



# **CITY OF GOODYEAR**

## 2018 Development Impact Fee Study – Land Use Assumptions and Infrastructure Improvement Plan

October 22, 2018





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## **List of Abbreviations Used Throughout the Report**

AWWA – American Water Works Association  
 CAP – Central Arizona Project  
 DIF – Development Impact Fee  
 EDU – Equivalent Dwelling Unit  
 GO Bond – General Obligation Bonds  
 GRIC - Gila River Indian Community  
 IIP – Infrastructure Improvement Plan  
 IWMP – Integrated Water Master Plan  
 LOS – Level of Service  
 LUA – Land Use Assumptions  
 LUA Period – 10-year growth period from LUA  
 MGD – Million Gallons per Day  
 Newland – Newland Real Estate Group, LLC  
 Raftelis – Raftelis Financial Consultants, Inc.  
 sf – square feet  
 WRF – Water Reclamation Facility

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# SECTION 1. INTRODUCTION

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ARS 9-463.05 dictates specific requirements for municipalities to impose development impact fees (DIF). Development fees can only be calculated and assessed for existing or proposed improvements included in an approved Infrastructure Improvement Plan (IIP) that is tied to Land Use Assumptions (LUA) or growth projections for each service area within the boundaries of a City. ARS 9-463.05 also provides for strict notification, public hearing, and implementation schedules among other provisions. This report provides a LUA and IIP for the various necessary public infrastructure to meet the demands of growth over the next ten-year period (LUA period). The report also calculates new DIFs based on the IIP and LUA to illustrate how the various fees would potentially change with implementation of the IIP and LUA.

The City last updated its LUA, IIP, and DIFs in 2014. The existing DIFs are authorized in Article 9-8 of the City Code. As set forth in this report, the updated IIP includes a significant level of necessary improvements to meet growth forecast for the LUA Period. The cost of these necessary improvements results in increases to most development fee calculations. As set forth in this report, the calculation of residential DIFs to fund the necessary public improvements for growth over the LUA Period is summarized below:

## North Service Area Existing and Calculated DIF Comparison

Fee Category	Existing Fee	Calculated Fee	Difference
Police	\$379	\$820	\$441
Fire	399	911	512
Streets*	1,573	2,669	1,096
Parks	922	1,375	453
Water	6,368	7,553	1,185
Wastewater	4,210	2,818	(1,392)
Total Central	\$13,851	\$16,146	\$2,295

\*Average of existing North and Central Fees, which are proposed to be combined into a single impact fee area north of the Gila River.

## South Service Area Existing and Calculated DIF Comparison

Fee Category	Existing Fee	Calculated Fee	Difference
Police	\$379	\$820	\$441
Fire	719	971	252
Streets	1,179	3,330	2,151
Parks	1,065	2,255	1,190
Water	7,769	7,843	74
Wastewater	1,541	2,538	997
Total	\$12,652	\$17,757	\$5,105

Additional information regarding the calculation of non-residential development fees is included within the remaining sections of the report.

**Section 2. Land Use Assumptions:** This section provides a summary of the LUA forecast. The LUA forecast is a major component of forecasting the need for future infrastructure improvements and the timing of these improvements. The City is anticipated to experience significant growth over the next ten years, requiring significant investment in infrastructure.

**Section 3. Fire Infrastructure Improvements:** This section outlines the infrastructure needs for the Fire Department to maintain the current LOS provided to existing development. The Fire Department will be responsible for providing additional fire stations and apparatus to provide service for growth.

**Section 4. Police Infrastructure Improvements:** This section outlines the infrastructure needs for the Police Department to maintain the current LOS provided to existing development. The Police Department will be responsible for providing additional police stations, patrol vehicles and an additional radio tower to provide service for growth.

**Section 5. Streets Infrastructure Improvements:** This section outlines the infrastructure needs for the arterial streets in the City to maintain the current LOS provided to existing development. The City will be responsible for providing additional arterial streets of four and six lanes and the appropriate intersections to accommodate additional traffic generated from growth.

**Section 6. Parks and Recreation Infrastructure Improvements:** This section outlines the infrastructure needs for the Parks and Recreation Department to maintain the current LOS provided to existing development. The Parks and Recreation Department will be responsible for providing additional parks that will benefit growth.

**Section 7. Water Infrastructure Improvements:** This section outlines the infrastructure needs for the Water Department to maintain the current LOS provided to existing development. The Water Department will be responsible for providing additional water plants, ensuring the adequate water rights and other aspects of providing service to growth.

**Section 8. Wastewater Infrastructure Improvements:** This section outlines the infrastructure needs for the Wastewater Department to maintain the current LOS provided to existing development. The Wastewater Department will be responsible for expanding wastewater plants and other aspects of providing service to growth.

## DIF AND OTHER REVENUE PROJECTION

A ten-year DIF revenue projection is included at the end of IIP section based on the LUA forecast and calculated fees for each service. In additional ARS Section 9-463.05 (E) (7) identifies the following:

A forecast of revenues generated by new service units other than development fees, which shall include estimated state-shared revenue, highway users revenue, federal revenue, ad valorem property taxes, construction contracting or similar excise taxes and the capital recovery portion of utility fees attributable to development based on the approved land use assumptions, and a plan to include these contributions in determining the extent of the burden imposed by the development as required in subsection B, paragraph 12 of this section.

Except for utility fee revenue as discussed in the water and wastewater IIP sections, the City does not forecast excess revenue from other sources available for the IIP projects. Specifically, ad valorem property taxes generated by new growth is used to support general government operations. Highway user revenue funds are used toward street maintenance. The City uses excess construction sales tax to reimburse the impact fee funds for infrastructure credits required in a development agreement, and the infrastructure improvements resulting in credits are no longer included in the Infrastructure Improvement Plan. The excess construction sales tax revenue projected by the City is as follows:

Excess Sales Tax Revenue	Total
FY 2019	\$3,100,000
FY 2020	3,200,000
FY 2021	3,200,000
FY 2022	3,300,000
FY 2023	3,400,000
FY 2024	3,400,000

## SECTION 2. LAND USE ASSUMPTIONS (LUA)

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### GENERAL

Pursuant to ARS 9-463.05 Section T.6 "Land use assumptions" means projections of changes in land uses, densities, intensities and population for a specified service area over a period of at least ten years and pursuant to the general plan of the municipality. As part of the ARS 9-463.05 requirements outlined in Subsection D, the land use assumptions (LUA) must be adopted or updated through a public hearing at least thirty days prior to updating the DIFs. To accomplish this piece of the statute requirements, the City has engaged with Raftelis and their subconsultant Elliot D. Pollack & Company. Elliot D. Pollack & Company has developed a memorandum titled Forecast for LUA and dated as of November 6, 2017 (LUA Memo), which is provided in full in Appendix A. The LUA forecast includes fiscal years ending June 30, 2019 through 2028 (LUA Period). This section provides a summary of the discussion and forecast that has been relied upon in the development of the DIF amounts.

### GROWTH FORECAST

Since 2000 the residential population in Goodyear has grown at an average annual rate of 9.0%, which was heavily influenced by the development in years prior to 2010. Since 2010 the average annual rate of growth has been significantly lower at 3.0%. The resident population (excluding inmates at Perryville Prison) for FY 2018 is estimated to be 81,138 and is forecast to increase to 122,425 in FY 2028. The forecast increase in population of 41,287 residents represents a cumulative 50.9% increase, which will place a significant level of increased demand on the services provided by the City. Table 1, obtained from the LUA Memo, is provided to illustrate the forecasted annual population growth.

The existing resident population and jobs are as follows:

Description	North	South	Total
Population	66,155	14,983	81,138
Jobs	32,644	2,133	34,777
Total Service Units	98,799	17,116	115,915

**Table 1: LUA Memo Population Forecast**

<b>Population Forecast City of Goodyear</b>							
<b>Fiscal Year</b>	<b>Total population</b>			<b>Resident Population</b>			<b>Non- Resident Population</b>
	<b>Population</b>	<b>Change</b>	<b>Percent Change</b>	<b>Population</b>	<b>Change</b>	<b>Percent Change</b>	
2017	82,243			77,938			4,353
2018	85,530	3,287	4.0%	81,138	3,200	4.1%	4,440
2019	88,919	3,389	4.0%	84,438	3,300	4.1%	4,528
2020	92,409	3,490	3.9%	87,838	3,400	4.0%	4,619
2021	96,001	3,592	3.9%	91,338	3,500	4.0%	4,711
2022	99,695	3,694	3.8%	94,938	3,600	3.9%	4,805
2023	103,591	3,896	3.9%	98,738	3,800	4.0%	4,901
2024	107,989	4,398	4.2%	103,038	4,300	4.4%	4,999
2025	112,689	4,700	4.4%	107,638	4,600	4.5%	5,098
2026	117,491	4,802	4.3%	112,338	4,700	4.4%	5,200
2027	122,495	5,004	4.3%	117,238	4,900	4.4%	5,304
2028	127,789	5,294	4.3%	122,425	5,187	4.4%	5,410
<b>Totals FY19 - FY28</b>		<b>42,258</b>	<b>49.4%</b>		<b>41,287</b>	<b>50.9%</b>	

Note: Forecast is benchmarked to 2016 Arizona Office of Economic Opportunity population estimate  
Sources: Maricopa Association of Governments, AZ Office of Economic Opportunity

The non-residential growth forecast is measured in terms of square footage of development and has been broken down into four primary development types including the following:

- Retail/Commercial;
- Office Buildings;
- Industrial; and
- Institutional.

City Code, Article 9-8 provides the definitions for each of these non-residential land uses.

Table 2, obtained from the LUA Memo, is provided to show the growth in square footage by land use type over the 10-year forecast period.

**Table 2: LUA Memo Building Square Footage Forecast**

<b>Recommended Non-Residential Land Use Assumptions</b> <b>Forecasted Growth FY2019 - FY 2028 (Building Square Feet)</b> <b>City of Goodyear</b>					
Land Use	FY 2018 Totals	Forecasted FY19-FY28 Non-Residential Building SF			
		Totals	North	Central	South
<b>Retail</b>	<b>6,238,726</b>	<b>2,087,443</b>	<b>798,764</b>	<b>995,028</b>	<b>293,651</b>
<b>Office</b>	<b>1,748,324</b>	<b>855,560</b>	<b>385,002</b>	<b>421,060</b>	<b>49,498</b>
<b>Industrial</b>	<b>8,169,660</b>	<b>6,346,304</b>	<b>3,109,689</b>	<b>3,214,391</b>	<b>22,224</b>
<b>Institutional</b>					
Government	351,583	172,050	5,539	143,019	23,492
Hospitals	695,102	170,078	53,963	116,115	-
Prison	551,833	-	-	-	-
Churches	368,710	187,617	14,534	159,152	13,931
Spring Training Facility	181,862	-	-	-	-
YMCA	26,343	-	-	-	-
Schools	1,972,315	590,764	101,924	256,893	231,947
<b>Total Institutional</b>	<b>4,147,748</b>	<b>1,120,509</b>	<b>175,960</b>	<b>675,179</b>	<b>269,370</b>
<b>Total Building Area</b>	<b>20,304,458</b>	<b>10,409,816</b>	<b>4,469,415</b>	<b>5,305,658</b>	<b>634,743</b>

Additionally, the LUA Memo provides a forecast of the number of jobs generated from non-residential growth to serve as the basis for determining the potential demand for services by new non-residential development. The forecast of job growth is discussed later in this section.

## SERVICE AREAS

For the purposes of providing services, including building infrastructure and collecting DIFs, the City previously identified three service areas in 2014. These three service areas are utilized for the collection of existing 2014 DIFs and for determining when expansions of infrastructure to provide additional services are necessary. For all services besides police, the service areas will be consolidated to two areas, North and South, based on the nature of the services and the current developer reimbursement agreements. The geographic constraints of the two service areas are described below:

- North Goodyear (North) service area: Area in the City boundaries north of the Gila River; and Previously consisted of two separate service areas referred to as North and Central.
- South Goodyear (South) service area: Area in the City boundaries south of the Gila River to North of Pecos Road.

As previously mentioned, the service areas utilized for providing each service are not the same. To summarize how the municipal services are provided in the City, the following descriptions are provided:

- Fire Service: Two service areas.
- Police Service: One City-wide service area.
- Parks & Recreation Service: Two service areas.
- Streets Service: Two service areas.
- Water Service: Two service areas. For water, the North is limited to a small area north of I-10 to McDowell Road and then south to the Gila River, with the second service area being the South.
- Wastewater Service: Two service areas. The first includes areas north of the Gila River to and north of I-10 to Camelback Road between N Perryville Road and N Cotton Lane. Also, a small area north of I-10 extending from slightly west of N Estrella Pkwy to slightly east of N Bullard Ave. The second service area being the South.

The following figures provide maps of the various service areas in the City.





Figure 2: Non-Utility Development Impact Fee Service Area Map

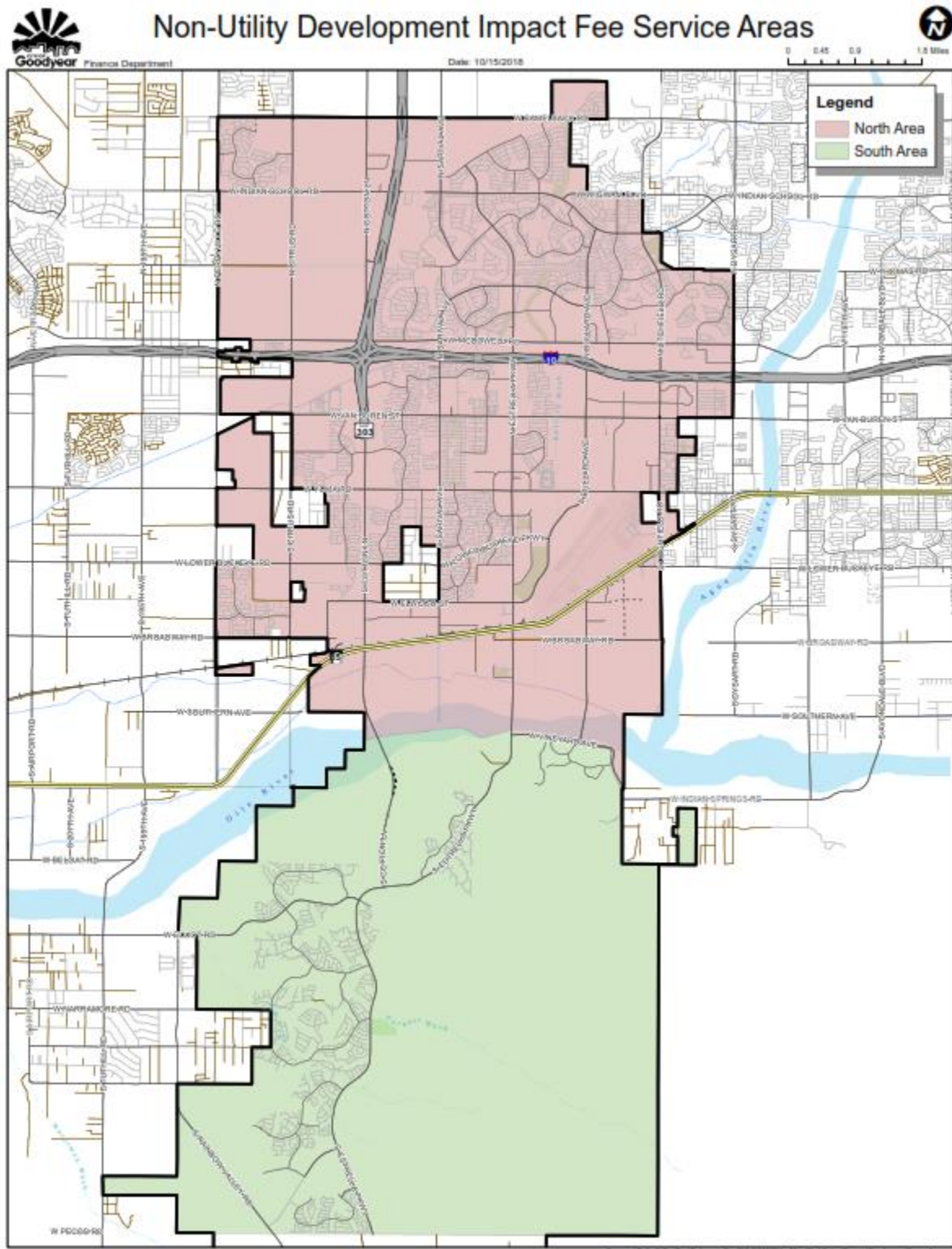
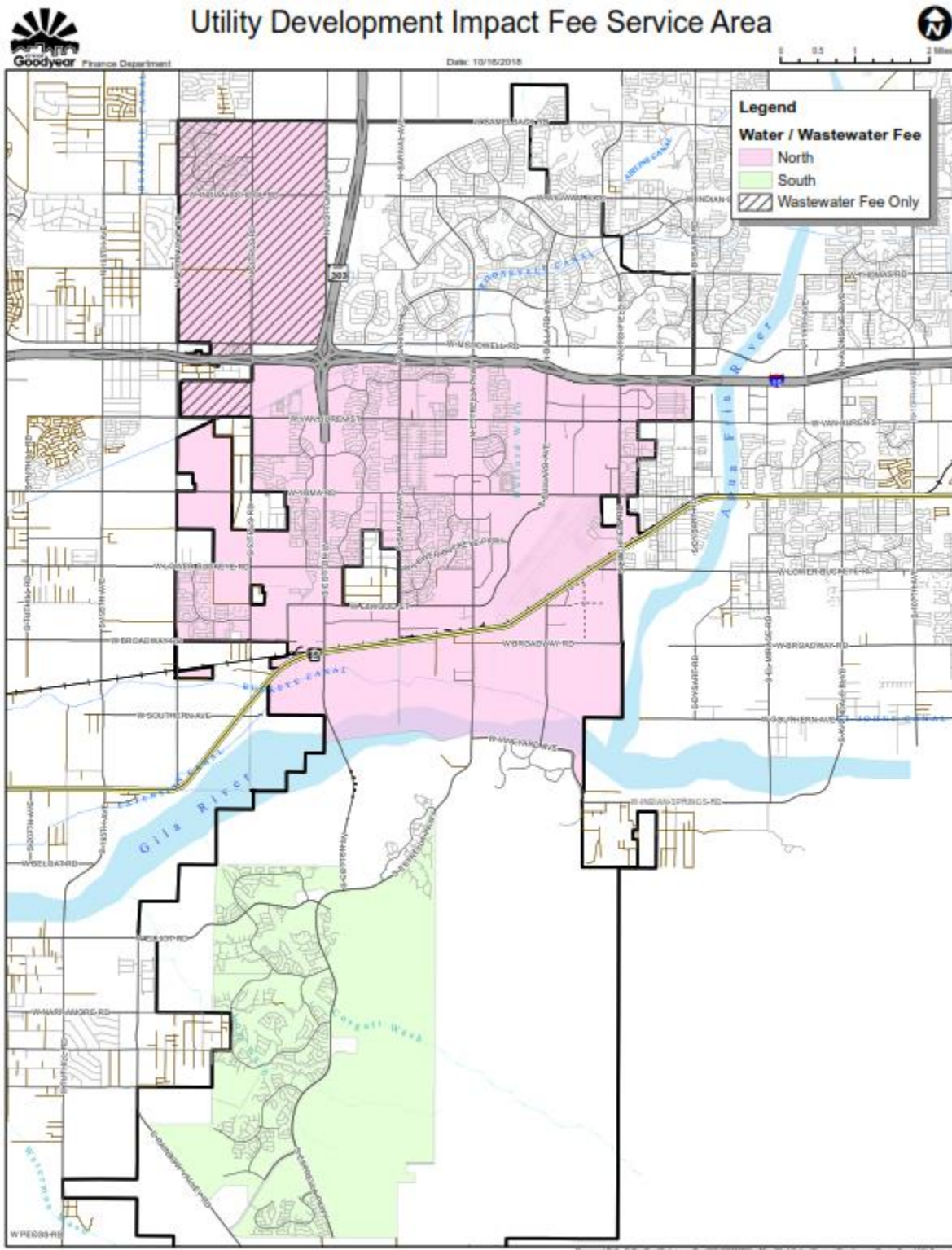


Figure 3: Utility Development Impact Fee Service Area Map





## SERVICE UNITS

To equitably recover costs from each of the six identified development types, it is necessary to determine the average number of service units each new development unit will provide. For example, the average single family home in the City will provide 2.73 residents. The residents per single family housing unit varies by service area as follows: North 2.62; Central 2.85; and South 2.64. Since the North service areas are combined, the weighted average residents per single family unit is 2.79 for combined North/Central (North) areas, which is slightly higher than the City average. The police fees are City-wide, therefore the average of 2.73 for the City is utilized. For the fire and parks fees, the figures by service area of 2.79 for the North and 2.64 for the South service areas will be used. As for the multi-family developments, it has been determined that on average the number of residents in these types of units is 75% of that in single family units based on the US Census American Community Survey 2015 (Tables DP04 & B25033). The 75% factor is applied consistently across all fee categories and is on average slightly less than the previous multi-family to single-family factor range of 70-93% in the previous IIP.

