ARIZONA
Goodyear

TRANSPORTATION
Master Plan

JUNE 12, 2014

RESOLUTION NO. 14-1640

A RESOLUTION OF THE MAYOR AND COUNCIL OF THE CITY OF GOODYEAR, MARICOPA COUNTY, ARIZONA, ADOPTING THE CITY OF GOODYEAR TRANSPORTATION MASTER PLAN.

WHEREAS, on July 14, 2014, by Resolution No.14-1640, the City of Goodyear City Council adopted the Goodyear General Plan 2003-2013, which includes a Circulation Element incorporating a Roadway Functional Classification Plan and circulation goals, objectives, and policies for the City; and,

WHEREAS, on December 7, 2009, by Resolution No. 09-1345, the City of Goodyear City Council adopted the Roadway Functional Classification Plan 2010 Amended Plan; and,

WHEREAS, the City of Goodyear has contracted with HDR to develop a comprehensive Transportation Master Plan; and,

WHEREAS, the 2014 Goodyear Transportation Master Plan has built upon the Circulation Element of the Goodyear General Plan 2003-2013 and the Roadway Functional Classification Plan 2010 Amended Plan to address all existing and proposed modes of travel within Goodyear and its planning area; and,

WHEREAS, the Goodyear General Plan Committee appointed a Transportation Subcommittee that actively participated in the development of the Master Plan; and,

WHEREAS, an extensive public outreach process was conducted to provide effective, early and continuous public participation in the development of the Transportation Master Plan, involving; public forums, stakeholder interviews, field reconnaissance, regional and detailed traffic analysis; and,

WHEREAS, City staff held an Open House on February 11, 2014, to solicit citizen input into the 2014 Goodyear Transportation Master Plan, and the citizens who attended expressed an interest in transit and nonmotorized modes and the 2014 Goodyear Transportation Master Plan reflects those concerns; and,

WHEREAS, the 2014 Goodyear Transportation Master Plan is closely coordinated with the Parks, Recreation, Trails and Open Space Plan, the 2025 General Plan and the Infrastructure Improvement Plan; and,

WHEREAS, City staff will be able to use the 2014 Goodyear Transportation Master Plan as a tool to properly classify streets, to build the Capital Improvement Program, and to better coordinate transportation issues with other entities; and,

WHEREAS, the Transportation Master Plan conforms to the desires and needs of the citizens of Goodyear, Arizona; and,

WHEREAS, after reviewing and receiving public comment on the Transportation Master Plan, the Mayor and Council find that adoption of the Transportation Master Plan is in the best interest of the City of Goodyear, Arizona and its commitment of providing an effective, safe and efficient multimodal transportation system.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND COUNCIL OF THE CITY OF GOODYEAR, ARIZONA, AS FOLLOWS:

SECTION 1. The "2014 Goodyear Transportation Master Plan" as prepared and reviewed by the citizens of the City of Goodyear, a copy of which is attached hereto as Exhibit A and incorporated herein by reference, is hereby adopted by City Council.

PASSED AND ADOPTED by the Mayor and Council of the City of Goodyear, Arizona, this 14th day of July, 2014.

Georgia Lord

Georgia Lord, Mayor

Date: 7/15/14

ATTEST:

Maureen Scott

Maureen Scott, City Clerk

APPROVED AS TO FORM:

Roric Massey, City Attorney

CERTIFICATION OF RECORDING OFFICER

STATE OF ARIZONA)
) ss.
County of Maricopa)

I, the undersigned Maureen Scott, being the duly appointed, qualified City Clerk of the City of Goodyear, Maricopa County, Arizona, certify that the foregoing Resolution No. 14-1640 is a true, correct and accurate copy of Resolution No. 14-1640, passed and adopted at a regular meeting of the Council of the City of Goodyear, Maricopa County, Arizona, held on July 14, 2014, at which a quorum was present and, by a 6-0 vote, 6 voted in favor of said resolution.

Given under my hand and sealed this 16th day of July, 2014.

seal

CITY OF GOODYEAR INCORPORATED 1946 GOODYEAR, ARIZONA

Maureen Scott

City Clerk

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ACKNOWLEDGMENTS

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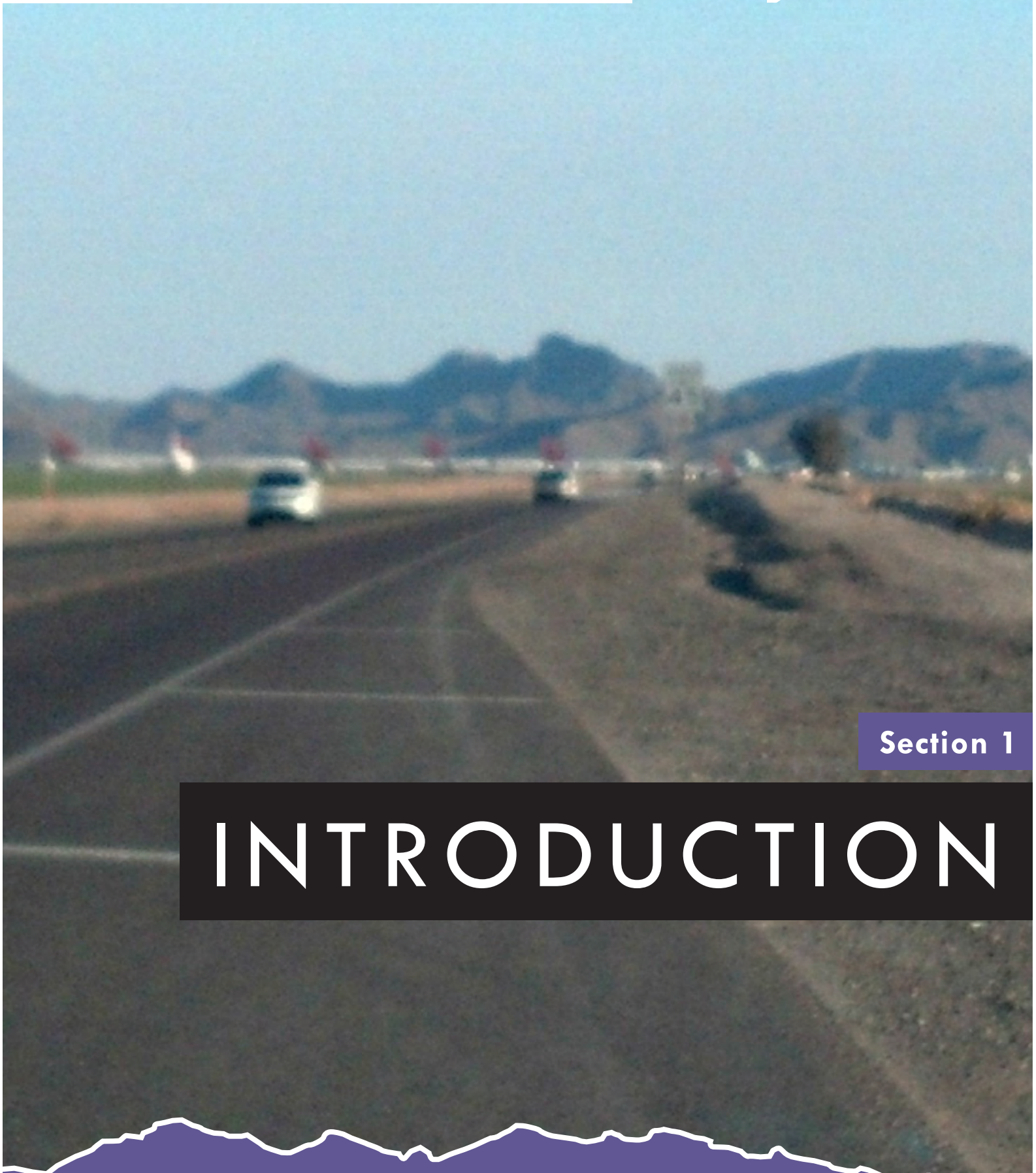


Section 1

INTRODUCTION

1. INTRODUCTION

The Goodyear Transportation Master Plan (the Plan) is the City of Goodyear's plan for maintaining and enhancing its transportation system.

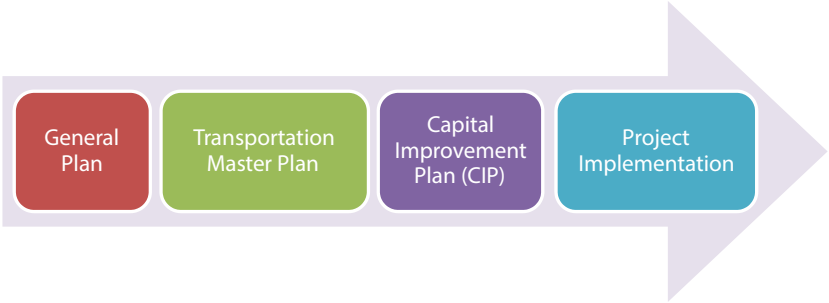
The Plan addresses all transportation modes in Goodyear—vehicular, nonmotorized, and transit—and provides the City with direction on specific improvements to enhance the ability of residents and visitors to navigate the community.

PLANNING PROCESS

The planning process entailed several steps, from idea conception to implementation, as described in the following text.

The Plan is not a stand-alone document; it is meant to support the City's General Plan. The General Plan describes the City's vision for the future and identifies the goals set to achieve that vision. This Plan provides greater detail with regard to transportation infrastructure to achieve the City's vision as embodied in the General Plan.

The Plan outlines a 20-year transportation program. It lists planned improvements for the short-, mid-, and long-term planning horizons. It is one phase in the City's multiphased approach to planning for future transportation improvements (see figure on this page and the component descriptions that follow).



GENERAL PLAN

The City's General Plan outlines Goodyear's long-term (20+ years) vision for future community development. The General Plan features a number of elements that address every facet of planning. It contains a Land Use and Transportation Plan, which includes land use and transportation maps along with development policies that provide guidance and direction to achieve the City's vision for the future.

TRANSPORTATION MASTER PLAN

The Plan provides the City with policy direction and guidance for a range of transportation improvements. Planning-level cost estimates are discussed,

and improvement projects are prioritized to assist with project programming and implementation.

CAPITAL IMPROVEMENT PROGRAM

The Capital Improvement Program (CIP) is a financial plan that supports Goodyear's present and future infrastructure needs. The CIP outlines project construction costs, funding sources, and estimated future operating and maintenance costs. It is designed to ensure that improvements will be made when and where they are needed and that the City will have the funds to build and maintain such improvements.

Capital projects are defined as one-time projects. They are assets of significant value—generally costing more than $50,000—with an expected useful life of at least 5 years. The CIP is updated annually to ensure that it addresses new and changing priorities within the City. The CIP is a plan, as such, projects are subject to change based on new or shifting service needs, special financing opportunities, emergency needs, or other directives established by the Mayor and Council.

PROJECT IMPLEMENTATION

Project implementation involves scoping the project, dedicating funding, contracting the work, and managing the project through completion.

PUBLIC AND STAKEHOLDER INVOLVEMENT

TRANSPORTATION SUBCOMMITTEE

The General Plan Committee created a Transportation Subcommittee to provide guidance and oversight for preparing this Plan. Subcommittee members included business representatives, Goodyear residents, and stakeholder agency representatives. The Transportation Subcommittee met at various times during preparation of the Plan and provided input on the working documents and topics being presented.

Goodyear residents discuss transportation issues with a member of the Plan's study team at a General Plan open house held in February 2013.

GENERAL PLAN PUBLIC INVOLVEMENT

February 2013 Open House Meetings

In 2013, the Plan's study team participated in a series of open house meetings related to the General Plan Update, held from February 26 to 28. An exhibit showed the Goodyear transportation network, and study team members were available to talk about the study, answer questions, and record

comments. Major topics raised by members of the public are listed below. A summary of the open house meetings is included in Appendix A.

- truck traffic
- transit (dial-a-ride, local circulator, regional connections, and high-capacity transit)
- Gila River crossings
- intelligent transportation systems
- bicycle safety and education

February 2014 Open House Meeting

One year after the General Plan Update open house meetings, the Plan's study team held an open house meeting on February 11, 2014. The meeting included a formal presentation of initial Plan recommendations. The study team also discussed the planning process and next steps. Topics of interest to the public included the nonmotorized path system and enhanced transit services, especially for residents who may not have access to a vehicle (where transit services would have the greatest impact). A summary of the open house meeting is included in Appendix A.

KEY TOPICS

Several key issues provide context to the planning effort and offer insight into ongoing concerns among Goodyear residents and stakeholders.

TRUCK TRAFFIC

Concerns regarding truck traffic have recently been aggravated because of temporary detours related to the Loop 303 construction. The Interstate 10 (I-10) on and off ramps at Cotton Lane have been closed during construction of the new I-10 and Loop 303 interchange since August 2012. At that time, the Arizona Department of Transportation (ADOT) recommended Sarival Avenue and Citrus Road as alternative routes (which have eastbound and westbound ramp access to I-10, respectively). Detour signs were installed to assist travelers. As a result, some of the diverted eastbound truck traffic to and from Goodyear to I-10 wound up on Sarival Avenue. Traffic counts conducted in March 2013 indicated that almost 10 percent of traffic on Sarival Avenue was commercial vehicles.

Detours have been implemented during construction of the Loop 303 in Goodyear. The Loop 303 interchange with Interstate 10 is expected to open in late 2014.

TRANSIT SERVICE

Goodyear currently has limited transit service, primarily focused east of Litchfield Road on the McDowell Road, Van Buren Street, and I-10 corridors.

During the open house meetings, numerous residents expressed interest in local, regional, and high-capacity transit services for Goodyear.

In 2012, Goodyear partnered with neighboring communities, Valley Metro, and the Maricopa Association of Governments (MAG) to determine the need for additional local transit service. Key short-term study recommendations included improving local bus service on McDowell Road and Van Buren Street and implementing a bus circulator in Goodyear.

GENERAL PLAN

Concurrently with this Plan update, Goodyear is updating the General Plan. The Goodyear 2025 General Plan Update identifies an overall vision for the community and covers a wide range of topics, including economic development, sustainability, parks, housing, transportation, and land use. This Plan has been developed in coordination with the General Plan Update to ensure that it supports and helps to implement the General Plan vision and goals.

The draft Goodyear 2025 General Plan emphasizes the connection between land use and transportation.

BICYCLE AND PEDESTRIAN FACILITIES

Goodyear has the right ingredients for a bicycle- and pedestrian-friendly community: temperate climate, level terrain in the northern area of the city, and beautiful scenery. Additionally, much of the planning area is yet to be developed, so facilities can be included in infrastructure improvements. Where development has occurred, bike lanes have been included on many arterial streets. An opportunity exists to create a citywide connected network of trails and paths to make it easy for residents to choose bicycling or walking for transportation, recreation, or exercise. A system developed for bicycling and walking will also accommodate runners, joggers, wheelchair users (motorized or not), skaters, skateboarders, people with strollers, and all other manner of wheeled devices.

PARKS AND RECREATION MASTER PLAN

Concurrently with this Plan update, Goodyear is updating the Parks and Recreation Master Plan, which will set standards for parks and recreation facilities, including fields, ball courts, and community centers, as well as recreation programs. It will identify the types and locations for parks and recreation facilities.

PLAN ORGANIZATION

The Plan has six main sections:

1. Introduction

   This section provides an overview of the Plan and discusses key topics addressed by the Plan's recommendations.

2. Goals and Objectives

   The specific goals and objectives in the Plan help focus efforts on priorities for addressing the City's long-range transportation needs.

3. Background

   This section describes the existing Goodyear transportation network. Goodyear's growth during the past 10 years has been rapid. For the City to effectively plan for the future, assumptions must be made about what the community will look like in the future; this section includes growth projections through the Plan's horizon of 2035.

4. Recommendations

   This section identifies the recommendations for the future transportation system; addressing vehicular, bicycle, pedestrian, and transit modes. While the recommendations are identified for short-term (5 years), medium-term (10 years), and long-term (20 years) periods, many factors will influence the timing of future projects. Funding availability, forecast population growth, future traffic levels, and development will influence project implementation. The Plan provides guidance for the City, and it will be revisited regularly to ensure that its recommendations continue to be relevant and consistent with the City's needs.

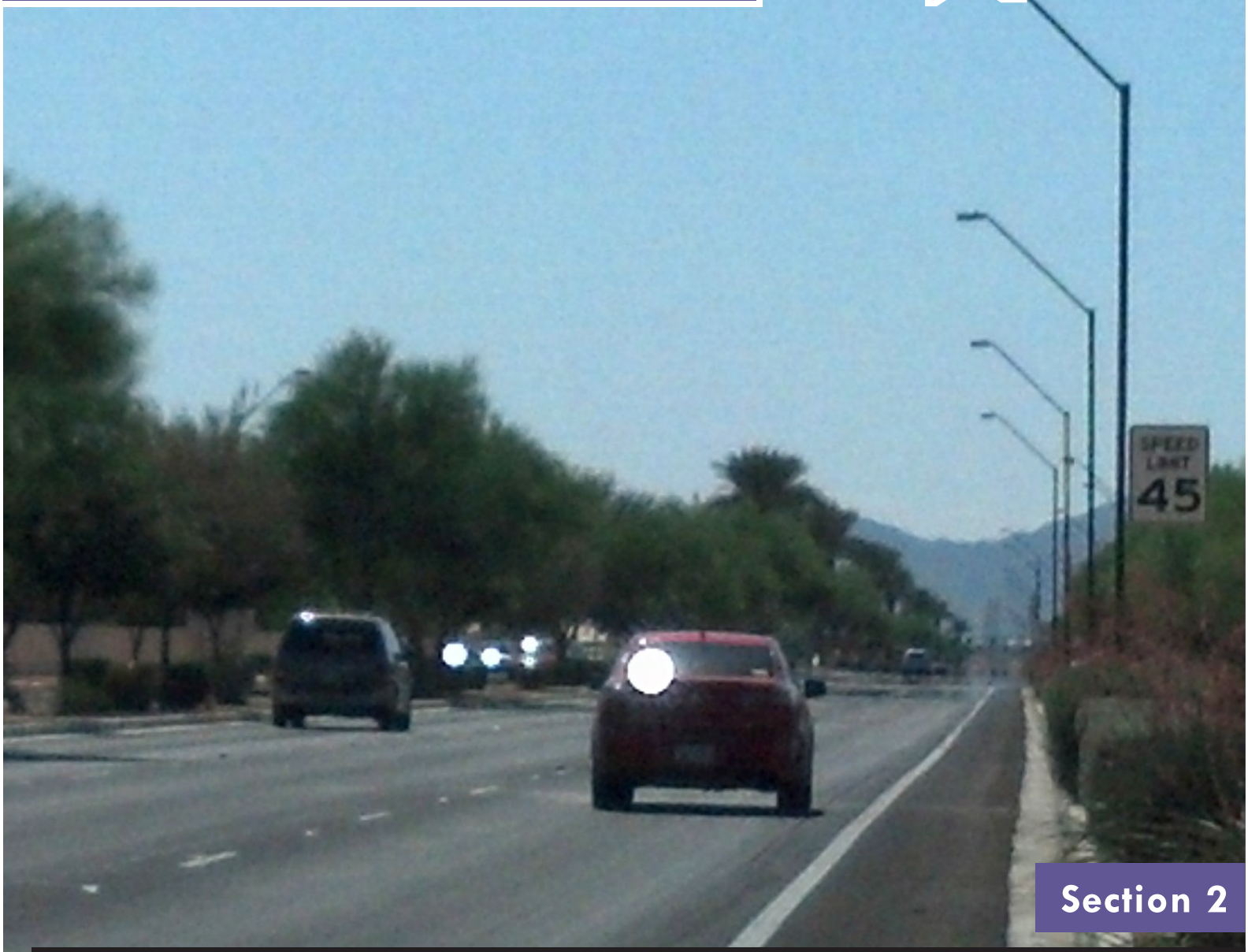
5. Guidance

   This section provides direction for the City with regard to specific transportation issues. Topics covered include: truck routing, transportation system management, operations and maintenance, transit facilities, and roadway design standards.

6. Implementation

   Section 6 presents information on moving forward with the Plan recommendations. Many of the recommendations require funding. This section acknowledges that funding is probably the most difficult topic to address, but is critical to nearly every aspect of the work to be implemented.

Additional supporting materials referenced throughout the Plan may be found in the appendixes. Additional background information on the transportation system may be found in the Goodyear Transportation Master Plan Existing and Future Conditions working paper (dated October 2013).



Section 2

GOALS and OBJECTIVES

Goodyear ARIZONA

2. GOALS AND OBJECTIVES

The City's moderate growth scenario from the General Plan shows that the 2040 population will be three times today's population of approximately 70,000. The Plan's overarching goal is to accommodate this growth with a transportation network that complements the City's land use development.

The goals, objectives, and policies outline the framework for developing and implementing a Plan that will achieve the overall vision for transportation. Goals are statements concerning desirable long-range achievements. These goals are general in nature and describe the ideal future situation. The objectives identified under each goal provide intermediate milestones that are essential to ultimately achieving the City's goals. The objectives are expressed in terms that are measurable and achievable. In some instances, several objectives may apply to each goal. Policies are the actions that must be followed to accomplish the objectives.

Overall, the goals are similar to those identified in the 2003 General Plan: provide Goodyear residents and visitors with an efficient and safe transportation system that meets the needs of multiple modes, including vehicular, transit, pedestrian, and bicycle. The City should be commended for the many objectives realized since that time. Updates to the goals and objectives were made to address issues raised through the public involvement process, with input from the Transportation Subcommittee.

GENERAL PLAN GUIDING VISION

Create a highly desirable place for all to live, work, visit, and play by fostering a sustainable community with diverse destinations connected throughout the city. Encourage growth by offering opportunities for cultural, educational, and economic development while recognizing our assets, history, and open spaces and maximizing partnerships and collaboration.

GOALS, OBJECTIVES, AND POLICIES

GOAL A: A well-functioning roadway network that effectively and efficiently serves Goodyear's residents, visitors, and employers.

Objective A-1: Continue to coordinate with MAG, ADOT, the Federal Highway Administration (FHWA), and other agencies to enhance regional connectivity.

Policy A-1a: The City shall cooperate with MAG, ADOT, FHWA, and the Maricopa County Department of Transportation (MCDOT) to implement the design and construction of access ramps on I-10 at its intersection with Perryville Road (to provide full access).

Policy A-1b: The City shall partner with MAG, ADOT, FHWA, and MCDOT to implement the design and construction of access ramps on Loop 303 at its intersection with Thomas Road (to and from the north), McDowell Road (grade-separated), Van Buren Street (grade-separated), Yuma Road (full access), and State Route (SR) 30 (east- and westbound access). (See ADOT's project website for more information: azdot.gov/projects/phoenix-metro-area/.)

Note: Planning for Loop 303 south of the proposed SR 30 is beyond this Plan's horizon. Recommendations would generally follow those identified in MAG's framework studies.

Policy A-1c: The City shall collaborate with MAG, ADOT, FHWA, and MCDOT to ensure that a 300- to 350-foot right-of-way is preserved for development of Loop 303.

Policy A-1d: The City shall continue to expand its regional approach to understanding and solving transportation issues.

Policy A-1e: For properties or existing master plans that currently have designated the need for a freeway or high-capacity road corridor such as a parkway, the City shall require that the property owners acquire (or provide resources for the City to acquire) necessary on- or off-site rights-of-way for the designated freeway or road corridor in an amount that is roughly proportional to the development's traffic on such a freeway or road corridor.

Policy A-1f: The City shall continue to use its adopted cross sections for arterial, collector, and residential roadways.

Policy A-1g: The City shall continually monitor its roadway/intersection levels of service to implement lane additions, lighting improvements, and traffic control upgrades within reasonable cost.

Policy A-1h: The City shall continue to use roadway construction standards produced by MAG.

Policy A-1i: The City shall use its CIP to install illuminated street signs for traffic signals at the intersections of major arterial roadways.

Policy A-1j: The City shall partner with MAG, ADOT, FHWA, and MCDOT to expand the Goodyear I-10 Park-and-Ride at 133rd Avenue. Future consideration should be given to the design and construction of high-occupancy vehicle direct access ramps from I-10.

Policy A-1k: The City shall develop and maintain a roadway network consistent with the Roadway Functional Classification Map shown in the Plan.

Objective A-2: Effectively transport truck traffic through the City with minimal adverse impacts on residential areas and pedestrians.

Policy A-2a: The City will implement the recommendations of the 2001 City of Goodyear Truck Route Study, along with revisions identified in this Plan and shown on Figure 5-1, Truck Route Map.

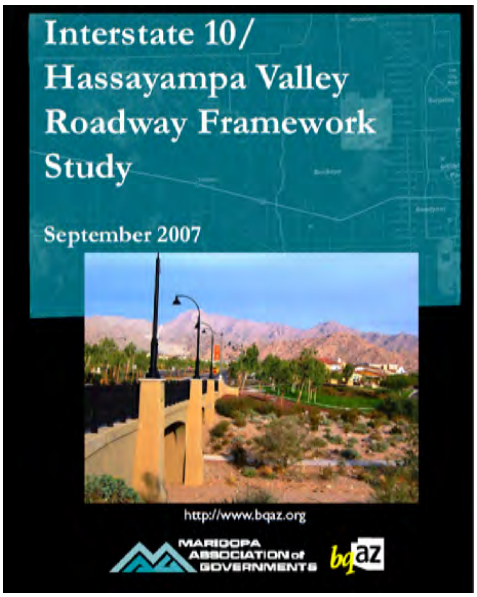
Policy A-2b: The City will install truck route signs to denote through routes and bypass routes in the city.

Policy A-2c: The City shall review and periodically monitor the impact of truck routing on city-wide traffic mobility and circulation.

Objective A-3: Evaluate the need for enhanced mobility throughout the community.

Policy A-3a: The City shall consider findings of the Interstate 10/ Hassayampa Valley Roadway Framework Study, Interstates 8 and 10 Hidden Valley Transportation Framework Study, and MCDOT transportation analyses to determine the appropriate mix and location of freeways, parkways, and major arterial roadways to serve its southern planning area.

Policy A-3b: The City shall support the expansion of existing bridges and addition of future bridges across the Gila River to provide high-capacity



The Interstate 10/Hassayampa Valley Roadway Framework Study identified a conceptual network of roadways through the area, including portions of Goodyear, to address the region's significant growth potential. General roadway alignment recommendations identified in the study are reflected in this Plan.

corridors that connect the central and southern regions of its planning area.

Policy A-3c: The City shall partner with the Cities of Phoenix and Avondale, the Town of Buckeye, and other agencies to establish SR 30—a high-capacity east-to-west corridor through the City—a high-capacity east-to-west corridor through the City in proximity to Broadway Road from Dysart Road to Perryville Road.

GOAL B: A community linked internally and externally with adequate transit service to meet the needs of its residents, workers, and visitors.

Objective B-1: Continue to provide transit service, extend the transit system, and make transit facility improvements in Goodyear.

Policy B-1a: The City shall ensure that the rail and bus transit modes will be fully incorporated into an integrated multimodal transportation system.

Policy B-1b: The City shall preserve rail corridors and evaluate other existing corridors for potential use for future rail transit or for "rails-to-trails" recreation use.

Policy B-1c: The City shall reduce its internally generated vehicle trips per day leaving and returning to the community by improving Goodyear's employment base.

Policy B-1d: The City shall identify I-10 and Loop 303 as preferred corridors for bus rapid transit routes within and outside the city.

Policy B-1e: The City shall evaluate the recommendations and findings of MAG's Sustainable Transportation and Land Use Integration Study, especially pertaining to the "transit-served place type" and its applicability to the Transit and City Center Overlay areas.

Policy B-1f: The City shall work with MAG and Valley Metro to identify and implement new park-and-ride transit facilities along Loop 303, coordinated with new or extended transit routes.

Policy B-1g: The City shall continue to locate, design, and implement bus bays along selected transit corridors (for example, McDowell Road, Van Buren Street, and Estrella Parkway) to provide bus patrons with access, shelter, and safety.

Policy B-1h: The City will continue to partner with Valley Metro to investigate and implement van pools (that is, Dial-A-Ride) for elderly and special needs residents and to expand local fixed transportation routes.

Policy B-1i: The City will encourage ride sharing and will coordinate with ADOT and MAG to promote the development of high-occupancy vehicle lanes in freeway corridors.

Objective B-2: Evaluate the cost and public benefit of a community- or subcommunity-wide transit circulator system.

Policy B-2a: The City shall facilitate an evaluation study to examine the cost and benefits of creating a City-operated transit circulator system serving the Phoenix-Goodyear Airport, City Center, Planned Regional Center, and other activity centers if survey data suggest sufficient patron demand or interest.

Objective B-3: Continue to promote the potential for commuter rail through the city.

Policy B-3a: The City shall continue to support regional efforts to implement the Union Pacific Railroad (UPRR) as a commuter rail corridor serving the transportation needs of residents, workers, and visitors between southern California, the Palo Verde Nuclear Generating Station, Goodyear, and downtown Phoenix, as identified in MAG's Commuter Rail System Study.

Policy B-3b: The City shall evaluate the potential of a commuter rail station north and east of the intersection of Maricopa County Route 85 (MC 85) and Estrella Parkway, as identified in MAG's Commuter Rail System Study.

eGo CarShare is one of a growing number of organizations providing car sharing in U.S. cities. Car sharing is a car rental model where people rent cars for short periods of time, often by the hour.
Photo credit: eGo CarShare

GOAL C: More sustainable transportation options for residents and visitors.

Objective C-1: Encourage bicycling for commuting and recreation.

Objective C-2: Explore options for offering bicycle and vehicle sharing options.

Policy C-2a: The City will investigate car sharing options and will collaborate on further studies of the benefits and opportunities associated with car sharing.

GOAL D: A nonmotorized transportation network that links neighborhoods with community activity centers.

Objective D-1: Expand the identified regional bicycle system with additional linkages in Goodyear.

Policy D-1a: The City will implement bicycle lanes as identified in the adopted Parks, Trails, and Open Space Plan.

Policy D-1b: The City shall provide bicycle lanes for the safe operation of bicycles on all identified collector and arterial roadways when they are widened or newly built and, if possible, when they are repaved or reconstructed.

Objective D-2: Continue to promote a safe, walkable community.

Policy D-2a: The City shall continue to follow principles established by Crime Prevention Through Environmental Design.

Policy D-2b: The City shall investigate locating park benches every quarter mile along major walking corridors in the city.

Policy D-2c: The City shall use design provisions to ensure that pathways and walkways are in accordance with Americans with Disabilities Act (ADA) requirements.

GOAL E: A functional and economically successful airport.

Objective E-1: Support the realignment of the Phoenix-Goodyear Airport main entrance to Bullard Avenue.

Policy E-1a: The City of Goodyear will continue to partner with the City of Phoenix in planning for establishing the main entrance to the Phoenix-Goodyear Airport from Bullard Avenue.

Objective E-2: Support airport-compatible development.

Policy E-2a: The City of Goodyear will respect noise contour lines established by past and updated aviation studies in siting appropriate adjacent and proximate land uses.

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Section 3

BACKGROUND

Goodyear ARIZONA

3. BACKGROUND

GOODYEAR TODAY

Goodyear is part of the Phoenix metropolitan area—the 13th most populous metropolitan area in the nation with a 2012 population of over 4.3 million.

GOODYEAR IN THE GREATER REGION

Goodyear is located approximately 20 miles west of downtown Phoenix, in an area referred to as the Southwest Valley. The city is bordered to the east by Avondale and Litchfield Park and to the west by Buckeye. North of Goodyear are Glendale and Luke Air Force Base (LAFB) (Figure 3-1).

North of the Gila River, the terrain is relatively flat and has been used for agriculture prior to being developed. As development has occurred, these agricultural fields have transitioned to urban land uses. However, large tracts of agricultural land remain. This area of Goodyear is served by a grid of arterial roadways at 1-mile spacing that connect to the regional grid system. The regular 1-mile spacing of arterial roadways is disrupted in the north by LAFB, a major training base of the U.S. Air Force's Air Education and Training Command.

The character of the southern planning area (south of the Gila River) is different, with mountains and major drainages that create challenges for transportation infrastructure. The topography has resulted in a more curvilinear road network.

Gila River

The Gila River presents a challenge to north-to-south travel in the city. Today, three crossings of the Gila River exist within Goodyear: on Cotton Lane, Estrella Parkway, and Bullard Avenue. South of the Gila River, the Sierra Estrella and Estrella Mountain Regional Park create a barrier to the east. Limited roadways and development distinguish the southern planning area from the rest of

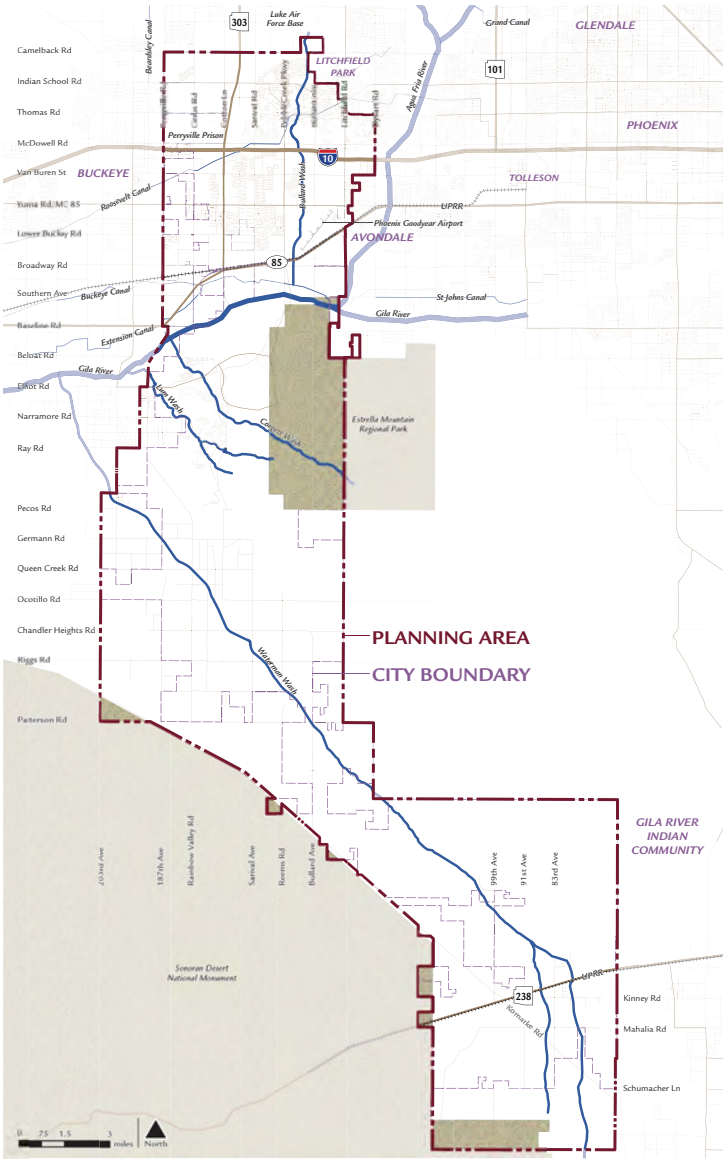


Figure 3-1 Goodyear Planning Area

The Goodyear planning area extends from 3 miles north of Interstate 10 to 10 miles north of Interstate 8. The long, linear nature of the city, along with natural barriers, major washes, and remoteness of the southern planning area, contribute to the southern planning area's separation from the northern portion of the city.

the community. Bordering the city to the southwest is the Sonoran Desert National Monument.

Today, there is limited access to the area of Goodyear south of Patterson Road, with no major transportation links. Until development occurs in this area, serving it will continue to be a financial and logistical challenge.

Major washes drain the southern planning area and occasionally flood, making roads impassable. Above, Waterman Wash has flooded Rainbow Valley Road in Goodyear's southern planning area.
Photo credit: AZFamily.com

Sonoran Desert National Monument

The Sonoran Desert National Monument encompasses more than 487,000 acres of Sonoran Desert landscape. The Sonoran Desert is the most biologically diverse of the North American deserts, and the monument exemplifies this desert setting. The monument is also home to three Congressionally designated wilderness areas, many significant archaeological and historical sites, and remnants of several important historical trails.

Neighboring Communities

Avondale

Avondale is Goodyear's neighbor to the east, sharing a border from Indian School Road in the north to south of Estrella Mountain Regional Park in the south. It has a population of approximately 78,000. South of MC 85, the arterial roadway grid connecting the two cities is interrupted by the convergence of the Agua Fria and Gila Rivers. Just south of the Gila River in Avondale is Phoenix International Raceway, a motorsport track with seating for approximately 70,000 spectators that is home to two annual NASCAR race weekends. On these weekends, event traffic affects Goodyear—designated traffic routes include Estrella Parkway, Litchfield Road, and Bullard Avenue (south of MC 85).

Buckeye

Goodyear shares its western border with the Buckeye planning area. Buckeye's nearly 600-square-mile planning area belies its modest population of approximately 54,000. According to the Town of Buckeye's website, over 240,000 new homes are planned in the community. The planned SR 30 freeway (the "I-10 Reliever") is proposed to address some of the east-to-west travel demand generated by growth in this area.

Litchfield Park

Litchfield Park, occupying 3.3 square miles on Goodyear's northeastern border, is largely developed.

LAND USE PATTERNS

Goodyear, originally founded as an agricultural community in 1917, was incorporated as a town in 1946 and became a charter city in 1985. Development spread from north to south, with annexation of master-planned communities such as Palm Valley, and eventually extended south of the Gila River in the 1980s with the annexation of the master-planned community of Estrella (formerly Estrella Mountain Ranch).

Rapid growth in Goodyear has fueled the need for an expanded roadway network. While new development has provided many street improvements, additional improvements to keep up with travel demand and ongoing maintenance needs are largely borne by the City of Goodyear.

Goodyear Planning Area

From just less than 117 square miles in 2007, Goodyear has grown to over 190 square miles today (refer to Table 3-1). Much of the annexation area is located south of the Gila River.

Table 3-1 City of Goodyear Annexation History

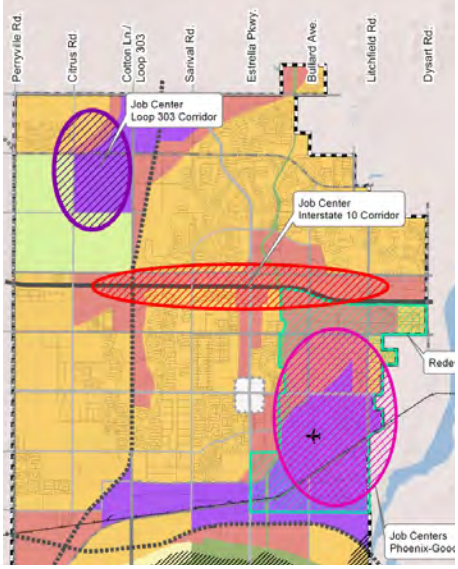
Period	Area (square miles)		
	Annexation	Deannexation	Total Area
Before 1964	1.0	—	1.0
1964–1984	47.6	—	48.6
1984–1992	71.5	6.1	114.0
1992–2002	2.8	<0.1	116.8
2002–2010	74.4	—	191.2

Source: Goodyear General Plan Update Existing Conditions Report, Arizona State University (2013)

Destinations and Attractions

The transportation network in Goodyear provides an effective means for residents, workers, and visitors to get around and through the city. Historically, agriculture and aerospace industries were the dominant forces driving development. In the 1980s, residential development was the primary driver of growth. Today, Goodyear's economy is increasingly diverse. Major employers have located in Goodyear, such as the Cancer Treatment Centers of America, Lufthansa Airlines Training Center, West Valley Hospital, Southwest Specialty Foods, Poore Brothers, Macy's, Amazon.com, Dick's Sporting Goods, and Sub-Zero, to name a few.

Convenient, efficient access to the transportation network is one factor businesses consider before locating in a community. Some businesses and activities rely on—and influence—the transportation system to the extent that they deserve special discussion.



Growth Areas map excerpt from the Goodyear 2025 General Plan shows developing employment centers in Goodyear (Goodyear 2025, January 2014 review draft).

