Visibility from all angles of approach
	Pedestrian volumes and peak flows
	Provide warning at each track if there are multiple tracks

Table 2.11: Light Rail Bicycle Safety Devices

Source: Manual on Uniform Traffic Control Devices for Streets and Highways. Part 10. 2003. http://safety.fhwa.dot.gov/xings/collision/twgreport/index.htm#a6

One of the goals of TOD is to improve the health of residents by encouraging an active lifestyle. Studies show that individuals who use public transit are more likely to achieve the Surgeon General's recommendation of thirty minutes of moderate physical activity per day.[18] The incorporation of open green space to encourage physical activity is a crucial element in any TOD plan.

The 2002 Phoenix General Plan[19] indicates several goals and policies aimed at the creation of more open spaces and parks throughout the city. The TOD Zoning Overlay District One[20] calls for a minimum 5% open space for multifamily, mixed use, and commercial development; in general, the district also encourages the maximum use of open space.

Area Parks

As indicated in Figure 2.11, there are two parks within the **two-mile** area surrounding the Central and Thomas station, and no parks within the half-mile target area.

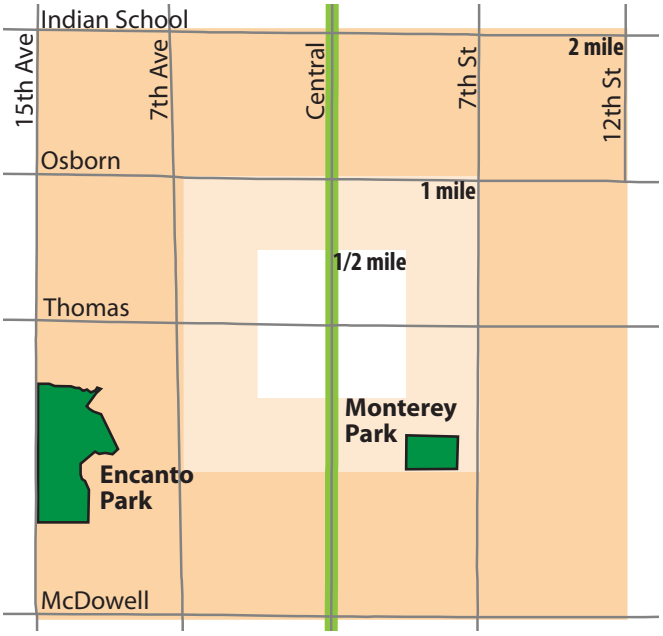


Figure 2.11: Area Parks, Central and Thomas

18 *Tucson Move*. 2011. May/June 1(2):60.
19 Phoenix General Plan: Recreation Element. 2002. http:\\phoenix.gov/planning/gprec.pdf.
20 662 Interim Transit-Oriented Zoning Overlay District One (TOD-1). 2009. http:\\www.codepublishing.com/az/phoenix/framless/index.pl?path=../html/PhoenixZ06/PhoenixZ0662.html#662.

Encanto park is a large 222-acre park that offers a lagoon, swimming pool, and two municipal golf courses.

Monterey park offers a playground, picnic areas, lighted soccer and softball fields, and volleyball courts.

Encanto Park, Phoenix, Arizona
Source: www.city-data.com

Vacant Land Potential

Any TOD plan for the half-mile area surrounding Central and Thomas should consider using existing vacant land to increase the amount of usable green space in the area.

The pictures below and on the following page demonstrate a surface parking area and vacant

Surface parking on 2nd Avenue

parcel near the light rail station at Central and Thomas. As indicated in Figure 2.12, there are numerous surface parking lots as well as several vacant parcels in the station area.

Several strategies may be considered to increase green space, including the creation of plazas, pocket parks, and joint-use agreements with schools.

Vacant lot near Central & Thomas

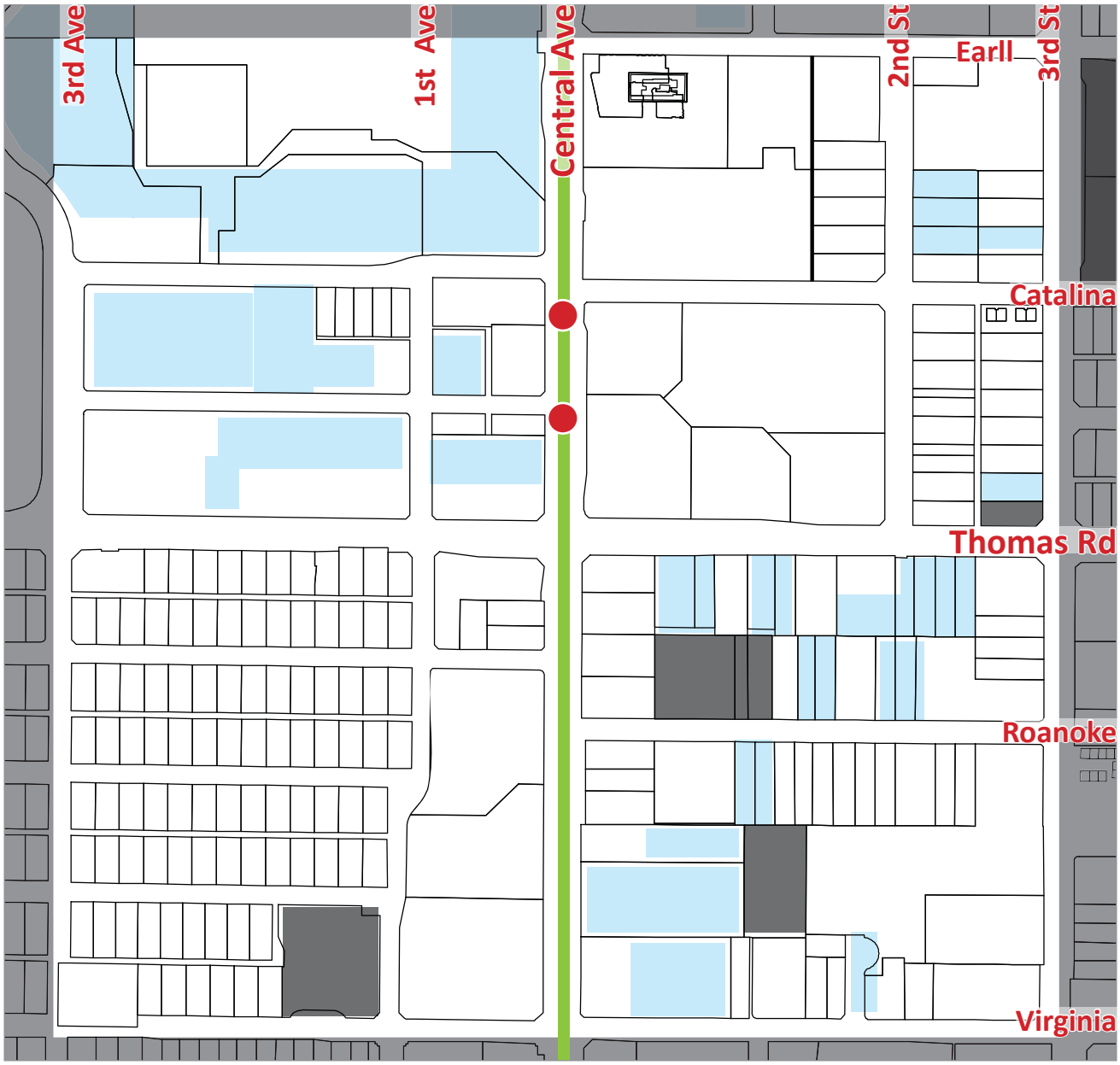


Figure 2.12: Open Space Potential, Central and Thomas

Source: Drachman Institute April 2012

light rail *light rail stop* *vacant land* *surface parking lots*

- **PLAZAS**

Public plazas are urban open spaces that can serve a multitude of functions. They may provide a public gathering space, accommodation for local farmer's markets or arts and crafts fairs, a home for public art structures, and settings for recreation and relaxation. Plazas should inject local character and flavor and provide adequate seating and shade for the hot desert climate. They also provide added security for the surrounding buildings by increasing public use.