With this information, the following equivalent factors are identified for residential development in the City:

Description	Development Units	Equivalent Factor		
		City-wide	North	South
Single Family	Dwelling Unit	2.73	2.79	2.64
Multi-Family	Dwelling Unit	2.05	2.09	1.98

For the non-residential development, the potential demand placed on services is derived from the number of jobs (people) added to the City. However, the DIFs are not assessed to new development based on the number of jobs added, but rather based on the building size in square feet. Therefore, it is necessary to determine the average number of jobs added per square foot by the type of development to ensure equitable cost recovery from each. This method will allow the City to recover more DIF revenues from developments that will generate higher demands for service. Elliott D. Pollack & Company identified standard square feet per job amounts generally used for planning purposes. By using these figures and converting them into a Jobs per 1,000 sf factor, the impact fees are equitably applied per 1,000 sf of development for the various land uses.

**Table 3: Non-residential Service Unit Equivalent Factor**

Description	Square Feet per Job [1]	Jobs per 1,000 sf [2]
Industrial	900	1.11
Commercial	700	1.43
Institutional	350	2.86
Office/Other	400	2.50

[1] Provided by Elliott D. Pollack & Company.

[2] 1,000 sf divided by Square Feet per Job amount.

In the LUA Memo there are 15,437 jobs forecasted for the City over the LUA Period per MAG forecasts. With the assistance of Elliott D. Pollack & Company the job forecast from MAG has been re-allocated amongst the service areas based on the development projections as shown on Table 2. To calibrate the job growth with the projected development, the factors identified above on Table 3 are applied to the projected development by service area. This process is shown below on Table 4:

**Table 4: Re-aligned Job Forecast**

<u>Description</u>		<u>North Area</u> <u>Growth sf [1]</u>	<u>Central Area</u> <u>Growth sf [1]</u>	<u>South Area</u> <u>Growth sf [1]</u>	<u>Total sf</u> <u>Growth</u>
Industrial		3,110	3,214	22	6,346
Commercial		799	995	294	2,087
Institutional		176	675	269	1,121
Office/Other		385	421	49	856
Total sf Growth		4,469	5,306	635	10,410

<b>Job Growth:</b>	<u>Jobs per</u> <u>1,000 sf [2]</u>	<u>North Area</u> <u>Job Growth</u> <u>[3]</u>	<u>Central Area</u> <u>Job Growth</u> <u>[3]</u>	<u>South Area</u> <u>Job Growth</u> <u>[3]</u>	<u>Total Job</u> <u>Growth</u>
Industrial	1.11	3,452	3,568	25	7,045
Commercial	1.43	1,143	1,423	419	2,985
Institutional	2.86	504	1,931	770	3,205
Office/Other	2.50	963	1,053	123	2,139
Total Job Growth		6,062	7,975	1,337	15,374

[1] From Table 2.

[2] From Table 3.

[3] Growth in sf multiplied by jobs per 1,000 sf for each development type.

As shown on the table above, the total jobs forecasted over the LUA Period are 15,374, which is slightly lower than the MAG forecast of 15,437 due to rounding. The job forecast above will be used to calculate the additional capital needs for each service category in later sections.

### ***Summary of Service Unit Growth Forecast by Service Area***

As previously mentioned, growth in population and jobs provide the basis to forecast future demand of necessary services provided by the City. The population and job growth provide strong indicators of the level of services (LOS) that will be required for the different types of development. Therefore, population and jobs are designated as service units for this study and will be relied upon to determine the appropriate fee levels as well. Table 5 shows the North and Central service areas combined since they are largely one contiguous area for all necessary services.

**Table 5: Service Unit Growth by Service Area**

10 Year Projection	North	South	Total
Population	25,920	15,367	41,287
Jobs	14,037	1,337	15,374
Total Service Units	39,957	16,704	56,661

# SECTION 3. FIRE INFRASTRUCTURE IMPROVEMENTS

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## DESCRIPTION OF SERVICE

Pursuant to ARS 9-463.05 Section T.7(f) Fire facilities include all appurtenances, equipment and vehicles. Fire facilities do not include a facility or portion of a facility that is used to replace services that were once provided elsewhere in the municipality, vehicles and equipment used to provide administrative services, helicopters or airplanes or a facility that is used for training firefighters from more than one station or substation.

## FIRE DEVELOPMENT IMPACT FEE SERVICE AREAS

The City's existing fire DIFs have two geographic zones:

- North (between Gila River and northern boundaries of the City)
- South (between the Gila River and Pecos Road)

The City currently has four fire stations in the North area and one station in the South area as provided in more detail below, along with plans for additional facilities in each area to serve growth. Based on a review of the existing and future LOS by area outlined below, no changes to the two existing service areas are proposed at this time. In the future should development south of Pecos Road materialize, an additional third area may be needed.

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Section 3. Fire Infrastructure Improvements | 15



## EXISTING INVENTORY, LOS AND FUTURE PLAN

The fire DIF will primarily recover the cost to provide additional facilities and fire apparatus to the department, based on needs generated by growth in each service area. The infrastructure needs generated by growth have been separated into two distinct categories including facilities and fire apparatus. The future needs are forecast based on the existing LOS, which is typically represented by square feet of facilities or number of apparatus per 1,000 service units.

### *Service Units*

As described in Section 2. Land Use Assumptions, the growth in population and jobs in the City are referred to as service units for police and fire services. Each unit of growth for population and jobs are weighed the same. For example, each job added generates the same need for service as each person added to the population. The service units are used to first measure the existing LOS provided to development and then to forecast the needs required by future development based on providing a the same or a lower LOS. The table below provides summary information from Section 2, that will be referred to and relied upon throughout this section. As can be seen on this table, the North and South service areas have been separated.

**Table 6: Fire Service Units**

Description	Population	Jobs	Total
<b>North Service Area</b>			
Existing Service Units	66,155	32,644	98,799
10-Year Growth	25,920	14,037	39,957
% Change	39.2%	43.0%	40.4%
<b>South Service Area</b>			
Existing Service Units	14,983	2,133	17,116
10-Year Growth	15,367	1,337	16,704
% Change	102.6%	62.7%	97.6%

As shown above, there are currently 98,799 service units generating the need for fire services in the North service area and 17,116 in the South area. While the growth percentage in the South area is much higher than the North, it is indicative of the nature of this area. High growth is forecast and the need to maintain infrastructure standards is important. The needs for future infrastructure is outlined below.

### *Fire Facilities*

The fire department currently operates out of four primary facilities in the North area including stations 181, 183, 184 and 185. The South service area is currently served by station 182, with a second station anticipated to be needed soon. Additionally, there is a headquarters building used for support staff that benefits both service areas that has been allocated based on the number of existing square feet of building space. The LOS provided in each service area will be maintained throughout the LUA period

The table below shows the existing fire stations in each service area and the square feet of each utilized to serve existing development.

**Table 7: Existing Fire Facilities**

Description	North	South
Station 181 (sf)	12,000	
Station 182 (sf)		10,870
Station 183 (sf)	13,813	
Station 184 (sf)	12,773	
Station 185 (sf)	9,762	
Headquarters (sf) [1]	6,480	1,620
Total Square Feet	54,828	12,490

[1] Allocated 80% to the North service area and 20% to the South service area.

The table below provides the existing LOS of sf per service unit of building space provided to existing development by service area. This LOS will serve as the baseline amount to forecast the needs generated by future development.

**Table 8: Fire Building Space per Service Unit – FY 2018**

Description	North	South
Sf allocated to existing development	54,828	12,490
Existing Service Units	98,799	17,116
Sf per Service Unit	0.55	0.73

With a current LOS of 0.55 sf per Service Unit in the North service area and a projected growth of 39,957 Service Units, an additional 21,980 sf of fire stations will be supported by growth as show on Table 9 below. The City has identified the West Goodyear Fire station of 12,000 sf as a project in FY 2020. Since there will still be demand for an additional 9,980 sf beyond this station, a portion of a future station has been included as well. See the Fire IIP subsection for additional discussion on these facilities.

The South service area currently has a higher LOS of 0.73 sf per Service Unit. With forecast growth of 16,704 Service Units in the South, an additional 12,193 sf of building space over the next ten years can be funded by growth. However, a new fire station (EMR fire station) in the South service area is anticipated to be developed in FY 2019. With the addition of this fire station, which provides 12,000 sf of building space, the South area will have sufficiently built the necessary building infrastructure to support growth.

**Table 9: Facilities Required to Serve Growth**

Description	North	South
Facilities LOS per Service Unit	0.55 sf	0.73 sf
Growth in Service Units	39,957	16,704
Additional Facilities sf for Growth	21,980	12,193

***Fire Apparatus***

Another capital asset that can be funded through DIFs are fire apparatus. The approach used herein provides a review of the current number of apparatus, along with an allowance for reserve vehicles, to determine the LOS provided to existing development. Having a sufficient number of apparatus available for immediate response is a critical component to providing a high LOS in terms of response times and general safety for the community. Reserve apparatus were included in this calculation to ensure that for every five apparatus, there is a spare available should something happen to one of the full-time apparatus. This allowance is consistent with City standards and will allow the City to maintain this capital asset standard through the collection of DIF funds. The City currently maintains ten primary apparatus and two reserves. Table 10 provides the calculation of the existing LOS in terms of apparatus provided to existing development.

**Table 10: Fire Apparatus per 1,000 Service Units – FY 2018**

Description	Amount
Current Fire Apparatus	10
Allowance for Reserves	2
Total Fire Apparatus	12
Existing Service Units	115,915
Fire Apparatus per 1,000 Service Units	0.10

With a current LOS of 0.10 apparatus per 1,000 Service Units and a projected growth of 39,957 Service Units in the North and 16,704 in the South, the City will need to fund and acquire an additional six fire apparatus over the LUA Period to support growth and maintain the current LOS. The calculations to provide six fire apparatus over LUA Period years is shown on Table 11.

**Table 11: Fire Apparatus Required to Serve Growth**

Description	North	South
Apparatus per 1,000 Service Units	0.10	0.10
Growth in Service Units	39,957	16,704
Additional Apparatus for Growth	4	2

## FIRE IIP

The following tables summarize the necessary fire facility and apparatus improvements to serve growth over the planning period for each service area:

**Table 12: Fire Department IIP FY 2019 – FY 2028 – North**

Description	Year	Current Cost	Escalated Cost	Allocated Cost
West Goodyear Fire Station (12,000 sf)	FY 2020	\$5,778,100	\$6,105,000	\$6,105,000
Future Fire Station (9,980 sf) [1]	FY 2027	5,778,100	7,539,000	6,270,000
Fire Apparatus (4 Vehicles)	FY 2024	2,564,000	3,060,000	3,060,000
LUA/IIP Updates and DIF Audits		50,000	50,000	50,000
Existing DIF Balances				(2,420,000)
Total				\$13,065,000

[1] Current and Escalated cost amounts based on developing additional 12,000 sf fire station. However, as identified on Table 9 a total of 21,980 sf are needed to serve growth, 12,000 sf of which are being provided by the West Goodyear Fire station. Therefore, 83.2% (9,980/12,000) of a future 12,000 sf fire station is being allocated to growth during the LUA Period.

**Table 13: Fire Department IIP FY 2019 – FY 2028 – South**

Description	Year	Current Cost	Escalated Cost	Allocated Cost
Fire Stations (12,000 sf)	FY 2019	\$5,470,000	\$5,470,000	\$5,470,000
Fire Apparatus (2 Vehicles)	FY 2024	1,282,000	1,530,000	1,530,000
LUA/IIP Updates and DIF Audits		50,000	50,000	50,000
Existing DIF Balances				(905,000)
Total				\$6,145,000

## FIRE FEE CALCULATIONS

Based on the LOS analysis for growth and the improvements identified in the IIP to meet the demands of growth, the following fire DIFs are calculated. First the cost per service unit is calculated, then the DIF level for each land use is identified pursuant to the service units added.

**Table 14: Calculated Fire Cost per Service Unit**

Description	North	South
Escalated IIP Costs	\$13,065,000	\$6,145,000
Service Units	39,957	16,704
Cost per Service Unit	\$326.98	\$367.88

Using the cost per service unit calculated above for the North and South areas respectively, and applying it to each land use based on the proposed equivalent factors derived in Section 2. Land Use Assumptions, the following fee levels are calculated. The calculated fees have been rounded down to the nearest dollar.

**Table 15: Calculated Fire Fee Levels – North**

Category of Development	Development Unit	Proposed Equivalent Factor	8.1.14 Fee	Calculated Fee	Difference \$
Residential Single Unit	Dwelling Unit	2.79	\$399	\$911	\$512
Residential 2+ Units	Dwelling Unit	2.09	\$310	\$682	\$372
Industrial	1,000 sf	1.11	\$34	\$362	\$328
Commercial	1,000 sf	1.43	\$110	\$467	\$357
Institutional	1,000 sf	2.86	\$48	\$934	\$886
Office and Other Services	1,000 sf	2.50	\$163	\$816	\$653

**Table 16: Calculated Fire Fee Levels – South**

Category of Development	Development Unit	Proposed Equivalent Factor	8.1.14 Fee	Calculated Fee	Difference \$
Residential Single Unit	Dwelling Unit	2.64	\$719	\$971	\$252
Residential 2+ Units	Dwelling Unit	1.98	\$559	\$728	\$169
Industrial	1,000 sf	1.11	\$349	\$408	\$59
Commercial	1,000 sf	1.43	\$1,103	\$526	(\$577)
Institutional	1,000 sf	2.86	\$482	\$1,052	\$570
Office and Other Services	1,000 sf	2.50	\$1,635	\$919	(\$716)

As shown above, the fee levels are increasing for a majority of the development categories in both service areas. The exception being the Commercial and Office and Other Services in the South. The primary influence on the fee increases are the cost escalations.

## REVENUE FORECAST

The fire revenue forecast is shown on the tables below.

**Table 17: North Fire Revenue Forecast**

Development Units	10-yr Increase	Fire DIF	Revenue Forecast
Single Family (Units)	7,968	\$911	\$7,258,848
2+ Units Residential (Units)	1,777	\$682	1,211,914
Industrial (1,000 sf)	6,324	\$362	2,289,317
Commercial (1,000 sf)	1,794	\$467	837,701
Institutional (1,000 sf)	851	\$934	794,963
Office & Other Services (1,000 sf)	806	\$816	657,746
<b>Total</b>	<b>19,520</b>		<b>\$13,050,489</b>

Note: The revenue forecast is based on the 10-year service unit increase multiplied by the calculated DIF. Actual revenue collections will vary due to several factors including the statutory waiting period on implementing fees.

**Table 18: South Fire Revenue Forecast**

Development Units	10-yr Increase	Fire DIF	Revenue Forecast
Single Family (Units)	5,548	\$971	\$5,387,108
2+ Units Residential (Units)	350	\$728	254,800
Industrial (1,000 sf)	22	\$408	9,068
Commercial (1,000 sf)	294	\$526	154,461
Institutional (1,000 sf)	269	\$1,052	283,378
Office & Other Services (1,000 sf)	49	\$919	45,489
<b>Total</b>	<b>6,533</b>		<b>\$6,134,303</b>

Note: The revenue forecast is based on the 10-year service unit increase multiplied by the calculated DIF. Actual revenue collections will vary due to several factors including the statutory waiting period on implementing fees.

# SECTION 4. POLICE INFRASTRUCTURE IMPROVEMENTS

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## DESCRIPTION OF SERVICE

Pursuant to ARS 9-463.05.T.7(f) Police facilities include all appurtenances, equipment and vehicles. Police facilities do not include a facility or portion of a facility that is used to replace services that were once provided elsewhere in the municipality, vehicles and equipment used to provide administrative services, helicopters, airplanes or a facility that is used for training officers from more than one station or substation.

The police department is responsible for providing constant and reliable service throughout the City limits. To support the current 57 sworn officers and 3 police assistants, the City maintains a staff including the Chief of Police, Deputy Chief, a Criminal Investigations Division, Administrative Services Division, Telecommunications Division and a Specialized Patrol Division. In order to provide these services as well as keep officers on patrol, the City is responsible for developing/purchasing office space for the sworn officers as well as the support staff and for purchasing patrol vehicles for sworn officers. The DIF will provide the City funding to maintain a consistent LOS of building space, with certain provisions, and patrol vehicles to future development as is currently provided to existing development. The LOS will be described further in this section.

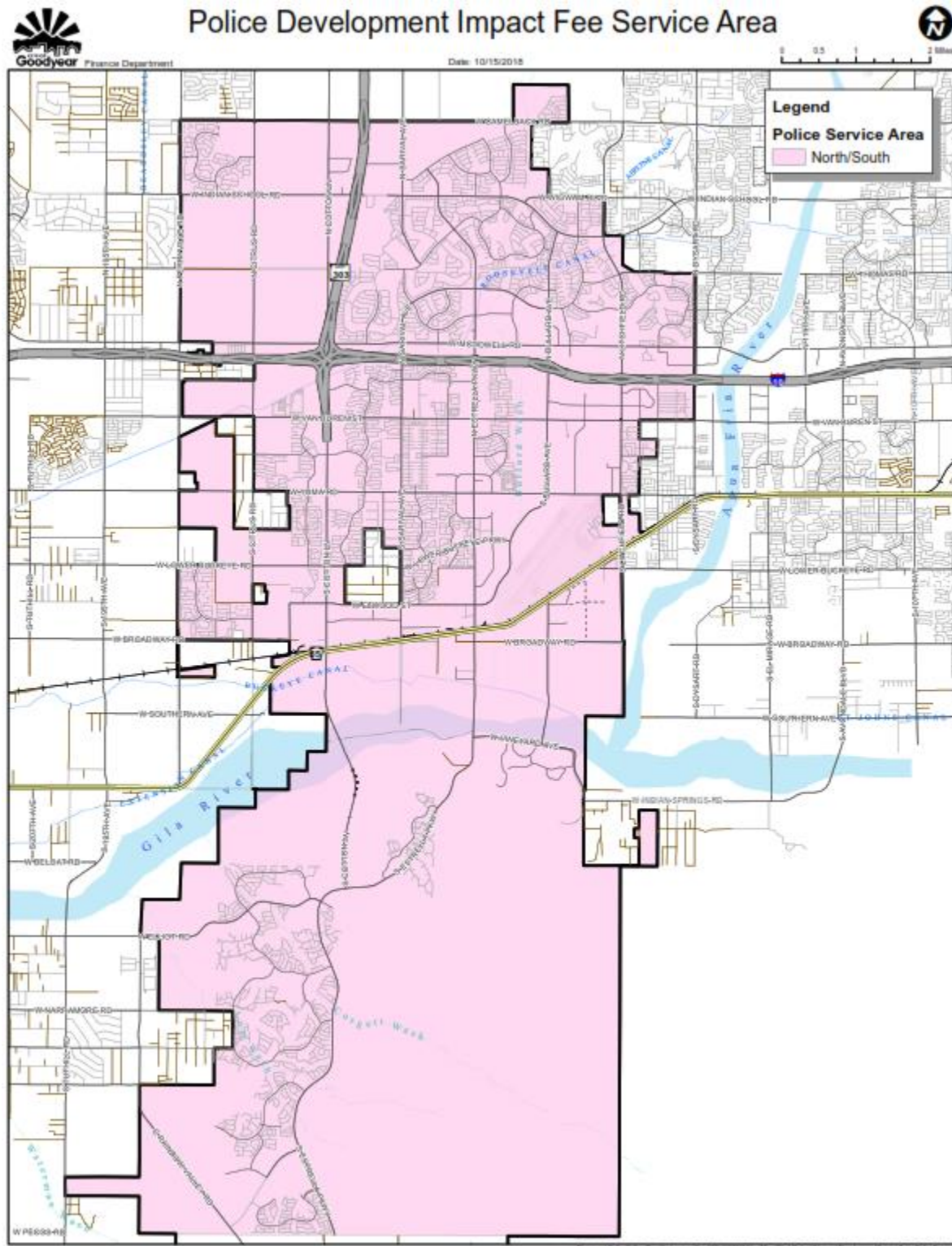
## POLICE SERVICE AREA

Since the primary areas developed in the City are from the Northern border and south to Pecos Road, this has been identified as the service area. These developed areas receive direct benefit from the presence of the police force. This service area remains unchanged from the previous LUA and IIP, and provides a uniform DIF across the City. With the understanding that the police officers typically provide service to areas of the City based on patrol rotations, and that placement of police facilities are not entirely dependent on providing service to specific areas of the City (for example, fire stations serve smaller areas), it is reasonable to calculate police DIFs based on a City-wide service area.

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### Figure 5: Police Development Impact Fee Service Area Map



Source: City of Goodyear



## EXISTING INVENTORY, LOS AND FUTURE PLAN

The police DIF will primarily recover the cost to provide additional facilities and patrol vehicles to the department, based on needs generated by growth. The infrastructure needs generated by growth have been separated into three distinct categories including i) facilities; ii) police vehicles; and iii) radio tower expansion. The future needs are forecast based on the existing LOS, which is typically represented by square feet of facilities or number of vehicles per 1,000 service units.