Phoenix-Goodyear Airport

The City of Phoenix began operating Phoenix-Goodyear Airport in 1968. The airport is classified as a general aviation reliever airport for Sky Harbor International Airport in Phoenix ("general aviation" includes all flights except for military and scheduled airline operations). The Phoenix-Goodyear Airport is located on Litchfield Road, although plans for the facility call for relocating the entrance to Bullard Avenue (see image to right).

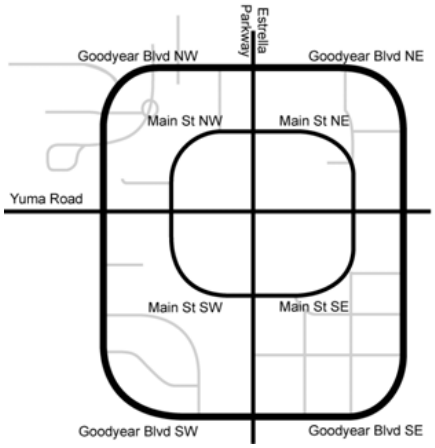
The Phoenix-Goodyear Airport Master Plan Concept shows the relocation of the airport entrance to Bullard Avenue (City of Phoenix, 2007).

Goodyear Ballpark

Goodyear Ballpark was constructed in 2009 and is the spring training home to the Cleveland Indians and Cincinnati Reds. Goodyear Ballpark is located at Estrella Parkway and Goodyear Boulevard Southeast. It has 8,000 stadium seats, with a total seating capacity of 10,311. South of the ballpark, the Goodyear Recreational Sports Complex includes facilities and practice fields covering over 100 acres.

Goodyear City Center

The Goodyear City Center Specific Area Plan (2006) provides policies and regulations to guide development of the Goodyear City Center, located at the intersection of Yuma Road and Estrella Parkway. The 200-acre site is "envisioned to evolve over time as the heart of the City." Proposed land uses have included higher education, shopping, dining, cultural and civic events, recreation, City administration, and commerce.



The Goodyear City Center Specific Area Plan describes four street types: City Center Scenic Arterial Streets (Estrella Parkway and Yuma Road), City Center

Arterial Streets (Goodyear Boulevard), Pedestrian Streets (Main Street), and Neighborhood Streets.

Source: Goodyear City Center Specific Area Plan, 2006

The City Center scenic arterial roadways (Yuma Road and Estrella Parkway) are envisioned as pedestrian-friendly routes with development immediately abutting wide sidewalks and with on-street parking. The vision for these scenic arterial roadways is significantly different than Estrella Parkway's existing high-volume character. However, improvements anticipated in advance of the City Center development will carry some of the north-to-south traffic, addressing the reduced through-traffic capacity within the developed City Center. These improvements (identified in this Plan) include completion of Bullard Avenue, continued development of Loop 303, and construction of SR 30.

Regional Mall

The Estrella Falls Regional Mall, proposed as the Southwest Valley's first super regional shopping center, is located on McDowell Road between Bullard Avenue and Estrella Parkway. The site covers over 300 acres, and

the mall will have approximately 2 million square feet of shopping, dining, and entertainment upon build out. The planned Bullard Wash Linear Park runs north-to-south between the mall and the existing power center, eventually providing off-street bicycle and pedestrian access. Another consideration with development of the mall will be providing local pedestrian and bicycle access from neighborhoods immediately abutting the facility that are affected by its development. Accommodating neighborhood electric vehicles coming to the mall from immediately adjacent neighborhoods should also be a consideration for mall owners.

An evaluation of the mall's traffic impacts, and recommendations to mitigate them, are incorporated in the Plan recommendations. Additional information on the traffic impacts may be found in Appendix B.

DEMOGRAPHICS

As of July 1, 2013, MAG estimated Goodyear's population at 72,274, with a dwelling unit count of 27,163. Goodyear has been one of the fastest-growing communities in the Phoenix metropolitan area, with a current population nearly four times its 2000 population of 18,900 (refer to Figure 3-2).

Sixty percent of Goodyear's residents are working age (20 to 64 years old) (refer to Figure 3-3). In 2010, Goodyear's population of those age 65 and over represented 11 percent of the overall population, up slightly from the 2000 Census. The percentage of the population under 18 years old was 27 percent in 2010, up by 5 percent from 2000. Both of these age groups rely more on transit and walking or bicycling for transportation (along with low-income and disabled populations). With the growth of both of these age groups since 2000—as well as an increasing awareness of the benefits of walking and bicycling—the City has ample reason to plan for improved mobility choices. Anecdotal information supporting this interest came from many commenters participating in the General Plan Update outreach efforts.

Elderly individuals who have retired from driving benefit from improved transit and walkability. Mobility of these

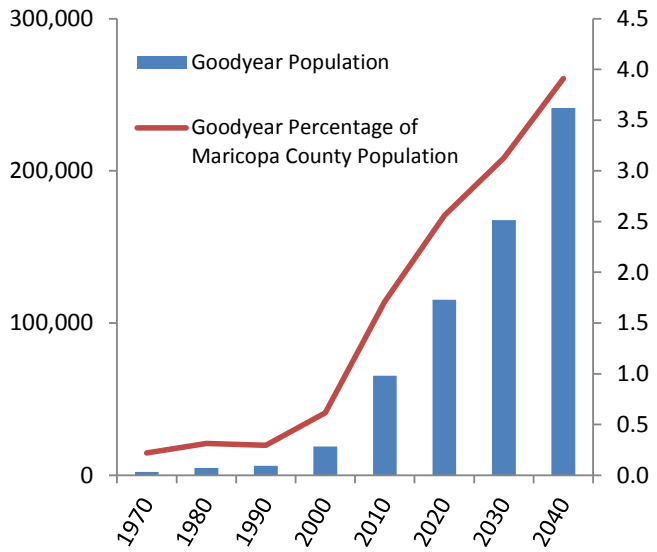


Figure 3-2 Goodyear's Projected Population and Percentage of Overall Maricopa County Population

As Goodyear's population has soared since the late 1990s, so has its influence in the Southwest Valley.

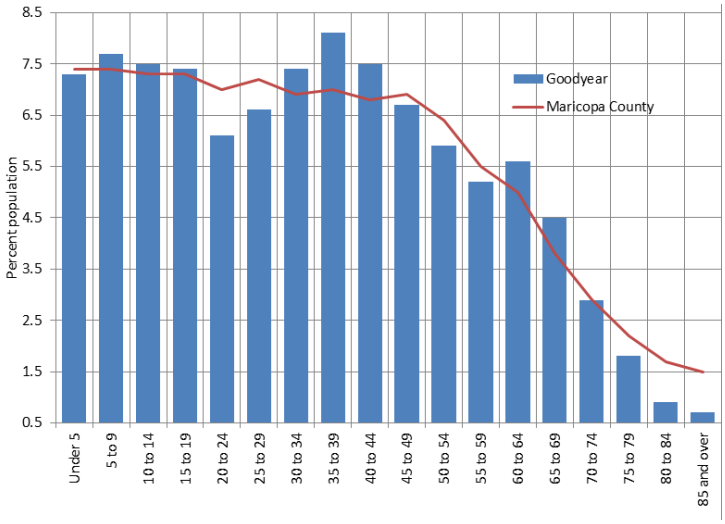


Figure 3-3 Goodyear's Age Distribution

Goodyear's age distribution is comparable to that of Maricopa County. More than one-quarter of Goodyear residents are age 18 and under, a growing demographic group in Goodyear since before 2000.

individuals varies widely depending on physical and mental health, among other factors. Some seniors can rely on assistance from nearby relatives or nonprofit services. These individuals might have a wide variety of transportation choices, while many of their counterparts may have none.

Elderly nondrivers suffering from health problems, with no nearby family members, are most severely impaired. In addition, teenagers, even those of driving age (reaching driving age does not always result in additional mobility because many teenagers might not have access to an automobile or the ability to pay for car insurance and fees), represent another group benefiting from expanded mobility options.

Goodyear's transportation system continues to serve the population well; however, continued growth and changing demographics influence the community's transportation needs and expectations. In addition, regional development puts a greater demand on Goodyear's roads, with I-10 and arterial roadways carrying more and more traffic. This increased demand on the transportation system necessitates that the City plan for improvements so that Goodyear will continue to have a well-functioning system that provides safe, reliable transportation for a range of users using a variety of modes, including vehicular, transit, bicycling, and walking.

GROWTH PROJECTIONS

As difficult as it may be to accurately predict the future, planning for the future is a necessity. Goodyear's growth over the past 10 years would have gridlocked the city without proper planning. The Goodyear General Plan developed three growth scenarios for the city, shown in Table 3-2. The medium growth scenario is comparable to MAG's 2013 socioeconomic projections, the projections used in this Plan for determining future traffic conditions in Goodyear.

Table 3-2 Growth Scenario Population Projections for the Municipal Planning Area

Growth Scenario	Population			
	2010	2020	2030	2040
Low	68,000	98,000	159,000	219,000
Medium	68,000	115,000	168,000	241,000
High	68,000	118,000	192,000	265,000

Sources: MAG, City of Goodyear (2013)

The MAG 2013 socioeconomic projections (the Goodyear General Plan 2025 moderate growth scenario) provided the basis for future year traffic forecasts for this Plan. MAG uses this information in its transportation model to forecast regional traffic, and the study team worked with the agency to develop traffic projections for Goodyear.

The MAG model considers Goodyear's traffic in the context of the MAG region (MAG's transportation model covers all of Maricopa County and portions of Pinal County). In addition to I-10, Goodyear is traversed by several arterial routes of regional significance that play an important role in the regional transportation system. While Goodyear's forecast growth explains many of the improvements identified in this Plan, some of the proposed roadway capacity improvements respond to regional growth.

Population

Goodyear's 2040 population is forecast to be more than 240,000. Figure 3-4 shows that, in 2040, the population will be much greater than it is today in the Goodyear area north of the Gila River as vacant parcels continue to develop. The area south of the Gila River is expected to develop with suburban densities to as far south as Patterson Road. Total population in the area south of Patterson Road is not expected to increase appreciably through the planning horizon.

Figures 3-5 and 3-6 show the 2010 and 2040 population density, respectively, for Goodyear (the full figures are in Appendix C). The figures show that population density is greatest in the area north of the Gila River, with population densities generally higher west of Bullard Wash.

Employment

Figures 3-7 and 3-8 show the 2010 and 2040 employment density, respectively, for Goodyear (the full figures are in Appendix C). They show that employment density is greatest in the area north of the Gila River, with employment densities generally higher west of Bullard Wash.

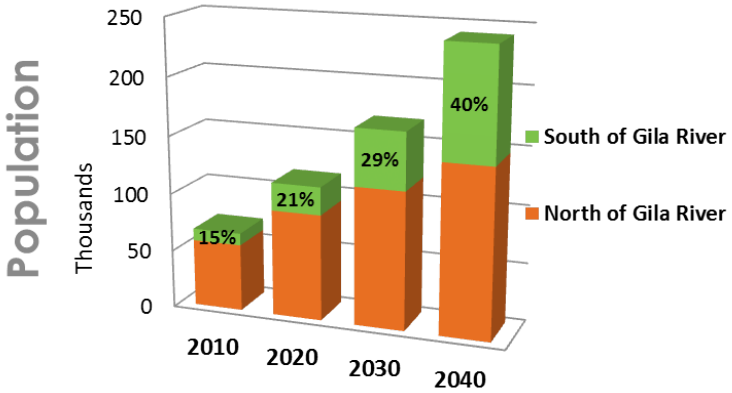
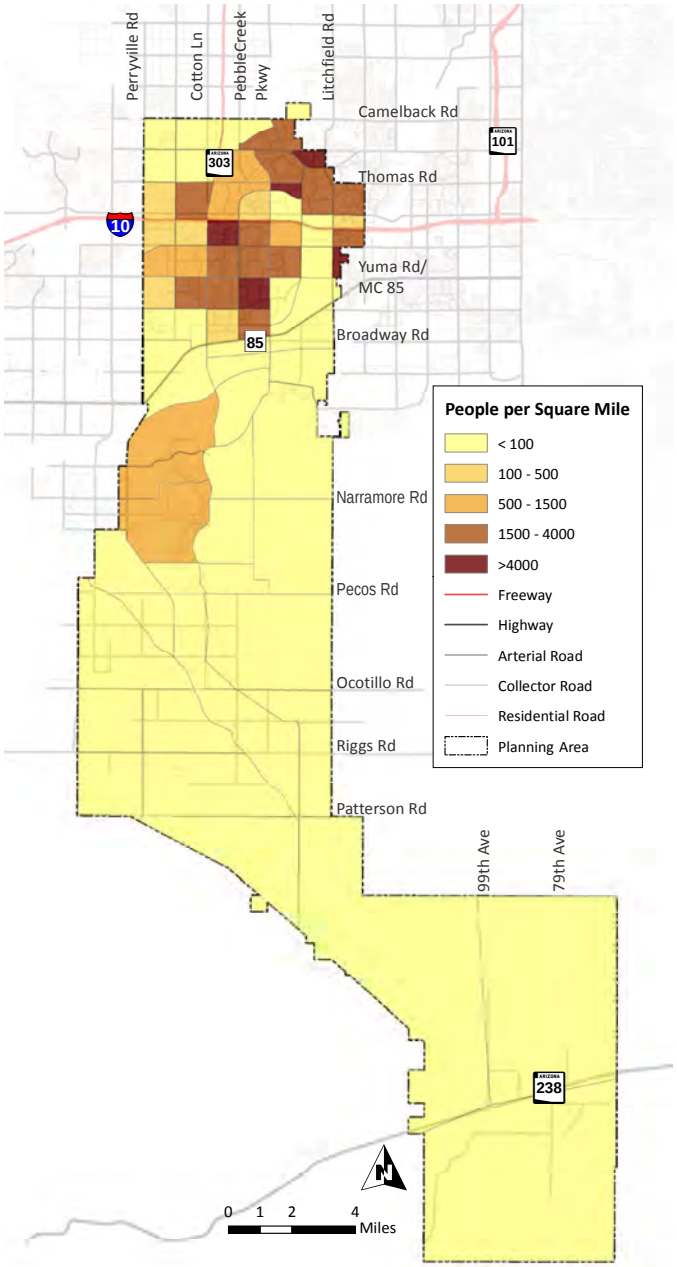


Figure 3-4 Goodyear 2040 Population Forecast

Source: MAG, 2013

Businesses locate in Goodyear for many reasons—a welcoming business environment, an educated workforce, available commercial real estate, and a well-planned, efficient transportation system with good regional access.



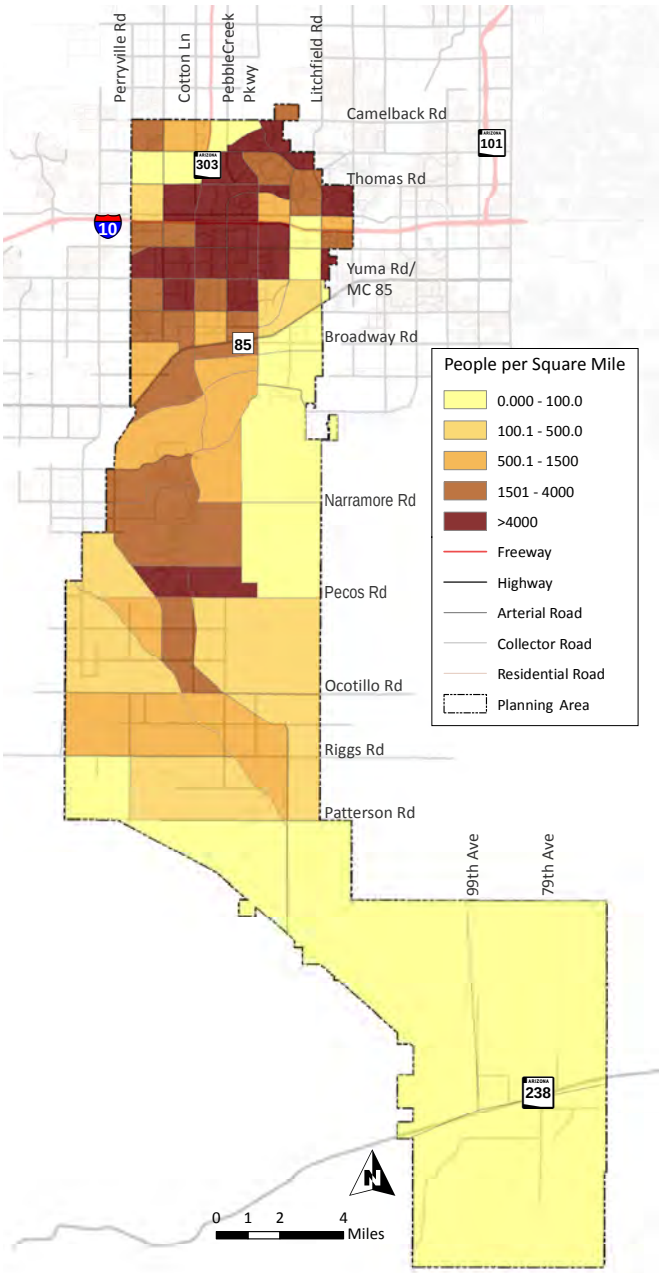
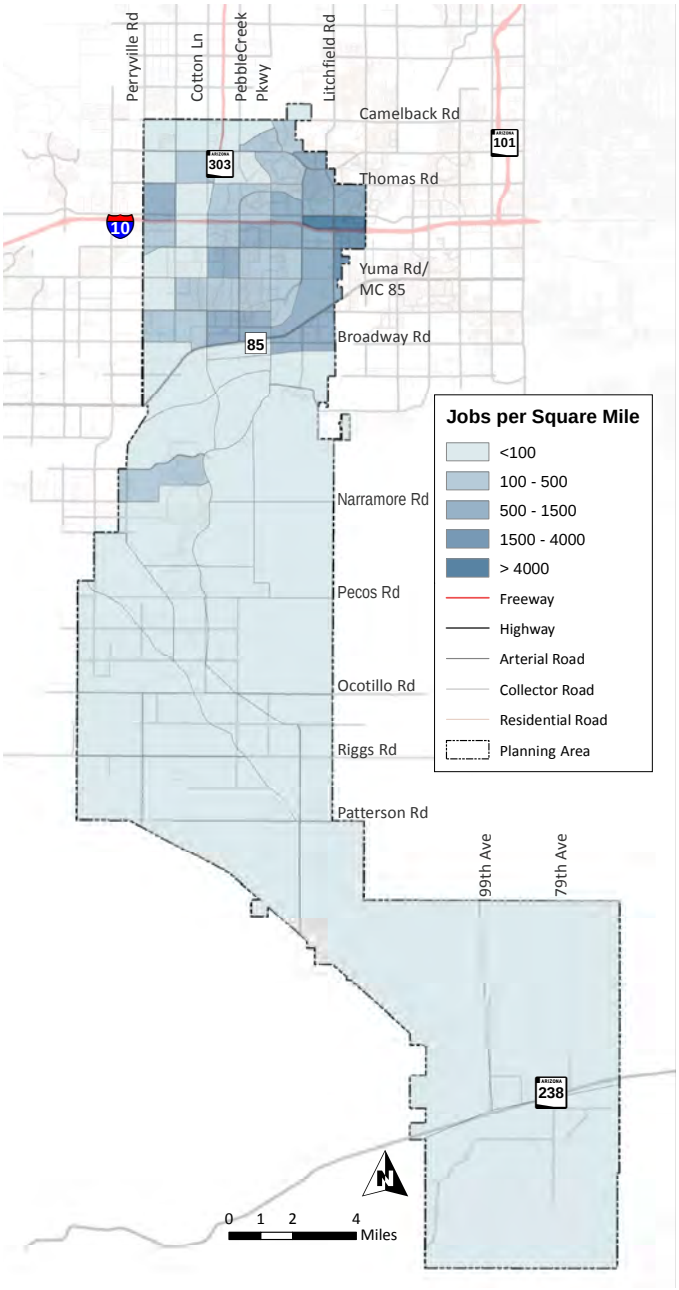


Figure 3-5 Goodyear Population Density (2010) **Figure 3-6 Goodyear Population Density (2040)**

These figures show the existing (2010) and projected (2040) population density per square mile for Goodyear. While the area north of the Gila River is becoming further urbanized, the area south of the Gila River and north of Patterson Road illustrates development in what is today undeveloped desert or agricultural areas. (Source: MAG, 2013)



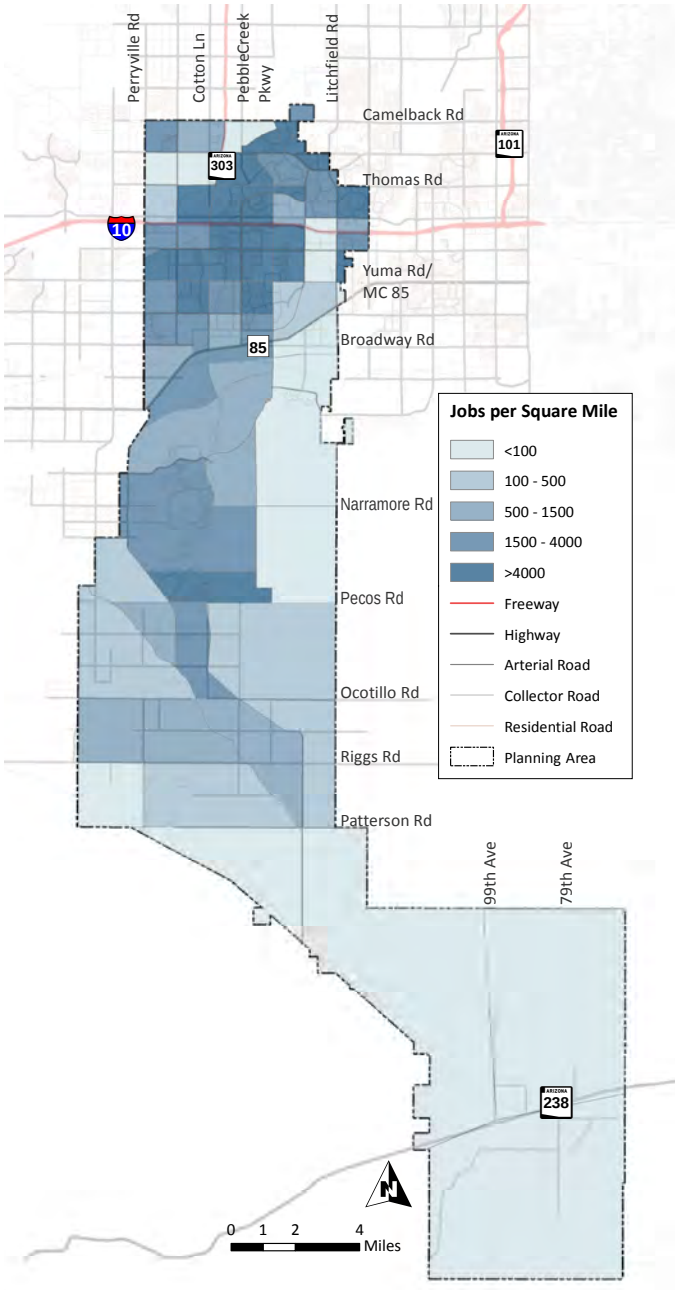


Figure 3-7 Goodyear Employment Density (2010) **Figure 3-8 Goodyear Employment Density (2040)**

These figures show the existing (2010) and projected (2040) employment density per square mile for Goodyear. The figures illustrate an increase in employment density north of the Gila River along MC 85 and the proposed SR 30, as well as the region north of Patterson Road. (Source: MAG, 2013)

Employment density throughout the area north of the Gila River is expected to experience a threefold increase by 2040. While limited employment exists south of the Gila River today, the area is projected to have over 17,000 jobs by 2040.

ROADWAY SYSTEM

Regional Connections

Goodyear is well-served by the existing regional freeway system, with I-10 traversing the northern portion of the city east-to-west. Loop 303 extends north from I-10 (the interchange, currently under construction, is anticipated to open in late 2014). Planning is under way to identify and evaluate alternative routes for the proposed Loop 303 extension between I-10 and the proposed SR 30.

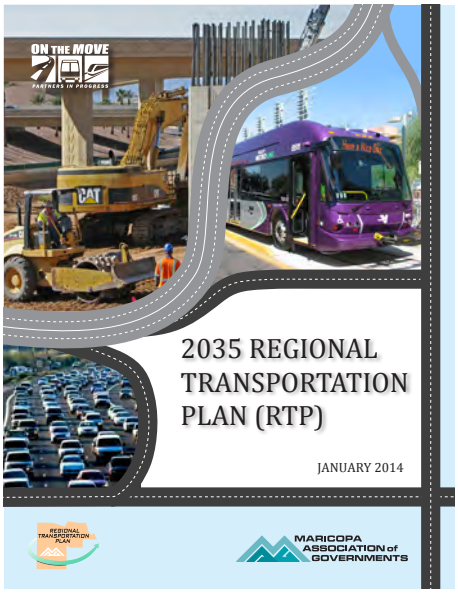
Proposition 400

In 2004, Maricopa County voters approved Proposition 400, which authorized the extension of an existing half-cent sales tax to fund transportation improvements defined in the Regional Transportation Plan. The proposed extension of Loop 303 south of I-10 was identified as an element of the Regional Transportation Plan. However, funding shortfalls have delayed construction of the Loop 303 extension and SR 30 beyond 2025. The proposed SR 30 would be located south of I-10, north of the Salt and Gila Rivers, and would connect the proposed South Mountain Freeway with the proposed Loop 303. It is noteworthy that SR 30 is identified in the 2025 planned improvements, although funding for its development was pushed beyond the current Regional Transportation Plan horizon of 2026.

Future Regional Routes

ADOT and the Nevada Department of Transportation are working on the Interstate 11 Intermountain West Corridor Study to examine a possible high-priority interstate link between Phoenix and Las Vegas. They are visioning the potential extension of the corridor north to Canada and south to Mexico. The Hassayampa Freeway (refer to the Interstate 10/Hassayampa Valley Roadway Framework Study) has been identified as one potential alternative for this controlled-access interstate facility. This alignment would provide an east-to-west connection through Goodyear's southern planning area and would ultimately provide access to I-8.

The southern planning area is crossed by SR 238, which connects Gila Bend with Maricopa, passing through Mobile. Mobile was annexed into Goodyear as part of a 67-square-mile expansion in 2007 to develop a master-planned community in the area. The economic slowdown stopped the development, and no development plans currently exist for the area.



The 2035 Regional Transportation Plan covers all major modes of transportation from a regional perspective, including freeways/highways, streets, transit, airports, bicycle and pedestrian facilities, goods movement, and special needs transportation (Copyright MAG).

Existing Roadway Network

Goodyear has a well-defined north-to-south and east-to-west arterial roadway grid network north of MC 85. The roadway network is less developed to the north and west of Loop 303 and I-10. This area is affected by flight patterns from neighboring LAFB, which limits land uses. Existing agricultural land is being developed as commercial land, which is compatible with LAFB operations. The roadway network is also less developed south of the Gila River, where there are large areas of undeveloped land and greater topographic variation.

Three bridge crossings over the Gila River exist within city limits: on Cotton Lane, Estrella Parkway, and Bullard Avenue. The bridges provide access to the southern portion of the community. Estrella Parkway/ PebbleCreek Parkway, Bullard Avenue, and Litchfield Road are Goodyear's major north-to-south corridors. Major east-to-west corridors include Camelback Road, Indian School Road, McDowell Road, I-10, Van Buren Street, Yuma Road, and MC 85. There are no through east-to-west corridors in Goodyear south of the Gila River. Estrella Parkway is the main corridor connecting communities south of the Gila River to the northern portion of Goodyear. I-10 provides freeway access to the community, with four traffic interchanges within city limits.

Roadway Maintenance

Roadway maintenance is primarily handled by the City, with several notable exceptions. Loop 303 and I-10 and associated freeway ramps are maintained by ADOT, along with SR 238 in the southern planning area. MCDOT maintains MC 85 and local streets in areas of unincorporated Goodyear ("county islands"). Private roads located in PebbleCreek, Palm Valley, Estrella Mountain Ranch and other small residential subdivisions are maintained by homeowner associations. Refer to Appendix B for a map depicting roadway maintenance responsibilities.

A roadway pavement management program uses network-level, long-term strategies to enhance pavement performance. Integrated, cost-effective practices extend pavement life and improve safety. Such a program consists of three primary components: preventive maintenance, minor rehabilitation (nonstructural), and routine maintenance. The City is preparing a pavement management program, although it will not be completed before completion of this Plan. Recommendations of that program are incorporated into this Plan by reference.

Roadway Functional Classification

Functional classification defines the hierarchy of roads. Streets and highways are classified according to the type of service they provide. Functional classification describes the relationship of mobility, access, and trip length. Goodyear's General Plan identifies functional classes in its roadway functional classification map, found in the circulation element section. These roadway types are further described in the General Plan, with typical section graphics for each.

Figures 3-9 and 3-10 illustrate the City's roadway functional classifications (for the north and south, respectively). They show Goodyear's ultimate roadway system, the elements of which will be developed by the City, private developers, and regional transportation entities as planning and needs dictate. Future regional roadway alignments depicted, such as SR 30 and Loop 303 south of the Gila River, are for illustration purposes only; environmental documents defining the actual right-of-way for these facilities have not been completed.

Table 3-3 shows the length of roadway by each functional class under existing and proposed conditions. The following sections further describe each roadway type.

Freeway

An access-controlled freeway is designed to move high volumes of traffic over substantial distances. A freeway can be designed as an at-grade or below/above grade facility. Urban freeways typically have four to eight through lanes and can transport between 160,000 and 200,000 vehicles per day. I-10 is an example of a freeway.

Table 3-3 Goodyear's Roadway Functional Classifications

Roadway Type	Existing		Proposed		Total	
	Length (miles)	Percentage (%)	Length (miles)	Percentage (%)	Length (miles)	Percentage (%)
Freeway	10	5	63	30	73	18
Parkway	3	2	52	24	55	14
Scenic Arterial	23	12	14	7	37	9
City Center Arterial	2	1	—	—	2	<1
Major Arterial	31	16	81	39	112	28
Arterial	124	64	—	—	124	31
Total	**193**	**100**	**210**	**100**	**403**	**100**

Source: 2010 Adopted/Amended Roadway Network Shapefile, City of Goodyear, May 2013

Note: The statistical summary includes all the roadways that are along and within the Goodyear planning area boundary.

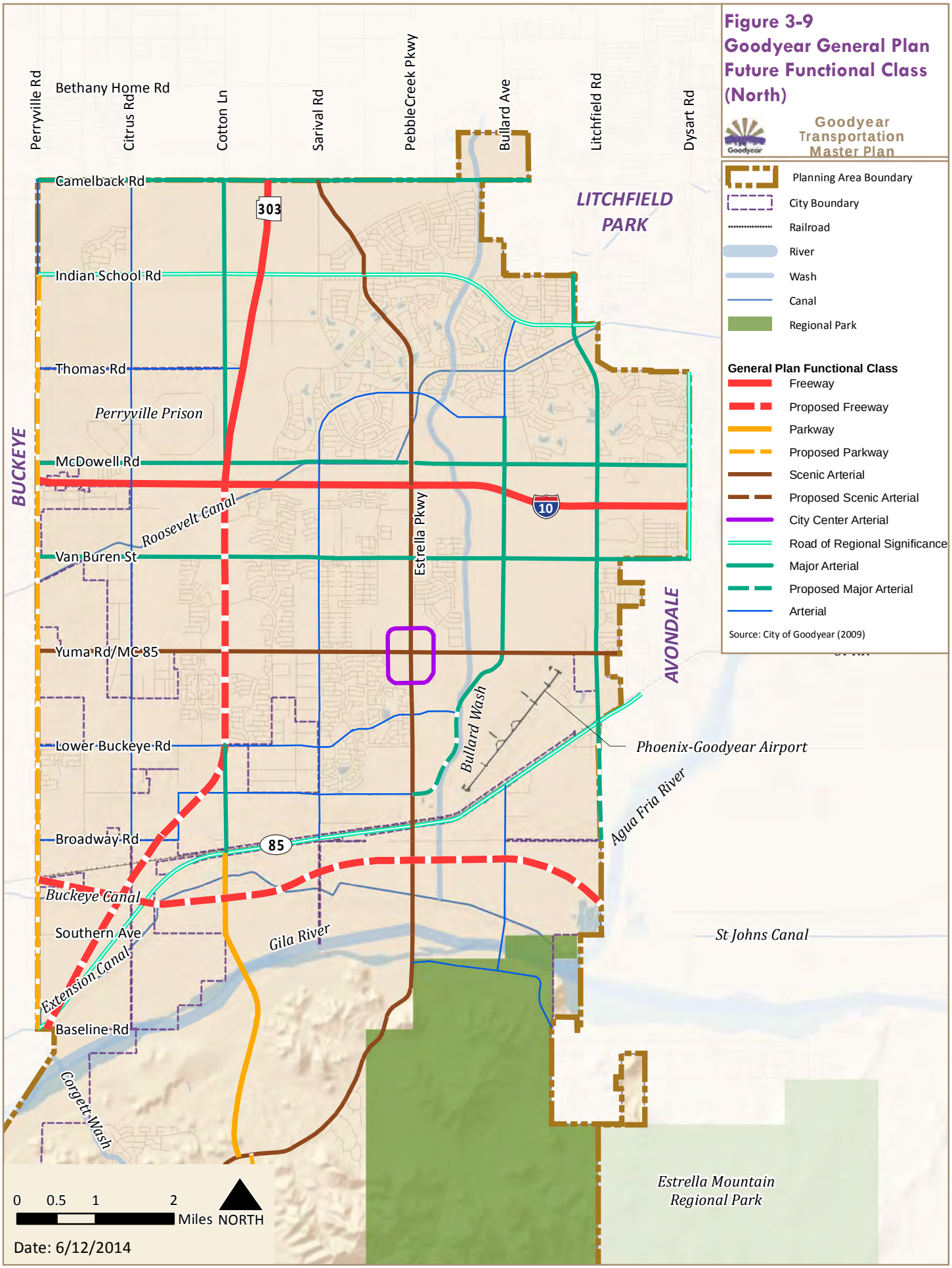


Figure 3-9
Goodyear General Plan Future Functional Class (North)
Goodyear Transportation Master Plan
Planning Area Boundary
City Boundary
Railroad
River
Wash
Canal
Regional Park
General Plan Functional Class
Freeway
Proposed Freeway
Parkway
Proposed Parkway
Scenic Arterial
Proposed Scenic Arterial
City Center Arterial
Road of Regional Significance
Major Arterial
Proposed Major Arterial
Arterial
Source: City of Goodyear (2009)
Perryville Rd
Bethany Home Rd
Citrus Rd
Cotton Ln
Sarival Rd
PebbleCreek Pkwy
Bullard Ave
Litchfield Rd
Dysart Rd
Camelback Rd
Indian School Rd
Thomas Rd
McDowell Rd
Van Buren St
Yuma Rd/MC 85
Lower Buckeye Rd
Broadway Rd
Southern Ave
Baseline Rd
303
10
85
LITCHFIELD PARK
BUCKEYE
AVONDALE
Perryville Prison
Roosevelt Canal
Estrella Pkwy
Bullard Wash
Phoenix-Goodyear Airport
Agua Fria River
Buckeye Canal
Gila River
Extension Canal
St Johns Canal
Corgett Wash
Estrella Mountain Regional Park
0 0.5 1 2 Miles
NORTH
Date: 6/12/2014

Broadway Rd
Southern Ave
Baseline Rd
Beloat Rd
Eliott Rd
Narramore Rd
Ray Rd
Pecos Rd
Germann Rd
Queen Creek Rd
Ocotillo Rd
Chandler Heights Rd
Riggs Rd
Patterson Rd
UPRR
Perryville Rd
Citrus Rd
Cotton Ln
Sarival Rd
Estrella Pkwy
Bullard Ave
Litchfield Rd
Dysart Rd
85
St Johns Canal
AVONDALE
Extension Canal
Gila River
Lum Wash
Corgett Wash
Estrella Mountain Regional Park
Waterman Wash
BUCKEYE
203rd Ave
187th Ave
Rainbow Valley Rd
Sarival Rd
Reems Rd
Bullard Ave
99th Ave
91st Ave
83rd Ave
GILA RIVER INDIAN COMMUNITY
Komatke Rd
238
UPRR
Kinney Rd
Mahalia Rd
Schumacher Ln
Sonoran Desert National Monument
0 1 2 4 Miles
NORTH
Date: 3/24/2014
Figure 3-10
Goodyear General Plan Future Functional Class (South)
Goodyear Transportation Master Plan
Planning Area Boundary
City Boundary
Railroad
River
Wash
Canal
Regional Park
General Plan Functional Class
Freeway
Proposed Freeway
Parkway
Proposed Parkway
Scenic
Proposed Scenic
City Center
Road of Regional Significance
Major
Proposed Major
Arterial
Source: City of Goodyear (2009)

Parkway

A parkway is designed to move high volumes of traffic over substantial distances. It is typically designed to be an at-grade facility with substantial right-of-way for building setbacks and landscaping. A parkway may be grade separated from major intersecting streets. Parkways have four to six through lanes with a landscaped, raised median that is 50 to 74 feet wide. Parkways have indirect left turns located away from the intersections. The parkway standards are based on the Design Guideline Recommendations for the Arizona Parkway, adopted by MCDOT. The standards note a minimum right-of-way width of 200 feet.

This rendering of Estrella Parkway from the Goodyear City Center Specific Area Plan shows a landscaped median dividing two lanes of traffic in each direction with on-street parallel parking. This vision may be realized with development in the City Center, located at the intersection of Estrella Parkway and Yuma Road.

Scenic Arterial

A scenic arterial roadway is designed to not only transport vehicular traffic through Goodyear, but also to act as the City Center loop gateway for residents, workers, and visitors. A scenic arterial is an at-grade roadway consisting of four to six traffic lanes, two bicycle lanes, detached sidewalks, and a raised, landscaped median. The roadway's landscaped medians and tracts with adjacent building/landscape setbacks create an inviting environment. The City's adopted standard for the roadway uses a 150-foot cross section. Yuma Road is an example of a scenic arterial.

City Center Arterial

The City Center arterial roadway is designed to continue the scenic theme on the Yuma Road and Estrella Parkway segments within the Goodyear Boulevard loop road. The City Center arterial is an at-grade roadway with four traffic lanes, two detached sidewalks, and a median. The roadway has a generous median and adjacent landscape tracts to buffer adjacent land uses. If the center raised median were removed, the roadway could support six lanes of traffic. The City's adopted standard for the roadway uses a 150-foot cross section. Goodyear Boulevard is the only roadway designated as a City Center arterial.

Major Arterial

A major arterial roadway is designed for vehicular mobility over moderate trip lengths. A major arterial is an at-grade roadway featuring six traffic lanes, two bicycle lanes, two detached sidewalks, a raised median, and landscape tracts. The City's adopted standard for the roadway uses a 130-foot cross section. McDowell Road is an example of a major arterial roadway.

Arterial

An arterial roadway is designed for moderate trip lengths. An arterial is an at-grade roadway consisting of four traffic lanes, two bicycle lanes, two detached sidewalks, a raised median, and landscape tracts. The City's adopted standard for the roadway uses a 110-foot cross section. Sarival Avenue is an example of an arterial roadway.

Major Collector

A major collector roadway carries lower volumes of through traffic for shorter distances while providing direct access to adjacent homes and commercial activities. The major collector roadway has four traffic lanes, two bicycle lanes, a raised median, and two detached sidewalks. The City's adopted standard for the roadway uses an 80-foot cross section.

Minor Collector

A minor collector roadway also carries limited through traffic and provides property access, but with lower traffic volumes than a major collector. Minor collectors are typically shorter than major collectors and have a reduced role in the overall roadway system. The minor collector roadway has two traffic lanes, bicycle lanes, an at-grade median, and detached sidewalks. The City's adopted standard for the roadway uses a 60-foot cross section. San Miguel Drive is an example of a minor collector roadway.

Residential Street

Residential streets provide direct access to local properties and are not designed to accommodate through traffic. The residential street has two traffic lanes and either attached or detached sidewalks. The City's adopted standard for the roadway uses a 50-foot cross section. Santa Alberta Lane is an example of a residential street.