Photo 1: Yavapai County Courthouse Plaza, Prescott, Arizona. Source: www.planning.org; Photo 2: Memorial Union Plaza adjacent to the student union at Arizona State University, Tempe, Arizona. Source: Studio Ma

- **POCKET PARKS**

Pocket parks are urban open spaces at a very small scale, usually a few parcels or smaller in size. They may include play areas for children, small meeting areas, or spaces for relaxing. Pocket parks provide much needed greenery in the urban landscape.

Photo 3: Pocket Park in South Bend, Indiana. Source: keepsouthbendneautiful.files.wordpress.com
Photo 4: Pocket Park at Arizona Ave and Chandler Blvd, Chandler, Arizona. Source: Landscapeforms
Photo 5: Pocket Park in Logan, Ohio. Source: logantowncenter.com

- **JOINT-USE AGREEMENTS**

Leading public health authorities recommend sharing existing school and community recreational facilities to promote physical activity. This can be done when schools open up their grounds to the community after school hours, or through specific joint-use agreements between organizations. In March 2012, Arizona Governor Jan Brewer signed SB 1059 which prevents schools from being held liable for injuries sustained by recreational users of outdoor school grounds, excluding swimming pools and other aquatic features. In the half mile target area at Central and Thomas there are several schools where such agreements could be pursued (see page 32).

6

The above photo is an example of a junior high school in Tucson, Arizona that opened up their track and Energi Systems equipment to the community after school hours. Located in a high risk area with few recreational opportunities, the school has become a park for the local residents to enjoy. It includes picnic areas, benches, exercise stations, an athletic field, and plenty of space to walk or run for exercise.

Photo 6: Flowing Wells Junior HIgh School, Tucson Arizona
Photo 7: Doolen Middle School Garden Before
Photo 8: Doolen Middle School Garden After
Source for Photos 6-8: Drachman Institute

7

The photos above and below show before and after shots of a facility benefitting the community under a joint-use agreement. The Tucson middle school has a joint use agreement with City of Tucson Parks and Recreation to open up their school grounds after school hours. Another joint-use agreement exists between the school and Community Gardens of Tucson (a local non-profit) to operate the school-community garden. Local community members can now subscribe to garden plots and have open access to the garden.

8

School Availability

A concern for families with children moving into a TOD area is the availability and quality of area schools. There are no schools in the half-mile target area at Central and Thomas (see Figure 2.13). However, there are twelve schools located between one and two miles from the light rail stop, six of which are high schools (five public and one private). The remaining schools are either K-8 or K-6.

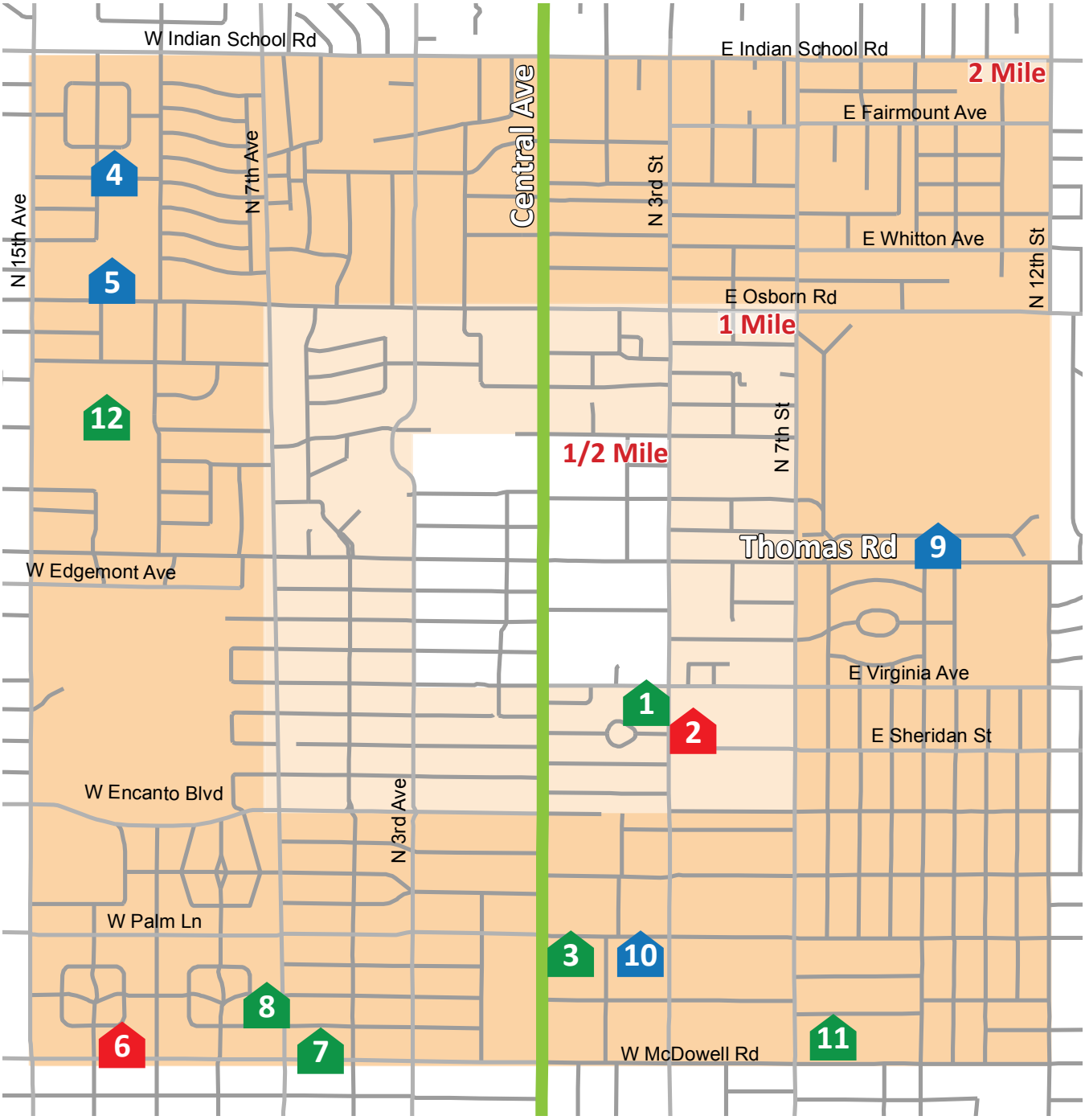


Figure 2.13: Area Schools, Central and Thomas

Source: Drachman Institute May 2012

light rail *public school* *private school* *public charter/magnet school* *specialty school*