### *Service Units*

As described in Section 2. Land Use Assumptions, the growth in population and jobs in the City are referred to as service units for police and fire services. Each unit of growth for population and jobs are weighed the same. For example, each job added generates the same need for service as each person added to the population. The service units are used to first measure the existing LOS provided to development and then to forecast the needs required by future development based on providing a certain LOS. The table below provides summary information from Section 2, that will be referred to and relied upon throughout this section.

**Table 19: Police Service Units**

Description	Population	Jobs	Total
Existing Service Units	81,138	34,777	115,915
10-Year Growth	41,287	15,374	56,661
% Change	50.9%	44.2%	48.9%

As shown above, there are currently 115,915 service units generating the need for police services in the City. The amount is forecast to grow by 48.9%, equal to 56,661 service units. This growth rate will necessitate a significant investment in infrastructure, as discussed below.

### *Police Facilities*

In January 2017 the police department completed the first phase of their headquarters building. The total square footage of this improvement is 21,000 sf with a cost of \$8,219,000 including construction and furnishings. With the addition of this first phase of expansion, the City was able to add approximately 12,000 sf of space while the other 9,000 sf provided for a replacement of Station 103 and administrative space, which has been excluded from the LOS calculations.

The table below provides the other existing police stations and square feet utilized to serve existing development.

**Table 20: Police Facilities Service Existing Development**

Description	Square Feet
GMC E-101 (PD half only)	7,300
Estrella Substation	5,000
Telecom [1]	6,750
PD Ops Phase I [2]	20,170
Total	39,220

[1] Telecom has total 10,000 sf. 6,750sf is allocated to existing development based on amount currently utilized.

[2] Amount excludes 830 sf that will be reimbursed from future development.

The table below provides the existing LOS of sf per service unit of building space provided to existing development. This LOS will serve as the baseline amount to forecast the needs generated by future development.

**Table 21: Police Building Space per Service Unit – FY 2018**

Description	Amount
Sf allocated to existing development	39,220
Existing Service Units	115,915
Sf per Service Unit	0.33

With a current LOS of 0.33 sf per Service Unit and projected growth of 56,661 Service Units over the LUA Period, the City will need to fund and construct an additional 18,698 sf of building space over the LUA Period to support growth and maintain the current LOS. The 18,698 sf calculation is provided on Table 22.

**Table 22: Facilities Required to Serve Growth**

Description	Amount
Facilities LOS per Service Unit	0.33 sf
Growth in Service Units	56,661
Additional Facilities sf for Growth	18,698

The City currently has plans to develop Police Building Phase II of an additional 21,000 sf, beginning in FY 2020. 12,300 sf of this facility has been designated as replacement of existing facilities including training space, administrative space and other current office space. The remaining 8,700 sf will be recovered from growth.

### ***Patrol Vehicles***

Another capital asset that can be funded through DIFs is equipped police cars. The approach used herein provides a review of the current number of sworn officers and police assistants with patrol functions, along with an allowance for reserve vehicles, to determine the LOS provided to existing

development. Having a sufficient number of officers on patrol is a critical component to providing a high LOS in terms of response times and general safety for the community. Reserve vehicles were included in this calculation to ensure that for every 10 officers on patrol, there is a spare vehicle available should something happen to one of the full-time vehicles. This allowance is consistent with City standards and will allow them to maintain this capital asset standard through the collection of DIF funds. The number of sworn officers and police assistants on regular patrol in FY 2018 is 60, consisting of 57 sworn officers and 3 police assistants. The table below provides the calculation of the existing LOS in terms of patrol vehicles provided to existing development.

**Table 23: Patrol Vehicles per 1,000 Service Units – FY 2018**

Description	Amount
Current Patrol Officers [1]	60
Allowance for Reserve Vehicles [2]	6
Total Patrol Vehicles	66
Existing Service Units	115,915
Patrol Vehicles per 1,000 Service Units	0.57

[1] Each officer is provided a designated patrol vehicle.

[2] Police department has established a 10% reserve vehicle factor to maintain a high quality of service.

With a current LOS of 0.57 patrol vehicles per 1,000 Service Units and projected growth of 56,661 Service Units over the LUA Period, the City will need to fund and acquire 33 patrol vehicles over the LUA Period to support growth and maintain the current LOS. The 33 patrol vehicles calculation is provided on the table below.

**Table 24: Patrol Vehicles Required to Serve Growth**

Description	Amount
Patrol Vehicles per 1,000 Service Units	0.57 sf
Growth in Service Units	56,661
Additional Patrol Vehicles for Growth	33

### ***Radio Tower Improvements***

In order to effectively communicate and respond to incidents, the police department relies on radios. There are currently two strategically located radio towers that allow for radio signal to a large majority of existing development. In some areas to the very south borders of the DIF service area, the signal can become weakened. However, the primary issue the police department is preparing for is a limitation on radio traffic volume (i.e., the number of radio calls that can be made simultaneously). As population and job growth continues in the City, the radios are becoming increasingly congested. With the current state of congestion, and Service Units anticipated to grow by almost 50% over the next 10-years, the police department will be able to add a third radio tower to the network that will increase the capacity.

## POLICE IIP

The following table summarizes the necessary police facility improvements to serve growth over the planning period:

**Table 25: Police Department IIP FY 2019 – FY 2028**

Description	Attributes	Year	Current Cost	Escalated Cost
Building Space [1]	18,698 sf	FY 2020 & FY 2025	\$8,956,000	\$10,184,000
Police Vehicles	33	Ongoing	1,591,000	1,879,000
Radio Tower Expansion	1 Tower	FY 2025	4,000,000	4,919,000
LUA/IIP Updates and DIF Audits			50,000	50,000
Total			\$14,597,000	\$17,032,000

[1] Police Building Phase II scheduled for FY 2020 construction, of which 8,700 sf is allocated to growth during the LUA Period. 830 sf is scheduled as an ongoing reimbursement to the General Fund from future DIFs as noted on Table 20, since this facility was advance funded. The remaining 9,168 sf needed to serve growth is estimated to be added in FY 2025.

## POLICE FEE CALCULATIONS

Based on the LOS analysis for growth and the improvements identified in the IIP to meet the demands of growth, the following police DIFs are calculated. First the cost per service unit is calculated, then the DIF level for each land use is identified pursuant to the service units added.

**Table 26: Calculated Police Cost per Service Unit**

Description	Amount
Escalated IIP Costs	\$17,032,000
Service Unit Growth	56,661
Cost per Service Unit	\$300.59

Using the Cost per Service Unit calculated above and applying it to each land use based on the proposed equivalent factors derived in Section 2. Land Use Assumptions, the following fee levels are calculated. The calculated fees have been rounded down to the nearest dollar.

**Table 27: Calculated Police Fee Levels**

Category of Development	Development Unit	Proposed Equivalent Factor	8.1.14 Fee	Calculated Fee	Difference \$
Residential Single Unit	Dwelling Unit	2.73	\$379	\$820	\$441
Residential 2+ Units	Dwelling Unit	2.05	\$294	\$616	\$322
Industrial	1,000 sf	1.11	\$30	\$333	\$303
Commercial	1,000 sf	1.43	\$238	\$429	\$191
Institutional	1,000 sf	2.86	\$86	\$859	\$773
Office and Other Services	1,000 sf	2.50	\$93	\$751	\$658

As shown on the table above, the fee levels are increasing for each of the development categories. The primary influence on the fee increases are the cost escalations and the radio tower.

## REVENUE FORECAST

The police revenue forecast is shown on the table below.

**Table 28: Police Revenue Forecast**

Development Units	10-yr Increase	Police DIF	Revenue Forecast
Single Family (Units)	13,516	\$820	\$11,083,120
2+ Units Residential (Units)	2,127	\$616	1,310,232
Industrial (1,000 sf)	6,346	\$333	2,113,319
Commercial (1,000 sf)	2,087	\$429	895,513
Institutional (1,000 sf)	1,121	\$859	962,518
Office & Other Services (1,000 sf)	856	\$751	642,526
Total	26,053		\$17,007,227

Note: The revenue forecast is based on the 10-year service unit increase multiplied by the calculated DIF. Actual revenue collections will vary due to several factors including the statutory waiting period on implementing fees.

# SECTION 5. STREETS INFRASTRUCTURE IMPROVEMENTS

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## DESCRIPTION OF SERVICE

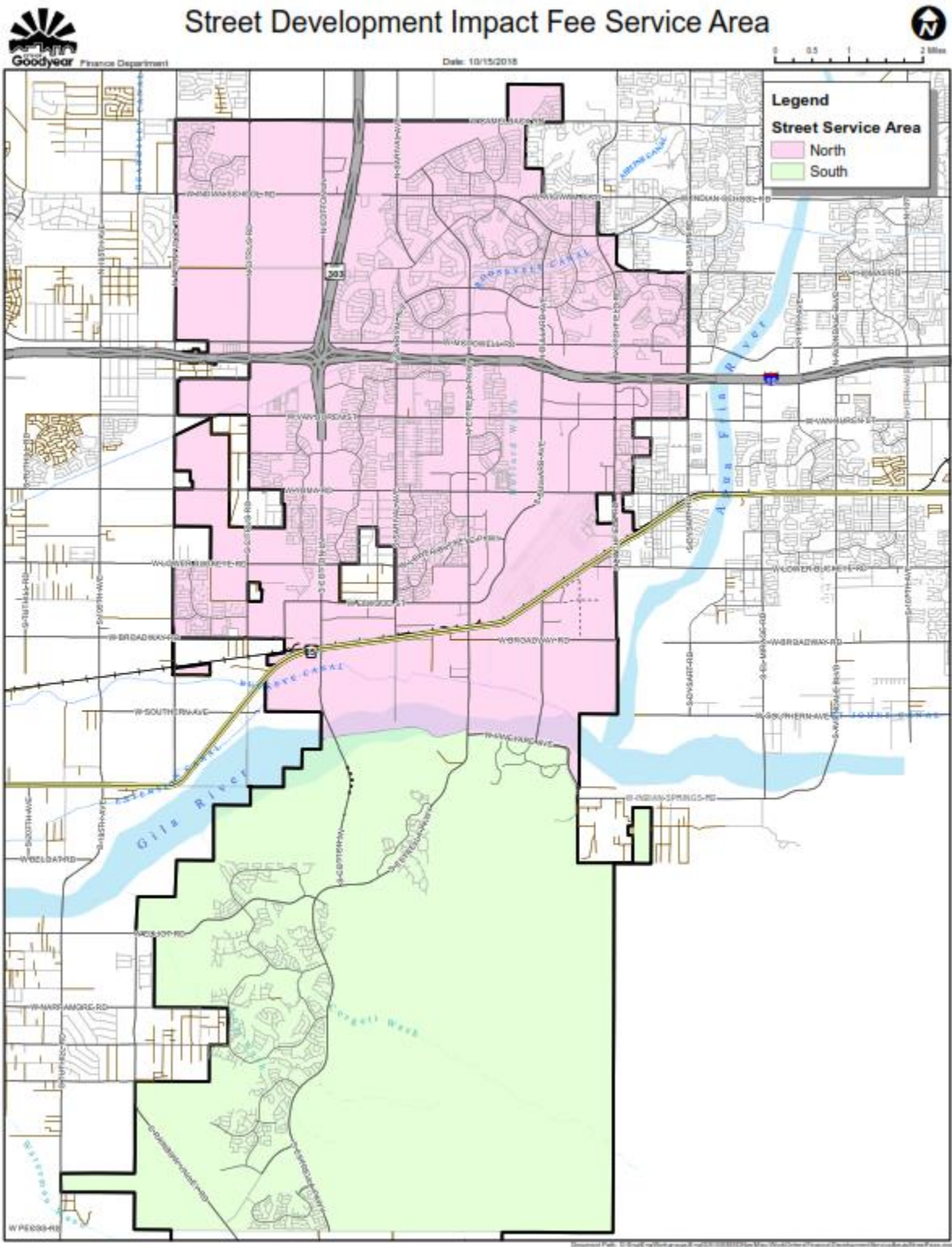
The City is responsible for managing and maintaining the network of streets to accommodate traffic. In the 2014 Transportation Master Plan it was identified that the City was targeting a minimum level of service of grade D. For the use of DIF funds, it has been identified that the City will generally focus on increasing arterial roads to four or six-lane arterials and developing new traffic signalization at arterial/arterial intersections in those areas where growth is occurring. Arterials are intended to serve a large amount of traffic and will benefit users across each service area, as opposed to local collector roads that primarily serve certain developments. As will be discussed in this section, the IIP projects will include projects increasing the number of lanes on arterial roads and the necessary traffic signalization identified over the next 10-years.

## SERVICE AREAS

The streets IIP was previously divided into three service areas including the North, Central and South. Due to the nature of the development and how improvements are funded in the South, this area will be kept separate from the other areas for the foreseeable future. However, due to the similarities and congruent nature of the North and Central service areas, they have been combined for this update.

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Figure 6: Streets Development Impact Fee Service Area Map



Source: City of Goodyear



## EXISTING ROAD INVENTORY AND LEVEL OF SERVICE

### *Existing Inventory of Four and Six-lane Arterials*

Since the previous plan primarily addresses the addition of six-lane arterials, Raftelis is providing an analysis to compare the approximate existing LOS for six-lane arterials to that of the prior plan. However, the updated plan is focused on providing four and six-lane arterials roads the City has identified as necessary to support growth over the LUA Period.

To derive the approximate number of lane miles of six-lane arterial roads in the City, multiple data sources were relied upon. The 2014 Transportation Master Plan identified the length in miles for the various types of roads in the City of 180 for arterials. The length is not the same as lane miles since it does not account for the number of lanes for each classification and certain classifications can have four and six lane widths. However, this information is useful in determining the approximate ratio of six-lane arterials to four-lane arterials. The two categories of roads from Table 3-3 in the 2014 Master Plan that include 6-lane arterials are the Scenic Arterials and Major Arterials. Assuming one-half of the Scenic Arterials and all the Major Arterials are six-lanes yields 24% of the total 180 miles. The City has provided the current lane miles of arterials for four and six lanes of 378 lane miles. By applying the 24% factor to the 378 current lane miles of four and six-lane arterials yields approximately 91 lane miles of six-lane arterials. The remaining 76%, or 287 lane miles, are four-lane arterials.

The City will focus on providing the necessary four and six-lane arterials to serve growth needs over the next ten years. This will change the basis for the infrastructure LOS since there are many more four lane arterials as compared to six lane arterials.

Using the minimum standards for congestion outlined in the 2014 Transportation Master Plan of LOS D, the capacity of 9,000 vehicle capacity per day per lane can be utilized. Multiplying the current lane miles of 378 by the 9,000 vehicle capacity per lane per day provides total current lane miles of capacity of 3,402,000. This figure will be compared to the number of trips generated by existing development to determine the average trip length taken, which will then be used to determine the Vehicle Miles Travelled (VMT).

### *Existing Demand*

To determine the existing traffic demand, which will be used to calculate the existing LOS, trips and vehicle miles travelled or VMT are calculated for each type of development using factors derived from various sources. Several factors are used to determine the trips and VMT for each type of development including the average weekday trip ends, trip adjustment factor, trip length factor and the average trip length. The average weekday trip ends for each land use are obtained from the most recent version of the Institute of Transportation Engineers (ITE) Manual 10<sup>th</sup> Edition.

The trip adjustment factor accounts for commuting patterns in Goodyear and pass-by trips. The standard, unweighted approach, assigns 50% to each of the average weekday trip end factors for each development type to account for one-way destination trips. However, certain types of



development are subject to different types of traffic patterns, so additional weighting has been identified. According to the OnTheMap tool, which is a web application created by the US Census Bureau, 92% of the residents living in Goodyear are employed outside of City limits. Additionally, the 2017 National Household Travel Survey (2017 NHTS) identifies that weekday work trips are typically 30% of all outbound trips (i.e., a portion of the 50% of trips normally not counted for residential development will be counted since travel is occurring on Goodyear roads, but the trip end is not within Goodyear). Using these factors, it is calculated that an additional 14% ( $50\% \times 92\% \times 30\%$ ) of trips will be allocated to residential development, bringing the total to 64%.

For commercial development, the trip adjustment factors, are weighted based on traffic studies from the ITE Manual 10<sup>th</sup> Edition. These studies indicate that on average 34% of vehicles entering shopping centers are passing by with the intent of arriving at some other primary destination. Therefore, the remaining 66% of the trip ends (i.e., 50% of all trips) will be assigned to the commercial and institutional land uses. This calculation yields a reduction from the standard 50% to 33% ( $66\% \times 50\%$ ).

To determine the trips generated by each type of development, the average weekday trip ends and the trip adjustment factors are used and applied to the number of units for each type of development. The table below is provided to identify the current number of trips generated by existing development.

**Table 29: Existing Development Trip Generation**

Description	ITE Code	Development Unit Type	Units (A)	Avg. Weekday Trip Ends [1] (B)	Trip Adjustment Factor (C)	Daily Trips Generated $A \times B \times C = (D)$
Single Family	210	Dwelling Units	27,180	9.44	64.0%	164,211
Multi-family	220	Dwelling Units	2,105	7.32	64.0%	9,862
Industrial	150	1,000 ft <sup>2</sup>	8,170	1.74	50.0%	7,108
Commercial	820	1,000 ft <sup>2</sup>	6,239	37.75	33.0%	77,719
Institutional	520	1,000 ft <sup>2</sup>	4,148	19.52	33.0%	26,718
Office/Other	710	1,000 ft <sup>2</sup>	1,748	9.74	50.0%	8,514
Total Trips Generated						294,132

[1] Figures derived from the ITE Manual, 10<sup>th</sup> Edition.

By taking the total lane miles of capacity of 3,402,000 and dividing by the number of daily trips generated by existing development of 294,132, an average trip length of 11.57 miles is developed as shown on the table below.

Description	Amount
Total Lane Miles of Capacity	3,402,000
Daily Trips Generated	294,132
Average Trip Length	11.57

This average trip length figure, in conjunction with the trip length weighting factor for each type of development, will be utilized to determine the VMT generated by existing development. The trip length weighting factor for each land use is derived from the 2017 NHTS. On average, residential trips including home-based work trips, social and recreational purposes, are 114% of the average trip length. For Commercial development, the shopping trips are generally 75% of the average trip length. The other non-residential land uses typically generate trips that are 90% of the average. The table below is provided to show the calculation of VMT for each type of development.

**Table 30: Existing Development VMT**

Description	Daily Trips Generated (D)	Trip Length Factor (E)	Average Trip Length (F)	VMT $D \times E \times F = (G)$	VMT per Development Unit $B \times C \times E \times F = (H)$
Single Family	164,211	114%	11.57	2,165,910	79.69
Multi-family	9,862	114%	11.57	130,078	61.79
Industrial	7,108	90%	11.57	74,016	9.06
Commercial	77,719	75%	11.57	674,407	108.10
Institutional	26,718	90%	11.57	278,215	67.08
Office/Other	8,514	90%	11.57	88,656	50.71
Total	294,132			3,411,282	

### Existing LOS

To determine the existing LOS provided in the City, the 378 arterial lane miles are divided by the number of ten thousand VMT (VMT/10,000). The VMT are first divided by 10,000 to be on a similar numerical basis as the number of lane miles. The calculation of the current LOS is as follows: 378 arterial lane miles divided by (3,411,282 VMT divided by 10,000) equals 1.11 lane miles per 10,000 VMT. As a standard going forward, the IIP and DIF calculations will not provide greater than 1.11 lane miles of arterials roads for each additional 10,000 VMT forecasted.

## IIP AND DEMAND GROWTH

Using the growth outlined in the LUA for each of the service areas, the following subsections provide the demand forecast over the LUA Period along with the maximum lane mile improvements based on the LOS standards. Additionally, the IIP projects for each service area are provided and lead to the calculation of the DIFs. The projects included in the IIP are driven by growth, so costs have been fully allocated over the 10-year period. As will be discussed below, the LOS of 1.11 lane miles per 10,000 VMT is not fully being met indicating the City is not exceeding the LOS provided to existing development. The lane miles provided in the plan will be compared to the lane miles allowable per LOS standards to show this difference.

### North Service Area

The following tables provide the growth in development units for the North service area along with the forecast of VMT generated.

**Table 31: North Service Area Streets Growth**

Description	Development Unit Type	10-Year LUA Growth	VMT per Unit	VMT
Single Family	Dwelling Units	7,968	79.69	634,970
Multi-family	Dwelling Units	1,777	61.79	109,801
Industrial	1,000 ft <sup>2</sup>	6,324	9.06	57,296
Commercial	1,000 ft <sup>2</sup>	1,794	108.10	193,909
Institutional	1,000 ft <sup>2</sup>	851	67.08	57,094
Office/Other	1,000 ft <sup>2</sup>	806	50.71	40,875
Total VMT				1,093,945

As shown on the table above, the growth in the North service area is largely comprised of residential development and industrial development. With a current LOS of 1.11 lane miles per 10,000 VMT and a projected growth of 1,093,945 VMT over the LUA Period, the City could fund and develop a maximum of 121.2 lane miles of arterial streets over the LUA Period to maintain the current LOS.

The City has identified 7 projects for the IIP that include intersection improvements and lane widening projects for four-lane arterials and six-lane arterials. These projects are primarily driven by the growth identified in the 10-year LUA forecast.