EXISTING AND FUTURE ROADWAY CONDITIONS

Traffic Counts

As part of the study's existing conditions analysis, traffic counts were collected along numerous roadway segments throughout Goodyear (refer to Figure 3-11 and Appendix B). Additionally, turning movements were counted at key intersections throughout the city, including the interchanges with I-10. The turning movement counts were collected to augment the City's Synchro model. Synchro is a traffic micro-simulation software used to conduct intersection traffic operational analysis. The City's Synchro model was expanded and 57 intersections were analyzed for AM and PM peak, including 11 intersections where residents requested that the City consider installing traffic signals and two intersections where all-way stop signs were requested. The Plan makes recommendations for traffic signals based on peak-hour traffic volumes; however, decisions regarding the installation of such signals are made only after additional analyses are completed. Criteria are determined based on Manual on Uniform Traffic Control Devices (MUTCD) guidelines. Appendix D contains the results of the analysis conducted for unsignalized intersections.

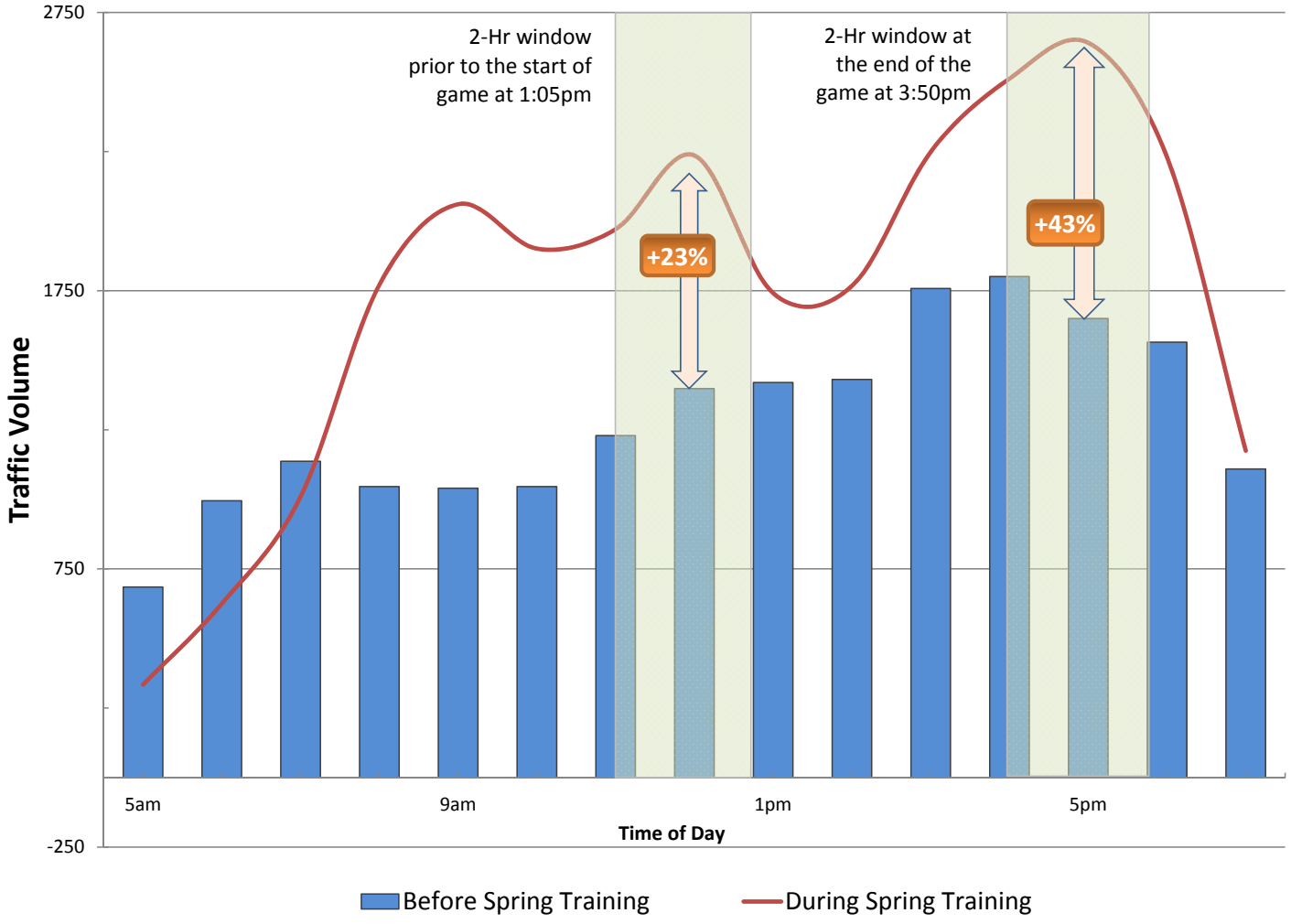


Figure 3-11 Hourly Traffic Counts on Estrella Parkway, south of Interstate 10

This exhibit shows a comparison of hourly traffic volumes on Estrella Parkway south of I-10 before and during the spring training season. The data indicate a surge in traffic volumes before the game starts and after it ends in comparison to counts taken prior to the start of spring training.

Traffic counts were also conducted during the 2013 Major League Baseball spring training season (February to March) along major access routes for Goodyear Ballpark to evaluate traffic operations before, during, and after a game. Figure 3-11 shows results of this data collection effort. It is noteworthy that the counts gathered during the game did not result in traffic congestion issues for the city. While a surge in traffic can be observed before and after the game, Goodyear's transportation network was able to adequately accommodate the increase.

Level of Service

To determine how well the existing and future roadway network in Goodyear operates, a level of service (LOS) analysis was conducted. LOS is a term used to describe how well traffic operates on a roadway segment or at an intersection. LOS is determined by the ratio of a roadway's traffic volume to its capacity. Capacity is defined by the roadway functional classification and the number of lanes on a particular roadway. Volume is the actual number of vehicles on a roadway. LOS uses a letter grading system to indicate how well a roadway operates, with letters ranging from "A" to "F" with "A" being excellent and "F" indicating failure. Figure 3-12 illustrates this concept.

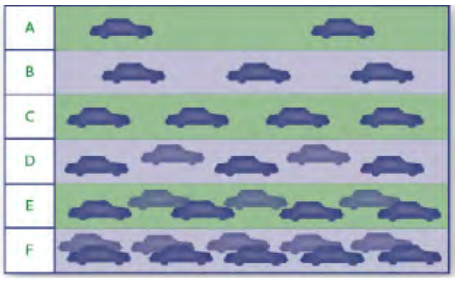


Figure 3-12 Level of Service Concept

LOS describes how well traffic operates on a roadway segment or at an intersection. LOS is determined by the ratio of a roadway's traffic volumes to its capacity.

Graphic credit: Clarksville, TN

The LOS grading system qualitatively characterizes traffic conditions associated with varying levels of traffic. LOS A represents free-flow traffic conditions with little or no delay experienced by motorists. LOS F describes congested conditions where traffic flows exceed design capacity, resulting in long queues and delays. LOS A, B, and C are generally considered to be satisfactory service levels, while the influence of congestion becomes more noticeable at LOS D. LOS E is undesirable and is considered by most agencies to be the limit of acceptable delay. LOS F conditions are considered to be unacceptable to most drivers. Most jurisdictions strive to attain an LOS of D or better on all roadways and signalized intersections in urban areas, while LOS C is targeted for rural areas.

LOS Analysis Methodology

Roadway LOS analysis was performed on Goodyear arterial roadways based on daily traffic flows, roadway capacity type, and functional classification.

Model runs for the base year (2012), interim year (2025), and planning horizon (2035) were developed to identify how well the roadway network responded to forecast increases in population and employment, discussed previously. The information derived from the model runs helped the study team identify those segments where widening or other capacity improvements may be needed to address a deficient LOS, and this information was used to assist in identifying Plan recommendations.

2025 Daily Volume and Level of Service

The MAG model for 2025 includes a number of inherent improvements that are planned to be completed by 2025. Figures 3-13 and 3-14 represent the LOS for the modeled network in the base year (2012) and 2025, respectively.

Gila River Crossings

The 2010 population in the area south of the Gila River is less than 11,000. It is estimated that daily crossings of the three Gila River bridges combined in 2010

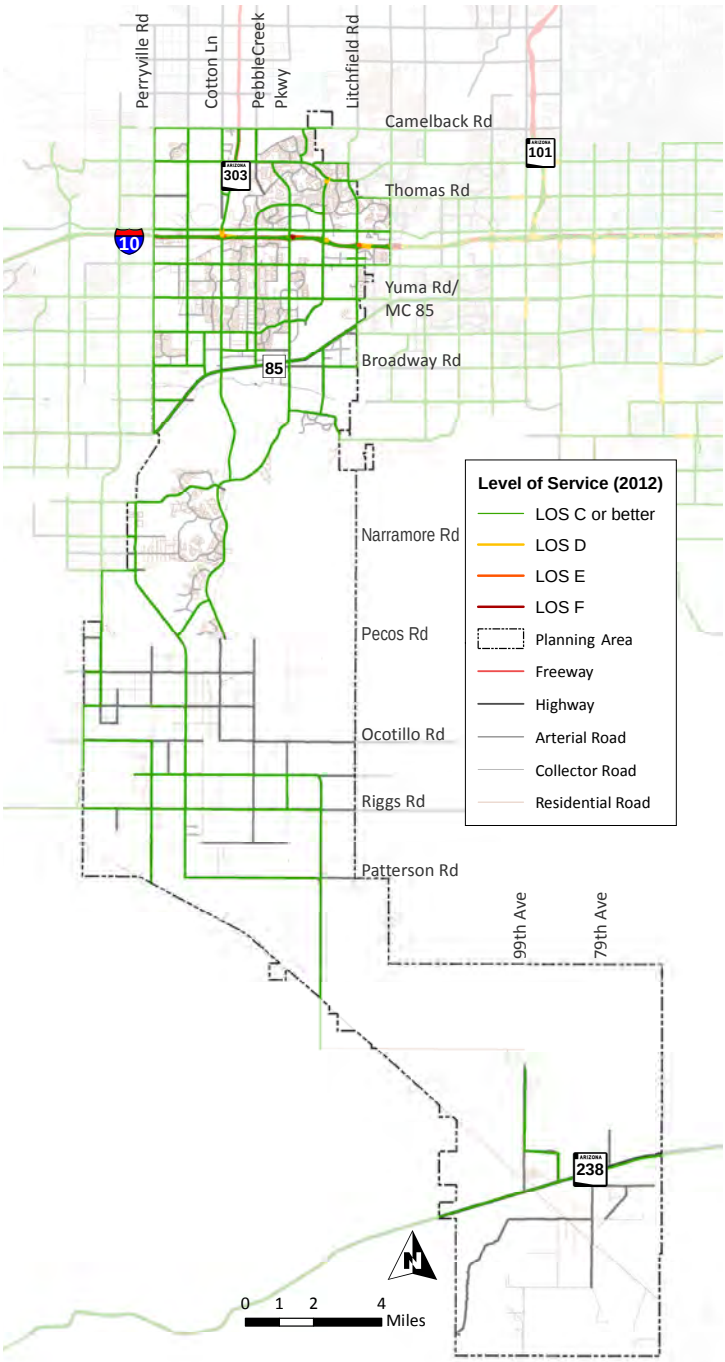


Figure 3-13 2012 Level of Service

The current PM peak-hour LOS for Goodyear's road network shows that most roads are operating at an acceptable LOS, with the exception of the interchanges with I-10.

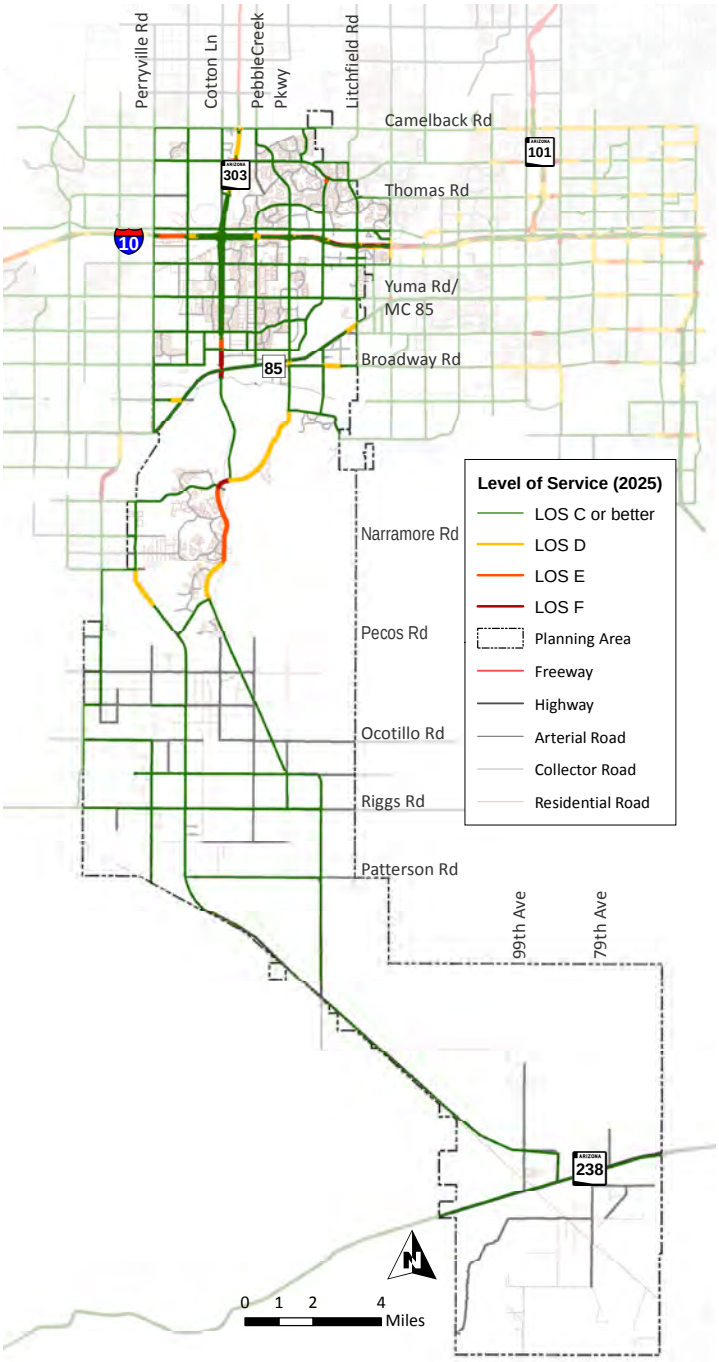


Figure 3-14 2025 Level of Service

The forecast PM peak-hour LOS for Goodyear's road network shows that roadways expected to experience poor LOS include segments of I-10, Loop 303, Cotton Lane, and Estrella Parkway south of the Gila River.

was about 15,000 (see Figure 3-13). With no direct routes linking the area south of the Gila River with destinations in Pinal County, or activity centers or other destinations drawing travel south—travel in the southern planning area is almost exclusively to the north, across the Gila River.

As the population to the south increases, demand across the Gila River will continue to increase as well. By 2025, travel across the Gila River on the three bridge crossings is expected to increase to over 71,000 trips—a nearly five-fold increase from the less than 15,000 trips reported in 2010.

The MAG model also shows the Estrella Parkway bridge as four lanes (it is envisioned as being expanded to four lanes by adding a parallel two-lane facility). However, even with the additional capacity, more than half of all the trips across the Gila River in Goodyear are projected to occur on Estrella Parkway. The projected volume in 2025 will result in considerable peak-period congestion (see Table 3-4).

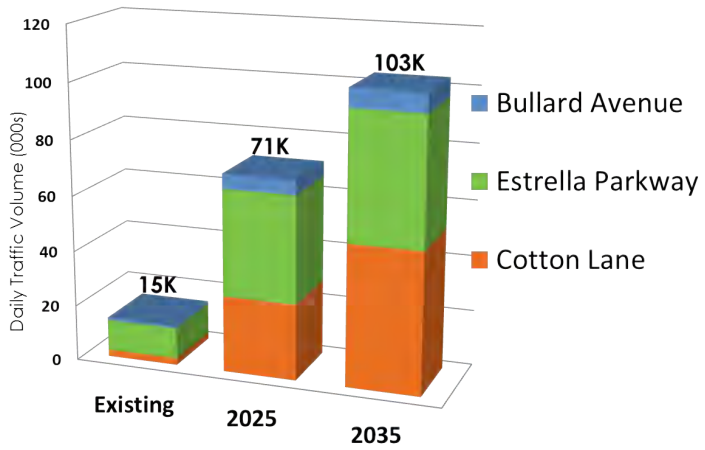


Figure 3-15 Projected Gila River Crossings

This chart shows the projected Gila River crossings on the three combined Goodyear bridges. By 2025, it is anticipated that even with the planned widening to four lanes, the Estrella Parkway crossing will be congested.

Table 3-4 Gila River Crossing Traffic Flow Analysis

Roadway	Description	Existing	2025	2035	Comments
Cotton Lane	# of lanes	4	4	6	At capacity by 2035
	Daily flow	2,500	27,500	50,900	
	Volume/Capacity	0.2	0.8	1.0	
Estrella Parkway	# of lanes	2	4	4	Over capacity by 2035
	Daily flow	11,200	38,200	45,700	
	Volume/Capacity	0.6	0.9	1.1	
Bullard Avenue	# of lanes	2	2	2	Low-volume road, does not provide regional access
	Daily flow	800	5,300	6,800	
	Volume/Capacity	0.2	0.4	0.7	
Gila River Crossing	# of lanes	8	10	12	Over capacity by 2035
	Daily flow	14,500	71,000	103,400	
	Volume/Capacity	0.3	0.8	1.0	

Note: The MAG model's worst directional PM peak period volume over capacity ratio is reported.

LOS C or better	*LOS D*	*LOS E or F*

Source: HDR Engineering, Inc.

It is worth noting that the overall Gila River crossing capacity (considering the Cotton Lane, Estrella Parkway, and Bullard Avenue bridges) is sufficient for the number of crossings projected for 2025.

2035 Daily Volume and Level of Service

Figure 3-16 presents the modeled network in 2035. Table 3-4 summarizes modeled traffic results for the three bridges crossing the Gila River. As can be seen from the table, with today's traffic volumes the bridges operate at an acceptable LOS.

By 2025, model results show that the Estrella Parkway and Cotton Lane bridges would begin to experience moderate congestion. This forecast is predicated on the considerable growth projected in the southern planning area by that time. In 2020, the forecast population south of the Gila River is anticipated to be nearly 24,000; by 2030, it is projected to be twice that, at over 48,000.

Additional north-to-south capacity is expected with several planned regional improvements. However, these improvements are not anticipated by the Plan's 2035 planning horizon. The Loop 303 is proposed to eventually extend south of the Gila River, merging with the proposed Hassayampa Freeway south of Patterson Road. Goodyear should continue to advocate for construction of the Loop 303 to the south to accommodate the substantial growth expected for the southern planning area.

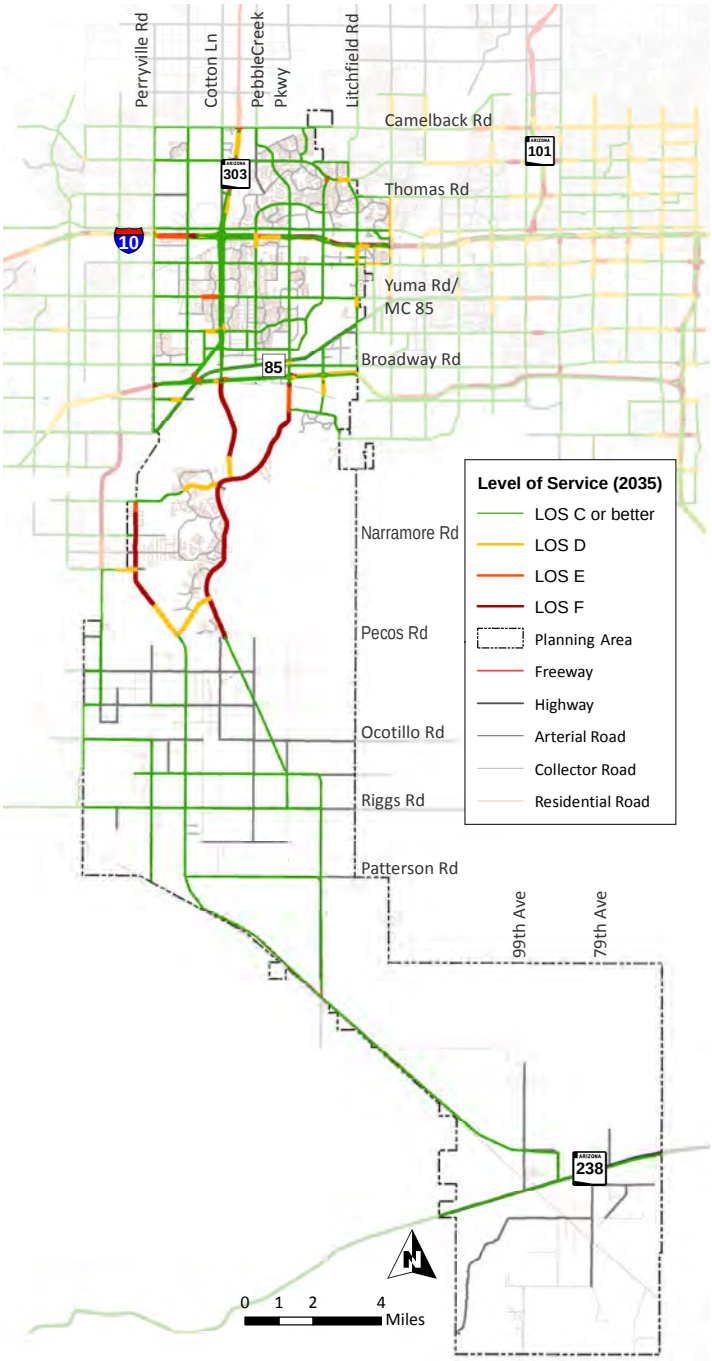
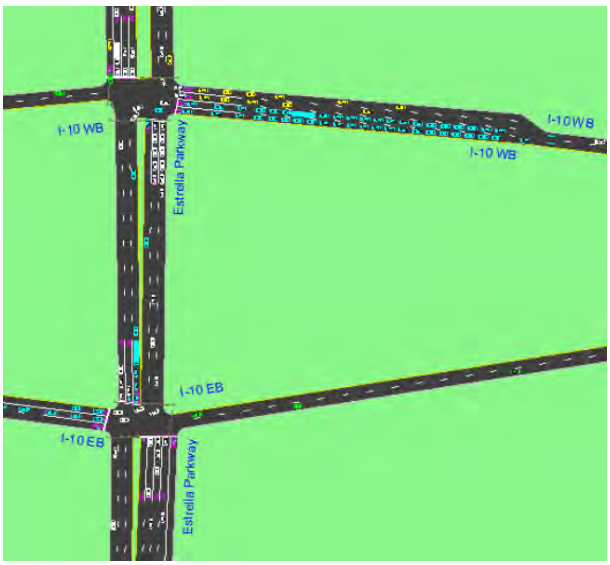


Figure 3-16 2035 Level of Service

The forecast PM peak-hour LOS for Goodyear's road network shows that roadways expected to experience reduced LOS include segments of I-10, Loop 303, Cotton Lane, and Estrella Parkway south of the Gila River.

Because intersections will experience congestion before adjoining roadway segments, LOS was also evaluated for key intersections. This analysis was done using Synchro. The information obtained from modeling the intersections provided the basis for making recommendations on intersection improvements. For additional information on the intersection Synchro analysis refer to Appendix D.



A Synchro model was used to evaluate the performance of intersections in Goodyear. Pictured here is the I-10 and Estrella Parkway interchange during PM peak conditions forecast for 2024. Vehicles can be seen queuing at the signals.

TRANSIT

Physical Characteristics

This Plan develops and evaluates transit service options that respond to Goodyear's physical characteristics. Goodyear is traversed by I-10 and UPRR's Yuma West branch. It is constrained by surrounding geographical and physical features, including the Sierra Estrella and the Agua Fria and Gila Rivers. These constraints reinforce the need for the Plan to be context-sensitive while ensuring the transit improvements are as efficient and effective as possible.

Previous Transit Studies

Previous planning efforts have documented transit service needs in Goodyear and the Southwest Valley:

- Avondale Urbanized Area Transit Plan (2003)
- ADOT SR 30 Draft Transit Modal Analysis (2006)
- MAG Regional Transportation Plan (2004)
- MAG Regional Transit Framework Study (2009)
- MAG Commuter Rail System Study (2010)
- MAG Southwest Valley Local Transit System Study (2013)

Some common themes can be found in these transit documents with regard to Goodyear. Most of the near-term recommendations focus on improving local bus service, specifically on McDowell Road and Van Buren Street. They also recommend developing a neighborhood circulator in Goodyear, which might be accomplished by extending and improving the existing Avondale Zoom service. Most of the long-term recommendations focus on identifying north-to-south transit service in Goodyear and future connections with regional high-capacity transit service. Several of the studies are discussed further in the following sections.

Avondale Urbanized Area Transit Plan (2003)

This study developed and evaluated transit service options for Avondale's urbanized area (consisting of portions of Avondale, Glendale, Goodyear, Litchfield Park, Phoenix, and Maricopa County), which was designated in 2002. Many of the Avondale Urbanized Area Transit Plan's recommendations were implemented, including the extension of several Valley Metro bus routes into Avondale and Goodyear (Routes 3, 17, and 29), new express bus service (Route 562), and completion of the Goodyear Park-and-Ride. However, declining sales tax revenues forced the reduction and/or elimination of some of the local bus service extensions into Goodyear.

ADOT SR 30 Transit Modal Analysis (2006)

This study provided an overview of existing and programmed transit service in the SR 30 study area, including portions of Phoenix, Avondale, Goodyear, and Buckeye

(south of I-10). The analysis identified potential local and express bus improvements, including extending existing bus routes from Phoenix as well as establishing future bus routes in Avondale and Goodyear. The study identified the Yuma West branch of UPRR as a future commuter rail corridor.

MAG Regional Transit Framework Study (2009)

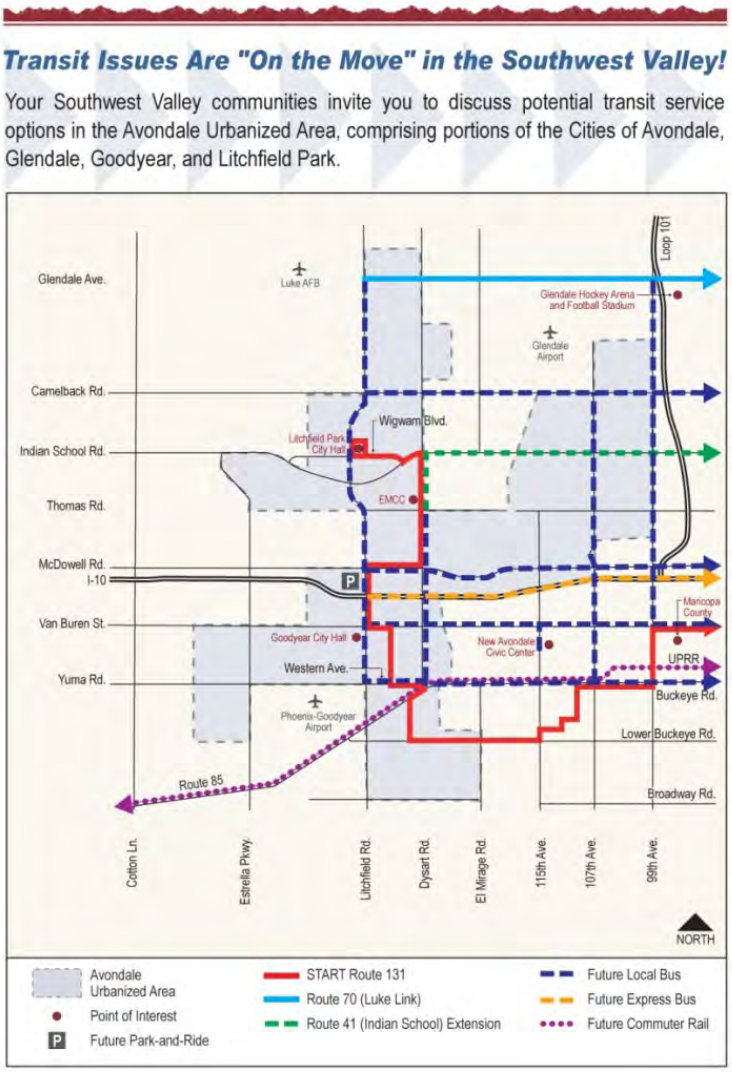
This study provided a transit needs-based approach for identifying and prioritizing regional transit improvements that will supplement the existing MAG Regional Transportation Plan. Long-range transit operations and capital recommendations were developed through 2030, with consideration for longer-term recommendations to 2050. The ultimate plan for transit improvements in the Southwest Valley included a continuation of the local bus (supergrid) and express bus service, as well future transit corridors outside the existing regional transit service area.

MAG Commuter Rail System Study (2010)

This study examined five commuter rail corridors: Yuma West, Grand Avenue, Tempe, Chandler, and Southeast (Phoenix Subdivision), all of which serve downtown Phoenix and share track with existing freight rail operations. The Phoenix Subdivision corridor was ranked the highest regional priority and included two interline scenarios, the second of which is a potential interline with the Yuma West UPRR corridor through downtown Phoenix. The ultimate implementation of these commuter rail corridors will likely depend on results of ADOT's Passenger Rail Study, which is examining potential rail service between Phoenix and Tucson.

MAG Southwest Valley Local Transit System Study (2013)

This study analyzed transit needs in the Southwest Valley, including portions of Goodyear. The study included short-, mid-, and long-term transit service recommendations based on a variety of criteria, including that the transit system be accessible, affordable, convenient, multimodal, and integrated with the regional transit system. The short-term recommendations included improving local bus service on McDowell Road and Van Buren Street, as well as implementing a circulator in Goodyear. The mid- and long-term recommendations included initiating local



A survey was distributed as part of preparing the Avondale Urbanized Area Transit Plan (2003). It included Goodyear and showed possible future transit service (as dashed lines). Many of the improvements identified in the 2003 plan have been implemented.

bus service on Dysart Road or Litchfield Road and completing the network of local and express bus service. The study did not make a clear recommendation for high-capacity transit in the Southwest Valley.

Existing Transit Conditions

Existing transit service in Goodyear includes fixed-route bus service (local, express, and rural routes), circulator service, and paratransit service. Goodyear's current transit service is limited and is primarily focused east of Litchfield Road in the McDowell Road, Van Buren Street, and I-10 corridors.

Fixed-route Bus Service

Existing fixed-route bus service in Goodyear includes two local bus routes (Route 3 – Van Buren and Route 17 – McDowell), two express bus routes (Route 562 – Goodyear Express and Route 563 – Buckeye Express), one rural route (Route 685 – Ajo/Gila Bend) and one neighborhood circulator (Avondale Zoom). These routes are shown in Figure 3-17, and their service hours and frequency are described in Table 3-5.

Routes 3 (Van Buren) and 17 (McDowell) are important east-to-west local bus routes in the Valley Metro transit system. Currently, there is no north-to-south local bus route in Goodyear, although the Avondale Zoom neighborhood circulator and Route 685 (Ajo/Gila Bend) provide some north-to-south service on Dysart and Litchfield Roads. Routes 562 (Goodyear Express) and 563 (Buckeye Express) are key east-to-west express bus routes in the Southwest Valley using the I-10 corridor.

The Desert Sky Transit Center (located at Desert Sky Mall) and the 79th Avenue Park-and-Ride (located at the northeastern corner of I-10 and 79th Avenue) are important transit hubs in the Southwest Valley. While these facilities are located outside of Goodyear, the concentration of transit service at these facilities currently dictates how much of the regional transit service (both local and express bus) is operated in this part of the Valley. For example, most bus routes in west Phoenix serve the Desert Sky Transit Center, and it will continue to be the transit service hub in west Phoenix.

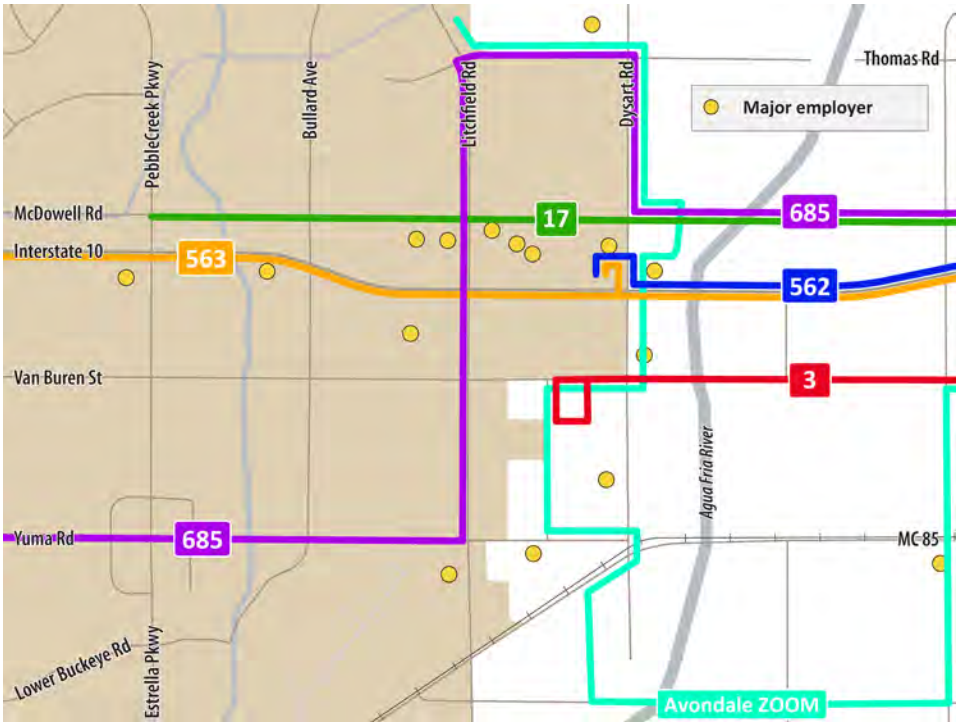


Figure 3-17 Existing Transit Service in the Goodyear Area

The Avondale Zoom local circulator bus route extends into the eastern portion of the city.

In addition, the 79th Avenue Park-and-Ride is the largest park-and-ride in this part of the region and is the hub for the City of Phoenix's I-10 West RAPID bus service. It is also the proposed terminus for the Valley Metro Capitol/I-10 light rail project. Connections to these facilities are important for Goodyear because Routes 17 (McDowell) and 685 (Ajo/Gila Bend) operate between Goodyear and Desert Sky Mall.

Table 3-5 Existing Transit Service

Route/Name	Weekday				Saturday			Sunday		
	Hours	Peak	Off-peak	Night	Hours	Day	Night	Hours	Day	Night
Local bus										
3 – Van Buren	5:00 a.m. – 8:15 p.m.	30	60	—	5:00 a.m. – 8:00 p.m.	60	—	No service	—	—
17 – McDowell	4:45 a.m. – 7:00 p.m.	30	60	—	5:45 a.m. – 7:30 p.m.	60	—	No service	—	—
Express bus										
562 – Goodyear	3 trips AM peak, 3 trips PM peak	No service	—	—	No service	—	—	—	—	—
563 – Buckeye	2 trips AM peak, 2 trips PM peak	No service	—	—	No service	—	—	—	—	—
Rural bus										
685 – Ajo/Gila Bend	5 trips each direction	2 trips each direction	No service	—	—	—	—	—	—	—
Circulator bus										
Avondale Zoom	5:30a.m. – 9:00 p.m.	30	30	—	6:00 a.m. – 6:30 p.m.	30	—	No service	—	—

Source: Valley Metro, 2013

Substantial transit improvements occurred in Goodyear in January 2014 as part of Valley Metro's biannual service change. The weekday peak frequency on Routes 3 (Van Buren) and 17 (McDowell) was improved from 60 minutes to 30 minutes west of Desert Sky Transit Center. Route 17 was extended west to Estrella Parkway from its former terminus at Litchfield Road. These changes represent a major transit service increase in Goodyear because the peak frequency of service was doubled on both Routes 3 (Van Buren) and 17 (McDowell), with the latter also including a 2-mile service extension to the west. In addition, Route 685 (Ajo/Gila Bend) was modified to operate east-to-west on Yuma Road instead of MC 85 west of Litchfield Road in Goodyear.

Ridership data for existing transit service in Goodyear is available from Valley Metro. According to Valley Metro, April and October are the months that best represent average systemwide ridership conditions.

Goodyear Park-and-Ride

Paratransit

Paratransit service in Goodyear is provided by Southwest Valley ADA service. The ADA requires that complementary paratransit service be provided in all areas within three-fourths of a mile of fixed-route transit service. Southwest Valley ADA service is provided Monday to Saturday from 5 a.m. to 8 p.m. No service is provided on Sundays or on holidays when fixed-route bus service is not provided.

Transit Facilities

Existing transit facilities include on-street passenger facilities such as bus stops and a large regional park-and-ride. The Goodyear Park-and-Ride is located at the northwestern corner of Dysart Road and I-10 and serves Routes 562 (Goodyear Express) and 563 (Buckeye Express). The Goodyear Park-and-Ride includes approximately 400 covered parking spaces, restrooms, and bicycle lockers.

Valley Metro local bus

Transit Technologies

Existing transit service in Goodyear includes a variety of transit technologies, ranging from local, express, and rural bus service to circulators and paratransit. Future transit service needs will be addressed using these existing transit technologies plus additional technologies as desired. The following is a summary of existing and potential transit technologies in Goodyear.

Local Bus

Local bus service is the most common form of transit service in the Valley. It uses standard-size buses (40 to 60 feet long) and generally operates on the arterial roadway network. The buses make frequent stops and may require passengers to transfer to reach their destinations. Routes 3 (Van Buren) and 17 (McDowell) are examples of local bus service in Goodyear.

Express Bus

Express bus service operates as commuter service during the peak hour and usually connects outlying areas with downtown Phoenix. The express bus routes typically serve park-and-ride lots, and the vehicles may include additional amenities geared toward commuter travel. Routes 562 (Goodyear Express) and 563 (Buckeye Express) are examples of express bus service in Goodyear.

Valley Metro express bus

Circulators

Circulators serve a small geographic area with frequent, all-day service. Some circulators serve designated stops and "flag" stops, whereby the passenger can wave at the driver to be picked up at an intermediate location. Circulator buses are small and often operate in residential areas. Avondale Zoom is an example of a neighborhood circulator.

Avondale Zoom circulator bus

Paratransit

Paratransit provides transportation for those unable to access traditional fixed-route transit service, such as passengers with disabilities. Complementary paratransit service is required by ADA in all areas within three-fourths of a mile of fixed-route bus service. The Southwest Valley ADA service is an example of paratransit in Goodyear.

Paratransit vehicle

Rural Bus

Rural bus service provides service to and from rural communities and typically covers a large geographical area. Rural bus service enables passengers to connect to a wider transit network from rural locations. Route 685 (Ajo/Gila Bend) is an example of rural bus service passing through Goodyear.

Regional Express Bus

Regional express bus service is a form of advanced bus service that expands traditional express bus service into two-way, all-day express bus service using regional freeway corridors. The routes typically provide point-to-point service and connect major activity centers and park-and-ride lots. There are no examples of regional express bus service in the Valley. The closest example would be if the City of Phoenix's RAPID bus service were expanded into two-way, all-day service.

Valley Metro rural bus

Bus Rapid Transit

Bus rapid transit is a form of advanced bus service that combines the advantages of high-capacity transit service with the flexibility of buses. It uses a dedicated or shared guideway to provide limited-stop bus service with additional passenger amenities. Traffic signal priority is often given to bus rapid transit vehicles. The Valley Metro LINK bus service in Mesa and Chandler is an example of bus rapid transit service in the Valley.