List of Local Schools

- **Within 1/2 mile of stop**

No Schools within 1/2 Mile of Stop

- **Within 1 mile of stop**

1. Khalsa Montessori Elementary School
2536 N 3rd St
Public K-6 (Charter)
99th percentile statewide
519 reading score (3rd grade)
406 math score (3rd grade)
168 students in 2010
16.7% free or reduced lunch

2. St. Marys High School
2525 N 3rd St
Private 9 – 12
709 students in 2010
19.4:1 student teacher ratio
36.5 full time teachers

- **Within 2 miles of stop**

3. Arizona Academy of Science and Technology
1875 N. Central Avenue
Public K-8 (Charter)
488 reading score (6th grade)
367 math score (6th grade)
117 students in 2010
73.5% free/reduced lunch

4. Clarendon School
1225 West Clarendon
Public K-8
434 students in 2010
85.9% free/reduced lunch
16.2:1 student teacher ratio
26.7 full time teachers
510 reading score (6th grade)
423 math score (6th grade)

5. Encanto School
1426 West Osborn Rd
Public K-8
644 students in 2010
85.7% free/reduced lunch
17.2:1 student teacher ratio
37.2 full time teachers
444 reading score (3rd grade)
352 math score (3rd grade)

6. The Family School
1127 W. McDowell Rd
Private K-5
64 students in 2010
13:1 student teacher ratio
1 full time teacher

7. Genesis Academy
525 E. McDowell Rd
Public 9-12 (Charter)
11th percentile statewide
665 reading score (10th grade)
457 math score (10th grade)
176 students in 2010
79% free or reduced lunch

8. Metropolitan Arts Institute
1700 N. 7th Ave
Public 7-12 (Charter)
82nd percentile statewide
733 reading score (10th grade)
501 math score (10th grade)
250 students in 2010
2% free or reduced lunch

9. North High School
1101 E Thomas Rd
Public 9 – 12
63rd percentile statewide
704 reading score (10th grade)
497 math score(10th grade)
2505 students in 2010
75.2% free or reduced lunch
18.9:1 student teacher ratio
132.2 full time teachers

10. Ralph Waldo Emerson Elementary School
915 E. Palm Lane
Public PK-6
13th percentile statewide
501 reading score (6th grade)
401 math score (6th grade)
512 students in 2010
6.6% free or reduced lunch
15.2:1 student teacher ratio
33.5 full time teachers

11. Summit High School
728 E. McDowell Rd
Public 9-12 (Charter)
50th percentile statewide
659 reading score (10th grade)
457 math score (10th grade)
362 students in 2010
1.3% free or reduced lunch

12. Teacher Preparation Charter High School
1202 W Thomas Rd
Public 9 – 12 (Charter)
50th percentile statewide
700 reading score (10th grade)
483 math score (10th grade)
78 students in 2010
1.3% free or reduced lunch

Notes: All test scores for public schools are based on the 2011 AIMS (Arizona's Instrument to Measure Standards).

10th Grade Math and Reading Scores:
Scale 0-800
- State Mean Scaled Math Score=501.09
- State Mean Scaled Reading Score=711.72

8th Grade Math and Reading Scores:
Scale=0-600
- State Mean Scaled Math Score=434.79
- State Mean Scaled Reading Score=527.07

6th Grade Math and Reading Scores:
Scale 0-600
- State Mean Scaled Math Score=412.64
- State Mean Scaled Reading Score=515.19

3rd Grade Math and Reading Scores:
Scale 0-500
- State Mean Scaled Math Score=370.95
- State Mean Scaled Reading Score=461.52

Information on all schools obtained from schooldigger.com, accessed April 2012

Area Amenities

A goal of successful transit-oriented development is to offer a mix of services and amenities within walking distance of public transit. While the area near the Central and Thomas station is dominated by surface parking, there is a mix of retail and services available in the area. According to data compiled by the Environmental Systems Research Institute (ESRI), there are 444 businesses in the half-mile area, 58.8 percent of which are service-related (See Table 2.12).

