

CITY OF
GOODYEAR

**2019 Development Impact Fee Study –
Land Use Assumptions and
Infrastructure Improvements Plan**

October 28, 2019

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List of Abbreviations Used Throughout the Report

2018 Study – 2018 Development Impact Fee Study – Land Use Assumptions and Infrastructure Improvement Plan, dated October 22, 2018

DIF – Development Impact Fee

IIP – Infrastructure Improvement Plan

LOS – Level of Service

LUA – Land Use Assumptions

LUA Period – 10-year growth period from LUA

Newland – Newland Real Estate Group, LLC

NWRV – Northwest Rainbow Valley development area (between Pecos Road and Queen Creek Road)

Raftelis – Raftelis Financial Consultants, Inc.

sf – square feet

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Section 1. Introduction

The City of Goodyear recently updated its LUA, IIP and DIFs in 2018. Since the 2018 Study was completed a new development area is being added that is within City boundaries but outside of previously identified DIF service areas. This new area is referred to as the Northwest Rainbow Valley (NWRV) area located between Pecos Road and Queen Creek Road, south of the existing DIF service areas. An update to Police DIFs are necessary to include this new growth in the NWRV area extending further south past the existing service area boundary currently terminating at Pecos Road. Fire and Streets South DIF service areas have historically spanned from the Gila River south to Pecos Road, but will be extended further south to Queen Creek Road in order to capture the anticipated development within NWRV.

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 existing DIFs are authorized in Article 9-8 of the City Code and have been effective since April 1, 2019. 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 is in most cases similar to the costs identified in the 2018 Study, which generates similar fee levels. 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 [1]	Difference
Police	\$820	\$820	\$0
Fire	911	N/A	0
Streets	2,669	N/A	0
Parks	1,375	N/A	0
Water	7,553	N/A	0
Wastewater	2,818	N/A	0
Total	\$16,146		\$0

[1] Only the Police fees have been reviewed in this study.

South Service Area Existing and Calculated DIF Comparison

Fee Category	Existing Fee	Calculated Fee [1]	Difference
Police	\$820	\$820	\$0
Fire	971	971	0
Streets	3,330	3,330	0
Parks	2,255	N/A	0
Water	7,843	N/A	0
Wastewater	2,538	N/A	0
Total	\$17,757		\$0

[1] Only the Police, Fire and Streets fees have been reviewed in this study.

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 in the South area. 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 additional lane miles of arterial streets in the South area to maintain the current LOS provided to existing development. The City will be responsible for providing two primary improvements over the LUA Period including a bridge expansion and the appropriate intersection expansion to accommodate additional traffic generated from growth in the South area.

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.

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:

<u>Excess Sales Tax Revenue</u>	<u>Total</u>
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

The projected excess sales tax is based on City-wide projections provided by the City and is will not necessarily be used or available for the police, fire, or street projects indicated in the IIP.

Section 2. Land Use Assumptions (LUA)

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 to develop an updated forecast. Since the City recently completed a DIF study, which includes the required LUA and IIP components, the LUA was reviewed and updated for the current LUA Period. The recently adopted LUA was completed by Elliott D. Pollack & Company (dated November 6, 2017 and attached as Appendix A) and had considerations for the North area and the South area, where the South area was limited to growth north of Pecos Road to the Gila River. With the planned development activity in the NWRV area, the South service area has been redefined to extend further south to Queen Creek Road. This extension to Queen Creek Road also applies to the Police DIF service area, which is a city-wide fee. The growth attributed to the NWRV area is provided in detail on Appendix B and is incorporated where appropriate on the tables below. The NWRV growth is anticipated to be in addition to the growth forecast for the South area, based on discussions with the City that indicated this new development area is unlikely to reduce growth planned for the remainder of the area south of the Gila River (i.e., north of Pecos road).

Growth Forecast

With the recent LUA being adopted and effective as of April 1, 2019, the approach taken herein was to update the LUA as opposed to completely re-calibrating and forecasting growth. The Maricopa Association of Governments (MAG) has not released updated population and employment forecasts, which contributed to the approach used. The MAG forecast was substantially relied upon to develop the 2018 LUA along with certain input and adjustments that resulted from discussions with City staff. To keep the integrity of the LUA intact, the growth period has been updated to reflect 2020 through 2029. The 2018 LUA did not include provisions for the NWRV area. To incorporate the NWRV area, City staff developed a MAG based forecast that is provided in Appendix B. As shown on the following tables, the resident population (excluding inmates at Perryville Prison) for 2019 is estimated to be 84,438 and is forecast to increase to 131,228 in 2029. The forecast increase in population of 46,790 residents represents a cumulative 55.4% increase, which continues to place a significant level of increased demand on the services provided by the City.

The existing resident population and jobs are as follows:

Table 1: Existing Service Units

Description	North	South	Total
Population	68,340	16,098	84,438
Jobs	33,829	2,239	36,068
Total Service Units	102,169	18,337	120,506

Table 2: LUA Memo Population Forecast

Year	Population	Change	Percent Change
2018	81,138		
2019	84,438	3,300	4.1%
2020	87,838	3,400	4.0%
2021	91,486	3,648	4.2%
2022	95,298	3,812	4.2%
2023	99,387	4,089	4.3%
2024	104,005	4,618	4.6%
2025	108,955	4,950	4.8%
2026	114,040	5,085	4.7%
2027	119,364	5,324	4.7%
2028	125,017	5,653	4.7%
2029	131,228	6,211	5.0%
Total 2020-2029		46,790	55.4%

Note: Forecast is benchmarked to 2016 Arizona Office of Economic Opportunity population estimate

Sources: MAG, 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:

- Commercial (Retail);
- Office/Other;
- Industrial; and
- Institutional.

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

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

Table 3: Non-residential Building Square Feet Forecast

Land Use	2019 Total	2029 Total Growth	2029 North Growth	2029 South Growth
Industrial (sf)	8,720,507	6,492,183	6,468,896	23,287
Commercial (sf)	6,413,926	2,277,492	1,836,796	440,695
Institutional (sf)	4,236,943	1,233,499	876,245	357,254
Office (sf)	1,821,646	876,648	824,783	51,866
Total Building Area	21,193,023	10,879,822	10,006,719	873,103

Additionally, a forecast of the number of jobs generated from non-residential growth is developed to serve as the basis for determining the potential demand for services by new non-residential development. The forecast of job growth by service area is provided below, with additional details by land use type discussed later in this section.

Table 4: Non-residential Job Forecast

Year	Total Jobs	Percent Change	North Jobs	South Jobs
2018	34,777		32,644	2,133
2019	36,068	3.7%	33,829	2,239
2020	37,409	3.7%	35,058	2,351
2021	38,807	3.7%	36,332	2,475
2022	40,288	3.8%	37,654	2,634
2023	41,788	3.7%	39,025	2,763
2024	43,398	3.9%	40,446	2,952
2025	45,014	3.7%	41,920	3,094
2026	46,738	3.8%	43,449	3,289
2027	48,588	4.0%	45,036	3,552
2028	50,445	3.8%	46,681	3,764
2029	52,119	3.3%	48,206	3,913
Growth 2020-2029	16,051	44.5%	14,377	1,674

Service Areas

For the purposes of providing services, including building infrastructure and collecting DIFs, the City has identified two service areas. These two service areas are utilized for the collection of existing 2018 DIFs and for determining when expansions of infrastructure to provide additional services are necessary. The service areas are utilized for all services besides police, which encompasses the entire City DIF area. Based on the nature of services and developer reimbursement agreements the area south of the Gila river to Pecos Road, which had one primary developer, was separated from the remaining part of the City to the north of the river. With this update to the LUA, IIP and DIFs the South service area is expanded further to the south to capture growth within the NWRV area. This extension takes the southern border to Queen Creek Road. The geographic constraints of the two service areas are described below:

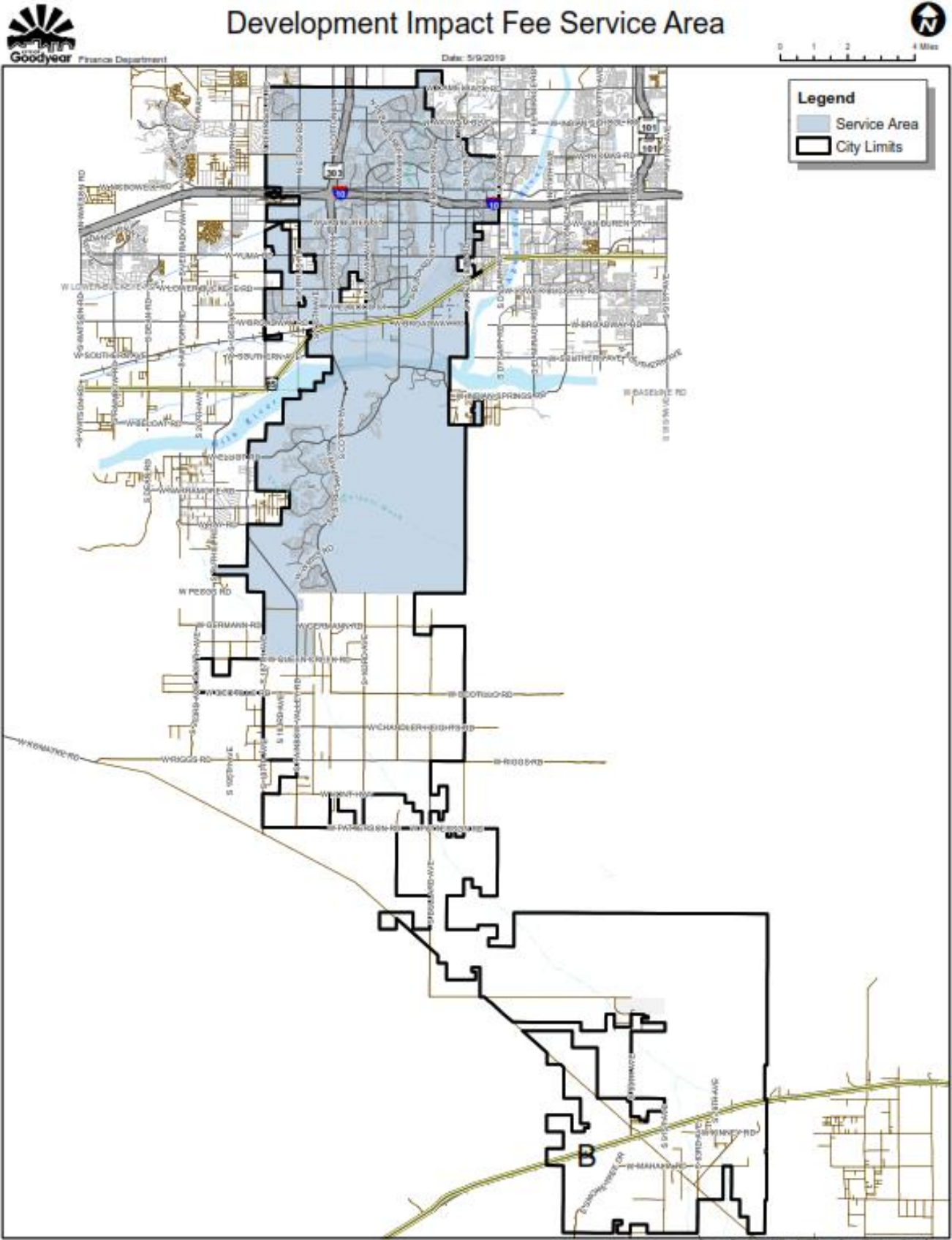
- North Goodyear (North) service area: Area in the City boundaries north of the Gila River; and
- South Goodyear (South) service area: Area in the City boundaries south of the Gila River to North of Queen Creek Road.

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.
- Streets Service: Two service areas.

The following figure provides a map of the City’s boundaries and the service areas where development impact fees are charged for new development.

Figure 1: City of Goodyear Municipal Boundaries and DIF Service Area



Service Units

To equitably recover costs from each of the six identified development types (two residential categories and four non-residential categories), it is necessary to determine a uniform means to apply DIFs. Establishing the average number of service units each new development unit will provide is the methodology used herein. A development unit is representative of a dwelling unit for residential categories and square feet for non-residential categories. 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 2.79 and South 2.64. The police fees are City-wide, therefore the average of 2.73 for the City is utilized. For fire the service area specific figure of 2.64 for the South 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 (Tables DP04 & B25033).

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

Table 5: Residential Service Unit Factors

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

Service units for non-residential development are represented by the average number of jobs created. Jobs represent people and serve as the basis for measuring the potential demand placed on services. 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. The LUA in the 2018 Study, developed by 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 6: Non-residential Service Unit Equivalent Factor

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

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

The total job forecast provided on Table 4 was developed by applying the Jobs per 1,000 sf factors identified on Table 6 above by the growth in building square feet forecast each year.

SUMMARY OF SERVICE UNIT GROWTH FORECAST BY SERVICE AREA

As previously discussed, growth in population and jobs represent service units for this study. With the addition of people to the City, through growth in population and job, there will be increased demands on the 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

Table 7: Service Unit Growth by Service Area

10 Year Projection	North	South	Total
Population	27,266	19,524	46,790
Jobs	14,377	1,674	16,051
Total Service Units	41,643	21,198	62,841

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Section 3. Fire Infrastructure Improvements

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

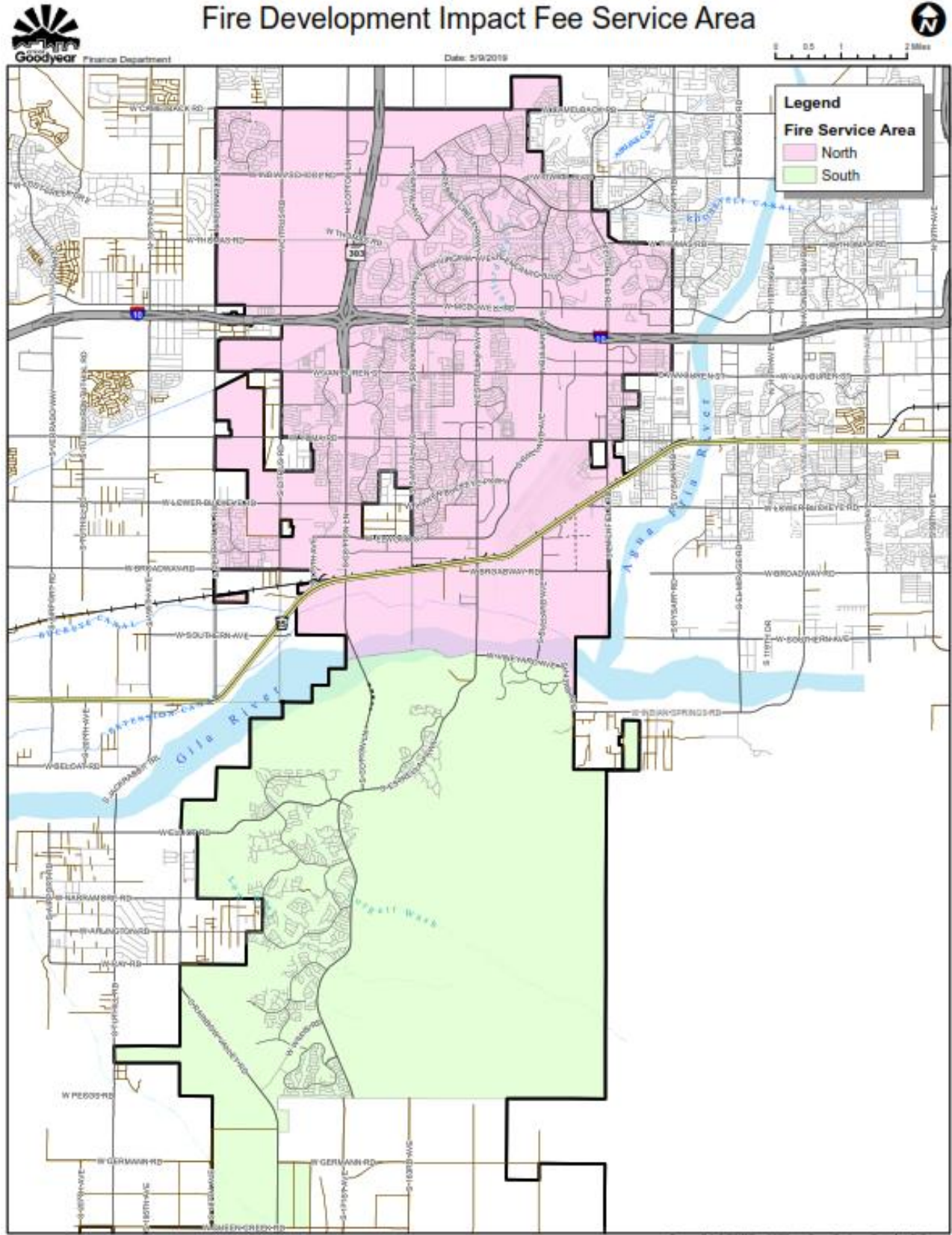
The City's fire DIFs have two geographic zones:

- North (between Gila River and northern boundaries of the City)
- South (between the Gila River and W Queen Creek Road)

The analysis herein only reviews the LUA and IIP for the South area. The City currently has one fire station in the South area (Station 182) but has plans for an additional facility (Station 186) near South Rainbow Valley Road and Pecos Road to serve growth. The City also plans to expand Station 182 in the future to accommodate increased demands by the ongoing growth. This future expansion of Station 182 is currently outside of the LUA Period and not factored into the analysis herein. To provide service to the NWRV area south of Pecos Road, the Rainbow Valley Development Agreement identifies that service will be provided through the new Station 186. The City has verified that Station 186 will have the capacity and operational level of service standards to serve this development. Due to the proximity of the Terrasante area, fire service will be obtained through Station 186 station as well.

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Figure 2: Fire Development Impact Fee Service Area Map



Source: City of Goodyear.

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 the South 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 LOS, which is typically represented by square feet of facilities or number of apparatus per 1,000 service units.

SERVICE UNITS

To establish a LOS based on existing infrastructure and existing development, service units are used as a measurement basis. As described in Section 2. Land Use Assumptions, service units consist of population growth and job growth, for residential and non-residential development, respectively. Each unit of growth for population and jobs are weighed equally. 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 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. Included on this table is growth from the 2018 South Service Area and the NWRV area.

