



CITY OF SURPRISE
Regular City Council Work Session
16000 N. Civic Center Plaza
Surprise, AZ 85374
Tuesday, November 21, 2023 @ 4:00 PM
COUNCIL CHAMBERS

- A. Call To Order
- B. Roll Call
- C. Pledge of Allegiance
- D. Proclamation and Community Acknowledgements
- E. City Manager Report
- F. City Clerk Report
- G. Call To The Public

INSTRUCTIONS: In order to address the City Council, you will need to fill out a Call to the Public Form available at the front counter, and then turn it in to the City Clerk before the meeting begins. You may also [fill out the Call to the Public form online](#) If submitting form electronically, please submit to City Clerk at least one hour before the meeting start time.

Note: A.R.S. 38-431.01(H)- During this time members of the public may address City Council only on issues within the jurisdiction of the City Council which are not an item on the agenda. At the conclusion of the open call, City Council may respond to criticism, may ask staff to review the matter or may ask that the matter be put on a future agenda. No discussion or action shall take place on any item raised.

Approval of items on the Consent Agenda – all items with an asterisk (*) are considered to be routine matters and will be enacted by one motion and one roll call vote to the City Council. There will be no separate discussion on these items unless a Councilmember requests, in which event the item will be removed from the consent agenda and considered in its normal sequence on the agenda.

Please be aware that Council Members may not discuss or respond to matters raised during call to the public that are not specifically identified on the agenda. Council Members may however, in their discretion, discuss or respond to relevant matters raised during a noticed public hearing or agenda item.

H. Regular City Council Work Session Agenda

CONSENT AGENDA:

REGULAR AGENDA ITEM - PUBLIC HEARING:

REGULAR AGENDA ITEM - NON-PUBLIC HEARING:

- | | | | |
|----|--|---|---------------------------------|
| 1. | Citywide | Presentation and discussion pertaining to an Annual Luke Air Force Base Update. | Jodi Tas
City Manager Office |
| 2. | Citywide | Presentation and discussion by the Maricopa Association of Governments (MAG) regarding housing market and economic development trends. | Jodi Tas
City Manager Office |
| 3. | Citywide | Presentation and discussion pertaining to Traffic Warrants. | Eric Boyles
Transportation |
| 4. | Citywide | Presentation and discussion pertaining to the draft Land Use Assumptions (LUA), Infrastructure Improvements Plan (IIP) and Development Impact Fees. | Andrea Davis
Finance |
| I. | Other Business and Future Agenda Items | | |
| J. | City Council Reports | | |

K. Executive Session

For information Purposes; Upon a public majority vote of a quorum of the City Council, the Council may hold an executive session, which will not be open to the public, but for only the following purposes:

- discussion or consideration of personnel matters (A.R.S. §38-431.03 (A)(1));
- discussion or consideration of records exempt by law from public inspection (A.R.S. §38-401.03 (A)(2));

L. Adjournment

KRISTI PASSARELLI, CITY CLERK

POSTED: Thursday, November 15, 2023 @ 1:00 PM

SPECIAL NOTE: PERSONS WITH SPECIAL ACCESSIBILITY NEEDS, INCLUDING LARGE PRINT MATERIALS OR INTERPRETER, SHOULD CONTACT THE CITY CLERK'S OFFICE @ 623.222.1200 OR TTY 623.222.1002, BY NO LATER THAN 24 HOURS IN ADVANCE OF THE REGULAR SCHEDULED MEETING TIME.



CITY OF SURPRISE
Regular City Council Work Session

Council Meeting Date: November 21, 2023

Contact Person: Jodi Tas, MNGMNT ANALYST - SR

Submitting Department: City Manager Office

District: Citywide

Staff Recommendations: None

Consent: No

Regular: Yes

Public Hearing: No

Report/Discussion: No

Agenda Wording:

Presentation and discussion pertaining to an Annual Luke Air Force Base Update.

Motion:

N/A

Background:

Luke Air Force Base is an integral part of our region and state. Surprise is home to more than 20% of their active airmen and women. The base provides an annual economic impact of \$2.4 billion. Brigadier General Jason Rueschhoff will provide an annual update on the base.

Objective Analysis:

To provide an update to City Council on Luke AFB.

Policy Compliant:

Yes

Financial Impact:

None at this time; however, topics covered in this presentation could lead to future actions which may have fiscal impact.