**Table 32: North Area Streets IIP Projects**

Description	Lane Miles	Current Cost	Year	Escalated Cost
I-1 Pebble Creek Parkway and Interstate 10 Intersection	0.33	\$2,797,475	2019	\$2,882,000
McDowell Road and Citrus Road Intersection	0.33	2,750,833	2020	2,919,000
Sarival Avenue (West Half), Yuma Rd to Elwood St	1.47	9,647,135	2022	10,858,000
Estrella Pkwy (Outside NB lane), MC85 to Elwood St	0.32	480,245	2026	609,000
Citrus Rd, I-10 (End ADOT Impr.) to Thomas Rd.	0.00	14,605,415	2024	17,440,000
I-5 Lower Buckeye Rd and Sarival Avenue Intersection [1]	0.05	671,981	2022	756,750
R-4 Yuma Road, Canyon Trails to Sarival Avenue	1.20	3,546,179	2024	4,235,000
Total Projects Amount	3.69	\$34,499,262		\$39,699,750
LUA/IIP Updates and DIF Audits				50,000
Existing DIF Balances				(3,097,000)
				\$36,652,750

[1] Project shown at 75% of total cost. City has identified that a developer agreement will provide 25% of the total project cost.

As shown above, 3.69 lane miles of improvements have been identified with a total cost of \$39,699,750. Additionally, included in the table above are 3 intersection improvement projects. After adding the cost of future LUA and IIP studies and reducing for the existing DIF balances, the total amount of project costs in the IIP is \$36,652,750.

### ***Streets North Fee Calculations***

Based on the LOS analysis for growth and the improvements identified in the IIP to meet the demands of growth, the following streets DIFs are calculated. First the cost per VMT is calculated, then the DIF level for each land use is identified pursuant to the service units added.

**Table 33: Calculated Streets North Cost per Service Unit**

Description	Amount
Escalated IIP Costs	\$36,652,750
VMT Growth	1,093,945
Cost per VMT	\$33.50

Using the Cost per VMT calculated above and applying it to each land use based on the VMT per service unit from Table 31, the following fee levels are calculated. The calculated fees have been rounded down to the nearest dollar.

**Table 34: Calculated Streets North Fee Levels**

Category of Development	Development Unit	VMT per Development Unit	8.1.14 Fee	Calculated Fee	Difference \$
Residential Single Unit	Dwelling Unit	79.69	\$1,743	\$2,669	\$926
Residential 2+ Units	Dwelling Unit	61.79	\$1,217	\$2,069	\$852
Industrial	1,000 sf	9.06	\$307	\$303	(\$4)
Commercial	1,000 sf	108.10	\$2,198	\$3,621	\$1,423
Institutional	1,000 sf	67.08	\$878	\$2,247	\$1,369
Office and Other Services	1,000 sf	50.71	\$951	\$1,698	\$747

As shown on the table above, the fee levels are increasing for each of the development categories, with the exception of Industrial. The primary influence on the fee increases are the cost escalations and the inclusion of the full cost of street improvements.

### ***South Service Area***

The following tables provides the growth in units for the South service area along with the forecast of VMT generated.

**Table 35: South Service Area Streets Growth**

Description	Development Unit Type	10-Year LUA Growth	VTM per Development Unit	VTM
Single Family	Dwelling Units	5,548	79.69	442,120
Multi-family	Dwelling Units	350	61.79	21,627
Industrial	1,000 ft <sup>2</sup>	22	9.06	201
Commercial	1,000 ft <sup>2</sup>	294	108.10	31,744
Institutional	1,000 ft <sup>2</sup>	269	67.08	18,069
Office/Other	1,000 ft <sup>2</sup>	49	50.71	2,510
Total VMT				516,271

As shown on the table above, the growth in the South service area is largely comprised of residential development. With a current LOS of 1.11 lane miles per 10,000 VMT and a projected growth of 516,271 VMT over the LUA Period, the City will need to fund and develop an additional 57.2 lane miles of arterial streets over the LUA Period to maintain the current LOS. As shown below, the IIP projects provide 1.55 lane miles of arterials.

The City has identified 2 projects for the IIP that includes expansion of the Estrella Parkway Bridge and an intersection improvement at Estrella Parkway and Cotton Lane. These projects are primarily driven by the existing traffic demands generated by growth identified in the 10-year LUA forecast.

**Table 36: South Area Streets IIP Projects**

Description	Lane Miles	Current Cost	Year	Escalated Cost
I-8 Estrella Parkway and Cotton Lane Intersection	0.88	\$5,124,789	2021	\$5,600,000
R-2 Estrella Parkway, Vineyard Avenue to MC 85 [1]	0.67	9,560,000	2024	11,415,000
R-2 Financing Costs [2]		4,514,200		4,514,200
Total Projects Amount	1.55	\$19,198,989		\$21,529,200
LUA/IIP Updates and DIF Audits				50,000
Total				\$21,579,200

[1] Total current project cost is \$28,678,966 but due to uncertainty of the utilization of this bridge, 33.3% or approximately 1/3 has been included for recovery from growth during the LUA Period. The 33.3% is based on the assumption that the bridge will service growth over the next 30-years (LUA Period represents 10/30 years). Contributing factors to the level of uncertainty include the recently completed 303 interchange on the west side of the City and a traffic study performed that shows bridge capacity with this expansion extending beyond 10-years.

[2] Financing assumes 20-year term, 5% interest rate and loan costs of 1.5%. Future interest payments have been net present valued assuming a 5% discount rate. Amount shown of \$4,514,200 reflects net present value of future interest payments and loan costs and an allowance for DIFs collected through 2024 to offset the amount financed.

As shown above, 1.55 lane miles of improvements have been identified with a total cost of \$21,579,200, after adding future LUA/IIP study costs.

### ***Streets South Fee Calculations***

Based on the LOS analysis for growth and the improvements identified in the IIP to meet the demands of growth, the following streets DIFs are calculated. First the cost per VMT is calculated, then the DIF level for each land use is identified pursuant to the service units added.

**Table 37: Calculated Streets South Cost per Service Unit**

Description	Amount
Escalated IIP Costs	\$21,579,200
VMT Growth	516,271
Cost per VMT	\$41.79

Using the Cost per VMT calculated above and applying it to each land use based on the VMT per service unit from Table 35, the following fee levels are calculated. The calculated fees have been rounded down to the nearest dollar.

**Table 38: Calculated Streets South Fee Levels**

Category of Development	Development Unit	VMT per Development Unit	8.1.14 Fee	Calculated Fee	Difference \$
Residential Single Unit	Dwelling Unit	79.69	\$1,179	\$3,330	\$2,151
Residential 2+ Units	Dwelling Unit	61.79	\$823	\$2,582	\$1,759
Industrial	1,000 sf	9.06	\$215	\$378	\$163
Commercial	1,000 sf	108.10	\$1,486	\$4,517	\$3,031
Institutional	1,000 sf	67.08	\$596	\$2,803	\$2,207
Office and Other Services	1,000 sf	50.71	\$643	\$2,119	\$1,476

As shown on the table above, the fee levels are increasing for each of the development categories. The primary influence on the fee increases are the cost escalations and inclusion of the full cost involved with the street improvements.

## **REVENUE FORECAST**

The streets revenue forecast for the North service area is shown on Table 39 and for the South area is shown on Table 40.

**Table 39: Streets North Revenue Forecast**

Development Units	10-yr Increase	Streets DIF	Revenue Forecast
Single Family (Units)	7,968	\$2,669.00	\$21,266,592
2+ Units Residential (Units)	1,777	\$2,069.00	3,676,613
Industrial (1,000 sf)	6,324	\$303.00	1,916,196
Commercial (1,000 sf)	1,794	\$3,621.00	6,495,320
Institutional (1,000 sf)	851	\$2,247.00	1,912,508
Office & Other Services (1,000 sf)	806	\$1,698.00	1,368,693
Total			\$36,635,921

Note: The revenue forecast is based on the 10-year service unit increase multiplied by the calculated DIF. Actual revenue collections will vary due to several factors including the statutory waiting period on implementing fees.

**Table 40: Streets South Revenue Forecast**

Development Units	10-yr Increase	Streets DIF	Revenue Forecast
Single Family (Units)	5,548	\$3,330.00	\$18,474,840
2+ Units Residential (Units)	350	\$2,582.00	903,700
Industrial (1,000 sf)	22	\$378.00	8,401
Commercial (1,000 sf)	294	\$4,517.00	1,326,422
Institutional (1,000 sf)	269	\$2,803.00	755,047
Office & Other Services (1,000 sf)	49	\$2,119.00	104,887
Total			\$21,573,297

Note: The revenue forecast is based on the 10-year service unit increase multiplied by the calculated DIF. Actual revenue collections will vary due to several factors including the statutory waiting period on implementing fees.

# SECTION 6. PARKS AND RECREATION INFRASTRUCTURE IMPROVEMENTS

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## DESCRIPTION OF SERVICE

The City provides parks and recreation services for the use and enjoyment of all residents, visitors and employees. Through the availability of parks, the City is able to provide a place for sporting activities, summer camps and recreation programs. As the City continues to grow, additional park and recreation facilities will be required to accommodate additional people and to ensure parks are available in proximity to where development is occurring.

## PARKS AND RECREATION SERVICE AREAS

The parks and recreation services are split into two service areas. The North service area encompasses everything in the City limits north of the Gila River. The South service area is left separate from the rest of the City for park services due to the contribution of the Foothills Community park by Newland. The park contribution in the South serves as the primary basis for DIF levels as there is a reimbursement to the original land owner required when new permits are issued. In the North service area, the parks have all been purchased and developed by the City and are sufficient to provide services for existing development.

A map of the parks service areas is provided on the following page.



**Parks Development Impact Fee Service Area**

Date: 10/15/2015

Goodyear Finance Department

Legend

**Parks Service Area**

- North
- South

0 0.5 1 2 Miles

Map showing the Parks Development Impact Fee Service Area, divided into North (pink) and South (green) service areas. The map includes a legend, scale bar, and north arrow. The map is dated 10/15/2015 and is provided by Goodyear Finance Department.

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## EXISTING INVENTORY, LOS AND FUTURE PLAN

### ***ARS §9-463.05 Discussion***

The enabling DIF statute currently places certain limitations on parks and recreation facilities that can be included in the IIP. The primary focus for the purposes of this study relate to the allowable size of the parks and the limitations relating to equestrian facilities, aquatic centers and community centers. The City has plans to develop a community aquatic center and recreation center, which have been excluded from the DIF calculations.

#### *Subsection 7 (g)*

*Neighborhood parks and recreational facilities on real property up to thirty acres in area, or parks and recreational facilities larger than thirty acres if the facilities provide a direct benefit to the development. Park and recreational facilities do not include vehicles, equipment or that portion of any facility that is used for amusement parks, aquariums, aquatic centers, auditoriums, arenas, arts and cultural facilities, bandstand and orchestra facilities, bathhouses, boathouses, clubhouses, community centers greater than three thousand square feet in floor area, environmental education centers, equestrian facilities, golf course facilities, greenhouses, lakes, museums, theme parks, water reclamation or riparian areas, wetlands, zoo facilities or similar recreational facilities, but may include swimming pools.*

### ***Allocation between Residential and Non-residential Land Uses***

To account for the varying intensity in use of park facilities, a weighting factor has been developed. For residents it is assumed there is a potential impact to parks 365 days per year and 24 hours per day. The non-residential land uses do not benefit from parks to the same level as homes and the residents residing in them who participate in a wide variety of activities. To reflect the lower intensity of benefit from parks, it has been assumed that over the course of the year each employee works 240 days and has the potential to impact parks for 1.5 hours per day. This assumption revolves around the idea that employees may have small windows of opportunity before or after work or on their lunch break to use a park in the City. However, if employees are also residents, it has been reflected that outside of work hours any use of parks in the City is done as a resident. Using these assumptions and applying them to the current mix of residents and employees in the North and South areas respectively, generates the potential impact hours on parks. These impact hours are then used to develop the percentage of IIP project costs to be recovered by residential and non-residential land uses.

**Table 41: Parks and Recreation Land Use Allocation – North**

Description	Days per Year	Hours per Day	FY 2018		Calculated Allocation %	Rounded Allocation %
			Service Units [1]	Total Impact Hours		
	(A)	(B)	(C)	(A)x(B)x(C)		
Residential	365	24	66,155	579,517,800	98.0%	98.0%
Non-residential	240	1.5	32,644	11,751,840	2.0%	2.0%
Total				591,269,640		

[1] The residential service units represent the existing resident population and the non-residential service units reflect the number of jobs in the City.

**Table 42: Parks and Recreation Land Use Allocation – South**

Description	Days per Year	Hours per Day	FY 2018		Calculated Allocation %	Rounded Allocation %
			Service Units [1]	Total Impact Hours		
	(A)	(B)	(C)	(A)x(B)x(C)		
Residential	365	24	14,983	131,251,080	99.4%	99.0%
Non-residential	240	1.5	2,133	767,880	0.6%	1.0%
Total				132,018,960		

[1] The residential service units represent the existing resident population and the non-residential service units reflect the number of jobs in the City.

### ***Analysis of Capacity, LOS and Future Plan***

While the City provides in total over 327 acres of public parks, greenbelts and special use areas, the DIFs focus on neighborhood parks that are often used by nearby residents and businesses. With this understanding, the following existing parks have been identified in the North service area as representative of neighborhood parks.

**Table 43: North Existing Park Inventory**

Description	Total Acres	Improved Acres
Goodyear Community Park	36	36
Portales	17	17
Falcon	16	16
Rio Paseo	14	14
Total	83	83

To determine the LOS provided to existing development, the service units in the North service area are divided into the number of acres allocated to each broad land use class. The LOS per 1,000 service units is calculated on the table below.

**Table 44: North Existing LOS**

Description	Allocated Improved Acres [1]	Service Units [2]	Park Acreage per 1,000 Service Units
Residential	81.3	66,155	1.23
Non-residential	1.7	32,644	0.05
Total	83.0	98,799	

[1] Calculated based on the allocation factor developed on Table 42 applied against the improved acreage identified on Table 44.

[2] The North residential service units represent the existing residents and the Non-residential service units represent the number of jobs.

Based on the LOS identified above for acres of parks per 1,000 service units for residential and non-residential development, the next table provides the calculation of future park needs. As growth continues to occur in the City, there is a desire to maintain the standard provided to existing development. In order to achieve this standard, the following table provides an illustration of the amount of park space necessary to maintain the current LOS.

**Table 45: Park Improvements to Maintain LOS – North**

Description	Growth in Service Units	Park Acreage per 1,000 Service Units	Calculated Park Acreage
Residential	25,920	1.23	31.9
Non-residential	14,037	0.05	0.7
Total	39,957		32.6

With a current LOS of 1.23 acres per 1,000 residential service units and 0.05 acres per 1,000 non-residential service units and a projected growth of 39,957 service units over the LUA Period, the City will need to fund and develop an additional 32.6 acres of parks over the LUA Period to support growth and maintain the current LOS. The cost associated with these improvements will be provided in the Parks and Recreation IIP subsection.

In the South service area, the only neighborhood park was partially developed and dedicated by the land owner through a developer's agreement. Through this agreement the City accepted the park and facilities and in turn is required to reimburse the land owner as development occurs in the service area. The park dedicated is named Foothills Community Park and is 37 acres in total, with 20 acres currently improved. As depicted earlier in this section, ARS §9-463.05 indicates that any parks larger than 30 acres must provide a direct benefit to the development. This requirement will be addressed later in this section when the forecast of future parks is developed based on LOS standards. The current inventory of parks in the South service area is provided on the table below.

**Table 46: South Existing Park Inventory**

Description	Total Acres	Improved Acres
Foothills Community Park	37	20

The LOS in the South area is calculated the same way as for the North area, as shown on the table below:

**Table 47: South Existing LOS**

Description	Allocated Improved Acres [1]	Service Units [2]	Park Acreage per 1,000 Service Units
Residential	19.8	14,983	1.32
Non-residential	0.2	2,133	0.09
Total	20	17,116	

[1] Calculated based on the allocation factor developed on Table 43 applied against the improved acreage identified on Table 47.

[2] The South service area Service Units are comprised of the number of existing residents for the residential portion and the number of jobs for the non-residential category.

Based on the LOS identified above for acres of parks per 1,000 service units for residential and non-residential development in the South area, the next table provides the calculation of future park needs. As growth continues to occur in the City, there is a desire to maintain the standard provided to existing development. In order to achieve this standard, the following table provides an illustration of the amount of park space necessary to maintain the current LOS.

**Table 48: Park Improvements to Maintain LOS – South**

Description	Growth in Service Units	Park Acreage per 1,000 Service Units	Calculated Park Acreage
Residential	15,367	1.32	20.3
Non-residential	1,337	0.09	0.1
Total	16,704		20.4

With a current LOS of 1.32 acres per 1,000 residential service units and 0.09 acres per 1,000 non-residential service units and a projected growth of 16,704 service units over the LUA Period, the City will need to fund and develop an additional 20.4 acres of parks over the LUA Period to support growth and maintain the current LOS. However, due to the availability of several smaller local parks and the limited availability of land in the area, the City currently plans to fully develop the remaining 17.0 acres of Foothills Park. This will bring the Foothills Park to a total of 37.0 improved acres, which will provide a direct benefit to development in the South service area. This improvement is allowable

under ARS §9-463.05 since it is in the service area and provides direct benefit to development in this area.

## PARKS AND RECREATION IIP

The following tables summarize the necessary park improvements and associated costs to serve growth over the planning period for each service area.

**Table 49: North IIP**

Description	Attributes	Year	Current Cost	Escalated Cost
Central Goodyear Park	30.0 acres	FY 2019	\$9,771,759	\$10,041,000
Financing Costs for Central Goodyear Park [1]		FY 2019	4,689,000	4,689,000
Future Community Park [2]	2.6 acres	FY 2027	1,284,000	1,675,000
LUA/IIP Updates and DIF Audits			50,000	50,000
Existing DIF Balance				(3,392,000)
Total	32.6 acres		\$15,794,759	\$13,063,000

[1] Financing assumes 20-year term and 5% interest rate and loan costs of 1.5%. Future interest payments have been net present valued assuming a 5% discount rate. Amount shown of \$4,689,000 includes net present value of future interest payments and loan costs.

[2] Costs show for Future Community Park represent 2.6 acres of a larger park that the City will develop in the future to serve growth.

**Table 50: South IIP**

Description	Attributes	Year	Current Cost	Escalated Cost
EMR Park Land [1]	17.0 acres	Ongoing	\$2,547,000	\$2,547,000
Foothills Community Park Phase II	17.0 acres	FY 2027	8,169,100	10,659,000
LUA/IIP Updates and DIF Audits			50,000	50,000
Total			\$10,766,100	\$13,256,000

[1] Reimbursement to Newland for land.

## PARKS AND RECREATION FEE CALCULATIONS

Based on the LOS analysis for growth and the improvements identified in the IIP to meet the demands of growth, the following parks DIFs are calculated. First the cost per service unit is calculated, then the DIF level for each land use is identified pursuant to the service units added.



**Table 51: Calculated Parks Cost per Service Unit**

Description	North	South
<b>Residential</b>		
Escalated IIP Costs	\$12,782,480	\$13,123,440
Service Units	25,920	15,367
Cost per Service Unit	\$493.15	\$854.00
<b>Non-residential</b>		
Escalated IIP Costs	\$280,520	\$132,560
Service Units	14,037	1,337
Cost per Service Unit	\$19.98	\$99.15

Using the cost per service unit calculated above for the North and South areas respectively, and applying it to each land use based on the proposed equivalent factors derived in Section 2. Land Use Assumptions, the following fee levels are calculated. The calculated fees have been rounded down to the nearest dollar.

**Table 52: Calculated Parks Fee Levels – North**

Category of Development	Development Unit	Proposed Equivalent Factor	8.1.14 Fee	Calculated Fee	Difference \$
Residential Single Unit	Dwelling Unit	2.79	\$922	\$1,375	\$453
Residential 2+ Units	Dwelling Unit	2.09	\$717	\$1,030	\$313
Industrial	1,000 sf	1.11	\$32	\$23	(\$9)
Commercial	1,000 sf	1.43	\$101	\$29	(\$72)
Institutional	1,000 sf	2.86	\$44	\$57	\$13
Office and Other Services	1,000 sf	2.50	\$150	\$50	(\$100)

**Table 53: Calculated Parks Fee Levels – South**

Category of Development	Development Unit	Proposed Equivalent Factor	8.1.14 Fee	Calculated Fee	Difference \$
Residential Single Unit	Dwelling Unit	2.64	\$1,065	\$2,255	\$1,190
Residential 2+ Units	Dwelling Unit	1.98	\$990	\$1,690	\$700
Industrial	1,000 sf	1.11	\$36	\$110	\$74
Commercial	1,000 sf	1.43	\$116	\$142	\$26
Institutional	1,000 sf	2.86	\$50	\$284	\$234
Office and Other Services	1,000 sf	2.50	\$173	\$247	\$74



As shown above, the fee levels are increasing for a majority of the development categories in both service areas. The exception being the Commercial and Office and Other Services in the North. The primary influence on the fee increases are the cost escalations and the inclusion of additional parks in the IIP to maintain the existing LOS standards.

## REVENUE FORECAST

The parks revenue forecast is shown on Tables 54 and 55.