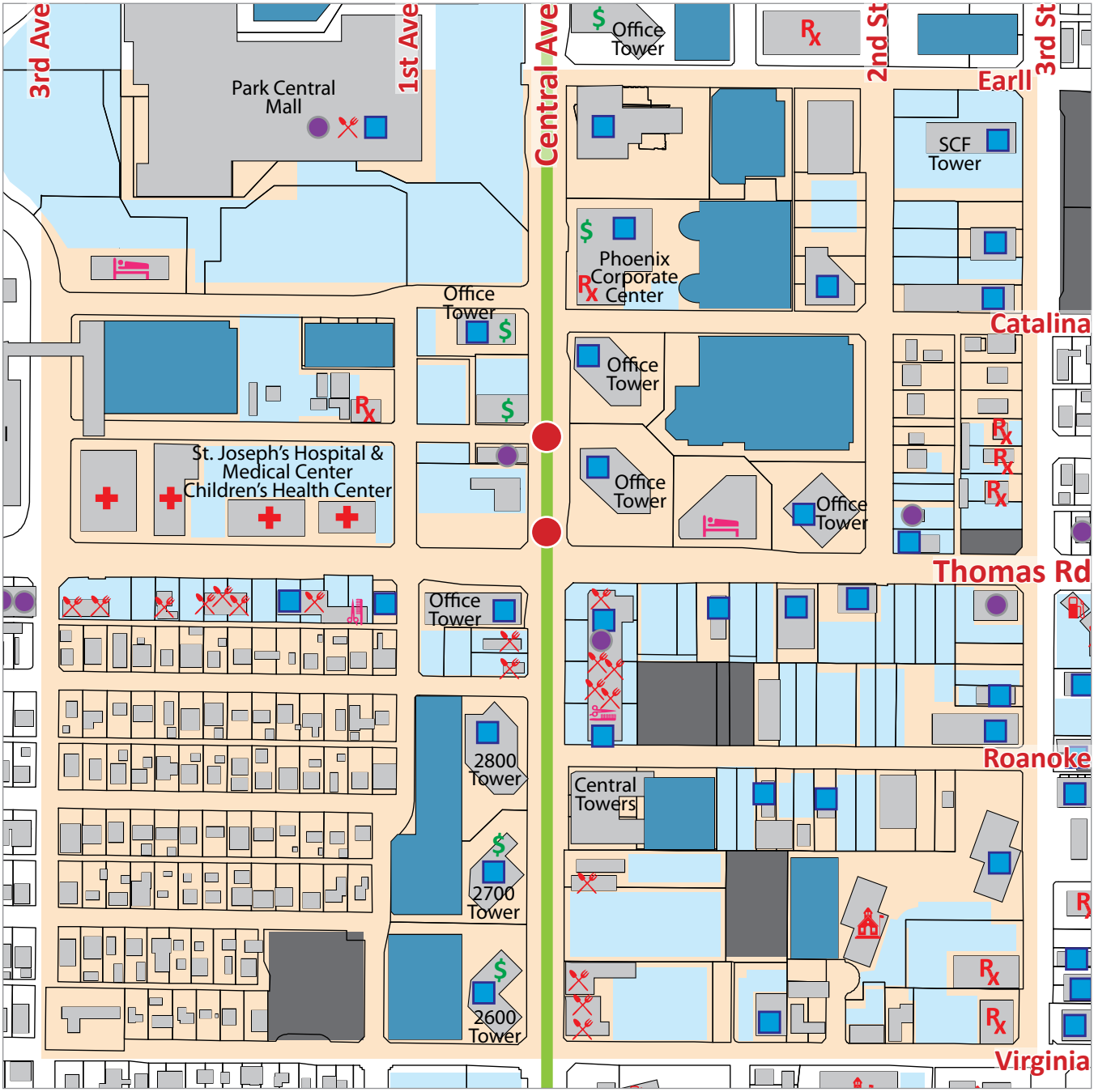


Figure 2.14: Area Amenities, Central and Thomas

Source: Drachman Institute April 2012

light rail *light rail stop* *1/2 mile area* *buildings* *surface parking* *parking garage* *vacant*

retail *office* *bank/money services* *beauty* *gas* *health/fitness* *hospital*

hotel/lodging *restaurant/dining* *school*

Businesses in Half-Mile Area by Service Industry Codes		
	Number	**Percent**
Agriculture & Mining	**0**	**0.0%**
Construction	**7**	**1.6%**
Manufacturing	**6**	**1.4%**
Transportation	**4**	**0.9%**
Communication	**7**	**1.6%**
Utility	**0**	**0.0%**
Wholesale Trade	**11**	**2.4%**
Retail Trade	**43**	**9.7%**
Home Improvement	5	
General Merchandise	1	
Food Stores (Includes Grocery Stores)	3	
Auto Dealers, Gas Stations, Auto Aftermarket	1	
Apparel & Accessory Stores	0	
Furniture & Home Furnishings	1	
Eating & Drinking Places (Includes "Fast Food")	24	
Miscellaneous Retail	8	
Finance, Insurance, Real Estate	**63**	**14.2%**
Banks, Savings, & Lending Institutions	14	
Securities Brokers	11	
Insurance Carriers & Agents	13	
Real Estate, Holding, Other Investment Offices	25	
Services	**261**	**58.8%**
Hotels & Lodging	2	
Automotive Services	9	
Motion Pictures & Amusements	3	
Health Services	40	
Legal Services	82	
Education Institutions & Libraries	6	
Other Services	119	
Government	**19**	**4.2%**
Other	**23**	**5.2%**
Total	**444**	**100%**

Table 2.12: Half-Mile Area Business Summary, Central and Thomas

Source: Business data by Infogroup, Omaha NE, 2012, compiled by ESRI Accessed April 2012

General

Central and Thomas is a mixed-use area with residential, retail, and offices located in the half-mile surrounding the light rail stop. The half-mile area is bounded by Earll Drive to the North, Virginia Avenue to the South, 3rd Avenue to the West, and 3rd Street to the East.

Neighborhood Demographics and Housing Characteristics

Compared to demographics for the City of Phoenix, target area residents are more likely to have a bachelor's degree or higher. Residents of the target area are similar to City of Phoenix residents in terms of homeownership and median income. The target area is 22.1 percent Hispanic, compared to 40.8 percent for the City of Phoenix.[21]

The target area is almost equally divided between single-family and multi-family homes, with 49.2 percent of the housing stock being single family, either attached or detached. The target area is also split between renters and homeowners, with 44 percent renting their home.

Property Values

Consistent with statistics from across the country, property values have risen since the introduction of light rail, and the largest increases are found closest to station areas.[22] There are a number of programs that may be pursued in order to preserve and develop affordable housing and to assist existing low-income homeowners in the area. These may include Low Income Housing Tax Credits, Community Land Trusts, Employer Assisted Housing Programs, and property tax abatement programs.

Housing and Transportation Affordability

Using the common measure of affordability that housing costs not exceed 30 percent of household income, in the target area around Central and Thomas those living south of Thomas typically spend almost 30 percent of their income on housing. When factoring in transportation costs, the area south of Thomas becomes unaffordable (housing and transportation costs consume 45 percent or more of total household income).[23]

Public Transit

Public transit ridership at the Central and Thomas light rail station has increased by 22 percent since April 2009.[24] Ridership numbers provided by Metro indicate that over 800,000 people got on and off at the station in 2011. In spite of these numbers, ridership figures for the residents of the half-mile target area are low, with 4.2 percent reporting that they use public transit to get to work.[25] On average, residents in the target area pay between $954-1,040 per month on transportation.[26]

Crime

The ADOH target area survey found that residents identified crime as one of their primary concerns, yet statistics show that crime has not increased in station areas since the introduction of Metro light rail.[27] Consistent with studies across the country, crime in the target area has been decreasing and is now at its lowest level in recent history. There are several principles that landlords, property owners, business owners, and developers can follow in order to reduce crime and disorder on their respective properties; collectively these are known as "crime prevention through environmental design" or CPTED. They include: natural surveillance,

21 U.S. Census Bureau, 2010 Summary File 1, provided by Environmental Systems Research Institute (ESRI), Community Analyst Data Service.

22 Golub, Aaron, Subjrajit Guhathakurta, and BharathSollapuram. 2011. "Light Rail Economic Impact Analysis: Task 1 Final Report to the Maricopa Association of Governments."

23 Center for Neighborhood Technology, Housing and Transportation Affordability Index. Accessed April 2012.

24 BAE Urban Economics. 2012. "TOD Mixed-Income Housing Market Demand Study." Online: wwwbae1.com.

25 Environmental Systems Research Institute (ESRI) forecasts for 2010 based on US Bureau of the Census, 2000.

26 Center for Neighborhood Technology, Housing and Transportation Affordability Index. Accessed April 2012.

27 City of Phoenix Police Department. 2011.

natural access control, territorial reinforcement, maintenance and management, and activity support.

Bicycle and Pedestrian Safety

In terms of bicycle and pedestrian safety, in the half-mile area around Central and Thomas there are seven striped pedestrian crossings and three designated bike lanes. The Arizona Department of Transportation has created an Active Transit Neighborhood Checklist (ATNC) to be used as a tool for assessing the walkability and bikeability of an area.[28] Of particular concern are speed limits and traffic, the presence of bicycle lanes and designated bicycle routes, and sidewalk conditions and crosswalks.

Open space/plazas/parks

There are two parks in the two-mile area surrounding the station, but no parks within the half-mile target area. There are a number of vacant parcels and considerable surface parking near the station area, providing potential for increasing usable green space. Strategies to be considered are the creation of plazas, pocket parks, and joint-use agreements with area schools. In support of joint-use agreements, Arizona Governor Jan Brewer recently signed SB 1059 which prevents schools from being held liable for injuries sustained by recreational users of outdoor school grounds after school hours.

