SUNNYSLOPE NEIGHBORHOODS

PHOENIX TRANSPORTATION 2050

A MOBILITY IMPROVEMENT PROJECT

PHOENIX MOBILITY STUDY

Mobility Assessment Area #12

DRAFT - Current Conditions Report

October 2018

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CHAPTER 1: INTRODUCTION

Purpose & Need

The City of Phoenix (City) has demonstrated a commitment to create better neighborhoods and a more livable city, and one of the major goals is to improve the city's transportation. On August 25, 2015, Phoenix voters approved the Transportation 2050 (T2050) plan which places emphasis on street needs including street maintenance, new pavement, bike lanes, sidewalks and Americans with Disabilities Act (ADA) compliance and accessibility.

A separate T2050 Mobility Improvements Program was established as a distinct element to implement additional projects that increase ADA accessibility and mobility through construction of new sidewalks and multimodal connectivity through this provision of new bicycle facilities and enhanced pedestrian amenities. The T2050 Mobility Improvements Program has allocated 15% of the T2050 funds for mobility projects. Phoenix Street Transportation staff analyzed 11 datasets to determine geographic areas of the community with the greatest mobility deficiencies and needs. After collection of all datasets, staff combined the data into a heat map, which acknowledged and ranked the 40 priority areas to move forward for additional analysis. The Citizens Transportation Commission approved the top 11 priority study areas to be part of the first of four phases of Mobility Study Areas.

The primary purpose of the mobility study is to complete a mobility gaps analysis based on available data and information from previous area studies. The gaps analysis will lead to identification of a prioritized list of mobility improvements for presentation to the public for feedback at a public meeting. Upon receipt of project feedback, projects will be re-prioritized if necessary, and design, right-of-way, and construction schedule and cost estimates will be developed by the project team.

Study Objectives

The objective is to scope and prioritize sidewalk, bike facility, mid-block crossings, and other improvements that will improve walking and biking to key destinations within and adjacent to the study area. Upon completion of the study, identified and prioritized mobility projects will be considered for inclusion in a 5-Year T2050 Mobility program of projects for design and construction.

Ultimately, the goal of the various mobility studies is to develop and recommend mobility solutions that will improve the safety, accessibility, and multimodal connectivity for all users, regardless of age or ability, to places of employment, schools, markets, and recreational opportunities.

Mobility Assessment Area #12 Overview

Illustrated in **Figure 1**, the T2050 Mobility Assessment Area #12 (MA 12) is approximately 7 miles north of Downtown Phoenix between Interstate 17 (I-17) and State Route 51 (SR-51). MA 12 is generally bounded by Mountain View Road and North Mountain to the north, Northern Avenue to the south, 12th Street to the east, and 7th Avenue to the west. MA 12 falls within the Sunnyslope community which is most notably known for the white "S" landmark on North Mountain near Central Avenue and Hatcher Road (Picture 1). Sunnyslope is located in the City of Phoenix North Mountain Village.

The Sunnyslope community has historical relevance dating back to the turn of the 20th century when the first neighborhood was platted in 1911. Many of the original frontiers to the area were seeking the arid climate to aid their recovery form tuberculosis, rheumatism, asthma and other various diseases. One such resident was John C. Lincoln who relocated from Ohio to treat his wife's tuberculosis. The family immediately became a beacon of light for the community offering a faith-based medical services for the neighborhood, eventually evolving into the John C. Lincoln Health Network which remains as the area's largest employer.

In the late 1940s, after World War II, the community really boomed. Many small businesses, churches and schools were established. The older neighborhoods contribute a historic character of the area, but also create opportunities for needed rehabilitation and upkeep in select areas.

The Arizona Canal (or Grand Canal) is the most notable transportation feature within MA 12, virtually bisecting the study area as it traverses though the middle of the study area. The area to the north of the canal includes a broader mix of older homes and higher density of residential and non-residential uses. By contrast, the collection of neighborhoods south of the canal are predominately larger lot, single family homes with more favorable property values and socio-demographics than the areas north of the canal. The canal is an excellent source of regional connection for bicyclists and pedestrians. However, the canal also acts as physical barrier negatively effecting local mobility and connectivity. Within the study area, there are only five locations that cross over or under the canal, which are all exclusive to major roadways only including 7th Avenue, Dunlap Avenue, Central Avenue, 7th Street, and 12th Street.

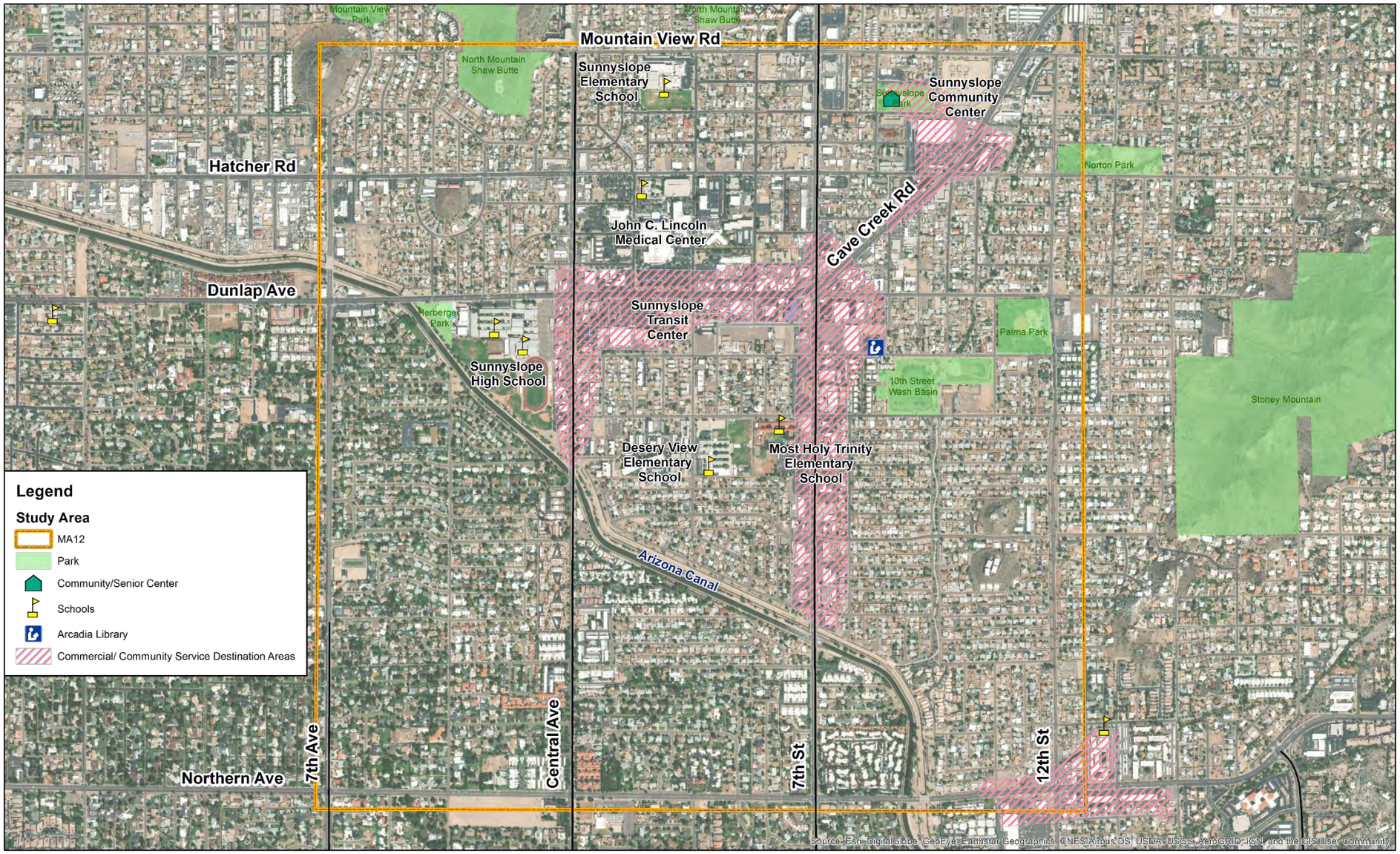
There are many different education facilities within MA 12 including four schools and a community center. These locations are major destinations which typically attract a high

volume of multimodal users, thus exacerbating the importance of mobility and connectivity issues in MA 12. As Illustrated on **Figure 1**, the schools include Sunnyslope High School, Sunnyslope Elementary School, Desert View Elementary School, and Most Holy Trinity Elementary/Pre-school. In addition, the Sunnyslope Community and Senior Center is located in the northeast area of MA 12 and is one of the most significant destinations within the MA 12 study area.

There is significant concentration of commercial development along Dunlap Avenue between 7th Street and Central Avenue that attract frequent multimodal visitors from the adjacent neighborhoods, particularly the Sunnyslope Transit Center located south of Dunlap Avenue on 3rd Street. Other neighborhood commercial cores include Central Avenue between the Grand Canal and Dunlap Avenue, and 7th Street from the Grand Canal to Hatcher Road. Cave Creek Road offers an interesting mix of commercial and industrial uses hosting the area's largest grocery store and is main thoroughfare for automobiles presenting a challenging barrier for pedestrians and bicyclists.

MA 12 includes six parks within the study area with five additional parks located on the outskirts. All six parks within the study area are located north of the Grand Canal which include Herberger Park, 10th Street Wash Basin Park, Palma Park, Norton Park, and Sunnyslope Park. Stoney Mountain Park and The Phoenix Mountain Preserve/Park are regional parks located east of MA 12 which attract recreational users from all over the valley. All of the parks within and around MA 12 generate multimodal activity so ensuring safe and convenient access to and from these parks will be essential.

Figure 1: Mobility Area #4 Study Area



Source: City of Phoenix

CHAPTER 2: REVIEW OF PERTINENT ENGINEERING, PLANNING AND POLICY DOCUMENTS

In order to develop a successful and effective plan for the City, understanding the previous planning efforts is important. Prior to this planning process several plans, studies, and reports have been completed that impact MA 12. A total of six completed or ongoing plans, studies or reports are summarized in **Table 1.** The table identifies the title of the report, the type of report and the year the report was published. The following pages directly describe the document contents and their relevance to this study.

Table 1: Review of Pertinent Engineering, Planning and Policy Documents

Title	Type	Year
2015 Phoenix General Plan	General Plan	2015
City of Phoenix Comprehensive Bicycle Master Plan	Master Plan	2014
City of Phoenix Complete Street Policy	City Policy	2017
MAG Complete Streets Guide	Design Guide	2011
NACTO Urban Street Design Guide	Design Guide	2013
NACTO Urban Bikeway Design Guide	Design Guide	2014
Sunnyslope/AZ Canal Demonstration Area Master Plan	Master Plan	1992
Hatcher Road Overlay District (7th St to 7th Ave.)	Zoning Overlay District	2008
Royal Palm Neighborhood Special Planning District Plan	Zoning Overlay District	1999
Tree and Shade Master Plan	Master Pan	2010

City of Phoenix General Plan

The City of Phoenix General Plan provides the vision and policies that determine Phoenix will grow and develop. This plan was updated in 2015 and addresses topics such as land use, zoning, housing, neighborhoods, transportation, environmental, natural resources, energy, and public facilities.

The PlanPHX Leadership Committee and staff identified Five Core Values (**Figure 2**) that will help achieve the Vision and embed the Community Benefits into the city. This effort begins and ends with the residents of Phoenix. These Core Values will provide the framework for the policy portion of the updated General Plan and serve as the new principles for growth and development in the city. Each of the Core Values addresses Phoenix's many assets. By building on and ultimately expanding these assets Phoenix will employ an asset-based approach to community development. This approach enhances Phoenix residents' connectivity to the benefits that all these assets provide, and further enhances Phoenix's unique character and identity.

Figure 2: 5 Core Values of PlanPHX

Source: City of Phoenix General Plan

City of Phoenix Comprehensive Bicycle Master Plan

The purpose of the City of Phoenix Comprehensive Bicycle Master Plan is to establish a direction to transform the city into a bicycle-friendly community over a 20-year timespan. The goal is to improve levels of bicycle friendliness, as defined by the League of American Bicyclists' Bicycle Friendly Communities program. Phoenix received an Honorable Mention in 2011, but the next goal is a Bronze Award, and then progressing up to the Platinum level as the projects recommended out the Bicycle Master Plan are implemented over time. The approach of the master plan, depicted **Figure 3**, called for a prioritization of corridors into the three separate tiers. The following recommendations specific to the Sunnyslope area were found within the Bicycle Master Plan:

- Central Ave. from Mountain View Rd. to South Mountain Park (Mountain View to Bethany Home – proposed bike route and shared lane markings);
- Mountain View Rd. from Cave Creek Rd. to 12th St. (proposed bike lanes);
- 12th St. from Mountain View Rd. to Sunnyslope Ln. (proposed bike lanes);
- Extend bike lanes into 12th St./Dunlap Ave, 12th St./Butler, and 12th St/Northern intersections; and
- Add wayfinding signs to the AZ Canal Trail; extend bike lanes into Cave Creek/Hatcher and Cave Creek/Mountain View intersections

The following information describes the projects for each of the three prioritization tiers:

1. Completion of Tier I corridor projects will add 32 miles of bikeways and improve bicycle safety and mobility through 50 intersections. The planning level in-house cost estimate to implement these projects is $4,031,000.
2. Completion of Tier II corridor projects will add 33 miles of bikeways, make an important connection across the I-17 freeway, and improve bicycle safety and mobility through 108 intersections. The planning level in-house cost estimate to implement these projects is $14,008,000. An additional $9,320,000 would be invested to pave the Grand Canal Trail.
3. Completion of Tier III corridor projects will add 55 miles of bikeways and improve bicycle safety and mobility through 125 intersections. The planning level in-house cost estimate to implement these projects is $10,798,000. An additional $14,550,000 would be invested to pave the Arizona, Highline, Western, and CAP Canal Trails.

Figure 3: Iterative Approach to Using the Bicycle Corridor/Project Prioritization Methodology

Source: City of Phoenix Comprehensive Bicycle Master Plan

City of Phoenix Complete Streets Policy

On June 28th, 2017, the City Council adopted the City of Phoenix Complete Streets Policy to further advance its goals to create a more sustainable transportation system that is safe and accessible for all users. Complete streets provide an environment that encourages walking, bicycling, transportation choices and increased connectivity.

Through this policy, the primary focus of street design will no longer be solely on the speed and efficiency of automobile travel, but on the safety and comfort of all users of the public right-of-way (ROW).

When designing, constructing and improving rights-of-way, including those in MA 12, City staff will incorporate this Policy to ensure the City's rights-of-way:

- Are planned, designed, constructed, operated, and maintained with the ultimate goal of serving a variety of transportation modes
- Will contribute to active transportation and public health
- Accommodate transportation users of all ages and abilities
- Are economically and environmentally sustainable
- Are designed to be compatible with the surrounding contexts and connecting transportation networks
- Comply with state and federal law and City code and Ordinance S-41094
- Follow the Complete Streets Planning and Design Principles which will be integrated into the Street Transportation Design Guidelines
- Provide new or improved connectivity between all transportation modes and adjacent land uses.

Figure 4: Example of Complete Street in Phoenix

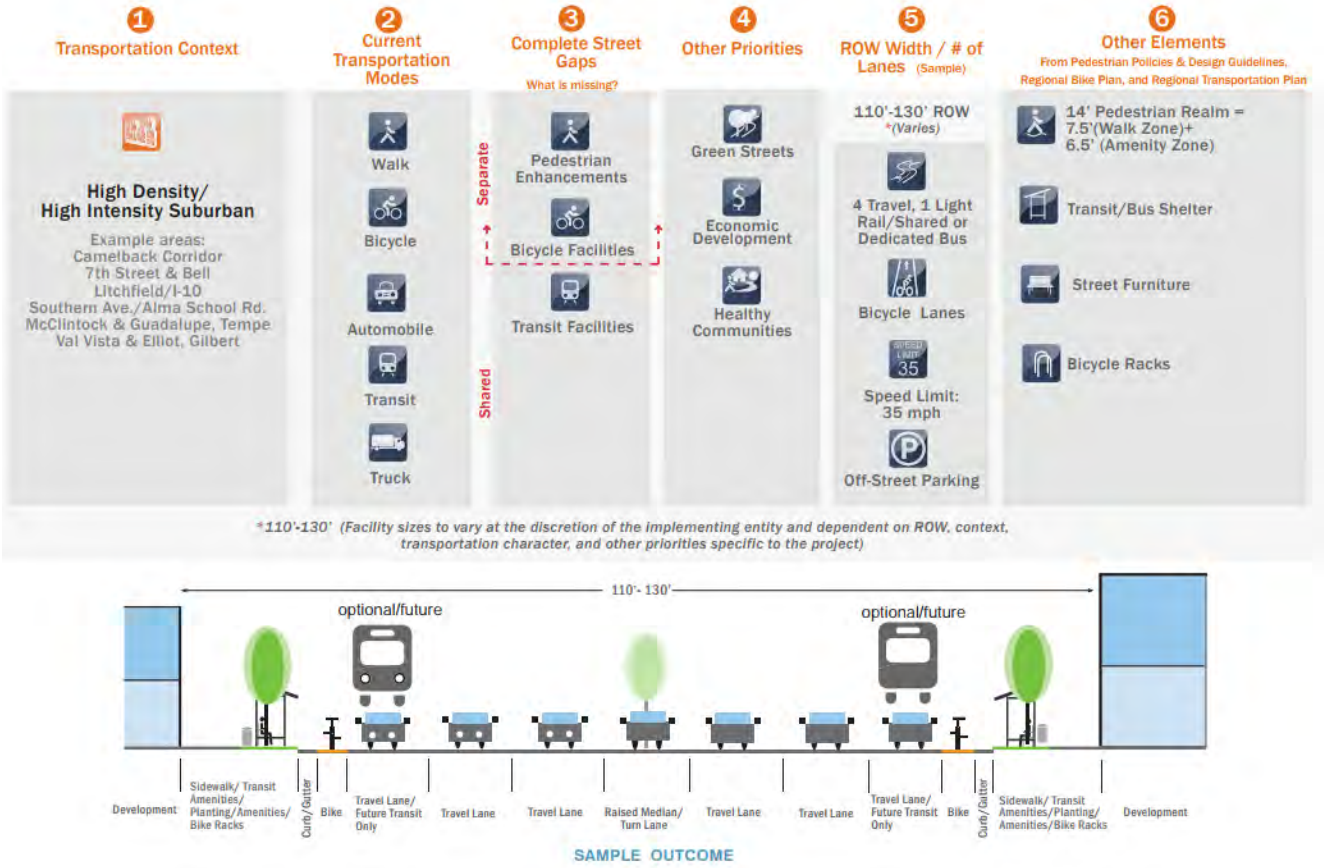
Source: City of Phoenix Complete Streets Initiative

Maricopa Association of Governments (MAG) Complete Streets Guide

The MAG Complete Streets Guide is a step to ensuring that facilities for bicycles, pedestrians, and transit are recognized as integral to a properly designed and functioning street. This policy guide provides sample outcomes, examples of best practices, and policy guidance to help ensure that all new and retrofitted streets in the MAG region serve as many transportation modes as practical and possible. The MAG Complete Streets Guide includes on information on the benefits of Complete Streets, what the MAG region is trying to accomplish with this Guide, how to plan a Complete Street in the MAG region, Complete Street plans and policies in other locations, and how to implement this Guide.

Portions of MA 12 would be categorized as both High Density/High Intensity Urban and Suburban Context, so planning techniques for those development contexts will be used in conjunction with the City's Complete Streets Policy when developing the framework for recommendations related to complete streets within Study Area.

Figure 5: Complete Street Planning Process for High Density/Intensity Suburban Context



Source: Maricopa Association of Governments Complete Streets Guide

NACTO Urban Bikeway Design Guide

The purpose of the Urban Bikeway Design Guide published by National Association of City Transportation Officials (NACTO) is to provide cities with state-of-the-practice solutions that can help create complete streets that are safe and enjoyable for bicyclists. The designs in this document were developed by cities for cities, since unique urban streets require innovative solutions. Most of these treatments are not directly referenced in the current version of the AASHTO Guide to Bikeway Facilities, although they are virtually all (with two exceptions) permitted under the Manual of Uniform Traffic Control Devices (MUTCD).

MA 12 is located in an Urbanized area. The design parameters referenced in the Urban Bikeway Design Guide shall be recognized in conjunction with City of Phoenix and MAG policy guidance during the design of the bike infrastructure for this corridor.

Figure 6: Example of a Buffered Two-Way Cycle Track

Source: NACTO Urban Bikeway Design Guide

NACTO Urban Street Design Guide

The NACTO Urban Street Design Guide shows how streets of every size can be designed to focus on safe driving and transit, biking, walking, and public activity. Unlike older, more conservative engineering manuals, this design guide is graphic oriented and has an emphasis on urban streets as public places and have a different function within communities' other than exclusively being corridors for traffic.

This Guide will be the toolbox and unveil tactics to use to make streets safer, more livable, and more economically vibrant in MA 12. The Guide outlines both a clear vision for complete streets and a basic road map for how to bring them to fruition during the planning process.

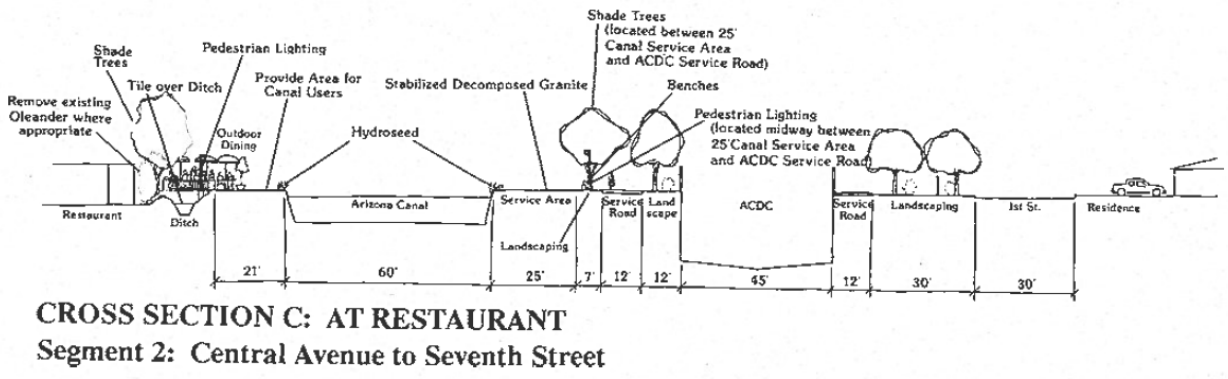
Figure 7: Conceptual Design of a Raised Intersection

Source: NACTO Urban Street Design Guide

Sunnyslope/AZ Canal Demonstration Area Master Plan

The Sunnyslope/AZ Canal Demonstration Area Master Plan was adopted in 1992 with the purpose of creating a plan along the Arizona Canal as the city was pursuing the potential of canals as linear transportation corridors and as places of community pride. The mission of the project team was to investigate and prepare plans for demonstration sites along the canal banks within Phoenix which can be developed as areas of recreational and commercial uses. The Sunnyslope Canal Bank Plan was the first one of these canalscape master plans to be completed while four other canal demonstration plans were being conducted. The boundaries of the plan were from Dunlap Avenue and 3rd Avenue to Northern Avenue and 10th Street with an approximately length of 1.5 miles. The Sunnyslope area was chosen as a canal bank demonstration area because its adjacency to the Sunnyslope Core, parallels to the Arizona Canal Diversion Channel (ACDC), a center for recreation activity, and a unique scenic area with manmade and natural features. The plan concluded with a long list of recommended improvements ranging from major streets improvements at adjacent intersections, to canal bank improvements such as planting shade trees and other pedestrian-scale improvements like lighting, benches and trash receptacles. **Figure 8** is a cross section showing the improvements of the Canal near Central Avenue. The improvements were planned to be implemented in two phases with a total cost of approximately $1,994,200 (1992 dollars). **Figure 9** summarizes the phasing improvements of the Sunnyslope/AZ Canal Demonstration Area Master Plan

Figure 8: Proposed Arizona Canal Recommendations at Central Avenue



CROSS SECTION C: AT RESTAURANT
Segment 2: Central Avenue to Seventh Street

Figure 9: Summary of Phasing Improvements

TABLE 1

SUMMARY OF PRELIMINARY ESTIMATED COSTS OF IMPROVEMENTS AND RECOMMENDED PHASING

PHASING IMPROVEMENTS

IMPROVEMENTS	FIRST PHASE	LATER PHASE	COST *
Major Street Intersections			
Seventh Street	X		35,000
Dunlap Avenue	X		34,000
Northern Avenue	X		30,000
Central Avenue	X		47,500
Local Streets and Alleys Intersections		X	25,000
Embankment South Bank Trees	X		75,600
Shrubs	X		109,600
Lateral Piping, Vehicle Ramp/Restaurant	X		138,300
Linkage of Shade Trees (ACDC Trail)	X		64,800
Shrubs and turf	X		80,400
Dust-Control Material	X		85,300
Pedestrian Bridges		X	227,600
Canal Bank Signage			
Auto Canal Notification		X	3,600
Canal User	X		900
Orientation Center	X		18,000
Education Center		X	Arts Commission
Hydroseeding	X		4,500
Pedestrian Solar Lighting	X		316,000
Public Telephones			Installed by U.S. West
Picnic Tables	X		18,000
Benches	X		26,400
Trash Receptacles	X		10,800
Water Fountains	X		4,800
SRP Well Site Improvements	X		5,000
Herberger Park Improvements		X	Arts Commission Project
Restaurant Improvements	X		Private Funds
Vacant Public Property (Ruth and Central)		X	Private Funds
Public Alley -- Garden		X	Private Funds
Sunnyslope High School Garden		X	Private Funds
SRP Canal Maintenance Ramps	X		60,000
Wrought Iron Fence along School		X	33,000
Irrigation System	X		79,900
Totals	1,244,800	289,200	
	* 1,618,240	* 375,960	

* A 30% Design, Construction and Administration Cost is added to the Capital Costs, which include materials and labor. These costs are estimates developed by City staff based on research completed from other projects. No detailed project specifications have been prepared or bids solicited.