**Table 54: North Parks Revenue Forecast**

Development Units	10-yr Increase	Parks DIF	Revenue Forecast
Single Family (Units)	7,968	\$1,370.00	\$10,916,160
2+ Units Residential (Units)	1,777	\$1,026.00	1,823,202
Industrial (1,000 sf)	6,324	\$22.00	139,130
Commercial (1,000 sf)	1,794	\$28.00	50,226
Institutional (1,000 sf)	851	\$56.00	47,664
Office & Other Services (1,000 sf)	806	\$49.00	39,497
<b>Total</b>	<b>19,520</b>		<b>\$13,015,879</b>

Note: The revenue forecast is based on the 10-year service unit increase multiplied by the calculated DIF. Actual revenue collections will vary due to several factors including the statutory waiting period on implementing fees.

**Table 55: South Parks Revenue Forecast**

Development Units	10-yr Increase	Parks DIF	Revenue Forecast
Single Family (Units)	5,548	\$2,255.00	\$12,510,740
2+ Units Residential (Units)	350	\$1,690.00	591,500
Industrial (1,000 sf)	22	\$110.00	2,445
Commercial (1,000 sf)	294	\$142.00	41,698
Institutional (1,000 sf)	269	\$284.00	76,501
Office & Other Services (1,000 sf)	49	\$247.00	12,226
<b>Total</b>	<b>6,533</b>		<b>\$13,235,111</b>

Note: The revenue forecast is based on the 10-year service unit increase multiplied by the calculated DIF. Actual revenue collections will vary due to several factors including the statutory waiting period on implementing fees.

# SECTION 7. WATER INFRASTRUCTURE IMPROVEMENTS

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The City provides potable water with water supply consisting of a combination of ground and surface water sources. The entire water system infrastructure includes wells, treatment facilities, transmission, distribution, storage, administrative facilities, vehicles, and equipment including meters. The following provides an analysis of those facility costs that are included in the IIP and DIF calculations.

## WATER DIF SERVICE AREAS

While the City's recent 2016 Integrated Water Master Plan (IWMP) identifies five (5) water planning areas, there are two (2) areas for IIP and DIF purposes. The five IWMP planning areas are summarized as follows:

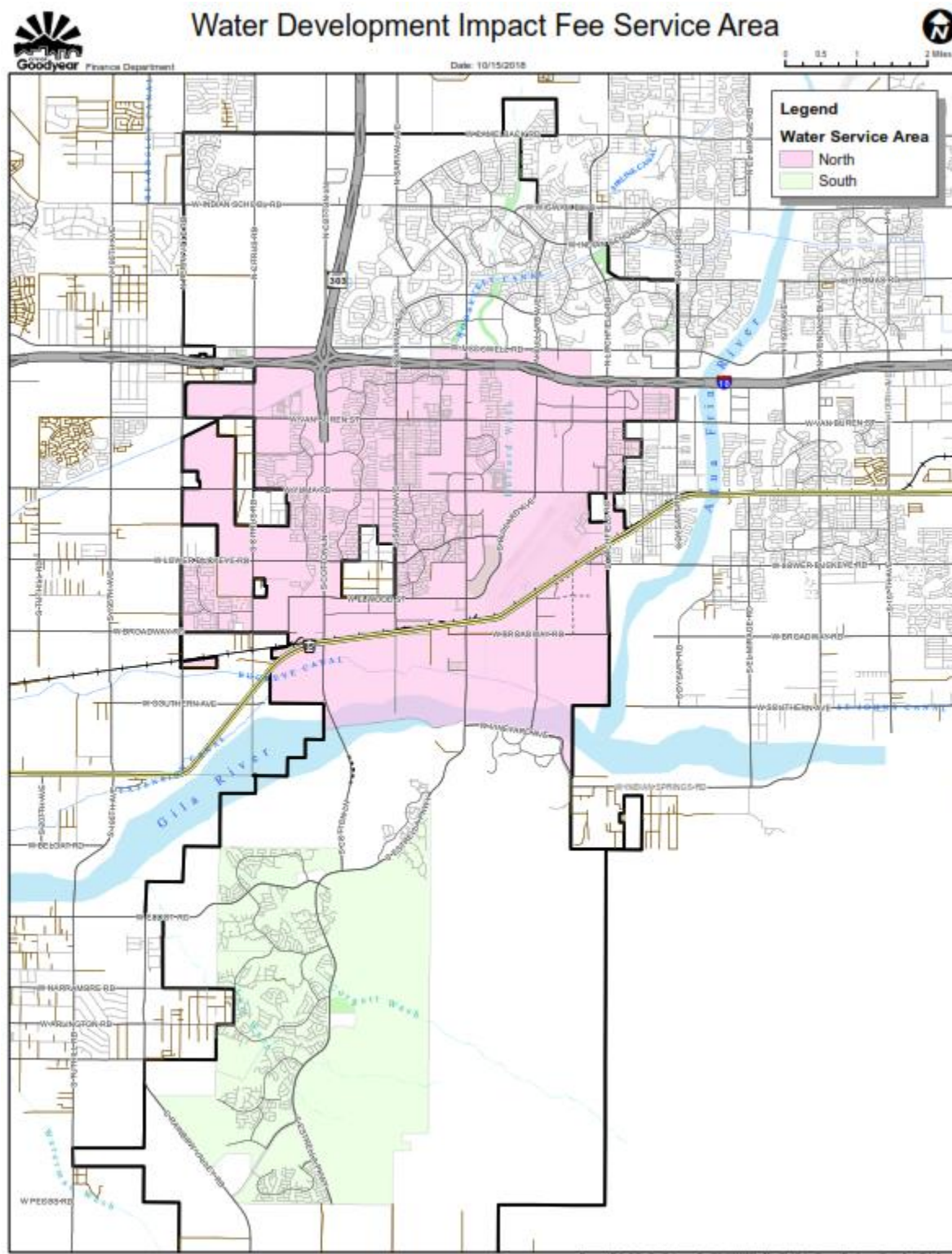
1. WPA 1 (North) – North of Interstate 10; the City has limited water service in this area as private utilities (Liberty Utilities and EPCOR) provide most of the water supply in this area.
2. WPA 2 (North) – Area between Interstate 10 and the Gila River.
3. WPA 3 (Sierra Estrella) – Area between Gila River and Pecos Road.
4. WPA 4 (Rainbow Valley) – Area south of Pecos Road and north of Patterson Road.
5. WPA 5 (Senoran Valley) – Area between Patterson Road and southern City limits.

The IIP includes the following two areas:

- North area – Areas north of Gila River (consists of WPA 1 and 2)
- South area – Area south of Gila River and north of Pecos (WPA 3)

Water facilities south of Pecos (WPA 4 and 5) are not included in this IIP since City does not have facility plans at this time.

### Figure 8 – Water Service Area Map



Source: City of Goodyear

### **Water Production**

The City's existing water source include a blend of various groundwater well facilities. During calendar year 2017 the City's reported North area average day water production was 6.24 MGD while the South production amount averaged 1.79 MGD as shown below:

**Table 56: 2017 Water Production**

Month	North	South Area	Total Average Demands (MGD)
1/17	4.06	1.14	5.20
2/17	4.12	1.38	5.50
3/17	4.82	1.48	6.30
4/17	5.86	1.74	7.60
5/17	6.97	1.93	8.90
6/17	8.14	2.16	10.30
7/17	7.87	2.13	10.00
8/17	7.50	2.10	9.60
9/17	7.51	2.09	9.60
10/17	7.23	1.97	9.20
11/17	5.94	1.76	7.70
12/17	4.83	1.57	6.40
Annual Avg.	6.24	1.79	8.03

As shown above the combined water production for both areas was 8.03 MGD. The 2017 production levels represent a 1.6% increase compared to the 2015 level of 7.9 MGD. Water production growth prior to 2015 was relatively unchanged as summarized below:

**Table 57: 2009 Through 2015 Water Production**

Year	Total Average Demands (MGD)
2009	7.50
2010	7.20
2011	7.70
2012	7.90
2013	7.90
2014	7.90
2015	7.90

Future water production requirements are expected to increase significantly with additional growth planned during the LUA period.

The City's 2016 IWMP identifies the immediate need to develop new physical water supplies to meet customer demands. The IWMP identifies the City's firm water supply to be 8.6 MGD with the largest well out of service. The City's 2017 water demand of 8.03 MGD is 93% of this firm water supply. As discussed in further detail below, the City is developing a future water supply to address its future water demand to benefit growth.

### ***Water Level of Service and Growth Demand***

Water LOS parameters are typically expressed on a gallons per day basis. The allocation of water service for both the North and South water fee areas are based on the 2016 Integrated Water Master Plan level of 402 gallons per day (average daily flow basis) per equivalent dwelling unit (EDU).

Based on the LUA assumptions, the 8,121 EDUs are projected for the North water fee area and 6,011 for the South water fee area during the IIP planning period:

**Table 58: 2019-2028 Water EDU Projections – North**

Development Units	10-yr Increase [1]	Units/EDU [2]	Assumed EDUs
Single Family (Units)	6,119	1.00	6,119
2+ Units Residential (Units)	963	0.75	722
Industrial (1,000 sf)	3,214	0.19	611
Commercial (1,000 sf)	995	0.32	318
Institutional (1,000 sf)	675	0.32	216
Office & Other Services (1,000 sf)	421	0.32	135
	12,387		8,121

[1] The 10-year growth has been adjusted to reflect that the area north of I-10 is primarily served by private utilities.

[2] The units/EDU is a conversion from service units (residential units or 1,000 square feet non-residential) to EDUs based on meter size. The existing and calculated fees are based on meter size for all customer classes.

**Table 59: 2019-2028 Water EDU Projections – South**

Development Units	10-yr Increase	Units/EDU	Assumed EDUs
Single Family (Units)	5,548	1.00	5,548
2+ Units Residential (Units)	350	0.75	263
Industrial (1,000 sf)	22	0.19	4
Commercial (1,000 sf)	294	0.32	94
Institutional (1,000 sf)	269	0.32	86
Office & Other Services (1,000 sf)	49	0.32	16
	6,532		6,011

The LOS is applied to the projected EDUs to derive the projected water demand to meet the LUA Period projections:

**Table 60: 2019-2028 Water Capacity Allocation – North Area**

FY 2019 - 2028 EDU Growth	8,121
LOS (Gallons per Day)	<u>402</u>
Water Capacity (MGD)	3.265

**Table 61: 2019-2028 Water Capacity Allocation – South Area**

FY 2019 - 2028 EDU Growth	6,011
LOS (Gallons per Day)	<u>402</u>
Water Capacity (MGD)	2.416

## **NORTH WATER IMPROVEMENTS**

### ***ARS §9-463.05 Water Facilities***

Water facilities permitted in the IIP pursuant to ARS §9-463.05 include the supply, transportation, treatment, purification, and distribution of water, and any appurtenances for those facilities. As set forth in the discussion below, the primary water infrastructure needs for the City over the next several years involve water supply and treatment. Other water facility costs as enumerated above are also reflected in the IIP within this report.

### ***Surface Water Project***

The City is developing a surface water project adjacent to the City's existing wastewater reclamation facility, and a short distance north of the Gila River. The surface water project is designed to transmit and treat a portion of the unused City's Central Arizona Project (CAP) allocation. The project is designed for an initial treatment capacity of 8 MGD (average daily flow) with future expansion capability to 16 MGD. The surface water project is designed to serve both the North and South service areas. The City is negotiating a project sharing agreement with Newland to fund an allocation of the surface water project cost to benefit the south service area. The City indicates that Newland is requesting 2,653,200 gallons per day of average daily flow capacity from the Surface Water Project and is also funding a transmission line to deliver treated water from the surface water facility south to the South water service area. The remaining project costs benefit the North area. The allocation of surface water project costs are summarized below:

**Table 62: Surface Water Project Funding**

Description	Amount	North	South
Capacity Allocation (mgd)	8.00000	5.34680	2.65320
Plant Expansion Cost	\$114,249,900		
Less: Oversizing Amount	6,654,450		
Total Project Cost (8 mgd)	\$107,595,450	\$71,911,419	\$35,684,031
% Allocation (based on capacity)	100.00%	66.83%	33.17%
Adjustment for South Transmission	7,900,000		7,900,000
Adjusted Surface Water Project Cost	\$115,495,450	\$71,911,419	\$43,584,031
Offsets/Credits:			
Water Operations	(\$4,361,700)	(\$2,715,594)	(\$1,646,106)
GO Bonds	(7,500,000)	(4,669,500)	(2,830,500)
Newland Plant Reimbursement	(24,100,000)	(0)	(24,100,000)
Total Offsets	(\$35,961,700)	(\$7,385,094)	(\$28,576,606)
Bond Project Funds	\$79,533,750	\$64,526,325	\$15,007,425
Cost per Gallon	\$14.88	\$14.88	\$14.88

***Surface Water Project Funding***

The City is funding the surface water project through a mix of developer contributions, water operations (user rates), General Obligation (GO) bonds, and utility revenue bonds. The utility revenue bond funding is calculated based on City provided data for the other funding sources. The following summarizes the other funding sources and remaining amount to be funded from utility revenue bonds:

**Table 63: Surface Water Project Funding**

Description	Amount	North	South
Bond Project Funds	\$79,533,750	\$64,526,325	\$15,007,425
% of Total	100.0%	81.1%	18.9%
Bond Funding Terms:			
Years	30		
Interest Rate	5.0%		
Loan Costs	1.0%		
Utility Revenue Bond Principal	\$80,330,000	\$65,172,300	15,157,700



### ***Surface Water Project Benefit to North Area***

As shown above, the City is financing a large portion of the surface water project with utility revenue bonds. The City's 2016 Integrated Water Master Plan states that "it is crucial that direct delivery of a new physical water supply be in place between 2020 and 2025 since groundwater physical supply limitations will be reached by 2020 and exceeded by 2021 if additional surface water is not provided."<sup>1</sup> Therefore the proportionate cost of the surface water plant is allocated to meet the demand for the 2019-2028 LUA growth in the North water area as follows:

**Table 64: North Surface Water Project Allocation**

Description	North [1]	Percent of Capacity for 2019 - 2028	Allocation to 2019 - 2028
Surface Water Project Capacity (MGD)	5.3468	61.06%	3.265
Principal Allocation	\$65,172,300	61.06%	\$39,794,200
Interest [2]			19,897,100
Subtotal before Adjustments			\$59,691,300
Rate Revenue and Amortization Adjustment [3]			(9,944,550)
Total			\$49,746,750
Cost of Capacity for 2019 - 2028 (rounded)			\$49,747,000

[1] The remaining portion of the 8 MGD capacity for the surface water project is allocated to the South water fee area.

[2] Amount reflects maximum interest cost allocated to 10-year growth based on financing assumptions.

[3] Adjustment to account for rate revenue from 10-year growth used toward debt service.

### ***GRIC Water Lease Project Benefit to North Area***

The City issued the Subordinate Lien Water and Sewer Revenue Obligations, Series 2011 (Series 2011 Bonds) to refund prior bonds that funded the City's lease of 7,000 acre-feet per year (6.249 MGD) surface water rights with the Gila River Indian Community (GRIC). The GRIC lease represents 57% of the Series 2011 debt service payments. Using the Series 2011 principal issuance amount of \$15,480,000 the allocation of principal to the GRIC lease is \$8,823,600. The allocation of the GRIC lease to the LUA Period for the North service area is shown below.

<sup>1</sup> City of Goodyear 2016 Integrated Water Master Plan, p. 2-54.

**Table 65: Water GRIC Lease Allocation**

Description	Amount
GRIC Lease Capacity (MGD)	6.249
Capacity Required by 10-yr LUA Growth (MGD)	3.265
Percentage of Available Capacity	52.25%
Series 2011 Principal [1]	\$8,823,600
Principal Allocation	\$4,610,200
Interest [2]	2,503,339
Subtotal before Adjustments	\$7,113,539
Rate Revenue and Amortization Adjustment [3]	(1,251,669)
Total	\$5,861,869
Rounded Total	\$5,862,000

[1] Principal reflects 57% of the Series 2011 Bonds funded the GRIC Lease.

[2] Amount reflects maximum interest cost allocated to the LUA Period growth based on Series 2011 interest rate.

[3] Adjustment to account for rate revenue from the LUA Period growth used toward debt service.

### ***Distribution and Storage to North Water Area***

The City has identified several projects necessary to meet the demands of the LUA Period growth for the North area:

**Table 66: North Distribution and Storage Projects**

Description	Year	Current Cost	Escalation per Year	Escalation Years	Escalated Cost
Site #12 Increase Booster Capacity	2024	\$1,810,000	3.00%	6	\$2,200,000
Oversizing Lines	2019	\$1,544,900	3.00%	1	\$1,600,000
WPA 2 - New 16-in water main (5,280 LF) Litchfield Road from Yuma Rd to Van Buren St	2021	\$1,544,900	3.00%	3	\$1,700,000
WPA 2 - New 16-in water main (650 LF) Litchfield Road from El Cielo Street to MC85	2021	\$190,200	3.00%	3	\$200,000
Total					\$5,700,000

Appendix C at the end of the report summarizes the North water IIP projects.

### ***Summary of North Water Improvements***

The necessary improvements detailed above for the North area are summarized and calculated on a per equivalent unit basis below:

**Table 67: Water – North DIF**

Surface Water Capacity Expansion	\$49,747,000
GRIC Lease	5,862,000
Transmission/Storage	5,700,000
LUA/IIP Updates and DIF Audits	50,000
Existing DIF Balance	0
IIP Costs	\$61,359,000
Growth Capacity (MGD)	3.265
Cost per Gallon	\$18.79
LOS (Avg. Gallons/Day)	402
Water DIF per EDU (3/4" meter)	\$7,553

## WATER NORTH FEE CALCULATIONS

Water DIFs are assessed by meter size and increased for 3/4-inch and higher meter sizes based on the AWWA meter capacity relationships. One EDU is equated to a 3/4-inch meter, which is the smallest and most common meter size available. The following provides the calculated fees by meter size using AWWA equivalent ratios and are the same as the City's existing equivalent ratios:

**Table 68: Calculated Water North Fee Levels**

Meter Size	Ratio	8.1.14 Fee	Calculated Fee	Difference \$	Difference %
3/4-inch	1.00	\$6,368	\$7,553	\$1,185	19%
1-inch	1.67	\$10,633	\$12,613	\$1,980	19%
1.5-inch	3.33	\$21,198	\$25,151	\$3,953	19%
2-inch	5.33	\$33,918	\$40,257	\$6,339	19%
3-inch	10.67	\$67,916	\$80,590	\$12,674	19%
4-inch	16.67	\$106,105	\$125,908	\$19,803	19%
6-inch	33.33	N/A	\$251,741	N/A	N/A
8-inch	53.33	N/A	\$402,801	N/A	N/A

As shown above, the calculated fees are significantly higher than the current fees. This increase is primarily attributed to the development of new surface water treatment and transmission facilities to meet the needs of growth. Additional fee levels are proposed for 6-inch and 8-inch meters, as the City currently does not have these meter sizes identified in its development fee ordinance.

## WATER NORTH REVENUE FORECAST

The North DIF revenue forecast is shown below.

**Table 69: Water North Revenue Forecast**

Development Units	Assumed EDUs	Water DIF	Forecast Revenue
Single Family (Units)	6,119	\$7,553	\$46,216,807
2+ Units Residential (Units)	722	\$7,553	5,453,266
Industrial (1,000 sf)	611	\$7,553	4,614,883
Commercial (1,000 sf)	318	\$7,553	2,401,854
Institutional (1,000 sf)	216	\$7,553	1,631,448
Office & Other Services (1,000 sf)	135	\$7,553	1,019,655
<b>Total</b>	<b>8,121</b>		<b>\$61,337,913</b>

Note: The revenue forecast is based on the 10-year service unit increase multiplied by the calculated DIF. Actual revenue collections will vary due to several factors including the statutory waiting period on implementing fees.

The difference of \$660,000 in the North DIF revenue before and after adjustments over the forecast period is anticipated to be funded from water rate revenue.

## **SOUTH WATER AREA IMPROVEMENTS**

### ***South Area Water Supply***

The South water area includes a mix of water supply sources. The initial water supply for the area is related to an agreement for groundwater supply between Newland and the City referred to as the “pre-Northern Solutions.” The next water supply includes wells, storage, and transmission facilities from the City’s Adaman wells down to the South water service area, this supply is referred to as the “Northern Solutions” agreement. The third water supply is the allocation of the surface water project to the South area as described earlier in this section. The following summarizes the average daily flow water supply for the South area:

**Table 70: South Water Supply Sources**

Agreement	Average Daily Demand (MGD)
Pre-Northern Solutions	1.48
Northern Solutions	1.18
Surface Water Project	2.65
<b>Total</b>	<b>5.31</b>

The South area’s average daily water production during 2017 was 1.79 MGD as discussed earlier in this section. Therefore, the pre-northern solutions supply capacity of 1.48 MGD is not available for future growth. The LUA Period growth for the south area will be supplied by a combination of northern solutions and the surface water plant.

The City reports that the northern solution projects have recently been completed and funded by Newland at a cost of approximately \$13,929,000. As discussed earlier in this section, a portion of the surface water plant will also be funded by Newland. Therefore, both these developer reimbursements are included as necessary improvements for the LUA Period.