Table 8: South Area Fire Service Units

Description	Population	Jobs	Total
Existing Service Units	16,098	2,239	18,337
Total 10-Year Growth	19,524	1,674	21,198
% Change	121.28%	74.75%	115.60%

As shown above, there are currently 18,337 service units generating the need for fire services and all are generated from the 2018 South Service Area. Since the NWRV area is undeveloped, but will be receiving fire service from Station 186, the forecast for these two areas is combined reflecting how the fire department will be operating. Since there are no existing fire facilities in the NWRV and no existing development, the LOS provided to the 2018 South Service Area is being used as a basis to ensure that the appropriate LOS is being assigned to growth within NWRV.

FIRE FACILITIES

Fire service in the South area is currently provided by station 182. Additionally, there is a headquarters building with 8,100 square feet used for support staff that benefits both service areas, which has been allocated based on the number of existing square feet of building space of fire stations. The table below shows the existing fire stations in the South service area and the square feet of each utilized to serve existing development.

Table 9: South Area Existing Fire Facilities

Description	Square Feet
Station 182	10,870
Headquarters [1]	1,620
Total	12,490

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

The existing LOS of square feet per service unit provided to existing development is provided on the table below, along with the recommended LOS from the 2018 Study.

Table 10: Fire Building Space per Service Unit – FY 2010

Description	South
Sf allocated to existing development	12,490
Existing Service Units	18,337
2019 Calculated LOS - Facilities	0.68
2018 Study Recommended LOS	0.72

As shown on the table above, the calculated 2019 LOS is slightly lower than the LOS from the 2018 Study recommendations (that were calculated based on 2017 data). The lower LOS can be attributed to the inherent timing differences of growth and adding new facilities since the City cannot add an incremental amount of square feet to fire stations each year. In a similar manner, once the City adds the new fire station it would not be appropriate to re-calculate the LOS and establish at a significantly higher basis since the fire station must be built prior to buildout of the area it will provide service to. By targeting the LOS of 0.72 sf per service unit, the City would be providing a reasonable LOS that will not charge growth for a higher LOS than provided to existing development. In general, due to this ever-fluctuating ratio, it is recommended that the City targets the LOS identified in the 2018 Study. However, with only one new station being planned during the LUA Period the LOS will be reduced over time.

With forecast growth of 21,198 service units at a LOS of 0.72 sf per Service Unit, an additional 15,262 sf of building space over the next ten years can be funded by growth. With the new Station 186 providing 11,604 sf of building space, growth would be able to support an additional 3,658 sf of expansion at Station 182. However, as previously discussed, the expansion of Station 182 is not within the LUA Period and therefore the LOS resulting at the end of the LUA Period will be lower than the 2018 Study recommendation.

Table 11: Facilities Required to Serve Growth

Description	South
Facilities LOS per Service Unit	0.72
Growth in Service Units	21,198
Additional Facilities sf for Growth	15,262

FIRE APPARATUS

In addition to funding building space, 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 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 level of service in terms of response times and general safety for the community. While the City does not currently have any reserve apparatus in the South area, should something happen to a vehicle, a vehicle can temporarily be relocated from the North service area. Table 12 provides the calculation of the existing LOS in terms of apparatus provided to existing development.

Table 12: Fire Apparatus per 1,000 Service Units – FY 2019

Description	Amount
Total Fire Apparatus	2
Existing Service Units	18,337
2019 Calculated LOS - Apparatus	0.11
2018 Study Recommended LOS	0.12

Using the same approach as with the facilities, the 2018 Study recommended LOS of 0.12 apparatus per 1,000 service units and a projected growth of 21,198 in the South, the City will need to fund and acquire an additional 2.5 fire apparatus over the LUA Period to support growth. The 2018 Study recommended LOS is used as opposed to the 2019 calculated LOS due to the timing differences between growth and the acquisition of additional apparatus. The calculations to provide 2.5 fire apparatus over LUA Period years is shown on Table 13.

Table 13: Fire Apparatus Required to Serve Growth

Description	South
Apparatus per 1,000 Service Units	0.12
Growth in Service Units	21,198
Additional Apparatus for Growth	2.5

Fire IIP

The following table summarizes the necessary fire facility and apparatus improvements to serve growth over the LUA Period. The first two fire apparatus will be added in conjunction with development of the new fire station. A portion of an additional fire apparatus is scheduled for about mid-way through the LUA Period. Near the time the portion of the next apparatus will be needed the City will be updating or near updating the LUA and IIP, so the need for the apparatus can be reviewed at that time depending on updated plans.

Table 14: Fire Department IIP FY 2019 – FY 2028 – South

Description	Year	Current Cost	Escalated Cost
Fire Station 186 (11,604 sf)	2020	\$7,505,100	\$7,505,100
Fire Apparatus (2.5)	2020 – 2023	2,137,500	2,191,000
LUA/IIP Updates and DIF Audits	Ongoing	50,000	50,000
Existing DIF Balance	Ongoing	(1,948,000)	(1,948,000)
Total		\$7,744,600	\$7,798,100

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 for the South area. 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 15: Calculated Fire Cost per Service Unit

Description	South
Escalated IIP Costs	\$7,798,100
Service Units	21,198
Cost per Service Unit	\$367.87

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 16: Calculated Fire Fee Levels – South

Category of Development	Development Unit	Proposed Equivalent Factor	Current Fee	Calculated Fee	Difference \$
Residential Single Unit	Dwelling Unit	2.64	\$971	\$971	\$0
Residential 2+ Units	Dwelling Unit	1.98	\$728	\$728	\$0
Industrial	1,000 sf	1.11	\$408	\$408	\$0
Commercial	1,000 sf	1.43	\$526	\$526	\$0
Institutional	1,000 sf	2.86	\$1,052	\$1,052	\$0
Office & Other Services	1,000 sf	2.50	\$919	\$919	\$0

As shown above, the fee levels are unchanged for each of the development categories.

Revenue Forecast

Table 17: South Fire Revenue Forecast

Development Units	10-yr Increase	Fire DIF	Revenue Forecast
Single Family (Units)	7,118	\$971	\$6,911,578
2+ Unit Residential (Units)	374	\$728	272,272
Industrial (1,000 sf)	23	\$408	9,384
Commercial (1,000 sf)	441	\$526	231,966
Institutional (1,000 sf)	357	\$1,052	375,564
Office & Other Services (1,000 sf)	52	\$919	47,788
Total	8,365		\$7,848,552

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

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.

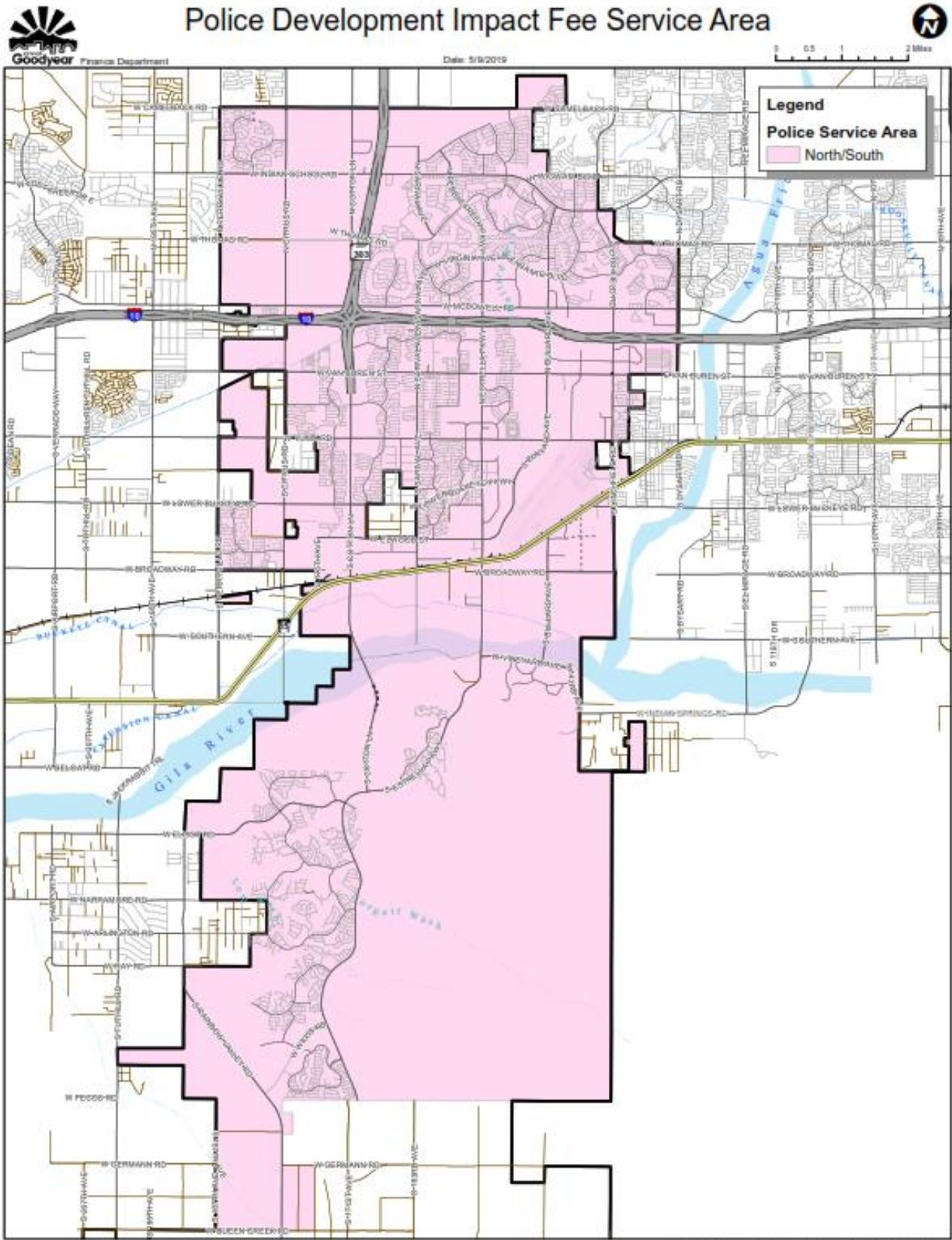
The police department is responsible for providing constant and reliable service throughout the City limits. To support the current sworn officers and police assistants, the City maintains a staff including the Chief of Police, Deputy Chief, a Criminal Investigations Division, Administrative Services 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