Light Rail Transit

Light rail transit is electrically powered rail service that operates on tracks. The tracks are within exclusive or shared right-of-way. The light rail vehicles serve stations located approximately every half mile to 1 mile.

Metro light rail transit

Light rail provides high-capacity transit service and emphasizes speed and travel time savings and can operate using multiple vehicles linked together to accommodate large passenger volumes. Valley Metro Rail (METRO light rail) in Phoenix, Tempe, and Mesa is an example of light rail in the Valley.

A modern streetcar

Modern Streetcar

A modern streetcar provides electrically powered rail service that operates on tracks. Modern streetcars typically operate in mixed traffic in existing urban environments. They are usually operated as a single vehicle and can operate safely in high traffic and/or high pedestrian activity areas. The proposed Tempe Streetcar (in planning) and the Tucson Streetcar (under construction) are examples of modern streetcars in Arizona.

BICYCLE AND PEDESTRIAN

Bicycle and Pedestrian Routes

In developed portions of Goodyear, roadways have both bicycle lanes and sidewalks (see Figures 3-18 North and 3-18 South). The sidewalks are often detached with a landscaped buffer and often feature a generous 8-foot width. The abundance of nonmotorized facilities is mostly attributable to new developments using street standards that include these amenities. There are a few 'gaps' or missing segments of bike lanes in the north area. These segments were generally built prior to the adoption of the current street cross section. Missing sidewalks generally occur where parcels remain undeveloped. The remainder of Goodyear is still rural, with two-lane roads lacking nonmotorized facilities. The General Plan identifies many of these roads in the future as arterial and collector roadways that will eventually have nonmotorized facilities.

Goodyear also has numerous existing and potential off-street nonmotorized facilities that are being evaluated as part of a separate, concurrent planning effort—the Parks and Recreation Master Plan. The goal of this Plan and the Parks and Recreation Master Plan is to develop a complete, linked system so that nonmotorized users can seamlessly move between on-street and off-street facilities to reach their desired destinations. These facilities are discussed further in the Pedestrian Improvement Descriptions section.

The Goodyear nonmotorized system also connects to facilities outside the planning area to support a regional network. Connections include planned or existing facilities on McDowell Road in both Buckeye and Avondale, and on MC 85 in Avondale.

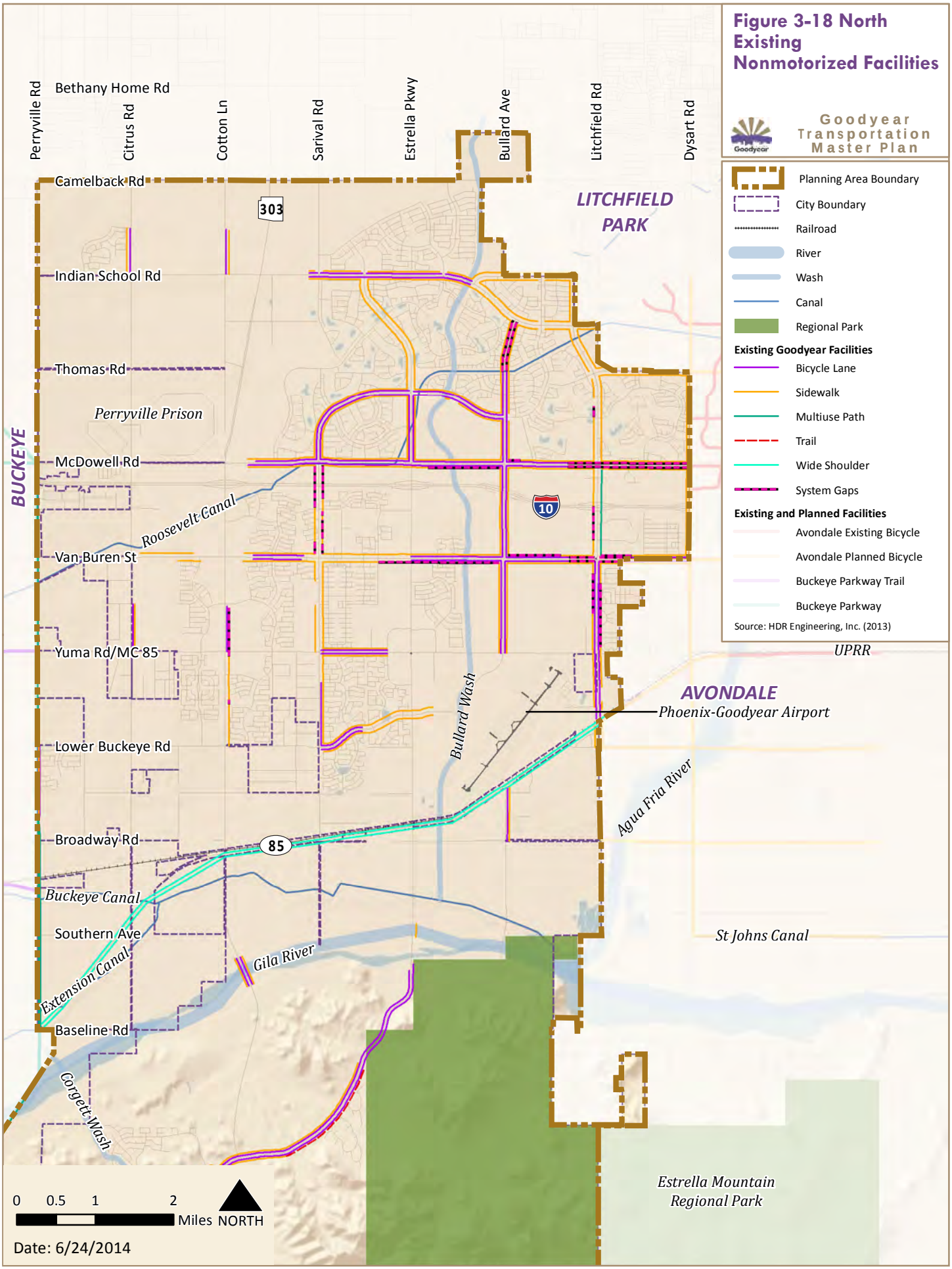


Figure 3-18 North Existing Nonmotorized Facilities
Goodyear Transportation Master Plan
Planning Area Boundary
City Boundary
Railroad
River
Wash
Canal
Regional Park
Existing Goodyear Facilities
Bicycle Lane
Sidewalk
Multiuse Path
Trail
Wide Shoulder
System Gaps
Existing and Planned Facilities
Avondale Existing Bicycle
Avondale Planned Bicycle
Buckeye Parkway Trail
Buckeye Parkway
Source: HDR Engineering, Inc. (2013)
Perryville Rd
Bethany Home Rd
Citrus Rd
Cotton Ln
Sarival Rd
Estrella Pkwy
Bullard Ave
Litchfield Rd
Dysart Rd
Camelback Rd
303
LITCHFIELD PARK
Indian School Rd
Thomas Rd
Perryville Prison
BUCKEYE
McDowell Rd
Roosevelt Canal
10
Van Buren St
Yuma Rd/MC 85
UPRR
AVONDALE
Phoenix-Goodyear Airport
Bullard Wash
Lower Buckeye Rd
Agua Fria River
Broadway Rd
85
Buckeye Canal
Southern Ave
St Johns Canal
Extension Canal
Gila River
Baseline Rd
Corgett Wash
Estrella Mountain Regional Park
0 0.5 1 2 Miles
NORTH
Date: 6/24/2014

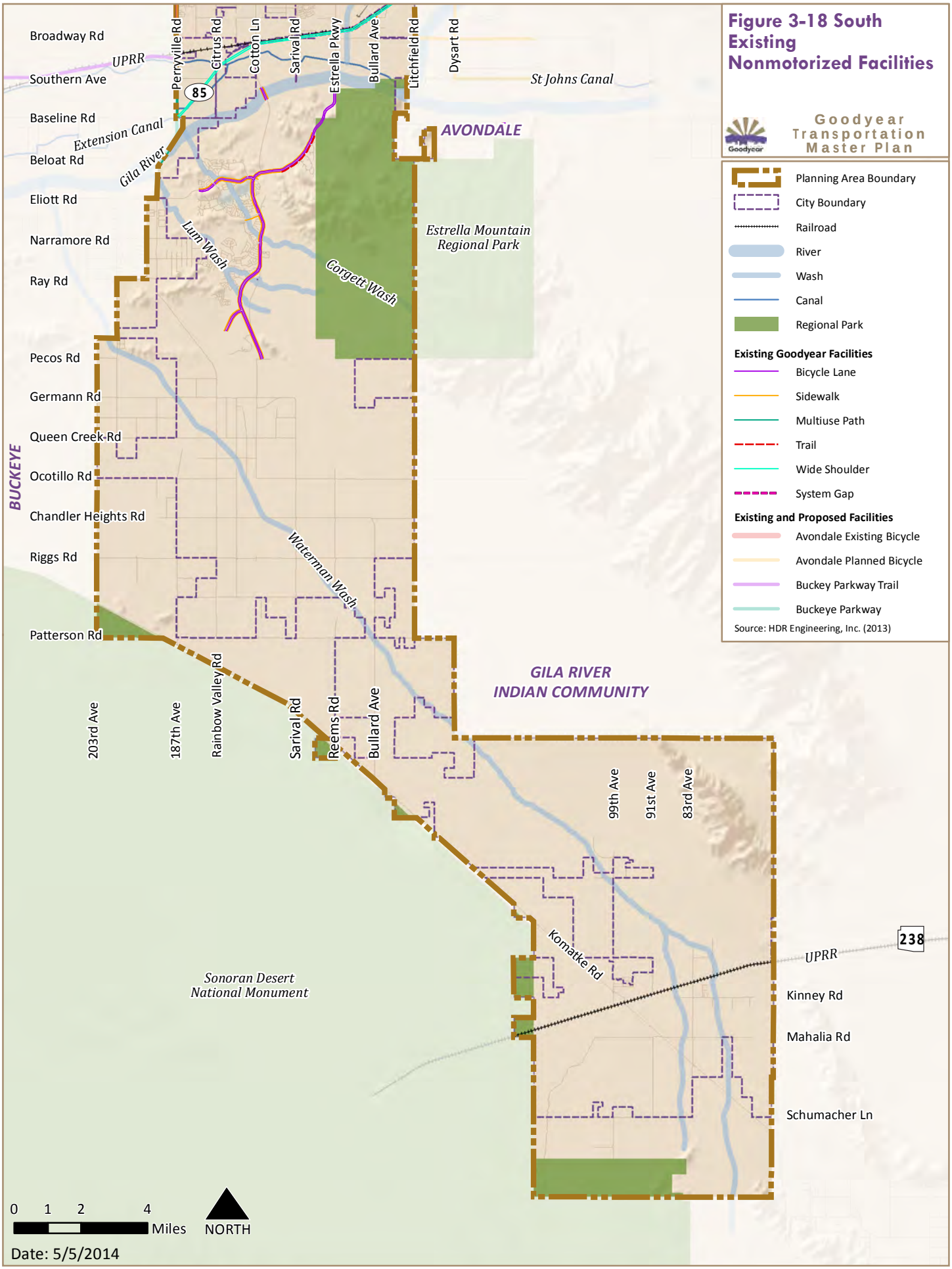


Figure 3-18 South Existing Nonmotorized Facilities
Goodyear Transportation Master Plan
Planning Area Boundary
City Boundary
Railroad
River
Wash
Canal
Regional Park
Existing Goodyear Facilities
Bicycle Lane
Sidewalk
Multiuse Path
Trail
Wide Shoulder
System Gap
Existing and Proposed Facilities
Avondale Existing Bicycle
Avondale Planned Bicycle
Buckey Parkway Trail
Buckeye Parkway
Source: HDR Engineering, Inc. (2013)
Broadway Rd
Southern Ave
Baseline Rd
Beloat Rd
Eliott Rd
Narramore Rd
Ray Rd
Pecos Rd
Germann Rd
Queen Creek Rd
Ocotillo Rd
Chandler Heights Rd
Riggs Rd
Patterson Rd
UPRR
Extension Canal
Gila River
Lum Wash
Corgett Wash
Waterman Wash
St Johns Canal
Estrella Mountain Regional Park
AVONDALE
BUCKEYE
GILA RIVER INDIAN COMMUNITY
Sonoran Desert National Monument
Komatke Rd
Kinney Rd
Mahalia Rd
Schumacher Ln
Perryville Rd
Citrus Rd
Cotton Ln
Sarival Rd
Estrella Pkwy
Bullard Ave
Litchfield Rd
Dysart Rd
203rd Ave
187th Ave
Rainbow Valley Rd
Reems Rd
99th Ave
91st Ave
83rd Ave
85
238
0 1 2 4 Miles
NORTH
Date: 5/5/2014

Bicycle and Pedestrian Level of Service

Bicycle and pedestrian existing LOS was calculated for two major crossroads in Goodyear—McDowell Road and Estrella Parkway—to get a small sampling of conditions. Both roads traverse developed and rural areas and thus provide a range of existing conditions. Existing bicycle LOS for Estrella Parkway ranges from LOS C to F (see Figure 3-19), while the LOS for McDowell Road ranges from LOS E to F. Existing pedestrian LOS is LOS B to C on Estrella Parkway and LOS C to D on McDowell Road (see Figure 3-20). Descriptions of LOS, for both types, are:

- LOS A – best possible condition
- LOS B – comfortable, adequate, and will attract users
- LOS C – adequate, but less comfortable
- LOS D – usable, but not likely to attract users
- LOS E – inadequate, requires cautious use
- LOS F – lacks facilities

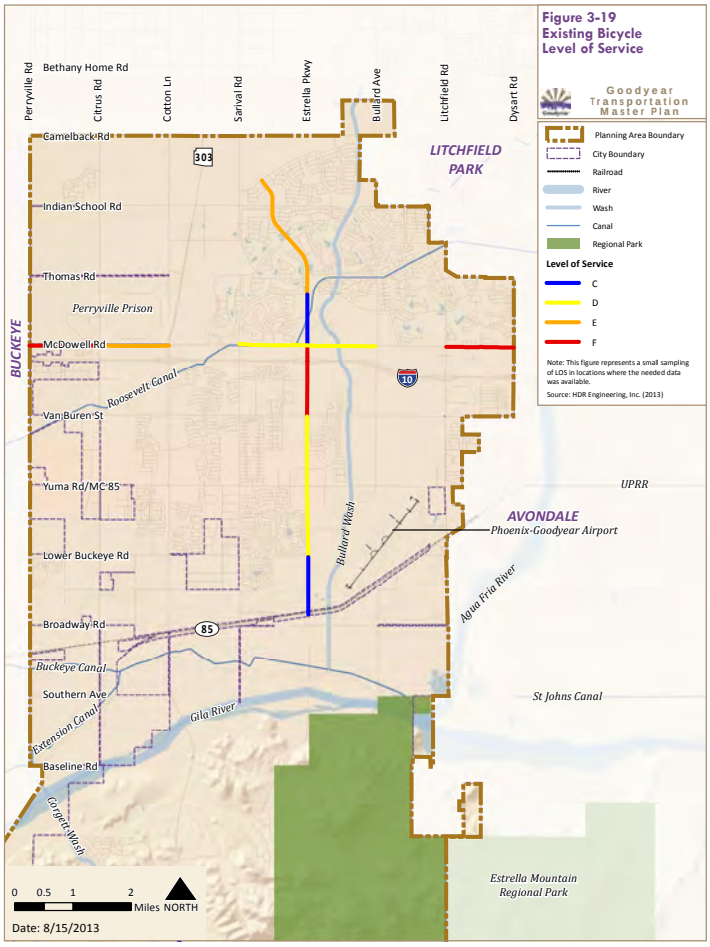


Figure 3-19 Existing Bicycle Level of Service

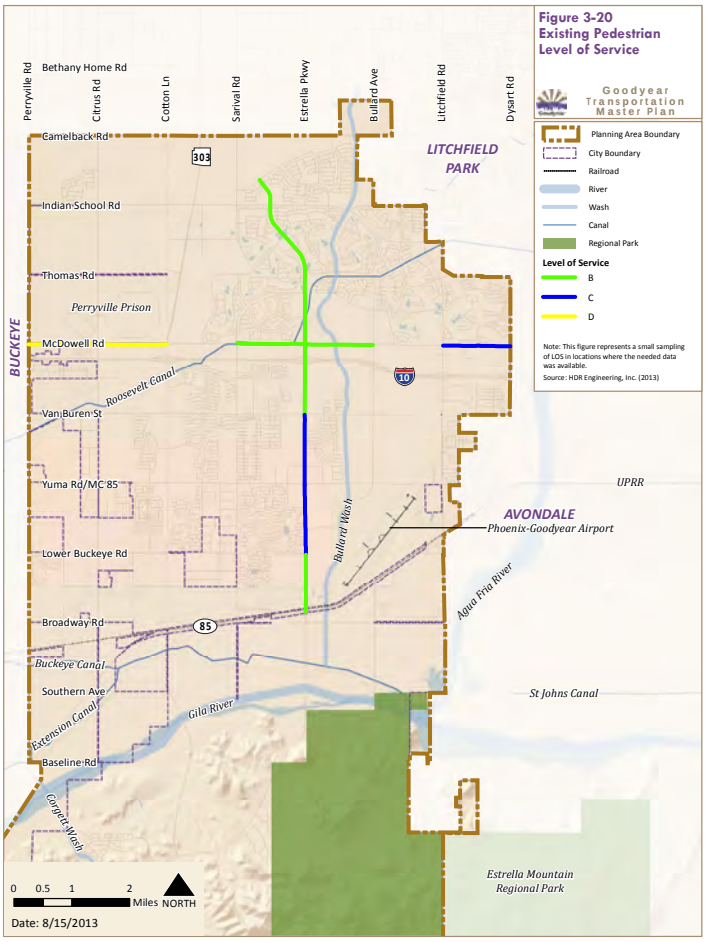


Figure 3-20 Existing Pedestrian Level of Service

Lowering traffic speeds or number of trucks, increasing the buffer width between the vehicular traffic and the sidewalk, increasing the amount of shade along a sidewalk, and improving pavement condition are just some ways to improve LOS scores for bicycles, pedestrians, or both. The LOS F scores in this case generally result from a high percentage of truck traffic.

Most of the bicycle lanes are marked with lane symbols, although some are very faded. A multiuse path on the eastern side of a portion of Litchfield Road is striped for two-way movement; there is no bicycle lane on the western side. There is a marked crossing of Bullard Avenue at the Roosevelt Canal. Median refuges exist where the canal paths cross Litchfield Road, but no marked crossings or signs. There is a lack of noticeable signs for bicycle movement.

As Goodyear continues to develop, so will the number of residents who wish to bicycle and walk in the community. Providing comfortable and convenient facilities will encourage residents to get out of their cars for short trips or out of their houses and gyms for recreation and health. Most of the master-planned communities have many off-street trails and paths and on-street sidewalks. Going forward, it is presumed this will be the standard. Ensuring that future facilities meet a minimum standard will help create a cohesive system. For instance, a true multiuse path is at least 10 feet wide to accommodate multiple users passing at the same time. While these internal subdivision facilities are intended for subdivision residents, they are often used by the general populace because they create longer cross-town routes using both on- and off-street facilities.

Proposed nonmotorized facilities shown on the General Plan are delineated on arterial roadways. While this is advantageous and desired, and bicyclists often prefer riding with traffic, there is an opportunity to identify a few on-street bicycle routes that could create a network on collector roadways, perhaps identifying some segments as bicycle boulevards. For the casual, recreational rider, streets with less vehicular traffic and lower traffic speeds are more comfortable than an arterial roadway, even the best designed one.

Goodyear has the fundamental elements in place to consider applying for League of American Bicyclists Bicycle Friendly status, should that be a desire. However, some facilities and programs could be initiated to improve the likelihood of being ranked. The city has many miles of bicycle lanes, but that is only one component of ranking. Specific recommendations covered later in this Plan include increasing the number of signs and developing an educational program.

Neighboring Jurisdictions

Goodyear is surrounded by Buckeye, Glendale, Litchfield Park, Avondale, Gila River Indian Community, Maricopa County, and regional open spaces. Buckeye and Avondale both have circulation plans that include enhanced bicycle and/or pedestrian facilities. Buckeye has the planned Parkway Trail section, with a 10-foot detached sidewalk on both sides of the street. McDowell and Yuma Roads and UPRR are all Parkways. Avondale has planned or existing bicycle facilities on its arterial roadways and planned trails on both banks of the Gila and Agua Fria Rivers.

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Section 4

RECOMMENDATIONS

Goodyear ARIZONA

4. RECOMMENDATIONS

ROADWAY SYSTEM IMPROVEMENTS

This section discusses recommended improvements for the roadway transportation system. Projects identified in the City of Goodyear's CIP are included in this list. The CIP aims to address traffic congestion by constructing new roadways, adding lanes to existing roadways, widening intersections, and enhancing traffic management systems. The 10-year CIP includes approximately $59 million for roadways and traffic control between fiscal years 2015 and 2024.

The tables on the following pages show roadway improvement recommendations for the short-term (5-year), mid-term (10-year), and long-term (20-year) periods. The identification number (ID) associated with each project is keyed to the corresponding project on figures following the tables of improvements.

Goodyear's roadway network serves the City well. The improvements made, either done by the City, through regional arterial and freeway infrastructure improvements, or in conjunction with private development, have kept ahead of demand. Today all of the City's roadways operate within an acceptable level of service—even during the peak AM and PM periods. The City's arterial street standards, which include accommodations for bicycle and pedestrian facilities, have also expanded the nonmotorized network through the developed portions of the City (refer to the Nonmotorized section for additional discussion of bicycle and pedestrian facilities).

The recommendations are tied to the City's goal of providing "A well-functioning roadway network that effectively and efficiently serves Goodyear's residents, visitors, and employers." The projects identified in the short-, mid-, and long-term recommendations are proposed to maintain the efficient operation of the transportation system, and in conjunction with the improvements identified in the transit and nonmotorized sections, enhance the transportation system to accommodate all users and provide alternatives for transportation throughout the City. It is important to recognize that this list is comprehensive, and developed based on the information available today. It is not expected that every project identified will be implemented in the time-frames specified. Projects are prioritized by time frame—short-, mid-, and long-term. The following pages provide a brief description of the identified projects, each is preceded with the identification number keyed to the table and figures.

Note:

In many instances, recommended improvements would be constructed as part of off-site improvements for private development.

The Plan identifies the needed improvements based on projected development, however, many improvements are only needed if adjacent private development occurs.

In addition, some identified projects include portions outside of the City of Goodyear, requiring coordination and cost sharing as appropriate.

SHORT-TERM RECOMMENDATIONS

The following provides a summary of the recommended projects identified for the short-term to maintain the efficient operation of the City's street network. Projects are also shown in Table 4-1 and Figure 4-1.

*editor's note:
the project numbering associated with the recommended improvements is neither sequential, nor indicative of a project's priority. Project numbers were assigned as the Plan progressed, and projects have been deleted, added, even moved between phases - hence the seemingly random numbering seen here.

Intersection Improvements

The following intersection improvements are recommended to ease congestion and improve traffic flow and operation in the short-term.

2* McDowell Road at Dysart Road. Bordering the City of Avondale, this intersection carries heavy traffic turning movement volumes at a busy commercial center.

3 McDowell Road at Litchfield Road. This is one of the busiest commercial areas in the City. Both Litchfield Road and McDowell Road provide regional access to thru-traffic to and from the City.

4 Van Buren Street at Estrella Parkway. The near term improvement of this intersection is linked with the widening of Van Buren Street from Sarival Avenue to Estrella Parkway #69, listed below).

5 Van Buren Street at Litchfield Road. The proposed improvements will serve the heavy traffic turning movements approaching capacity at this busy commercial intersection.

7 Yuma Road at Bullard Avenue. This improvement is linked with the improvements identified for Bullard Avenue including the extension from Lower Buckeye Road to Estrella Parkway (#66, listed below anticipated for construction by Fall 2014), and the widening from Van Buren Street to Yuma Road (#28, listed below). The proposed improvements support the designation of Bullard Avenue as a truck route and will aid heavy vehicle maneuvering as well as increasing intersection capacity.

12 Indian School Road at Cotton Lane. The proposed improvement will support the traffic flow anticipated from the completion of Loop 303 and I-10 system interchange construction project, and ties in to the Indian School Road widening project (#20).

13 McDowell Road at Citrus Road. This project supports the anticipated traffic flow from recently completed traffic interchange at Citrus Road and I-10, and ties in to the mid-term improvement widening of Citrus Road, north of I-10 (#10); and the widening of McDowell Road between Citrus Road and Cotton Lane (#18).

16 Elwood Street at Estrella Parkway. Improvements here are necessary with the extension of Bullard Avenue from Lower Buckeye Road to Estrella Parkway (#66). This improvement will facilitate truck maneuvering along Bullard Avenue and Estrella Parkway.

22 Van Buren Street at Sarival Avenue. See also #69.

34 Van Buren Street at Citrus Road. This intersection improvement is planned in coordination with widening project of Van Buren: Citrus Road to Loop 303 (#21), and, in advance of the mid-term widening project of Citrus Road from McDowell Road to Van Buren Street (#10).

36 Yuma Road at Canyon Trails Blvd. An evaluation of this intersection was completed in May 2014 which recommended a traffic signal at this location pending City Engineer determination.

48 Estrella Parkway underpass widening at I-10. This roadway widening project is required to meet the anticipated traffic demand by 2025 as a result of regional growth and the development of the Estrella Falls Shopping Mall. This traffic interchange will operate at LOS F without identified improvement projects. Widening of the underpass is recommended to alleviate congestion and safer traffic operation.

59 Van Buren Street at Bullard Avenue. This improvement is in conjunction with the Bullard Avenue extension project (#66) and widening from Van Buren Street to Yuma Road (#28). This intersection improvement will support heavy vehicle maneuvering and heavier traffic flow anticipated with the Bullard Avenue improvements.

67 Bullard Avenue at Vineyard Avenue. A detailed traffic safety study is recommended for this intersection to identify appropriate countermeasures to address the vehicle crashes which have occurred at this intersection.

70 MC 85 at 159th Avenue. This improvement will provide improved access to MC 85 from this area, identified in the General Plan as part of the Phoenix Goodyear Airport/MC 85/ Bullard Corridor Job Center. Existing access is limited to Estrella Parkway, just north of the Gila River Bridge.

73 Vineyard Avenue at Estrella Parkway. In advance of any widening of the Gila River bridge crossing (refer to mid-term recommendation #26), interim improvements are recommended at this intersection to improve safety on Estrella Parkway at Vineyard Road.

Roadway Improvements

The following roadway widening and new roadway projects will enhance local and regional access and improve traffic operation.

8 Sarival Avenue: I-10 to Van Buren Street. These improvements continue the enhancements of Sarival Avenue as a 4-lane roadway with increased capacity.

9 Sarival Avenue: Jefferson Street to Yuma Road. These improvements continue the enhancements of Sarival Avenue as a 4-lane roadway, completing street, curb, gutter and sidewalk improvements along the western edge.

11 Elwood Street: Sarival Avenue to Estrella Parkway. Currently, Elwood Street does not extend west of 156th Avenue, impeding traffic flow by not providing thru-access; the proposed improvements will complete east-west thru-traffic access between Sarival Avenue and Estrella Parkway.

20 Indian School Road: Loop 303 to west of Sarival Avenue. These interim improvements will widen Indian School Road to 4-lanes, essentially doubling the existing pavement. Mid-term improvements identify widening Indian School Road to its ultimate 6-lane section, with median, curb, and sidewalks.

21 Van Buren Street: Citrus Road to Cotton Lane (Loop 303). This improvement is in conjunction with the Loop 303 and I-10 system ramp construction project. Widening to 4-Lanes will improve the connectivity and traffic operations in short-term.

28 Bullard Avenue: Van Buren Street to Yuma Road. Bullard Road is identified as a truck route within the City, this widening project, in conjunction with the new roadway project extending Bullard Avenue to Estrella Parkway (Bullard Avenue: Lower Buckeye Road to Elwood Street #66, listed below) will provide continuous 4-lane truck route from Elwood Road/Estrella Parkway to I-10. Capacity will be added with improved traffic operation and truck accessibility.

66 Bullard Avenue: Lower Buckeye Road to Elwood Street. The Bullard Avenue extension will improve north-south access through the City and serve to relieve some of the demand currently using Estrella Parkway. This corridor will serve as a truck route with access to the Goodyear airport, which has identified Bullard Avenue as the facilities future main entrance.

69 Van Buren: Estrella Parkway to Sarival Avenue. Widening Van Buren Street will improve safety and enhance the capacity and traffic operation in short term. Additionally, the construction of curb, gutter and sidewalks will improve east-west pedestrian connectivity in the area.

MID-TERM RECOMMENDATIONS

Many of the roadway projects recommended in the mid-term time frame address capacity enhancements for intersections to accommodate forecast demand; actual timing and recommendations for traffic signals will be based on actual traffic counts and other warrants as determined by MUTCD. A number of projects are identified to improve the Gila River crossing, where it is forecast that over 70,000 vehicles per day will cross. In addition, because of the significant growth anticipated for the southern planning area, a number of roads will need to be widened or constructed. These southern planning area needs are predicated on the growth currently projected to occur south of the Gila River.

The following provides a summary of the recommended projects identified for the mid-term to maintain the efficient operation of the City's street network. Projects are also shown in Table 4-2 and Figures 4-2 North and 4-2 South.

Intersection Improvements

The following intersection improvements are recommended to ease congestion and improve traffic flow and operation.

15 Estrella Parkway at MC 85. This intersection capacity improvement project is in conjunction with the widening of Estrella Parkway widening project (see #25). As growth continues in the Southern Planning area, this improvement is necessary to ensure efficient traffic flow.

17 Elwood Street at Sarival Avenue. This intersection improvement is in conjunction with Sarival Avenue and Elwood Road widening projects (#39 and #65, respectively). Traffic flow will be improved by added intersection capacity.

23 Vineyard Avenue at Estrella Parkway. In coordination with widening of the Gila River bridge crossing (identified as a mid-term recommendation #26), a traffic signal would be incorporated at this intersection.

Traffic Signal Considerations

The following projects involve potential traffic signal installations, per MUTCD guidelines, and are recommended as traffic counts demonstrate they meet the necessary warrants. The improvement will enhance the traffic operation, reduce delay and queue on the side streets, and improve traffic safety:

30 Van Buren Street at 152nd Drive

31 Van Buren Street at 158th Avenue

32 Thomas Road at 135th Avenue

33 Earl Drive at Bullard Avenue

35 Sarival Avenue at Harrison Street

Roadway Improvements

The following roadway widening and new roadway projects will enhance local and regional access and improve traffic operation.

10 Citrus Road: McDowell Road to Van Buren Street This widening project will tie-in to, and enhance traffic operation at the Citrus Road traffic interchange at I-10.

18 McDowell Road: Citrus Road to Loop 303. This widening project will improve capacity in the vicinity of the Loop 303 and I-10.

19 Camelback Road: Cotton Lane to Sarival Road. This demand driven roadway widening project will improve east-west traffic flow, where MAG traffic volume projections indicate the need for this roadway widening by 2025. This improvement would also accommodate the future truck route planned for Camelback Road.

37 Yuma Road: Cotton Lane to Sarival Avenue. This roadway widening project will enhance east-west directional capacity, and improve traffic operation and safety.

75 Estrella Pkwy: Fillmore Road to I-10 South TI. In order to improve traffic operation as congestion increases, build northbound outside lane.

Estrella Parkway Crossing of the Gila River

As noted in the discussion of future conditions, Estrella Parkway is anticipated to carry heavy traffic volume across the Gila River with the further development of the southern planning area (by 2030 the population south of the river is anticipated to be nearly 50,000). The following improvements are identified to increase the Estrella Parkway capacity across the Gila River.

24 Cotton Lane: south of the Gila River Bridge to north of Estrella Parkway. Widening of Cotton Lane is required to support the growth in traffic originating in the southern planning area. This improvement is necessary to meet the demand for north-south access across the Gila River.

25 Estrella Parkway: MC85 to Vineyard Avenue. This demand driven capacity improvement project is necessary to support the growth in the southern portion of the city as well as provide continuous and acceptable level of service across the Gila River (refer to projects #26 and #27; widening of the bridges crossing the Gila River and Buckeye Canal, respectively).

26 Estrella Parkway: Gila River (bridge widening). Refer to #25.

27 Estrella Parkway: Buckeye Canal (bridge widening). Refer to #25.

Roadway Improvements in Southern Planning Area

The following projects are predicated on the anticipated development in the southern planning area. It is anticipated that this area will develop through master planned developments. Master planned developments serve the local traffic through their internal circulation, the recommended improvements identified here address the arterial network.

71 Elliot Road: 186th Avenue to Rainbow Valley Road. This roadway widening project will improve east-west connectivity in the southern planning area. This improvement will also provide access to Tuthill Road (outside Goodyear Planning Area) an all-weather crossing of the Gila River which may help to relieve some congestion on the Goodyear Gila River crossings.

72 Willis Road: Rainbow Valley Road to Estrella Parkway. This improvement will improve east-west connectivity in the southern planning area.

74 Rainbow Valley Road: Elliot Road to Willis Road. This project provides a north-south connection from Willis Road (#72) to Elliot Road (#71), and with continuation on to Tuthill Road provides an alternate Gila River crossing. Part of this roadway extends outside the City's planning area.

LONG-TERM RECOMMENDATIONS

The long-term roadway recommendations are largely tied to supporting the City's anticipated growth and development. Many of the projects address completing street improvements to tie together previously developed segments into continuous fully-developed street sections per the city's functional classification map. Many of the identified projects will be triggered by adjacent development, which may occur in advance of the long-term time-frame.

The following provides a summary of the recommended projects identified for the long-term to maintain the efficient operation of the City's street network. Projects are also shown in Table 4-3 and Figures 4-3 North and 4-3 South.

Intersection Improvements

The following intersection improvements are recommended to ease congestion and improve traffic flow and operation.

1 Indian School Road at Litchfield Road. Approaching traffic volumes during the peak period are at capacity and without improvements intersection experiences long delay and congestion.

14 Lower Buckeye Road at Sarival Avenue. This long-term proposed improvement is proposed in conjunction with Sarival Avenue widening (refer to #39)

40 Camelback Road at Sarival Avenue. A traffic signal installation per MUTCD guideline is recommended as the traffic volume meets warrant. This intersection improvement is necessary with the proposed discontinuation of Sarival Avenue and extension of PebbleCreek Parkway.

41 Thomas Road at Perryville Road. The intersection improvement is recommended in conjunction with Thomas Road widening (#51).

42 Thomas Road at Citrus Road. The intersection improvement is recommended in conjunction with Thomas Road widening (#51).

43 Thomas Road at Cotton Lane. The intersection improvement is recommended in conjunction with Thomas Road widening (#51).

44 Yuma Road at Citrus Road. The intersection improvement is recommended in conjunction with Yuma Road widening (#38).

47 Estrella Parkway at Cotton Lane. Estrella Parkway at Cotton Lane was ultimately envisioned as a grade-separated intersection. The traffic growth forecast by the MAG model forecasts heavy traffic volume along Estrella Parkway and Cotton Lane. Sometime after 2025 it is anticipated that the traffic demand will exceed the capacity of the current roundabout; a grade-separated intersection will greatly increase the capacity of this intersection and improve safety.

Roadway Improvements

29 Perryville Road: McDowell Road to Van Buren Street. This improvement will improve north-south accessibility for the City to and from I-10 in the western portion of the City. Perryville Road is a planned parkway with proposed traffic interchange with I-10.

38 Yuma Road: Citrus Road to 175th Drive. As development occurs west of the Loop 303, widening Yuma Road will provide enhanced east-west access to this part of the City.

39 Sarival Avenue: Yuma Road to MC85. As the development occurs within the City widening Sarival Avenue will provide improved, continuous north-south access.

49 Camelback Road: Sarival Road to West of 152nd Avenue. Widening Camelback Road will improve roadway capacity and provide the area better east-west directional access. Camelback Road is identified as a future truck route; widening this segment will enhance truck accessibility.

51 Thomas Road: Perryville Road to Loop 303 (New Road). Widening of Thomas Road will provide improved access to the Loop 303. The intersections at Perryville Road

(#41), Citrus Road (#42) and Cotton Lane (#43) will be improved concurrently with this roadway widening project.

52 Cotton Lane: Camelback Road to Indian School Road. This roadway widening project will improve north-south accessibility for the employment uses planned for this area.

53 PebbleCreek Parkway: Camelback Road to Charles Blvd. Extending PebbleCreek Parkway, north to Camelback Road will provide improved north-south connectivity as development occurs.

54 Yuma Road: 175th Drive to Cotton Lane. This project improves access to the Loop 303 and east-west connectivity in the central area of the City.

55 Yuma Road: Goodyear Blvd (E) to Bullard Avenue. This project will enhance access to the City Center.

56 Yuma Road: Bullard Avenue to Camino Oro. As with #55, this project will enhance access to the City Center.

57 Citrus Road: Van Buren Street to Durango Street. This project will improve north-south capacity as the western area of the City develops.

60 Estrella Parkway: Pecos Road to Riggs Road. Extending Estrella south of Pecos Road is necessary to provide access to the forecast growth in the southern planning area. The time line for the implementation may be beyond this projects planning horizon of 2035.

64 Litchfield Road: Van Buren Street to MC 85. Widening Litchfield Road will improve north-south connectivity necessary for increased demand.

65 Elwood Street: Cotton Lane to Sarival Avenue. Widening Elwood Street will provide improved access to commercial development in the area.

73 Rainbow Valley Road/Sonoran Valley Parkway: Ray Road (western boundary) to Riggs Road; becomes Sonoran Valley Parkway south of Riggs Road. This roadway is identified in the City's adopted roadway functional classification plan shows Rainbow Valley becoming Sonoran Parkway south of Riggs Road traversing all the way to the southern City boundary. This recommendation will support City's vision in achieving long-term roadway functional classification goal.