Budget Impact:

There is no anticipated budget impact related to this item.

FTE Impact:

This item does not have an impact on current staff levels.

ATTACHMENTS:

1. 56FW Community Brief FINAL
-

“Cave Tonitrum”



56 FW COMMUNITY BRIEF

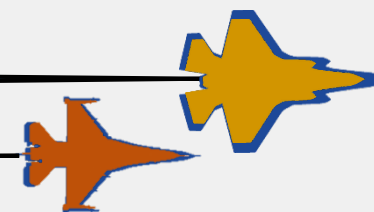


Luke AFB



Fly, Fight, & Win

**MISSION: WE TRAIN THE WORLD'S GREATEST
FIGHTER PILOTS AND COMBAT-READY AIRMEN**



**VISION: THE WORLD'S PREMIER FIGHTER
WING...ADVANCING AIRPOWER TO WIN
TOMORROW'S FIGHT**



Approach To Training In A Changing World



Fly, Fight, & Win

- ## The Ukraine/Russia War

- Luke AFB trains US and allied students from across the world.
- When students complete training, they are prepared to posture as each country deems necessary.

- ## Rising China Threat

- We train our students and instructors with up-to-date intelligence assets and personnel for current and future conflicts with threat countries.





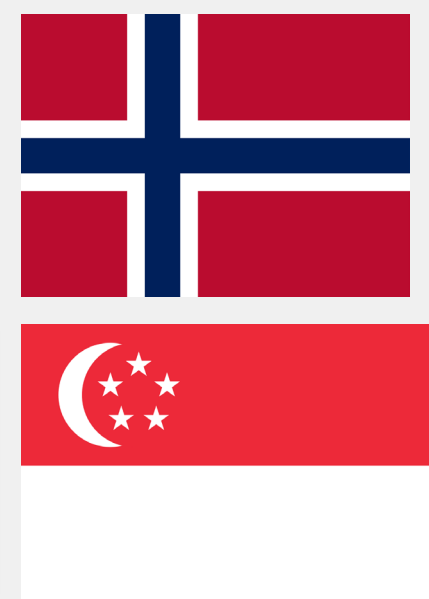
Luke AFB Overview



Fly, Fight, & Win

Current Int'l partners:

- Netherlands
- Denmark
- Norway
- Italy
- Belgium
- Singapore



*Future: Canada





Changes To The Base: F-16 Movements



Fly, Fight, & Win

- Singapore F-16 moving to Ebbing, AR
 - Timeline TBD
- USAF F-16 transferring to Ft Wayne, IN
 - Jet relocations began this Fall and are forecast to be complete by May 2025.





Others Who Enable The Mission



Fly, Fight, & Win

- **ATAC and TOP ACES**
 - Mirage F-1 and F-16 aircraft piloted by civilian contractors.
 - Provides “adversary” aircraft to the wing, replicating threats as required per mission.
 - Allows the Luke F-35s/F-16s to live-fly “Blue” tactics without sacrificing flight hours of USAF assets.



Cave Tonitrum





2023 Congressional Visits



Fly, Fight, & Win

Luke AFB hosts Federal / State Officials

- Jan/Feb POTUS and VPOTUS, AZ Governor Katie Hobbs
- Feb – AZ Governor Katie Hobbs
- March – Senator Mark Kelly (D-AZ)
- March – SASC PSM Kristina Belcourt
- April - Entire AZ Staff Delegation (All congressional offices)
- May – AZ State Rep Steven Montenegro
- Jun – Congressman Paul Gosar (R-AZ-9)
- Jun – Congressman Ruben Gallego (D-AZ-3) Staff
- Jun – AZ Senator Janae Shamp (R-AZ-29)



Luke AFB Current/Future Involvement



Fly, Fight, & Win

- Current draft Economic Impact

- 12k employees
 - 5k+ military w/ 6,700 dependents. 90% live off-base in the west valley community
 - 3k civilians, 2.4k reservists, 1.5k military students
- Estimated impact exceeds \$3 Billion annually
 - Equivalent of 4-5 Super Bowls... every year!