The 2018 Study identified the service area from the northern City border all the way south to Pecos Road, as these boundaries incorporated all existing development and anticipated future development. With the addition of the NWRV area to the south of Pecos Road the City-wide Police service area is being extended further south to Queen Creek Road. The extension of the service area is done to maintain a uniform DIF across the City, which reflects how the Police department plans for and provides service. These areas will receive direct benefit from the presence of the police force. 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 3: Police Development Impact Fee Service Area Map



Source: City of Goodyear

Existing Inventory, LOS and Future Plan

The police DIF primarily recovers 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 expansions. 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 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 18: Police Service Units

Description	Population	Jobs	Total
Existing Service Units	84,438	36,068	120,506
10-Year Growth	46,790	16,051	62,841
% Change	55.4%	44.5%	52.1%

As shown above, there are currently 120,506 service units generating the need for police services in the City. The amount is forecast to grow by 52.1%, equal to 62,841 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 19: Police Facilities Service Existing Development

Description	Square Feet
GMC E-101 (PD half only)	7,300
Training Facility	0
Estrella Substation	5,000
Telecom [1]	6,750
PD Ops Phase I	21,000
Total	40,050

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

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

Table 20: Police Building Space per Service Unit – FY 2018

Description	Amounts
Sf allocated to existing development	40,050
Existing Service Units	120,506
Sf per Service Unit	0.33

With a current LOS of 0.33 sf per service unit and projected growth of 62,841 service units over the LUA Period, the City will need to fund and construct an additional 20,738 sf of building space over the LUA Period to support growth and maintain the current LOS. The current LOS of 0.33 sf per service unit is consistent with the amount recommended in the 2018 Study and will be used to calculate the needs of growth over the new LUA Period. The 20,738 sf calculation is provided on Table 21.

Table 21: Facilities Required to Serve Growth

Description	Amount
Facilities LOS per Service Unit	0.33 sf
Growth in Service Units	62,841
Additional Facilities sf for Growth	20,738

The City currently has plans to develop Police Building Phase II of an additional 21,000 sf, beginning in FY 2022. 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 of the Police Building Phase II project will be recovered from growth. As previously discussed, there is also 3,250 sf of space available at the telecom building to accommodate additional staff as the department and City continues to grow. With 11,950 sf, of the total 20,738 sf needed already accounted, for the City will be able to fund an additional 8,788 sf of building space in order to maintain the LOS. The cost for this additional building space is included in the IIP at an assumed cost level equal to the Police Building Phase I project, which has already been completed, at \$391.38 per sf.

PATROL VEHICLES

Another capital asset that will be funded through DIFs is equipped police cars used by additional officers needed to serve growth. 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 adequate service in terms of response times and general safety for the community. Reserve vehicles are 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 for maintaining 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 63, consisting of 60 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 22: Patrol Vehicles per 1,000 Service Units – FY 2019

Description	Amount
Current Patrol Officers	63
Allowance for Reserve Vehicles	7
Total Patrol Vehicles	70
Existing Service Units	120,506
Patrol Vehicles per 1,000 Service Units	0.58
2018 Study Recommended LOS	0.57

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

[2] Police department has established a 10% reserve vehicle factor

With a current LOS of 0.58 patrol vehicles per 1,000 service units, the LOS has increased slightly over the recommended level from the 2018 Study. To provide a consistent approach and smooth out the fluctuating nature of the LOS calculations, the recommended LOS from the 2018 Study of 0.57 patrol vehicles per 1,000 service units will be used. By applying the 0.57 patrol vehicles per 1,000 service units to projected growth of 62,841 service units over the LUA Period, the City will need to fund and acquire 36 patrol vehicles over the LUA Period to support growth and maintain the current LOS. The 36 patrol vehicles calculation is provided on the table below.

Table 23: Patrol Vehicles Required to Serve Growth

Description	Amount
Patrol Vehicles per 1,000 Service Units	0.57
Growth in Service Units	62,841
Additional Patrol Vehicles for Growth	36

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 the 2018 Study it was identified that areas in the South service area near Pecos experience weakened radio signals. With development occurring even further South of Pecos, along with an increase in total development, it is important for the Police department to add a third radio tower. With the current state of radio traffic congestion, and service units anticipated to grow by over 50% over the next 10-years, the police department will be able to add a third radio tower to the network that will accommodate the increase in radio use.

Police IIP

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

Table 24: Police Department IIP FY 2019 – FY 2028

Description	Attributes	Year	Current Cost	Escalated Cost
PD Phase II	8,700 sf	2022	\$5,674,554	\$6,387,000
Police Telecom Building	3,250 sf	Ongoing	1,787,500	1,787,500
Future Police Facilities Expansion	8,788 sf	2025	3,439,500	4,230,000
Police Vehicles	36 Vehicles	Ongoing	1,735,200	2,072,000
Radio Tower Expansion	1 Tower	2025	4,000,000	4,919,000
LUA/IIP Updates and DIF Audits			50,000	50,000
Existing DIF Balance			(550,000)	(550,000)
Total			\$16,136,754	\$18,895,500

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 25: Calculated Police Cost per Service Unit

Description	Amount
Escalated IIP Costs	\$18,895,500
Service Unit Growth	62,841
Cost per Service Unit	\$300.69

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 26: Calculated Police Fee Levels

Category of Development	Development Unit	Proposed Equivalent Factor	Current Fee	Calculated Fee	Difference \$
Residential Single Unit	Dwelling Unit	2.74	\$820	\$820	\$0
Residential 2+ Units	Dwelling Unit	2.05	\$616	\$616	\$0
Industrial	1,000 sf	1.11	\$333	\$333	\$0
Commercial	1,000 sf	1.43	\$429	\$429	\$0
Institutional	1,000 sf	2.86	\$859	\$859	\$0
Office and Other Services	1,000 sf	2.50	\$751	\$751	\$0

As shown on the table above, the fee levels are remaining unchanged for each of the development categories.

Revenue Forecast

The police revenue forecast is shown on the following table.

Table 27: Police Revenue Forecast

Development Units	10-yr Increase	Police DIF	Revenue Forecast
Single Family (Units)	15,505	\$820	\$12,714,100
2+ Unit Residential (Units)	2,217	\$616	1,365,672
Industrial (1,000 sf)	6,492	\$333	2,161,836
Commercial (1,000 sf)	2,277	\$429	976,833
Institutional (1,000 sf)	1,233	\$859	1,059,147
Office & Other Services (1,000 sf)	877	\$751	658,627
Total	28,601		\$18,936,215