Table 4-1 Short-term Roadway Network Improvements (2020)

Map ID	Segment/Intersection	Length (miles)	Type	ROW (feet)	Description	Cost ($000s)	Functional Class	Notes
2	McDowell Rd at Dysart Rd	N/A	Intersection improvement	N/A	Intersection improvements	900	Major Arterial/ Major Arterial	Approaching capacity
3	McDowell Rd at Litchfield Rd	N/A	Intersection improvement	N/A	NBL and SBL dual lefts, EBT and WBT 3 lanes	1,112	Major Arterial/ Major Arterial	Approaching capacity
4	Van Buren St at Estrella Pkwy	N/A	Intersection improvement	N/A	EBT, WBT and SBT 3 lanes. Striping	556	Major Arterial/ Scenic Arterial	Approaching capacity
5	Van Buren St at Litchfield Rd	N/A	Intersection improvement	N/A	NBL and SBL dual lefts, EBT, SBT and WBT 3 lanes	2,623	Major Arterial/ Major Arterial	Approaching capacity
7	Yuma Rd at Bullard Ave	N/A	Intersection improvement	N/A	Intersection improvements including traffic signal	2,433	Scenic Arterial/ Major Arterial	In conjunction with Bullard Ave improvement
8	Sarival Ave: I-10 to Van Buren St	1.1	Widening	110	Two lanes-median-one lane to two lanes-median-two lanes	1,700	Arterial	Capacity improvement, CIP project
9	Sarival Ave: Jefferson St to Yuma Rd	0.7	Widening	110	Two lanes-median-one lane to two lanes-median-two lanes	1,740	Arterial	Capacity improvement, CIP project
11	Elwood St: Sarival Ave to Estrella Parkway	1.0	New road plus improvement	130	New 2 lanes (1:1) from 161st Ave to west of 156th Ave plus roadway improvement	400	Major Arterial	Truck route, capacity improvement
12	Indian School Rd at Cotton Ln	N/A	Intersection improvement	N/A	East leg of the intersection will be widened to 4 lanes with turn pockets along with 2 lane (WB) lane drop on Indian School Rd on west approach. Traffic signal	2,111	Major Arterial/ Major Arterial	Potential traffic signal location
13	McDowell Rd at Citrus Rd	N/A	Intersection improvement	N/A	Intersection improvements	1,676	Major Arterial/ Arterial	Intersection improvements in conjunction with L303
16	Elwood St at Estrella Pkwy	N/A	Intersection improvement	N/A	Intersection improvements in conjunction with roadway widening	2,224	Major Arterial/ Scenic Arterial	Truck route, capacity improvement
20	Indian School Rd: L303 to Sarival Ave	0.9	Widening	130	One lane-one lane to two lanes-median-two lanes	2,012	Major Arterial/ Road of Regional Significance	Demand driven capacity improvement
21	Van Buren St: Citrus Rd to Cotton Ln (L303)	1.1	Widening	130	Restriping, widening, complete 4 lanes	2,589	Major Arterial	Demand driven CIP project
22	Van Buren St at Sarival Ave	N/A	Intersection improvement	N/A	Intersection improvements	1,112	Major Arterial/ Arterial	Conjunction with Sarival Ave improvement
28	Bullard Ave: Van Buren St to Yuma Rd	1.0	Widening	130	One lane-one lane to two lanes-median-two lanes	6,119	Major Arterial	Truck route, capacity improvement
34	Van Buren St at Citrus Rd	N/A	Intersection improvement	N/A	Intersection Improvements	1,668	Major Arterial/ Arterial	Intersection improvements, CIP project

Notes: EBT = eastbound turn, N/A = not applicable, NBL = northbound lane, RRS = route of regional significance, SBL = southbound lane, SBT = southbound turn

(table continues on next page)

Table 4-1 Short-term Roadway Network Improvements (2020) (continued)

Map ID	Segment/Intersection	Length (miles)	Type	ROW (feet)	Description	Cost ($000s)	Functional Class	Notes
36	Yuma Rd at Canyon Trails Blvd	N/A	Intersection improvement	N/A	Signal	440	Scenic Arterial/ Collector	Potential traffic signal location
48	Estrella Pkwy at I-10	N/A	Intersection improvement	N/A	Need intersection improvement including free NB right turns at north intersection.	(ADOT)/ 3,200	Parkway/ Freeway	Improve traffic operation
59	Van Buren St at Bullard Ave	N/A	Intersection improvement	N/A	Intersection improvements	1,112	Major Arterial/ Major Arterial	In conjunction with Bullard Ave improvement
66	Bullard Ave: Lower Buckeye Rd to Elwood St	1.8	New road	130	Two lanes-median-two lanes	5,000	Major Arterial	Major truck route
67	Bullard Avenue at Vineyard Ave	N/A	Intersection improvement	N/A	Intersection safety improvement	Pending evaluation	Major Arterial/ Arterial	Safety improvement
69	Van Buren: Estrella Pkwy to Sarival Ave	1.0	Widening	130	Widen to 4 lanes west and east, curb gutter bike lane and sidewalks.	1,200	Major Arterial	Capacity and safety improvement
70	MC 85 at 159th Ave	N/A	Intersection improvement	N/A	Improve intersection and accessibility	1,150	Major Arterial/ Other	Provide an MC 85 access to adjacent developments, as the only existing access is on Estrella Pkwy just north of the Gila River bridge
73	Vineyard Ave at Estrella Pkwy	N/A	Intersection improvement	N/A	Intersection safety improvements	Pending evaluation	Scenic Arterial	Safety improvement

Notes: EBT = eastbound turn, N/A = not applicable, NBL = northbound lane, RRS = route of regional significance, SBL = southbound lane, SBT = southbound turn

Table 4-2 Mid-term Roadway Network Improvements (2025)

Map ID	Segment/Intersection	Length (miles)	Type	ROW (feet)	Description	Cost ($000s)	Functional Class	Notes
10	Citrus Rd: McDowell Rd to Van Buren St	1.0	Widening	110	One lane-one lane to two lanes-median-two lanes	4,205	Arterial	Demand driven, CIP project
15	Estrella Pkwy at MC 85	N/A	Intersection improvement	N/A	Intersection improvements in conjunction with roadway widening	1,870	Major Arterial/ Road of Regional Significance/ Scenic Arterial	Capacity improvement
17	Elwood St at Sarival Ave	N/A	Intersection improvement	N/A	Intersection improvements in conjunction with roadway widening	2,224	Major Arterial/ Arterial	Truck access and intersection improvement
18	McDowell Rd: Citrus Rd to L303	1.1	Widening	130	One lane-one lane to two lanes-median-two lanes	5,242	Major Arterial	Improvement in conjunction with L303
19	Camelback Rd: Cotton Ln to Sarival Rd	1.0	Widening	130	One lane-one lane to two lanes-median-two lanes	9,338	Major Arterial	Demand driven
23	Vineyard Ave at Estrella Pkwy	N/A	Intersection improvement	N/A	Intersection improvements and signal	1,190	Arterial/Scenic Arterial	Potential traffic signal location
24	Cotton Ln: s/o Gila River Bridge to n/o Estrella Pkwy	1.5	Widening	200	One lane-one lane to two lanes-median-two lanes	10,967	Parkway	Capacity improvement
25	Estrella Pkwy: MC85 to Vineyard Ave	1.5	Widening	150	One lane-one lane to two lanes-median-two lanes	4,772	Scenic Arterial	Demand driven capacity improvement
26	Estrella Pkwy: Gila River	2250	Bridge widening	120	One lane-one lane to two lanes-median-two lanes	27,000	Scenic Arterial	Capacity improvement
27	Estrella Pkwy: Buckeye Canal	90	Bridge widening	120	One lane-one lane to two lanes-median-two lanes	1,080	Scenic Arterial	Capacity improvement
30	Van Buren St at 152nd Dr	N/A	Intersection improvement	N/A	Signal	440	Major Arterial/ Residential	Potential traffic signal location
31	Van Buren St at 158th Ave	N/A	Intersection improvement	N/A	Signal	440	Major Arterial/ Collector	Potential traffic signal location
32	Thomas Rd at 135th Ave	N/A	Intersection improvement	N/A	Signal	440	Arterial/ Collector	Potential traffic signal location
33	Earl Dr at Bullard Ave	N/A	Intersection improvement	N/A	Signal	440	Major Arterial/ Residential	Potential traffic signal location
35	Sarival Ave at Harrison St	N/A	Intersection improvement	N/A	Signal	440	Arterial/ Residential	Potential traffic signal location

Notes: N/A = not applicable, s/o = south of, n/o = north of

(table continues on next page)

Table 4-2 Mid-term Roadway Network Improvements (2025) (continued)

Map ID	Segment/Intersection	Length (miles)	Type	ROW (feet)	Description	Cost ($000s)	Functional Class	Notes
37	Yuma Rd: Cotton Ln to Sarival Ave	1.1	Widening	150	Two lanes-median-one lane to two lanes-median-two lanes	2,193	Scenic Arterial	Capacity improvement
71	Elliot Rd: 186th Ave to Rainbow Valley Rd	0.9	Widening	110	One lane-one lane to two lanes-median-two lanes	5,905	Arterial	Improve connectivity
72	Willis Rd: Rainbow Valley Rd to Estrella Pkwy	0.8	Widening	130	Two lanes-median-two lanes	5,249	Major Arterial	Improve connectivity
74	Rainbow Valley Road: Elliot Rd to Willis Rd	4.3	Widening	200	Two lanes-median-two lanes	17,200	Parkway	Improve connectivity
75	Estrella Pkwy: Fillmore Road to I-10 South TI	N/A	Widening	150	Provide northbound outside lane	1,219	Parkway	Demand driven

Notes: N/A = not applicable, s/o = south of, n/o = north of

Table 4-3 Long-term Roadway Network Improvements (2035)

Map ID	Segment/Intersection	Length (miles)	Type	ROW (feet)	Description	Cost ($000s)	Functional Class	Notes
1	Indian School Rd at Litchfield Rd	N/A	Intersection improvement	N/A	ALL approaches dual lefts, NBT and WBT 3 lanes	1,928	Major Arterial/ Major Arterial	Intersection at capacity
14	Lower Buckeye Rd at Sarival Ave	N/A	Intersection improvement	N/A	Intersection improvements in conjunction with roadway widening	1,668	Arterial/Arterial	Commensurate with Sarival Ave widening
29	Perryville Rd: McDowell Rd to Van Buren St	1.0	Widening	200	One lane-one lane to two lanes-median-two lanes	4,000	Parkway	Designated planned parkway
38	Yuma Rd: Citrus Rd to 175th Dr	0.5	Widening	150	Two lanes-median-two lanes	1,200	Scenic Arterial	Capacity improvement
39	Sarival Ave: Yuma Rd to MC85	2.0	Widening	110	Two lanes-median-two lanes	2,000	Arterial	Capacity improvement, CIP project
40	Camelback Rd at Sarival Ave	N/A	Intersection improvement	N/A	Turn lanes on east/west/south approaches. Traffic signal.	2,448	Major Arterial/ Arterial/Scenic Arterial	Capacity improvement
41	Thomas Rd at Perryville Rd	N/A	Intersection improvement	N/A	Complete Thomas Rd and Perryville Rd intersection with east leg	834	Arterial/ Parkway	In conjunction with Thomas Rd widening
42	Thomas Rd at Citrus Rd	N/A	Intersection improvement	N/A	Complete Thomas Rd and Citrus Rd intersection with turn lanes	1,112	Arterial/Arterial	Intersection improvement
43	Thomas Rd at Cotton Ln	N/A	Intersection improvement	N/A	Complete Thomas Rd and Cotton Ln intersection with turn lanes	1,668	Arterial/Major Arterial	Intersection improvement
44	Yuma Rd at Citrus Rd	N/A	Intersection improvement	N/A	Intersection improvements in conjunction with roadway widening	1,668	Scenic Arterial/ Arterial	Intersection improvement
47	Estrella Pkwy at Cotton Ln	N/A	Intersection improvement	N/A	Grade separated Estralla Parkway at Cotton Lane to meet anticipated demand	21,000	Scenic Arterial/ Parkway	Grade separation
49	Camelback Rd: Sarival Rd to West of 152nd Ave	1.2	Widening	130	One lane-one lane to two lanes-median-two lanes	8,372	Major Arterial	Capacity improvement
51	Thomas Rd: Perryville Rd to L303	2.0	New road	110	One lane-median-one lane	8,261	Arterial	Connection to L303
52	Cotton Ln: Camelback Rd to Indian School Rd	1.0	Widening	130	Two lanes-median-one lane to two lanes-median-two lanes	2,000	Major Arterial	Capacity improvement, CIP project
53	PebbleCreek Pkwy: Camelback Rd to Charles Blvd	0.8	New road	150	Two lanes-median-two lanes with bike lanes	6,166	Scenic Arterial	Improve roadway connectivity
54	Yuma Rd: 175th Dr to Cotton Ln	0.6	Widening	150	One lane-one lane to two lanes-median-two lanes with bike lanes	1,027	Scenic Arterial	Capacity improvement
55	Yuma Rd: Goodyear Blvd to Bullard Ave	0.8	Widening	150	1:1 to 2:M:2 w/bike lanes One lane-one lane to two lanes-median-two lanes with bike lanes	4,544	Scenic Arterial	Capacity improvement

Notes: N/A = not applicable, ITS = intelligent transportation system, NBT = northbound turn, WBT = westbound turn

(table continues on next page)

Table 4-3 Long-term Roadway Network Improvements (2035) (continued)

Map ID	Segment/Intersection	Length (miles)	Type	ROW (feet)	Description	Cost ($000s)	Functional Class	Notes
56	Yuma Rd: Bullard Ave to Camino Oro	0.9	Widening	150	1:1 to 2:M:2 w/bike lanes One lane-one lane to two lanes-median-two lanes with bike lanes	5,800	Scenic Arterial	Capacity improvement
57	Citrus Rd: Van Buren St to Durango St	1.6	Widening	110	1:1 to 2:M:2 One lane-one lane to two lanes-median-two lanes	8,207	Arterial	Capacity improvement
60	Estrella Pkwy: Pecos Rd to Riggs Rd	6.4	New road	150	1:M:1 (interim) One lane-median-one lane (interim)	37,014	Scenic Arterial	Capacity improvement
64	Litchfield Road: Van Buren St to MC 85	1.8	Widening	130	2:M:2 to 3:M:3 Two lanes-median-two lanes to three lanes-median-three lanes	877	Major Arterial	Capacity improvement
65	Elwood St: Cotton Ln to Sarival Ave	1.0	Widening	110	1:1 to 2:M:2 One lane-one lane to two lanes-median-two lanes	4,875	Arterial	Truck route, capacity improvement
76	Rainbow Valley Rd/Sonoran Valley Pkwy: Willis Rd to Riggs Rd; becomes Sonoran Valley Pkwy south of Riggs Rd	5.2	Widening	200	2:M:2 Two lanes-median-two lanes	20,800	Parkway	Improve connectivity

Notes: N/A = not applicable, ITS = intelligent transportation system, NBT = northbound turn, WBT = westbound turn

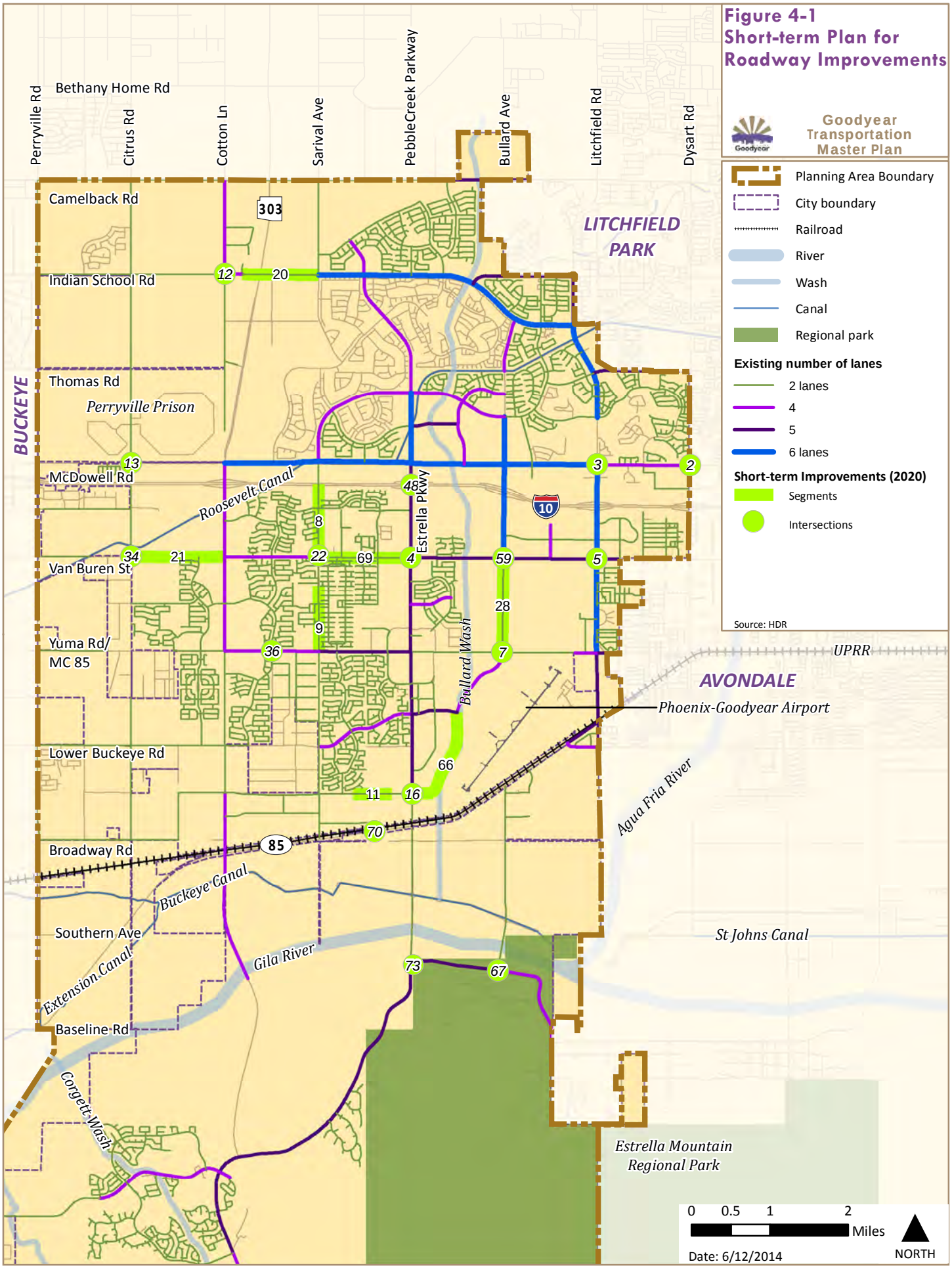


Figure 4-1
Short-term Plan for Roadway Improvements
Goodyear Transportation Master Plan
Planning Area Boundary
City boundary
Railroad
River
Wash
Canal
Regional park
Existing number of lanes
2 lanes
4
5
6 lanes
Short-term Improvements (2020)
Segments
Intersections
Source: HDR
Perryville Rd
Bethany Home Rd
Citrus Rd
Cotton Ln
Sarival Ave
PebbleCreek Parkway
Bullard Ave
Litchfield Rd
Dysart Rd
Camelback Rd
Indian School Rd
Thomas Rd
McDowell Rd
Van Buren St
Yuma Rd/
MC 85
Lower Buckeye Rd
Broadway Rd
Southern Ave
Baseline Rd
LITCHFIELD PARK
BUCKEYE
AVONDALE
Perryville Prison
Roosevelt Canal
Estrella Pkwy
Bullard Wash
UPRR
Phoenix-Goodyear Airport
Agua Fria River
Buckeye Canal
Gila River
Extension Canal
St Johns Canal
Corgett Wash
Estrella Mountain Regional Park
303
10
85
12
20
13
48
3
2
8
34
21
22
69
4
59
5
28
9
36
7
66
11
16
70
73
67
0 0.5 1 2
Miles
Date: 6/12/2014
NORTH

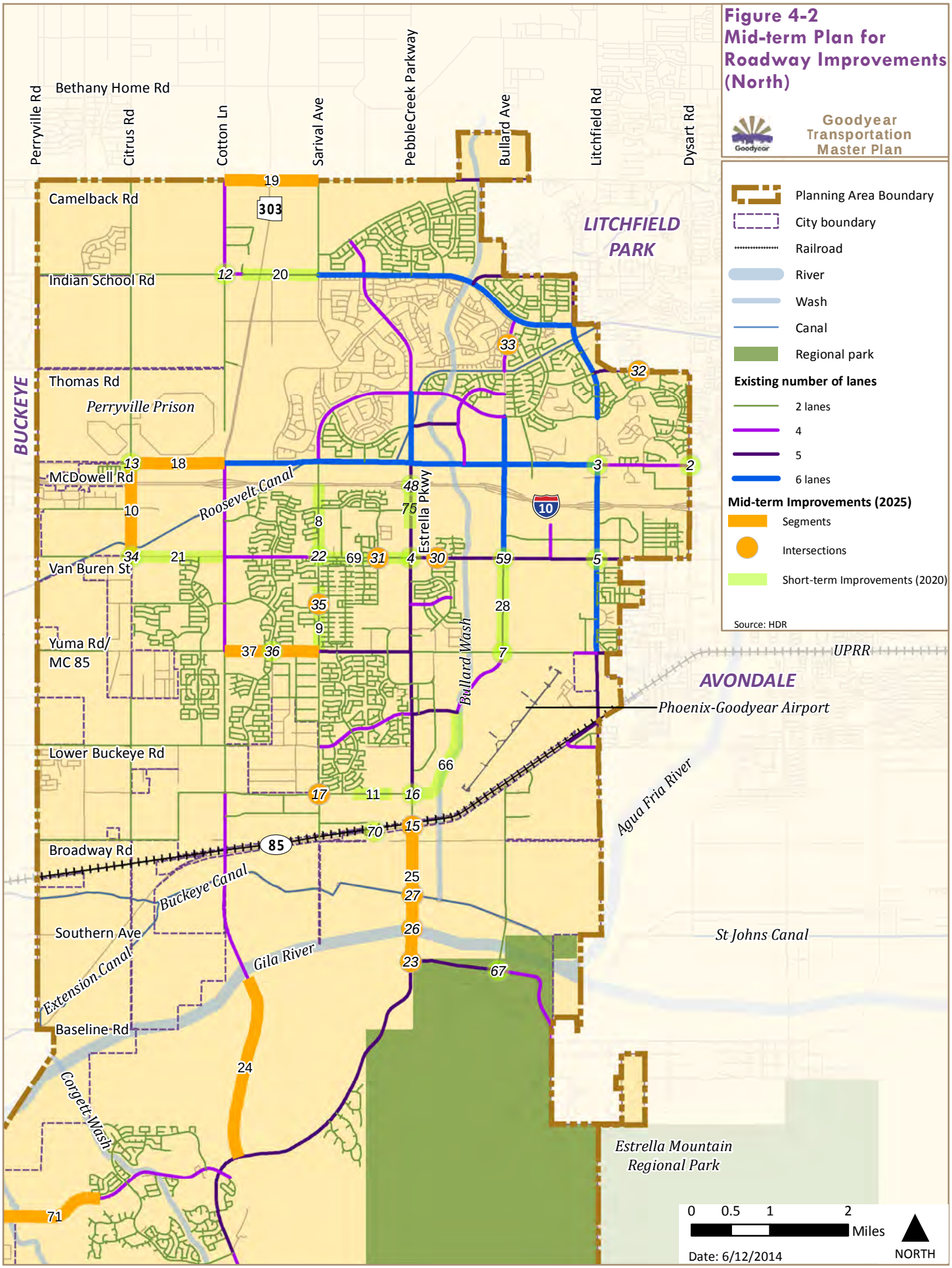
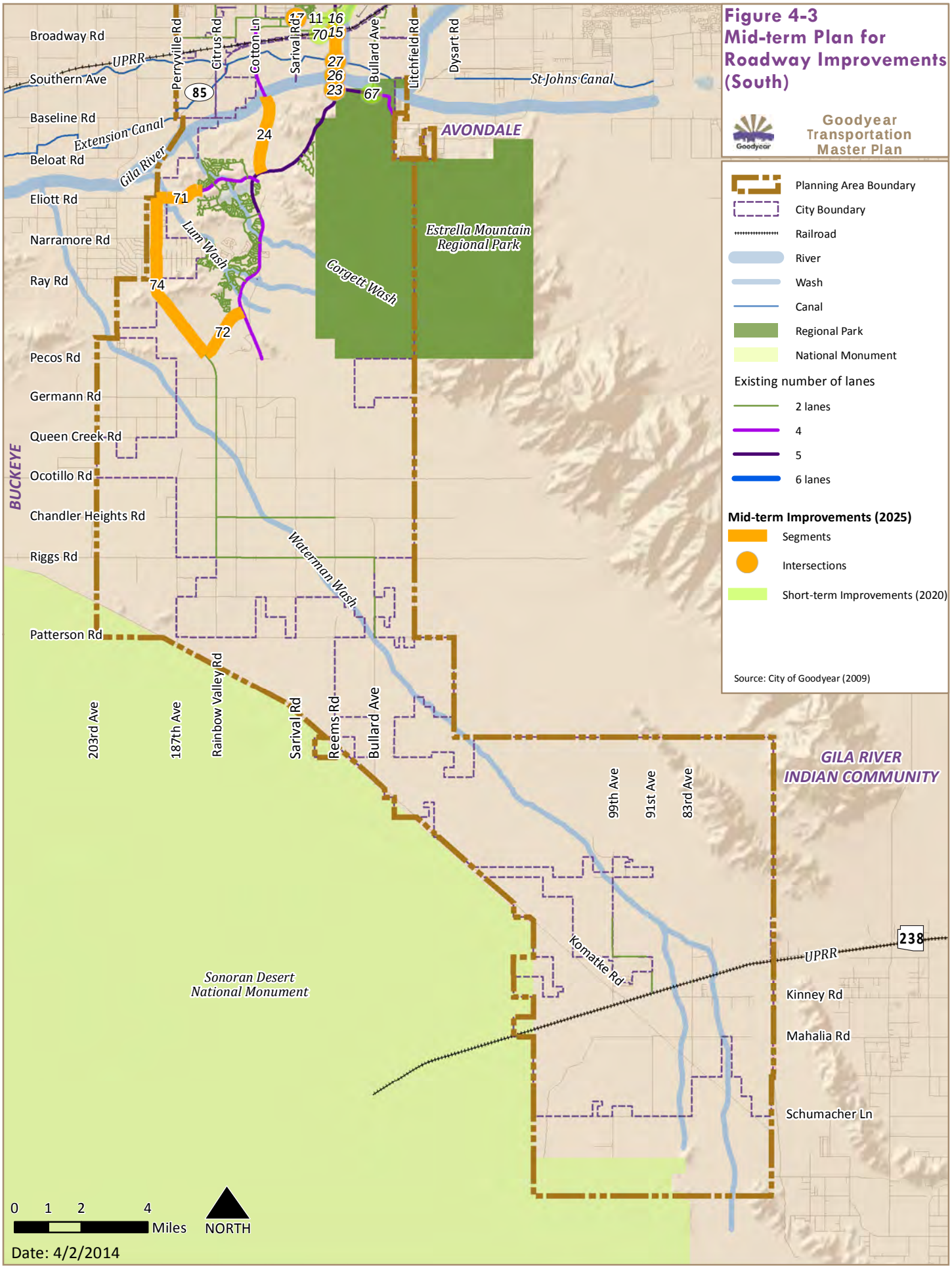


Figure 4-2
Mid-term Plan for Roadway Improvements (North)
Goodyear Transportation Master Plan
Planning Area Boundary
City boundary
Railroad
River
Wash
Canal
Regional park
Existing number of lanes
2 lanes
4
5
6 lanes
Mid-term Improvements (2025)
Segments
Intersections
Short-term Improvements (2020)
Source: HDR
Perryville Rd
Bethany Home Rd
Citrus Rd
Cotton Ln
Sarival Ave
PebbleCreek Parkway
Bullard Ave
Litchfield Rd
Dysart Rd
Camelback Rd
Indian School Rd
Thomas Rd
Perryville Prison
BUCKEYE
LITCHFIELD PARK
McDowell Rd
Roosevelt Canal
Estrella Pkwy
Van Buren St
Yuma Rd/ MC 85
Bullard Wash
UPRR
AVONDALE
Phoenix-Goodyear Airport
Lower Buckeye Rd
Agua Fria River
Broadway Rd
Buckeye Canal
Southern Ave
Extension Canal
Gila River
St Johns Canal
Baseline Rd
Corgett Wash
Estrella Mountain Regional Park
0 0.5 1 2
Miles
Date: 6/12/2014
NORTH


Broadway Rd
Southern Ave
Baseline Rd
Beloat Rd
Eliott Rd
Narramore Rd
Ray Rd
Pecos Rd
Germann Rd
Queen Creek Rd
Ocotillo Rd
Chandler Heights Rd
Riggs Rd
Patterson Rd
UPRR
Perryville Rd
Citrus Rd
Cotton Ln
Sarival Rd
Bullard Ave
Litchfield Rd
Dysart Rd
85
Extension Canal
Gila River
Lum Wash
Corgett Wash
Waterman Wash
St Johns Canal
AVONDALE
Estrella Mountain Regional Park
BUCKEYE
GILA RIVER INDIAN COMMUNITY
Sonoran Desert National Monument
203rd Ave
187th Ave
Rainbow Valley Rd
Reems Rd
99th Ave
91st Ave
83rd Ave
Komatke Rd
238
Kinney Rd
Mahalia Rd
Schumacher Ln
7
11
16
70
15
27
26
23
67
24
71
74
72
0 1 2 4 Miles
NORTH
Date: 4/2/2014
Figure 4-3
Mid-term Plan for Roadway Improvements (South)
Goodyear Transportation Master Plan
Planning Area Boundary
City Boundary
Railroad
River
Wash
Canal
Regional Park
National Monument
Existing number of lanes
2 lanes
4
5
6 lanes
Mid-term Improvements (2025)
Segments
Intersections
Short-term Improvements (2020)
Source: City of Goodyear (2009)

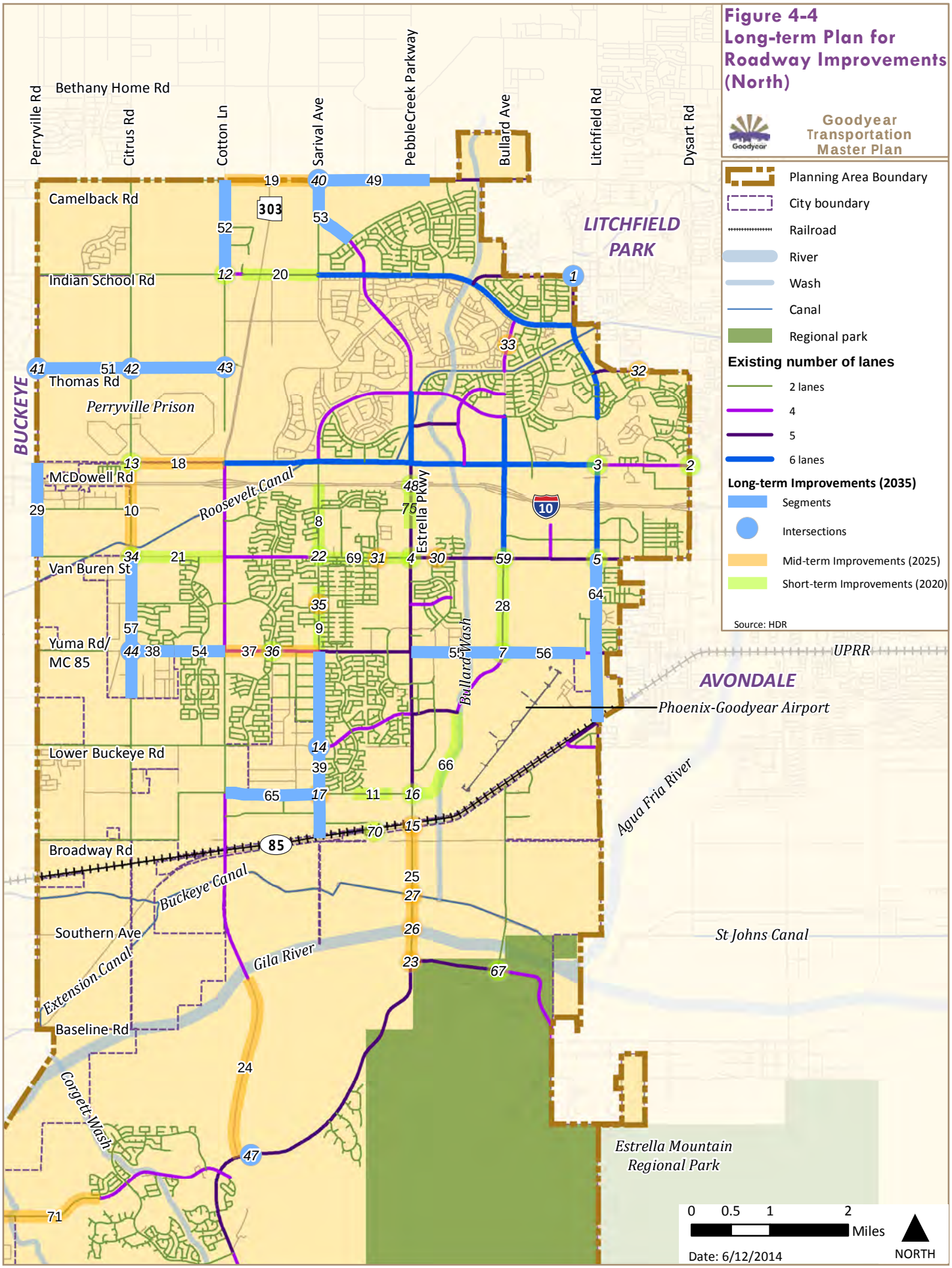


Figure 4-4
Long-term Plan for Roadway Improvements (North)
Goodyear Transportation Master Plan
Planning Area Boundary
City boundary
Railroad
River
Wash
Canal
Regional park
Existing number of lanes
2 lanes
4
5
6 lanes
Long-term Improvements (2035)
Segments
Intersections
Mid-term Improvements (2025)
Short-term Improvements (2020)
Source: HDR
Perryville Rd
Bethany Home Rd
Citrus Rd
Cotton Ln
Sarival Ave
PebbleCreek Parkway
Bullard Ave
Litchfield Rd
Dysart Rd
Camelback Rd
Indian School Rd
Thomas Rd
Perryville Prison
BUCKEYE
LITCHFIELD PARK
McDowell Rd
Roosevelt Canal
Estrella Pkwy
Van Buren St
Yuma Rd/ MC 85
Bullard Wash
UPRR
AVONDALE
Phoenix-Goodyear Airport
Lower Buckeye Rd
Agua Fria River
Broadway Rd
Buckeye Canal
Southern Ave
Extension Canal
Gila River
St Johns Canal
Baseline Rd
Corgett Wash
Estrella Mountain Regional Park
0 0.5 1 2 Miles
Date: 6/12/2014
NORTH

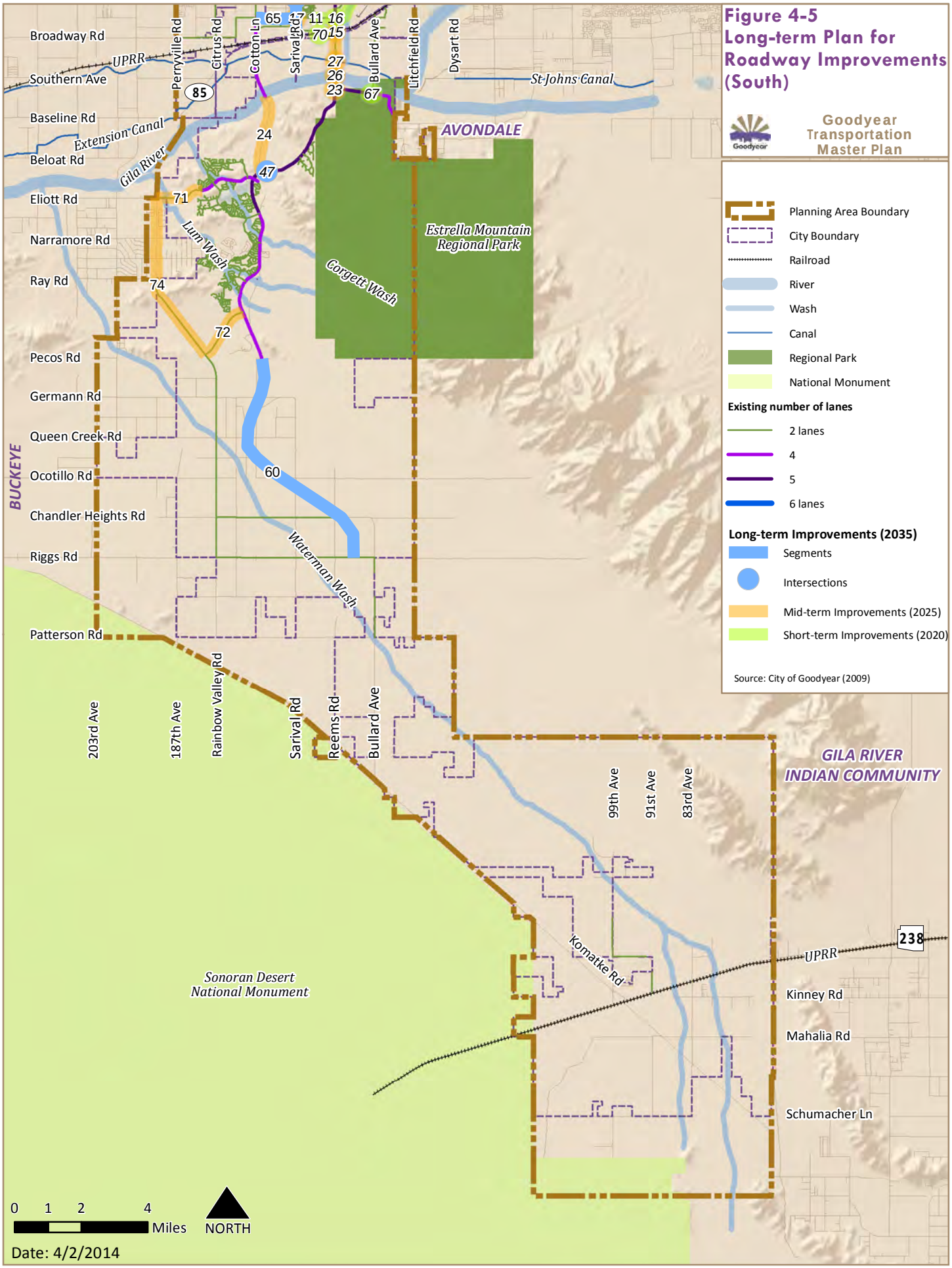


Figure 4-5
Long-term Plan for Roadway Improvements (South)

Goodyear Transportation Master Plan

NONMOTORIZED SYSTEM RECOMMENDATIONS

INTRODUCTION

The nonmotorized portion of this Plan provides guidance for developing a network of on-street paths, bicycle lanes, and other facilities for nonmotorized users. The recommended network was developed in coordination with the Parks and Recreation Department's off-street facilities planning effort to create a complete system that connects residents with destinations throughout Goodyear. Establishing a connected on- and off-street nonmotorized system with related improvements will provide transportation alternatives, improve walking and bicycling safety, and expand the range of available recreation opportunities. In the long term, it is hoped that bicycling and walking will increasingly be seen as viable modes of transportation in Goodyear and that interest in bicycling and walking will increase, providing the many benefits associated with nonmotorized travel. These benefits include (in no order of priority) reduced fossil fuel use, reduced carbon emissions, reduced roadway congestion, fewer vehicle miles traveled, and better health outcomes related to heart disease, obesity, high blood pressure, diabetes, osteoporosis, and mental health.

The nonmotorized on-street short- and mid-term improvements focus on the northern area of the city, where most of the existing facilities occur. In particular, the recommended short-term improvements fill in gaps where missing bicycle lanes and sidewalks create discontinuous routes. The mid- and long-term improvements tend to focus on network corridors that may or may not currently exist, rather than on specific projects, and on non-infrastructure recommendations. Keeping these corridors open as development occurs will make implementation of the proposed facilities easier in the future. The recommended improvements are listed in Table 4-4 and shown in Figures 4-6 through 4-8, organized by time frame (short [5 years], mid [10 years], long [20 years]). Descriptions of the improvements, both specific and general, follow the figures.

The long-term improvements shown in Figure 4-7 and 4-8 illustrate corridors that are recommended as potential nonmotorized-focused streets that complement the off-street corridors, providing nonmotorized users a grid of routes throughout the city. Corridors are recommended approximately every 2 miles from the Gila River north to Camelback Road and from east to west, whether on-street or off. In the northern area of the city, arterial streets have become the main continuous routes across the city because past development has blocked off many of the half-mile connections.