The annual maintenance costs are estimated to be approximately $76,320 for both phases.

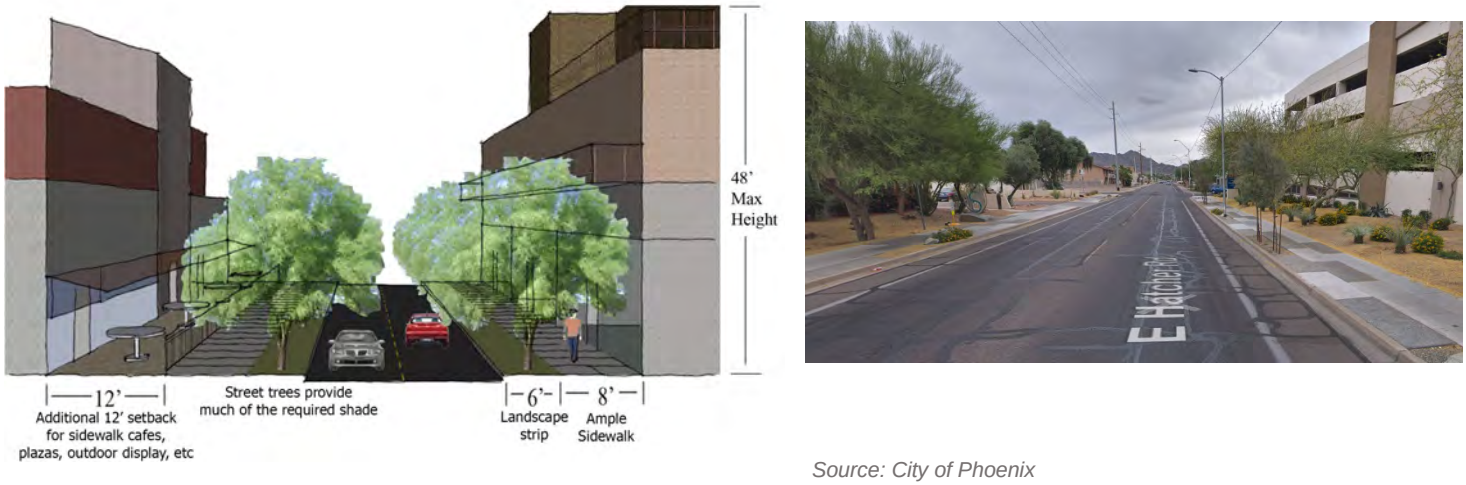
Hatcher Road Overlay District (7th St to 7th Ave.)

The Hatcher Road Overlay (HRO) District is intended to improve the long term economic vitality and appearance of one of Sunnyslope's main corridors and to assist the street's transition to a pedestrian-friendly residential and commercial destination. The Hatcher Road Overlay:

- Provides a mechanism to improve the streetscape for Hatcher Road with wider sidewalks and shade;
- Allows development flexibility for both vacant sites and existing businesses; and,
- Promotes opportunities for mixed-use development.

The HRO applies to properties fronting on both sides of Hatcher Road between 7th Street and 7th Avenue. An overlay zone is a special purpose zoning district that is superimposed over existing zoning districts, with specified requirements in addition to, or in place of, those that are otherwise applicable to the underlying (original) zones. The HRO District establishes guidelines to permit a creative mixture of uses, flexibility in design standards, and encourages mixing residential and business activities in hopes of creating a pedestrian oriented development. **Figure 10** shows a graphic representation of a proposed Hatcher Road and the current condition of Hatcher Road.

Figure 10: Hatcher Road Recommendations and Hatcher Road Today



Source: City of Phoenix

Royal Palm Neighborhood Special Planning District

Special Planning District (SPD) is a neighborhood plan and zoning overlay district designed to help neighborhoods identify and implement programs and actions that will help conserve or revitalize their area. As shown in **Figure 11**, the Royal Palm Neighborhood is just outside of the MA 12 study area, bounded by 7th and 19th Avenues, from Northern to Dunlap Avenues. The residents' vision for the Royal Palm neighborhood is to provide a safe, clean, well-maintained neighborhood where people of any age or race can enjoy security, leisure time activity, and social interaction as well as privacy. To achieve the vision, residents identified seven goals stated at the time of the SPD initiation, which included.

1. Ensuring appropriate land use;
2. Maintaining all current zoning;
3. Developing a stronger sense of community and identity as a neighborhood;
4. Strengthening communications among neighbors;
5. Providing safe circulation for pedestrians, cyclists, skaters, equestrians, children and vehicles;
6. Bringing an appropriate focus to the Royal Palm Park as a core asset of the neighborhood; and,
7. Continuing to strengthen relations between residents and businesses around our neighborhood.

As part of the planning process, a neighborhood workshop was conducted where residents identified a series of goals and objectives relating to land use/zoning, traffic, and crime/ safety. The following circulation goals and objectives are related to MA 12:

Circulation Goal:

That pedestrian, vehicular and trail access throughout the Royal Palm Neighborhood will provide safe access around and about the neighborhood, Royal Palm Park and adjacent commercial areas, while providing linkages to the Arizona Canal.

Circulation Objectives:

1. The City's Street Transportation Department should analyze traffic circulation and development programs that will reduce cut-through traffic, speeding and unsafe traffic conditions.
2. The Royal Palm Neighborhood should investigate mitigation measures, through the City's traffic mitigation program, that reduce cut-through traffic, speeding and accidents.
3. The City should provide a network of bikeways and trails that promote alternative choices to use of automobile and connect activity centers such as Royal Palm

Park, Royal Palm Middle School and commercial uses on the periphery of the SPD.

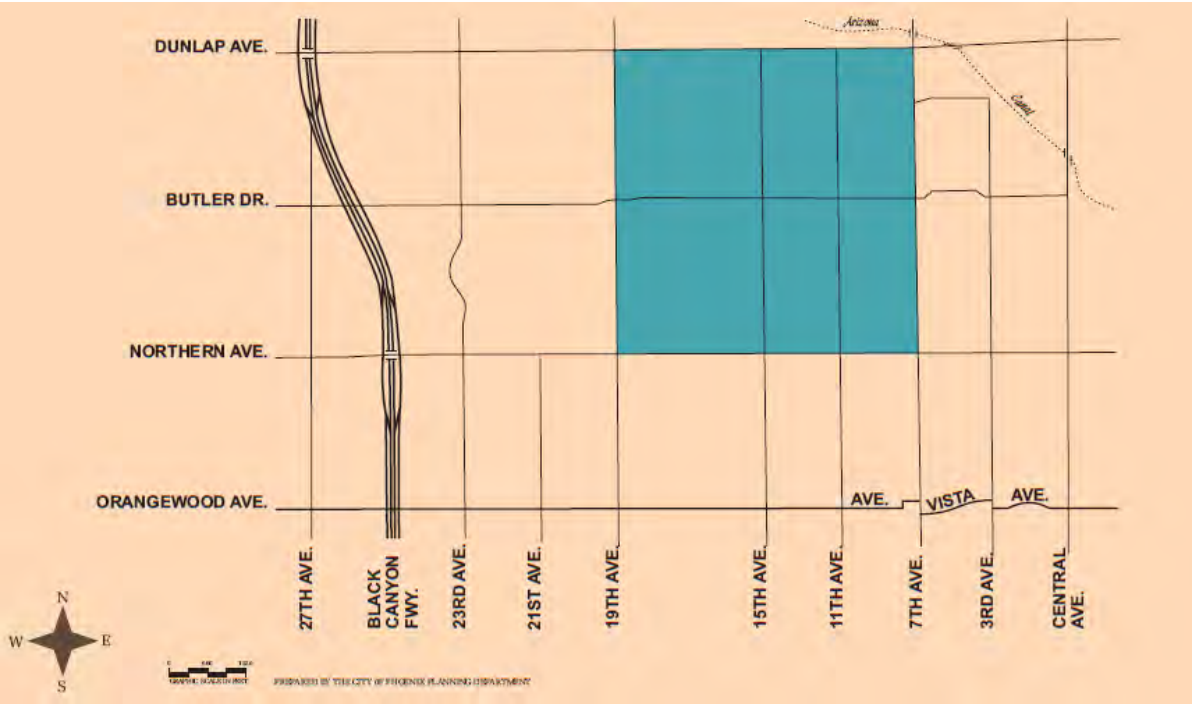
4. The City should discourage the use of 15th Avenue and Butler Drive for cut-through traffic, thereby reducing traffic volumes.

To achieve the circulation goals and objectives described above, City staff and Royal Palm residents agreed on a series of Circulation Policies as a product of the Royal Palm SPD.

Circulation Policies:

1. The Royal Palm Neighborhood Council Association will work with the City's Transportation Department and neighborhoods within the Total Palm SPD to achieve traffic mitigation consensus and implement appropriate traffic calming solutions.
2. Bike lanes will be created with stripping and signage where appropriate.

Figure 11: Royal Palm Neighborhood SPD Study Area



Trees & Shade Master Plan

The Tree and Shade Master Plan presents Phoenix's leaders and residents a roadmap to create a healthier, more livable and prosperous 21st Century desert city. The urban forest is the keystone to creating sustainable infrastructure because it achieves many goals of the city with one single investment – a single tree. Trees create walkable streets and vibrant pedestrian places, and according to the Trees and Shade Master Plan, for every dollar invested in the urban forest results in an impressive return of $2.23 in benefits.

However, creating a more sustainable and leviable city through a trees and shad initiative will require more than just planning and planting trees. The current planting, maintenance and irrigation practices are killing many valuable trees; additionally, these practices waste hundreds of thousands of gallons of water annually. In order to maximize the investment, these practices and many others will have to be addressed. For this reason, the plan focuses on a canopy goal instead of a numerical planting goal. Often, numerical planting goals lead to the wrong tree species being planted in an inappropriate location, resulting in higher maintenance cost and the eventual loss of the tree.

Figure 12: Trees & Shade Master Plan Trajectory of Change

The current state of Phoenix's urban forest is of immediate concern. In order to see the full benefits of the urban forest, a significant long-term investment must be made into its enhancement and maintenance. This plan provides a detailed roadmap to improve and increase the current health of the urban forest resource. As shown in **Figure 12**, known as the trajectory of Change, the plan is organized into three sections: one section for each goal with recommendations and action items for each. The three sections include:

1. Raise Awareness/Educate;
2. Preserve – Protect – Increase; and,
3. Sustainable – Maintainable – Infrastructure.

CHAPTER 3: EXISTING FEATURES INVENTORY

Chapter 3 provides an overview of the existing conditions and features of MA 12. This includes the latest information related to population demographics, existing land use and zoning, housing, property ownership, infrastructure (stormwater, sewer, water, power, gas, and broadband), and transportation facilities. Each of these topics is described in greater detail in this section. The data summarized is this section was either collected through a series of extensive site visits or provided to the project team by the City in electronic format. Where recent data could be collected, supporting figures and tables have been provided.

Existing Land Use & Zoning

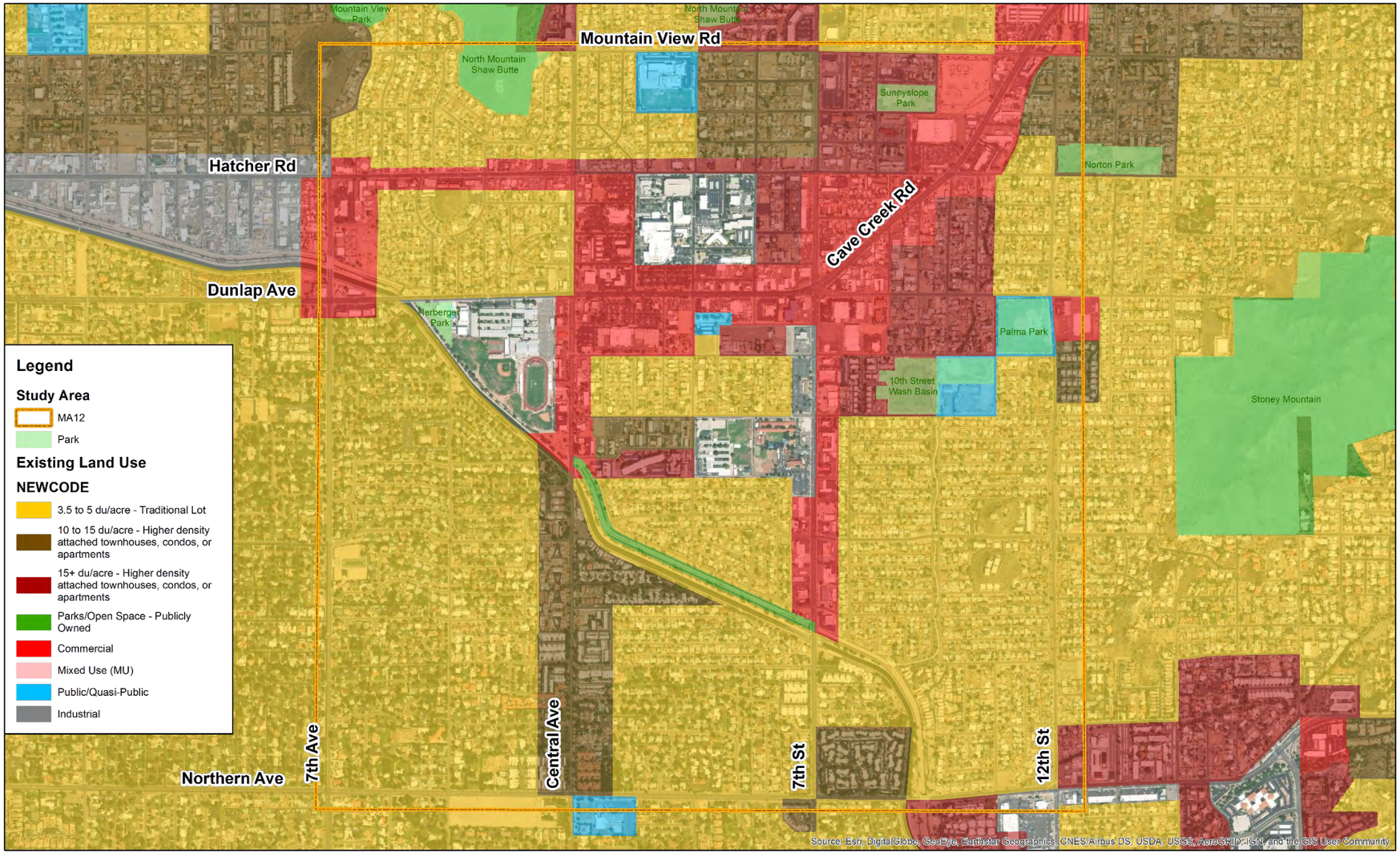
Land Use

The existing land use is reviewed early in the planning process to develop a sense of how various land uses define the character of the planning area. As shown in **Figure 13,** the predominant land use type is traditional single-family residential land use with 3.5 to 5 dwelling unit per acre (du/acre). This is particularly evident in the southwest portion of the study area south of the Grand Canal between 7th Avenue and 7th Street, and in the east part of the study area east of 7th Street. Dunlap Avenue, Hatcher Road, Cave Creek Road, Central Avenue. Non-residential uses include John C. Lincoln Hospital (Sunnyslope's largest employer) and various commercial and community service land uses primarily located along 7th Street and Central Avenue north of the Arizona Canal, Hatcher between Central Ave. and 7th Street, along portions of Cave Creek Road and at 12th Street and Northern Ave. The various Public/Quasi-Public land uses include Sunnyslope High School, Sunnyslope Elementary School, Mountain View Elementary School, and Most Holy Trinity Elementary/Pre-School.

Zoning

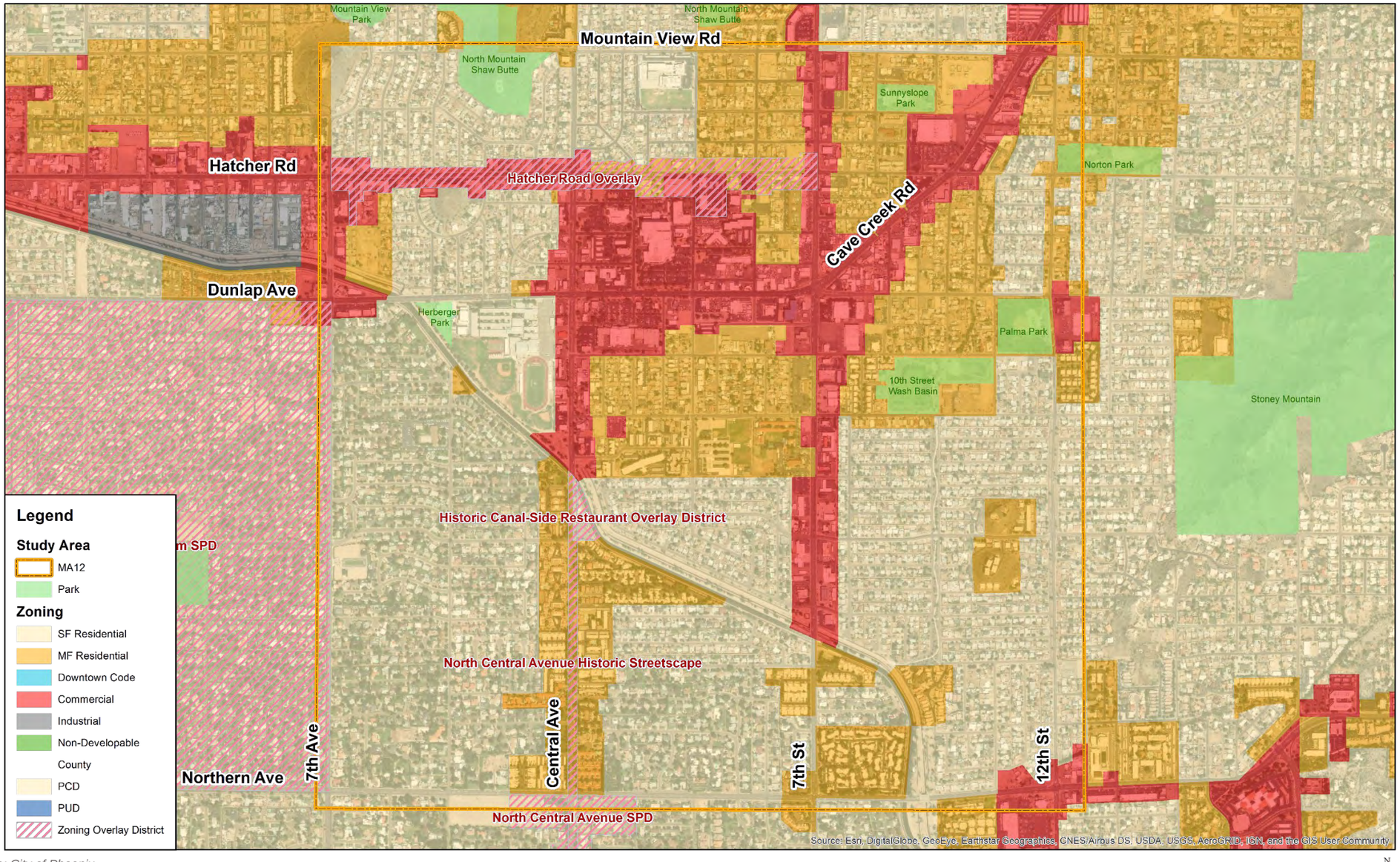
In addition to the early review of existing land uses, existing zoning is also reviewed to understand the regulatory zoning framework that exists and its current and future impact on multimodal trip generation in MA 12. **Figure 14** illustrates the existing zoning within MA 12, indicating the predominant zoning category as Single-Family (SF) Residential. MA 12 has Multi-Family Residential zoning sprinkled throughout the study area located along arterial streets and a concentration in the northeast corner. The commercial zoning pattern is similar to the typical zoning practice adjacent to the major arterial corridors including Dunlap Avenue, 7th Street, Cave Creek Road, and parts of Central Avenue and 7th Avenue. Just outside of MA 12 lies one Industrial zoned area to the west. MA 12 also includes five zoning overlay district, which include, Hatcher Road Overlay, Historic Canal-Side Restaurant Overlay District, North Central Avenue Historic Streetscape, North Central Avenue SPD, and Royal Palm SPD along 7th Avenue and to the west of the study area.

Figure 13: Existing Land Use



Source: City of Phoenix

Figure 14: Existing Zoning



Source: City of Phoenix

City Owned Properties

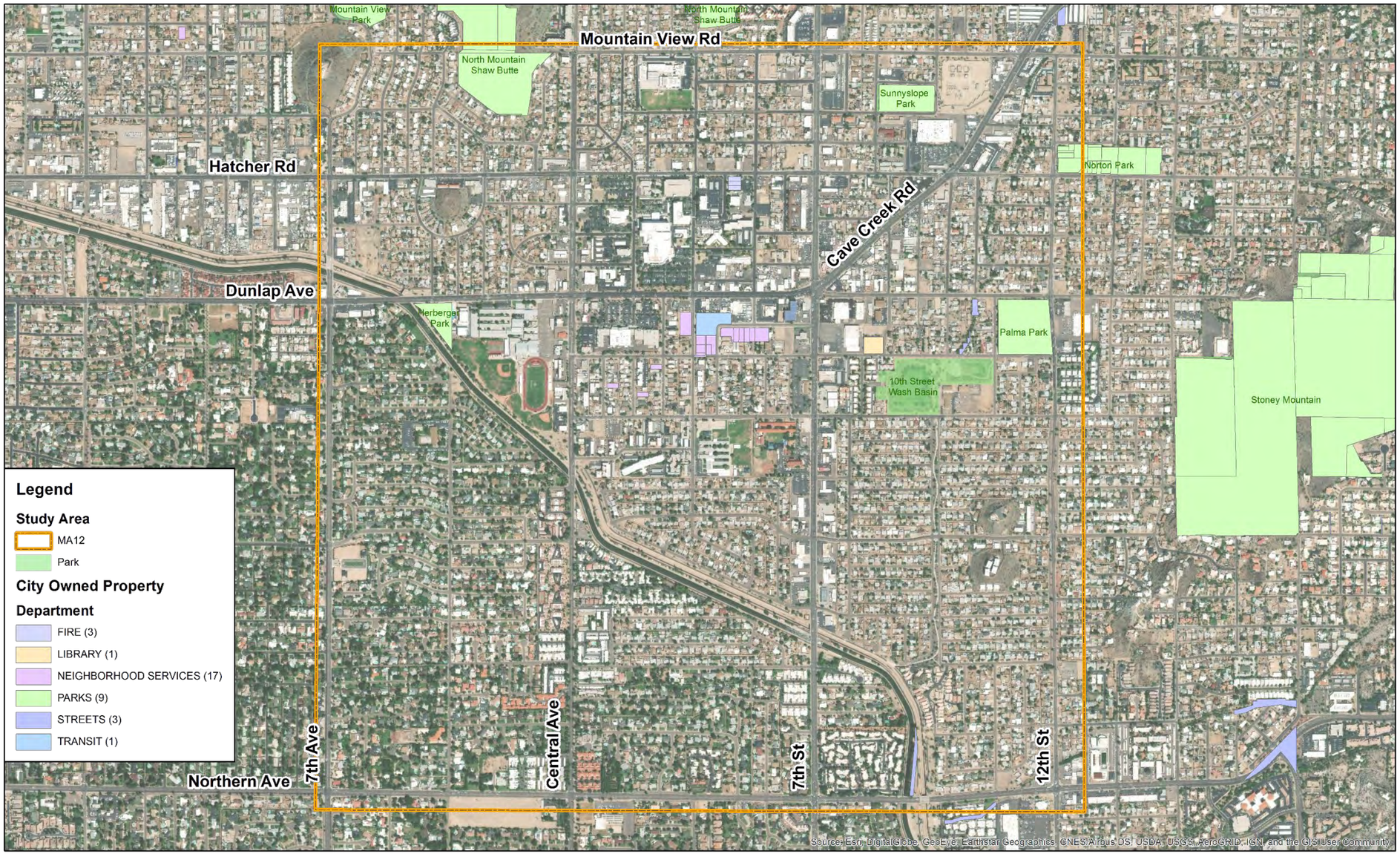
There are 45 city owned properties in MA 12 as shown in **Figure 15**. The properties are owned by various departments for various purposes. There is a concentration of city owned parcels south of Dunlap Avenue between 3rd Street and 7th Street near the Sunnyslope Transit Center and the majority of the parcels are owned by Neighborhood Services Department. The land owned by Neighborhood Services is vacant land which is currently zoned residential. There are three parcels owned by the Streets Department which are all vacant and fairly small in size. One of these three parcels are adjacent to the Grand Canal north of Dunlap Avenue and between 7th and 12th Street. The other two are adjacent to the 10th Street Wash Basin Park.