- Community Impact

- Luke AFB is always looking for ways to reach out and help
 - Joint First Responder training/exercise
 - LAFB/Glendale Automatic Aid Agreement
 - Wastewater Treatment Plan
 - Compatible Land Development Collaboration around Luke AFB
 - Military Appreciation Events, Veterans Day Ceremony, AZ Legislators Day





Decentralized Fellowship (D-Fellows)



Fly, Fight, & Win



- Luke AFB was selected as **1 of only 2** installations across the Air Force for this opportunity.
 - Designed to provide Airmen with experiences outside the traditional military environment
 - Allows their skills and expertise to be contributed to local businesses within their communities
 - Local businesses receive a hardworking Airman to assist their production or projects for 6 weeks with **NO COST TO THEIR BUSINESS!**
 - Luke AFB increased Airman skillsets, keeps up with industrial capabilities, and increases community partnership
- 4 Sessions completed, 20 local business partners



Fighter Country Spark Cell



Fly, Fight, & Win

- Innovators and problem-solvers dedicated to drive innovation and transformation across the 56th Fighter Wing.
 - Actively working 71 innovation initiatives originated by Luke AFB Airmen!!

MISSION: FIND, FIX, EMPOWER!

**BUSINESS MODEL: EMPLOY GRASSROOTS
EFFORTS TO CREATE UNAVOIDABLE VALUE**



ROBO TIRE

- Luke awarded a \$1.7M fund request to support.
- 4 tires completely serviced in under 40 minutes, compared to 4 man-hours and worker-related injuries.



Cave Tonitrum

ESSENTIAL AERO

- Autonomous Ground Vehicle to pick up and deliver full size tool kits, equipment/parts, and morale items to personnel on the flight line.





Luke Days Airshow



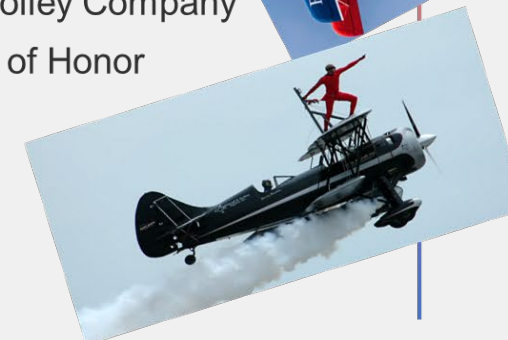
Fly, Fight, & Win



Air Show Dates March 23rd & 24th 2024

Performer Line up:

- Wings of Blue
- Thunderbirds
- RedBull
- Precision Exotics
- CAF
- Aftershock
- Franklin Airshows
- The Jolley Company
- Folds of Honor





Fighter Country Foundation



Fly, Fight, & Win

Support for men, women and families of LAFB

- **Morale and Well-being**
 - Financial Expo, Chaplain's Deployed Family Events, Back-to-School Bash
- **Culture and Tradition**
 - Luke AFB Ball, Luke Days Airshow, Support to honorary commander program
- **Mission Sustainability**
 - Chapel kitchen renovation, fighter squadron heritage room
 - Honor Guard training facility, food pantry



“Cave Tonitrum”



Questions?



CITY OF SURPRISE
Regular City Council Work Session

Council Meeting Date: November 21, 2023

Contact Person: Jodi Tas, MNGMNT ANALYST - SR

Submitting Department: City Manager Office
Staff Recommendations:

District: Citywide

Consent: No

Regular: Yes

Public Hearing: No

Report/Discussion: No

Agenda Wording:

Presentation and discussion by the Maricopa Association of Governments (MAG) regarding housing market and economic development trends.

Motion:

Discussion only.

Background:

The MAG region is one of the fastest growing regions in the nation, and with that growth has come a recent rise in home prices. The housing market, as well as the larger economy of the region, have shifted over the past few years. MAG staff will present a report on an analysis of current trends in the economy, real estate transactions, and housing affordability across the MAG region.

Objective Analysis:

The objective is to ensure that the Surprise City Council is updated on the most recent report concerning the region's latest trends in the economy, real estate and housing affordability in Surprise as well as across Maricopa County.

Policy Compliant:

This item is policy compliant.

Financial Impact:

There is no anticipated financial impact related to this item.

Budget Impact:

There is no anticipated budget impact related to this item.

FTE Impact:

This item does not have an impact on current staff levels.

ATTACHMENTS:



CITY OF SURPRISE
Regular City Council Work Session

Council Meeting Date: November 21, 2023

Contact Person: Eric Boyles, ASSISTANT
DIRECTOR - FINANCE

Submitting Department: Transportation

District: Citywide

Staff Recommendations: None

Consent: No

Regular: No

Public Hearing: No

Report/Discussion: Yes

Agenda Wording:

Presentation and discussion pertaining to Traffic Warrants.