**Surface Water Project Benefit to South Area**

The necessary improvements for the LUA Period for the South area from the Surface Water Project are summarized below:

**Table 71: Allocation of Surface Water Plant**

Projected 2019 -2028 Capacity Needs (MGD)	2.416
Less:	
Northern Solutions (MGD)	0.880
Portion of Surface Water Plant allocated to LUA Growth	1.536

As shown above, 1.536 MGD of the surface water plant is allocated to the LUA Period growth for the South area. The cost of this capacity includes the transmission line from the surface water project to the South water area:

**Table 72: Surface Water Project Allocation to South Area**

Description	South Allocation [1]	Percent of Capacity for 2019 - 2028	Allocation to 2019 - 2028
Surface Water Project Capacity (MGD)	2.6532	57.89%	1.5360
Cost of Improvements [2]	\$43,584,031	57.89%	\$27,425,000
Cost per Gallon			\$17.86

[1] Cost includes \$7.9 million transmission line from Surface Water Plant to the South service area.  
 [2] The allocation amount includes \$2,194,000 of interest. Interest is calculated with the following assumptions: i) recovery of 57.89% of the \$15,157,700 bond principal identified on Table 63 over the next ten years; ii) annual interest of 5%; and iii) 50% of interest will be funded by rate revenues.

**Additional Developer Reimbursement**

In addition to the northern solutions and surface water project developer reimbursements outlined above, there are two additional reimbursements to Newland for necessary improvements made to meet the demands of growth. The first additional reimbursement is the Rainbow Valley water campus booster. The City has reimbursed approximately \$8.7 million of the total \$13.6 million total reimbursement for this facility benefitting the South area, leaving approximately \$4.9 million reimbursement from future growth in the South area. The second additional reimbursement is for a 1.5 million gallon reservoir project at a cost of \$4.6 million.

### Summary of South Water Improvements

The necessary improvements detailed above for the South water area are summarized and calculated on a per equivalent unit basis below:

**Table 73: Water – South DIF**

Surface Water Plant	\$27,425,000
Northern Solutions Transmission/Wells	13,929,000
Rainbow Valley Water Campus Booster	1,141,000
1.5 MGD Reservoir Project	4,600,000
LUA/IIP Updates and DIF Audits	50,000
Existing DIF Balance	0
Other Revenue/User Fees	0
IIP Costs	\$47,145,000
Growth Capacity (MGD)	2.416
Cost per Gallon	\$19.51
LOS (Avg. Gallons/Day)	402
Water DIF per EDU (3/4" Meter)	\$7,843

### WATER SOUTH FEE CALCULATIONS

Water DIFs are assessed by meter size and increased for 3/4-inch and higher meter sizes based on the AWWA meter capacity relationships. One EDU is equated to a 3/4-inch meter, which is the smallest and most common meter size available. The following provides the calculated fees by meter size using AWWA equivalent ratios and are the same as the City's existing equivalent ratios:

**Table 74: Calculated Water South Fee Levels**

Meter Size	Ratio	8.1.14 Fee	Calculated Fee	Difference \$	Difference %
3/4-inch	1.00	\$7,769	\$7,843	\$74	4%
1-inch	1.67	\$12,971	\$13,097	\$126	4%
1.5-inch	3.33	\$25,861	\$26,117	\$256	4%
2-inch	5.33	\$41,391	\$41,803	\$412	4%
3-inch	10.67	\$82,855	\$83,684	\$829	1%
4-inch	16.67	\$129,445	\$130,742	\$1,297	4%
6-inch	33.33	N/A	\$261,407	N/A	N/A
8-inch	53.33	N/A	\$418,267	N/A	N/A

As shown above, the calculated fees are slightly higher than the existing fees. Additional fee levels are proposed for 6-inch and 8-inch meters, as the City currently does not have these meter sizes identified in its development fee ordinance.

## WATER SOUTH REVENUE FORECAST

The south DIF revenue forecast are shown below

**Table 75: Water South Revenue Forecast**

Development Units	Assumed EDUs	Water DIF	Forecast Revenue
Single Family (Units)	5,548	\$7,843	\$43,512,964
2+ Units Residential (Units)	263	\$7,843	\$2,062,709
Industrial (1,000 sf)	4	\$7,843	\$31,372
Commercial (1,000 sf)	94	\$7,843	\$737,242
Institutional (1,000 sf)	86	\$7,843	\$674,498
Office & Other Uses (1,000 sf)	16	\$7,843	\$125,488
	6,011		\$47,144,273

Note: The revenue forecast is based on the 10-year service unit increase multiplied by the calculated DIF. Actual revenue collections will vary due to several factors including the statutory waiting period on implementing fees.

There is only a slight difference in the south DIF revenue before and after adjustments since the fee level is not anticipated to change significantly.



## SECTION 8. WASTEWATER INFRASTRUCTURE IMPROVEMENTS

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The City provides central wastewater collection, treatment, and disposal service throughout the City incorporated area with the exception of portions of the City north of I-10 served by Liberty Utilities.

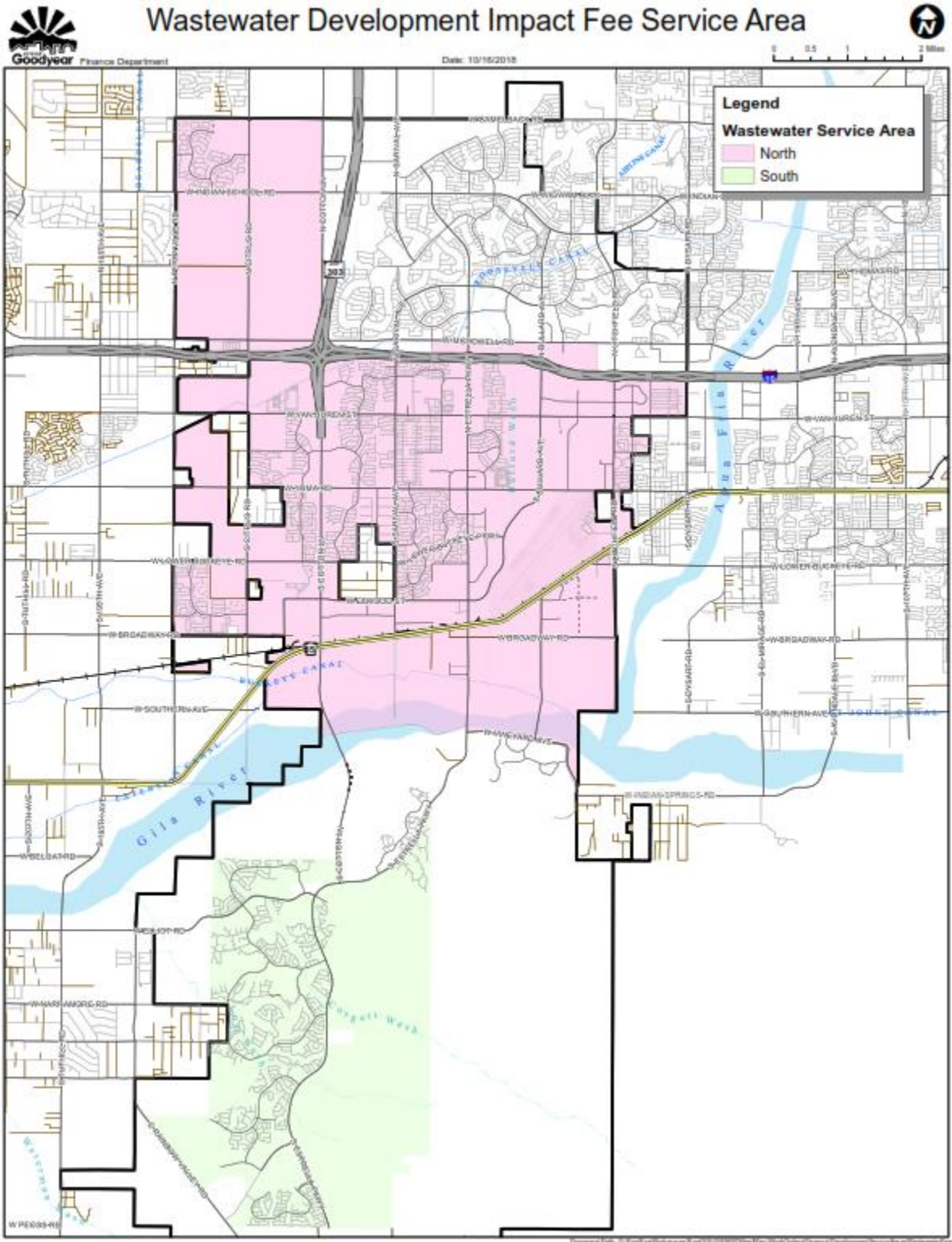
### WASTEWATER DIF SERVICE AREAS

There is no proposed change to the DIF service areas for wastewater service:

- North area – Areas north of Gila River to I-10 and North of I-10 to Camelback Road between N Perryville Road and N Cotton Lane. Also, a small area North of I-10 extending from slightly west of N Estrella Pkwy to slightly east of N Bullard Ave.
- South area – Area south of Gila River and north of Pecos

Wastewater facilities south of Pecos are not included in this IIP since City does not have facility plans at this time.

Figure 9 – Wastewater Service Area Map



Source: City of Goodyear

### ***Wastewater Treatment***

The City operates the Goodyear Water Reclamation Facility (WRF) to serve the North service area and operates the Corgett WRF and Rainbow Valley WRF located in the south area. During calendar year 2017 the City's reported North area average day wastewater treated was 3.72 MGD while the south production included 0.39 MGD and 0.31 MGD for Corgett WRF and Rainbow Valley WRF, respectively, as shown below:

**Table 76: 2017 Wastewater Treatment**

	Goodyear WRF	Corgett WRF	Rainbow Valley WRF
Date	Avg Monthly Flow (MGD)	Avg Monthly Flow (MGD)	Avg Monthly Flow (MGD)
1/1/2017	3.58	0.42	0.33
2/1/2017	3.57	0.39	0.34
3/1/2017	3.71	0.41	0.34
4/1/2017	3.63	0.41	0.33
5/1/2017	3.70	0.38	0.29
6/1/2017	3.89	0.36	0.27
7/1/2017	3.96	0.36	0.27
8/1/2017	3.84	0.39	0.31
9/1/2017	3.67	0.39	0.28
10/1/2017	3.72	0.40	0.32
11/1/2017	3.68	0.42	0.34
12/1/2017	3.64	0.39	0.34
Annual Average	3.72	0.39	0.31
Designed Capacity	4.00	0.80	0.75

Future wastewater treatment requirements are expected to increase with additional growth planned during the LUA Period. As shown above the 2017 Goodyear WRF treatment production of 3.72 MGD indicates that 93% of the facility's available 4.00 MGD capacity is utilized. The City is currently expanding the Goodyear WRF capacity from 4.0 MGD to 6.0 MGD and has future expansions planned to 8.00 MGD within the LUA Period. The City also plans to expand the Rainbow Valley WRF within the LUA Period. Both of these necessary facility improvements are discussed later in this section.

### ***Wastewater Level of Service and Growth Demand***

Similar to water, the LOS parameters for wastewater are typically expressed on a gallons per day basis. The allocation of wastewater service for both the North and south wastewater fee areas are based on the 2016 Integrated Water Master Plan level of 140 gallons per day (average daily flow basis) per equivalent dwelling unit (EDU). This is lower than the existing LOS of 175 gallons per day.

Based on the LUA assumptions, the 8,989 EDUs are projected for the North wastewater fee area and 6,206 for the south wastewater fee area during the IIP planning period:

**Table 77: 2019-2028 Wastewater EDU Projections – North**

Development Units	10-yr Increase	Units/EDU	Assumed EDUs
Single Family (Units)	6,489	1.00	6,489
2+ Units Residential (Units)	1,126	0.75	845
Industrial (1,000 sf)	3,836	0.33	1,266
Commercial (1,000 sf)	1,155	0.56	647
Institutional (1,000 sf)	710	0.56	398
Office & Other Uses (1,000 sf)	498	0.56	279
	13,814		9,924

Note: The 10-year growth has been adjusted to reflect only 20% of the area north of I-10 since the majority of this area is served by Liberty Utilities.

**Table 78: 2019-2028 Wastewater EDU Projections – South**

Development Units	10-yr Increase	Units/EDU	Assumed EDUs
Single Family (Units)	5,548	1.00	5,548
2+ Units Residential (Units)	350	0.75	263
Industrial (1,000 sf)	22	0.33	7
Commercial (1,000 sf)	294	0.56	165
Institutional (1,000 sf)	269	0.56	151
Office & Other Uses (1,000 sf)	49	0.56	27
Total	6,532		6,161

The LOS is applied to the project EDUs to derive the project wastewater demand to meet the LUA Period projections:

**Table 79: 2019-2028 Wastewater Capacity Allocation – North Area**

FY 2019 - 2028 EDU Growth	9,924
LOS (Gallons per Day)	140
Wastewater Capacity (MGD)	1.389

**Table 80: 2019-2028 Wastewater Capacity Allocation – South Area**

FY 2019 - 2028 EDU Growth	6,161
LOS (Gallons per Day)	140
Wastewater Capacity (MGD)	0.863

NORTH WASTEWATER IMPROVEMENTS

ARS §9-463.05 Wastewater Facilities

Wastewater facilities permitted in the IIP pursuant to ARS §9-463.05 include collection, interception, transportation, treatment and disposal of wastewater, and any appurtenances for those facilities.

Goodyear WRF Expansion

The City is currently expanding the Goodyear WRF from 4.00 MGD to 6.00 MGD at a cost of approximately \$14.5 million to meet immediate capacity requirements. An additional expansion to 8.00 MGD is planned within the LUA Period. The Goodyear WRF expansions include additional clarifiers, centrifuges, aeration basins, tertiary filters, and other related improvements to meet higher treatment demands such as upgrades to the influent pump station, force mains, sludge line, and miscellaneous piping.

The Goodyear WRF expansion to 6.0 MGD is funded from available utility reserves, which will be reimbursed by DIF revenue. Sufficient utility reserves are not anticipated to be available for the expansion to 8.0 MGD and therefore debt funding will be required. The following summarizes the financing assumptions for this expansion:

Table 81: GWRF Expansion (6 MGD to 8 MGD)

GWRF Expansion (6 MGD to 8 MGD)	
Description	Amount
Project Expansion (MGD)	2.000
Project Cost (Current)	44,000,000
Planned Project Cost (3%/Year Inflation)	52,500,000
Adjustment for Digester Costs Allocated to Existing Users [1]	(\$9,000,000)
Adjusted Cost	\$43,500,000
Principal Allocation (1% issuance)	\$43,935,000
Interest [2]	\$21,967,500
Subtotal before Adjustments	\$65,902,500
Rate Revenue and Amortization Adjustment [3]	(\$10,983,750)
Total	\$54,918,750
Total Cost of Capacity (Rounded)	\$54,919,000
Cost per Gallon	\$27.46
<div><div>[1] The GWRF expansion cost includes \$15 million for digester improvements (\$18 million with cost escalations); \$9.0 million (50%) of the digester costs are allocated to existing users and therefore deducted from new capacity costs.</div><div>[2] Amount reflects maximum interest cost allocated to the LUA Period based on financing assumptions.</div><div>[3] Adjustment to account for rate revenue from the LUA Period growth used toward debt service.</div></div>	

In order to reflect the cost of wastewater treatment capacity, the blend of facility expansions between 4.0 and 8.0 MGD is recommended. The following illustrates the blended cost of wastewater treatment to serve growth and calculates the cost attributed to the LUA Period.

**Table 82: Blended Cost of Goodyear WRF Expansions**

Phase	Cost	MGD	Cost/Gallon
4-6 MGD	\$14,546,136	2.000	\$7.27
6-8 MGD	\$54,919,000	2.000	\$27.46
Combined Cost	\$69,465,136	4.000	\$17.37
<u>Cost Assigned to LUA Period</u>			<u>Amount</u>
10-year growth in demand (MGD)			1.389
Cost per Gallon			\$17.37
Total Cost			\$24,126,930
Cost of Capacity for 2019 - 2028 (rounded)			\$24,127,000

### ***Other North Improvements***

The City has outstanding debt related to infrastructure improvements and an additional wastewater collection project during the LUA Period. The outstanding debt is a WIFA loan related to Goodyear WRF improvements identified in the 2013 Infrastructure Improvements Plan. The City has approximately \$1.7 million of outstanding debt for these improvements. The summary of the cost and timing of these projects along with the Goodyear WRF expansions are shown below:

**Table 83: Wastewater North IIP Projects**

Description	Year	2018 Cost	Cost Adjusted for Inflation and Other Factors
Goodyear WRF Expansion 4 to 6 MGD	2017-2019	\$14,546,136	\$14,546,136
GWRF - Expansion of the Goodyear WRF from 6.0 to 8.0 MGD	2024	\$44,000,000	\$54,919,000
WIFA Debt Service	Ongoing	\$4,951,000	\$4,951,100
WPA 2 - New 12-in sewer (5,090 LF) Bullard Avenue from Van Buren to Yuma	2024	\$1,099,600	\$1,300,000

The necessary improvements detailed above for the North wastewater area are summarized and calculated on a per equivalent unit basis below:

**Table 84: Wastewater – North DIF**

Wastewater Treatment/Disposal	\$24,127,000
WIFA Debt Service	4,951,100
Major Collection and Disposal	1,300,000
LUA/IIP Updates and Audit	50,000
Existing Balance	(2,464,000)
Other Revenue/User Fees	0
IIP Costs	\$27,964,100
Growth Capacity (MGD)	1.389
Cost per Gallon	\$20.13
LOS (Avg. Gallons/Day)	140
Wastewater DIF per EDU (3/4" Meter)	\$2,818

## WASTEWATER NORTH FEE CALCULATIONS

Similar to the water fees, the wastewater DIFs are assessed by meter size and increased for 3/4-inch and higher meter sizes based on the AWWA meter capacity relationships. One EDU is equated to a 3/4-inch meter, which is the smallest and most common meter size available. The following provides the calculated fees by meter size using AWWA equivalent ratios and are the same as the City's existing equivalent ratios:

**Table 85: Calculated Wastewater North Fee Levels**

Meter Size	Ratio	8.1.14 Fee	Calculated Fee	Difference \$	Difference %
3/4-inch	1.00	\$4,210	\$2,818	(\$1,392)	-33%
1-inch	1.67	\$7,029	\$4,706	(\$2,323)	-33%
1.5-inch	3.33	\$14,013	\$9,383	(\$4,630)	-33%
2-inch	5.33	\$22,427	\$15,019	(\$7,408)	-33%
3-inch	10.67	\$44,892	\$30,068	(\$14,824)	-33%
4-inch	16.67	\$70,134	\$46,976	(\$23,158)	-33%
6-inch	33.33	N/A	\$93,923	N/A	N/A
8-inch	53.33	N/A	\$150,283	N/A	N/A

As shown above, the calculated fees are lower than the current fees. This decrease is primarily attributed to the lower LOS. Additional fee levels are proposed for 6-inch and 8-inch meters, as the City currently does not have these meter sizes identified in its development fee ordinance.



## WASTEWATER NORTH REVENUE FORECAST

The north wastewater DIF revenue forecast is shown below. The only difference in the south wastewater DIF revenue before and after adjustments is due to rounding since the calculated fee level is lower than the existing fee level.

**Table 86: Wastewater North Revenue Forecast**

Development Units	Assumed EDUs	Wastewater DIF	Forecast Revenue
Single Family (Units)	6,489	\$2,818	\$18,286,002
2+ Units Residential (Units)	845	\$2,818	\$2,381,210
Industrial (1,000 sf)	1,266	\$2,818	\$3,567,588
Commercial (1,000 sf)	647	\$2,818	\$1,823,246
Institutional (1,000 sf)	398	\$2,818	\$1,121,564
Office & Other Uses (1,000 sf)	279	\$2,818	\$786,222
Total	9,924		\$27,965,832

Note: The revenue forecast is based on the 10-year service unit increase multiplied by the calculated DIF. Actual revenue collections will vary due to several factors including the statutory waiting period on implementing fees.

## SOUTH WASTEWATER AREA IMPROVEMENTS

### ***ARS §9-463.05 Wastewater Facilities***

Wastewater facilities permitted in the IIP pursuant to ARS §9-463.05 include collection, interception, transportation, treatment and disposal of wastewater, and any appurtenances for those facilities.