Major Assets

Assets are the primary destinations and trip generators of the community. These include major employers, schools, historic buildings, community organizations, initiatives, institutions and infrastructure. Asset mapping helps inform the planning process by creating an inventory for preserving, improving or further supporting the areas existing resources. While also identifying where residents and visitors will likely be traveling to and from. The major assets within MA 12 are depicted in **Figure 16** and outlined below:

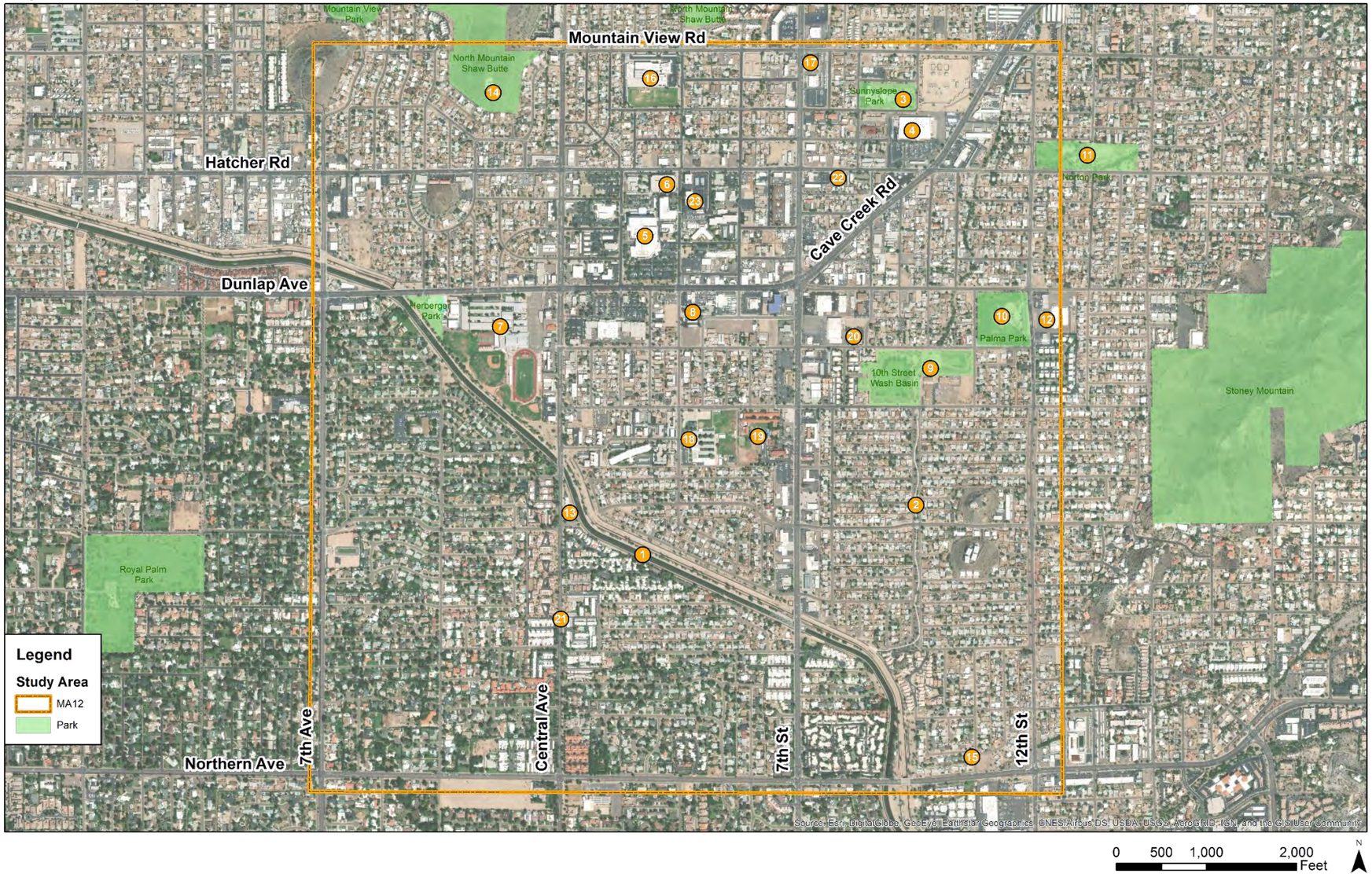
- Grand Canal
- 10th Street Multi-Use Path
- Sunnyslope Community/Senior Center
- Fry's
- John C. Lincoln Health Network
- Wal-Mart
- Sunnyslope High School
- Sunnyslope Transit Center
- 10th Street Wash Basin Park
- Palma Park
- Norton Park
- Let it Bowl
- Spoke & Wheel
- Shaw Butte Park
- Foundation for the Blind
- Sunnyslope Elementary School
- US Postal Service
- Desert View School
- Most Holy Trinity School
- Arcadia Library
- Central Avenue Multi-Use Path
- Sunnyslope Historical Society
- Desert Mission Food Bank

Figure 15: City Owned Parcels



Source: City of Phoenix

Figure 16: Major Assets

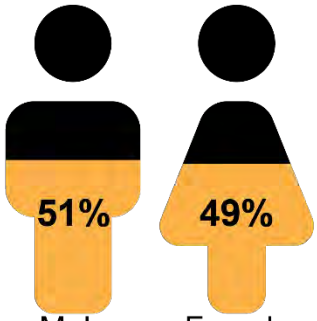


1. Grand Canal
2. 10th Street Multi-Use Path
3. Sunnyslope Community/Senior Center
4. Fry's
5. John C. Lincoln Health Network
6. Wal-Mart
7. Sunnyslope High School
8. Sunnyslope Transit Center
9. 10th Street Wash Basin Park
10. Palma Park
11. Norton Park
12. Let it Bowl
13. Spoke & Wheel
14. Shaw Butte Park
15. Foundation for the Blind
16. Sunnyslope Elementary School
17. US Postal Service
18. Desert View School
19. Most Holy Trinity School
20. Arcadia Library
21. Central Avenue Multi-Use Path
22. Sunnyslope Historical Society
23. Desert Mission Food Bank

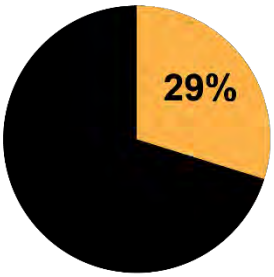
Existing Socioeconomic Conditions in MA 12

his section offers an overview of the demographic, social and economic characteristics of MA 11. The data in used to generate **Figure 17** through **Figure 24** was developed from the MAG Demographic Viewer which generates data from American Community Survey (ACS) conducted by the US Census Bureau

Total Population: 17,972

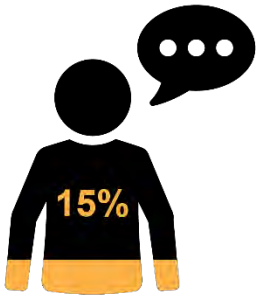


Poverty Status

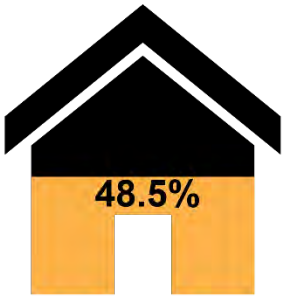


Percent of People with a High School Education

Percent of People with Limited English Proficiency

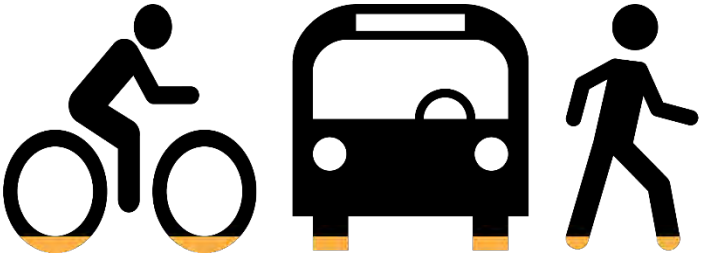


Renter Occupiued Housing Units



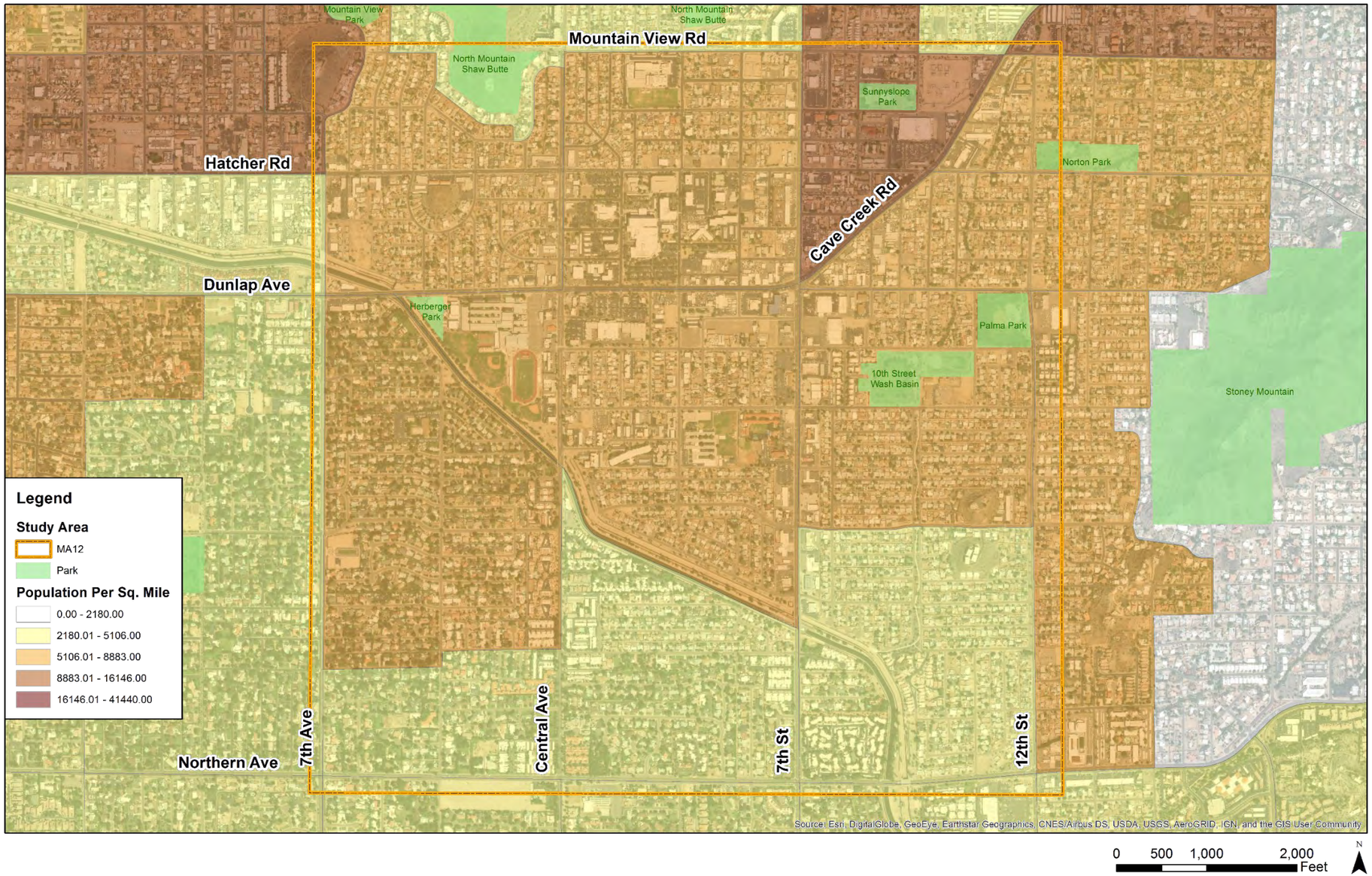
Total Number of Housing Units: 7,006
11.2% Vacant

8% Walk, Bike, or take Public Transit to Work



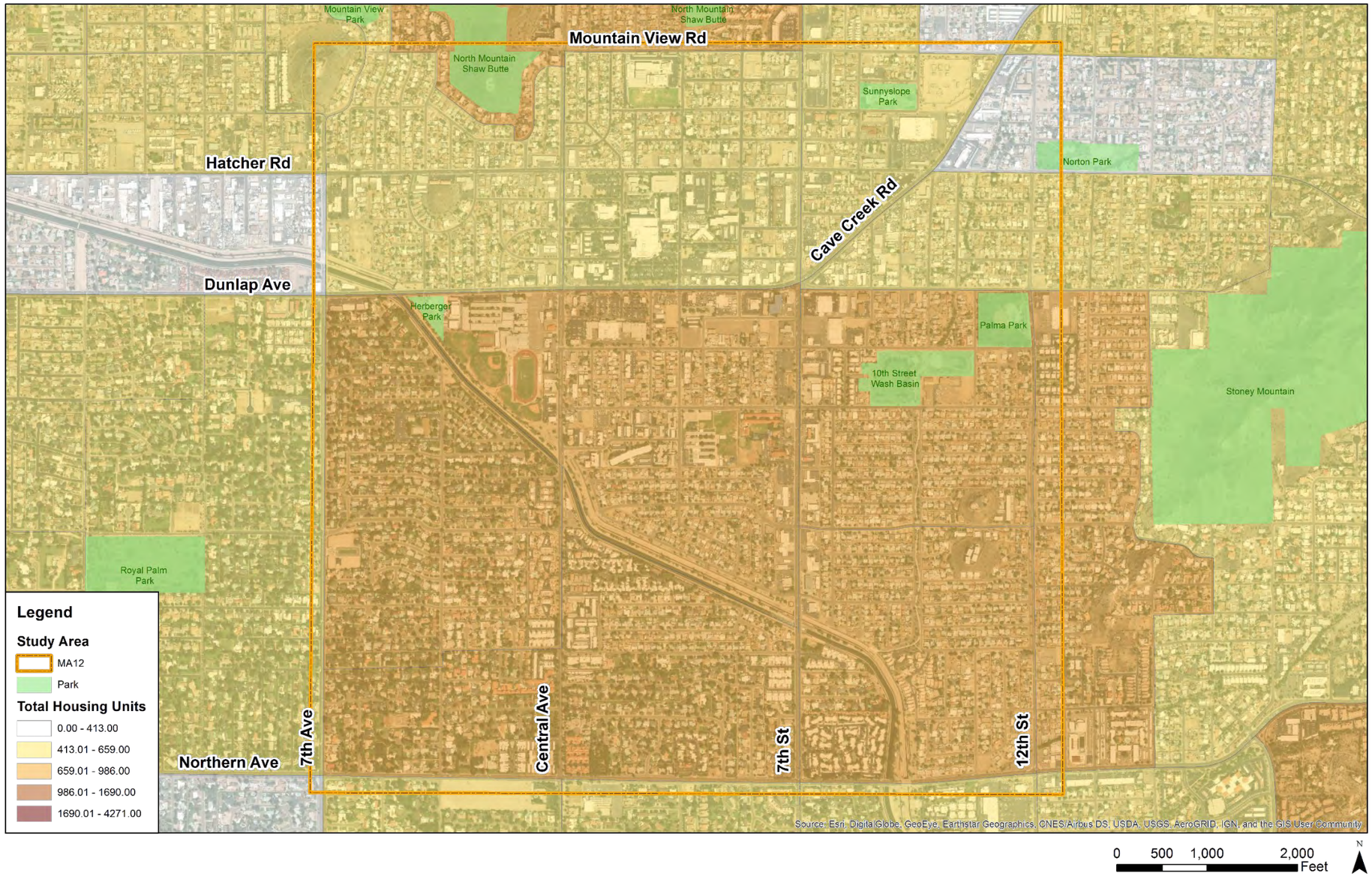
11% Zero-Vehicle Households

Figure 17: Total Population Density (Per Sq. Mile)



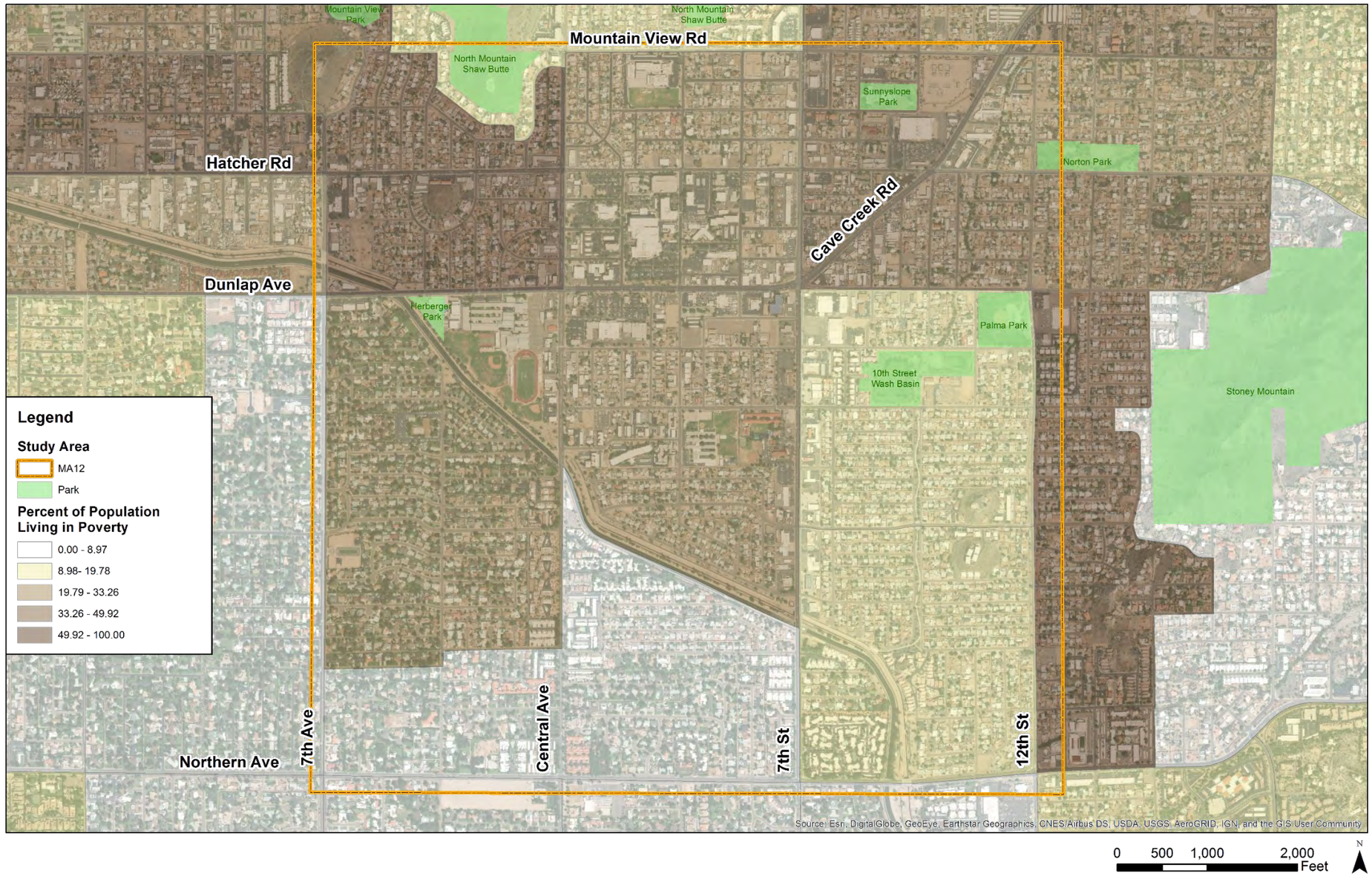
Source: Maricopa Association of Governments

Figure 18: Total Housing Units



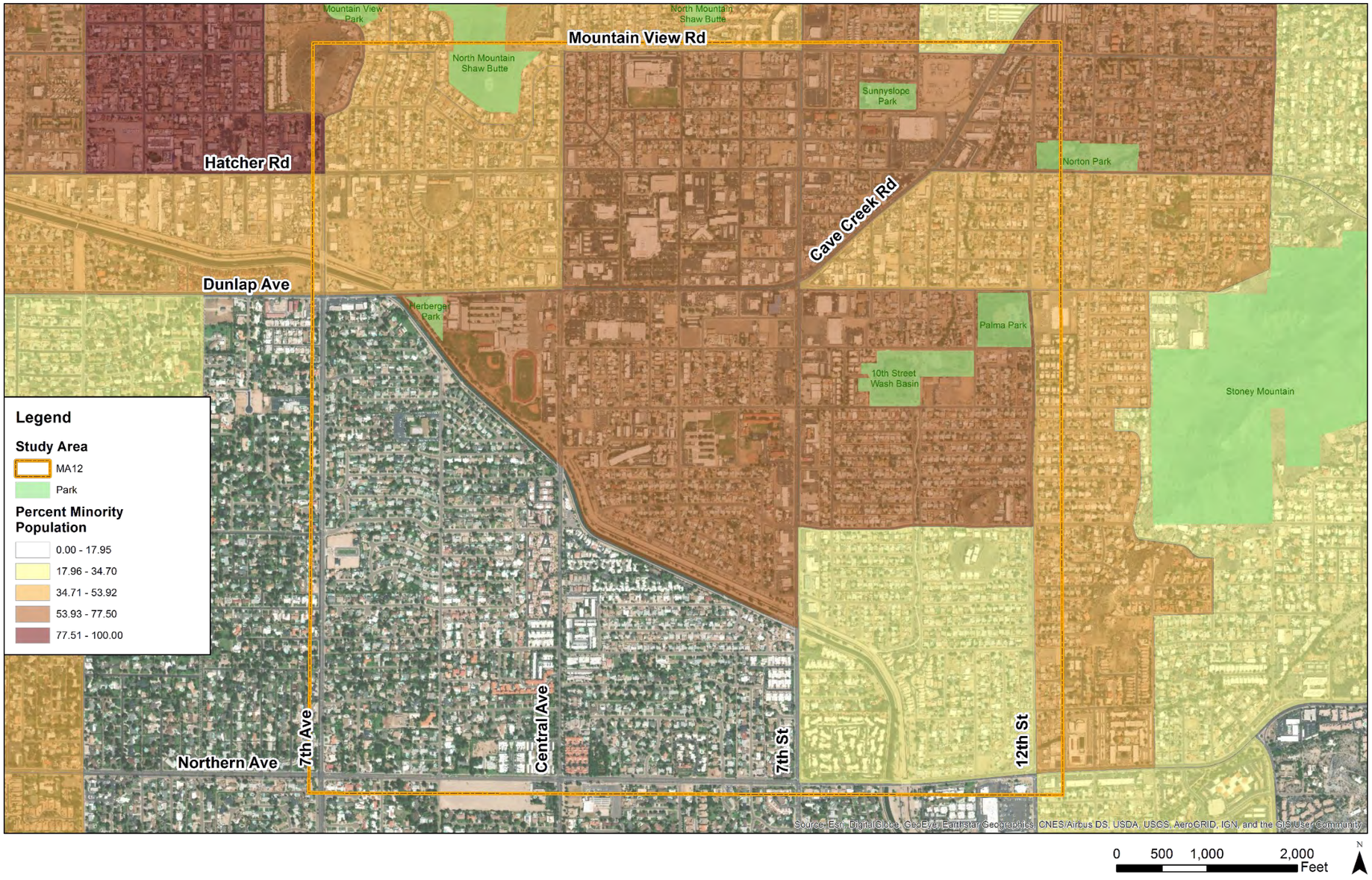
Source: Maricopa Association of Governments

Figure 19: Percent of Population Living Below Poverty Level



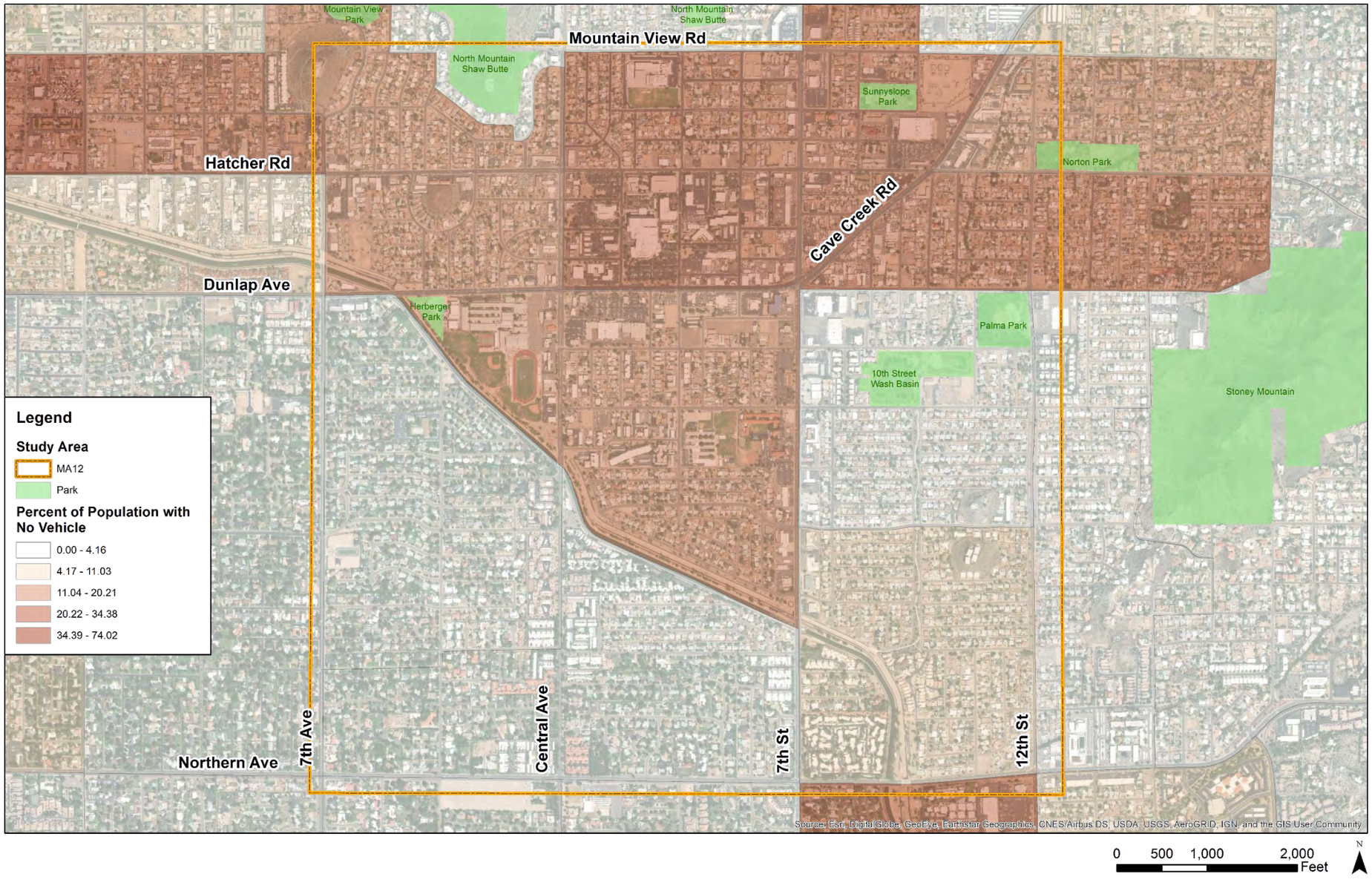
Source: Maricopa Association of Governments