Motion:

None, Discussion Only

Background:

This item was requested by City Council as a future agenda item at a past City Council meeting. This presentation will provide information regarding the process of the City approving traffic signals, pedestrian crossings, school zones, etc.

Objective Analysis:

This presentation will provide an in-depth look into the process of approving certain traffic control devices, such as traffic signals, pedestrian crosswalks, school zones, etc. This is for informational purposes only, to provide City Council with a greater understanding of what that process looks like here at the City.

Policy Compliant:

This item is compliant with City Council and Citywide policies.

Financial Impact:

There is no anticipated financial impact related to this item.

Budget Impact:

There is no anticipated budget impact related to this item.

FTE Impact:

This item does not have an impact on current staff levels.

ATTACHMENTS:

1. Traffic Warrant Presentation_SV



TRAFFIC WARRANTS

City Council Work Session
November 21, 2023

AGENDA

- **City Development Standards**
- **Other Standards**
- **Warrants**
- **Future Signal Process**
- **Signal Monitoring**
- **Pedestrian Crosswalks & Pedestrian Hybrid Beacons**
- **School Zones & Crossings**

CITY DEVELOPMENT STANDARDS

What drives the development of the City Transportation System?

The City of Surprise has adopted development standards, which include Traffic Engineering Standards. These provide an engineering standard for some of the following:

- Median break spacing (1/4, 1/2, 3/4 mile)
- Continuous Raised Medians
- Street & Lane Closures
- Traffic Control Procedures
- Signal Design



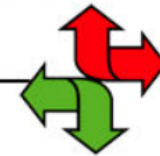
OTHER STANDARDS

In addition to the City's Development Standards, the City considers other national and regional standards.

- AASHTO
- MUTCD
- ADOT
- MCDOT
- Other local municipalities



Manual on Uniform Traffic
Control Devices (MUTCD)



TRAFFIC WARRANTS

What justifies the installation of a traffic control device?

Warrants

A warrant describes a threshold condition based upon average or normal conditions that, if found to be satisfied as part of an engineering study, shall result in analysis of other traffic conditions or factors to determine whether a traffic control device or other improvement is justified.



Warrants are not a substitute for engineering judgement. The fact that a warrant for a particular traffic control device is met is not conclusive justification for the installation of the device.

TRAFFIC WARRANTS

What types of studies are used?

Traffic Impact Analysis (TIA)

- Required by City code
- Identifies Traffic Volumes & Patterns
- Will make recommendations of traffic design and control devices

Signal Warrant Study

- Supplement to the TIA
- Specifically evaluates an intersection for the need of a signal
- Makes recommendations based on the 9 signal warrants

TRAFFIC SIGNALS

What is a Traffic signal?

- A traffic control signal (traffic signal) is defined as any highway traffic signal by which traffic is alternately directed to stop and permitted to proceed.



TRAFFIC SIGNALS

Properly Installed Signals - Advantages

- They provide for the orderly movement of traffic
- They increase the capacity of the intersection
- They reduce the frequency and severity of certain types of crashes
- Can be coordinated with other signals to provide efficient traffic flow along a corridor

TRAFFIC SIGNALS

Improperly Installed Signals - Disadvantages

- Excessive delay
- Excessive disobedience of the signal indications
- Increased use of less adequate routes as road users attempt to avoid the traffic control signals
- Significant increases in the frequency of collisions (especially rear-end collisions)

Installation of an unwarranted signal may decrease safety as compared to a 4-way stop condition

TRAFFIC SIGNALS

Traffic Volume Warrant Criteria

- **Warrant 1 - Eight-hour vehicular volume**
- **Warrant 2 - Four-hour vehicular volume**
- **Warrant 3 - Peak hour**

Other Traffic Signal Warrant Criteria

- **Warrant 4 - Pedestrian volume**
- **Warrant 5 - School Crossing**
- **Warrant 6 - Coordinated Signal System**
- **Warrant 7 - Crash Experience**
- **Warrant 8 - Roadway Network**
- **Warrant 9 - Intersection / Grade Crossing**



TRAFFIC SIGNALS

Implementation

- Step 1 – Gather the data
 - Traffic Volume counts
 - Traffic Impact Analysis
 - Signal Warrant Analysis
- Step 2 – Analyze the data
 - Does the signal meet the warrants?
 - Engineering analysis of the proposed signal
 - Does it work? Is it safe? How does it impact the transportation network?
- Step 3 – Funding
 - How will the signal be funded?
 - Developer funded vs. City Funded



TRAFFIC SIGNALS



What is the timeline for Future Signals?