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

Description of Service

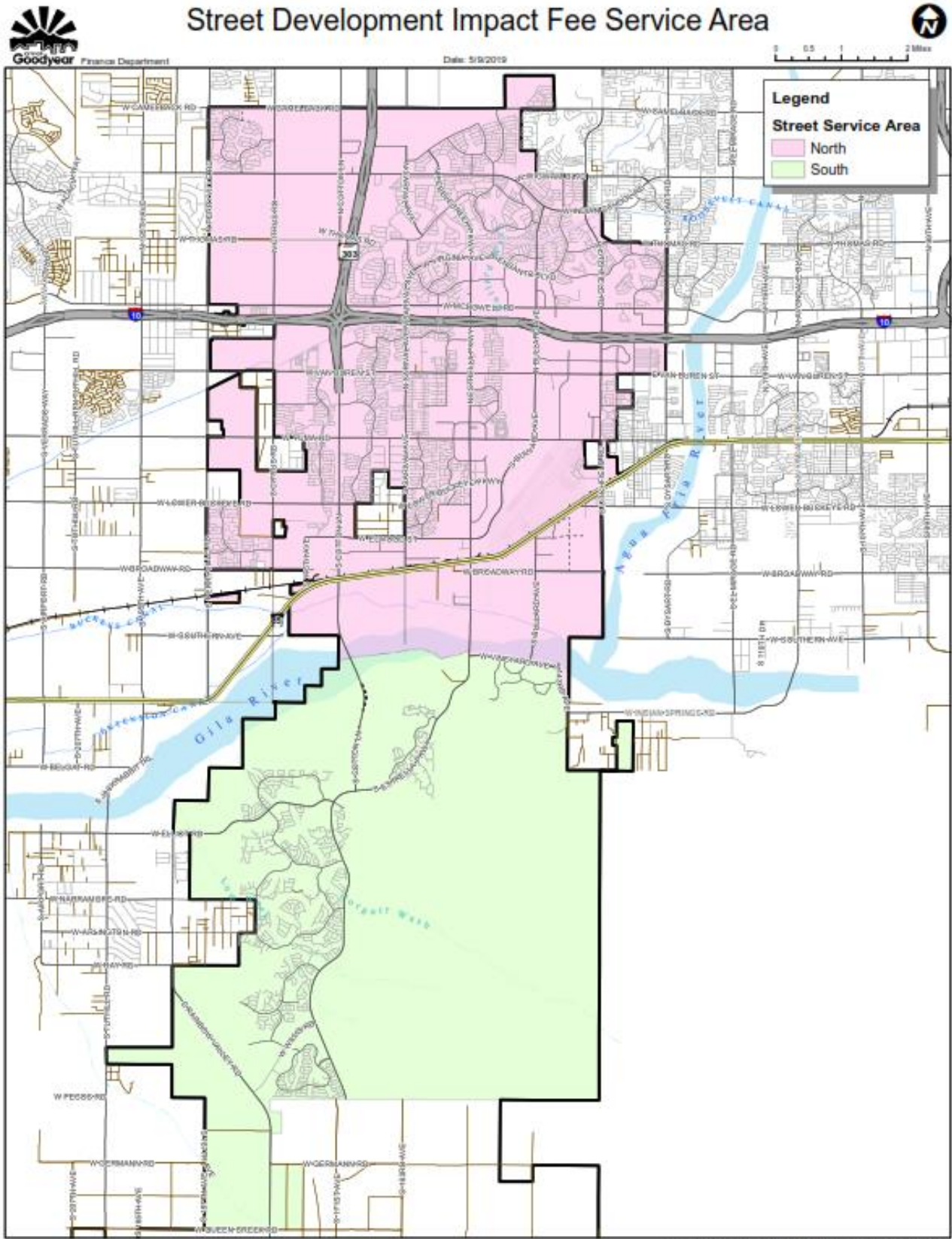
In the South service area developers have constructed and contributed the primary arterial and collector roads to the City, which has allowed the City to place a focus on providing and improving the primary access points from the North area. The two service areas are separated by the Gila River, with two bridge access points including Estrella Parkway and Cotton Lane. Pursuant to the Rainbow Valley Development Agreement, the developers are responsible for providing all new and/or expanded necessary arterial and collector roads adjacent to the development. Therefore, the City will still be responsible for the primary access points and ensuring the available capacity and operation level of service desired. 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, the 2018 Study identified two improvements that will benefit the South area including an expansion to the Estrella Parkway bridge and improvements at the Estrella Parkway and Cotton Lane intersection that will increase the capacity of the intersection.

Service Areas

The streets DIFs are divided into two service areas, the North and the South. Only the South service area is being updated by this analysis. In this study the South has been extended from Pecos Road to Queen Creek Road to incorporate the NWRV development. Since the primary access points to the NWRV development will be the same as the remaining area south of the Gila river, it is appropriate to combine these areas to ensure the costs of the improvements are equitably recovered from growth that benefits from the projects.

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Figure 4: Street 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

While the service areas have been separated for the purpose of establishing the appropriate IIP projects and also taking into account potential developer reimbursements, the LOS is a City-wide calculation. Establishing a City-wide LOS is in line with how the streets are planned and maintained. However, it is reasonable to assume that only certain development directly benefits from some improvements, while other developments do not, based on the unique geographical layout and separation of the service areas in the City. The LOS is calculated to provide four and six-lane arterials roads the City has identified as necessary to support growth over the LUA Period.

The City indicated that the number of available arterial lane miles is currently 424, which represents an increase to the 378 lane miles identified in the 2018 Study. With the City focused on providing the necessary bridge and intersection improvements for the South area, the LOS calculation in terms of lane miles per 10,000 VMT will show a significant decrease. However, this calculation does not forecast the additional lane mile improvements added by developers since they will not be funded by DIFs and the exact plans are not yet available.

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 424 by the 9,000 vehicle capacity per lane per day provides total current lane miles of capacity of 3,816,000. 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 Traveled (VMT).

EXISTING DEMAND

To determine the existing traffic demand, which will be used to calculate the existing LOS, trips and 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 10th 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 10th 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 28: Existing Development Trip Generation

Description	ITE Code	Development Unit Type	Units (A)	Avg. Weekday Trip Ends (B)	Trip Adjustment Factor (C)	Daily Trips Generated A x B x C = (D)
Single Family	210	Dwelling Units	27,180	9.44	0.64	164,211
Multi-family	220	Dwelling Units	2,440	7.32	0.64	11,431
Industrial	150	1,000 sf	8,721	1.74	0.50	7,587
Commercial	820	1,000 sf	6,414	37.75	0.33	79,901
Institutional	520	1,000 sf	4,237	19.52	0.33	27,293
Office/Other	710	1,000 sf	1,822	9.74	0.50	8,871
Total Trips Generated						299,294

By taking the total lane miles of capacity of 3,816,000 and dividing by the number of daily trips generated by existing development of 299,294, an average trip length of 12.75 miles is developed as shown on the table below.

Table 29: Average Trip Length Calculation

Description	Amount
Total Lane Miles of Capacity	3,816,000
Daily Trips Generated	299,294
Average Trip Length	12.75

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	Trip Length	Average	VMT	VMT per
	Generated	Factor	Trip Length	D x E x F =	Development
	(D)	(E)	(F)	(G)	Unit
					B x C x E x F =
					(H)
Single Family	164,211	114%	12.75	2,386,807	87.81
Multi-family	11,431	114%	12.75	166,150	68.09
Industrial	7,587	90%	12.75	87,061	9.98
Commercial	79,901	75%	12.75	764,053	119.12
Institutional	27,293	90%	12.75	313,187	73.92
Office/Other	8,871	90%	12.75	101,795	55.88
Total	299,294			3,819,053	

EXISTING LOS

To determine the existing LOS provided in the City, the 424 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: 424 arterial lane miles divided by (3,819,053 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 the South service area, 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 are identified and discussed and are used in the calculation of the DIFs. The projects included in the IIP are driven by growth, so costs have been allocated over the 10-year period based on demand. 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.

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

Table 31: South Service Area Streets Growth

Description	Development Unit Type	10-Year	Daily Trips Generated [1]	VMT per	VMT
		LUA Growth		Development Unit	
Single Family	Dwelling Units	7,118	43,005	87.81	625,042
Multi-family	Dwelling Units	374	1,752	68.09	25,467
Industrial	1,000 sf	23	20	9.98	232
Commercial	1,000 sf	441	5,490	119.12	52,498
Institutional	1,000 sf	357	2,301	73.92	26,407
Office/Other	1,000 sf	52	253	55.88	2,898
Total VMT			52,821		732,544

[1] 10-Year LUA Growth multiplied by factors (B) and (C) identified on Table 28.

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 732,544 VMT over the LUA Period, the City will need to fund and develop an additional 81.3 lane miles of arterial streets over the LUA Period to maintain the current LOS. As shown below, the IIP projects provide 1.75 lane miles of arterials.

As previously discussed, 2 projects have been identified for the IIP, including expansion of the Estrella Parkway Bridge and an intersection improvement at Estrella Parkway and Cotton Lane. These projects are primarily driven by the traffic demands generated by growth identified in the 10-year LUA forecast. The total anticipated cost of the Estrella Parkway bridge project, extending from Vineyard Avenue to MC 85 is \$28,679,000. As stated in the 2018 Study there is a level of uncertainty surrounding utilization of this bridge and the expanded capacity. In the 2018 Study 33.3%, or approximately 1/3, was included in the IIP for recovery from growth during the LUA Period. Using the assumption that 1/3 of the additional capacity would be adequate to serve the 40,812 new one-way trips identified in the 2018 Study, it is reasonable to extrapolate this assumption to recognize that in total the bridge could accommodate approximately 122,436 (40,812 divided by 33.3%) new one-way trips. To establish this analysis, one-way trips were used instead of VMT since the VMT per unit changed between the 2018 Study and the calculations performed in this study (changes from increased average trip length calculation due to added lane miles). Therefore, as shown on Table 31 above, growth during the updated LUA Period is adding 52,821 new one-way trips, or 43.1% of the estimated bridge capacity. Therefore, 43.1% of the bridge project will be recovered over the LUA Period.

Table 32: South Area Streets IIP Projects

Description	Lane Miles	Current Costs	Year	Escalated Cost
I-8 Estrella Parkway and Cotton Lane Intersection	0.88	\$6,453,600	2021	\$7,481,000
R-2 Estrella Parkway, Vineyard Avenue to MC 85 [1]	0.87	12,360,600	2024	14,329,000
R-2 Financing Costs [2]		5,924,000		5,924,000
Total Project Costs	1.75	\$24,738,200		\$27,734,000
LUA/IIP Updates and DIF Audits				50,000
Total				\$27,784,000

[1] Represents 43.1% of the total project cost identified on Appendix D.

[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 \$5,308,600 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, 1.75 lane miles of improvements have been identified with a total cost of \$27,784,000, after adding costs for future LUA/IIP updates and DIF audits.

STREETS 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 South Cost per VMT

Description	Amount
Escalated IIP Costs	\$27,784,000
VMT Growth	732,544
Cost per VMT	\$37.93

Using the Cost per VMT calculated above and applying it to each land use based on the VMT per development 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 South Fee Levels

Category of Development	VMT per		Current Fee	Calculated Fee	Difference \$
	Development Unit	Development Unit			
Residential Single Unit	Dwelling Unit	87.81	\$3,330	\$3,330	\$0
Residential 2+ Units	Dwelling Units	68.09	\$2,582	\$2,582	\$0
Industrial	1,000 sf	9.98	\$378	\$378	\$0
Commercial	1,000 sf	119.12	\$4,517	\$4,517	\$0
Institutional	1,000 sf	73.92	\$2,803	\$2,803	\$0
Office and Other Services	1,000 sf	55.88	\$2,119	\$2,119	\$0

As shown above, the fee levels are remaining unchanged from the current fees. This is due to the proportional increase in the bridge consumption allocated to growth.