Figure 20: Percent Minority Population



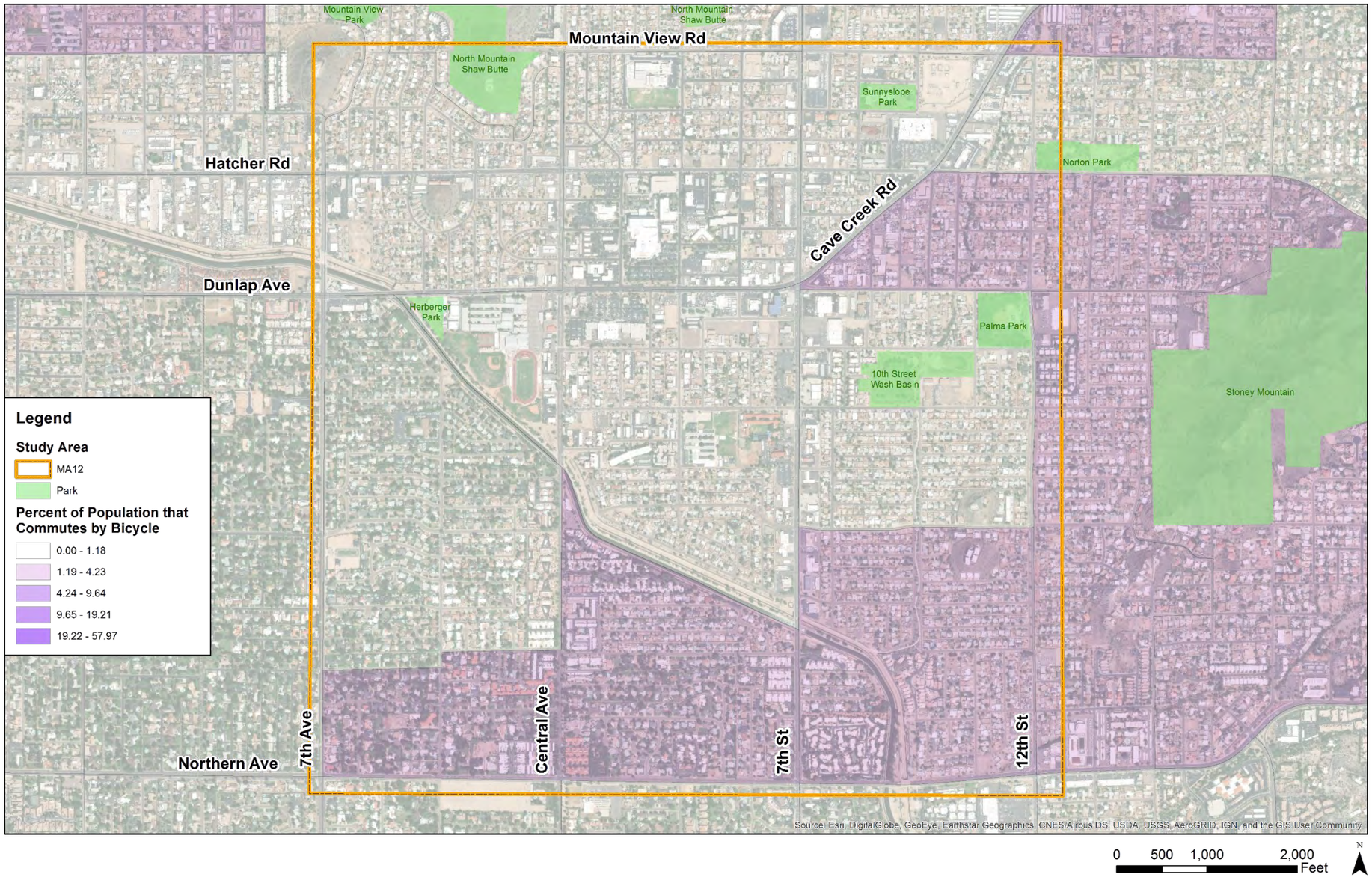
Source: Maricopa Association of Governments

Figure 21: Percent No-Vehicle Households



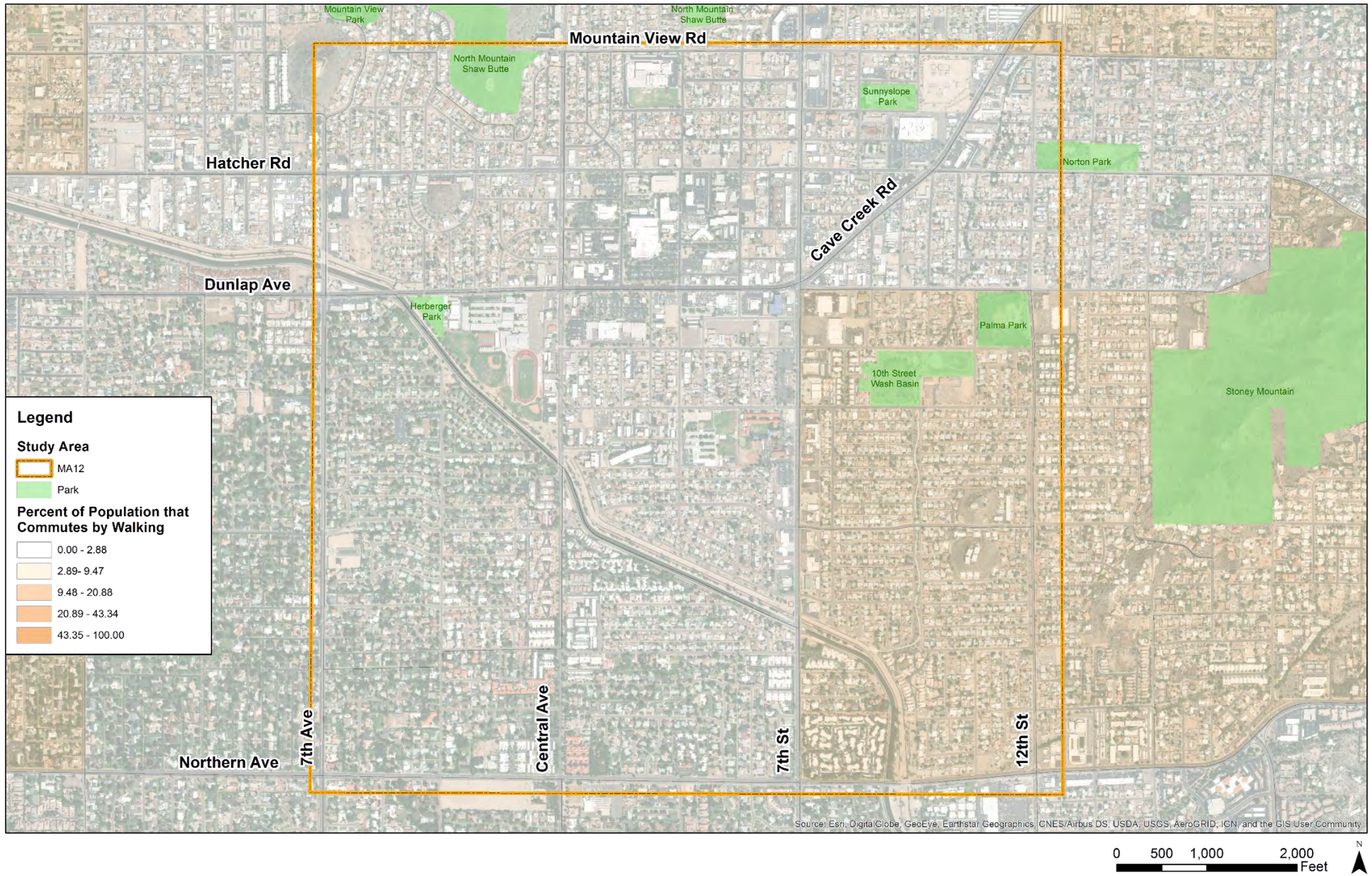
Source: Maricopa Association of Governments

Figure 22: Percent of Population that Bike to Work



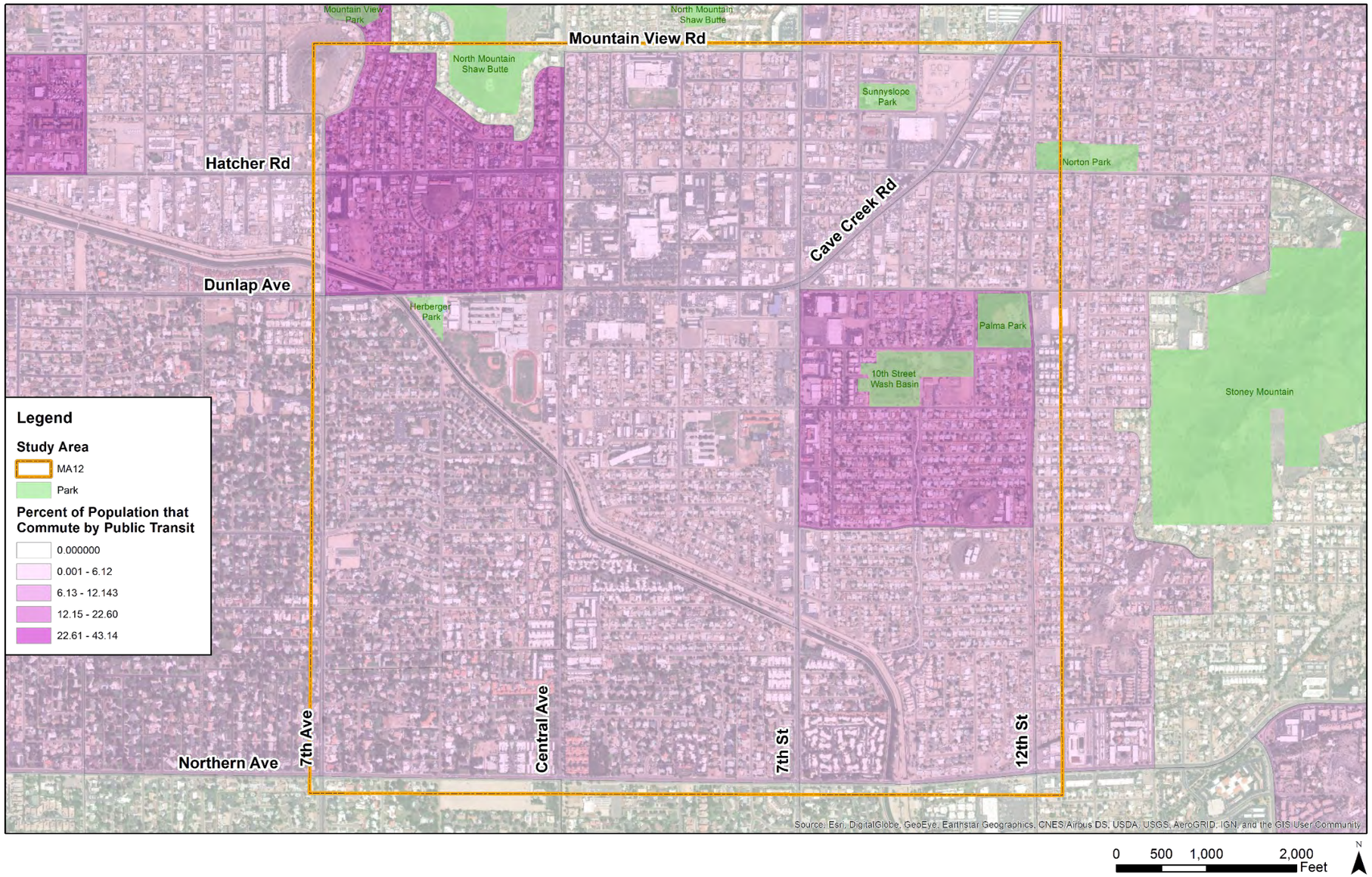
Source: Maricopa Association of Governments

Figure 23: Percent of Population that Walk to Work



Source: Maricopa Association of Governments

Figure 24: Percent of Population that take Public Transit to Work



Source: Maricopa Association of Governments

CHAPTER 4: EXISTING ROADWAY AND TRAFFIC CONDITIONS

The major elements of the existing transportation system in MA 12 are inventoried and documented in this section. The status or existing condition of each element are also summarized and illustrated. Major elements include pavement cross-sections and conditions and non-motorized modes of transportation such as bikeways, sidewalks and transit within MA 12.

Roadway Functional Classifications

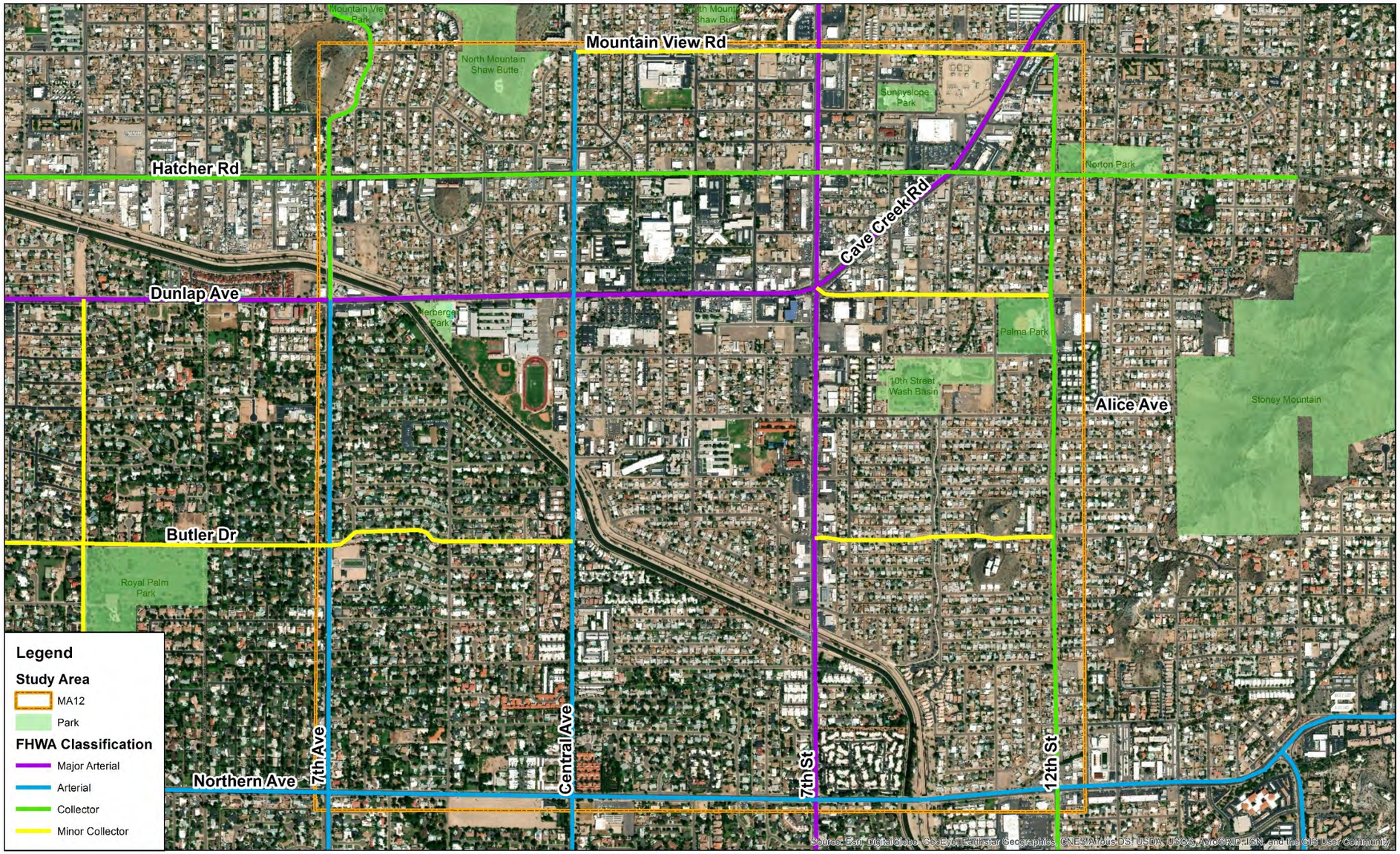
Roadway functional classifications are the grouping of streets and highways into classes according to the level of service in which they are intended to provide. **Figure 25** depicts the current functional classification of the roadways within the MA 12 study area. The City of Phoenix functional classification map identifies arterial and collector roadways only. Roadways within the study area that are not classified as arterial or collector roadways based on the City of Phoenix functional classification map are assumed as local roads (and thus not labeled in **Figure 25**).

Existing Vehicular Traffic Volumes

City of Phoenix provided the 24-hour hourly traffic volume data for the roadways within the MA 12 study limits. The dates when the traffic volume data was collected varied from August 2003 to July 2017. For clarity, **Figure 26** only depicts the 24-hour average daily traffic volumes collected between the years 2013 and 2017 on roadways within MA 12 study area. Additional traffic volumes can be found in **Appendix A** of this report. 7th Avenue, Central Avenue and 7th Street are the three north-south arterial roadways within MA 12. Traffic volumes on 7th Avenue and Central Avenue range from 7,000 to 8,000 vehicles a day on average, whereas traffic volumes on 7th Street range from 12,500 to 14,500 a day. Northern Avenue and Dunlap Avenue/Cave Creek Road are the two east-west arterial roadways within MA 12. Traffic volumes on Northern Avenue range from 14,000 to 20,000 vehicles a day on average, whereas traffic volumes on Dunlap Avenue/Cave Creek Road range from 10,000 to 14,500 a day. Traffic volumes on the five collector roadways within MA 12, Mountain View Road, Hatcher Road, Dunlap Avenue east of Cave Creek Road, Butler Drive and 12th Street, vary significantly. 12th Street and Hatcher Road west of Cave Creek Road had the highest traffic volumes of the collector roadways with volumes ranging from 4,000 to 9,000 vehicles per day. Mountain View Road, Hatcher Road east of Cave Creek Road and Dunlap Avenue east of Cave Creek Road range from 2,000 to 3,000 a day and Butler Drive volumes range from 200 to 1,000 a day. Traffic volumes were not available for Alice Avenue within the study area.

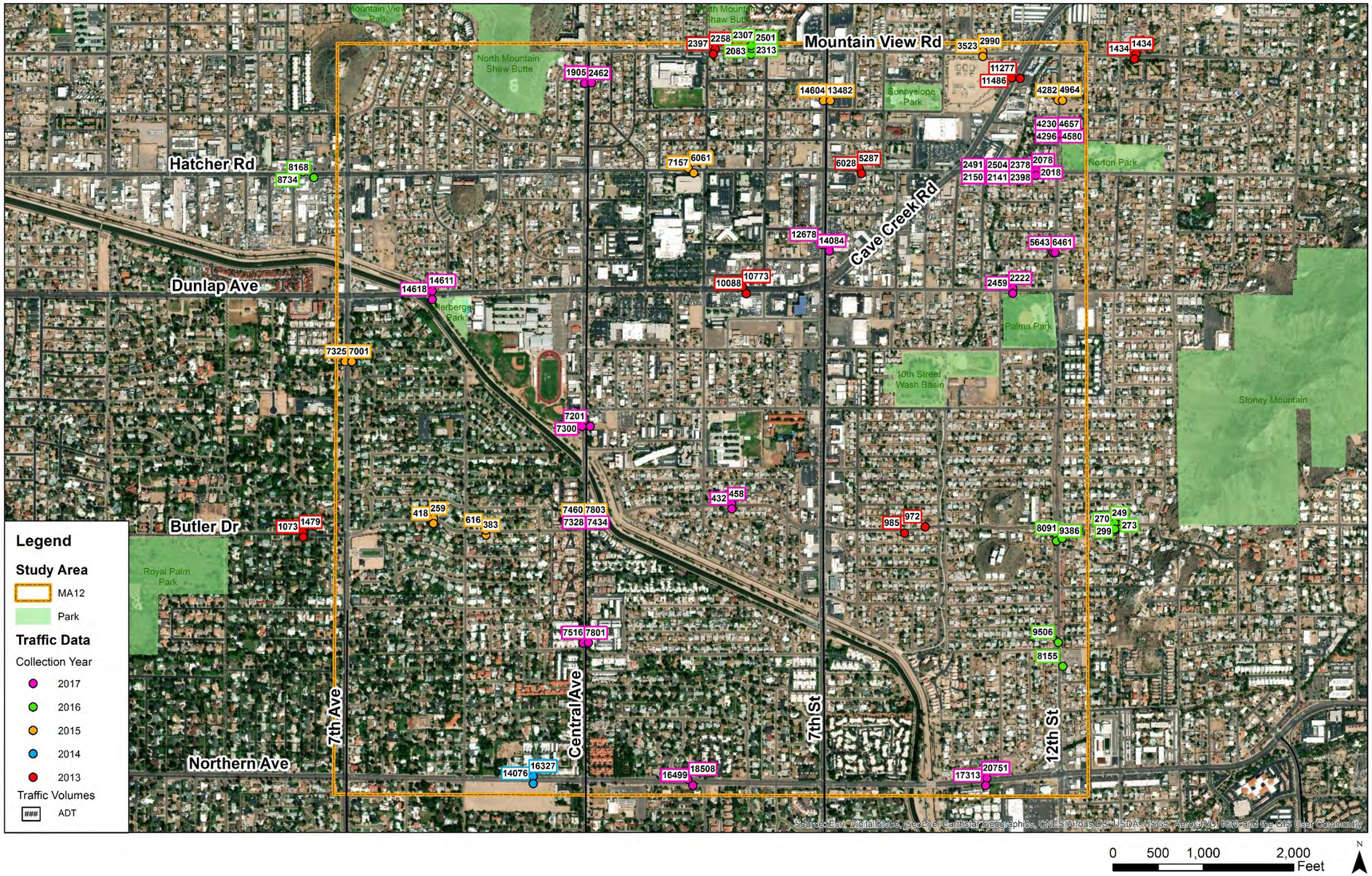
Northern Avenue experiences the highest number of daily traffic volumes due to its connection to I-17 and SR-51 on either side of MA 12.

Figure 25: Functional Classification of Roadways



Source: City of Phoenix Street Classification Map

Figure 26: Daily Traffic Volumes



Crash Data

Crash data for the study area was obtained to identify trends, patterns, predominant crash types, and high crash locations. Crash data for the five-year period, from January 1, 2013 to December 31, 2017 was obtained from the City of Phoenix.

During the five-year period, a total of 2,079 crashes were reported within the MA 12 study area. 2,017 of the 2,079 crashes were vehicular crashes, 18 were bicycle related and the remaining 44 were pedestrian related crashes. Detailed crash analysis for the study area is included within the ***Existing Corridor Safety Conditions*** section of this report.

Existing Pavement Conditions

The Street Transportation Department Street Maintenance division is responsible for the planning, programming and execution of the city's street maintenance program. This entails maintaining all roadways within the city's jurisdiction limits and does not include private streets, state routes maintained by ADOT and roads maintained by Maricopa County.

The Street Maintenance Division performs annual routine street maintenance activities to keep the city's street network in a state of good repair and extend their lifespan. The work to repair and improve our roadways ranges from pothole patching to the longer term and most expensive projects of resurfacing and the more extensive road reconstruction.

Enhancing the safety of the roadway and improving the ride comfort of the road surface provides a benefit to the traveling public.

The pavement surface for all roadways within the MA 12 study area are asphalt concrete. Pavement condition data for the study area was obtained from City of Phoenix. According the data obtained from City of Phoenix, pavement conditions for the study area are defined as:

Excellent Condition: Like new pavement, with no visible distresses and require no maintenance.

Good Condition: Like new pavement with few defects as perceived by field reviewers, no sign of cracking and pavement deterioration, no maintenance is required as cracks are barely visible or well-sealed.

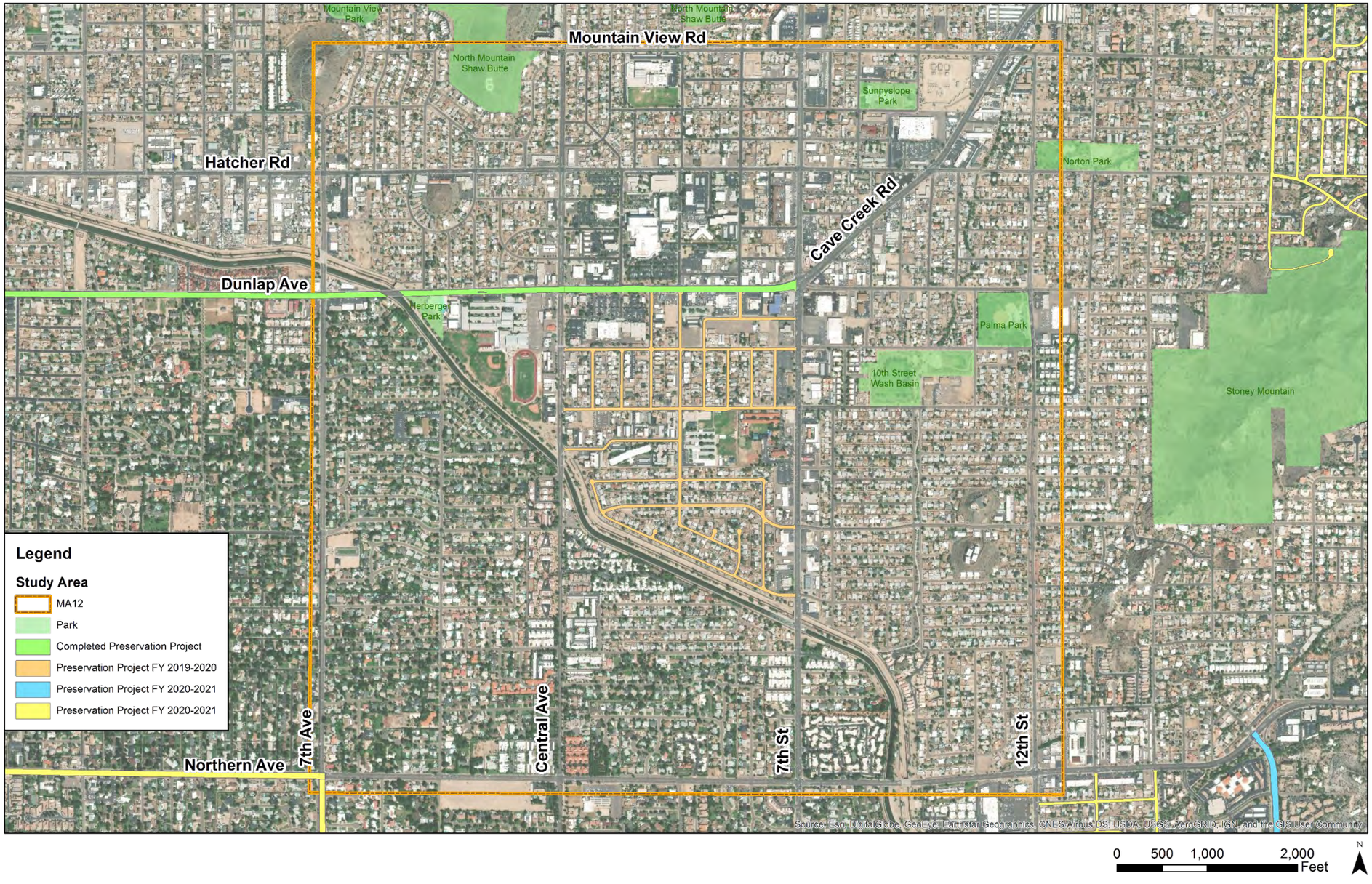
Fair Condition: Slight rutting, cracking, and/or roughness that became noticeable by field reviewers. The road may also be bumpy but not enough to reduce vehicle speed and may have some pavement raveling.