- Timeline
 - Design Timeframe
 - 6-9 Months depending on Signal
 - Long-Lead Items
 - Poles (4-6 months)
 - Signal Cabinets (3-4 Months)
 - APS Electrical Service (6-12 Months)
 - Signal Heads (3-6 Months)
 - Construction Timeframe
 - 10-16 Weeks Depending on Signal
 - Total Timeframe
 - Average 12 to 18 Months

TRAFFIC SIGNALS

How does the City handle Future Signals?

- The City maintains a prioritized list of future traffic signals and locations
 - Traffic Volumes
 - Traffic Safety
 - Current & Future Development
 - Current & Future Funding
- Signals required by incoming developments are required to be installed or partially funded by development
- Signals required in developed areas are required to be funded by the City.



PEDESTRIAN CROSSWALKS

What is a crosswalk?

- A marked crosswalk is defined as any portion of a roadway at an intersection or elsewhere indicated for pedestrian crossing
- A marked crosswalk should be installed at an intersection where an unmarked crosswalk would not be clearly discernable due to peculiar geometrics or other physical characteristics.

The location and marking of pedestrian crosswalks shall be approved by the City Traffic Engineer



PEDESTRIAN CROSSWALKS

Warranted Crossings - Advantages

- Act as a warning device and reminder to motorists
- Point out to the pedestrian an optimum crossing path
- Limit pedestrian crossings to specific locations
- Aid in enforcing pedestrian crossing regulations

Unwarranted Crossings - Disadvantages

- Reduction in pedestrian safety
- Increase in pedestrian accidents
- Increase in the number of rear-end collisions
- Result in unnecessary installation and maintenance costs

PEDESTRIAN CROSSWALKS

Crosswalk Warrants

- Gap Time
- Pedestrian Volume
- Approach Speed

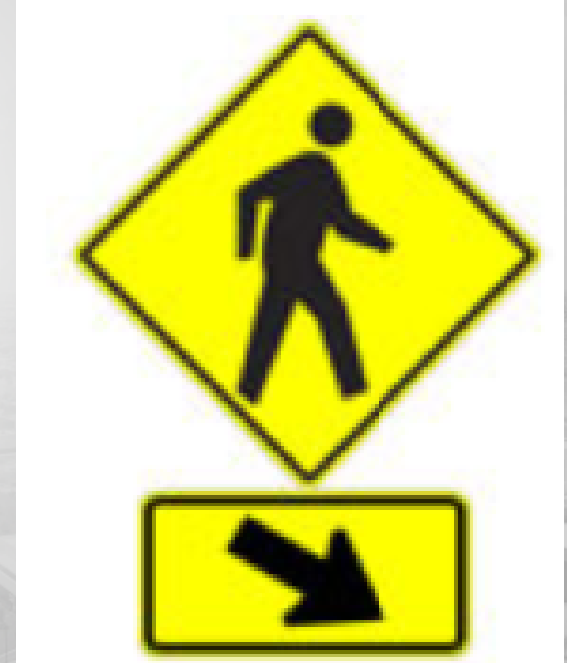
Crosswalk Implementation Guidelines

- Signalized intersections - marked crosswalks are provided across all legs
- Crosswalks shall not be installed at an unsignalized location unless it meets sight distance requirements
- ***General Conditions***
 - pedestrian routes across complex intersections
 - channelize pedestrians into a significantly shorter path
 - pedestrian visibility
 - exposure to fewer vehicles

PEDESTRIAN CROSSWALKS

Implementation

- Gather and analyze the data for a crossing
 - Traffic Volumes
 - Pedestrian Volumes
 - Traffic Speed Data
- The location of pedestrian crosswalks shall be approved by the City Traffic Engineer
- ***Warrants/guidelines are not a substitute for engineering judgement. The fact that a warrant/guideline for a particular traffic control device is met is not conclusive justification for the installation of the device***



PEDESTRIAN HYBRID BEACON CROSSINGS

What is a PHB or Hawk crossing?