Area Schools and Amenities

In terms of area services and amenities, there are twelve schools located within two miles of the Central and Thomas light rail station. Six of the twelve are either private or public high schools. There are approximately 444 businesses in the target area, three of which are food stores, 9.7 percent are retail, 14.2 percent are finance, insurance, or real estate, and 58.8 percent are service-related.[29]

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28 See Appendix B.

29 Environmental Systems Research Institute (ESRI), Business Analyst Data Service.

Project Summary

Housing and transportation are the two largest expenses in American household budgets. In 2009, the US Departments of Housing and Urban Development (HUD) and Transportation (DOT) created a partnership with the Environmental Protection Agency (EPA) to help improve access to affordable housing, more transportation options, and lower transportation costs while protecting the environment in communities around the country. They compiled a set of "*Livability Principles"* to guide their efforts toward this end with **transit-oriented development** listed as a strategy to support existing communities. Today, in addition to serving as criteria for securing various sources of funding, these *Principles* are frequently used by jurisdictions and organizations to help define their goals for community development:

Provide more transportation choices

Develop safe, reliable, and economical transportation choices to **decrease household transportation costs**, improve air quality, and promote public health.

Promote equitable, affordable housing

Expand location- and energy-efficient housing choices for people of all ages, incomes, races, and ethnicities to **increase mobility** and **lower the combined cost of housing and transportation**.

Enhance economic competitiveness

Improve economic competitiveness through reliable and timely access to employment centers, educational opportunities, services, and other basic needs by workers, as well as expanded business access to markets.

Support existing communities

Target funding toward existing communities-through **strategies like transit-oriented, mixed-use development** and land recycling- to increase community revitalization and the efficiency of public works investments and safeguard rural landscapes.

Coordinate and leverage federal policies and investment

Align federal policies and funding to remove barriers to collaboration, leverage funding, and increase accountability and effectiveness of all levels of government to plan for future growth, including making smart energy choices such as locally generated renewable energy.

Value communities and neighborhoods

Enhance the unique characteristics of all communities by **investing in healthy, safe, walkable neighborhoods**- rural, urban, or suburban.

Transit-oriented development is a key strategy to creating sustainable communities, that is, communities with the capacity to endure over time. In sum,

"Sustainable communities are places that have a variety of housing and transportation choices, with destinations close to home. As a result, they tend to have lower transportation costs, reduce air pollution and storm water runoff, decrease infrastructure costs, preserve historic properties and sensitive lands, save people time in traffic, be more economically resilient and meet market demand for different types of housing at different price points. Rural, suburban, and urban communities can all use sustainable communities strategies and techniques to invest in healthy, safe and walkable neighborhoods, but these ***strategies will look different in each place depending on the community's character, context, and needs.***" (The Partnership for Sustainable Communities, 2012, emphasis added).[1]

In order to work towards **sustainable transit-oriented** communities, residents and property owners must be knowledgeable about existing conditions and community needs. The following tables provide additional data and summary of the existing conditions in the eight station areas included in this series of Transit Oriented Development Neighborhood Studies. The overall goal is to provide information for residents, property owners, and business owners in the areas surrounding the light rail stations so that they will be better informed participants in the changes that are and will be taking place in their neighborhoods. We believe these changes toward **transit-oriented development** can lead to more livable and sustainable communities that will provide healthier, safer, more equitable and more beautiful places to live.

1 http://www.sustainablecommunities.gov.

		Central & Camelback	Central & Osborn	Central & Thomas	Central & McDowell	Washington & 12th St	Apache & McClintock	Apache & Price	Main & Sycamore
Area Boundaries:	North	Colter	Clarendon	Earll	Palm	Van Buren	Randall/ Orange	Orange/ Victory	Aragon
	South	Highland	Earll	Virginia	I-10	Jackson	Railroad	Railroad	Railroad
	West	3rd Ave	3rd Ave	3rd Ave	3rd Ave	10th St	Una	S-bound Price	Dobson
	East	3rd St	3rd St	3rd St	3rd St	14th St	Bonnie	Evergreen	Longmore

Table 3.1: Area Boundaries: These boundaries apply to all data below except as noted.

Source: 2005 - 2009 American Community Survey									
		Central & Camelback	Central & Osborn	Central & Thomas	Central & McDowell	Washington & 12th St	Apache & McClintock	Apache & Price	Main & Sycamore
% Households in Poverty		5.0%	15.2%	6.9%	7.1%	38.9%	38.5%	20.4%	12.0%
Education									
	Not a H.S. Grad	9.3%	8.0%	6.0%	13.0%	23.9%	29.6%	25.5%	26.6%
	HS Grad	9.5%	17.7%	17.8%	11.4%	20.8%	20.0%	24.4%	23.0%
	Some College	29.4%	20.5%	18.2%	17.9%	23.6%	34.0%	24.5%	26.3%
	Associates Degree	14.4%	4.0%	11.5%	4.8%	7.1%	5.3%	6.4%	4.8%
	Bachelor's Degree	20.9%	25.4%	24.5%	34.3%	13.6%	5.6%	13.7%	14.9%
	Graduate or Prof Degree	16.6%	24.6%	21.8%	18.6%	10.1%	6.7%	5.5%	4.8%
	% H.S. Grad or Higher	90.7%	92.0%	94.0%	87.0%	76.1%	70.4%	74.5%	73.4%
	% B.A. or higher	37.5%	50.0%	46.3%	52.9%	24.7%	12.3%	19.2%	19.7%
Travel Time to Work									
	1-19 minutes	54.3%	61.0%	46.9%	62.8%	59.0%	48.4%	36.8%	28.5%
	20-29 minutes	30.5%	32.2%	38.3%	20.2%	21.3%	14.5%	20.7%	22.8%
	30-39 minutes	10.5%	5.1%	9.2%	9.3%	5.9%	9.7%	25.8%	27.2%
	40-59 minutes	4.5%	1.2%	2.5%	7.4%	8.0%	23.3%	14.4%	15.5%
	60+ minutes	0.2%	0.4%	3.6%	0.3%	6.1%	3.6%	2.3%	6.0%
Public Transportation to Work		8.6%	1.5%	6.7%	0.9%	13.7%	28.2%	2.5%	7.4%
# Single-Family Units		223	26	96	192	104	111	130	128
# Multi-Family Units		452	363	92	227	525	107	625	60