Poor Condition: Multiple cracks, potholes, roughness, and/or bleeding are apparent on roadway. Roadway may be uncomfortable to vehicle occupants and

drivers may need to correct or avoid road defects. Previous road repairs are deteriorated and require maintenance.

Figure 27 shows programed pavement preservation projects within and around the MA 12 study area with the majority of the pavement the being in a fair condition. Dunlap Avenue west of Cave Creek Road has a recently completed pavement preservation project in FY 2016. The only roadways scheduled for upcoming pavement preservation projects are the local streets between Central Avenue and 7th Street, north of the Grand Canal and south of Dunlap Avenue.

Figure 27: Existing Pavement Conditions



Access Management Guidelines

Access Management is the control and management of every point of access on the public roadway network. The purpose of this control is to limit vehicular and pedestrian conflicts. Access Management guidelines for City of Phoenix are included in *Chapter 8* of the *City of Phoenix Street Planning and Design Guidelines* document published in December 2009.

Access Management guidelines for City of Phoenix are summarized below:

1. Single-family residential driveways should not be located within the curb radius return on a corner lot.
2. Existing, unused driveways, must be replaced with curb, gutter and sidewalk built to City standards.
3. A single parcel or contiguous parcels comprising of one development should be limited to one driveway, unless traffic volume or street frontage warrants additional driveways.
4. On major arterial and arterial streets, the sharing of driveways between adjacent properties and common ingress/egress easements are strongly encouraged. Existing driveways that are unnecessary or substandard should be removed or upgraded in conjunction with any new on-site or street construction.
5. On major arterial and arterial streets, large developments should consolidate major driveways at 1/4 or 1/8-mile locations and align them with the driveways on the opposite side of the street.
6. Driveways to corner lots should be located as far away from the intersection as practical.
7. Driveways are prohibited within the passenger waiting area of bus stops unless relocation of the facility is approved by Public Transit. Driveways should be located such that bus stop improvements are beyond the projection of driveway visibility triangles and drivers will be able to see around bus stop improvements, both existing and planned. Driveways are not to be located within the flat portion of the bus bay (bus standing area).
8. Driveway connections should be placed at locations that facilitate the efficient entry and exit of vehicles to properties on both sides of a street and minimize conflicts with transit facilities, left turn pockets as well as traffic on the streets or neighboring properties.
9. The Driveway Ordinance prohibits access from commercial property to alleys that abut residential property. Access to alleys must be applied for and shall be considered by the Development Services Director or designee.
10. Median island opening will be allowed at 660-foot intervals as required in the City of Phoenix Street Classification System General Policy Document and Technical

Supplement. Openings other than at the 660-foot locations may be permitted if approved by the Street Transportation Department.

11. On-street parking is normally permitted on both sides of local streets adjacent to single family residential properties if the street is a minimum of 29.16 feet (back-of-curb to back-of-curb) wide.

Traffic Calming

Traffic calming uses physical design or other measures to slow or reduce traffic in order to enhance safety for pedestrians and motorists, including narrowed roads, speed humps etc. Traffic calming is the most effective way to reduce speeding on residential streets, avoid traffic accidents and prevent fatalities.

There are a number of traffic management techniques used by City of Phoenix to help alleviate cut-through traffic problems in neighborhoods. Several traffic management techniques used by the City are listed below:

1. Right-turn diverters,
2. Traffic circles,
3. Diagonal diverters,
4. Semi-diverters,
5. Turn restrictions,
6. Chicanes, and
7. Speed humps.

Traffic management technique examples and the standards details for traffic calming devices are included in *Section 7.4* of the *City of Phoenix Street Planning and Design Guidelines*.

Figure 28 is an example of a permanent traffic circle used as traffic calming on Central Avenue and Mountain View Road. **Figure 29** shows temporary traffic calming on 12th Street near Hatcher Road

Existing traffic calming devices within MA 12 are shown in **Figure 32**.

Figure 28: Traffic Circle

Figure 29: Temporary Traffic Calming

Bicycle Infrastructure

Bicycle Lanes

Striped bike lanes exist on various roadways within the study area. Existing striped bike lanes in both directions along the roadways within the study area are shown in **Figure 32** and are listed below:

1. 7th Avenue between Hatcher Road and Dunlap Avenue,
2. 2nd Street between Hatcher Road and Dunlap Avenue,
3. 3rd Street between Hatcher Road and Dunlap Avenue,
4. 12th Street south of Hatcher Road,
5. Cave Creek Road east 8th Street, and
6. Hatcher Road between 7th Avenue and Cave Creek Road.

Figure 30: Bicycle Lane on Hatcher Road

Figure 31: Bicycle Lane on 12th Street

Bicycle Routes

A signed bicycle route is typically designated along more lightly traveled residential or secondary roads and is indicated by signs with or without a specific route number and/or dedicated striping. This type of facility should have appropriate directional and informational markers. Signed bicycle routes are designated by the jurisdiction having authority over the roadways included in the bicycle route system. Bicycle routes are often utilized to direct bicyclists to less-congested roadways that may follow the same general corridor as more heavily traveled arterial roadways.

Existing bike routes within the study area are shown in **Figure 32** and are listed below:

1. 3rd Avenue south of the canal;
2. Ruth Avenue between 3rd Avenue and the canal; and
3. Butler Drive west of 3rd Avenue.

Bicycle Route Wayfinding

A bicycle wayfinding system consists of comprehensive signing and/or pavement marking to guide bicyclists to their destinations along preferred bicycle routes. Signs are typically placed at decision points along bicycle routes; typically, at

the intersection of two or more bikeways and at other key locations leading to and along bicycle routes.

Bicycle wayfinding signs do not exist within MA 12 study area.

Bicycle Volumes

The average weekday bicycle volumes collected within MA 12 study area are depicted in **Figure 33**, which highlights only two corridors where bicycle counts have been conducted. Bicycle counts were conducted on Hatcher Road east of Central Avenue and on Northern Avenue west of 7th Avenue. Volumes indicated an average of 101 to 150 bicyclists on Hatcher Road east of Central Avenue on a weekday and an average of 201 to 250 bicyclists on Northern Avenue west of 7th Avenue on a weekday.

There is a current lack of thorough bicycle volume data within MA 12, particularly within corridors with existing bike lanes.

Sharrows

Shared Lane Markings (SLM's), or "Sharrows" are road markings used to indicate a shared lane environment for bicycles and automobiles. Among other benefits, shared lane markings reinforce the legitimacy of bicycle traffic on the street, recommend proper bicyclist positioning, and may be configured to offer directional and wayfinding guidance. The shared lane marking is not a facility type, it is a pavement marking with a variety of uses to support a complete bikeway network.

Sharrows are shown in **Figure 32** and exist along Central Avenue throughout the study area and on Mountain View Road between Cave Creek Road and 12th Street.

Bikeway Gaps

Bikeway gaps within MA 12 study area exist on Mountain View Road, Alice Avenue, Hatcher Road east of Cave Creek Road, 10th Street between Cave Creek Road and Alice Avenue, 3rd Street between Mountain View Road and Hatcher Road, and 3rd Street between Dunlap Avenue and the Arizona Canal and are shown in **Figure 32**.

Bike Share Locations

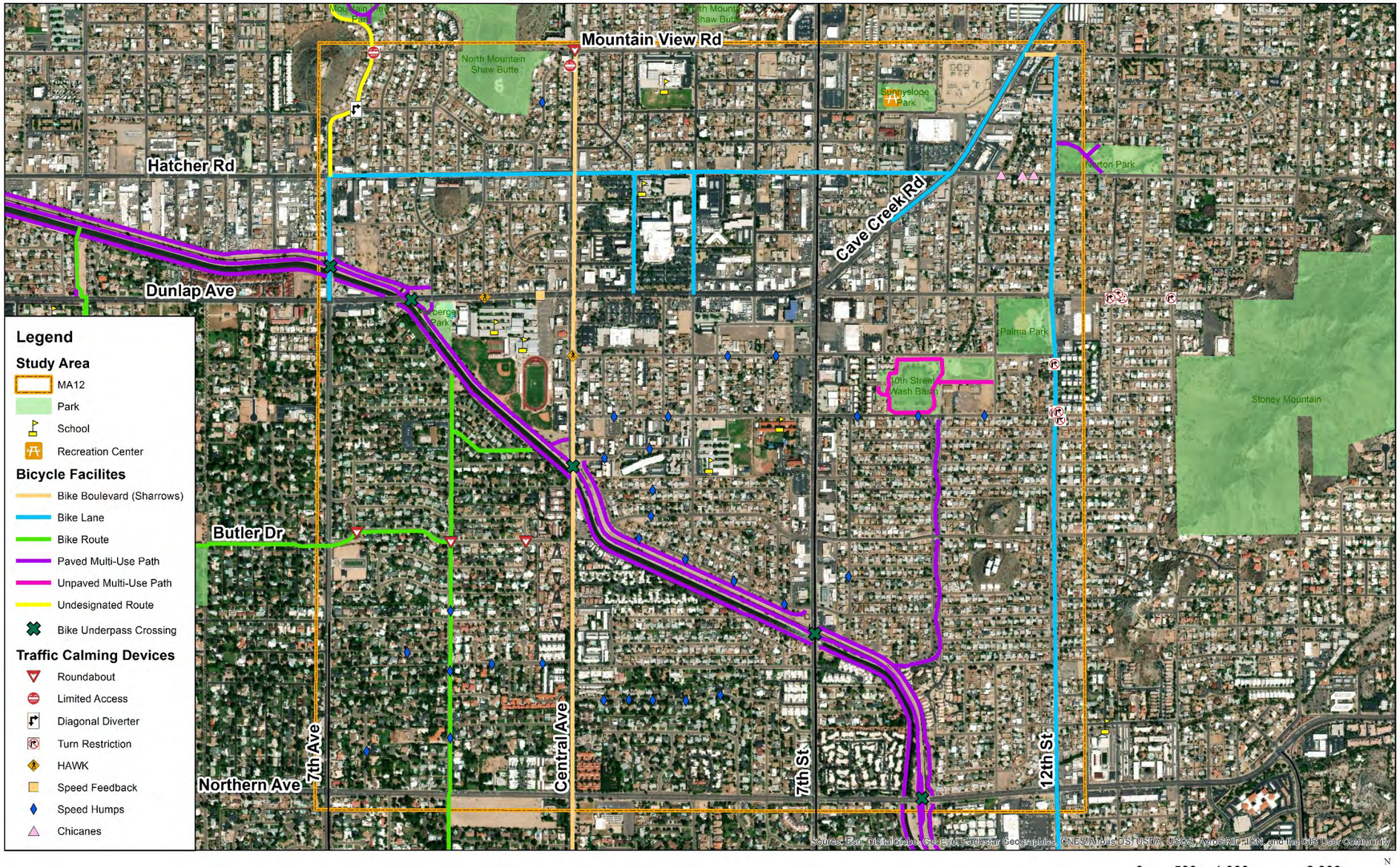
A bicycle sharing system is a service in which bicycles are made available for shared use to individuals on a very short-term basis for a price. Bike share schemes allow people to borrow a bike from one location and return it at another location.

There are currently no bike share locations within the MA 12 study area.

Connection to Trails

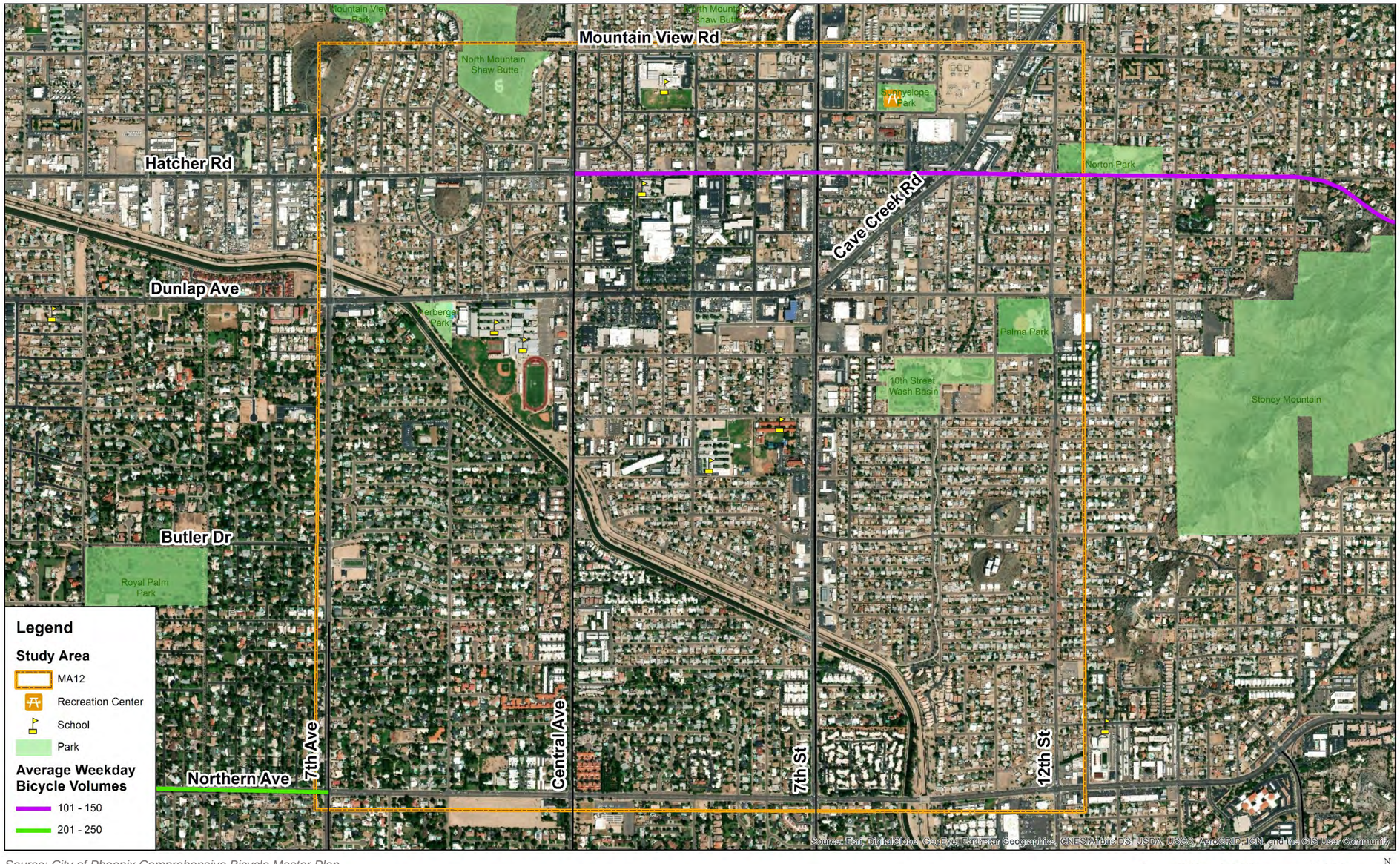
Paved multi-use paths exist on both sides of the Arizona Canal within MA 12. There are also paved multi-use paths in Norton Park connecting to the east side of 12th Street and along 10th Street connecting the 10th Street Wash Basin to the Arizona Canal.

Figure 32: Existing Bicycle Infrastructure



Source: City of Phoenix Street Transportation Bike Map

Figure 33: Existing Bicycle Volumes



Source: City of Phoenix Comprehensive Bicycle Master Plan

Pedestrian Infrastructure

Pedestrian infrastructure existing within MA 12 is discussed in the following sections.

Sidewalks

Sidewalks exist on the majority of roadways within the study area. **Figure 40** shows the existing sidewalk locations and sidewalk widths along major roadways within the study area. Existing sidewalks along local roads are assumed to be 4 to 4.5 feet in width based on the sampling field observations taken along similar streets. Areas with sidewalk widths greater than 6 feet generally included cutouts for trees and decorative street art. Based on the observations from the field reviews, the existing sidewalks within the study area are generally in good condition with no major damages.

The existing sidewalk gaps identified within MA 12 are illustrated in red on **Figure 41**. Many neighborhood streets within the study area do not have sidewalks for pedestrians to utilize. This forces pedestrians to navigate the street, often times posing a threat of potential collisions with vehicular traffic. The sidewalk gaps west of 10th Street between Alice Avenue and the Arizona Canal, east of 7th Street between Orchid Lane and the Arizona Canal, and north of Alice Avenue between 3rd Street and 7th Street are more concerning due to their frequent use and proximity to the schools. Sidewalk gaps also exist on Central Avenue south of the Arizona Canal.

Figure 34: Sidewalk Gap on 3rd Street north of Mountain View Road

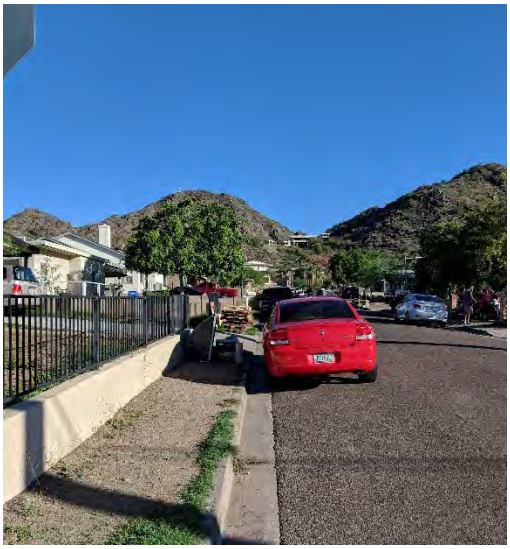


Figure 35: Sidewalk Gap on 3rd Street south of Vogel Avenue

ADA Compliance

The minimum continuous and unobstructed clear width of a pedestrian access route shall be 1.2 m (4.0 feet), exclusive of the width of the curb. Where a pedestrian access route turns or changes direction, it should accommodate the continuous passage of a wheelchair or a scooter.

As shown in **Figure 40**, all the existing sidewalks within MA 12 study area are 4 feet or wider, therefore, the existing sidewalks generally appear to ADA compliant though it should be noted that a ADA assessment was not included in this project.

Figure 36: 8-Foot Sidewalks along Dunlap Avenue

Curb Ramps

According to the Americans with Disabilities Act (ADA), detectable warnings at curb ramps shall consist of a surface of truncated domes aligned in a square or radial grid pattern. **Figure 40** depicts the location of curb ramps with or without truncated domes within MA 12 study area. During the field visits, it was observed that the east side of 10th Street between Alice Avenue and Butler Drive, 7th Avenue south of Dunlap Avenue were the only corridors that had consistent use of truncated domes at the crossing locations. Other roadways, including Central Avenue, 7th Street, and 12th Street, have truncated domes spread out more sporadically. Otherwise, non-truncated domes have been primarily installed on other corridors. Data from the City indicating curb ramp locations also indicated a priority ranking for ramps needing repairs for steep slopes, cracks, or other miscellaneous deficiencies. These priority curb ramps in need of repair are shown in **Figure 41**.

Marked Intersection Crossings

Crosswalks exist at all signalized intersections and in the vicinity of schools within the study area. Crosswalks exists at the following unsignalized intersections within the study area:

1. Mountain View Road and 2nd Way;
2. 2nd Street and Vogel Avenue;
3. 2nd Place and Vogel Avenue;
4. Mountain View Road and 3rd Street;
5. Mountain View Road and 8th Street;
6. Mountain View Road and 12th Street;
7. Hatcher Road and 3rd Street;
8. 3rd Street and Orchid Lane;
9. 3rd Street and Ruth Avenue;
10. 3rd Street and Alice Avenue; and
11. Alice Avenue and 6th Place

Figure 37: Marked Yellow Crosswalk at Sunnyslope Elementary School

Mid-block Crossings and High Intensity Activated Crosswalk Beacon (HAWK)

A HAWK is a traffic control device used to stop road traffic and allow pedestrians to cross safely. There are two existing HAWKs within MA 12 study area, one on Dunlap Avenue at 2nd Drive and one on Central Avenue at Townley Avenue. There are no mid-block crossings within MA 12.

Figure 38: HAWK Across Dunlap Avenue at Sunnyslope High School

Rectangle Rapid Flash Beacon (RRFB)

RRFBs are user-actuated amber LEDs that supplement warning signs at unsignalized intersections or mid-block crosswalks. They can be activated by pedestrians manually by a push button or passively by a pedestrian detection system. There are currently no RRFB's within MA 12.

Grade-Separated Crossings

There are no existing pedestrian bridges or grade-separated crossings within MA 12.

Connections to Trails

Paved multi-use paths exist on both sides of the Arizona Canal within MA 12. There are also paved multi-use paths in Norton Park connecting to the east side of 12th Street and along 10th Street connecting the 10th Street Wash Basin to the Arizona Canal.