Table 4-4 Nonmotorized Improvements

Key	Street or Item	From	To	Improvement type	Side of street	Width (feet)	Length	Cost ($000s)	Remarks
Short-term								1,158	
NM-S1	Bullard Ave	Roosevelt Canal	Indian School Rd	"Bikes May Use Full Road" signs	Both	N/A	½ mile	0.3	Insufficient room exists to restripe for a bicycle lane. If a future road improvement entails moving the curbs, then bike lanes should be accommodated.
NM-S2	Litchfield Rd	Palm Valley Blvd	Virginia Ave	Sidewalk	West	10	700 ft	140	Unless it is known that this parcel will develop in the near future (2 to 5 years), complete gap now.
NM-S3	McDowell Rd	1,500 ft west of Litchfield Rd	Eastern city boundary at Dysart Rd	"Bikes May Use Full Road" signs	Both	N/A	6,900 ft	0.3	Insufficient room exists to restripe for a bicycle lane. If a future improvement entails moving the curbs, then buffered bike lanes should be accommodated.
NM-S4	McDowell Rd	Bullard Ave	540 ft east of Bullard Ave	Sidewalk	North	10	540 ft	108	Unless it is known that this parcel will develop in the near future (2 to 5 years), complete gap now.
NM-S5	Litchfield Rd	Celebrate Life Way	I-10	Sidewalk	West	8	1,500 ft	300	Unless it is known that this parcel will develop in the near future (2 to 5 years), complete gap now.
NM-S6	Van Buren St	1,670 ft west of Litchfield Rd	2,000 ft east of Litchfield Rd	"Bikes May Use Full Road" signs	—	—	—	0.3	Insufficient room exists to restripe for a bicycle lane and vehicular speeds are too high for sharrow lanes. If a future road improvement entails moving the curbs, then buffered bike lanes should be accommodated.
NM-S7	Van Buren St	Bullard Ave	143rd Ave	Sidewalk	North	8	2,490 ft	500	Unless it is known that this parcel will develop in the near future (2 to 5 years), complete gap now.
—	Various			Repaint bike lane pavement symbols				20	
—	Bicycle/ pedestrian coordinator	—	—	—	—	—	—	50	Fill the position of a full-time bicycle/pedestrian coordinator.
—	ADA ramps	—	—	—	—	—	—		Identify if there are locations in the developed portions of the city where ADA ramps are not up to standard or are missing; include in the next round of CIP projects.
—	Promote end-of-trip amenities	—	—	—	—	—	—	0	During the planning process with new developments, encourage these developments to install end-of-trip amenities such as bike lockers and showers
—	Begin planning for connectivity	—	—	—	—	—	—	0	Identify nonmonotorized connections as a critical component of planning projects.
—	Bicycle lane and sidewalk inventory	—	—	—	—	—	—	40	Initiate a complete bicycle lane and path and trail inventory to document the city's facilities. The inventory can be a tool for prioritizing future improvement projects and for documenting nonmotorized facilities should the city apply for LAB status.
—	Set up annual bicycle event	—	—	—	—	—	—	60	Plan for and implement one new annual event for fall 2017.

(table continues on next page)

Table 4-4 Nonmotorized Improvements (continued)

Key	Street or Item	From	To	Improvement type	Side of street	Width (feet)	Length	Cost ($000s)	Remarks
Mid-term								2,715	
NM-M1	McDowell Rd	Approx. 152nd Ave	Bullard Ave	Sidewalk	South	10	3,500 ft	700	Consider constructing based on whether adjacent parcels develop in the next 5 to 10 years.
NM-M2	Sarival Rd	Van Buren St	I-10	Sidewalk	Both	8	1,610 ft (west); 2,590 ft (east)	—	On the west side, the gap is in two segments along vacant parcels; on the east, there are three vacant parcels and two areas of large-lot homes. Unless it is known that this parcel will develop in the future (5 to 10 years), complete gap now.
NM-M3	Van Buren St	161st Ln	Bullard Ave	Sidewalk	South	8	6,750 ft	1,350	Consider constructing based on adjacent parcels developing in the next 5 to 10 years.
—	Education campaign	—	—	—	—	—	—	200	Develop and execute an educational campaign directed at bicycle riders, motorists, and enforcement.
—	Wayfinding branding project	—	—	—	—	—	—	400	Develop and install a citywide wayfinding and branding sign package that promotes the city's destinations, and provides direction and a sense of place.
—	Set up annual bicycle event	—	—	—	—	—	—	60	Plan for and implement a second new annual event for fall 2024.
—	Increase number of miles of bike lanes and number of signs	—	—	—	—	—	—	—[a]	Continute to include bike lanes and the associated recommended signs in new and upgraded roadway projects. Include these new facilities in the inventory.
—	Multiuse paths/ trails	—	—	—	—	—	—	—[a]	As roadway projects occur through development or improvement, incorporate the multiuse path/trail into the cross section where they are shown on the Plan.

[a] these costs will be part of roadway improvement projects

(table continues on next page)

Table 4-4 Nonmotorized Improvements (continued)

Map Key	Street or Item	From	To	Improvement type	Side of street	Width (feet)	Length	Cost ($000s)	Remarks
Long-term								50	
—	Additional bicycle facility signs	—	—	—	—	—	—	50 (allowance)	Increase the number of bicycle lane and bicycle route confirmation signs along existing routes. Install at decision points, turn points, and every two to three blocks.
—	Bike activated loops	—	—	—	—	—	—	— [b]	At busy intersections and at selected cross street locations to reduce bike wait time
—	Colored bike lanes	—	—	—	—	—	—	— [b]	Either full lane color or at selected vehicular/bicycle interaction points
—	Multiuse path/ trail	—	—	—	—	—	—	— [a]	Can also occur sooner as development or roadway improvement projects occur
—	Nonmotorized-focused arterial roadways	—	—	—	—	—	—	— [a]	Can also occur sooner as development or roadway improvement projects occur
—	Bicycle sharing	—	—	—	—	—	—	— [b]	When more transit development has occurred or there is an intense urban zone where multiple short trips could be made by bicycle, consider instigating a bike sharing program
—	Submit application for League of American Bicyclists status	—	—	—	—	—	—	— [a]	
—	Multiuse paths/ trails	—	—	—	—	—	—	— [a]	As roadway projects occur through development or improvement, incorporate the multiuse path/trail into the cross section where they are shown on the Plan.
—	Pedestrian-activated crossings and high-visibility crosswalks	—	—	—	—	—	—	— [b]	As pedestrian activity increases, identify locations where such crossings will improve safety and the pedestrian experience.

[a] these costs will be part of roadway improvement projects

[b] costs are not calculated for these items

NOTE:
Many of the arterial and collector roadway improvements in Goodyear were built recently, and were designed to the 2003 standard city cross sections, which include bike lanes and 8-foot sidewalks. Segments built prior to 2003 do not necessarily have these standard amenities. Short of rebuilding the road (at great cost) there is not adequate space to accommodate bicycle lanes. Given the number of improvements shown in the Plan, recommending an expensive rebuild for any one segment at this time would defer many other improvements. The recommendation of the Plan is to wait until a rebuild is needed for multiple other reasons.

Motorist education, a recommendation of this plan, will help spread the message that bicycles have the right to use traffic lanes. In some locations, a multiuse path can be built in lieu of the 8-foot sidewalk to provide an alternative for those bicyclists who are uncomfortable using the vehicular lanes.

It is recognized that priorities and conditions change over time. Should a specific segment become a concern that bike lanes are needed sooner than later, and a multiuse path does not meet the need of users, the city can consider the rebuild option.

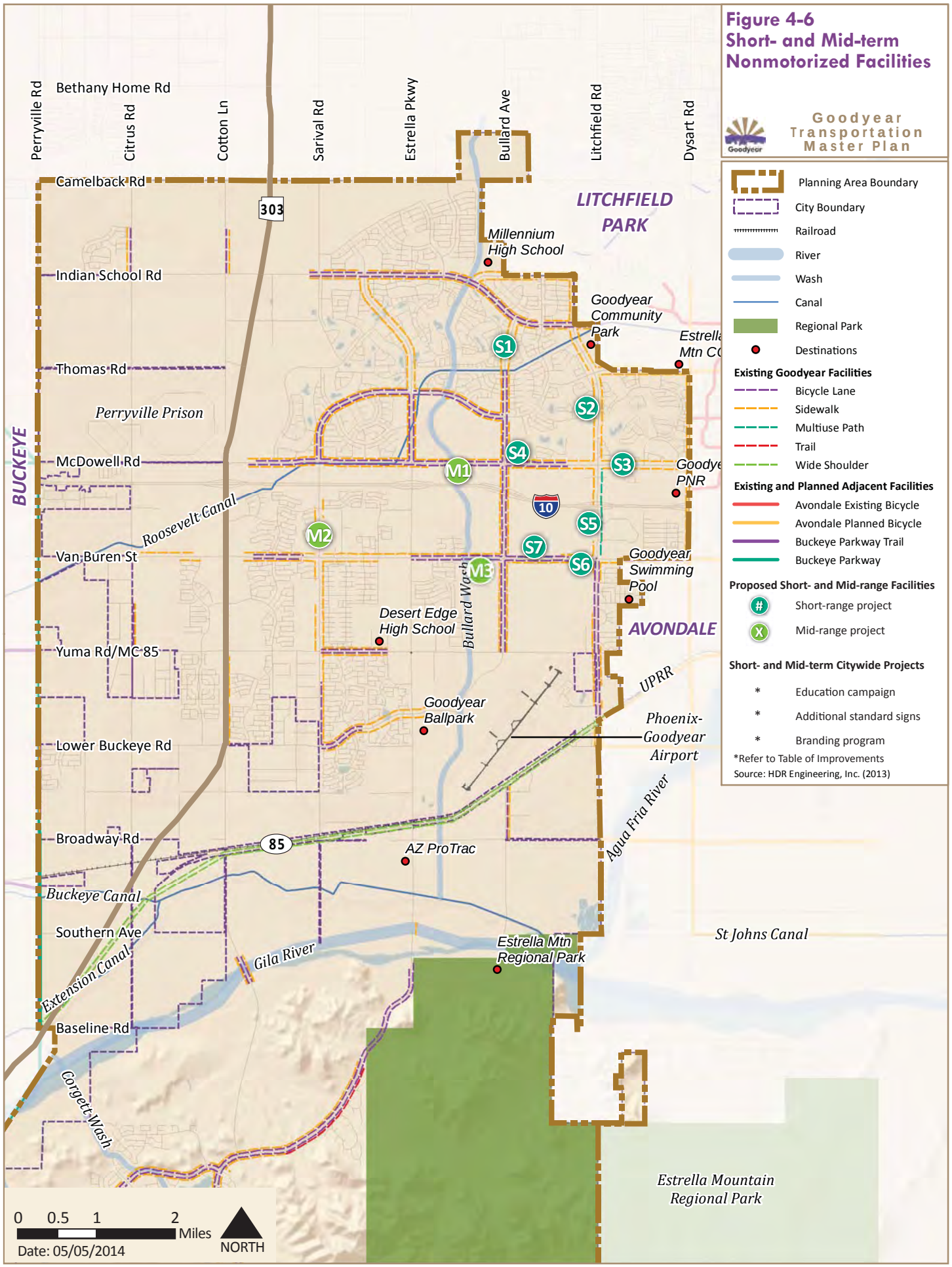
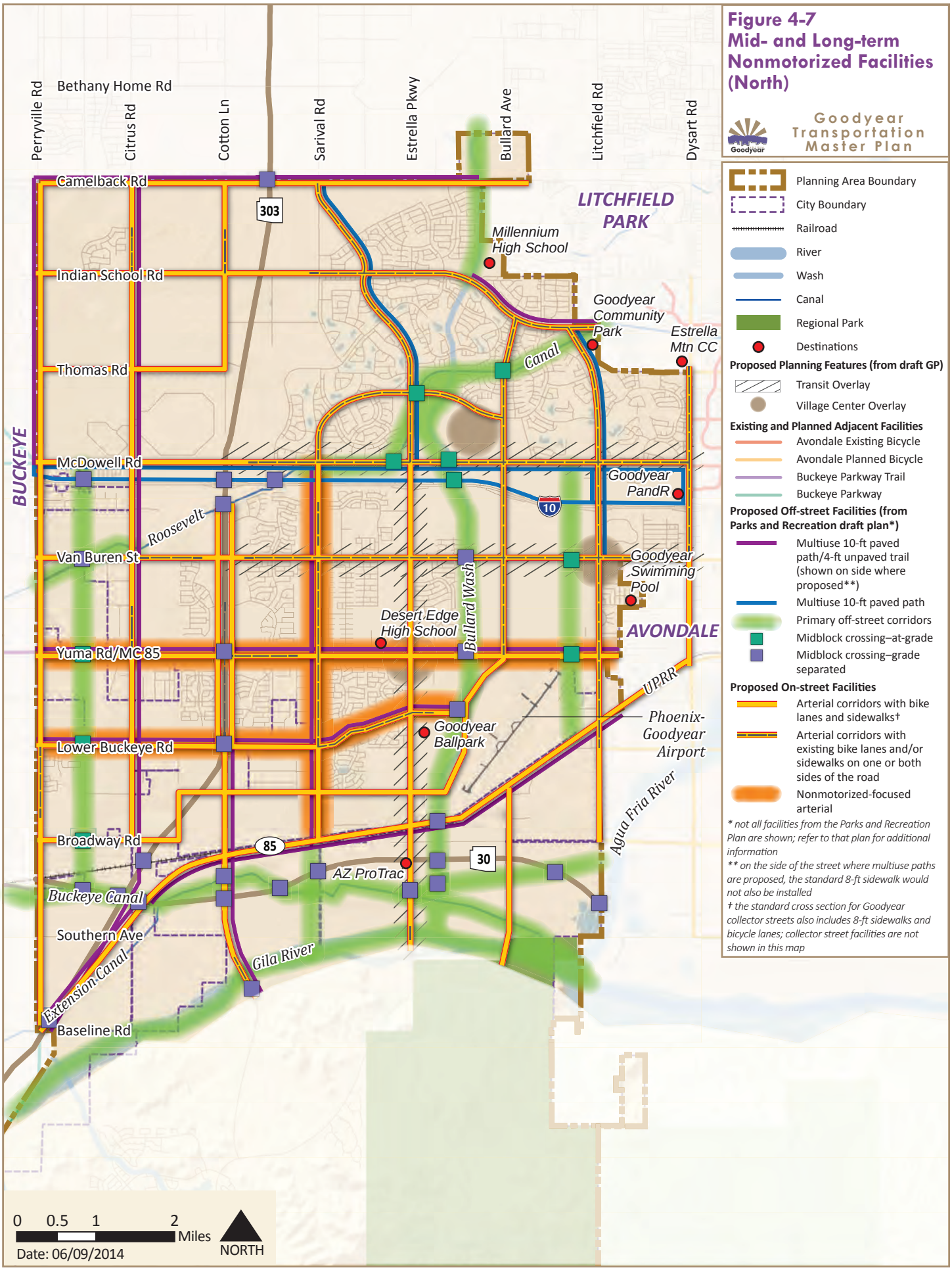


Figure 4-6
Short- and Mid-term Nonmotorized Facilities
Goodyear Transportation Master Plan
Planning Area Boundary
City Boundary
Railroad
River
Wash
Canal
Regional Park
Destinations
Existing Goodyear Facilities
Bicycle Lane
Sidewalk
Multiuse Path
Trail
Wide Shoulder
Existing and Planned Adjacent Facilities
Avondale Existing Bicycle
Avondale Planned Bicycle
Buckeye Parkway Trail
Buckeye Parkway
Proposed Short- and Mid-range Facilities
Short-range project
Mid-range project
Short- and Mid-term Citywide Projects
* Education campaign
* Additional standard signs
* Branding program
*Refer to Table of Improvements
Source: HDR Engineering, Inc. (2013)
Perryville Rd
Bethany Home Rd
Citrus Rd
Cotton Ln
Sarival Rd
Estrella Pkwy
Bullard Ave
Litchfield Rd
Dysart Rd
Camelback Rd
Indian School Rd
Thomas Rd
McDowell Rd
Van Buren St
Yuma Rd/MC 85
Lower Buckeye Rd
Broadway Rd
Southern Ave
Baseline Rd
303
10
85
LITCHFIELD PARK
BUCKEYE
AVONDALE
Millennium High School
Goodyear Community Park
Estrella Mtn C
Perryville Prison
Goodye PNR
Roosevelt Canal
Goodyear Swimming Pool
Desert Edge High School
Bullard Wash
Goodyear Ballpark
UPRR
Phoenix-Goodyear Airport
Agua Fria River
AZ ProTrac
Buckeye Canal
Extension Canal
Gila River
Estrella Mtn Regional Park
St Johns Canal
Corgett Wash
Estrella Mountain Regional Park
S1
S2
S3
S4
S5
S6
S7
M1
M2
M3
0 0.5 1 2 Miles
NORTH
Date: 05/05/2014


Bethany Home Rd
Perryville Rd
Citrus Rd
Cotton Ln
Sarival Rd
Estrella Pkwy
Bullard Ave
Litchfield Rd
Dysart Rd
Camelback Rd
Indian School Rd
Thomas Rd
McDowell Rd
Van Buren St
Yuma Rd/MC 85
Lower Buckeye Rd
Broadway Rd
Southern Ave
Baseline Rd
303
10
85
30
BUCKEYE
LITCHFIELD PARK
AVONDALE
Millennium High School
Goodyear Community Park
Estrella Mtn CC
Canal
Goodyear PandR
Roosevelt
Goodyear Swimming Pool
Desert Edge High School
Bullard Wash
Goodyear Ballpark
UPRR
Phoenix-Goodyear Airport
Agua Fria River
AZ ProTrac
Buckeye Canal
Extension Canal
Gila River
0 0.5 1 2 Miles
NORTH
Date: 06/09/2014
Figure 4-7
Mid- and Long-term Nonmotorized Facilities (North)
Goodyear Transportation Master Plan
Planning Area Boundary
City Boundary
Railroad
River
Wash
Canal
Regional Park
Destinations
Proposed Planning Features (from draft GP)
Transit Overlay
Village Center Overlay
Existing and Planned Adjacent Facilities
Avondale Existing Bicycle
Avondale Planned Bicycle
Buckeye Parkway Trail
Buckeye Parkway
Proposed Off-street Facilities (from Parks and Recreation draft plan*)
Multiuse 10-ft paved path/4-ft unpaved trail (shown on side where proposed**)
Multiuse 10-ft paved path
Primary off-street corridors
Midblock crossing–at-grade
Midblock crossing–grade separated
Proposed On-street Facilities
Arterial corridors with bike lanes and sidewalks†
Arterial corridors with existing bike lanes and/or sidewalks on one or both sides of the road
Nonmotorized-focused arterial
* not all facilities from the Parks and Recreation Plan are shown; refer to that plan for additional information
** on the side of the street where multiuse paths are proposed, the standard 8-ft sidewalk would not also be installed
† the standard cross section for Goodyear collector streets also includes 8-ft sidewalks and bicycle lanes; collector street facilities are not shown in this map

Perryville Rd
Citrus Rd
Cotton Ln
Sarival Rd
Estrella Pkwy
Bullard Ave
Litchfield Rd
Dysart Rd
Southern Ave
Baseline Rd
Beloat Rd
Eliott Rd
Narramore Rd
Ray Rd
Pecos Rd
Germann Rd
Queen Creek Rd
Ocotillo Rd
Chandler Heights Rd
Riggs Rd
Patterson Rd
BUCKEYE
AVONDALE
Estrella Mtn Regional Park
Estrella Mountain Regional Park
Foothills Comm Park
Estrella Foothills High School
Gila River
Corgett Wash
Lum Wash
Waterman Wash
303
203rd Ave
187th Ave
Rainbow Valley Rd
Sarival Rd
Reem Rd
Bullard Ave
99th Ave
91st Ave
Komatke Rd
GILA RIVER INDIAN COMMUNITY
UPRR
238
Kinney Rd
Mahalia Rd
Schumacher Ln
Sonoran Desert National Monument
0 1 2 4 Miles
Date: 06/09/2014
NORTH
Figure 4-8
Mid- and Long-term Nonmotorized Facilities (South)
Goodyear Transportation Master Plan
Planning Area Boundary
City Boundary
Railroad
River
Wash
Canal
Regional Park
Destinations
Proposed Planning Features (from draft GP)
Transit Overlay
Village Center Overlay
Proposed Off-street Facilities (from Parks and Recreation draft plan*)
Multiuse 10-ft paved path/4-ft unpaved trail (shown on side where proposed**)
Multiuse 10-ft paved path
Primary off-street corridors
Midblock crossing–at-grade
Midblock crossing–grade separated
Proposed On-street Facilities
Arterial corridors with bike lanes and sidewalks†
Arterial corridors with existing bike lanes and/or sidewalks on one or both sides of the road
Nonmotorized-focused arterial
* not all facilities from the Parks and Recreation Plan are shown; refer to that plan for additional information
** on the side of the street where multiuse paths are proposed, the standard 8-ft sidewalk would not also be installed
† the standard cross section for Goodyear collector streets also includes 8-ft sidewalks and bicycle lanes; collector street facilities are not shown in this map

Coordination with the Parks and Recreation Plan

As this Plan was developed, the City was also starting the General Plan Update and the Parks, Recreation, Trails and Open Space (PRTOS) Master Plan update. Information from both this Plan and the PRTOS Master Plan were intended to become elements of the General Plan.

Some of the features being developed as part of the nonmotorized portion of this Plan and the PRTOS Master Plan were similar or coincident. For the two plans to work together to support one nonmotorized system, some features from the PRTOS Master Plan are shown as primary nonmotorized features in this Plan. These features are (1) multiuse path/trails that are proposed along several city arterial roadways and (2) crossings (both at-grade and grade-separated) that occur along city roadways. These features are listed in this Plan so that they are included at the outset with roadway development and improvements projects rather than being incorporated at a later, often more costly, date. Short descriptions of these features are included in this Plan, but the reader is referred to the PRTOS Master Plan for complete details, goals, and implementation strategies. The multiuse path/trail feature is shown and dimensioned in the recommended standard city arterial street detail in this plan, but full details are in the PRTOS Master Plan.

NONMOTORIZED IMPROVEMENTS

Introduction

Following a short discussion on bicyclists and pedestrian, descriptions or implementation guidance are provided for the recommended improvements. Descriptions for some features are included but are not specifically called out as an improvement item. They are included as features that are not needed at this time, nor are specific locations identified, but the probability exists they could be useful in the future as development and density increase in Goodyear.

Bicycle

Bicyclists can be categorized by their level of experience and their sense of comfort when bicycling. Some of the conditions that affect rider comfort level are traffic volumes, traffic speeds, and presence of curb lanes. Experienced riders will accept riding with higher-speed traffic and no bicycle lanes. Casual riders feel more comfortable if there are wide bike lanes, lower traffic speeds and volumes, and clear directional and wayfinding signs. Beginning riders or very inexperienced riders will ride only on the sidewalk or avoid major streets altogether.

Many of the Goodyear bicyclists the study team spoke with indicated that they ride for pleasure and health, often meeting with other riders on the weekend to take long-distance rides. Another large contingent of riders are those who ride for pleasure or exercise but who prefer routes that are completely off-street and almost always ride on the sidewalk. There did not appear to be many commuter bicyclists in Goodyear using facilities to get to work or to complete errands.

Pedestrian

Walking is the most basic mode of transportation. At some point, almost everyone is a pedestrian and uses a sidewalk or similar feature to reach a destination—whether walking from a parking lot to the store, from home to the bus stop, or making another similar trip. Pedestrians have a range of abilities based on age, physical capacity, and cognitive ability, to list a few, and paths and trails need to accommodate all ability levels. Also, pedestrians may have assistive devices (wheelchairs, canes, motorized scooters, crutches, seeing-eye dogs) or ride, push, or pull wheeled devices (strollers, wheeled carts and luggage, skateboards, and inline skates). As such, providing a pedestrian environment that accommodates all walking modes, is fully accessible, and connects people to their destinations along a pleasant and safe route is a goal of this Plan.

Short-term Project Descriptions

Bicycle Lane Striping

Bicycle lanes are preferably 6 feet wide, as shown in the City's standard street cross sections, but can be 5 feet wide (American Association of State and Highway Transportation Officials 1999) where room is limited. Where there is no curb and gutter, 4 feet is the minimum standard. However, in a built out condition such as in Goodyear, there are curbs and gutters. The City's standard street cross sections show 6-foot bicycle lanes on arterial and collector roadways, measured from stripe to back of curb (making the effective bicycle lane width 5.5 feet).

Signing and Marking

Both vertical signs and pavement markings help bicyclists and motorists note the presence of bicycle facilities and the need to share the road. The City has fairly consistently marked all of its bike lanes with the standard bicycle lane pavement symbol. However, many are faded and in need of refreshing.

Pavement symbols are typically placed on the far side of intersections, just prior to intersections where vehicular crossovers to right-turn lanes occur, and at periodic intervals between intersections based on engineering

judgment. Vertical bicycle lane signs should be used in conjunction with the pavement marking. The MUTCD sign (R3-17) should be the minimum standard but, as discussed below, it can be designed as part of a unique-to-Goodyear sign and wayfinding package.

Accessibility

The nonmotorized network should accommodate all users. The ADA establishes design standards for private and public facilities, new and reconstructed. The guiding document is the ADA Accessibility Guidelines (www.access-board.gov). ADA requires a slope of 5 percent or less, a minimum width for a clear walkway of 36 inches, a stable and firm surface, and adequate width and height clearances.

Corner ramps are critical to creating an accessible route along streets. Preferably they are directional to traffic, rather than diagonal. They need to be a minimum of 36 inches wide, have a maximum rise of 1:12, and include a detectable warning strip. Additional information can be found at www.acccess-board.gov.

Sidewalks

Sidewalks are the most ubiquitous pedestrian facility throughout Goodyear and the region. They occur on most improved arterial, collector, and local roadways. The standard Goodyear roadway cross sections include 8- or 5-foot sidewalks on both sides of the street. This is advantageous because pedestrians tend to walk on whichever side of the street is best for them in terms of comfort and convenience and will walk on the preferred side even if no sidewalk exists.

Bicycle/Pedestrian Coordinator

Fill the position of full-time bicycle/pedestrian coordinator. The League of American Bicyclists determined through analysis that, “of the 40 largest U.S. cities, those with bicycle and pedestrian staff have higher levels of bicycling than the cities without staff.” A full-time coordinator would be in the position to champion and facilitate many of the recommendations in this report. Activities of a coordinator could include: coordinating the development and implementation of a citywide bicycle program; promoting mobility and safety; reviewing projects for compliance nonmotorized transportation plans; reviewing and recommending policies and programs; compiling and analyzing planning and design data; researching and writing grant money requests; and preparing and distributing educational information and promotional activities. In the application for obtaining Bicycle Friendly Community status from the

League of American Bicyclists, one item in the check list is whether the community has a dedicated bicycle program manager.

End-of-trip Amenities

End-of-trip amenities are as important to bicyclists as on-street amenities. During the design review process for retail, commercial, and office projects, City planners should encourage businesses to provide lockers, bicycle racks (that allow for double locking of the frame), and showers into their site and building development. As part of the overall education campaign, planners should encourage these same business owners to offer incentive programs for employees to ride to work. Healthier employees can result in reduced medical costs for the employer.

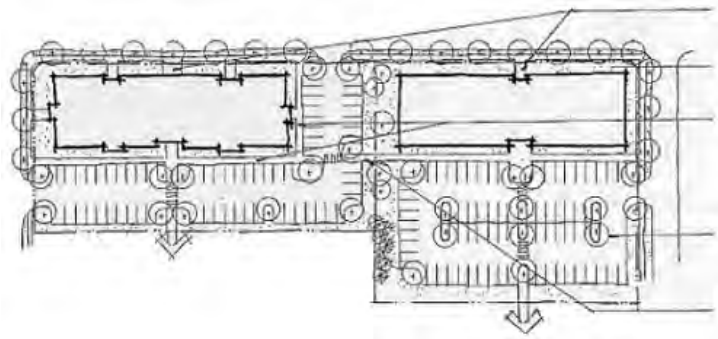
Bike lockers at destinations will encourage ridership.
Source: World Wide Web

Racks that accommodate double locking are preferred.
Source: Kryptonite

Planning

Promoting walking starts in the planning process. During site plan reviews of all types of development, consider the following:

- Find opportunities to create pass throughs between adjacent subdivisions and between subdivisions and destinations (parks, retail centers, libraries, etc.); create "back doors" to these destinations as well as front doors.
- Design commercial and retail centers so they that have "back gates" that lead to adjacent residential areas.
- Select new school sites based on the principles of Safe Routes to Schools.
- Promote subdivision layouts that accommodate the movement of bicyclists and pedestrians within the subdivision and between subdivisions; where possible, make connections between subdivisions along half-mile alignments to provide off-arterial roadway routes for bicyclists
- In the long term, promote mixed-use land development with higher densities to create living areas that encourage bicycling and walking between home, work, school, shopping, and entertainment.



Provide pedestrian routes between parcels and between businesses and the street
Source: FHWA

Sidewalk and Bicycle Lane Inventory

The study team did not document all of the city's arterial and collector roadway bicycle lanes and sidewalks. One recommendation is to commission a detailed inventory of the city's sidewalks, bicycle lanes, paths, and trails with information such as width, material (if other than concrete), shade coverage, accessibility, impediments, and condition. This inventory would need to be updated regularly so that facilities in need of improvement and gaps in the system can be identified. The study could also prioritize improvements based on proximity to schools and transit and on safety considerations.

Mid-term Projects

Education

An ongoing education program for bicyclists and motorists is a good method to decrease bicycle-automobile accidents. Education programs generally have an awareness component that could include brochures, posters, videos, and street signs, and a training component to develop riding skills and change riding behavior. The education program should be equally directed at motorists, although they are often harder to reach. Once people have obtained a driver's license, with little or no training related to sharing the road with bicycles, they seldom revisit the rules of the road. Many basic road rules are incorrectly passed along, such as the idea that bicycles are supposed to ride against traffic. Educating the community about proper bicycle lane and trail etiquette can reduce conflict between users on all types of facilities, on-street and off-street.

An education program usually has several target audiences: children (who can be further subdivided by age), adults, and law enforcement officials. Children need instruction on basic rules of the road and bicycle-handling techniques. Adults need more guidance in the responsibilities of bicycling, how to share the road safely, required safety equipment, and pedestrian awareness, especially for pedestrians with hearing or visual impairments.

Law enforcement officials know the rules of the road but are sometimes reluctant to issue citations to bicyclists, perhaps because it may make their department look bad or because they feel their limited time and budget are better spent on more serious crimes. However, many bicycle-automobile accidents are caused by the bicyclist not following the rules or riding erratically. Issuing citations for infractions before accidents occur could help prevent some of these accidents. Citations and fees could be waived if the bicyclist attends a training program or similar event.

Wayfinding and Branding Sign Program

The City should consider developing a wayfinding sign and branding program that promotes Goodyear's bicycling and walking environment. Wayfinding 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 (National Association of City Transportation Officials [NACTO] 2013). Wayfinding signs can encourage more people to use the routes because they provide a sense that there is an established nonmotorized network that leads to city and regional destinations.

Education workshops for all ages
Source: League of American Bicyclists

Getting the message out
Source: League of American Bicyclists

Bicycle route wayfinding sign
Source: NACTO

Bicycle route wayfinding sign with logo
Source: NACTO

The program could include:

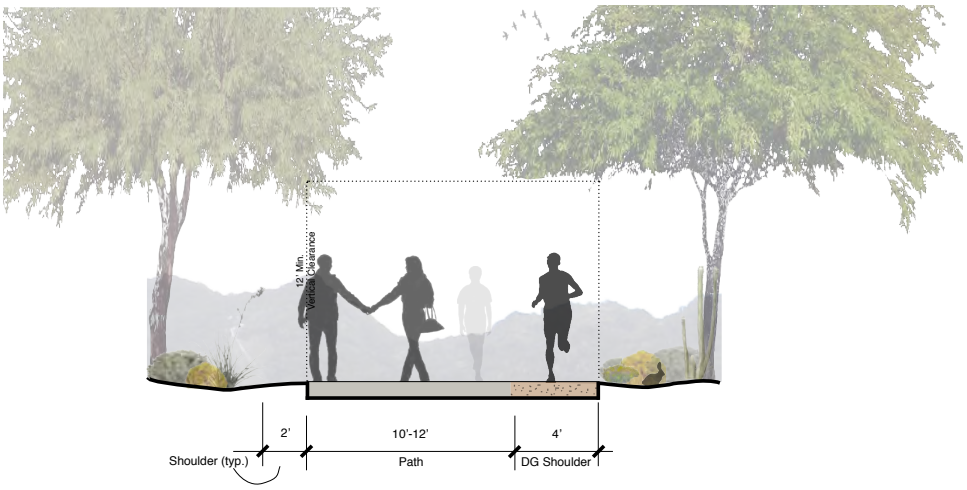
- creating a logo and brand that identifies the nonmotorized network
- defining bicycle routes with a number and/or name that corresponds to a route map
- listing city and regional destinations on signs with directional arrows and distances (Distances are generally calculated using the average riding speed of 10 mph.)

Bicycle Events

Bicycle safety events can help increase ridership by teaching good riding habits that make riders feel safer when bicycling. At least two events per year could help demonstrate that bicycling is a viable form of transportation and one that decreases congestion and air pollution. Goodyear has many active and interested bicyclists and bicycle-related businesses that could be called upon to assist with planning, funding, and implementing these events. The recommendation is to plan and organize one new event for the fall of 2015.

Multiuse Paths

One multiuse path exists in Goodyear on the eastern side of Litchfield Road from McDowell Road south to the I-10 westbound off ramp and from the I-10 eastbound on ramp south to Van Buren Street. It is striped for two-way traffic. The proposed Goodyear off-street facilities plan shows numerous other multiuse paths along the city's arterial streets and off-street corridors, and these routes are also shown inn the on-street plan (Figure 4-7 and 4-8). The multiuse path is shown on the preferred side of the street; the opposite side has the standard 8-foot sidewalk. The path cross section, in most locations, is a 10-foot path with a 4-foot decomposed granite shoulder/trail attached on one side, separated from the curb by a landscaped buffer.



Multiuse path with 4-foot decomposed granite shoulder/trail
Source: City of Goodyear Parks, Recreation, Trails and Open Space Master Plan

Online Reporting System for Bicyclists and Pedestrians

Path and trail users should have an easy and accessible method to report maintenance issues, identify specific route needs (for example, a ramp), or provide comments to park maintenance or public works staff. The city

has such a system for all types of city facilities; issues with nonmotorized facilities are routed to the appropriate department.

Long-term Projects

Shared Lane

In cases where insufficient room exists to stripe a 6-foot bicycle lane, but vehicular lanes are comfortably wide, the travel lanes can be restriped to accommodate a minimum 14-foot-wide outside lane, not including the gutter pan. This outside lane can be signed and marked for shared use, also known as a sharrow lane. The top photograph on this page shows bicycle and vehicular lanes merging into a sharrow lane. Shared lanes are generally not recommended on streets with traffic speeds over 35 mph.

Sharrow lane
Source: NACTO

Bicycle Detector Loop

Bicycle detector loops embedded in the pavement work much the same way as detector loops for vehicles except that they are calibrated to the weight and metallic mass of a bicycle and rider. Pavement markings show riders where they need to pause to activate the signal. Loop technology can be used to extend the green-light phase as needed to give bicyclists enough time to clear the intersection. These should be used at busy intersections or where bicyclists are observed crossing on red to avoid a wait. In locations where video detection exists for vehicular traffic, those cameras could be calibrated to sense both cars and bicycles so detector loops for bicycles would not be needed.

Bicycle detector loop
Source: NACTO

Colored Bicycle Lane

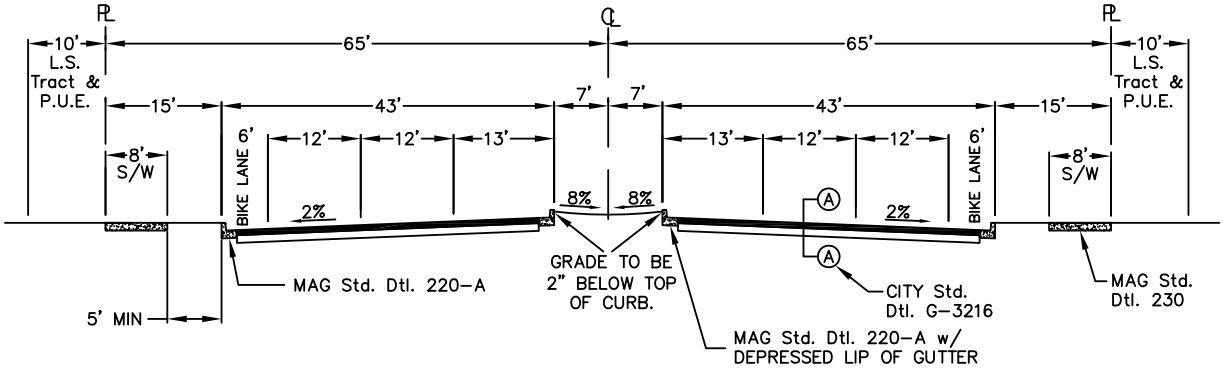
To further increase a rider's sense of comfort, bicycle lanes can be painted a color to distinguish them from vehicular lanes. This also helps reinforce for the motorists that the bicycle lane is not for his or her use. The painted lane is provided in addition to the white bicycle lane stripes and pavement symbols—the color most often used is green. An alternative to a continuously painted bike lane is to only paint those segments where interactions with vehicles usually occur, such as at intersections. This raises motorist and bicyclist awareness of potential areas of conflict and increases motorist yielding behavior (NACTO 2013), but also increases the area that needs to be periodically repainted. A colored bike lane is included in the nonmotorized-focused arterial roadway, discussed below.