Table 3.2: Data Summary, 2005-2009 American Community Survey

Source: Census 2012 Summary File 1									
		Central & Camelback	Central & Osborn	Central & Thomas	Central & McDowell	Washington & 12th St	Apache & McClintock	Apache & Price	Main & Sycamore
Population		748	370	303	651	1,751	1,553	2,288	582
# Households		415	248	159	377	632	640	1,049	182
# Housing Units		558	512	223	433	705	786	1,174	197
Avg. Household Size		1.79	1.54	1.91	1.72	2.01	2.4	2.17	3.17
% Households with Children		19.8%	8.5%	15.1%	12.2%	16.6%	24.5%	23.5%	42.3%
Vacancy Rate*		25.6%	51.6%	28.7%	12.9%	10.4%	18.6%	10.6%	7.6%
% Owner Occupied		38.8%	36.4%	56.0%	50.1%	19.0%	20.1%	21.0%	70.9%
Race									
	White	75.6%	73.3%	77.6%	84.5%	57.5%	58.8%	55.1%	63.2%
	Hispanic (any race)	25.0%	19.2%	22.1%	14.9%	38.8%	40.2%	32.9%	52.2%
	Black/African American	5.6%	9.2%	5.9%	4.9%	16.2%	4.2%	9.2%	2.8%
	Asian	2.1%	4.0%	2.0%	1.7%	4.2%	8.7%	3.6%	2.2%
	Native Hawaiian/ Pacific Islander	0.1%	0.3%	0.0%	0.3%	0.1%	0.3%	1.0%	0.0%
	American Indian/ Alaska Native	3.2%	3.2%	1.7%	0.9%	4.5%	4.1%	10.4%	3.8%
	Two or more races	4.5%	3.2%	4.3%	2.6%	2.8%	4.2%	5.0%	5.0%
Gender									
	Male	53.3%	50.8%	53.1%	52.5%	57.7%	54.4%	50.0%	50.2%
	Female	46.7%	49.2%	46.9%	47.5%	42.3%	45.6%	50.0%	49.8%
Age**									
	0-19	19.6%	9.2%	14.6%	12.7%	15.1%	24.9%	25.9%	33.1%
	20-29	15.7%	26.6%	15.5%	16.7%	21.6%	33.7%	37.9%	15.0%
	30-44	24.7%	29.6%	26.8%	25.6%	24.7%	21.0%	16.7%	19.0%
	45-64	29.3%	23.1%	33.8%	33.7%	28.8%	15.9%	14.4%	23.8%
	65+	10.7%	11.9%	10.2%	10.8%	9.7%	4.4%	5.1%	9.3%
Median Age		39.3	35.6	41.3	42	38.1	27.1	25	31.5
Income									
	Median Household Income	$36,581	$52,543	$45,502	$40,468	$22,757	$30,279	$41,116	$47,076
	Avg. Household Income	$50,516	$63,970	$64,545	$62,423	$41,395	$40,380	$48,296	$52,874
	Per Capita Income	$26,150	$41,370	$34,927	$36,354	$24,993	$16,669	$21,368	$16,224

Table 3.3: Data Summary, Census 2010 Summary File 1

*For Vacancy rate by Tenure (homeowner versus renter) please see Table 2.7, page 11.
**Millenial Generation: Born after 1980 (age 18-29 in 2010); Generation X: Born 1965-1980 (age 30-45 in 2010); Baby Boomers: Born 1946-1964 (age 46-64 in 2010); Silent Generation: Born 1928-1945 (age 65+ in 2010) (*Source: Pew Social Science Research Center, 2012).*

Source: Center for Neighborhood Technology 2012								
	Central & Camelback	Central & Osborn	Central & Thomas	Central & McDowell	Washington & 12th St	Apache & McClintock	Apache & Price	Main & Sycamore
Housing Affordability (<30% of Household Income)	N. of Camelback unaffordable	affordable	affordable	West of Central unaffordable	affordable	affordable	affordable	affordable
Housing + Transportation Affordability (<45% of Household Income)	unaffordable	northwest quadrant unaffordable	southern half unaffordable	unaffordable	West of 12th unaffordable	unaffordable	unaffordable	Area n. of Main and e. of Sycamore unaffordable
Avg Transportation Costs	$957-1036/mo	$978-1038/mo	$954-1040/mo	$948-968/mo	$880-983/mo	$935-1046/mo	$1,018/mo	$1094-1129/mo

Table 3.4: Data Summary, Center for Neighborhood Technology 2012

Source: METRO 2012								
	Central & Camelback	Central & Osborn	Central & Thomas	Central & McDowell	Washington & 12th St	Apache & McClintock	Apache & Price	Main & Sycamore
METRO Light Rail Ridership (total on/off in 2011)	526,677	461,500	829,377	856,664	146,067	679,702	572,063	1,930,831
Metro Bus Options (routes)	4 Routes: 0, 39, 50, GL	3 Routes: 0, 512, GL	4 Routes: 0, 29, 512, GL	4 Routes: 0, 17, 512, GL	4 Routes: 1, 512, 3, 12	1 Route: 40	2 Routes: 40, 511	7 Routes: 30, 40, 45, 96, 104, AZ Ave Link, Main St. Link

Table 3.5: Data Summary, Metro 2012

Source: Miscellaneous								
	Central & Camelback	Central & Osborn	Central & Thomas	Central & McDowell	Washington & 12th St	Apache & McClintock	Apache & Price	Main & Sycamore
# Parks (within 2 miles)	3	3	2	12	12	6	5	4
# Schools (within 2 miles)	15	9	12	17	13	8	6	5
# Businesses**	198	393	444	167	94	51	20	74
Acres of vacant land (2011)*** (within 1 mile)	21	18	21	32	7	17	1	42

Table 3.6: Data Summary, Miscellaneous

***ESRI, 2012.*

****Kittrell, Katherine. 2012. "Vacant Land Value Impacts: Comparing Phoenix Metro Light Rail Station Areas." Paper presented to the Transportation Research Board of the National Academies, 91st Annual Meeting, Washington, D.C.*