Figure 39: Multi-Use Path Along Arizona Canal

Figure 40: Existing Sidewalks and Curb Ramps

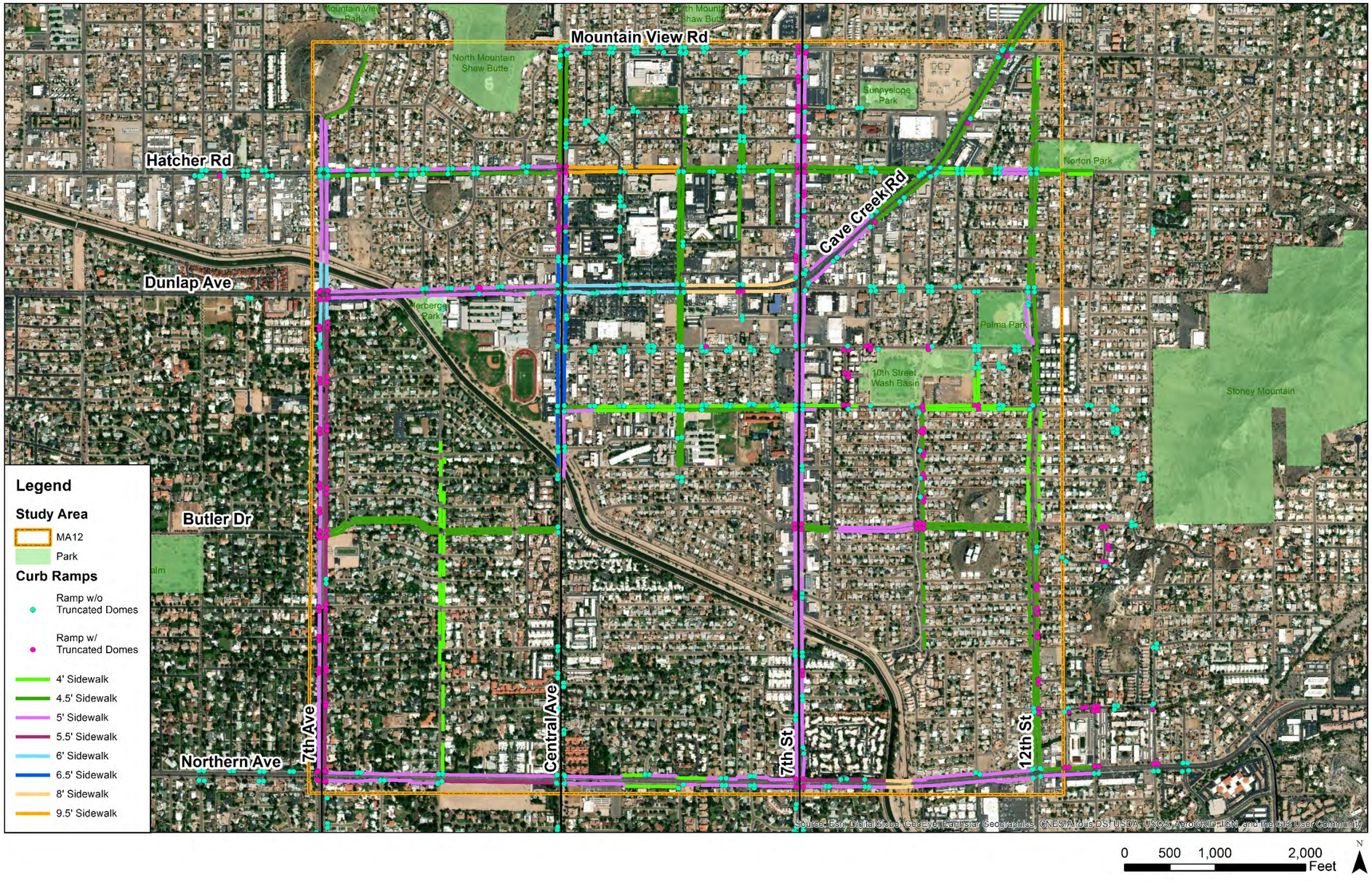


Figure 41: Identified Sidewalk Gaps

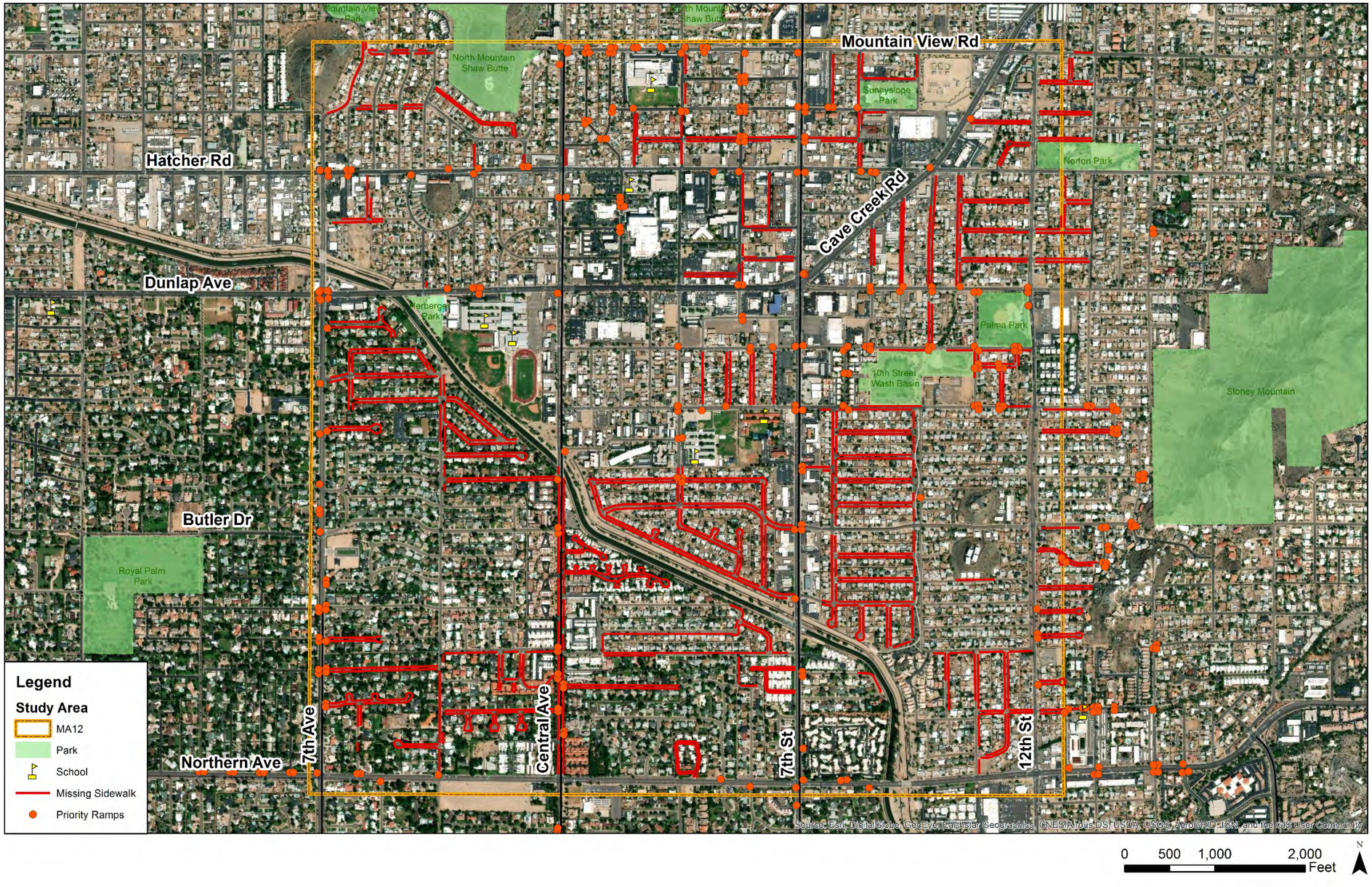
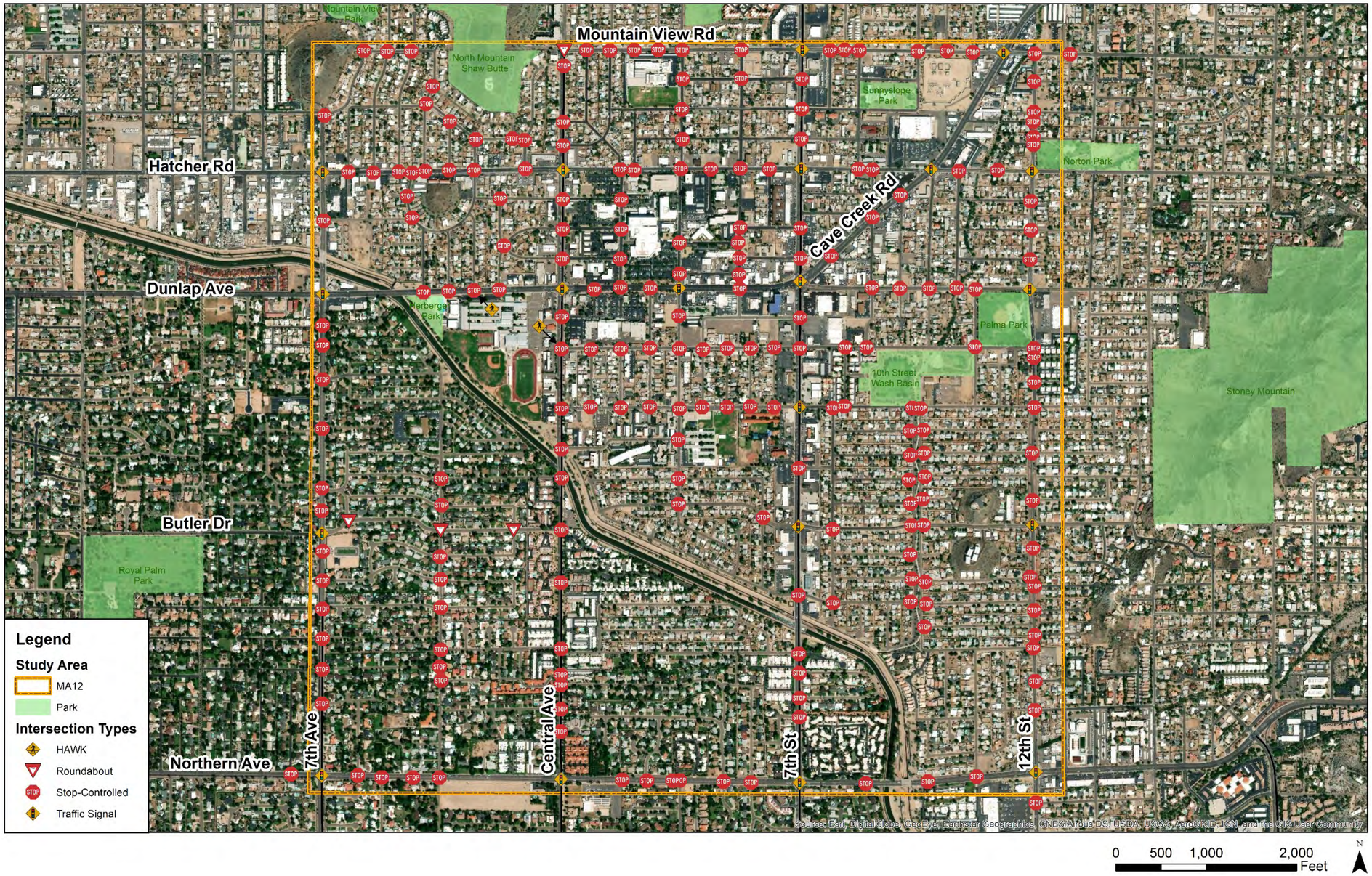


Figure 42: Crossing Types and Locations



Transit Infrastructure

The Valley Metro Regional Public Transportation Authority, more popularly known as Valley Metro, is the unified public brand of the regional transit system in and around the Phoenix, Arizona, metropolitan area. Within the system, it is divided between Valley Metro Bus, which runs all bus operations, and Valley Metro Rail, which is responsible for light rail operations in the valley.

Only the Valley Metro bus system runs within MA 12 study area.

Existing Bus Routes

Valley Metro bus system runs along the following roadways within MA 12 study area:

East-West Direction:

1. Mountain View Road from Central Avenue to 8th Street (SMART Circulator) and east of 12th Street (SMART Circulator),
2. Hatcher Road west of Central Avenue (Route 106 and SMART Circulator) and from 3rd Street to 12th Street (Route 12),
3. Dunlap Avenue/Cave Creek Road though the study area (Route 0, Route 8, and Route 90),
4. Dunlap Avenue from 11th Street to 12th Street (SMART Circulator),
5. Townley Avenue from 8th Street to 11th Street (SMART Circulator),
6. Alice Avenue from 3rd Street to 8th Street (SMART Circulator),
7. Ruth Avenue west of 3rd Street (SMART Circulator), and
8. Northern Avenue through the study area (Route 80).

North-South Direction:

1. 7th Avenue south of Dunlap Avenue (Route 8),
2. Central Avenue through the study area (Route 0, Route 106, and SMART Circulator),
3. 3rd Street from Hatcher Road to Ruth Avenue (Route 12 and SMART Circulator),
4. 5th Street from Hatcher Road to Dunlap Avenue (SMART Circulator),
5. 7th Street through the study area (Route 7),
6. 8th Street from Mountain View Road to Hatcher Road (SMART Circulator) and from Townley Avenue to Alice Avenue (SMART Circulator),
7. 11th Street from Dunlap Avenue to Townley Avenue (SMART Circulator), and
8. 12th Street through the study area (Route 12 and SMART Circulator).

Figure 45 shows the bus routes and the bus stop locations within MA 12 study area. Ridership data, shown in **Table 2**, was retrieved from Valley Metro's FY 2017-2018 Annual Ridership Report. Bus routes are illustrated in **Figure 46**.

Table 2: Bus Ridership

Route	Total Boardings	FY18 Bikes	Wheelchairs	% Change from FY17
0	1,225,203	34,341 (2.8%)	8,472 (0.7%)	0.6%
7	1,278,001	38,924 (30.5%)	12,659 (1.0%)	4.7%
8	669,723	17,372 (2.6%)	7,640 (1.1%)	1.9%
12	361,557	9,714 (2.7%)	2,015 (0.6%)	10.3%
80	482,750	12,969 (2.7%)	3,796 (0.8%)	3.2%
90	891,076	23,832 (2.7%)	6,155 (0.7%)	5.2%
106	452,209	10,649 (2.4%)	3,611 (0.8%)	7.8%
SMART	201,485	2,556 (1.3%)	1,443 (0.7%)	-9.5%

Light Rail Routes

The Valley Metro light rail system does not exist within MA 12 study area.

ADA Compliance for Transit

To meet ADA requirements, a bus stop must have a boarding clear length of 96 inches perpendicular to the roadway edge and a clear width of 60 inches parallel to the roadway. ADA non-compliant bus stops exist at the following locations within MA 12:

1. Hatcher Road at 7th Street – eastbound direction,
2. Hatcher Road at 11th Street – eastbound direction,
3. Cave Creek Road between Dunlap Avenue and Hatcher Road – both directions,
4. Dunlap Avenue at 7th Avenue – westbound direction,
5. Dunlap Avenue east of 3rd Avenue – both directions,
6. 7th Avenue south of Alice Avenue – northbound direction,
7. 7th Avenue at Butler Drive – northbound direction,
8. Central Avenue north of Dunlap Avenue – southbound direction,
9. 7th Street between Dunlap Avenue and Townley Avenue – both directions,
10. 7th Street at Alice Avenue – both directions,
11. 7th Street at Butler Drive – northbound direction,
12. 7th Street south of the Arizona Canal – both directions,
13. Northern Avenue between 7th Street and 12th Street – westbound direction,
14. 12th Street at Dunlap Avenue – southbound direction,
15. 12th Street north of Alice Avenue – both directions,
16. 12th Street south of Griswold Road – southbound direction, and
17. Northern Avenue at 12th Street – westbound direction.

Park-and-Ride Locations

There is one park-and-ride location within MA 12 at Dunlap Avenue and 3rd Street. The park-and-ride can be accessed by Valley Metro bus only.

Transit Gaps

Based on the field observations and as shown in **Figure 45**, no gaps were present along the bus routes through MA 12.

Figure 43: ADA Compliant Bust Stop on 12th Street

Figure 44: Non-ADA Compliant/Accessible Bust Stop on Central Avenue

Figure 45: Existing Transit Facilities

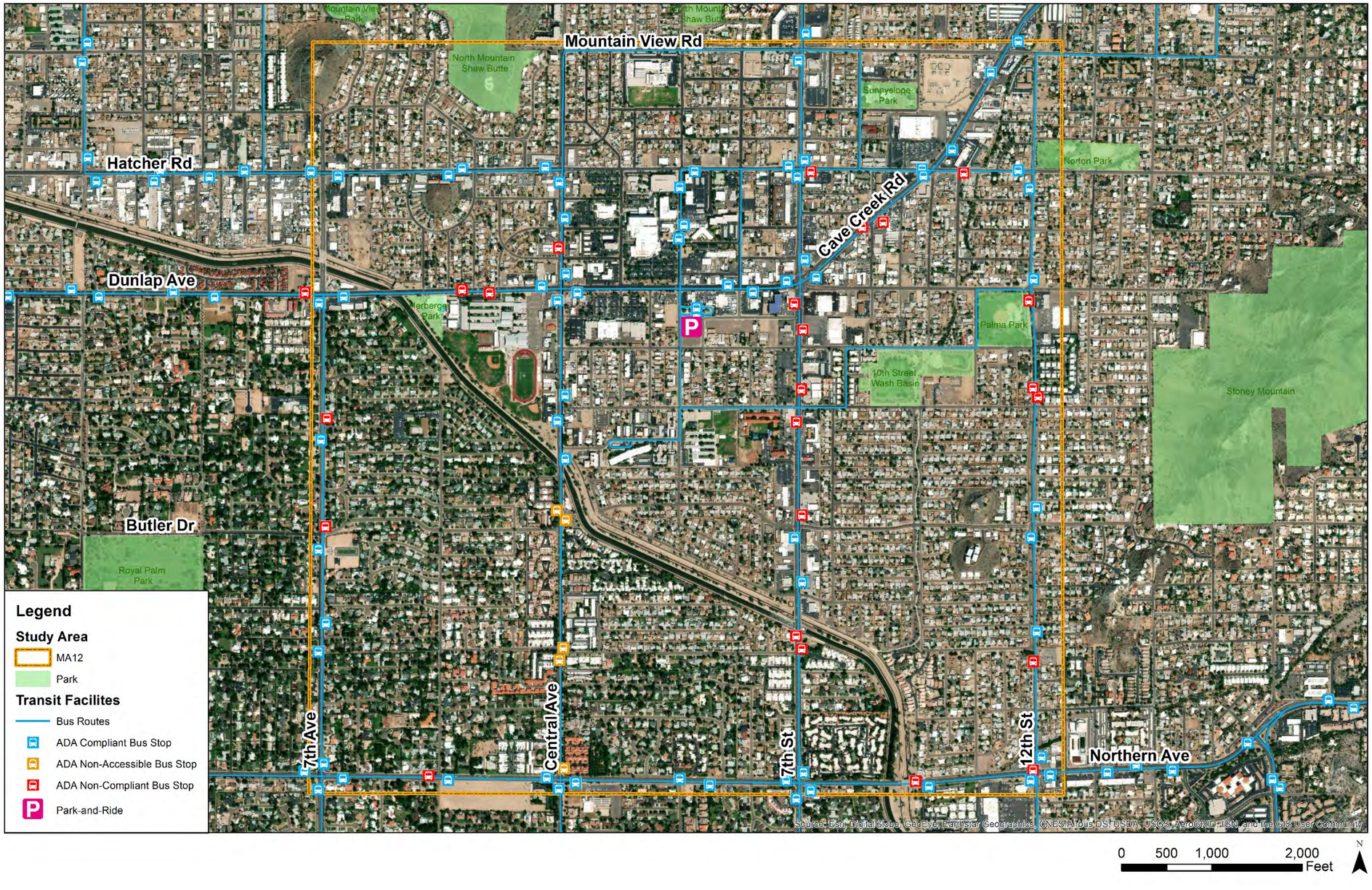
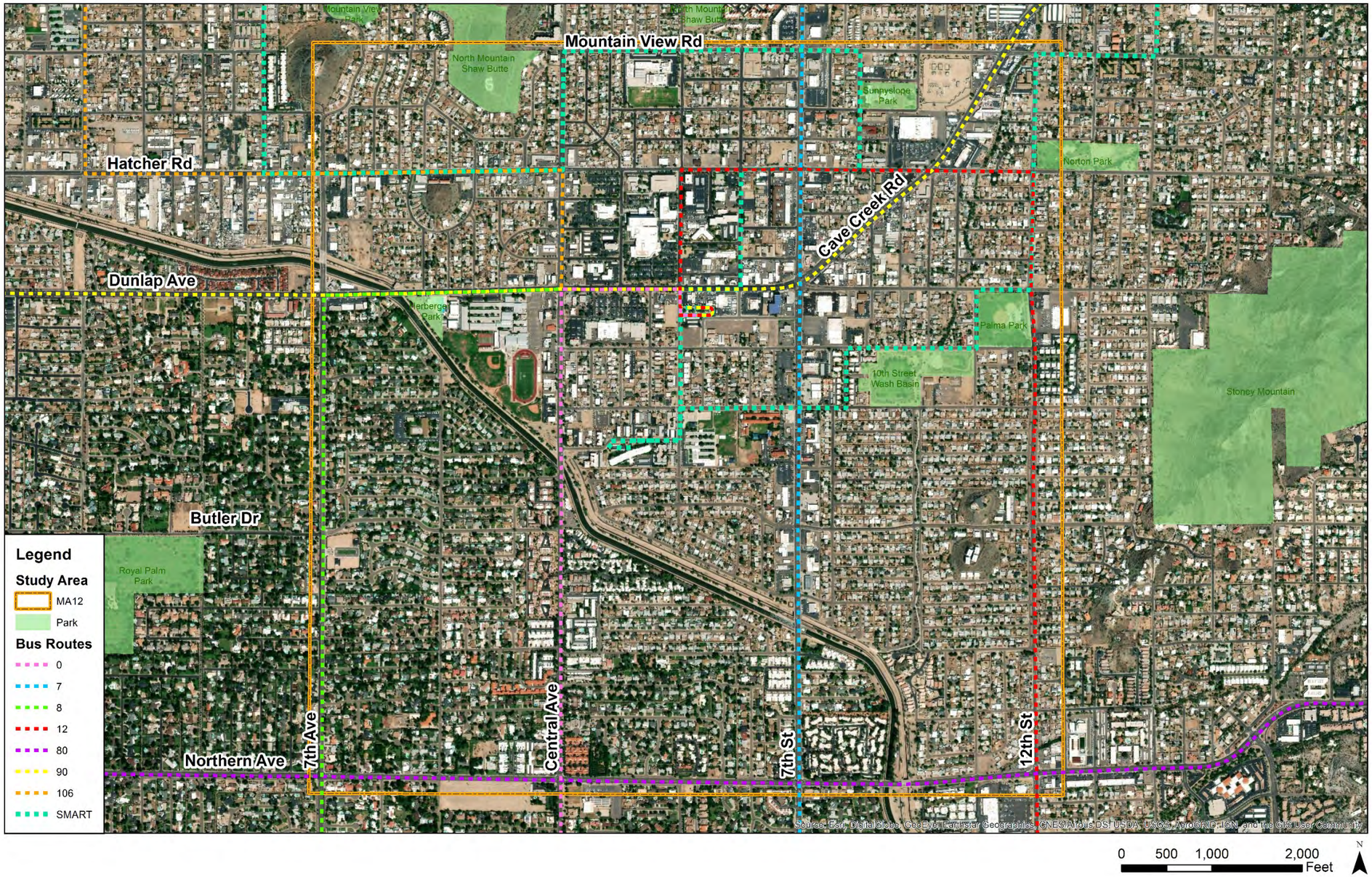


Figure 46: Bus Routes



Utilities and Lighting Infrastructure

Utilities

There are many existing utilities along the street network within MA 12. These include visible utilities such as overhead telephone and APS power lines, fire hydrants, traffic signal equipment, storm drains, SRP irrigation structures, private irrigation equipment, backflow preventers, and private utility cabinets. Additionally, there are many underground utilities such as Century Link cable TV and fiber, City of Phoenix water and sewer, COX cable TV and fiber, telecommunications, APS electric, communication and fiber, Southwest Gas and Zayo Group fiber. A complete list of utilities within MA 12 is provided in **Table 3**.

Table 3: Existing Utilities Within MA 12

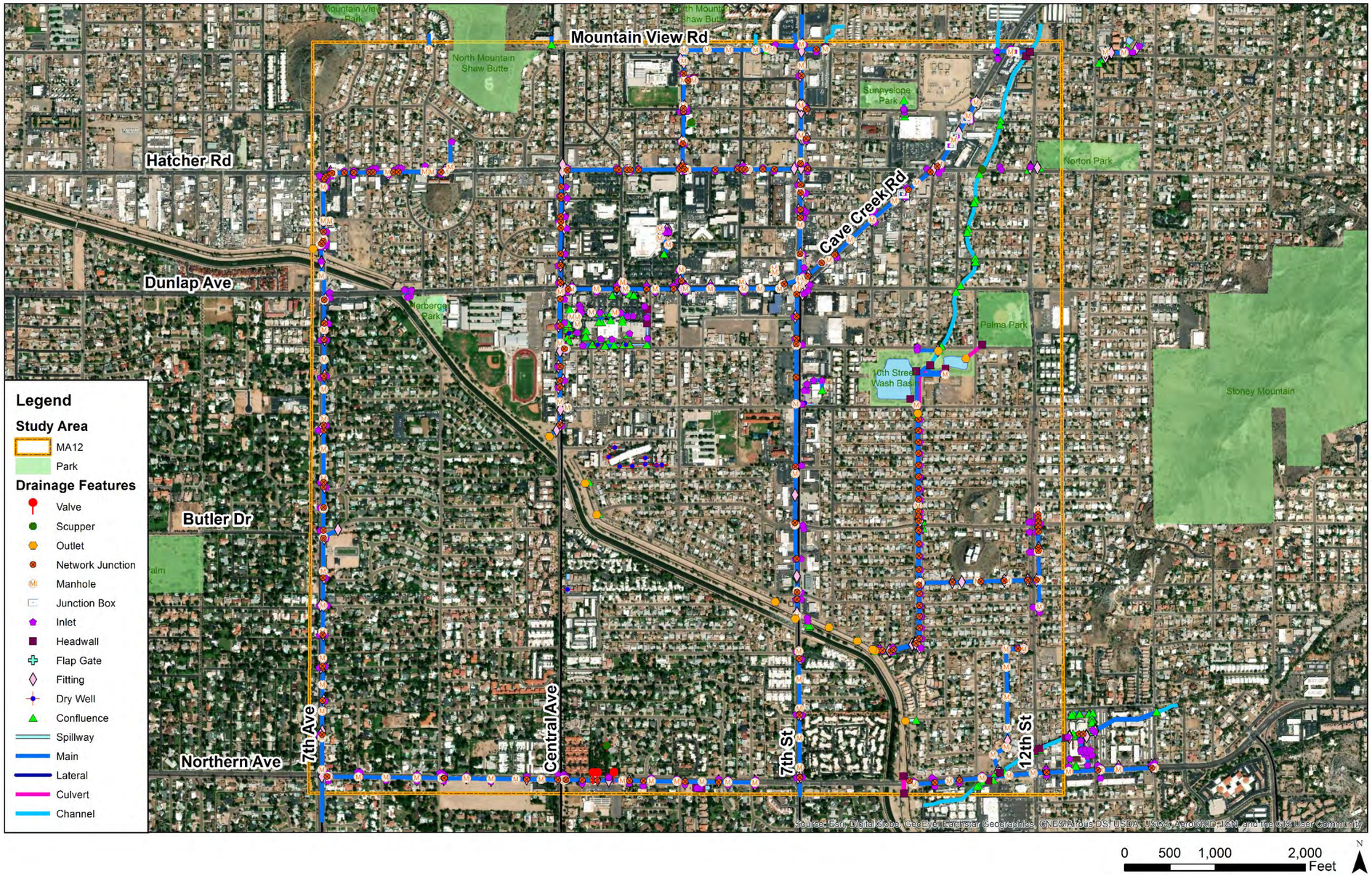
Member Name	Facility Type
AT&T	Coaxial, Fiber
APS	Electric
City of Phoenix – ITS	Coaxial, Fiber
City of Phoenix – Public Transit	Electric
City of Phoenix – Traffic Signals	Fiber, Junction Box, Traffic Signals
City of Phoenix – Water Services	Reclaimed Water, Sewer, Water
COX Communications	CATV, Fiber
CenturyLink	Coaxial, Fiber
Flood Control District of Maricopa County	Electric, Storm Drain, Water
Level 3 Communications	Fiber
MCI (Verizon Business)	Fiber
Pauley Construction	Communications, Fiber Optic
SRP	Communication, Electric, Fiber, Irrigation
Southwest Gas	Gas, High Pressure Gas
Zayo Group	Communication Vault, Conduit, Fiber

The City worked with various private utility companies to provide pertinent engineering documents and maps to the project team. Due to security and sensitivity of the information, the data was not shared in a form to readily create figures to depict the location of utilities on an exhibit map at this time. However, the provided data and maps of existing utilities will be extensively evaluated when determining recommendations and solution sets to evaluate potential utility conflicts. Any improvements to the utilities that can be made in tandem with the multimodal mobility and connectivity recommendations produced from this study will also be considered. A map of existing drainage facilities is shown in **Figure 47**.