Fully colored bike lane
Source: NACTO

Partially colored bike lane
Source: NACTO

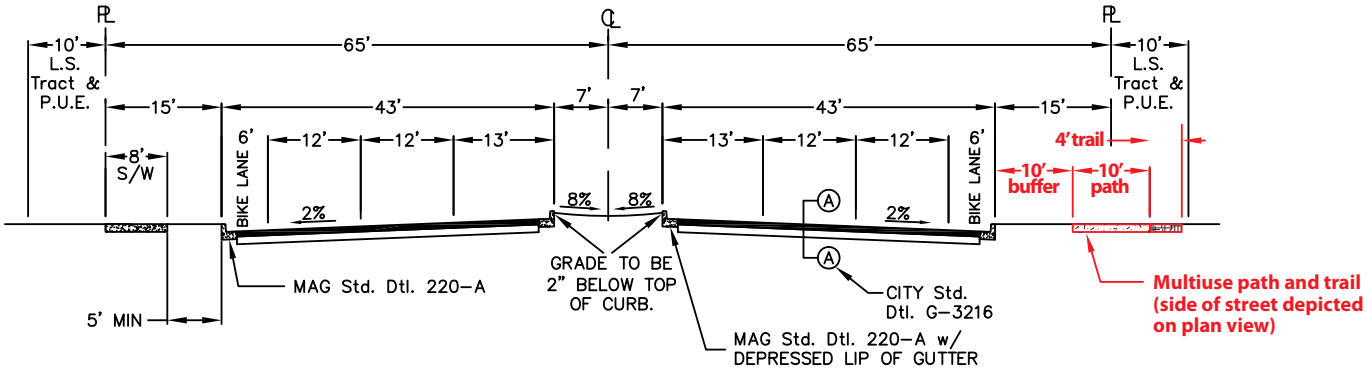
Nonmotorized-focused Arterial

Nonmotorized-focused arterial roadways are recommended for several roads throughout the city. Their locations, north-to-south and east-to-west, were selected to complement off-street corridor locations, providing routes



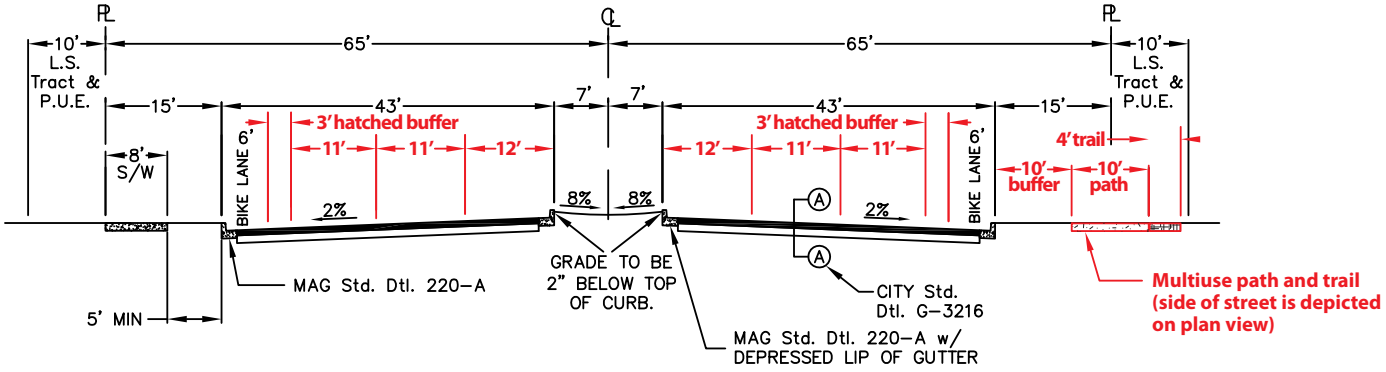
MAJOR ARTERIAL STREET

existing



MAJOR ARTERIAL STREET

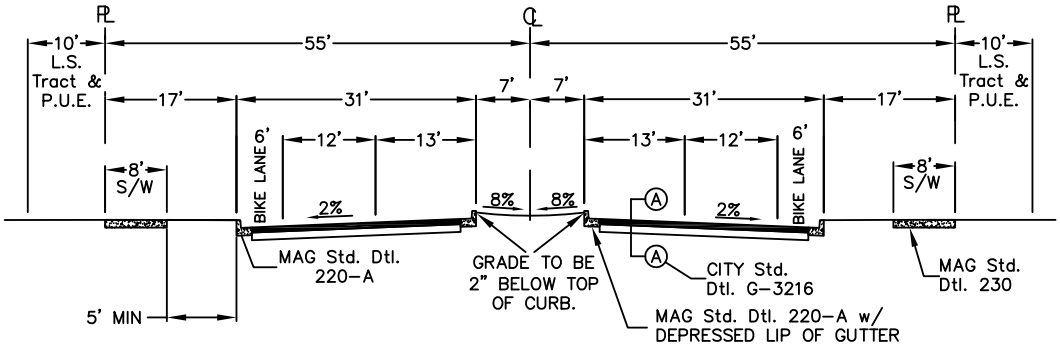
with multiuse path/trail



MAJOR ARTERIAL STREET

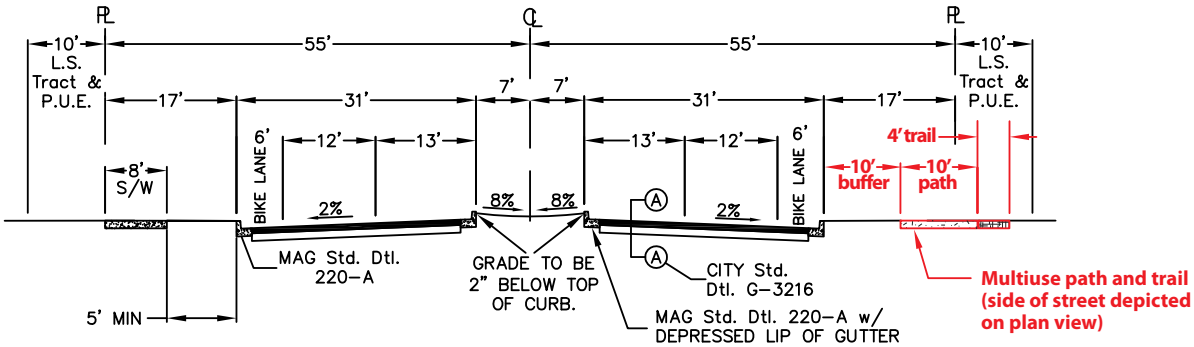
nonmotorized- focused

Figure 4-9 Nonmotorized-focused Major Arterial



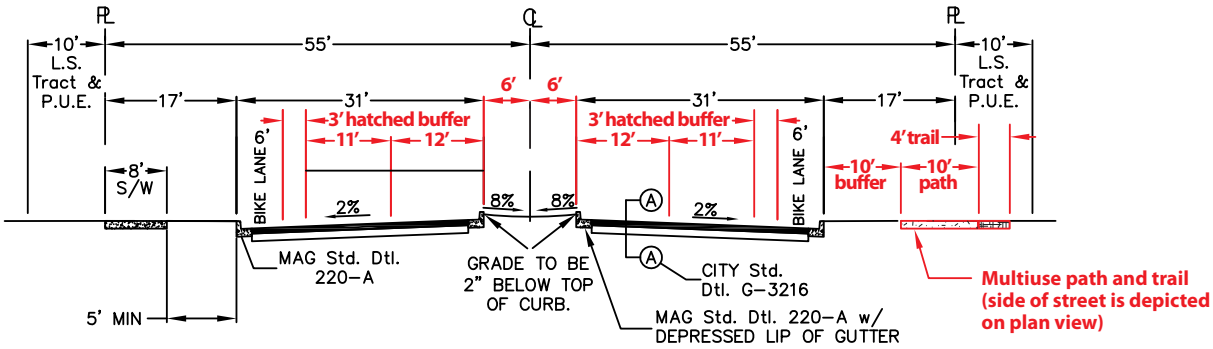
MINOR ARTERIAL STREET

existing



MINOR ARTERIAL STREET

with multiuse path/trail



MINOR ARTERIAL STREET

nonmotorized-focused

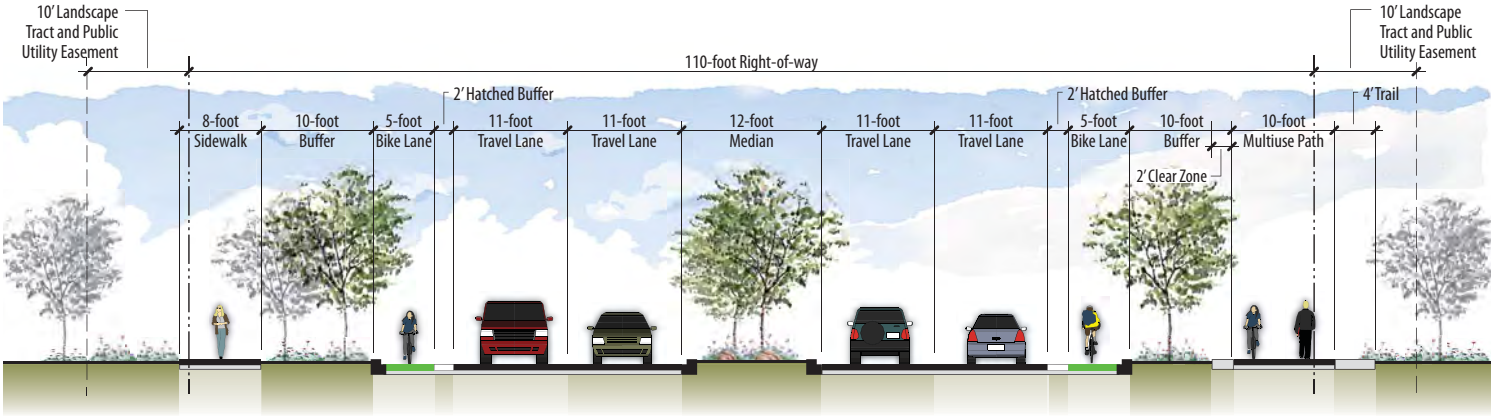
Figure 4-10 Nonmotorized-focused Minor Arterial

approximately every 2 miles that are preferential to nonmotorized use (over vehicular use) but do not decrease the roadway's functional classification.

The elements of the nonmotorized-focused arterial roadway can fit within the outside curb dimensions of the current city standard roadway cross sections (see Figures 4-9 and 4-10). This is achieved by narrowing the median from 14 to 12 feet for some scenarios and by narrowing the traffic lanes by 1 foot to gain room for the 3-foot striped buffer area (described below). Nonmotorized-focused arterial roadways incorporate the multiuse path/trail on one side or the other, as shown in the Plan.

Lots of shade can make the sidewalk a more inviting place to walk.

On the nonmotorized-focused arterial roadways, increasing the amenities provided for bicyclists and pedestrians could increase nonmotorized activity. Aside from the facilities themselves (for example, bicycle lanes, sidewalks, trails), which should be maintained in good condition, the amenities of shade,



Section through a typical nonmotorized-focused minor arterial street

water, and places to rest will create a more pleasing environment. Sidewalks and trails with a minimum of 50 percent shade coverage will be inviting places to walk, particularly in the summer. An abundant tree canopy provides many other benefits: increased property values, reduced cooling costs, increased community and business district appeal, reduced expenditures on gray infrastructure, prolonged pavement life, reduced greenhouse gas emissions (to combat global warming), improved air and water quality, reduced urban heat island effect, reduced energy consumption, reduced stormwater runoff and erosion, improved wildlife habitat, improved human health, more shade, visual and sound buffers, improved neighborhoods, and walkable streets (City of Phoenix 2010).

Buffered bicycle lane
Source: NACTO

Buffered Bicycle Lane

Buffered bicycle lanes have additional space between the bicycle lane and the outside vehicular lane or parked cars to buffer bicyclists from vehicular traffic. These are recommended on high-volume or high-speed (over 35 mph) roadways, especially those with freight or large-vehicle traffic.

Bicycle alert signs
Source: MUTCD

Share the Road Signs

There is a growing consensus that the "Share the Road" sign is too ambiguous and that motorist interpretation differs from bicyclist interpretation. The sign may suggest that the lane or road belongs to the car and should be shared with bicycles, rather than alerting motorists that bicycles also have the right to use the road. Using just the bicycle alert sign (W11-1) may be preferable, or using it in conjunction with the "Bikes May Use Full Lane" sign (R4-11). The R4-11 sign may also be used alone. Either of these signs could be modified as part of the overall wayfinding and branding program sign package.

Bicycle Sharing

Bicycle sharing is a nonmotorized transportation service typically structured to provide users point-to-point transportation for short trips (0.5 to 3 miles). It allows users to pick up a bicycle at any self-serve bicycle sharing station in the network and return it to any other bicycle sharing station (including the origin). Bicycle sharing is most often developed with, or in response to, a transit network where the bicycles provide the first or last mile of a transit trip. It is also used in urban areas where numerous short trips are the norm. The time frame for needing to develop such a program is likely beyond the long-term threshold of this study.

Bicycle Boulevards

Bicycle boulevards are recommended for low-volume, low-speed streets. They give priority to bicyclists and discourage through trips by vehicles. Signs, markings, and vehicular speed and volume management help create a bicycle-friendly environment, as can increased landscape and public space amenities. Intersections of bike boulevards with minor vehicular routes should be designed to minimize delays for bicyclists on the boulevard. At major vehicular routes, the bicycle crossing should be safe and convenient. Bicycle boulevards can provide strategic connections between off-street paths and the bicycle lane network.

Bicycle boulevards are typically at least 2½ miles long and can follow circuitous routes to connect destinations. To be successful, bicycle boulevards should be clearly signed and marked because they follow routes that may not be direct or intuitive. Sometime specific bicycling events are planned around

a boulevard to increase awareness of its existence. Bicycle boulevards often develop along routes parallel to busy arterial streets that are accessing the same, multiple desired destinations (NACTO 2013).

League of American Bicyclists Application

In 2009, Goodyear submitted a Bicycle Friendly Community application to the League of American Bicyclists. It was rejected. Because the application and rejection letter are no longer available, the reasons for the rejection are unknown, along with whether the League suggested improvements to attain the Bicycle Friendly Community designation. Since 2009, the City has continued to increase the number of miles of bicycle lanes, which would bolster a second application. Any continued improvements in the "5 E's" reviewed by the League and described below would help another application. Several of the mid- and long-term recommendations (for example, an education program) in this Plan would increase the chances for acceptance.

Engineering

The **engineering** category assesses what is in the ground and how well bicyclists and pedestrians are accommodated. Items reviewed include how well-connected the bicycle system is and whether secure bicycle parking is available at destinations.

Education

The **education** category assesses how well a community teaches bicycle riders of all ages to ride safely on multiuse paths and busy city streets. It is also important to gauge how well motorists are taught to share the road with bicyclists. The League looks for a program that is comprehensive and widely distributed. This category also assesses progress related to Safe Routes to School.

Encouragement

The **encouragement** category covers what types of events the City sponsors to promote bicycling and walking. Examples are "Walk or Bike to Work" events and events during national bike or walk month. It also considers features that promote walking and bicycling, such as informational signs, maps, and clubs.

Enforcement

The **enforcement** category assesses how well local law enforcement agencies interact with motorists, bicyclists, and pedestrians by reminding people of the proper rules of the road and sharing the road. It considers whether officers patrol on bicycle, and the nature of a community's ordinances related to bicycling.

Evaluation

The **evaluation** category identifies whether the community has a bicycle program manager, a bicycle advisory group that meets regularly, and a comprehensive bicycle plan.

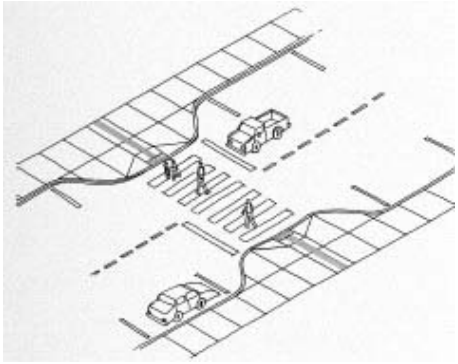
Pedestrian-activated Crossings

Pedestrian-activated crossings are gaining ground as a way to get pedestrians safely across major streets at midblock locations. In this region, typical locations are at intersections with irrigation canals, which are heavily used nonmotorized routes, and multiuse paths that cross arterial roadways midblock. The HAWK is one of the common types of pedestrian-activated signal. These signals are triggered only by pedestrians and activate quickly so there is little delay to cross the street, thus encouraging pedestrians to wait for a safe crossing opportunity rather than risk darting into traffic. Shortening the crossing distance with bulbouts in these locations can also decrease the crossing time for pedestrians (and thus the wait time for vehicles). Where midblock crossings occur on major arterial roadways with medians, if the median is not already raised, it should be modified to provide a refuge area for pedestrians and bicyclists. The route through or over the median should be ADA accessible. More information on at-grade and grade-separated crossings can be found in the PRTOS Master Plan.

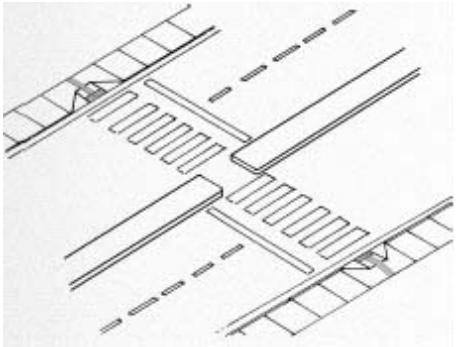
High-visibility Crosswalks

High-visibility crosswalks are an additional option for pedestrian crossings. They have highly visible pavement markings and signs indicating the presence of pedestrians. The pavement markings are embedded with reflective glass beads and have a crosswalk pattern in a ladder design to increase the amount of reflective material, making them more visible to motorists. As with all crosswalks, shortening the crossing distance improves pedestrian safety.

HAWK signal in Tempe
Source: World Wide Web



Curb bulb outs shorten crossing distance.
Source: FHWA



Median refuge
Source: FHWA

TRANSIT IMPROVEMENTS

INTRODUCTION

This Plan provides recommendations for transit improvements in Goodyear, including developing and evaluating transit service options for three planning horizons (short-, mid-, and long-term) using a variety of transit technologies.

Connections to Major Activity Centers and Regional Transportation Nodes

The Plan addresses connections from Goodyear to major activity centers and regional transportation nodes, which often serve as gateways to other destinations. Examples include downtown Phoenix, Phoenix Sky Harbor International Airport, and Valley Metro Rail. Currently, opportunities to connect to these destinations using transit from various points in Goodyear are limited to nonexistent.

Local and Regional Transit Circulation

The Plan balances local and regional transit circulation needs because the demand for internal trips within Goodyear differs from demand for external trips serving regional corridors and destinations. This is an important distinction since Goodyear has a relatively incomplete transit network compared with the rest of the region, with limited transit options for north-to-south travel. The Plan also identifies the types of transit technologies most suitable for potential passengers in Goodyear.

Transit Priority Corridors

The Plan includes recommendations to further consolidate transit service into priority corridors in Goodyear. Transit service in Goodyear has an opportunity to capture more ridership through a solution that consolidates and improves transit service in priority corridors, such as I-10 and UPRR's Yuma West branch. These corridors have been identified and previously studied in regional planning efforts such as the MAG Regional Transit Framework Study.

Changes in Travel Patterns

The Plan responds to changes in travel patterns in Goodyear, as land use and transit opportunities assume a more urban arrangement and preference. This includes an increased emphasis on making connections to major activity centers and regional transportation nodes. Being able to respond to a shift in regional travel patterns from peak-hour, peak-direction trips to trips that occur all day is important.

TRANSIT SERVICE NEEDS

Future transit service in Goodyear should focus on improving local and regional transit service and developing transit priority corridors. These transit improvements must balance local and regional transit service needs, as demand for internal trips within Goodyear may differ from external trips serving other parts of the Valley.

Future transit service needs are grouped into the following categories: local bus and circulator improvements, transit priority corridors, and high-capacity transit.

Local Bus and Circulator Improvements

Future local and circulator bus service focuses on completing the grid of transit service within the Goodyear core. The goal is to meet the Valley Metro regional standard of local bus service, which is 15-minute frequency in the peak and 30-minute frequency in the off peak. Most local bus routes in Goodyear are extensions from adjacent cities such as Phoenix, Avondale, and Tolleson. Given the variety of residential and employment densities in Goodyear, a neighborhood circulator could address some of the transit service limitations of local bus service, which operates on the 1-mile arterial roadway grid.

Transit Priority Corridors

Transit priority corridors provide key local bus service, emphasizing improved transit frequency and span of service. Given Goodyear's geography, both an east-to-west and north-to-south transit priority corridor should be identified. For east-to-west travel, McDowell Road and Van Buren Street are good candidates. Route 17 (McDowell) connects to the Desert Sky Mall Transit Center while Route 3 (Van Buren) connects to downtown Phoenix. One or both of these routes should be elevated to key local bus status. Overall, it is easy to connect into the grid of regional transit service, located predominantly east of Goodyear. For north-to-south travel, both Litchfield and Dysart Roads are possibilities, but neither has existing local bus service to build upon. The challenge is to identify whether one or both north-to-south roadways have local bus service, given funding limitations.

High-capacity Transit

There is no clear recommendation for high-capacity transit in the Southwest Valley. Several transit planning studies are under way (by Valley Metro, MAG, and ADOT) that may ultimately dictate if and how light rail, commuter rail, or other forms of high-capacity transit will develop in the Southwest Valley. This is an important point because the implementation of high-capacity transit is ultimately a regional decision. The configuration of transit service in the

I-10 corridor will likely determine the extent to which Goodyear can connect to a regional high-capacity transit system. For example, the Valley Metro Capitol/I-10 light rail project identifies light rail between downtown Phoenix and 79th Avenue. If this project is implemented, it presents the opportunity to extend light rail to Goodyear in the future. If the light rail line terminates at the State Capitol instead of 79th Avenue, it is unlikely Goodyear could be served by light rail in the foreseeable future.

Potential transit service issues and trade offs as they relate to transit in Goodyear are presented in Table 4-5.

Table 4-5 Transit Issues

Transit Category	Issue	Potential Trade Offs
Local Bus and Circulator		
Prioritize local transit circulation	Local bus routes or neighborhood circulator?	**Local bus:** More passenger capacity, provides regional connection, but has higher cost **Circulator:** Less passenger capacity, provides local connection with lower cost, but does not provide regional connections
Transit Priority Corridor		
Identify east-to-west corridor	McDowell Road or Van Buren Street?	**McDowell Road:** Serves more activity centers in Goodyear and connects to Desert Sky Mall Transit Center **Van Buren Street:** Directly connects to downtown Phoenix
Identify north-to-south corridor	Dysart Road or Litchfield Road?	**Dysart Road:** Serves Goodyear Park-and-Ride and Estrella Mountain Community College **Litchfield Road:** Serves West Valley Hospital, Phoenix-Goodyear Airport, and LAFB
High-capacity Transit		
Prioritize high-capacity transit mode	Commuter rail, light rail, bus rapid transit, or regional express bus?	**Commuter rail (UPRR Yuma West branch):** Limited stop service between Goodyear and downtown Phoenix, potential peak only or all-day service, requires negotiation with UPRR **Light rail (extension of Valley Metro Capitol/I-10 light rail):** Ties into Valley Metro light rail system, provides regional connections, but has a very high capital cost and depends on light rail projects in Phoenix **Bus rapid transit (using an arterial corridor):** Expands on existing local bus service to provide two-way, all-day limited stop service **Regional express bus (using I-10 corridor):** Expands on existing express bus service to provide two-way, all-day service, provides regional connections with lowest capital cost

TRANSIT IMPROVEMENTS

The Plan includes short-, mid-, and long-term transit improvements that are based on an evaluation of existing and future transit conditions and on an assessment of future needs.

Short-term Transit Improvements

The short-term transit improvements include expanding the network of local, express, and circulator bus service:

- Extend Route 3 (Van Buren) to McDowell Road by way of Litchfield Road. This will allow a connection with Route 17 (McDowell) and will serve a segment of Litchfield Road that currently lacks local bus service. This route could be extended to terminate at the Goodyear Park-and-Ride.
- Extend the Avondale Zoom circulator into Goodyear (based on community input).
- Add two trips in the AM and PM peak on Route 562 (Goodyear Express).
- Add one trip in the AM and PM peak on Route 563 (Buckeye Express).

The short-term transit improvements are shown in Figure 4-11 and Table 4-6.

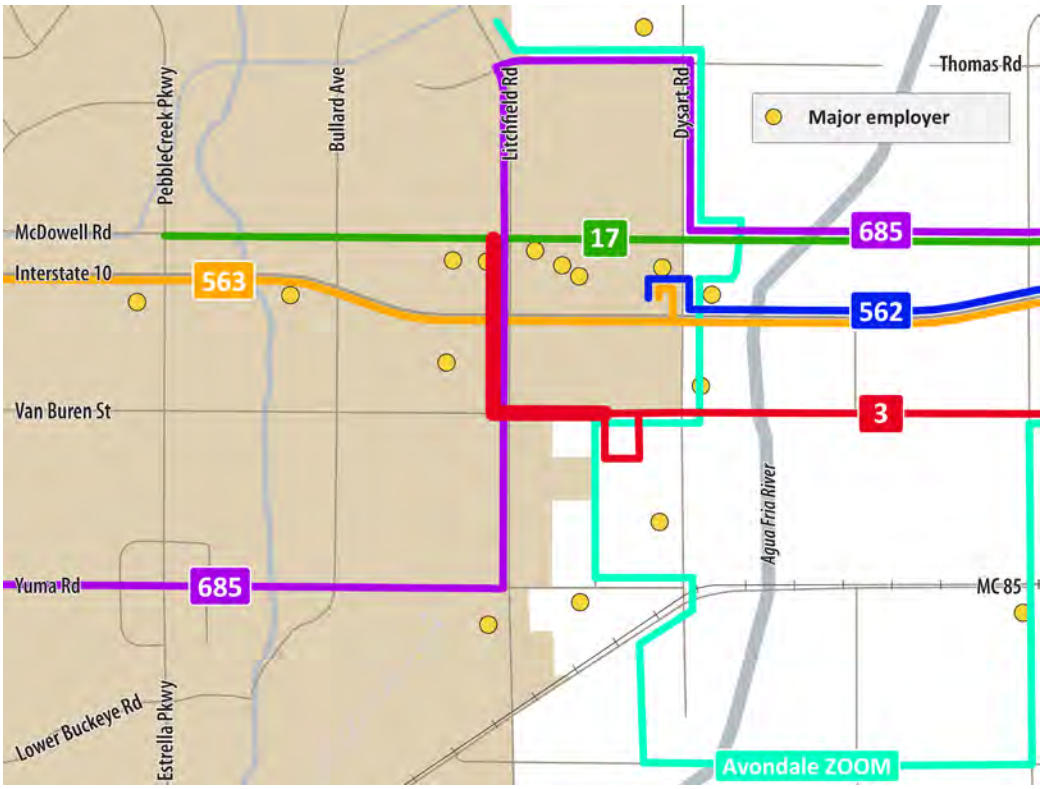


Figure 4-11 Short-term Transit Improvements

Table 4-6 Short-term Transit Improvements

Route/Name	Improvement	Existing Frequency (peak/off-peak)	Proposed Frequency (peak/off-peak)
Local Bus			
3 – Van Buren	Extend route to McDowell Rd by way of Litchfield Rd	30/60 minutes	No change
17 – McDowell	No change	30/60 minutes	No change
Express Bus			
562 – Goodyear	Add two trips in AM and PM	Three trips AM/ Three trips PM	Five trips AM/ Five trips PM
563 – Buckeye	Add 1 trip in AM and PM	Two trips AM/ Two trips PM	Three trips AM/ Three trips PM
Rural Bus			
685 – Ajo/Gila Bend	No change	Two trips each direction	No change
Circulator Bus			
Avondale Zoom	Extend route into Goodyear by way of Litchfield Rd (based on community input)	30/30 minutes	No change

Mid-term Transit Improvements

Mid-term transit improvements include expanding the network of local bus service, particularly for north-to-south corridors:

- Extend Route 3 (Van Buren) to Estrella Parkway, then north to the future Estrella Falls Mall. This eliminates the segment that operates on Litchfield Road, which will be replaced by new local bus service on Litchfield Road.
- Make frequency improvements on Routes 3 (Van Buren) and 17 (McDowell).
- Provide new local bus service on Litchfield Road between Yuma Road and Glendale Avenue, and on Dysart Road between Western and Glendale Avenues (requires partnership with adjacent jurisdictions).
- Consider combining the proposed local bus service on Litchfield and Dysart Roads into a single loop using Yuma Road/Western Avenue on the south and Glendale Avenue on the north.
- Establish new circulator service in Goodyear serving activity centers such as the Goodyear Ballpark or the planned Estrella Falls Mall (located at McDowell Road and Bullard Avenue) and Goodyear City Center (located at Yuma Road and Estrella Parkway). The actual routing will be determined by future development and community input.
- Begin planning and design for expanded Goodyear Park-and-Ride when capacity reaches 90 percent, or when additional trips are added on the Route 562 (Goodyear Express) and Route 563 (Buckeye Express).
- A potential new transit center at the future Estrella Falls Mall. This would be located north of McDowell Road and west of Bullard Avenue and be served by Routes 3 (Van Buren) and 17 (McDowell) and by the new circulator service in Goodyear.

The mid-term transit improvements are shown in Figure 4-12 and Table 4-7.

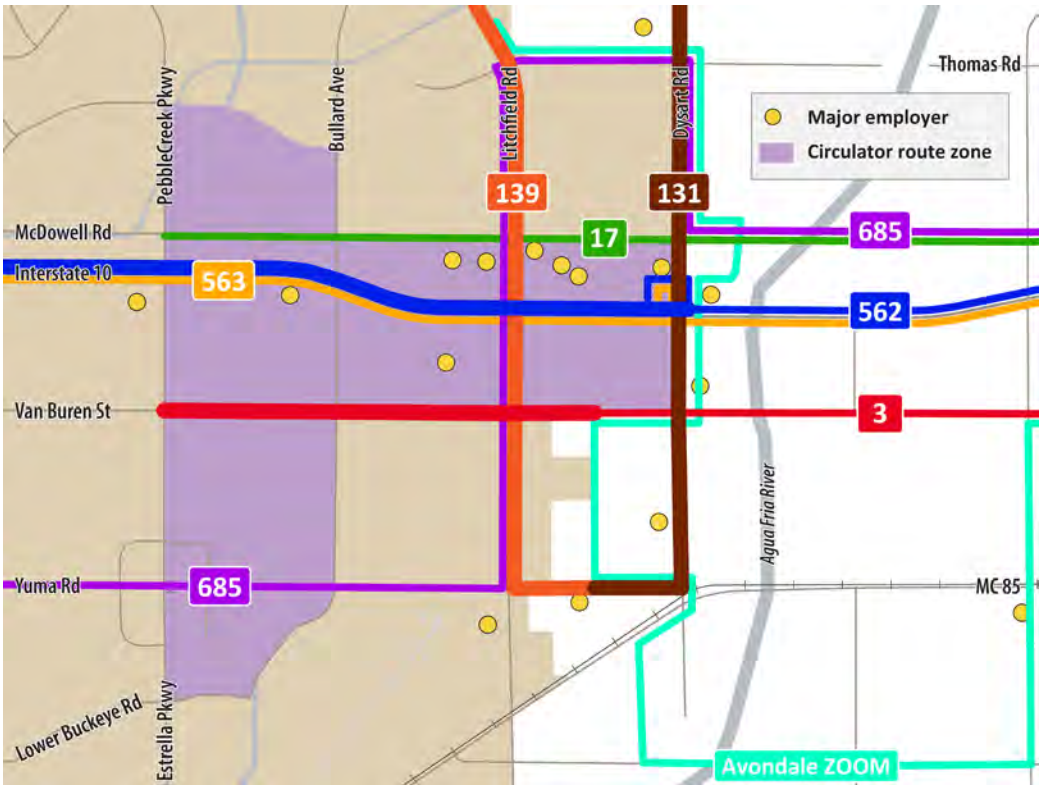


Figure 4-12 Mid-term Transit Improvements

Table 4-7 Mid-term Transit Improvements

Route/Name	Improvement	Existing Frequency (peak/off-peak)	Proposed Frequency (peak/off-peak)
Local Bus			
3 – Van Buren	Extend to Estrella Pkwy and Estrella Falls Mall	30/60 minutes	15/30 minutes
17 – McDowell	No change	30/60 minutes	15/30 minutes
Litchfield[a]	New local bus service on Litchfield Rd	—	30/60 minutes
Dysart[a]	New local bus service on Dysart Rd	—	30/60 minutes
Express Bus			
562 – Goodyear	No change	Five trips AM/Five trips PM	No change
563 – Buckeye	No change	Three trips AM/Three trips PM	No change
Rural Bus			
685 – Ajo/Gila Bend	No change	Two trips each direction	No change
Circulator Bus			
Avondale Zoom	No change	30/30 minutes	No change
Goodyear Circulator	New circulator serving activity centers (route to be determined based on community input)	—	30/30 minutes
Capital Facility	—	—	—
Estrella Falls Mall Transit Center	New transit center at future Estrella Falls Mall	—	—

[a] Proposed new local bus service on Litchfield and Dysart Roads could be combined into a single loop using Van Buren Street/Western Avenue on the south and Glendale Avenue on the north.

Long-term Transit Improvements

The long-term transit improvements include expanding the network of local bus service and implementing new regional express bus service and commuter rail. The long-term transit improvements include:

- Frequency improvements on Litchfield Road, Dysart Road, and the Goodyear circulator.
- New regional express bus service in the I-10 freeway corridor. This service supplements existing express bus service with two-way, all-day transit service between Goodyear and downtown Phoenix. It could be possible to combine all existing express bus service (I-10 West RAPID and Routes 562 and 563) into a single regional express bus route in the I-10 freeway corridor (requires partnership with partner jurisdictions).
- A new regional park-and-ride facility in the Loop 303 corridor between Indian School and Camelback Roads. This facility would be served by new express bus service on Loop 303 (to be determined in the MAG Regional Transportation Plan).
- New commuter rail service on the Yuma West branch of UPRR. This service will likely depend on the development of other commuter rail service in the region (most notably the Southeast Corridor) and the outcome of the ADOT Passenger Rail Study.

The long-term transit improvements are shown in Figure 4-13 and Table 4-8.

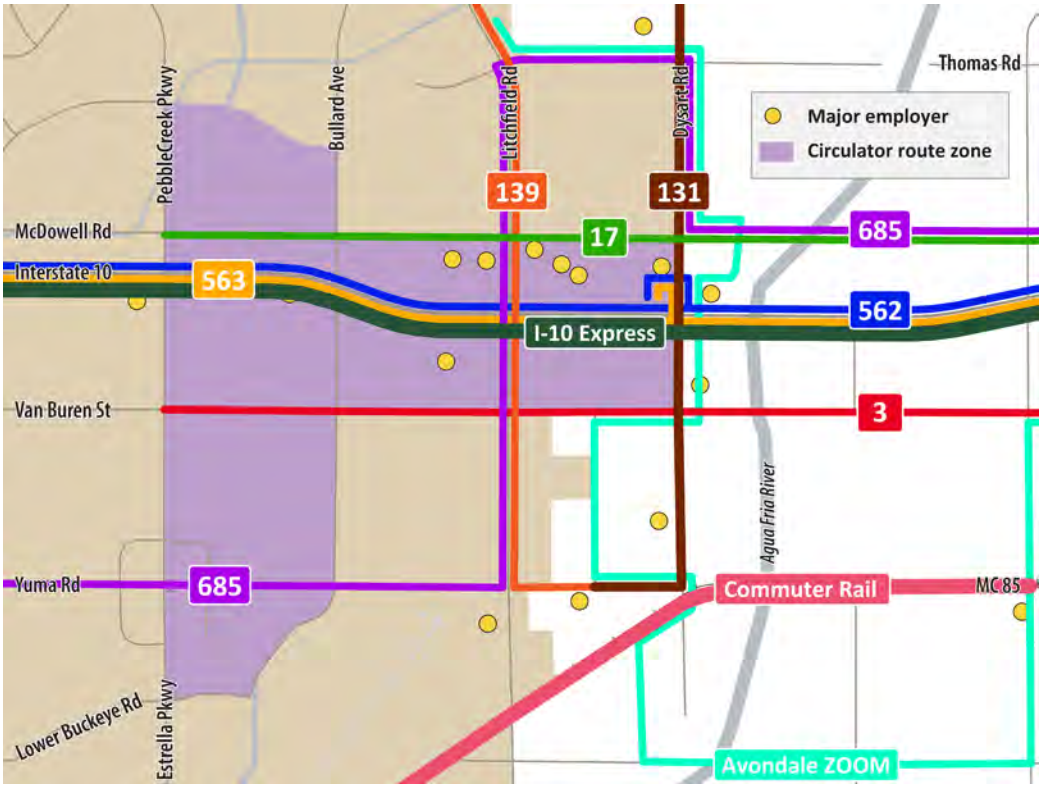


Figure 4-13 Long-term Transit Improvements

Table 4-8 Long-term Transit Improvements

Route/Name	Improvement	Existing frequency (peak/off-peak)	Proposed frequency (peak/off-peak)
Local Bus			
3 – Van Buren	No change	15/30 minutes	No change
17 – McDowell	No change	15/30 minutes	No change
Litchfield	No change	30/60 minutes	15/30 minutes
Dysart	No change	30/60 minutes	15/30 minutes
Express Bus			
562 – Goodyear	Could be combined with new regional express bus service	Five trips AM/Five trips PM	No change
563 – Buckeye	Could be combined with new regional express bus service	Three trips AM/Three trips PM	No change
Rural Bus			
685 – Ajo/Gila Bend	No change	Two trips each direction	No change
Circulator Bus			
Avondale Zoom	No change	30/30 minutes	No change
Goodyear Circulator	No change	30/30 minutes	15/30 minutes
Regional Express Bus			
I-10	New two-way, all-day regional express bus service on I-10 between Goodyear and downtown Phoenix	—	30/60 minutes
Commuter Rail			
Yuma West	New commuter rail service on the Yuma West branch of UPRR	—	Three trips AM/Three trips PM
Capital Facility			
Loop 303 Park-and-Ride	New regional park-and-ride in Loop 303 corridor between Indian School and Camelback Roads	—	—

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Section 5

GUIDANCE

Goodyear ARIZONA

5. GUIDANCE

OVERVIEW

This section provides guidance on a number of topics relevant to Goodyear's transportation system. Specific items addressed include:

- truck routing
- transportation system management
- operations and maintenance
- transit facilities

TRUCK ROUTING

INTRODUCTION

The City conducted a truck route study in 2001 that recommended various truck routes through Goodyear. The City Council adopted a resolution on November 12, 2002, designating specific routes for trucks.

Designated truck routes through the City inform industry it is welcome, while protecting neighborhoods.

Since 2002, significant development in Goodyear has occurred. ADOT is poised to open the Loop 303 interchange with I-10 in late 2014, and businesses such as Sub-Zero, Schoeller Allibert, and a Dicks Sporting Goods distribution center have located in Goodyear—in part because of its excellent access to the regional transportation system. The Phoenix-Goodyear Airport has experienced an increase in the number of takeoffs and landings, and several businesses, including established firms and aviation-related startups, plan to expand there. The draft 2025 General Plan has identified three job centers: the Loop 303 Corridor, I–10 Corridor, and the Phoenix-Goodyear Airport/MC 85/Bullard Avenue Corridor, all of which are highly important to the community's continued growth and development.

The City recognizes that it must provide convenient and efficient access to these areas for continued economic growth, while acknowledging the importance of protecting residents and neighborhoods with a logical and reasonable approach to handling truck traffic supporting that growth.

BACKGROUND

With the continuing construction of Loop 303, traffic traveling on Cotton Lane has been detoured. The Cotton Lane on and off ramps have been closed during construction of the new I-10 and Loop 303 interchange since August 2012. At that time, ADOT recommended Sarival and Citrus Roads as alternative routes (they have eastbound and westbound ramp access to I-10, respectively). Detour signs were installed to assist travelers.

Given the ongoing construction of the I-10 and Loop 303 interchange, the study team received anecdotal reports from City staff and members of the public regarding heavy vehicle traffic increasing along Sarival Avenue. While it is anticipated that heavy truck traffic on Sarival Avenue will abate once the new interchange is completed, a more permanent solution to the issue of truck traffic on Goodyear's streets was sought.

Traffic counts taken in February and March 2013 were evaluated to better understand the nature of truck traffic on city streets. In addition to heavier truck traffic on commercial streets, where such traffic might be expected,

truck traffic was observed on Sarival Avenue north of Elwood Street, approaching 10 percent (traffic count data may be found in Appendix E).

RECOMMENDATION

The City's recommended approach to truck traffic is to designate specific routes for the use of trucks operating within the City's adopted ordinance for weight and size. These routes would be identified as *designated truck routes* for Goodyear. All other routes would be for *local truck traffic only*. This means that trucks originating within and/or destined for locations within Goodyear would be required to take a designated truck route, accessing that designated truck route by way of the nearest and most direct arterial street route. Trucks traveling through Goodyear, with neither destinations nor origins in Goodyear, would be required to travel on the designated truck routes.

Industries that rely on trucking are critical to Goodyear's continued growth.

The recommended designated truck routes are shown on Figure 5-1.

The following definitions are provided for the purposes of this recommendation:

Designated truck route. A street or connected segments of streets upon which through truck traffic is directed by posted signs.

Local truck traffic. Regulated trucks receiving or making deliveries on a route.

The following actions are identified to fully implement this recommendation. Where these recommendations require roadway improvements, those improvements have been identified in the Recommendations section of the Plan as well.

Bullard Avenue Truck Route

Construction of the Bullard Avenue extension from Lower Buckeye Road south to Elwood Street is scheduled to begin in early 2014, with completion anticipated in 1 year. Bullard Avenue will provide direct access to the Phoenix-Goodyear Airport. Bullard Avenue is identified in the airport's master plan as the planned main facility entrance. This corridor will also serve commercial land uses in the southern part of the Goodyear planning area by providing direct and convenient access to Estrella Parkway at the south.