Appendices

A. Center for Neighborhood Technology: Housing and Transportation Affordability Index 46

B. Active Transit Neighborhood Checklist 48

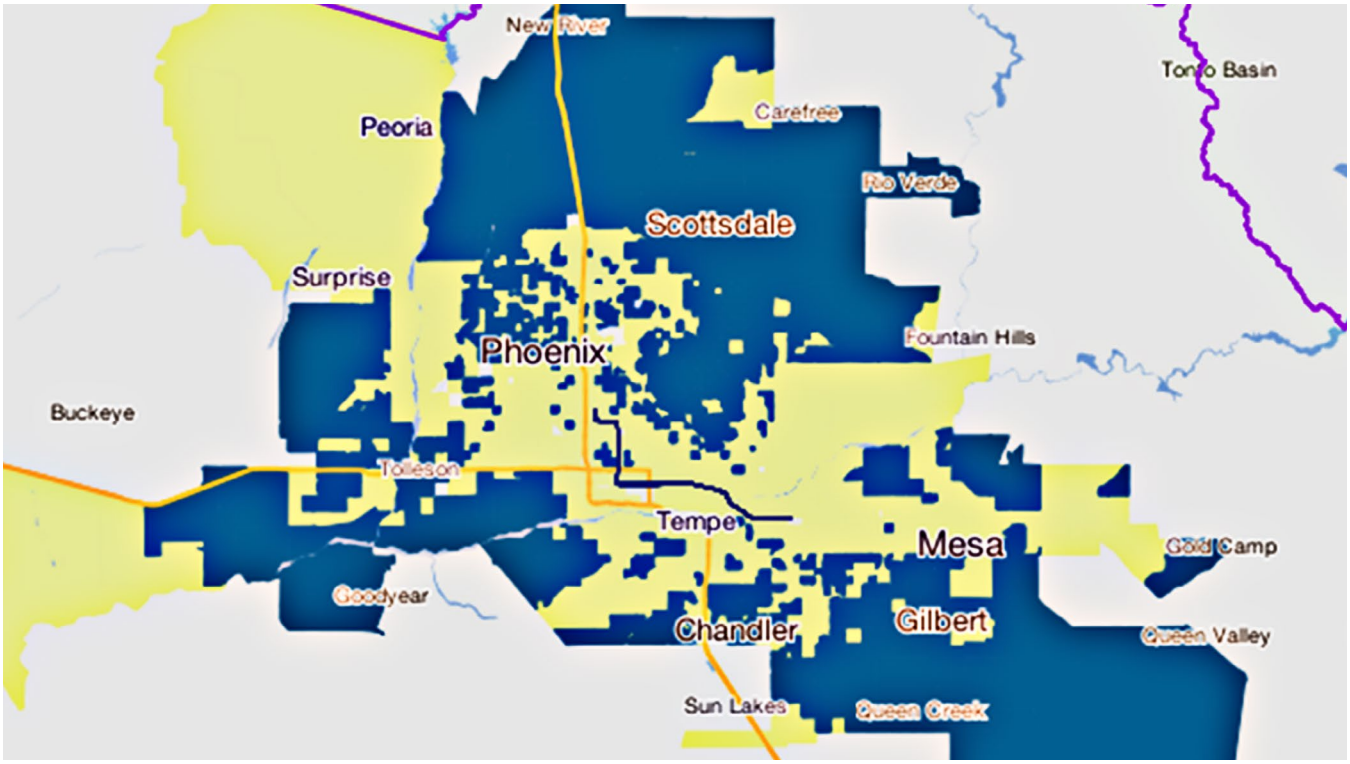

Figure A.1: Regional Housing Costs as a Percentage of Income

Source: www.cnt.org
Accessed July 2012

Unaffordable Housing: Greater than 30% *Affordable Housing: Less than 30%*

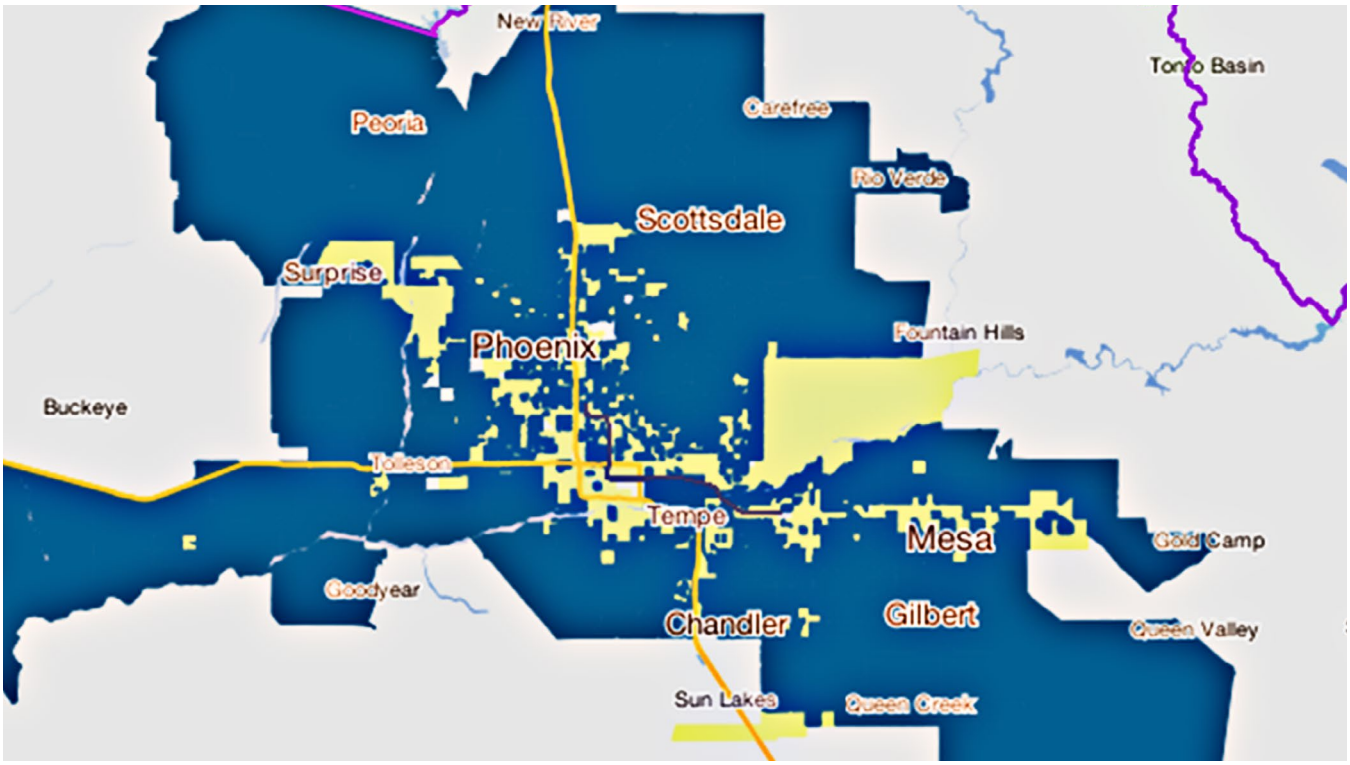

Figure A.2: Regional Housing + Transportation Costs as a Percentage of Income

Source: www.cnt.org
Accessed July 2012

Unaffordable H+T: Greater than 45% *Affordable H+T: Less than 45%*

CENTER FOR NEIGHBORHOOD TECHNOLOGY

The Drachman Institute utilized data analyses by the Center for Neighborhood Technology (CNT) to create housing and transportation affordability maps for each station area. Figures A.1 and A.2 show housing and transportation affordability for the region. As indicated in Figure A.2, when transportation costs are included, many areas of the region become unaffordable (residents are paying 45 percent or more of their income on housing and transportation).

The following information (taken from the CNT website) provides a brief explanation of their methods and data. For more detailed information on the Housing and Transportation Affordability Index, see http://htaindex.cnt.org/.

The Housing and Transportation Affordability Index (H&T Index) was constructed to estimate three dependent variables (auto ownership, auto use, and transit use) as functions of eleven independent variables (median income, per capita income, average household size, average commuters per household, residential density, gross density, average block size, intersection density, transit connectivity, transit access shed, and employment access). The H&T Index was constructed at the Census block group level using the 2009 American Community Survey 5-year estimates as the primary dataset.

DEPENDENT VARIABLES: TRANSPORTATION COSTS

Three components of transportation behavior (auto ownership, auto use, and transit use) are combined to estimate the cost of transportation.

INDEPENDENT VARIABLES: HOUSEHOLD CHARACTERISTICS

- **Household Income**

Median household income is obtained from the 2009 American Community Survey, 5-Year Estimates. Per capita income is calculated as median household income divided by average household size.

- **Average Household Size**

Average household size is the "Total Population in Occupied Housing Units by Tenure" and "Tenure" to define the universe of occupied housing units.

- **Average Commuters per Household**

Average commuters per household is calculated using the total number of workers age sixteen and older who do not work at home and means of transportation to work.