Lighting

As part of an effort to become more sustainable, Phoenix has launched a Citywide initiative to convert all street lights to LED by the end of 2018. The city is divided into 22 zones which all have a dedicated schedule of completion. MA 12 falls within Zone 6, Zone 9 and Zone 10 which have mostly been completed according to the City of Phoenix interactive street light map. Within MA 12, approximately 140 street lights have not yet been converted to LED.

Figure 47: Existing Drainage Facilities



CHAPTER 5: EXISTING CORRIDOR SAFETY CONSIDERATIONS

A crash analysis was conducted for the MA 12 study area to identify trends, patterns, predominant crash types, and high crash intersections. The purpose of the crash analysis is to discover safety hazard locations that need to be addressed to improve area safety. Crash data for the five-year period from January 1, 2013 to December 31, 2017 was obtained from the City of Phoenix.

The 7th Street corridor, especially at the Mountain View Road, Hatcher Road, Dunlap Avenue/Cave Creek Road and Northern Avenue intersections, experienced the highest incidents of crashes. While the arterial streets typically have the greatest frequency of crashes, Hatcher Road also experienced a high number of crashes during the study period.

Vehicular Crash Data Analysis

During the five-year analysis period, 2,079 crashes occurred within MA 12 study area. The following sections discuss the crashes within the study area during the five-year analysis period.

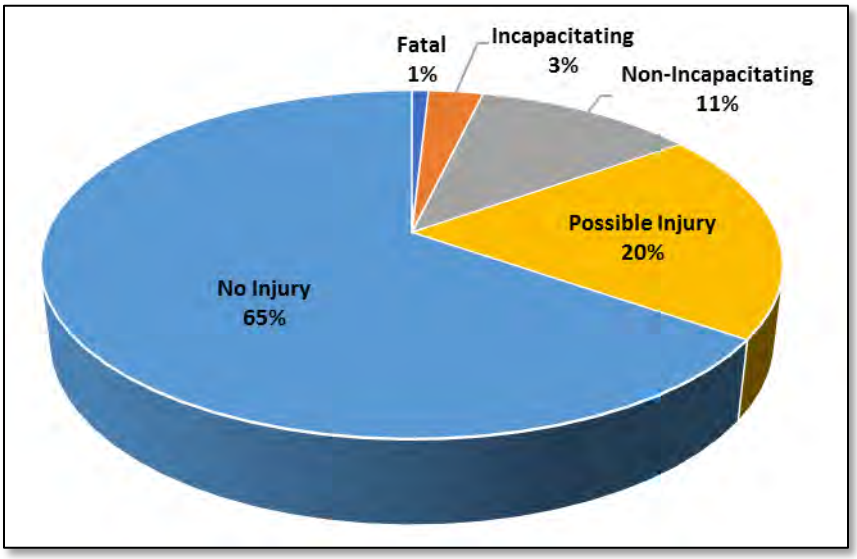
Injury Severity

There were 18 fatalities reported in the analysis period within the study area during the five-year analysis period at the following locations:

1. 12th Street and Dunlap Avenue – vehicle related,
2. 12th Street and Hatcher Road – pedestrian related,
3. 7th Street and Las Palmaritas Drive – vehicle related,
4. 7th Street and Townley Avenue – pedestrian related,
5. 7th Street and Vogel Avenue – pedestrian related,
6. Cave Creek Road and Mountain View Road – vehicle related,
7. Central Avenue and Butler Drive – vehicle related,
8. Central Avenue and Mountain View Road – vehicle related,
9. Central Avenue and Northern Avenue – vehicle related,
10. Dunlap Avenue and 3rd Street – pedestrian related,
11. Dunlap Avenue and 7th Avenue – pedestrian related,
12. Hatcher Road and 8th Street – vehicle related,
13. Mountain View Road and 9th Street – pedestrian related,
14. Northern Avenue and 11th Street – pedestrian related,
15. Northern Avenue and 12th Street – two crashes are pedestrian related and one crash is vehicle related, and
16. Northern Avenue and 7th Street – vehicle related.

Figure 48 illustrates the percentage of crashes that occurred within the study area during the five-year analysis period based on the severity of crashes.

Figure 48: Percentage of Crashes by Injury Severity



A comparison of total crashes that occurred in the five-year period within the MA 12 study and the Statewide average is shown in **Table 4**. As shown in **Table 4**, 703 of 2,079 crashes (33.8%) within the study corridor resulted in an injury crash, which is slightly higher than the statewide average injury crash percentage for the year 2013 to 2017 (30.9%).

Table 4: Crash Severity Comparison

Crash Severity	Number	MA 12 %	Statewide Average %*
Fatal	18	0.9%	0.7%
Injury	703	33.8%	30.9%
Property Damage Only	1,358	65.3%	68.4%

**Source: Arizona Department of Transportation (ADOT)*

Figure 49 and **Figure 50** illustrate the locations of all crashes based on severity within the study area for all crashes and bicycle/pedestrian related crashes, respectively. Consistent with the overall crash data presented above, the 7th Street corridor (especially between Hatcher Road and Mountain View Road) is the location for the most frequent number of bicycle and pedestrian related collisions.

Figure 49: Location of all Crashes based on Severity

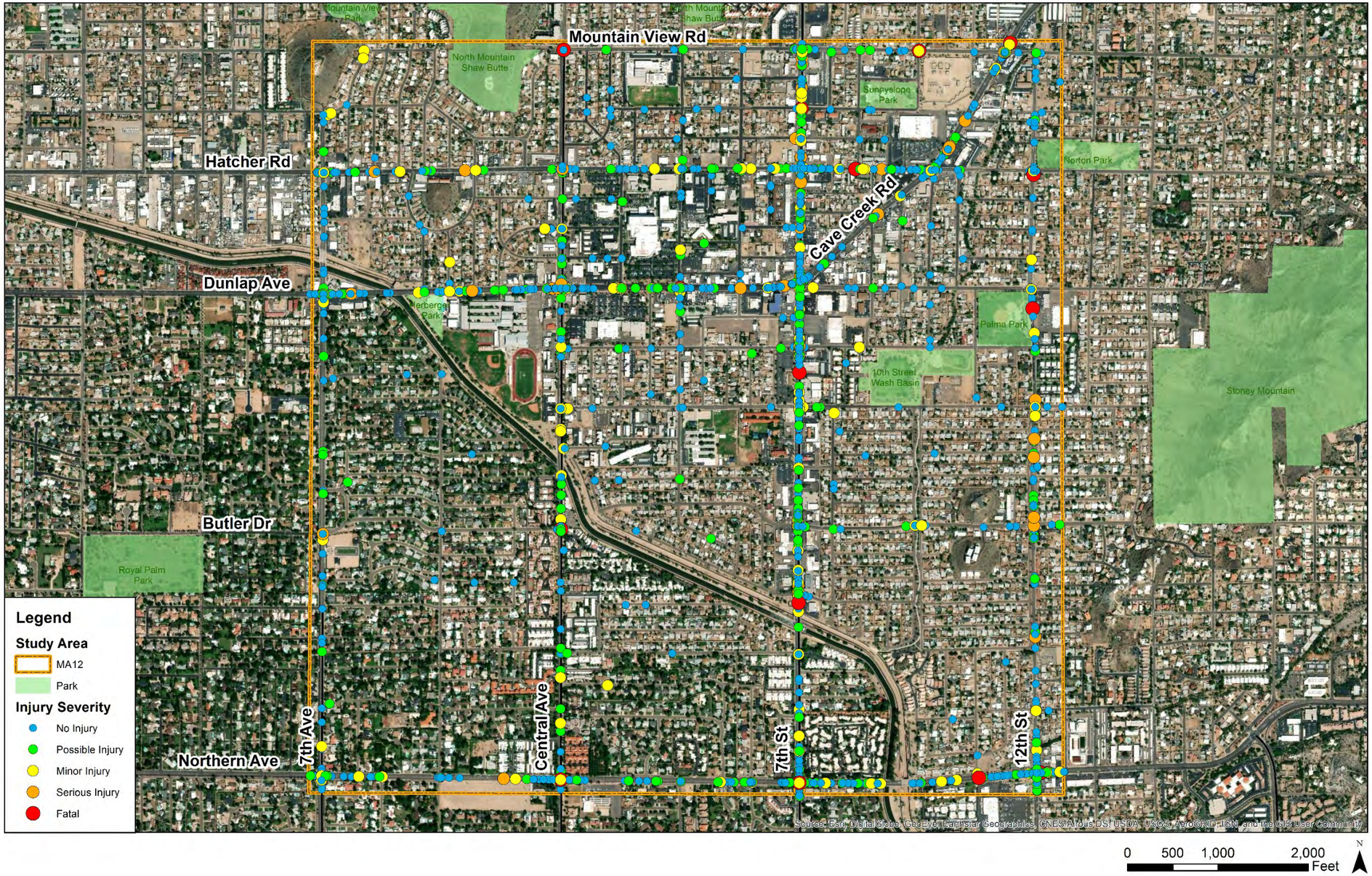
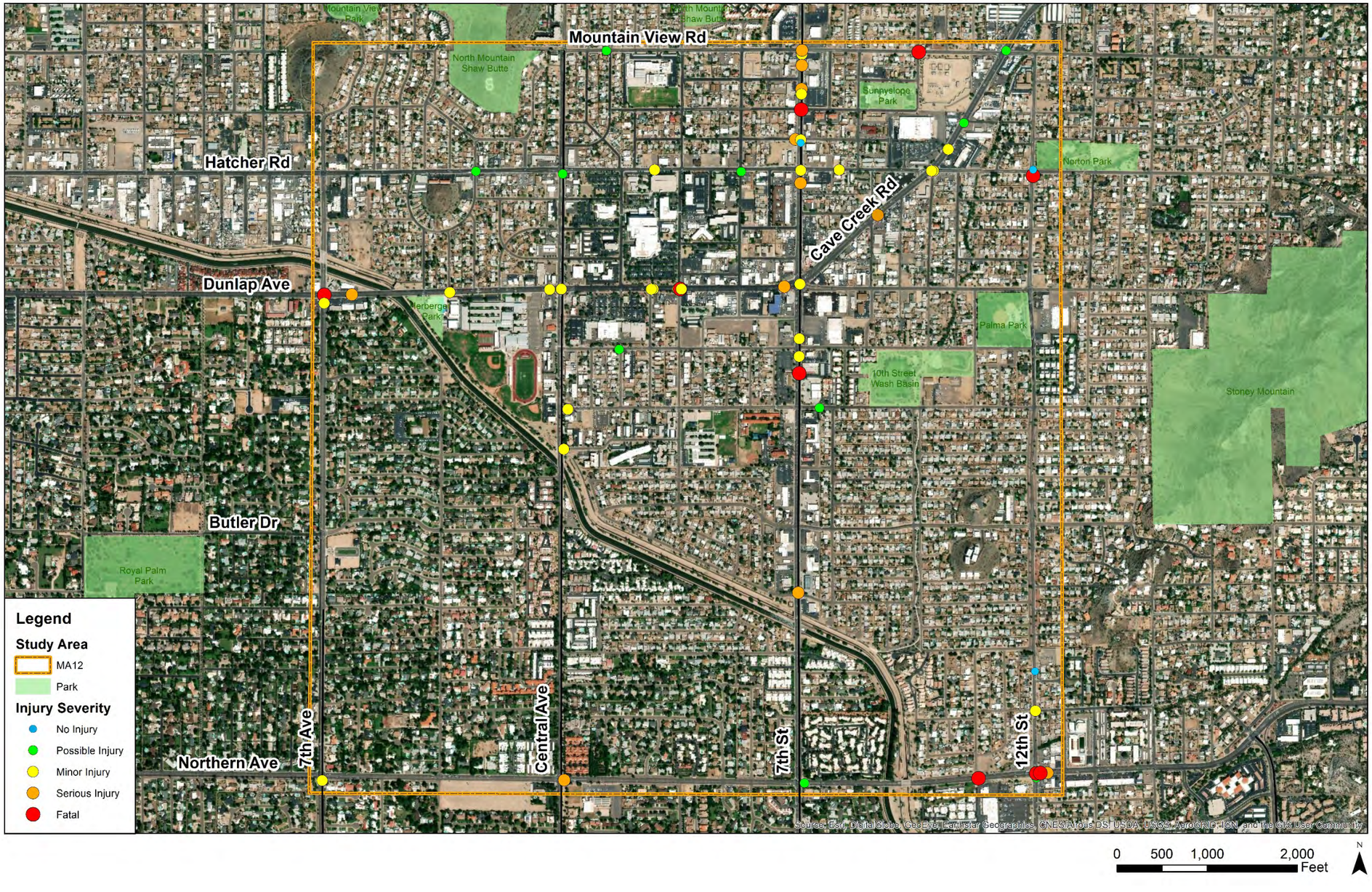


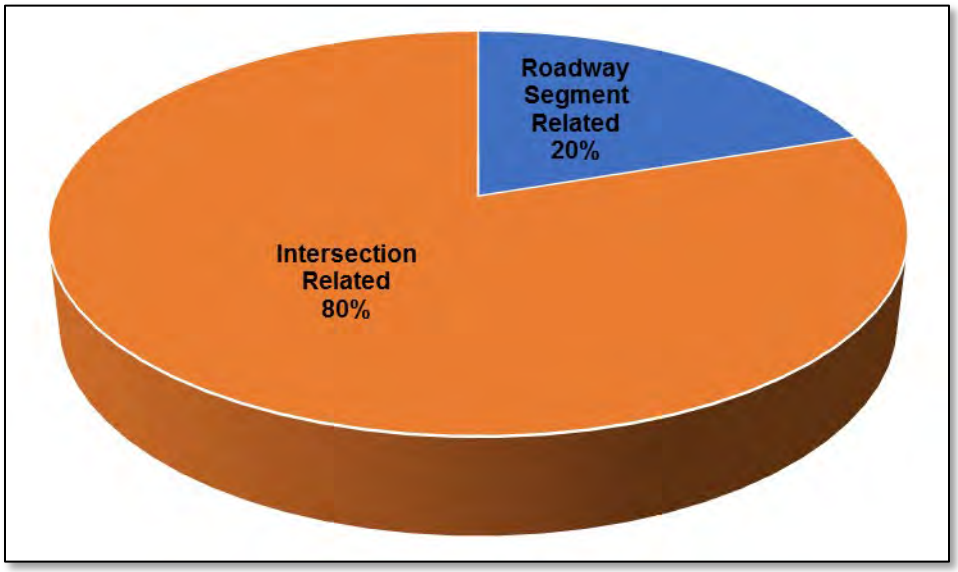
Figure 50: Location of Pedestrian and Bicycle Crashes based on Severity



Intersection Relation

As shown in **Figure 51**, 80% of the crashes within MA 12 study area during the five-year analysis period occurred at an intersection. For the purposes of this analysis, intersection related crashes were assumed to be the crashes that occurred within 150 feet of an intersection.

Figure 51: Crash Percentages based on Intersection Relation



Collision Manner

Figure 52 illustrates the percentage of crashes that occurred within the study during the five-year study period by collision type. As shown in the **Figure 52**, 29% of the total crashes during the analysis year were rear end collisions, 21% were angled collisions, 21% were left turn collisions, 14% were sideswipe crashes, 5% were single vehicle collisions and 5% were classified as other. **Figure 53** illustrates the collision manners associated with pedestrian and bicyclist related crashes. Most of the pedestrian and bicyclists related crashes were due to collisions classified as “other”. Crashes listed as “other” for collision manner typically consist of crashes involving pedestrians or bicyclist and any crash that cannot be classified under any of the other collision manners.

Figure 52: Percentage of Crashes by Collision Manner

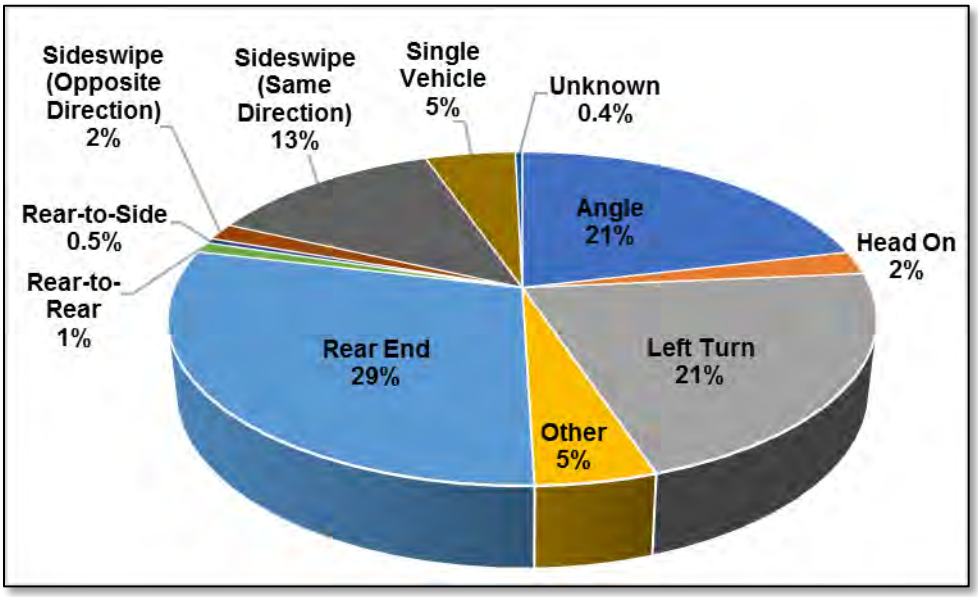
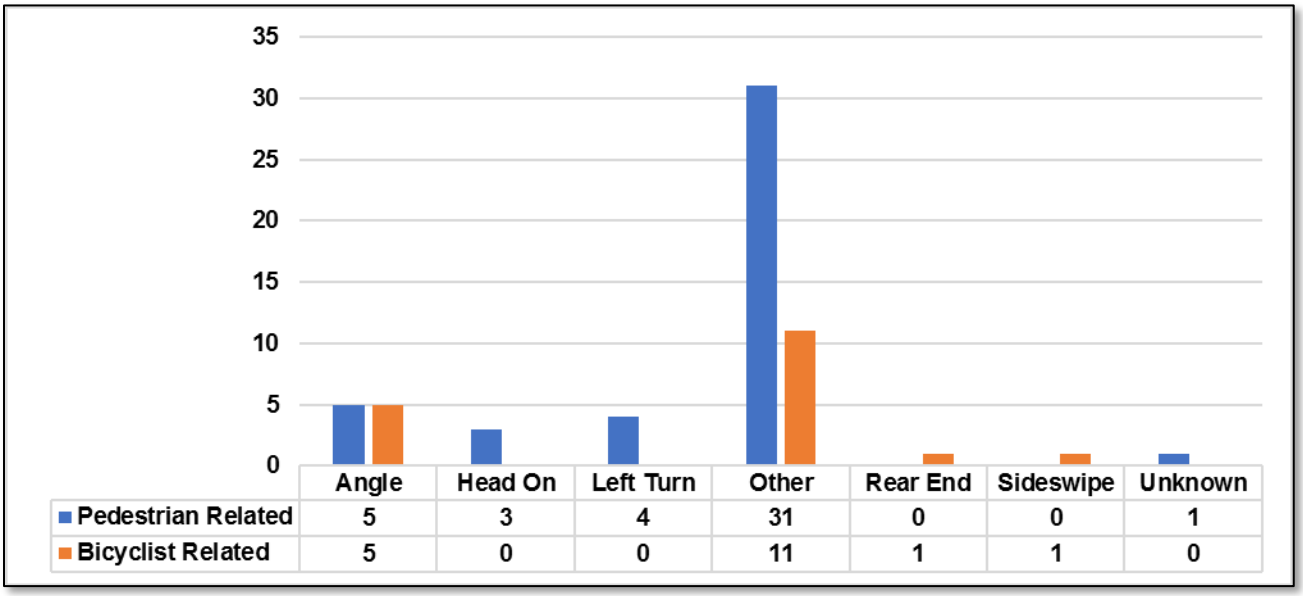


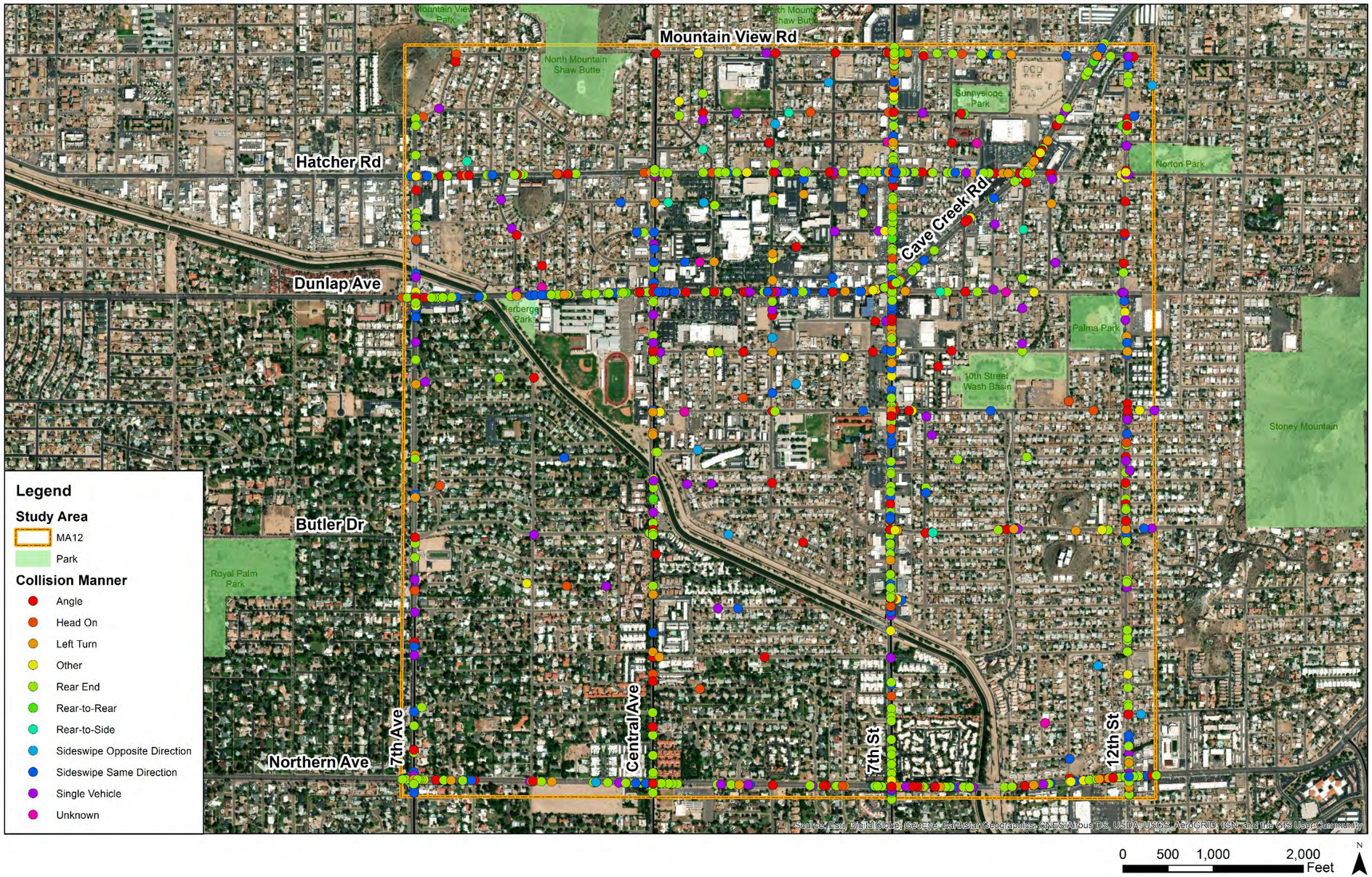
Figure 53: Pedestrian and Bicyclist Crashes by Collision Manner



	Angle	Head On	Left Turn	Other	Rear End	Sideswipe	Unknown
Pedestrian Related	5	3	4	31	0	0	1
Bicyclist Related	5	0	0	11	1	1	0

Figure 54 illustrates the locations of all crashes based on the collision manner within the study area. As shown in **Figure 54**, there is a high occurrence of rear end crashes on 7th Street, Hatcher Road between Central Ave and 7th Street and Dunlap Avenue between 7th Avenue and Central Avenue.

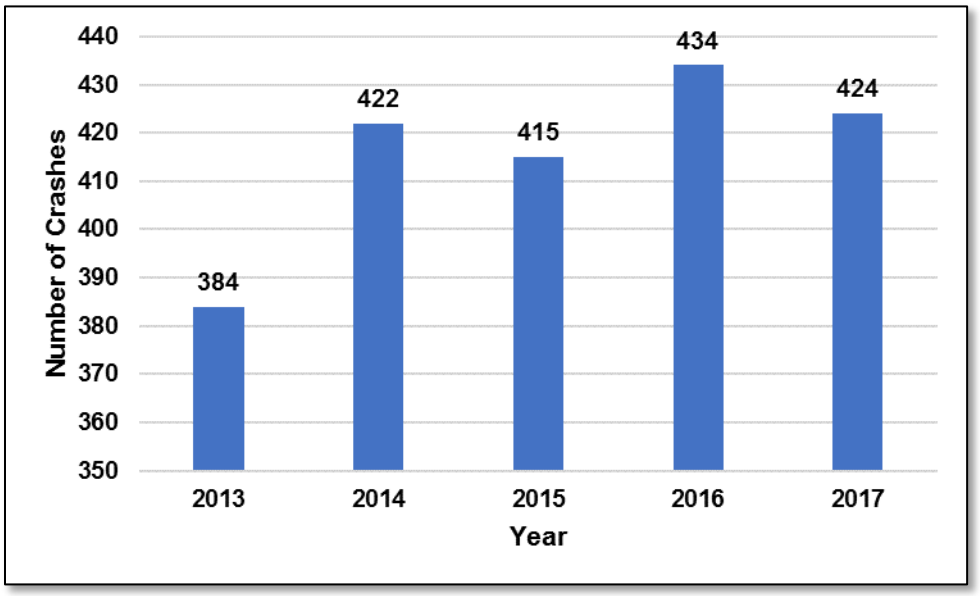
Figure 54: Location of Crashes based on Collision Manner



Crashes by Year

Figure 55 illustrates the total number of crashes that occurred within the MA 12 study area during the five-year study period in each year. As shown in the Figure, the corridor experienced the highest number of crashes in the year 2016 (with total 434 crashes). The number of crashes has increased 10% overall from 2013 to 2017.