### ***Wastewater Treatment Reimbursements and Expansion***

Wastewater treatment and demand for the south 10-year growth will be provided by a combination of existing and future capacity. As shown below, 45.2% of the projected 0.869 MGD capacity for the south wastewater area will be provided by existing capacity and the remaining 54.8% from future expansion during the planning period:

**Table 87: Allocation of South Wastewater Capacity 2019-2028**

Projected Capacity Needs (MGD)	0.863	
Allocation by Facility (MGD):		
Rainbow Valley Existing Capacity Available	0.390	45.20%
Facility Expansion	0.473	54.80%
Total (MGD)	0.863	

Outstanding reimbursements to Newland of approximately \$3.7 million exist for the Rainbow Valley WRF capacity. In addition to this existing investment, additional costs for the facility expansion will be needed to serve growth. The cost per gallon of capacity for the original Rainbow Valley WRF and future expansion are summarized as follows:

**Table 88: Average Cost by Facility**

	Existing Capacity [1]	Treatment Expansion [2]	Total
Cost of Improvements	\$7,131,648	\$28,000,000	\$35,131,648
Capacity (MGD)	0.750	1.250	2.000
Subtotal Cost per Gallon	\$9.51	\$22.40	\$17.57
Odor Control Improvements [3]	\$1,125,000	\$1,875,000	\$3,000,000
Adjusted Cost	\$8,256,648	\$29,875,000	\$38,131,648
Total Cost per Gallon	\$11.01	23.90	19.07

[1] Existing capacity is based on the reimbursement agreement with Newland for the Rainbow Valley WRF.

[2] Reflects increased capacity for the Rainbow Valley WRF in 2020 based on current cost of \$26.4 million escalated 3% per year.

[3] Improvements are allocated proportionally between existing and expansion capacity.

Based on the blend of existing and future capacity to serve the LUA Period growth and the average cost per gallon, the following cost of south wastewater treatment facilities is calculated below:

**Table 89: South Wastewater Treatment Improvements**

	Existing Capacity	Treatment Expansion [1]	Total
Capacity Allocation to Growth	0.390	0.473	0.863
Cost per Gallon	\$11.01	\$23.90	19.07
Cost of Improvements	\$4,293,457	\$11,304,700	\$15,598,157
Rounded Amount			\$15,598,000

[1] Includes a portion of the 1.25 MGD increase for Rainbow Valley WRF (0.750 to 2.000 MGD).

It should be noted that the treatment expansion is assumed to be funded either 1) by Newland and would require an additional reimbursement agreement; or 2) from existing utility reserves which would be refunded from development fees.

The necessary improvements detailed above for the south wastewater area are summarized and calculated on a per equivalent unit basis below.

**Table 90: Wastewater – South DIF**

Wastewater Treatment/Disposal	\$15,598,000
Transmission/Collection	0
LUA/IIP Updates and Audit	50,000
Existing Balance	0
IIP Costs	\$15,648,000
Growth Capacity (MGD)	0.863
Cost per Gallon	\$18.13
LOS (Avg. Gallons/Day)	140
Wastewater DIF per EDU (3/4" Meter)	\$2,538

## WASTEWATER SOUTH FEE CALCULATIONS

Wastewater DIFs are assessed by meter size and increased for 3/4-inch and higher meter sizes based on the AWWA meter capacity relationships. One EDU is equated to a 3/4-inch meter, which is the smallest and most common meter size available. The following provides the calculated fees by meter size using AWWA equivalent ratios and are the same as the City's existing equivalent ratios:

**Table 91: Calculated Wastewater South Fee Levels**

Meter Size	Ratio	8.1.14 Fee	Calculated Fee	Difference \$	Difference %
3/4-inch	1.00	\$1,541	\$2,538	\$997	65%
1-inch	1.67	\$2,572	\$4,238	\$1,666	65%
1.5-inch	3.33	\$5,125	\$8,451	\$3,326	65%
2-inch	5.33	\$8,202	\$13,527	\$5,325	65%
3-inch	10.67	\$16,416	\$27,080	\$10,664	65%
4-inch	16.67	\$25,646	\$42,308	\$10,664	65%
6-inch	33.33	N/A	\$84,591	N/A	N/A
8-inch	53.33	N/A	\$135,351	N/A	N/A

As shown above, the calculated fees are higher than the existing fees. The existing fees are relatively low for wastewater treatment infrastructure while the calculated fees are based on actual costs for the existing capacity and future costs with inflation for expanded capacity. Additional fee levels are proposed for 6-inch and 8-inch meters, as the City currently does not have these meter sizes identified in its development fee ordinance.

## WASTEWATER SOUTH REVENUE FORECAST

The south wastewater DIF revenue forecast is shown below:

**Table 92: Wastewater South Revenue Forecast**

Development Units	Assumed EDUs	Wastewater DIF	Forecast Revenue
Single Family (Units)	5,548	\$2,538	\$14,080,824
2+ Units Residential (Units)	263	\$2,538	\$667,494
Industrial (1,000 sf)	7	\$2,538	\$17,766
Commercial (1,000 sf)	165	\$2,538	\$418,770
Institutional (1,000 sf)	151	\$2,538	\$383,238
Office & Other Uses (1,000 sf)	27	\$2,538	\$68,526
Total	6,161		\$15,636,618

Note: The revenue forecast is based on the 10-year service unit increase multiplied by the calculated DIF. Actual revenue collections will vary due to several factors including the statutory waiting period on implementing fees.

There is only a slight difference in the south wastewater DIF revenue before and after adjustments since the fee level is not anticipated to change significantly.

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# LIST OF APPENDICES

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Appendix A: LUA Memorandum as of November 6, 2017

Appendix B: Summary Infrastructure Level of Service

Appendix C: IIP Projects by Service

## **Appendix A**

**LUA Memorandum as of November 6, 2017**

## **MEMORANDUM**

**To:** Andrew Rheem  
Tony Hairston

**From:** Richard Merritt

**Date:** November 6, 2017

**Re:** Preliminary Forecast for Land Use Assumptions

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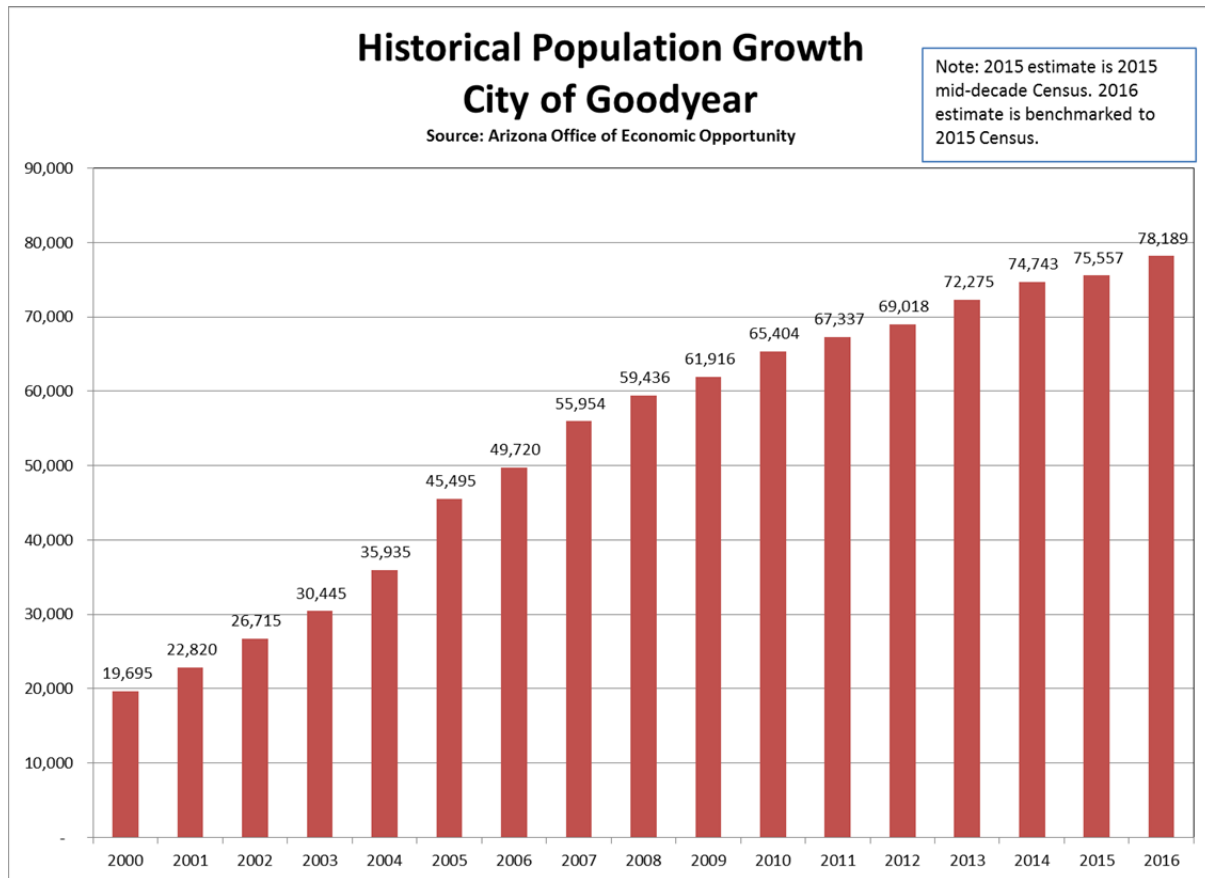
We have completed our review of the non-residential land use information provided by the City's GIS personnel. We have also reviewed various other documents provided by the City including information on multi-family development and pending commercial development. This memo outlines our initial recommendations on the land use assumptions. Our preliminary residential forecast remains unchanged from our August 31, 2017 memo and is outlined in the first part of this memo.

### **Population Forecast**

We have used a variety of sources to develop a population and housing forecast. To begin with, Goodyear has grown rapidly since 2000 at an overall compounded annual rate of 9.0%. Much of that growth occurred during the housing boom and, since 2010, the rate of growth has leveled off to an annual rate of 3.0%. In 2015, Goodyear paid for a special mid-decade census in an effort to generate additional state revenue sharing. That number came in at 75,557. The following chart shows the historical growth of the City, but we note on the following chart that the 2015 estimate from the Arizona Office of Economic Opportunity (OEO) was prepared prior the results of the special census. The 2016 estimate was benchmarked to the census estimate, so the July 2016 population estimate for Goodyear is 78,189.



Chart 1



We have consulted the Arizona OEO and MAG forecasts in developing our forecast for the City. Using the benchmarked 2016 population of 78,189, the following chart shows our initial forecast with total population and resident population. According to MAG data, the resident population does not include persons in group quarters such as prisons, nursing homes, etc. We have checked the inmate records at the Perryville Prison and their population since 2011 has increased by nearly 600 inmates or an average annual increase of about 2.5%. However, over the last three years the inmate count has leveled off at about 3,900 inmates. MAG forecasts a continued increase in the population of the prison over the long term. Whether that occurs in the future with prison and inmate reform programs is open to question. There are a couple of additional group facilities in the City that are also not included in the resident population numbers, but the size of these facilities is nominal.

The forecast is for Goodyear to grow to a population of 127,789 persons by FY 2028 with a resident population of 122,425. Goodyear's resident population will increase by 51% over the next ten years or an increase of 41,287 persons.

**Table 1**

<b>Population Forecast</b> <b>City of Goodyear</b>							
Fiscal Year	Total Population			Resident Population			Non-Resident Population
	Population*	Change	Percent Change	Population	Change	Percent Change	
2017	82,243			77,938			4,353
2018	85,530	3,287	4.0%	81,138	3,200	4.1%	4,440
2019	88,919	3,389	4.0%	84,438	3,300	4.1%	4,528
2020	92,409	3,490	3.9%	87,838	3,400	4.0%	4,619
2021	96,001	3,592	3.9%	91,338	3,500	4.0%	4,711
2022	99,695	3,694	3.8%	94,938	3,600	3.9%	4,805
2023	103,591	3,896	3.9%	98,738	3,800	4.0%	4,901
2024	107,989	4,398	4.2%	103,038	4,300	4.4%	4,999
2025	112,689	4,700	4.4%	107,638	4,600	4.5%	5,098
2026	117,491	4,802	4.3%	112,338	4,700	4.4%	5,200
2027	122,495	5,004	4.3%	117,238	4,900	4.4%	5,304
2028	127,789	5,294	4.3%	122,425	5,187	4.4%	5,410
<b>Totals FY19 - FY28</b>		<b>42,258</b>	<b>49.4%</b>		<b>41,287</b>	<b>50.9%</b>	
*Forecast is benchmarked to 2016 OEO population estimate							
Sources: MAG, AZ Office of Economic Opportunity							

### **Residential Construction Forecast**

The population forecast on Table 1 has been allocated according the current impact fee sub-areas of North, Central and South as shown on Table 2. The allocation is based on MAG's growth projections, benchmarked to the most recent population estimates. As noted on the following table, nearly 50% of the future growth is expected to occur in the Central sub-area, followed by the South sub-area. The North subarea is nearing build-out according to MAG and housing construction activity is expected to slowly decrease over the next ten years.

Table 2 also includes the forecast for single and multi-family housing by sub-area. The forecast is based on various capture factors including:

- Goodyear's share of the single family permitting activity at 5% of the Greater Phoenix permitting total.
- A 2.2% of capture of Greater Phoenix multi-family permitting. This means that Goodyear will see about 13.6% of its residential permit activity in apartment units.
- A vacancy factor of 5% has been factored into the residential permit forecast.
- The permit totals for the sub-markets take into account the differences in household size for each sub-market. The overall household size for Goodyear according to MAG and the Census is 2.86 persons. However, the average size in the North sub-market is

2.55; in the Central sub-market it is 3.10; and in the South sub-market the average household size is 2.94.

- In our opinion, few multi-family units will be built in the South sub-market over the next ten years. The majority of apartment units will likely be built in the North and Central sub-markets.

Table 2

Population & Housing Forecast By Sub-Area City of Goodyear													
	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY18-FY28 Change
<b>Population By Type</b>													
Total Population	82,243	85,530	88,919	92,409	96,001	99,695	103,591	107,989	112,689	117,491	122,495	127,789	42,258
Resident Population	77,938	81,138	84,438	87,838	91,338	94,938	98,738	103,038	107,638	112,338	117,238	122,425	41,287
<b>Resident Populaton Forecast by Sub-Area</b>													
North	26,890	27,536	28,174	28,802	29,417	30,014	30,620	31,320	32,039	32,709	33,348	33,967	6,431
Central	37,111	38,619	40,166	41,753	43,381	45,053	46,817	48,823	50,980	53,206	55,562	58,108	19,489
South	13,937	14,984	16,098	17,282	18,539	19,871	21,300	22,895	24,618	26,423	28,328	30,350	15,366
<b>Total</b>	<b>77,938</b>	<b>81,138</b>	<b>84,438</b>	<b>87,838</b>	<b>91,338</b>	<b>94,938</b>	<b>98,738</b>	<b>103,038</b>	<b>107,638</b>	<b>112,338</b>	<b>117,238</b>	<b>122,425</b>	<b>41,287</b>
<b>Change in Resident Population by Sub-Area</b>													
North		646	639	628	615	597	606	699	719	670	639	619	6,431
Central		1,508	1,547	1,587	1,628	1,671	1,765	2,005	2,158	2,226	2,356	2,546	19,489
South		1,046	1,114	1,185	1,257	1,332	1,429	1,595	1,723	1,805	1,906	2,022	15,366
<b>Total</b>		<b>3,200</b>	<b>3,300</b>	<b>3,400</b>	<b>3,500</b>	<b>3,600</b>	<b>3,800</b>	<b>4,300</b>	<b>4,600</b>	<b>4,700</b>	<b>4,900</b>	<b>5,187</b>	<b>41,287</b>
<b>Housing Unit Forecast</b>													
<b>Vacancy factor</b>	<b>5%</b>												
North		263	259	254	246	250	289	297	276	264	255	272	2,662
Central		526	539	553	568	600	681	733	756	800	865	986	7,083
South		399	425	451	477	512	572	617	647	683	725	789	5,898
<b>Total</b>		<b>1,189</b>	<b>1,223</b>	<b>1,257</b>	<b>1,291</b>	<b>1,362</b>	<b>1,542</b>	<b>1,647</b>	<b>1,679</b>	<b>1,747</b>	<b>1,845</b>	<b>2,048</b>	<b>15,643</b>
<b>Housing Unit Forecast By Housing Type</b>													
<b>North - Total Units</b>		<b>259</b>	<b>254</b>	<b>246</b>	<b>250</b>	<b>289</b>	<b>297</b>	<b>276</b>	<b>264</b>	<b>255</b>	<b>272</b>	<b>2,662</b>	
Single Family		180	176	171	174	200	206	192	183	177	189	1,848	
Multi-Family		79	78	75	76	88	91	84	81	78	83	814	
<b>Central - Total Units</b>		<b>539</b>	<b>553</b>	<b>568</b>	<b>600</b>	<b>681</b>	<b>733</b>	<b>756</b>	<b>800</b>	<b>865</b>	<b>986</b>	<b>7,083</b>	
Single Family		466	478	491	518	589	633	653	692	748	852	6,119	
Multi-Family		73	75	77	82	93	100	103	109	118	134	963	
<b>South - Total Units</b>		<b>425</b>	<b>451</b>	<b>477</b>	<b>512</b>	<b>572</b>	<b>617</b>	<b>647</b>	<b>683</b>	<b>725</b>	<b>789</b>	<b>5,898</b>	
Single Family		399	424	449	482	538	581	608	642	682	743	5,548	
Multi-Family		25	27	28	30	34	37	38	41	43	47	350	
<b>City-Wide Totals</b>		<b>1,223</b>	<b>1,257</b>	<b>1,291</b>	<b>1,362</b>	<b>1,542</b>	<b>1,647</b>	<b>1,679</b>	<b>1,747</b>	<b>1,845</b>	<b>2,048</b>	<b>15,643</b>	
Single Family		<b>1,045</b>	<b>1,078</b>	<b>1,111</b>	<b>1,173</b>	<b>1,327</b>	<b>1,420</b>	<b>1,454</b>	<b>1,517</b>	<b>1,606</b>	<b>1,784</b>	<b>13,515</b>	
Multi-Family		<b>178</b>	<b>180</b>	<b>181</b>	<b>188</b>	<b>215</b>	<b>227</b>	<b>226</b>	<b>230</b>	<b>239</b>	<b>264</b>	<b>2,127</b>	
Sources: MAG, AZ Office of Economic Opportunity, U.S. Census, Elliott D. Pollack & Co.													

### **Non-Residential Forecast**

Table 3 outlines the building square footage for various non-residential land use categories within Goodyear. This summary was created from the data provided by the City's GIS personnel. The primary categories of retail, office and industrial uses are outlined on the table. In addition, Goodyear has a significant inventory of major medical facilities that include two hospitals and several urgent care properties. These facilities have been separated from the other land use categories because of their specialized use. However, they could be combined with other land use categories in order to simplify the LUA analysis process.

The last category is labeled Institutional and includes government, the Perryville Prison, churches, spring training facilities, private clubhouses and golf course buildings, the YMCA and schools. Following are some comments related to these uses.

- The government use includes primarily City facilities such as municipal buildings, police and fire stations, ADOT facilities, the post office, utility buildings and emissions testing facility.
- The Perryville Prison is a large facility that has been growing in population and is forecasted to continue to grow by MAG. At the end of September 2017, the prison had 3,930 inmates, a population level that has been maintained since 2014. The prison has a capacity of 4,250 persons. We have not been able to confirm if there are plans to expand the prison in the next ten years. At this time, we are assuming no expansion of the facility.
- The spring training facility includes the stadium and clubhouses for the teams. We would not expect this use to expand any further.
- Private clubhouses are within Palm Valley, CanteMia, and Pebble Creek. We have not been able to determine if additional clubhouses will be built in any of the retirement communities in the next ten years.
- Golf course facilities consist of clubhouses and maintenance buildings.

**Table 3**

<b>Building Square Footage By Use &amp; Sub-Area City of Goodyear</b>				
<b>Land Use</b>	<b>North</b>	<b>Central</b>	<b>South</b>	<b>Totals</b>
<b>Retail</b>				
Retail Centers	2,357,503	2,955,830	146,629	5,459,962
Hotel/Motel	260,046	260,177	-	520,223
Private Clubhouses/Golf Courses	171,650	-	86,891	258,541
<b>Total Retail SF</b>	<b>2,789,199</b>	<b>3,216,007</b>	<b>233,520</b>	<b>6,238,726</b>
<b>Office (Including Medical Office)</b>	<b>825,854</b>	<b>886,164</b>	<b>36,306</b>	<b>1,748,324</b>
<b>Industrial</b>				
Industrial Buildings	2,096,140	5,536,020	-	7,632,160
Airport	-	530,000	7,500	537,500
<b>Total Industrial SF</b>	<b>2,096,140</b>	<b>6,066,020</b>	<b>7,500</b>	<b>8,169,660</b>
<b>Institutional</b>				
Government	22,367	306,731	22,485	351,583
Hospitals	324,375	370,727	-	695,102
Prison	551,833	-	-	551,833
Churches	58,656	297,250	12,804	368,710
Spring Training Facility	-	181,862	-	181,862
YMCA	26,343	-	-	26,343
Schools	670,031	912,377	389,907	1,972,315
<i>Public</i>	<i>523,365</i>	<i>709,391</i>	<i>389,907</i>	<i>1,622,663</i>
<i>Private</i>	<i>146,666</i>	<i>202,986</i>	<i>-</i>	<i>349,652</i>
<b>Total Institutional SF</b>	<b>1,653,605</b>	<b>2,068,947</b>	<b>425,196</b>	<b>4,147,748</b>
<b>Total Building Area</b>	<b>7,364,798</b>	<b>12,237,138</b>	<b>702,522</b>	<b>20,304,458</b>
Source: City of Goodyear GIS, Maricopa County Assessor				

The forecast for commercial/non-residential development in Goodyear is a function of population and employment growth. Table 4 outlines the MAG forecast for employment growth for Goodyear. From FY2018 through FY 2028, Goodyear's employment base is expected to grow by 15,400 jobs or an average of nearly 1,540 jobs per year. Approximately 46% of the job growth is expected to occur in the Central sub-market and 33% in the North sub-market.