Revenue Forecast

The streets revenue forecast for the South service area is shown on the table below.

Table 35: Streets South Revenue Forecast

Development Units	10-yr Increase	Streets DIF	Revenue Forecast
Single Family (Units)	7,118	\$3,330	\$23,702,940
2+ Unit Residential (Units)	374	\$2,582	965,668
Industrial (1,000 sf)	23	\$378	8,694
Commercial (1,000 sf)	441	\$4,517	1,991,997
Institutional (1,000 sf)	357	\$2,803	1,000,671
Office & Other Services (1,000 sf)	52	\$2,119	110,188
Total			\$27,780,158

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.

LIST OF APPENDICES

Appendix A: LUA Memorandum as of November 6, 2017

Appendix B: NWRV LUA Forecast as of April 5, 2019

Appendix C: Summary Infrastructure Level of Service

Appendix D: 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

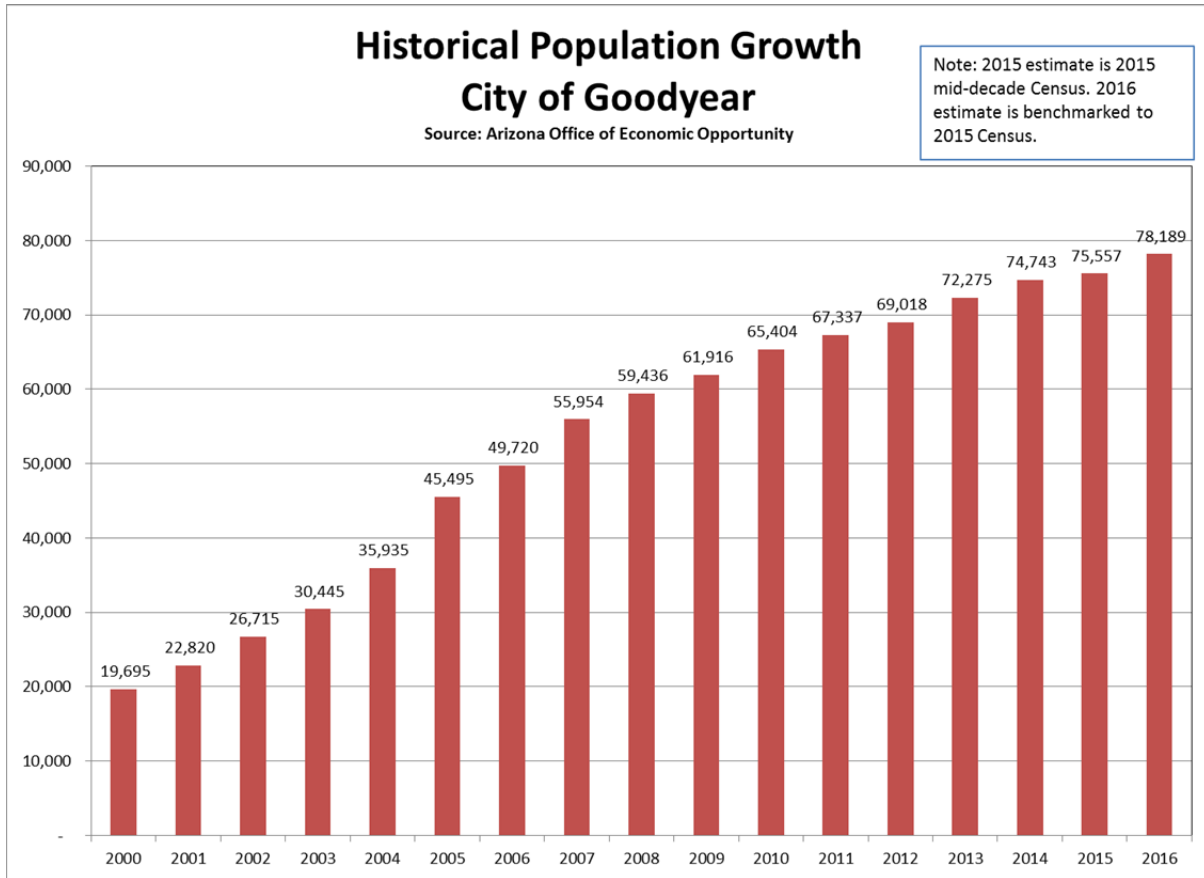
Re: Preliminary Forecast for Land Use Assumptions

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

Population Forecast City of Goodyear							
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
Totals FY19 - FY28		42,258	49.4%		41,287	50.9%	
*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
Population By Type													
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
Resident Populaton Forecast by Sub-Area													
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
Total	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
Change in Resident Population by Sub-Area													
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
Total		3,200	3,300	3,400	3,500	3,600	3,800	4,300	4,600	4,700	4,900	5,187	41,287
Housing Unit Forecast													
Vacancy factor	5%												
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
Total		1,189	1,223	1,257	1,291	1,362	1,542	1,647	1,679	1,747	1,845	2,048	15,643
Housing Unit Forecast By Housing Type													
North - Total Units		259	254	246	250	289	297	276	264	255	272	272	2,662
Single Family		180	176	171	174	200	206	192	183	177	189	189	1,848
Multi-Family		79	78	75	76	88	91	84	81	78	83	83	814
Central - Total Units		539	553	568	600	681	733	756	800	865	986	986	7,083
Single Family		466	478	491	518	589	633	653	692	748	852	852	6,119
Multi-Family		73	75	77	82	93	100	103	109	118	134	134	963
South - Total Units		425	451	477	512	572	617	647	683	725	789	789	5,898
Single Family		399	424	449	482	538	581	608	642	682	743	743	5,548
Multi-Family		25	27	28	30	34	37	38	41	43	47	47	350
City-Wide Totals		1,223	1,257	1,291	1,362	1,542	1,647	1,679	1,747	1,845	2,048	2,048	15,643
Single Family		1,045	1,078	1,111	1,173	1,327	1,420	1,454	1,517	1,606	1,784	1,784	13,515
Multi-Family		178	180	181	188	215	227	226	230	239	264	264	2,127

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

Building Square Footage By Use & Sub-Area City of Goodyear				
Land Use	North	Central	South	Totals
Retail				
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
Total Retail SF	2,789,199	3,216,007	233,520	6,238,726
Office (Including Medical Office)				
	825,854	886,164	36,306	1,748,324
Industrial				
Industrial Buildings	2,096,140	5,536,020	-	7,632,160
Airport	-	530,000	7,500	537,500
Total Industrial SF	2,096,140	6,066,020	7,500	8,169,660
Institutional				
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>	523,365	709,391	389,907	1,622,663
<i>Private</i>	146,666	202,986	-	349,652
Total Institutional SF	1,653,605	2,068,947	425,196	4,147,748
Total Building Area				
	7,364,798	12,237,138	702,522	20,304,458
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
North	16,377	16,813	17,261	17,720	18,192	18,676	19,174	19,684	20,208	20,746	21,298	21,865	5,052
Job Change			448	460	472	484	497	510	524	538	552	567	5,052
Central	15,296	15,831	16,391	16,977	17,591	18,235	18,912	19,624	20,374	21,165	22,001	22,886	7,054
Job Change			560	586	614	644	677	712	750	791	836	885	7,054
South	1,949	2,133	2,334	2,556	2,801	3,072	3,372	3,704	4,074	4,486	4,947	5,463	3,330
Job Change			202	222	245	271	300	333	370	412	461	516	3,330
Total City	33,623	34,777	35,986	37,254	38,584	39,984	41,457	43,012	44,656	46,397	48,246	50,214	15,437
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

Recommended Non-Residential Land Use Assumptions Forecasted Growth FY2019 - FY 2028 (Building Square Feet) City of Goodyear					
Land Use	FY 2018	Forecasted FY19-FY28 Non-Residential Building SF			
	Totals	Totals	North	Central	South
Retail	6,238,726	2,087,443	798,764	995,028	293,651
Office	1,748,324	855,560	385,002	421,060	49,498
Industrial	8,169,660	6,346,304	3,109,689	3,214,391	22,224
Institutional					
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
Total Institutional	4,147,748	1,120,509	175,960	675,179	269,370
Total Building Area	20,304,458	10,409,816	4,469,415	5,305,658	634,743

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

**Recommended Non-Residential Land Use Assumptions By Sub-Area & Year
Forecasted Growth FY2019 - FY 2028 (in Building Square Feet)
City of Goodyear**

Sub-Area	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY18-FY28 Change
NORTH											
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
North Total	422,729	423,376	422,831	420,915	429,468	470,903	483,946	469,984	463,624	461,639	4,469,414
CENTRAL											
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
Central Total	421,167	434,365	448,165	462,788	487,999	543,094	581,199	603,055	637,964	685,861	5,305,657
SOUTH											
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
South Total	44,669	47,754	50,998	54,402	58,691	65,449	71,041	75,255	80,327	86,159	634,745
TOTAL											
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
Grand Total	888,565	905,494	921,995	938,105	976,158	1,079,447	1,136,186	1,148,294	1,181,914	1,233,658	10,409,816

Sources: MAG 2016, Elliott D. Pollack & Co.