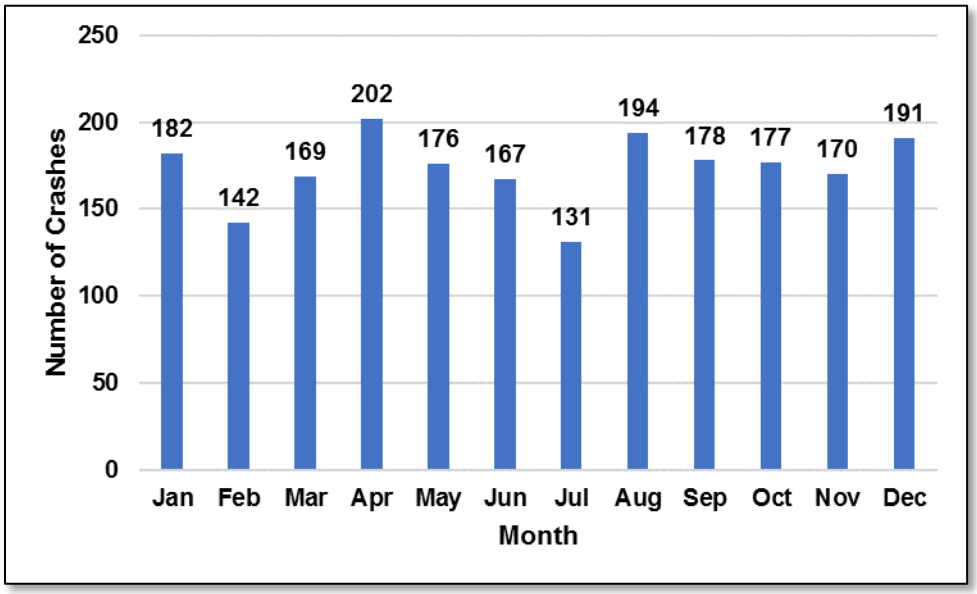
Figure 55: Number of Crashes per Year



Crashes by the Time of the Year

Figure 56 illustrates the total number of crashes that occurred in each month within the study during the five-year analysis period. As shown in the Figure, April and August had the highest number of crashes followed by December, January, September, October and May.

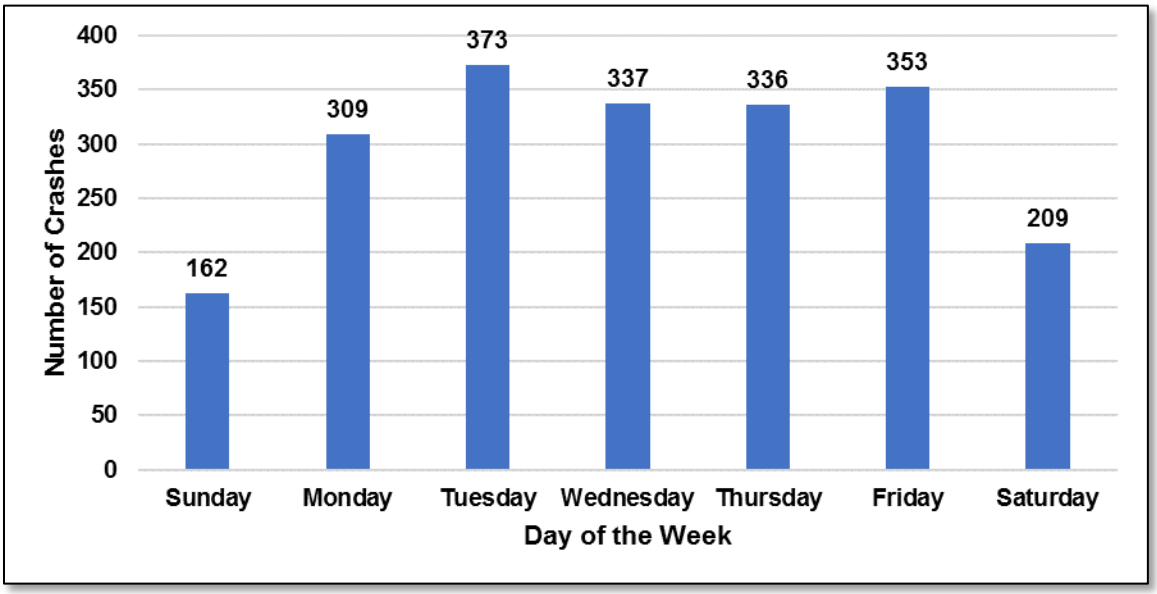
Figure 56: Total Crashes by Month



Crashes by the Day of the Week

Figure 57 illustrates the number of crashes by day of week within the study area during the five-year analysis period. Weekdays tend to experience more crashes than the weekends, with Tuesday experiencing the most crashes.

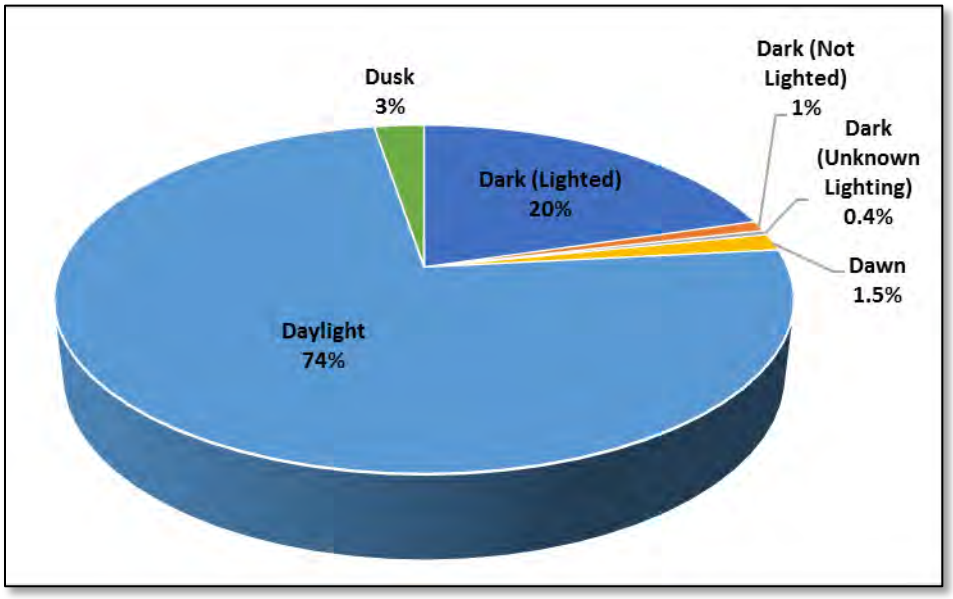
Figure 57: Total Crashes by Day of the Week



Lighting Conditions

Figure 58 illustrates the percentage of total crashes that occurred within the study area during the five-year analysis period based on the lighting conditions of the study area. As shown in the Figure, 74% of the total crashes occurred during daylight and 20% of the crashes occurred during dark lighted conditions.

Figure 58: Crash Percentages by Lighting Conditions

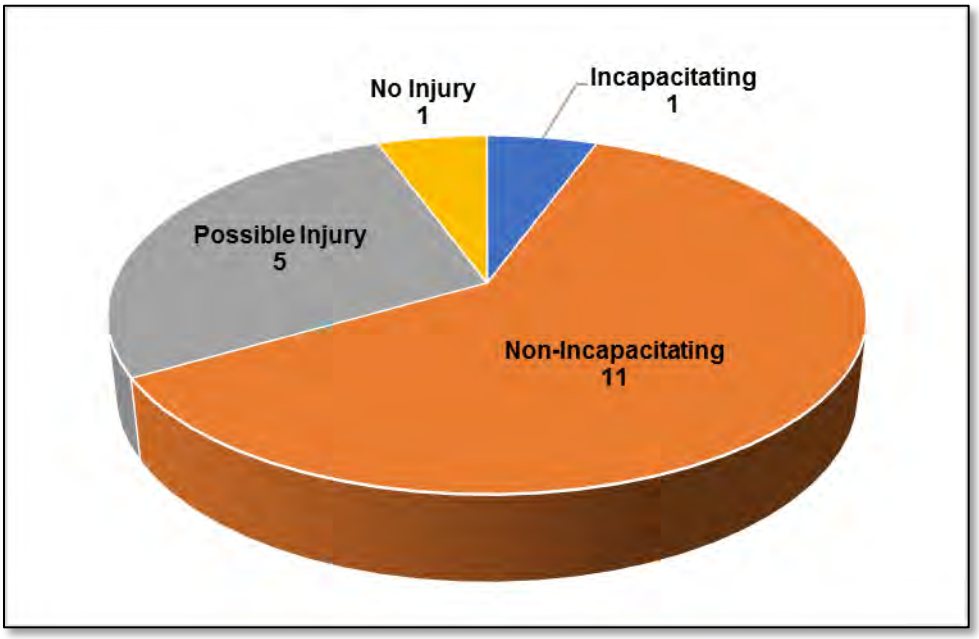


Bicycle Crash Data Analysis

As mentioned in the ***Collision Manner*** section of this report, 18 of the 2,079 crashes (0.9%) within the study area were bicycle related crashes. **Figure 59** illustrates the total number of bicycle related crashes that occurred within the study area during the five-year analysis period based on injury type.

One of the 18 bicycle related crashes resulted in an incapacitating injury in the year 2015 just north of the intersection of Cave Creek Road and 8th Street. This bicycle related crash occurred as the bicyclist that was involved in the collision failed to yield to right-of-way and occurred during daylight conditions. Of the remaining bicycle related crashes, 11 were non-incapacitating injury crashes, 5 were possible injury crashes and 1 was a non-injury crash.

Figure 59: Bicycle Crash Summary



Pedestrian Crash Data Analysis

As mentioned in the ***Collision Manner*** section of this report, 44 of the 2,079 crashes (2.1%) within MA 12 were pedestrian related crashes. **Figure 60** illustrates the total number of pedestrian related crashes that occurred within the study area during the five-year analysis period.

Nine of the 44 pedestrian related crashes resulted in fatalities during the five-year analysis period. Of the remaining pedestrian related crashes, ten were incapacitating injury crashes, 15 were non-incapacitating injury crashes, seven were possible injury crashes and three were no injury crashes. The fatal pedestrian related crashes occurred at the following locations:

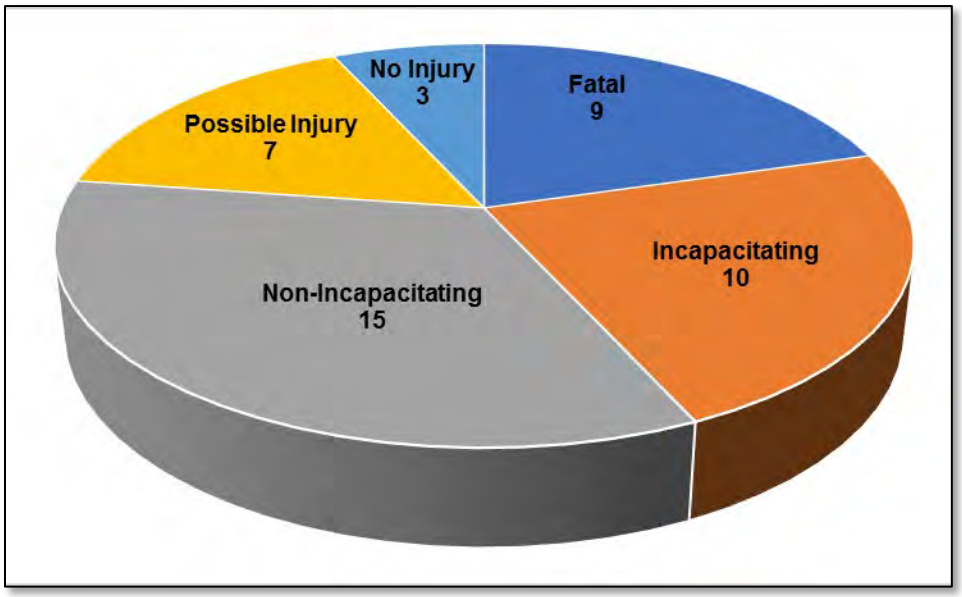
- One at the intersection of 12th Street and Hatcher Road;
- One south of the intersection of 7th Street and Townley Avenue;
- One at the intersection of 7th Street and Vogel Avenue;
- One at the intersection of Dunlap Avenue and 3rd Street;
- One at the intersection of Dunlap Avenue and 7th Avenue;
- One at the intersection of Mountain View Road and 9th Street;
- One at the intersection of Northern Avenue and 11th Street; and
- Two at the intersection of Northern Avenue and 12th Street.

Violations documented for the pedestrian related fatalities included:

- Two of the fatalities occurred because the pedestrian did not use the crosswalk,
- One occurred because the pedestrian failed to yield to the right-of-way,
- Two occurred because the vehicle failed to yield to the right-of-way,
- One occurred because the vehicle was not paying attention or was distracted,
- One was classified with the vehicle having an "other" violation, and
- Two crashes had unknown violations.

Four of the fatalities occurred during daylight conditions, two during dark unknown lighting conditions, two during dawn and one during dusk.

Figure 60: Pedestrian Crash Summary



CHAPTER 6: STAKEHOLDER INTERVIEW SUMMARY

The project team developed a standard stakeholder interview questionnaire designed to focus on daily mobility patterns and safety concerns and considerations. A group of stakeholders were selected to interview to explore the issues, concerns and objectives for mobility challenges, priorities, and desired improvements within MA 12. The interviews were either conducted over the phone or in person and the input is summarized below:

The project team developed a standardized stakeholder interview questionnaire to be utilized for each phone or in-person interview with identified project stakeholders. This standardized questionnaire is referenced as general guidance for the interview conversations with identified stakeholders but it is important to recognize here that the most informative interviews often deviate from the standardized questionnaire to adequately capture the thoughts and sentiments of the stakeholder.

The project team has to-date obtained some very insightful feedback from a few key stakeholders. The project team will continue to work with the City of Phoenix Neighborhood Services department and other staff to incrementally include additional stakeholder interviews as the Mobility Area #12 study process moves forward. Below is a summary of the stakeholder interviews conducted thus far:

Don Cross – City of Phoenix

Sunnyslope Elementary School:

- This school has not conducted a Safe Routes to School (SRTS) assessment
- The crossing of Hatcher Rd. at 3rd Street is a busy and priority location
- The city has conducted some sidewalk improvements to 3rd street, but more are needed along the west side of 3rd St.
- Please be aware of and identify existing sidewalk gaps on local streets in the neighborhood(s) east of the elementary school
- Our study should be aware of an ongoing SRTS assessment beigng conducted just outside of the MA#12 study area at Mountain View Elementary school. Likely that sidewalk projects will be recommended along 7th Avenue and 15th Avenue.

Sunnyslope High School:

- Noted that there are two existing HAWK locations that receive frequent daily use.
- Suggested that the existing cross walk at the intersection of Central Ave. and Dunlap Avenue should be a high visibility, ladder variety.

General Observations:

- Hatcher Road contains daily high volume of pedestrians who tend to be both residents and non-residents that frequently access the Arizona Canal and local area businesses along Hatcher Rd.
- Noted that the existing City of Phoenix Transit Center at 3rd Street and Dunlap Avenue experiences a high volume of pedestrian activity on a weekday basis. And john C. Lincoln hospital at 3rd Street, north of Dunlap, the pedestrian activity is particularly busy in this area.
- Noted that the intersection of 7th Street and Alice Ave. is a particularly busy bicycle and pedestrian crossing location. This is primarily due to the proximity of the Desert View and Holy Trinity Schools (and church) west of 7th Street and the proximity of Palma Park and 10th Street Wash Basin Park to the east of 7th Street. This is a signalized intersection and has two crossing guards that service this locations at school am and pm peal periods.
- Recalls that there are vehicle crash/safety concerns along Central Ave., south of Dunlap Ave. These issues led to the installation of a HAWK at Central Ave. and Townley Ave. which is at the Sunnyslope High School driveway entrance.
- Palma Park has historically had a bit of a reputation as a hangout area for homeless with some drug use and other crime issues. The Phoenix Police Department has been actively enforcing the last couple of years and as a result, crime has dropped in this area.
- The existing Fry's grocery store at the northwest corner of Cave Creek Rd. and Hatcher Rd. generates a large volume of vehicle and pedestrian trips to and from the Sunnyslope neighborhoods. Mr. Cross suggested that this project explore the introduction of a mid-block HAWK crossing of Cave Creek rd. in this area.
- Noted that bike lanes along Cave Creek Rd. have a cut-off point that should be evaluated as part of this study.
- Suggested this study evaluate the 10th Street Drain median/sidewalk improvement project to determine if additional connections to and from 10th Street (between Alive Ave. and the Arizona Canal Trail) should be established. Suggested that potential connections should evaluate ADA accessibility and possible shade trees.
- Noted that Northern Avenue, between 7th Street and 12th Street seems to be an increase on commercial development activity which will induce more vehicular and pedestrian trips in this area. Mr. Cross feels that the ROW along Northern Avenue may not be sufficient to accommodate this

potential increase in daily trips and should be evaluated as a part of this study.
- Noted that there is a lot of bicycle activity in the area primarily due to bicycle users along the Arizona Canal Trail.
- Noted that the existing bus transit line serving Dunlap Ave. is very busy on a daily basis and is primarily a function of daily users going to and from the employment core in the MetroCenter area. Mr. Cross also noted that a potential light rail line could extend to MetroCenter which could put greater demand on the Dunlap Ave. bus transit line.

Maricopa County Department of Health Services

- In conjunction with their project partners, the Dept. of Health Services are currently/will be conducting some focus group surveys in the Sunnyslope area and want to ensure that their project and this Mobility Area Study #12 project are coordinating.
- They are evaluating healthy food options for the Sunnyslope area and noted that the area of 7th Street and Hatcher Rd. does contain healthy food options for residents to access.
- Noted that there are a higher than normal concentration of Guatemalians in the Sunnyslope area.
- They are hoping that a result of their focus group surveys will help lead to an adjustment in some of the bus routes – such as a neighborhood circulator – to enhance access to grocery stores, healthy food options and other community services. Suggested route modifications will likely occur in March of 2019.
- Explored the possibility of coordinating with our project walkability assessment with a “Five Ambassadaor” activity they will be conducting that will takes a field trip on a neighborhood circulator to identify route needs. This will likely be conducted in November.

Kirin Christianson

- Ms. Christianson and her family are new residents to the Sunnyslope neighborhood. They generally live in a home at the end of Hatcher Drive adjacent to the Phoenix Mountain Preserve.
- Ms. Christianson does observe that Hatcher Rd. between 12th Street and 16th Street does experience a high number of pedestrian and bicycle users. She feels that pedestrian and bicycle user safety in this area is generally considered safe.
- Ms. Christianson largely discussed her observations of a frequent number of transients and other “undesirables” tend to congregate at the eastern terminus of Hatcher Drive near the trail entrance into the Phoenix

Mountain preserve which is near her home's driveway entrance. She noted that these individuals congregate at all times of day, including late nights/early morning. She often finds evidence of drug activity at this location.

- Ms. Christianson would like to see this project study recommend that the existing Phoenix Mountain Preserve public access trailhead at the eastern terminus of Hatcher Rd. be closed for public access.

Jeff Tisot – President, East Sunnyslope Neighborhood Association & Block Watch

- Mr. Tisot is President of the East Sunnyslope Neighborhood Association & Block Watch which covers the area of SR 51 to 7th Street and Dunlap Ave. to Northern Avenue.
- Mr. Tisot noted that the following destinations/locations tend to have the highest volume of visitors: Royal Palm, Desert Edge school, Basin park, Palma park and the 10th Street Promenade.
- He also noted that the area of 7th Street from Dunlap to Northern is seeing an increase in restaurant and other commercial activity coming into the neighborhood which will generate more traffic trips.
- Mr. Tisot suggested that he viewed the greatest mobility issue in the area was at 3rd Street and Alice Avenue. This is due to the heavy foot traffic generated by Desert Edge school on Butler and Alive Ave. from the neighborhoods in this area.
- On Butler Ave – cars often speed
- He would like to see speed bumps installed on Alive Ave. and Butler Ave.
- There has been increased vehicular traffic on 12th Street (in the morning especially) north to Mountain View.
- Mr. Tisot feels that there needs to be an increase in pedestrian and bicycle facilities in the area of Palma Park. The city has done a good job with enforcement, now the park is increasingly popular with after school sports and activities. There are condos on the southeast corner of the park with many kids crossing the street.
- He noted that there are lots of pedestrians daily using Hatcher Rd. He believes most of these individuals are transients and not Sunnyslope residents.
- He noted that Horton Park at 12th Street and Hatcher Rd is not as big of a safety concern as the Palma Park area.
- Mr. Tisot referenced a pending city application for a rehabilitation home/facility to possibly be located at the eastern terminus of Dunlap Ave.

Near the Phoenix Mountain Preserve. He noted that if approved, this facility would increase pedestrian traffic and this study should evaluate any needed facilities in this general area.

- Mr. Tisot reference a "Tope 8" request for safety projects that he and his 27 block watch captains have been developing and recommending with the city of Phoenix. These recommendations are illustrated below:

Mobility Safety Request

1. **Traffic light and cross walk on 12th St at Alice Ave**

There are many residents that live East of 12th St in single family homes and the condo/apartment complex on 12th St between Townley Ave and Alice Ave. There are many children in this area that along with some elderly that go, or would go, to Palma Park located at 12th St and Dunlap. It is EXTREAMLY dangerous for pedestrians, walkers, bikes, and wheel chairs to cross 12th going to our community park. An extra benefit of this light would help relieve some congestion on 12th St at Northern.

2. **Round-A-Bout in the intersection of Butler Dr and 10th St**

Butler Dr between 12th St and 7th St is another area in our community that poses a sever safety risk to all pedestrians, dog walkers, mobility scooters, and bikers. The east end of Butler is on a hill and traffic going west is always at a high rate of speed. Our community is fortunate to have a nice path for the above mentioned going from the canal to the south to Alice Ave to the north. People use this heading to the 10th St Basin Bark and Palma Park. This path is heavily used and enjoyed by the entire neighborhood and this intersection needs to be made safer.

3. **A Hawk traffic crosswalk and lights on Northern Ave and 13th St.**

Northern is another highly traveled road in our neighborhood. There are the La Madelina condos/apartments on the Northeast corner and the School for the Blind on the Southeast corner. Many of the students from the school and residents of La Madelina cross this bust street going to the shopping centers on the South side of Northern. Many of the residents at La Madelina do not drive or have vehicles are forced to walk or ride a bike. This cross walk will be a fantastic way to make this dangerous street safer.

4. **A Hawk traffic crosswalk and lights on 12th St and E. Griswold Rd**

12th St is another highly volume vehicle road. This crossing signal will give the ability to safely cross 12th St between the east and west neighborhoods. This is another area frequently crossed by families walking to Desert View Elementary school.

5. **Speed Intrusion Humps on Butler Dr between 12th St and 7th St.**

Butler Dr between 12th St and 7th St is another area in our community that poses a sever safety risk to all pedestrians and bikers. The east end of Butler is on a hill and traffic going west is always at a high rate of speed. This is one of the heaviest traveled streets in our neighborhood. Residents heading to the 10th St path, and going to the businesses on 7th St. Many families and children walk and ride their bikes along Butler Dr going to Desert View Elementary, Sunnyslope High, and Royal Palm schools.

6. **Stop signs and crosswalks on Alice Ave at 10th St.**

This intersection is the north end of the walking path that splits 10th St. On the north side of this intersection is the 10th St Basin Park which has a dirt trail completely around it. Neighbors use the 10th St path then cross Alice Ave and continue using the dirt train for biking, walking, mobility scooters, running, and as a main travel route to get to Palma Park for many residents. With there virtually being two 10th Streets with two-way traffic on both sides and the walking path between poses a unique intersection at Alice. It Is difficult for vehicle operators to see everything with this intersection making it very dangerous to cross. The 10th St Basin Park is used all the time by soccer teams, families and children. The signs and crosswalks would make this much safer to cross.

7. **Stop signs and crosswalks on Townley Ave and 11th St.**

This intersection is located at the Southeast corner of Palma park. A park that has became a positive and widely used park in our neighborhood. This intersection has a North and South stop sign but none East West on Townley. It is located on the Southwest corner of Palma park probably the main corner where residents enter the park. Number two and six above are leading up to this entry point. Townley is a primary traffic rout through our neighborhood and there are no traffic breaks like stop signs, traffic lights, or speed humps, between 12th St and 7th St. I have seen many many close calls with people crossing this intersection going to the park.

8. **Speed humps or intrusion devices on Townley Ave between 12th St and 7th St.**

This is another highly traveled road by pedestrians and bikes. It passes Palma Park, the retention pond, and the 10th St Basin Park. There is nothing to slow traffic from 12th St to 7thSt. Making this an extremely dangerous travel route for residents. There are many multi family housing units on the North side if the road which many residents are traveling on foot, bike, or wheelchair to the parks, shopping on 7th St and schools on the West side of 7th St.