**Table 4**

Employment Forecast By Sub-Area City of Goodyear													
Sub-Area	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY18-FY28 Change
<b>North</b>	16,377	16,813	17,261	17,720	18,192	18,676	19,174	19,684	20,208	20,746	21,298	21,865	<b>5,052</b>
Job Change			448	460	472	484	497	510	524	538	552	567	5,052
<b>Central</b>	15,296	15,831	16,391	16,977	17,591	18,235	18,912	19,624	20,374	21,165	22,001	22,886	<b>7,054</b>
Job Change			560	586	614	644	677	712	750	791	836	885	7,054
<b>South</b>	1,949	2,133	2,334	2,556	2,801	3,072	3,372	3,704	4,074	4,486	4,947	5,463	<b>3,330</b>
Job Change			202	222	245	271	300	333	370	412	461	516	3,330
<b>Total City</b>	<b>33,623</b>	<b>34,777</b>	<b>35,986</b>	<b>37,254</b>	<b>38,584</b>	<b>39,984</b>	<b>41,457</b>	<b>43,012</b>	<b>44,656</b>	<b>46,397</b>	<b>48,246</b>	<b>50,214</b>	<b>15,437</b>
Job Change			1,209	1,267	1,331	1,399	1,474	1,555	1,644	1,741	1,849	1,968	15,437
Sources: MAG 2016													

A forecast for the future growth of the non-residential land uses has been developed based on the relationship between population, employment and non-residential development within the City (Table 5). We anticipate that the City's non-residential uses will continue to develop as they have in the past relative to the community's population and job base. However, a number of adjustments have been made to the forecast based on input from staff at the meeting on October 24, 2017. As a result, the non-residential square footage within Goodyear has been increased by 1.7 million square feet from the October 18 report, all within the industrial category. Total forecasted non-residential square footage growth over the next ten years is now estimated at 10.4 million square feet or an increase of approximately 51% over the next ten years.



Table 5

<b>Recommended Non-Residential Land Use Assumptions</b> <b>Forecasted Growth FY2019 - FY 2028 (Building Square Feet)</b> <b>City of Goodyear</b>					
Land Use	FY 2018 Totals	Forecasted FY19-FY28 Non-Residential Building SF			
		Totals	North	Central	South
<b>Retail</b>	<b>6,238,726</b>	<b>2,087,443</b>	<b>798,764</b>	<b>995,028</b>	<b>293,651</b>
<b>Office</b>	<b>1,748,324</b>	<b>855,560</b>	<b>385,002</b>	<b>421,060</b>	<b>49,498</b>
<b>Industrial</b>	<b>8,169,660</b>	<b>6,346,304</b>	<b>3,109,689</b>	<b>3,214,391</b>	<b>22,224</b>
<b>Institutional</b>					
Government	351,583	172,050	5,539	143,019	23,492
Hospitals	695,102	170,078	53,963	116,115	-
Prison	551,833	-	-	-	-
Churches	368,710	187,617	14,534	159,152	13,931
Spring Training Facility	181,862	-	-	-	-
YMCA	26,343	-	-	-	-
Schools	1,972,315	590,764	101,924	256,893	231,947
<b>Total Institutional</b>	<b>4,147,748</b>	<b>1,120,509</b>	<b>175,960</b>	<b>675,179</b>	<b>269,370</b>
<b>Total Building Area</b>	<b>20,304,458</b>	<b>10,409,816</b>	<b>4,469,415</b>	<b>5,305,658</b>	<b>634,743</b>
Sources: MAG 2016, Elliott D. Pollack & Co.					

The following adjustments have been made to the Land Use Assumptions:

- Retail Land Use:** Private clubhouses and golf course facilities have been placed in the retail category and should be considered retail development for the assessment of impact fees. The forecasted amount of retail square footage for the Central area has been reduced by 50% per staff recommendations.
- Industrial Land Use:** The industrial forecast was updated to include approximately 500,000 square feet of building space on the Phoenix-Goodyear Airport property. Total existing industrial building space in the City was estimated at 8.17 million square feet. Based on our previous methodology using MAG data, we would have forecasted the development of another 3.6 million square feet. However, based on staff input, that forecast was increased to 6.35 million square feet. The allocation of that building area among the sub-areas was adjusted to more evenly distribute the square footage to the North and Central sub-areas per staff recommendations.
- Institutional - Government Land Use:** We received information from City staff that 128,000 square feet of Goodyear government buildings were included in the current CIP. This included the following facilities in the Central area:
  - Two fire stations totaling 30,000 square feet,
  - A police station at 23,000 square feet,
  - A community center at 35,000 square feet, and
  - A water/wastewater administration buildings at 25,000 square feet.

Our original forecast called for about 170,000 square feet of government buildings. To account for the construction of buildings by other governmental entities, we have maintained our original methodology, updated for the latest information on inventory.

- **Institutional – Hospitals:** We have reduced the forecast for future hospital space with the assumption that a new small hospital could be built in the future or additions to existing hospitals could occur.
- **Institutional – Schools:** We have conducted some additional research and found that there are approximately 1.62 million square feet of public school buildings in the City including three high schools that average 225,000 square feet each. The average elementary school is 72,000 square feet in size. Charter and private schools total 350,000 square feet. Because of the influx of charter schools, we anticipate that the demand for public school buildings may decline. Charter schools construction will likely continue.

Table 6 shows the Land Use Assumptions forecast by fiscal year and sub-area. The table is illustrative of the manner in which building construction could occur based on population and employment growth. However, we would expect future development activity to be uneven or irregular rather than linear as noted on the table. For instance, the City may see periods of strong construction activity followed by periods of limited development. More than anything, the table provides the City some understanding of the average annual level of construction activity that could occur in any year.

**Table 6**

<b>Recommended Non-Residential Land Use Assumptions By Sub-Area &amp; Year</b> <b>Forecasted Growth FY2019 - FY 2028 (in Building Square Feet)</b> <b>City of Goodyear</b>											
Sub-Area	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY18-FY28 Change
<b>NORTH</b>											
Retail	75,549	75,665	75,567	75,225	76,754	84,159	86,490	83,995	82,858	82,503	798,764
Office	36,414	36,470	36,423	36,258	36,995	40,564	41,688	40,485	39,937	39,766	385,002
Industrial	294,122	294,572	294,193	292,860	298,811	327,641	336,716	327,001	322,576	321,195	3,109,689
Institutional	16,643	16,668	16,647	16,571	16,908	18,539	19,053	18,503	18,253	18,175	175,960
<b>North Total</b>	<b>422,729</b>	<b>423,376</b>	<b>422,831</b>	<b>420,915</b>	<b>429,468</b>	<b>470,903</b>	<b>483,946</b>	<b>469,984</b>	<b>463,624</b>	<b>461,639</b>	<b>4,469,414</b>
<b>CENTRAL</b>											
Retail	78,986	81,461	84,049	86,792	91,520	101,852	108,999	113,098	119,644	128,627	995,028
Office	33,424	34,471	35,567	36,727	38,728	43,100	46,124	47,859	50,629	54,430	421,060
Industrial	255,161	263,157	271,517	280,376	295,650	329,029	352,115	365,356	386,505	415,524	3,214,391
Institutional	53,596	55,276	57,032	58,893	62,101	69,112	73,961	76,743	81,185	87,280	675,178
<b>Central Total</b>	<b>421,167</b>	<b>434,365</b>	<b>448,165</b>	<b>462,788</b>	<b>487,999</b>	<b>543,094</b>	<b>581,199</b>	<b>603,055</b>	<b>637,964</b>	<b>685,861</b>	<b>5,305,657</b>
<b>SOUTH</b>											
Retail	20,665	22,092	23,593	25,168	27,152	30,279	32,865	34,815	37,161	39,860	293,651
Office	3,483	3,724	3,977	4,242	4,577	5,104	5,540	5,869	6,264	6,719	49,498
Industrial	1,564	1,672	1,786	1,905	2,055	2,292	2,487	2,635	2,812	3,017	22,224
Institutional	18,957	20,265	21,643	23,087	24,907	27,775	30,148	31,937	34,089	36,564	269,371
<b>South Total</b>	<b>44,669</b>	<b>47,754</b>	<b>50,998</b>	<b>54,402</b>	<b>58,691</b>	<b>65,449</b>	<b>71,041</b>	<b>75,255</b>	<b>80,327</b>	<b>86,159</b>	<b>634,745</b>
<b>TOTAL</b>											
Retail	175,200	179,218	183,210	187,185	195,426	216,290	228,354	231,907	239,663	250,990	2,087,443
Office	73,322	74,665	75,967	77,228	80,300	88,768	93,352	94,212	96,830	100,915	855,560
Industrial	550,847	559,401	567,497	575,141	596,517	658,962	691,318	694,992	711,894	739,735	6,346,304
Institutional	89,195	92,209	95,321	98,551	103,916	115,427	123,162	127,182	133,526	142,019	1,120,509
<b>Grand Total</b>	<b>888,565</b>	<b>905,494</b>	<b>921,995</b>	<b>938,105</b>	<b>976,158</b>	<b>1,079,447</b>	<b>1,136,186</b>	<b>1,148,294</b>	<b>1,181,914</b>	<b>1,233,658</b>	<b>10,409,816</b>
Sources: MAG 2016, Elliott D. Pollack & Co.											

## **Appendix B**

### **Summary Infrastructure Level of Service**

**Appendix B**  
**Summary Infrastructure Level of Service**

Category	Level of Service	Calculated LOS 2018	Recommended LOS
Police	Building sf per Service Unit	0.33	0.33
	Vehicles per 1,000 Service Units	0.57	0.57
	Radio Towers per 41,000 Service Units	1.00	1.00
Fire	Building sf per Service Unit - North	0.55	0.55
	Apparatus per 1,000 Service Units - North	0.10	0.10
	Building sf per Service Unit - South	0.73	0.72
	Apparatus per 1,000 Service Units - South	0.12	0.12
Parks	Improved Acreage per 1,000 Service Units:		
	North - Residential	1.23	1.23
	North - Non-residential	0.05	0.05
	South - Residential	1.32	1.21
	South - Non-residential	0.15	0.15
Streets	Lane Miles per 10,000 VMT - North	1.11	0.82
	Traffic Signals per 10,000 VMT - North	0.09	0.07
	Lane Miles per 10,000 VMT - South	1.11	0.53
	Traffic Signals per 10,000 VMT - South	0.09	0.05
Water	GPD (average day) per EDU	402	402
Wastewater	GPD (average day) per EDU	140	140

## **Appendix C**

### **IIP Projects by Service**

## Appendix C

### IIP Projects by Service

#### Fire IIP Projects - North

Description	Current Cost	Year	Escalated Cost	Allocation to LUA Growth	Comments
West Goodyear Fire Station (12,000 sf)	\$5,778,100	2020	\$6,105,000	\$6,105,000	Station construction costs split into two years on the CIP. In FY 2019, \$820,000 was scheduled and the remainder of construction in FY 2019. Only the FY 2019 construction costs were escalated.
Future North Fire Station (9,980 sf)	5,778,100	2027	7,539,000	6,270,000	2018 Cost and Escalated Cost amounts based on a future 12,000 sf fire station. LOS standards indicate only 9,980 sf are needed in addition to West Goodyear Fire Station, so 83.2% (9,980/12,000) is allocated to the LUA Growth.
<b>Subtotal -Building Space</b>	<b>\$11,556,200</b>		<b>\$13,644,000</b>	<b>\$12,375,000</b>	
4 Fire Apparatus	2,564,000	2024	3,060,000	3,060,000	
Future LUA/IIP Updates and Audits	50,000		50,000	50,000	
<b>Total</b>	<b>\$14,170,200</b>		<b>\$16,754,000</b>	<b>\$15,485,000</b>	

#### Fire IIP Projects - South

Description	Current Cost	Year	Escalated Cost	Allocation to LUA Growth	Comments
EMR Fire Station	\$5,470,000	2019	\$5,470,000	\$5,470,000	
2 Fire Apparatus	1,282,000	2024	1,530,000	1,530,000	
Future LUA/IIP Updates and Audits	50,000		50,000	50,000	
<b>Total</b>	<b>\$6,802,000</b>		<b>\$7,050,000</b>	<b>\$7,050,000</b>	



### Police IIP Projects

Description	Current Cost	Year	Escalated Cost	Allocation to LUA Growth	Comments
Police Building Phase 1 - GF Loan Repayment (830 sf)	\$324,000	Ongoing	\$324,000	\$324,000	
Financing Costs for GF Loan Repayment	96,000	Ongoing	96,000	96,000	10-year loan, 5% interest, 0% loan issuance costs (internally funded)
Police Building Phase 2 (8,700 sf)	13,697,200	2020	14,646,000	5,351,000	Total improvement is 21,000 sf and includes 12,300 sf of replacement space, leaving 8,700 sf to serve LUA growth.
Future Police Building Space (9,168 sf)	3,588,200	2025	4,413,000	4,413,000	Cost of additional Police building space based on per sf cost of Police Building Phase 1 of approximately \$391/sf.
<b>Subtotal -Building Space</b>	<b>\$17,705,400</b>		<b>\$19,479,000</b>	<b>\$10,184,000</b>	
33 Police Vehicles	1,591,000	Ongoing	1,879,000	1,879,000	
Radio Tower Expansion	4,000,000	2025	4,919,000	4,919,000	
Future LUA/IIP Updates and Audits	50,000		50,000	50,000	
<b>Total</b>	<b>\$23,346,400</b>		<b>\$26,327,000</b>	<b>\$17,032,000</b>	

### Parks and Recreation IIP Projects – North

Description	Current Cost	Year	Escalated Cost	Allocation to LUA Growth	Comments
Central Goodyear Park (30 acres)	\$9,771,759	2019	\$10,041,000	\$10,041,000	Park costs split into two years on the CIP. In FY 2018, \$800,000 was scheduled and the remainder of construction in FY 2019. Only the FY 2019 construction costs were escalated.
Financing Costs for Central Goodyear Park	4,689,000	2019	4,689,000	4,689,000	20-year loan, 5% interest, 1.5% loan issuance costs. Amount shows net present value of interest and loan issuance costs (assumes 5% discount factor).
<b>Subtotal Central Goodyear Park</b>	<b>\$14,460,759</b>		<b>\$14,730,000</b>	<b>\$14,730,000</b>	
Community Park #2	14,815,500	2027	19,331,000	1,675,000	Reflects 2.6 acres of total 30-acre park allocated to growth during LUA Period.
Future LUA/IIP Updates and Audits	50,000		50,000	50,000	
<b>Total</b>	<b>\$29,326,259</b>		<b>\$34,111,000</b>	<b>\$16,455,000</b>	

### Parks and Recreation IIP Projects – South

Description	Current Cost	Year	Escalated Cost	Allocation to LUA Growth	Comments
Newland Reimbursement EMR Park	\$2,547,000	Ongoing	\$2,547,000	\$2,547,000	
Foothills Community Park Phase II (17 acres)	8,169,100	2027	10,659,000	10,659,000	
Future LUA/IIP Updates and Audits	50,000		50,000	50,000	
<b>Total</b>	<b>\$10,766,100</b>		<b>\$13,256,000</b>	<b>\$13,256,000</b>	

### Streets IIP Projects – North

Description	Current Cost	Year	Escalated Cost	Allocation to LUA Growth	Comments
I-1 Pebble Creek Parkway and Interstate 10 Intersection	\$2,797,475	2019	\$2,882,000	\$2,882,000	
McDowell Road and Citrus Road Intersection	2,750,833	2020	2,919,000	2,919,000	
Sarival Avenue (West Half), Yuma Rd to Elwood St	9,647,135	2022	10,858,000	10,858,000	
Estrella Parkway (Outside Northbound Lane), MC85 to Elwood St	480,245	2026	609,000	609,000	
Citrus Rd (Full City Cross Section), I-10 (End ADOT Impr.) to Thomas Rd.	14,605,415	2024	17,440,000	17,440,000	
I-5 Lower Buckeye Road and Sarival Avenue Intersection	895,974	2022	1,009,000	756,750	25% of escalated cost being recovered through developer agreement.
R-4 Yuma Road, Canyon Trails to Sarival Avenue	3,546,179	2024	4,235,000	4,235,000	
Future LUA/IIP Updates and Audits	50,000		50,000	50,000	
<b>Total</b>	<b>\$34,773,256</b>		<b>\$40,002,000</b>	<b>\$39,749,750</b>	

### Streets IIP Projects – South

Description	Current Cost	Year	Escalated Cost	Allocation to LUA Growth	Comments
I-8 Estrella Parkway and Cotton Lane Intersection	\$5,124,789	2021	\$5,600,000	\$5,600,000	
R-2 Estrella Parkway, Vineyard Avenue to MC 85	28,678,966	2024	34,245,000	11,415,000	Project is being allocated to 30-years of growth. 33.3% is being recovered over the LUA Period. Amount shown is 33.3% of total project cost.
R-2 Financing Costs			4,514,200	4,514,200	20-year loan, 5% interest, 1.5% loan issuance costs. Amount shows net present value of interest and loan issuance costs allocated to LUA Period (assumes 5% discount factor). Includes offset to amount financed to reflect DIFs collected through 2024.
Future LUA/IIP Updates and Audits			50,000	50,000	
<b>Total</b>	<b>\$33,803,755</b>		<b>\$44,409,200</b>	<b>\$21,579,200</b>	

### Water IIP Projects – North

Description	Current Cost	Year	Escalated Cost	Allocation to LUA Growth	Comments
Surface Water Project Principal and Interest	\$71,911,419	2019-2028	\$71,911,419	\$49,747,000	Allocation reflects principal and interest payments toward project
GRIC Lease Payments	7,113,539	Ongoing	7,113,539	5,862,000	
Site #12 Increase Booster Capacity	1,810,000	2024	2,200,000	2,200,000	
Oversizing Lines	1,544,900	2019	1,600,000	1,600,000	
WPA 2 - New 16-in water main (5,280 LF) Litchfield Road from Yuma Rd to Van Buren St	1,544,900	2021	1,700,000	1,700,000	
WPA 2 - New 16-in water main (650 LF) Litchfield Road from El Cielo Street to MC85	190,200	2021	200,000	200,000	
Future LUA/IIP Updates and Audits	50,000	Ongoing	50,000	50,000	Amount over ten year period
<b>Total</b>	<b>\$84,164,958</b>		<b>\$84,774,958</b>	<b>\$61,359,000</b>	

### Water IIP Projects – South

Description	Current Cost	Year	Escalated Cost	Allocation to LUA Growth	Comments
Surface Water Project Principal and Interest	\$43,584,031	2019-2028	\$43,584,031	\$27,425,000	Allocation reflects principal and interest payments toward project
Northern Solutions Reimbursement	13,928,765	2019-2028	13,928,765	13,929,000	Ongoing developer reimbursements
Rainbow Valley Water Campus Booster:	1,141,000	2019-2028	1,141,000	1,141,000	
1.5 MGD Reservoir Project	4,000,000	2023	4,600,000	4,600,000	
Future LUA/IIP Updates and Audits	50,000	Ongoing	50,000	50,000	Amount over ten year period
<b>Total</b>	<b>\$62,703,796</b>		<b>\$63,303,796</b>	<b>\$47,145,000</b>	

### Wastewater IIP Projects – North

Description	Current Cost	Year	Escalated Cost	Allocation to LUA Growth	Comments
Goodyear WRF Expansion 4 to 6 MGD	\$14,546,136	2017-2019	\$14,546,136	\$14,546,136	
Goodyear GWRF - Expansion 6 to 8 MGD	44,000,000	2024	52,500,000	9,580,864	
WIFA Debt Service	4,951,100	Ongoing	4,951,100	4,951,100	
WPA 2 - New 12-in sewer (5,090 LF) Bullard Avenue from Van Buren to Yuma	1,099,600	2024	1,300,000	1,300,000	
Future LUA/IIP Updates and Audits	50,000	Ongoing	50,000	50,000	Amount over ten year period
<b>Total</b>	<b>\$64,646,836</b>		<b>\$73,347,236</b>	<b>\$30,428,100</b>	

### Wastewater IIP Projects – South

Description	Current Cost	Year	Escalated Cost	Allocation to LUA Growth	Comments
Rainbow Valley WRF Reimbursements	\$7,131,648	Ongoing	\$7,131,648	\$3,708,457	Allocation reflects remaining reimbursements to developer for existing capacity
Rainbow Valley WRF Expansion	26,400,000	2020	28,000,000	10,595,200	Reflects expansion capacity allocated to LUA growth
Odor Control Improvements	3,000,000	2020	3,000,000	1,294,500	Portion of odor control allocated to LUA growth
Future LUA/IIP Updates and Audits	50,000	Ongoing	50,000	50,000	Amount over ten year period
<b>Total</b>	<b>\$36,581,648</b>		<b>\$38,181,648</b>	<b>\$15,648,157</b>	