APPENDIX B:
**NWRV LUA Forecast as of
April 5, 2019**

**NORTHWEST RAINBOW VALLEY SERVICE AREA
DEVELOPMENT IMPACT FEE STUDY
LAND USE ASSUMPTIONS AND POPULATION, HOUSING & JOBS FORECAST
APRIL 5, 2019**

INTRODUCTION:

The purpose of this report is to provide Land Use Assumptions and population and housing forecasts for a new service area called the “Northwest Rainbow Valley Service Area.” This service area contains 1,611.61 acres and is located within the city limits of Goodyear between the Pecos Road alignment and Queen Creek Road alignment and extends about one mile west of Rainbow Valley Road and one-half mile east of Rainbow Valley Road.

The land within this service area is vacant and is owned by Arnold & Baker Farms with 315 acres; RVG Lender LLC (Terrasante) with 252 acres; and Rainbow Valley 2011 LLC (Rainbow Valley) with 993 acres. The remaining 51 acres is divided among four different land owners.

None of the service areas identified in the 2018 Development Impact Fee Study extended south of the Pecos Road alignment, which is the southern boundary of the South Goodyear Service Area. The new service area lies within a larger planning area that has been referred to as the “Rainbow Valley Planning Area” (Goodyear 2025 General Plan); the “Northern Waterman Wash Planning Area” (City Council Work Session, January 19, 2018); or “WPA 4 – Water Planning Area 4” (2008 and 2016 Integrated Water Master Plans). Although they have different names, they all cover the same area that contains about 35,840 acres and extends from Pecos Road on the north to Patterson Road on the south (7 miles) and from South Tuthill Road on the west to the Litchfield Road alignment (S. 139th Avenue) on the east (8 miles). The Northwest Rainbow Valley Service Area covers about 4.5% of the Rainbow Valley Planning Area.

POPULATION AND HOUSING FORECAST:

The Land Use Assumptions and population and housing forecast were developed using information from the Maricopa Association of Government forecasts, the “2018 Development Impact Fee - Land Use Assumptions and Infrastructure Improvement Plan,” and the owners of property within the new service area. According to the Maricopa Association of Government 2015 Socioeconomic Forecasts, the existing resident population in the entire Rainbow Valley area is 154 persons located in 68 dwelling units. The total number of existing jobs is 9. None of the existing resident population, nor any of the jobs, are located within the Northwest Rainbow Valley Development Impact Fee Study Area.

The MAG forecast for the entire Rainbow Valley area for 2015 to 2020 called for an increase in population of 49; an increase in dwelling units of 17; and an increase in employment of 326 jobs. Likewise, the MAG forecast for the Rainbow Valley area for 2020 to 2030 called for an increase in population of 3,013; an increase in dwelling units of 1,479; and an increase in employment of 620 jobs. Since no dwelling units were constructed in the Rainbow Valley area between 2015 to 2019, and none are expected to be constructed prior to 2020, the projected population for this period was combined with the projected population for the 2020 to 2030 period. The same is true regarding the number of jobs added. The resulting projection out to the year 2030 is shown in Table 1.

TABLE 1. MAG FORECAST	Existing in 2015	Projected Increase 2015-2030	Projected Total in 2030
Population	154	3,062	3,216
Dwelling Units	68	1,496	1,564
Jobs	9	946	955

The population figure represents total population with no adjustment for resident population since there are no existing group quarters in this area and no known plans to develop any group quarters within the planning period. This population figure is recalculated using the projected dwelling unit data and then converted to fiscal years in Table 3. This yields a slightly higher population increase than the 3,062 noted in Table 1., but it is believed that the MAG population forecast may have been understated since the forecast population figure of 3,062 located in 1,496 dwelling units results in a persons per house hold number of 2.047, which is well below the 2.64 used to calculate service units for the South area described in the 2018 Development Impact Fee - Land Use Assumptions and Infrastructure Improvement Plan (Page 11).

Although the MAG forecasts are for the entire Rainbow Valley Planning Area, the likelihood of development occurring within this planning area is greatest within, or adjacent to, the boundaries of the proposed new service area. The owner of the Rainbow Valley development (Rainbow Valley 2011 LLC) has received approval of zoning for the property and is pursuing the water and sewer solutions that are needed for development to proceed. At the same time, it does not appear that any other owner(s) of large holdings in the Rainbow Valley Planning Area intend to pursue development in the near future. Newland Communities currently is focused on their holdings in Estrella located north of the Pecos Road alignment and will probably not pursue development south of Pecos Road within the time frame of this study.

While only representing about 4.5% of the Rainbow Valley Planning Area, the capacity of the new service area is more than adequate to accommodate all of the development projected for this new service area. An estimate of the capacity of the new service area - based on existing entitlements; previous plans submitted to the City, but not yet approved; and the land use designations of the Goodyear 2025 General Plan for properties for which development plans have not yet been submitted - is presented in Table 2.

TABLE 2. ESTIMATED NUMBER OF RESIDENTIAL UNITS AND NON-RESIDENTIAL SQUARE FOOTAGE AT BUILD-OUT NW RAINBOW VALLEY SERVICE AREA					
Description	Rainbow Valley	Terrasante	Arnold & Baker	Other	Total
Area (acres)	993	252	315	51	1,611
SF Units	2,522	650	945	0	4,117
MF Units	440	376	0	0	816
Commercial (acres)	42.2	112.1	0	18	172
Commercial (sq.ft.)	460,000	1,025,000	0	196,000	1,681,000
Industrial (acres)	0	0	0	33	33
Industrial (sq.ft.)	0	0	0	180,000	180,000
Institutional (acres)	20	16.6	0	0	37
Institutional (sq.ft.)	95,800	80,000	0	0	175,800

It should be noted that the potential capacity of this service area (over 4,900 SF and MF dwelling units) exceeds what was projected in the MAG forecast for the entire Rainbow Valley Planning Area. Therefore, it is not unreasonable to believe that the NW Rainbow Valley Service Area is capable of supporting the development of 1,496 dwelling units over the next ten years.

In addition to reviewing the MAG forecasts and the data developed in the “2018 Development Impact Fee - Land Use Assumptions and Infrastructure Improvement Plan,” the owners of property within the new service area were consulted. The owner of the Rainbow Valley development provided information suggesting that, after an initial start-up period in 2021 during which only 135 single family permits would be issued, the projected number of permits each year would be 270 per year until reaching build-out in about 2030 (See Table 4). Although the zoning for this property includes up to 400 multi-family units, no multi-family units are expected to be built until after 2030. No response was received from the owner of Terrasante or the owner of the Arnold & Baker Farms property.

With this background in mind, low and high residential forecasts were prepared and are presented in Tables 3 and 4. The low forecast presented in Table 3 is based on the 1,496 additional dwelling units projected by MAG. That forecast assumes that construction of homes will begin in FY20-21 (January 2021), will double in the next year, and then will increase by 10% year over year through the remainder of the decade. The high forecast in Table 4 uses the absorption rate provided by the developer of the Rainbow Valley development. It also assumes that construction of homes will begin in FY20-21 (January 2021), but expects that number to triple in the second year, then level off at 270 units per year through the end of the decade until reaching build-out at 2,522 units – the maximum allowed by its zoning.

To assess the feasibility of the low and high forecasts, the permit history from the Estrella development was reviewed. Over the past five years, the average number of permits issued per year for the Sierra Estrella Planning Area which extends from the Gila River south to the Pecos Road alignment, was 302 and ranged from a low of 162 (2015) to a high of 419 (2018). Of that number, 122 permits were issued in the CantaMia active adult community and the other 180 permits were issued in the rest of Estrella. The range for CantaMia had a low of 65 (2015) and a high of 170 permits (2014). The range for the balance of Estrella had a low of 97 (2015) and a high of 308 permits (2018). Only in the last two of the past five years has the total number of permits issued exceeded 300 with 353 in 2018 and 419 in 2018. The recently completed 2018 Development Impact Fee study forecasted that the number of units to be constructed in Estrella over the next decade will climb from 400 to about 750 per year. The low projection includes a similar growth curve and averages about 150 single family permits per year. However the high projection assumes a growth rate that is almost double what was projected by MAG and almost the same as the rate of growth for all of Estrella (South Service Area), which may not be realistic.

Given the recent activity levels in Estrella, it seems unlikely that the NW Rainbow Valley Service Area would produce homes at a rate that is greater than Estrella. The NW Rainbow Valley Service Area is more remote than the Estrella area and is not as accessible. It is more likely that it would compete with homes in the Buckeye area, rather than other areas within Goodyear. For these reasons, it may be more prudent to use the low forecast, rather than the high forecast, in spite of what is projected by the primary developer in the service area. However, the high forecast is being provided in case it is selected as the preferred forecast.

Table 3.
Population and Housing Forecast - Low
Northwest Rainbow Valley Service Area

	1	2	3	4	5	6	7	8	9	10	11	12	13	
Fiscal Year	FY18-19	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24	FY24-25	FY25-26	FY26-27	FY27-28	FY28-29	FY29-30	FY30-31	Total
D.U.s	0	0	57	82	111	122	135	148	163	179	197	217	239	1,650
Population	0	0	148	212	289	318	350	385	424	466	513	564	620	4,290

NOTE: 1. Dwelling unit forecast from MAG Socioeconomic Projections, Population and Employment by MPA 2015 to 2050, June 2016: Final.
2. Population calculation using factor of 2.6 pphu from 2018 Development Impact Fee - Land Use Assumptions and Infrastructure Improvement Plan, Appendix A, Table 2.