Estrella Parkway Truck Route

In the interim period while the Bullard Avenue extension is being completed, and until such time as the Bullard Avenue widening occurs between Van Buren Street and Yuma Avenue, Estrella Parkway is identified as a temporary truck route. The temporary route along Estrella Parkway will be eliminated once

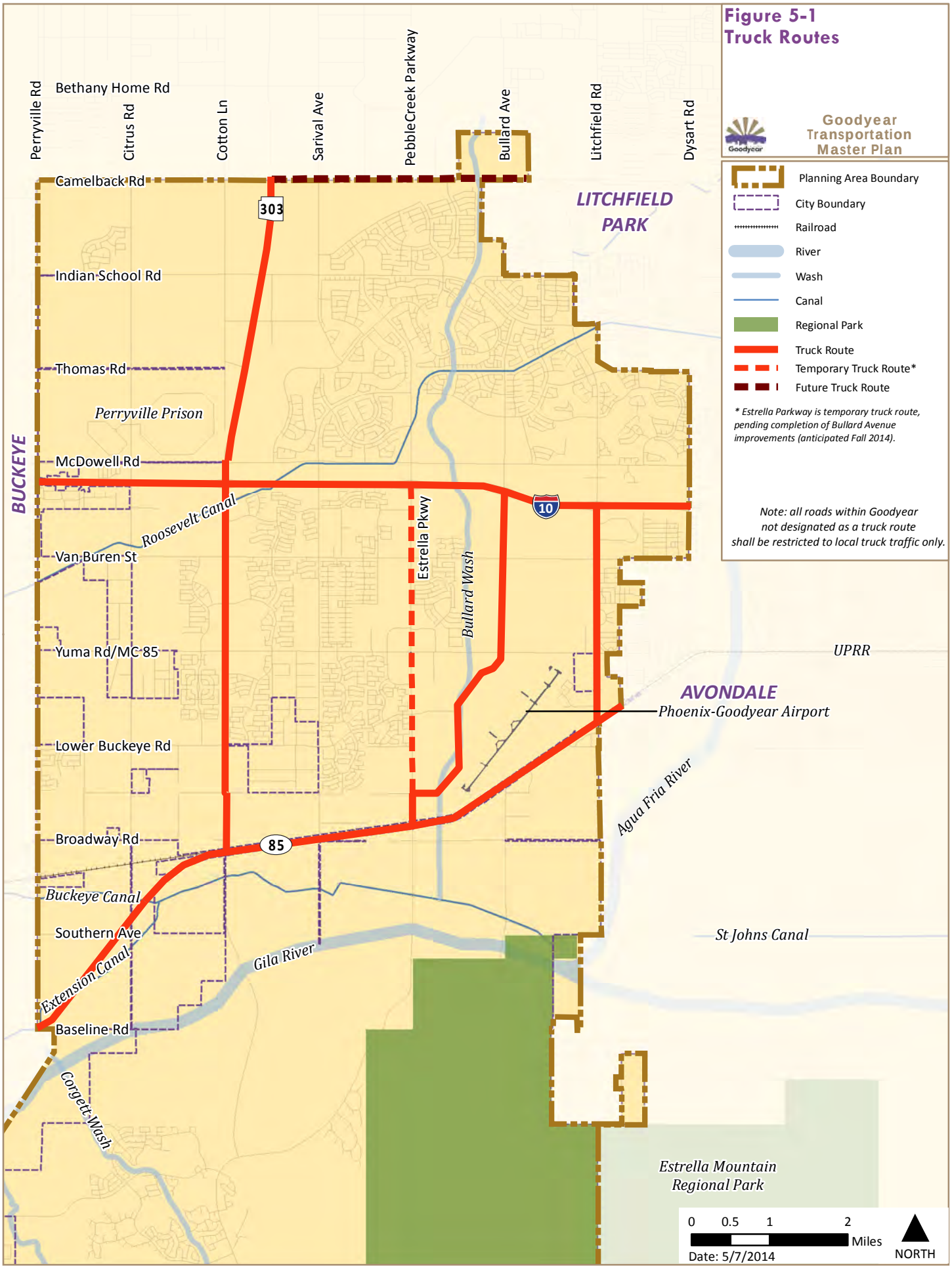


Figure 5-1
Truck Routes
Goodyear Transportation Master Plan
Planning Area Boundary
City Boundary
Railroad
River
Wash
Canal
Regional Park
Truck Route
Temporary Truck Route*
Future Truck Route
* Estrella Parkway is temporary truck route, pending completion of Bullard Avenue improvements (anticipated Fall 2014).
Note: all roads within Goodyear not designated as a truck route shall be restricted to local truck traffic only.
Perryville Rd
Bethany Home Rd
Citrus Rd
Cotton Ln
Sarival Ave
PebbleCreek Parkway
Bullard Ave
Litchfield Rd
Dysart Rd
Camelback Rd
303
LITCHFIELD PARK
Indian School Rd
Thomas Rd
Perryville Prison
BUCKEYE
McDowell Rd
Roosevelt Canal
10
Estrella Pkwy
Bullard Wash
Van Buren St
Yuma Rd/MC 85
UPRR
AVONDALE
Phoenix-Goodyear Airport
Lower Buckeye Rd
Agua Fria River
Broadway Rd
85
Buckeye Canal
Southern Ave
St Johns Canal
Gila River
Extension Canal
Baseline Rd
Corgett Wash
Estrella Mountain Regional Park
0 0.5 1 2
Miles
Date: 5/7/2014
NORTH

the Bullard Avenue improvements are complete and operating. Development of the City Center, at the intersection of Estrella Parkway and Yuma Road, is anticipated to alter the character of this area, with a greater emphasis on pedestrians. A designated truck route is not consistent with this intent; however, in the interim period Estrella Parkway will serve this role with the understanding that it is temporary.

Camelback Road Future Truck Route

Camelback Road is identified as a future truck route. This route would extend from the eastern border of the city to Loop 303, an area of developing commerce (refer to the draft General Plan 2025 Job Center: Loop 303 Corridor). This northern portion of the City is affected by the flight patterns of LAFB and has been identified for employment uses. Roadway improvements, identified in this plan, are necessary before this portion of Camelback Road can be designated as a truck route.

Loop 303 Corridor Truck Route

The Loop 303 will eventually provide a continuous north-to-south through route for the city. In 2014, the Loop 303 interchange with I-10 will be complete. A second phase of the project constructing the Loop 303 south interchange with I-10 is anticipated to begin in 2016. The proposed Loop 303 extension to the south will eventually include a new Gila River crossing, ultimately connecting to MAG's proposed Hassayampa Freeway in the southern planning area.

I-10 Truck Route

The I-10 is the principal east-to-west route through the entire Phoenix metropolitan area. I-10 provides full-diamond interchanges with Dysart and Litchfield Roads, Bullard Avenue, and Estrella/PebbleCreek; a half-diamond east access interchange with Sarival Avenue; and a half-diamond west access interchange with Citrus Road. Design work is under way to provide an additional full-diamond interchange at Perryville Road.

MC 85 Truck Route

MC 85 runs parallel to UPRR 3 miles south of I-10 and serves the Phoenix-Goodyear Airport/MC 85 Corridor/Bullard Avenue Corridor Job Center identified in the draft General Plan 2025.

Litchfield Road Truck Route

The Litchfield Road truck route extends from I-10 south to MC 85 and serves the Phoenix-Goodyear Airport/MC 85 Corridor/Bullard Avenue Corridor Job Center.

ADOT and FHWA have reinitiated the design concept report and environmental assessment effort for this portion of Loop 303. The original study was placed on hold in 2009 because of uncertain funding for the Regional Transportation Plan and questions concerning the location of the interchange between Loop 303 and SR 30. This study will identify and evaluate alternative routes for the proposed Loop 303 extension between I-10 and the proposed SR 30.
(ADOT 2014)

TRANSPORTATION SYSTEM MANAGEMENT

INTELLIGENT TRANSPORTATION SYSTEMS

Introduction

Intelligent transportation systems (ITS) significantly improve transportation system performance by reducing congestion, increasing safety, and providing traveler convenience. Transportation systems are networks, and much of the value of a network is contained in its information: for example, whether a traffic signal "knows" traffic is waiting to pass through an intersection and whether a roadway is congested with traffic. With numerous other applications, ITS "empowers" actors in the transportation system—from commuters, to transportation network operators, to the actual devices (such as traffic lights)—with actionable information (that is, intelligence) to make better-informed decisions. This information is used to maximize the transportation network's performance.

As a growing Southwest Valley city, Goodyear has been building, maintaining, and expanding its transportation infrastructure to serve Goodyear's ever-increasing travel demand. In 2009, Goodyear prepared the Intelligent Transportation Systems Strategic Plan (ITS Plan) to:

- Identify needs that ITS technologies could address.
- Establish goals, objectives, and service area priorities for ITS.
- Identify the infrastructure, funding, and other resources necessary to support the City's ITS priorities.
- Identify roles and responsibilities for implementing these priorities.
- Establish time frames for implementing and integrating a transportation technology program.

The goal of the ITS Plan is to maximize the safety, efficiency, and quality of travel on Goodyear's roadway system for residents, businesses, and visitors. In preparing this Plan, the ITS Plan was reviewed and the study team concluded that its recommendations remain valid. Therefore, recommendations of the ITS Plan are incorporated into this document by reference.

Background

To provide for safe and efficient traffic flow within the city, and to manage major cross-jurisdictional corridors, Goodyear has been implementing ITS applications providing high-quality information regarding roadway conditions and incidents. The ITS Plan developed the Goodyear ITS Architecture, which can identify opportunities for making ITS investments in a cost-effective

fashion by using interagency cooperation during planning, implementation, and operation of these ITS projects. The ITS Architecture has identified several agency interfaces, information exchanges, and integration strategies that would be needed to provide the ITS services and systems identified by system stakeholders. These multiagency and public-private entity interfaces require agreements; a list of such agreements is included in the ITS Plan.

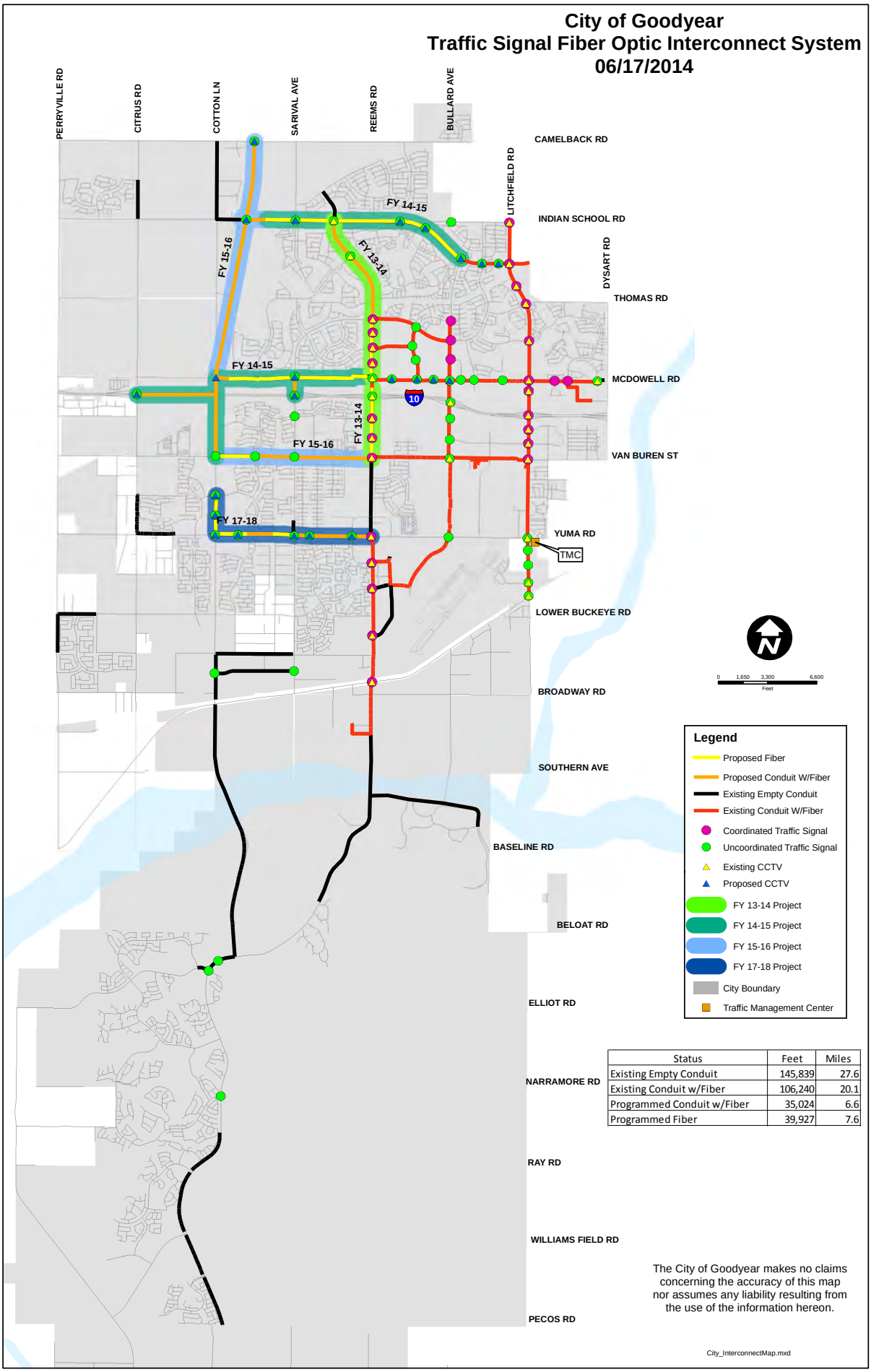
The City's Traffic Management Center monitors the traffic management and control devices implemented throughout Goodyear. The City currently operates 79 signalized intersections, of which 27 are time-based coordinated signals and 8 are inactive signals with hardware in place. All the signalized intersections have opticom infrared preemption equipment and serve the incident response vehicles. The preemption hardware triggers the green phase and/or extends the green phase at traffic signals for emergency vehicles and helps reduce delays at the traffic signals for incident responders. The City uses video detection for signal phasing and intersection counts. An additional 8 intersections are identified for future signalization as part of the City's CIP.

As of 2014, there are 20.1 miles of existing conduit with fiber and 27.6 miles of existing empty conduit. The City plans to install an additional 7.6 miles of fiber in existing conduit and 6.6 miles of new conduit with fiber by fiscal year 2017. Presently, there are 23 signalized locations with closed-circuit television (CCTV) cameras and 32 signalized intersections planned for CCTV cameras. There are two dynamic message signs on McDowell Road in Goodyear. The eastbound dynamic message sign is located east of Sarival Avenue. The westbound sign is located west of Litchfield Road on McDowell Road.

Figure 5-2 summarizes the programmed traffic signal, fiber interconnect, and ITS infrastructure.

Recommendations

Coordination with adjacent municipalities is vital as the City deploys its ITS infrastructure. Currently, no ITS information sharing occurs between agencies. With the existing and programmed fiber network and future ITS infrastructure deployments, the City plans to share its ITS information with adjacent municipalities, ADOT, and MCDOT.



Status	Feet	Miles
Existing Empty Conduit	145,839	27.6
Existing Conduit w/Fiber	106,240	20.1
Programmed Conduit w/Fiber	35,024	6.6
Programmed Fiber	39,927	7.6

Figure 5-2 Traffic Signal Fiber Optic Interconnect System

A number of recommendations identified in the ITS Plan have already been implemented, and additional projects are currently programmed in the fiscal year 2014 to 2018 CIP. Table 5-1 summarizes the long-term ITS recommendations.

Table 5-1 ITS Plan Recommendations

No.	Location	Description	Year	Potential Funding Source
1	Estrella Pkwy – Van Buren St to Yuma Rd	Fiber	2020–2025	MAG
2	Estrella Pkwy – Roeser Rd to Santa Elizabeth Dr	Fiber	2020–2025	MAG
3	Cotton Ln – Elwood St to Estrella Pkwy	Fiber	2020–2025	MAG
4	Estrella Pkwy – Santa Elizabeth Dr to Cotton Lane	Conduit and fiber	2025	MAG
5	McDowell Rd – Perryville Rd to Cotton Ln	Conduit and fiber	2020–2030	MAG
6	Yuma Rd – Estrella Pkwy to Litchfield Rd	Conduit and fiber	2020–2030	MAG
7	McDowell Rd at four signalized locations	CCTV cameras	2020–2025	MAG
8	Van Buren St at three signalized locations	CCTV cameras	2020–2025	MAG
9	Bullard Ave at six signalized locations	CCTV cameras	2020–2025	MAG
10	Other signalized locations	CCTV cameras	2020–2030	MAG

Source: Goodyear Intelligent Transportation Systems Strategic Plan (2009)

In addition to the communication and CCTV deployments, recommendations the City should consider follow:

- traffic counting stations along major north-to-south and east-to-west corridors
- CCTV cameras at new signalized intersections, along with preemption equipment
- signal coordination timing plans for major north-to-south and east-to-west corridors using MAG Traffic Signal Optimization Program funding
- special event timing plans using MAG Traffic Signal Optimization Program funding
- updated Synchro traffic model (to implement timing plans catering to changing traffic patterns)
- multiagency and public-private entity ITS information-sharing agreements

OPERATIONS AND MAINTENANCE

TRAFFIC SIGNAL MAINTENANCE

Traffic signal maintenance is the preventative activities to preserve traffic signal infrastructure and control devices necessary for the safe and efficient utilization of arterial, collector and local roadways.

The operation of traffic signals in Goodyear is one of the most visible services provided to residents and visitors on the City's streets. Committing the appropriate resources (staff, funding and attention), and coordinating activities are all important management activities. With attention focused on maintenance activities, it is difficult to keep traffic signals operating and provide necessary attention on making the operation efficient on a 24/7 basis. This has safety implications and may contribute to unnecessary traffic delays and congestion. Recommendations for traffic operations, including staffing needs are identified in the Goodyear Intelligent Transportation Systems Strategic Plan (2009), which are incorporated into the Plan by reference. Additional guidance is available at the FHWA's webpage on Traffic Signal Timing & Operations Strategies (see www.fhwa.dot.gov).

STREETS MAINTENANCE

A quick calculation of roadways in the Goodyear planning area shows that there are approximately 900 lane miles (lane miles are the number of lanes multiplied by the length in miles). The disparity between maintenance budgets and maintenance requirements causes agencies to make difficult choices about maintenance priorities. When this happens, maintenance concerns related to safety and operational efficiency tend to override preservation of capital investment.

Efforts to reserch typcial streets maintenance staffing were not able to determine an average number of lane miles per employee. Most of the information available is at the state level, with agencies operating with 14-30 lane-miles/employee. The trend seems to be more lane-miles/employee as the agencies get smaller.

If streets were maintained more often, the total cost of street maintenance would actually decrease. Therefore, the City should continue to monitor the number of lane miles per streets maintenance employee, so that it may keep up with, and maintain, the major roadway infrastructure investment.

TRANSIT

TRANSIT FACILITIES

The transit improvements include a new transit center at Estrella Falls Mall and a new regional park-and-ride facility in the Loop 303 corridor between Indian School and Camelback Roads. Both of these projects depend on future decisions related to adjacent parcels, but some key transit planning considerations should be implemented for each facility.

Estrella Falls Mall Transit Center

This facility is a potential new transit center at the planned Estrella Falls Mall. It would be located north of McDowell Road and west of Bullard Avenue and would be served by Routes 3 (Van Buren) and 17 (McDowell) and the new circulator service in Goodyear. The mall site plan is still being developed, but it will likely be an indoor mall. Most regional malls that are indoor facilities are surrounded by surface parking and use a “ring road” or other periphery roadway to circulate traffic.

The following are some key considerations for developing a transit center at Estrella Falls Mall:

- The transit center is the likely terminus for the Routes 3 (Van Buren) and 17 (McDowell), so adequate space will need to be provided for a bus layover.
- The transit center is best located adjacent to the periphery roadway that provides direct access to and from McDowell Road or Bullard Avenue.
- The transit center should have a strong pedestrian connection between the facility and the indoor mall.
- The site location for the transit center should minimize out-of-direction travel for buses and passengers.
- The transit center should be designed collaboratively so the site location works efficiently for passengers, operators, and the mall owner.

Loop 303 Park-and-Ride

This transit facility is a potential new regional park-and-ride in the Loop 303 corridor between Indian School and Camelback Roads. This facility would be served by future express bus service on Loop 303 (to be determined in the MAG Regional Transportation Plan).

The following are some key considerations for developing a regional park-and-ride in the Loop 303 corridor:

- The park-and-ride should be large enough to accommodate regional demand.
- It should be located close to Loop 303, preferably with direct access to the freeway.
- The park-and-ride should have easy bus and vehicular access to and from adjacent arterial roadways.

- It should be designed to accommodate express bus trips that originate at the facility, as well as trips that originate elsewhere.

Circulator Service

The transit improvements include a new bus circulator service in Goodyear serving activity centers such as the Goodyear Ballpark, planned Estrella Falls Mall, and Goodyear City Center. The route will be determined by future development and community input.

The following are some key considerations for implementing a new circulator service in Goodyear:

- Approximately 20 circulators operate throughout the region. Many of these circulators provide lessons for potential service in Goodyear. The Avondale Zoom (which uses a similar route to the former START Route 131 that served Goodyear) is the closest example.
- Circulators need to be planned based on specific origins and destinations and often follow a nontraditional route. They need strong local advocates during the development phase.
- The type of vehicle used could range from a small cutaway van to a small bus. The vehicle should accommodate the length of the route, ridership, destinations served, and available operating funding.
- The operating costs for circulator service are usually a function of how the service is provided. Most circulators are operated by contractors, although the approach varies widely. Some cities contract directly with a provider, while others use a contractor through Valley Metro. The primary difference in these approaches is how administrative costs are assigned and whether the local jurisdiction has enough staff to manage the contractor.

The recommended steps for developing circulator service in Goodyear are as follows:

- Form a committee to guide the process of planning and ultimately implementing a circulator in Goodyear. This will allow the circulator route to be planned by those who know the service area the best. This committee could function similar to the START Committee that developed the START Route 131 that previously served Goodyear.
- Focus the committee's efforts on identifying travel markets (who needs to be served and where?), as well as the "branding" of the circulator service so that it reaches the intended audience.
- Identify a City of Goodyear staff person or alternate to support the circulator committee and to coordinate with Valley Metro and other regional transit providers. This person will provide technical support to the circulator committee in terms of developing and evaluating routes, fleet, fare policy, and operating/capital costs.

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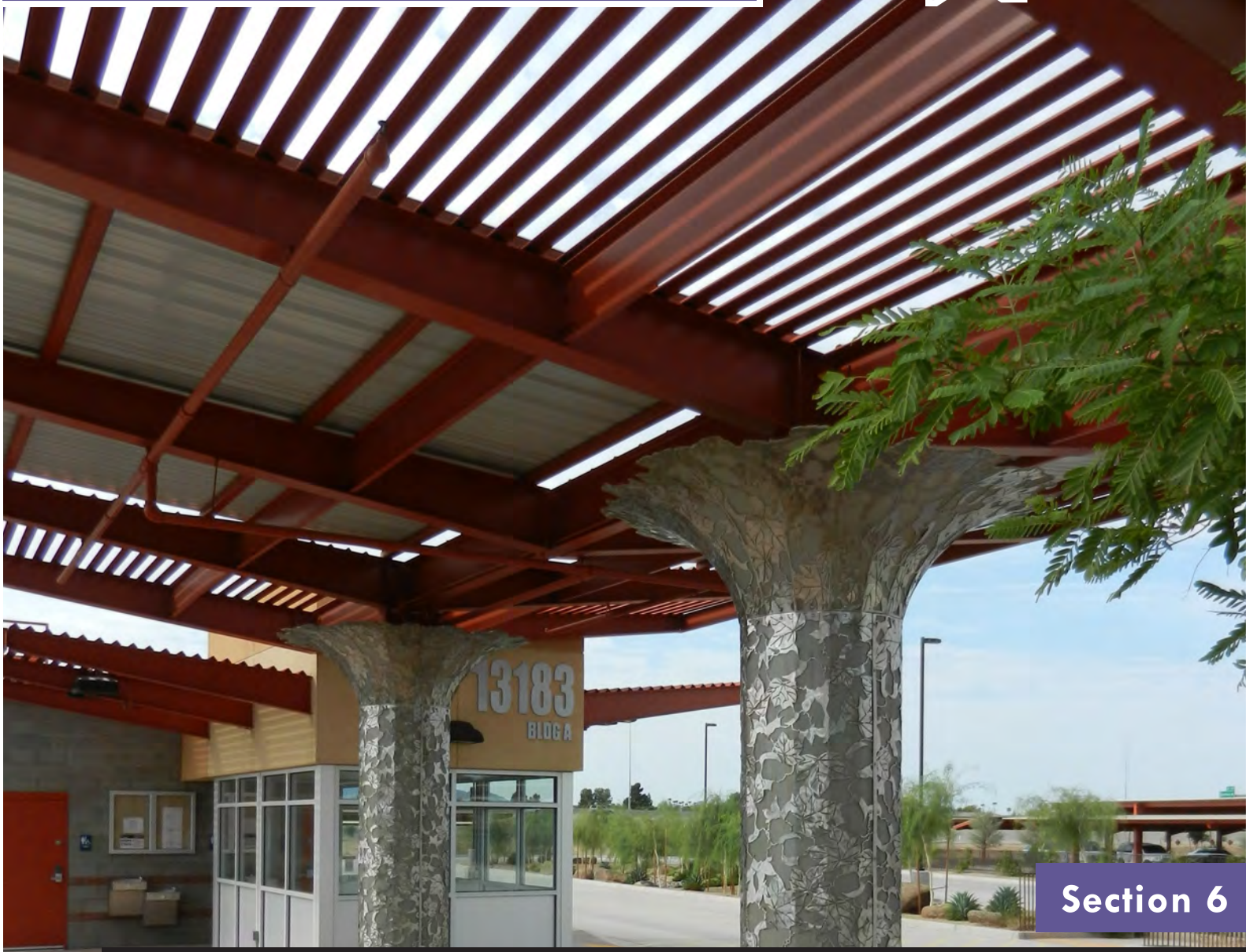
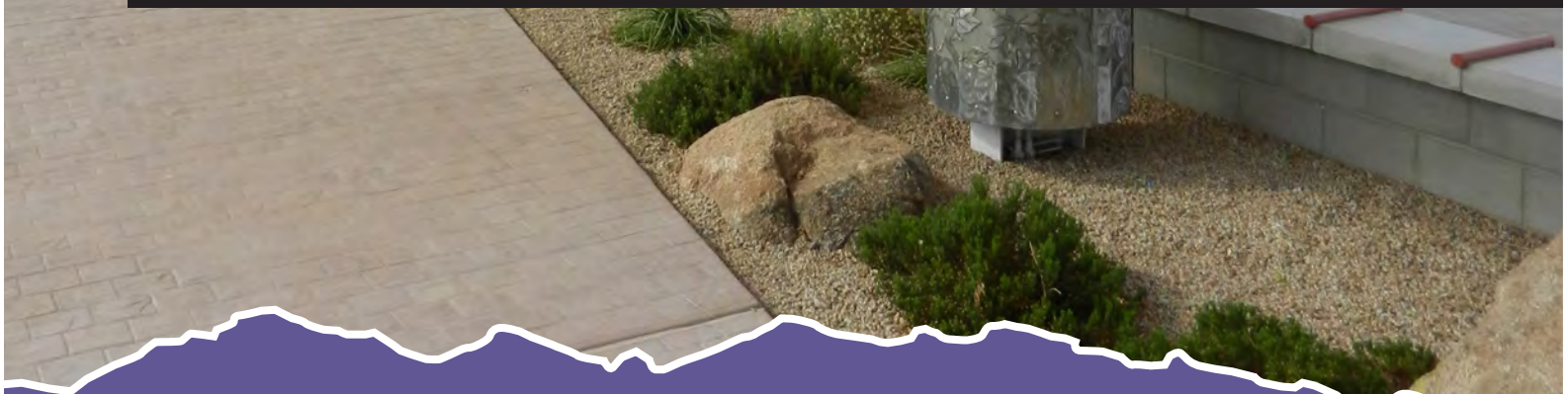


Section 6

IMPLEMENTATION



Goodyear ARIZONA

6. IMPLEMENTATION

FUNDING

GOODYEAR FUNDING SOURCES

Infrastructure Improvement Plan

Under the authority of Arizona Revised Statutes (A.R.S.) § 9-463.05, municipalities in Arizona may assess development fees to offset infrastructure costs associated with providing necessary public services to development. The development fees must be based on an Infrastructure Improvement Plan (IIP).

A.R.S. § 9-463.05(T)(7)(f) defines the facilities and assets that can be included in the Street Facilities IIP: "Street facilities located in the service area, including arterial or collector streets or roads that have been designated on an officially adopted plan of the municipality, traffic signals and rights-of-way and improvements thereon."

Goodyear adopted their Infrastructure Improvement Plan on February 24, 2014.

Capital Improvement Program

The CIP is a financial plan designed to create, support, maintain, and finance Goodyear's present and future infrastructure needs. With the FY 2015 budget, the City introduced its first 10-year plan, allowing the City to be more forward thinking in its budgeting process.

The CIP outlines project costs, funding sources, and estimated future operating costs associated with each project. The plan is designed to ensure that improvements will be made when and where they are needed and that the City will have the funds to pay for and maintain them. It reflects the City's policy regarding long-range physical and economic development, outlines present and future public needs and priorities, and provides a planned schedule for improvements.

Planning capital projects is an ongoing process, with updates to the CIP occurring every year. Once the need or idea for capital improvements is proposed by the Mayor, Council, citizens, or City staff, these items are compiled into the CIP and presented to the Council. The Council prioritizes the first-year expenditures and validates the long-term plan during a series of work sessions. Once approved, the CIP officially details the City's commitment to fund the first year expenditures in the upcoming budget. The first-year projects are refined during the annual budget process.

Today, the CIP achieves the following objectives as a component of the City's budget and financial planning process:

- reduces the need for "crash programs" to finance the construction of City facilities
- focuses attention on community goals, needs, and capabilities
- achieves optimum use of taxpayer dollars
- guides future community growth and development
- advance planning ensures that projects are well thought out in advance of construction
- provides for the orderly replacement of capital expenditures
- encourages a more efficient governmental administration and maintains a sound and stable financial program

The current adopted CIP covers the five fiscal years 2014-18. Capital projects are defined as (1) one-time projects; (2) having assets of significant value; (3) generally costing more than $50,000; and (4) with an expected useful life of at least 5 years. The CIP is updated annually to ensure that it addresses new and changing priorities within the City. The CIP is a plan. As such, projects are subject to change based on new or shifting service needs, special financing opportunities, emergency needs, or other directives established by the Mayor and Council.

For fiscal year 2015, budgeted capital projects total **$ 26,717,645**. The program takes into consideration all known capital improvement needs while using available revenue to meet those needs.

Sources of Funding for the CIP

Revenues for the CIP are generated by voter-authorized bonds, development impact fees, grants, or user fees from municipal utilities.

General Fund

Taxpayer dollars are deposited in the General Fund, along with utility license fees, business license fees, transient lodging taxes, state shared revenues (from cigarette and liquor taxes), interest income, and miscellaneous revenues and beginning cash balances. This portion of the budget is comprised largely of discretionary funds, since the Mayor and Council can allocate the funds to programs and services in any area. General Fund dollars are used to support such City services as police, fire and parks, as well as planning, community development and administrative support services. Each year the CIP receives funding from the City's General Fund; amounts typically range from $8 to10 million per year.

Development Impact Fees

Development impact fees were adopted by the Council beginning in 1986. They require new development to pay its proportionate share of the costs associated with providing the necessary public infrastructure. These fees provide capital revenues that are needed to meet the necessary service demands placed on the City by new development. The recently adopted Goodyear Infrastructure Improvement Plan is effective August 1, 2014.

The City currently has nine development impact fee categories, two of which are specifically for transportation improvements—arterial streets and regional transportation improvements.

Other Sources of Funding for Infrastructure Improvements

Developer Contributions – Developers may provide the City with cash, certain assets, or services to obtain the right to develop land. Contributions are collected to ensure that infrastructure and community facilities support the needs of our growing community.

Improvement District Funds – Improvement districts are formed by groups of property owners to share the cost of infrastructure improvements for their properties. Bonds are issued to finance these improvements, which are repaid by assessments on affected properties. Improvement district debt is paid for by a special assessment made against affected properties to defray all or part of the cost of a specific capital improvement or service deemed to benefit primarily those properties.

Community Facilities Districts – Community facilities districts (CFDs) provide a funding mechanism to finance construction, operation, and maintenance of public infrastructure within the boundaries of the CFD and to better enable the City to provide municipal services within the boundaries of the CFD. The Council has established policy guidelines and application procedures for establishing CFDs. Goodyear currently has ten CFDs.

While the City's annual budget funds a large portion of its transportation needs, City spending on transportation is only a portion of all the spending that occurs to support transportation. MAG and ADOT both make significant investments in the regional and local transportation system.

ALTERNATIVE FUNDING OPTIONS AND REVENUE SOURCES

The following sections summarize revenue sources that are currently available for funding road transportation projects in Goodyear. It should be

noted that in the current environment, the funding of significant transportation projects is complex and, in most cases, involves multiple sources. Innovation in this dynamic environment has become the mainstay of successful transportation funding. In addition to more traditional funding sources, this section also presents the results of research of some innovative grants opportunities that would support Goodyear's economic development efforts.

General Obligation Bonds

A General Obligation bond is a financing tool similar to a home mortgage that the City uses to finance large capital projects over a 20-year period. Bonds allow the City to pay for projects over a longer period of time. Typically the City asks voters to authorize bonds for major projects or package of several similar projects. It should be acknowledged that 2018 would be the earliest that the City would be able to issue General Obligation bonds.

Sales Tax

A sales tax exclusively for transportation needs is another revenue option to be considered. This is currently being used by a number of Arizona cities. In 1988, Scottsdale passed a transportation tax, which dedicates one-eighth of the privilege tax revenue specifically for transportation purposes. In 1996, Tempe residents passed a half-cent dedicated sales tax with no sunset for transit. In 1998, Mesa residents passed a quality-of-life half-cent sales tax, which dedicated a small portion for transit. In 2000, Phoenix voters passed Transit 2000, a four-tenths of a cent sales tax that pays for transit improvements. In 2001, Glendale voters authorized a half-cent sales tax to pay for transportation projects and programs for all modes of transportation including transit (modeled after Phoenix's plan). In 2004, Maricopa County residents extended the half-cent countywide sales tax originally authorized in 1985 (the tax allocates over one-third of tax revenues for transit, including light rail). In 2005, Peoria voters approved a three-tenths cent sales tax increase dedicated to funding transportation projects and services.

The local sales tax option is an increasingly popular revenue source for transportation. As noted, many Phoenix area cities have chosen to do so to fill gaps in transportation funding. The local option sales taxes have been especially important in funding transit projects and service in the Valley. The local option sales taxes is successful for a number of reasons[4]:

- a sales tax produces high revenue for a low marginal tax rate; although it is susceptible to retail sales declines during recessions
- it has a favorable public perception because of horizontal equity- Individuals of comparable means pay similar amounts of tax - despite it being regressive

- It is considered fair from a modal perspective, where, for example, bike/pedestrian and transit projects can be funded by users who pay sales tax, which is not the case when they are funded with motor fuel tax revenues
- sales tax expenditures are a better reflection of ability-to-pay, rather than income or wealth
- a sales tax is an attractive way to exact revenue from non-resident users of local transportation facilities

A transportation sales tax could be used to develop any of the transportation improvements identified in the Plan—street improvements, transit services such as the circulator or local bus extensions, and bicycle and pedestrian improvements such as the multiuse path system identified in the Plan and PRTOS Master Plan.

Improvements by Development

It is recognized that there is a cost to building "first" in undeveloped areas that often goes unrecognized. It is a reasonable assumption that if development introduces traffic congestion, it can be held responsible for improvements to the transportation infrastructure to mitigate that impact. The half-street improvements that are seen throughout Goodyear are an example of this type of development infrastructure requirement.

By requiring developers to make improvements not immediately adjacent to the development to mitigate impacts caused by their developments, they are paying their share of the improvements necessitated by the new development (the required nexus to request improvements). Following a standard traffic impact assessment procedure would document the needed improvements caused by new development. The financial impact of this method is based on the timing and size of developments and cannot be known in advance.

Federal Funding Sources

Community Development Block Grant

Funds under this grant are provided by the U.S. Department of Housing and Urban Development. A transportation improvement project must benefit and be located in a census tract or block group with at least 51 percent of the population in low- and moderate-income groups. Projects that address an urgent need such as a natural disaster may be eligible.

Highway Safety Improvement Program

The Highway Safety Improvement Program aims to achieve a significant reduction in traffic fatalities and serious injuries on all public roads. Each state's appropriation of Highway Safety Improvement Program funds is

subject to a set-aside for construction and operational improvements on high-risk rural roads. High-risk rural roads are functionally classified as rural major or minor collectors or rural local roads with a fatality and incapacitating injury crash rate above the statewide average for those functional classes of roads, or that are likely to experience an increase in traffic volumes that leads to a crash rate in excess of the average statewide rate. Goodyear streets do not qualify for these funds as none of the City's have high enough crash rates.

National Highway System Program

The program provides funding for improvements to rural and urban roads that are part of the National Highway System, including the Interstate system, and designated connections to major intermodal terminals. Under certain circumstances, these funds may also be used to fund transit improvements in National Highway System corridors.

Surface Transportation Program

The Surface Transportation Program provides flexible funding that may be used by states and localities for projects on any Federal-aid highway classified as a major collector or above, including the National Highway System, bridge projects on any public road, transit capital projects, and intracity and intercity bus terminals and facilities. For projects programmed with Surface Transportation Program funds from the MAG Transportation Improvement Program, local project sponsors may exchange Surface Transportation Program funds for a reduced amount of Highway User Revenue Fund monies from ADOT, enabling the project sponsor to assume greater control over project development and implementation. The exchange program is currently on hold by ADOT until Highway User Revenue Fund gains are shown for the revenue stream.

Transportation, Community, and System Preservation Program

The Transportation, Community, and System Preservation Program is intended to address the relationships among transportation, community, and system preservation plans and practices and to identify private sector-based initiatives to improve those relationships. States, metropolitan planning organizations, local governments, and tribal governments are eligible for Transportation, Community, and System Preservation Program discretionary grants to plan and implement strategies that improve the efficiency of the transportation system; reduce environmental impacts of transportation; reduce the need for costly future public infrastructure investments; ensure efficient access to jobs, services, and centers of trade; and examine development patterns and identify strategies to encourage private sector development patterns that achieve these goals.

State Funding Sources

Transportation Alternatives

Prior to 2013, three distinct types of federal formula funds were apportioned to the state: Transportation Enhancements, Safe Routes to School, and the Recreational Trails Program. In July 2012, the federal government passed the new federal transportation authorization bill, Moving Ahead for Progress in the 21st Century (MAP-21). MAP-21consolidated these three programs into one federal formula funding category called the Transportation Alternatives Program (TA).

The MAG region receives about $4.4 million per year for this program. There are two categories of projects: Infrastructure and Non-Infrastructure Safe Routes to School projects. Previously, local schools have applied for funds through ADOT. With the Transportation Alternatives Program, all applications must come through a MAG member agency. Local schools interested in submitting projects should contact the City of Goodyear Engineering Department for more information.

Arizona Gaming Sources (Proposition 202)

Proposition 202 was passed in November 2002 and set the stage for new gaming compacts between the State of Arizona and the respective tribes. A provision of Proposition 202 was the sharing of gaming revenues with the State and local governments. Proposition 202 requires an Indian tribe to make 12 percent of its total annual contribution to cities, towns, or counties for government services that benefit the general public, including public safety, mitigation of the impacts of gaming, or promotion of commerce and economic development.

Greater Arizona Development Authority

The Greater Arizona Development Authority was created by the Arizona State Legislature to assist local and tribal governments and special districts with developing public infrastructure. It leverages its funds to lower the costs of financing and to help accelerate project development for public facilities owned, operated, and maintained by a political subdivision, special district, or Indian tribe. The Greater Arizona Development Authority has both financial and technical assistance programs.

Highway Extension and Expansion Loan Program

House Bill 2488, enacted into law on August 21, 1998, established a comprehensive loan and financial assistance program for eligible highway projects in Arizona. The program, designated as Highway Extension and Expansion Loan Program (HELP), provides communities in Arizona with a new financing mechanism to stretch limited transportation dollars and to bridge the gap between needs and available revenues. HELP provides the State and its communities with an innovative financing mechanism to accelerate the funding of road construction projects. It has proven to be a significant tool for financing the construction of highway projects throughout Arizona. Similar to bond funds, HELP funding is a loan and, hence, there are payback obligations. The major advantage is there are no application fees and the interest rate, under statute, is “below market.” Currently, HELP loan applications are not being accepted because of State budget issues.

Highway User Revenue Fund

The Highway User Revenue Fund is the most significant source of transportation funds in Arizona for highway construction, improvements, and related expenses. Arizona taxes motor fuels and collects a variety of fees and charges relating to the registration and operation of motor vehicles on the public highways of the state. These revenues are deposited in the Arizona Highway User Revenue Fund and are then distributed to the cities, towns, and counties based on population and to the State Highway Fund. These funds, which typically amount to approximately $3 million are used to finance roadway operations and maintenance. These activities are also augmented each year by the Capital Improvement Plan, which contributes an additional $2.5 million per year.

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