INDEPENDENT VARIABLES: NEIGHBORHOOD CHARACTERISTICS

- **Household Density**

Residential density represents household density of residential areas, in contrast to population density on land area. Gross density is calculated as total households divided by total land acres.

- **Street Connectivity and Walkability**

Street connectivity and walkability are calculated through average block size and intersection density.

- **Transit Access**

Transit access is measured through General Transit Feed Specification (GTFS) data collected and created by the Center for Neighborhood Technology. As of February 2012, CNT has compiled station and stop data for bus, rail, and ferry service for more than 75 percent of all metropolitan and micropolitan areas in the United States.

- **Employment Access**

The Employment Access Index calculates both the quantity and distance to all employment destinations, relative to any given block group.

B Active Transit Neighborhood Checklist

The following Active Transit Neighborhood Checklist (ATNC) is adapted from the Active School Neighborhood Checklist (ASNC) that was created by the Safe Routes to School Program of the Arizona Department of Transportation. The ATNC is a tool for assessing walkability and bikeability around transit. To see the full ASNC go to http://www.azdot.gov/srts/PDF/Documents_Active_School_Neighborhood_Checklist.pdf.

How to Complete This Checklist

In order to properly complete this checklist you must use a team approach. A broad range of answers are required, so you should have at least four (4) members on your team, all from different disciplines – not all from one discipline. Below are the recommended disciplines that your team should include:

Groups:

1. Technical/engineering
   - Traffic, transportation, or civil engineer from the city or county of the proposed/existing school
2. School (if transit serves students)
   - Principle or assistant principle (mandatory member)
   - School nurse
   - PTA, PTO, booster club (highly advisable member)
3. Health
   - County health department representative
   - State department of public health representative
   - Other health/wellness professional
4. Community
   - Other parent representatives (if transit serves students)
   - Other community partners
5. School district (if transit serves students)
   - Transportation coordinator
   - Risk management director
   - School health advisory council member
6. City/policy
   - Transportation, transit, or public works department representative
   - City bicycle and pedestrian coordinator
   - Planning department representative
   - Police officer

On what dates does your team meet? _____

Your ATNC Team (also indicate from which group 1-6 above)

Member: _____ Group ___ Signature: _____ Title: _____

Member: _____ Group ___ Signature: _____ Title: _____

Member: _____ Group ___ Signature: _____ Title: _____

Member: _____ Group ___ Signature: _____ Title: _____

Member: _____ Group ___ Signature: _____ Title: _____

Member: _____ Group ___ Signature: _____ Title: _____

Speed Limits

The speed at which vehicles travel directly affects the safety of pedestrians and bicyclists. The faster the speed, the greater the risk that a car-pedestrian crash will injure the pedestrian. Circle 'Y' or 'N' in each of the four speed limit categories listed -- you should have a total of FOUR ANSWERS.

30 or Less		35		40-45		50 or Higher		Add your 4 Answers Here
Y	N	Y	N	Y	N	Y	N	
3	0	1	2	0	1	-5	2	

Traffic Lanes

Circle 'Y' or 'N' in each of the traffic lane categories listed – you should have a total of FOUR ANSWERS.

2- Lane Streets		3-4 Lane Streets		5- Lane Streets		Streets with More than 6 Lanes		Add your 4 Answers Here
Y	N	Y	N	Y	N	Y	N	
2	0	1	1	-5	1	-6	1	

Curb Radius

Larger curb radii can encourage drivers to drive faster, which can be challenging to pedestrians. Circle an answer for Small, Medium, AND Large categories – a total of THREE ANSWERS.

Small Radius (Less than or equal to 20 feet)		Medium Radius (21-39 feet)		Large Radius (Greater than or equal to 40 feet)		Add your 4 Answers Here
Y	N	Y	N	Y	N	
2	0	0.5	1	-2	2	

Number of Vehicles

In neighborhoods with fewer, slower vehicles, people are more likely to start – or continue -- walking and cycling to transit locations.

Number of Vehicles per Day	Fewer than 2,000 Vehicles per Day	2,000 - 5,000 Vehicles per Day	More than 5,000 Vehicles per Day
Points:	0	2	1

Pedestrian and Bicycle Facilities

These are simply "safe places on which to walk and bike". If neighborhoods surrounding a transit stop have these facilities, transit users, including pedestrians and cyclists, have a safer environment.

Bike Lanes	Prevalent	Present in Some Cases	Not Present
Points:	0	2	1
Designated Bike Lanes	**Prevalent**	**Present in Some Cases**	**Not Present**
Points:	1	0.5	0
Multi-Use Paths	**Prevalent**	**Present in Some Cases**	**Not Present**
Points:	2	0.5	0

Part 1 Subtotal _____ points (out of 25 points)

Transfer these points to 'Scoring Your Neighborhood and Transit Sites' section.

Sidewalks

Sidewalks	Prevalent on Both sides of the street	Present in some cases -- or -- Sometimes on only one side of the street	No sidewalks
Points:	2	1	-2

Condition of Sidewalks	Good Few or no cracks, buckled or missing sections	Acceptable Some cracks, buckled or missing sections	Poor Badly neglected and in need of maintenance
Points:	1	0	-1

Marked Crosswalks *at* Intersections

Marked Crosswalks at intersections	Prevalent	Present in some cases	No marked crosswalks
Points:	2	1	-1

Americans with Disabilities Act (ADA) Curb Ramps

	If there are neither '2 per corner' nor '1 per corner' ADA ramps, Award -2 points			
Is the '2 per corner' ADA ramp design used? Award this many points (circle only one):	All intersections	Most intersections	Some intersections	None
	3	2	1	0
Is the '1 per corner' ADA ramp design used? Award this many points (circle only one):	All intersections	Most intersections	Some intersections	None
	2	1	0.5	0
	You should have two answers (circles) above.			

Pedestrian Crossing Signals

Pedestrian crossing signals at traffic signals	Prevalent	Present at some intersections	Not present
Points:	2	1	-1
"Countdown pedestrian signals" at traffic signals	Prevalent	Present at some intersections	Not present
Points:	1	0.5	0

Part 2 Subtotal _____ points (out of 13 points)
Transfer these points to 'Scoring Your Neighborhood and Transit Sites' section.

Pedestrian Walkability

Are there obstacles that limit the mobility of wheelchairs (trash receptacles, newspaper boxes, or landscaping)?

No	Some	Prevalent
2	1	-1

Are access ways to transit facilities well lit?

No	Some	Prevalent
0	1	2

Do bus/rail stops provide route information and maps?

No	Some	Prevalent
0	1	2

Are bus stops well connected to the surrounding sidewalk system?

No	Some	Prevalent
0	1	2

Are there shade trees?

No	Some	Prevalent
0	1	2

Do bus stops offer protection from sun, rain, etc.?

Yes	No
2	0

Part 3 Subtotal _____ points (out of 12 points)

Transfer these points to 'Scoring Your Neighborhood and Transit Sites' section below.

Scoring Your Neighborhood and Transit Sites

Part 1 Subtotal _____ points (out of 25 points)

Part 2 Subtotal _____ points (out of 13 points)

Part 3 Subtotal _____ points (out of 12 points)

GRAND TOTAL _____ points (out of 50 points)