Table 4.
Population and Housing - High
Northwest Rainbow Valley Service Area

	1	2	3	4	5	6	7	8	9	10	11	12	13	
Fiscal Year	FY18-19	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24	FY24-25	FY25-26	FY26-27	FY27-28	FY28-29	FY29-30	FY30-31	Total
D.U.s	0	0	67	203	270	270	270	270	270	270	270	249	114	2,522
Population	0	0	174	527	702	702	702	702	702	702	702	646	295	6,556

NOTE: 1. Dwelling unit forecast from Hilgart-Wilson LLC, engineer for developer of Rainbow Valley project, January 2019.
2. Population calculation using factor of 2.6 pphu from 2018 Development Impact Fee - Land Use Assumptions and Infrastructure Improvement Plan, Appendix A, Table 2.

NON-RESIDENTIAL BUILDING SQUARE FOOTAGE AND JOBS:

Table 5 outlines the building square footage for various non-residential land use categories within the study area. This summary was created from the data provided by the COG Development Services Department and the engineer for the developer of the Rainbow Valley development.

The primary categories of retail, office, industrial and institutional uses are outlined on the table. The projected square footage of non-residential uses is shown by fiscal year in Table 5 and then is converted to jobs using the formulas for square foot per job by land use category from Table 3 on Page 11 of the 2018 Development Impact Fee study. The only exception is the entry for 60,000 square feet of institutional land use in FY26-27 which is a future elementary school. The number of employees per square foot provided in the 2018 study produces a much higher jobs number than the actual staffing levels at this type of school. Instead of 214 jobs as calculated by the formula, the actual number of jobs for an elementary school with 60,000 square feet is closer to 50-60 jobs. This lower figure has been used in Table 6.

Based on this information, it is projected that non-residential land uses in the NW Rainbow Valley Service Area will grow by 208,000 square feet over the next ten years and produce 294 jobs. With the projected development of 1,650 to 2,522 dwelling units, this results in a jobs to housing ratio of 0.18 (Low Housing Forecast) to 0.12 (High Housing Forecast).

The MAG forecast for employment growth for the entire Rainbow Valley area suggests that the number of jobs in this area will grow by 946 from 2020 to 2030. With the projected development of 1,496 dwelling units, this results in a jobs to housing ratio of 0.63. The 2018 Development Impact Fee Study projected that in the Estrella (South Service Area) the number of jobs would be 3,330 and the number of dwelling units added would be 5,898 which results in a jobs to housing ratio of 0.56. A desirable jobs to housing ratio is around 1.0.

Although the number of jobs forecast for the NW Rainbow Valley Service Area is only 294 and is just under one-third of what was forecast by MAG for the entire Rainbow Valley area, it seems unlikely that the jobs to housing ratio in the NW Rainbow Valley Service Area would be as high as the 0.56 in the Estrella area, or higher than the 0.63 projected for the entire Rainbow Valley Service Area. The jobs and housing projections in the 2018 Development Impact Fee Study projected a jobs to housing ratio of 0.98 for the city as a whole, with the North Service Area at 1.90 and the Central Service Area at 0.995. The South Service Area had the lowest jobs to housing ratio at 0.56. Also, the smaller the area, the more variable the jobs to housing ratio is likely to be.

For purposes of this study, it is recommended that the square footage and job forecasts provided in Tables 5 and 6 be used instead of the MAG forecasts.

Table 5.**Non-Residential Land Use Growth - Building Square Feet Forecast****Northwest Rainbow Valley Service Area**

	1	2	3	4	5	6	7	8	9	10	11	12	13	
Fiscal Year	FY18-19	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24	FY24-25	FY25-26	FY26-27	FY27-28	FY28-29	FY29-30	FY30-31	Total
Retail	0	0	5,000 ²	25,000 ³	0	7,000 ⁴	0	32,000 ⁵	32,000 ⁶	32,000 ⁷	0	0	0	133,000
Office	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	15,000 ⁴	0	0	60,000 ⁶	0	0	0	0	75,000
Total	0	0	5,000	25,000	0	22,000	0	32,000	92,000	32,000	0	0	0	208,000

NOTE: 1. Building square footage forecast from COG Development Services Department and input provided by Hilgart-Wilson LLC, engineer for developer of Rainbow Valley project, January 2019.

2. FY20-21 - 5,000 sq.ft.- Phase 1 Community Center/Sales office.

3. FY21-22 - 25,000 sq.ft.- Phase 2 Community Center.

4. FY23-24 - 7,000 sq.ft. - Convenience store and 15,000 sq.ft. Fire Station.

5. FY25-26 - 32,000 sq.ft. - Phase 1 Community commercial center on Parcel 6 in Rainbow Valley Development.

6. FY26-27 - 32,000 sq.ft. - Phase 2 Community commercial center and 60,000 sq.ft. is an elementary school in Rainbow Valley Development.

7. FY27-28 - 32,000 sq.ft. - Phase 3 Community commercial center.

Table 6.**Non-Residential Land Use Growth - Jobs Forecast****Northwest Rainbow Valley Service Area**

	1	2	3	4	5	6	7	8	9	10	11	12	13	
Fiscal Year	FY18-19	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24	FY24-25	FY25-26	FY26-27	FY27-28	FY28-29	FY29-30	FY30-31	Total
Retail	0	0	7	36	0	10	0	46	46	46	0	0	0	191
Office	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Institutional	0	0	0	0	0	43	0	0	60 ²	0	0	0	0	103
Total	0	0	7	36	0	53	0	46	106	46	0	0	0	294

NOTE: 1. Job forecast from COG Development Services Department and calculated using formulas for conversion of square footage to jobs from 2018 Development Impact Fee - Land Use Assumptions and Infrastructure Improvement Plan, Appendix A, Table 2.

2. Jobs at elementary school forecast based on typical number of jobs per elementary school in the Liberty School District in Goodyear instead of the formula referenced in Note 1. above.

APPENDIX C:

Summary Infrastructure Level of Service

Appendix C

Summary Infrastructure Level of Service

Category	Level of Service	LOS 2018 Study	Actual LOS 2017-2019	Recommended 2019 LOS
Police	Building sf per Service Unit	0.33	0.33	0.33
	Vehicles per 1,000 Service Units	0.57	0.58	0.57
	Radio Towers per 10,000 Service Units	0.24	0.25	0.22
Fire	Building sf per Service Unit - South	0.72	0.71	0.61
	Apparatus per 1,000 Service Units - South	0.12	0.12	0.12
Streets	Lane Miles per 10,000 VMT - South	0.53	1.11	0.48
	Traffic Signals per 10,000 VMT - South	0.05	0.08	0.04

APPENDIX D:
IIP Projects by Service

Appendix D

IIP Projects by Service

Fire IIP Projects – South

Description	Current Cost	Year	Escalated Cost	Allocation to Growth	Comments
Fire Station 186 (11,604 sf)	\$7,505,100	2020	\$7,505,100	\$7,505,100	
Fire Apparatus (2.5 apparatus)	2,137,500	2020-2023	2,191,000	2,191,000	\$855,000 per vehicle (prior to escalation)
Future LUA/IIP Updates and Audits	50,000		50,000	50,000	
Total	\$9,692,600		\$9,746,100	\$9,746,100	

Police IIP Projects

Description	Current Cost	Year	Escalated Cost	Allocation to Growth	Comments
PD Phase II (8,700 sf)	\$13,697,200	2022	\$15,416,000	\$6,387,000	Total improvement is 21,000 sf and includes 12,300 sf of replacement space, leaving 8,700 sf to serve LUA growth.
Police Telecom Building (3,250 sf)	5,500,000	Ongoing	5,500,000	1,787,500	Total improvement is 10,000 sf at a cost of \$5,500,000. Currently 3,250 sf are available.
Future Police Facilities Expansion (8,788 sf)	3,439,500	2025	4,230,000	4,230,000	Cost of additional Police building space based on the actual per sf cost of Police Building Phase 1, \$391/sf.
Subtotal - Building Space	\$22,636,700		\$25,146,000	\$12,404,500	
Police Vehicles (36 Vehicles)	1,735,200	Ongoing	2,072,000	2,072,000	
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	
Total	\$28,421,900		\$32,187,000	\$19,445,500	

Streets IIP Projects - South

Description	Current Cost	Year	Escalated Cost	Allocation to Growth	Comments
I-8 Estrella Parkway and Cotton Lane Intersection	\$6,453,600	2024	\$7,481,000	\$7,481,000	
R-2 Estrella Parkway, Vineyard Avenue to MC 85	\$28,679,000	2024	\$33,247,000	\$14,329,000	Project originally identified as serving 30-years of growth (equivalent to approximately 122,436 one-way trips). Update LUA generates 52,821 one-way trips, or 43.1% of the total estimated trip capacity. Therefore, 43.1% of the cost has been allocated to the 10-year LUA growth.
R-2 Financing Costs			5,924,000	5,924,000	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 2023.
Future LUA/IIP Updates and Audits			50,000	50,000	
Total	\$35,132,600		\$46,702,000	\$27,784,000	