A pedestrian hybrid beacon (PHB) is a special type of hybrid beacon used to warn and control traffic at an unsignalized location to assist pedestrians in crossing a street or highway at a marked crosswalk.

Evaluation Guidelines

- To improve pedestrian crossings there are many possible treatments
 - marked crosswalks
 - high visibility crosswalks
 - two-stage crosswalks
 - pedestrian signals
- Evaluation of pedestrian crossing safety should be conducted in order to identify the most effective treatment
- PHBs should not be installed on roadways with speed limits greater than 45 mph

PEDESTRIAN HYBRID BEACON CROSSINGS

Additional Considerations

- Is the location within a coordinated signal network?
- Does the roadway environment support a PHB?
- Does the street have adjoining sidewalks and/or pathways?
- Is right-of-way needed?
- Are there utility conflicts?
- Is funding of the PHB available?
- Does the local jurisdiction support the installation of a PHB?

Exhibit 640-A. PEDESTRIAN HYBRID BEACON (PHB) EVALUATION

PEDESTRIAN HYBRID BEACON (PHB) EVALUATION	
Location: _____	Date: _____
1. Motor vehicle crashes correctable by installation of PHB – Award 5 points for each crash (for the most recent 5 years of data) involving pedestrians, bicyclists, wheel chairs, skateboards, motorized scooters, or golf carts crossing within 500 feet on either side of the proposed PHB locations, or half the distance to the nearest signal (whichever is less):	_____
2. Peak hour pedestrian crossing volume – Award points if the average peak hour pedestrian crossing volume within 500 feet on either side of the proposed PHB location, or half the distance to the nearest traffic signal (whichever is less):	_____
0 points → 0 – 10 pedestrians per peak hour (average)	
2 points → 11 – 20 pedestrians per peak hour (average)	
4 points → 21 – 39 pedestrians per peak hour (average)	
6 points → 40+ pedestrians per peak hour (average)	
3. Location of nearest existing traffic signal or existing PHB – Award points:	_____
- 5 points → Less than 500 feet	
0 points → 500 – 1,000 feet	
5 points → Over 1,000 feet	
4. Posted speed limit – Award points:	_____
0 points → Under 30 mph	
2 points → 30 – 35 mph	
4 points → 40 – 45 mph	
5. Roadway traffic volume (AADT) – Award points:	_____
0 points → Less than 5,000	
2 points → 5,000 – 9,999	
4 points → 10,000 – 14,999	
6 points → 15,000+	
6. Raised median – Award 5 points if the roadway does not have a raised median with a minimum width of 6 feet.	_____
7. Shared-use path or walkway – Award 5 points if a designated, maintained, and permitted shared-use path or walkway crosses the road at the proposed PHB location.	_____
8. Pedestrian activity generator – Award 5 points if the proposed PHB location is within 500 feet of a senior center, medical facility, community center, school, or other pedestrian activity generator.	_____
9. Roadway illumination – Award 5 points if the proposed PHB location does not have roadway illumination.	_____
10. Crossing distance – Award 5 points if the crossing distance is greater than 36 feet. (If a raised median with a minimum width of 6 feet is present, the crossing distance is measured to the median).	_____
GRAND TOTAL	_____

PEDESTRIAN HYBRID BEACON CROSSINGS

Implementation



- Gather and analyze the data for a crossing
 - Traffic Volumes
 - Pedestrian Volumes
 - Traffic Speed Data
- PHBs shall be used in conjunction with signs and pavement markings
- PHB shall only be installed at a marked crosswalk
- ***Warrants/guidelines are not a substitute for engineering judgement***

SCHOOL ZONES & CROSSINGS

What are the policy guidelines?

- Arizona Revised Statutes: 28-797.
School crossings; civil penalty;
assessment; definition
- ADOT Traffic Safety for School Areas
Guidelines
- MUTCD

In 1950, Arizona safety officials, in conjunction with parents and school officials, created a unique traffic control concept that would slow motorists to 15 mph at school crosswalks for the purpose of providing safe and efficient conditions near schools.



SCHOOL ZONES & CROSSINGS

Overarching Standards & Guidelines

- Aggressive enforcement is required to gain compliance
- School Crossings need to be limited
 - Number
 - Duration
 - Only used where truly needed
- If used indiscriminately, motorists ignore crossings & enforcement becomes harder
- Schools will operate crossings by placing, removing, and re-setting signs
- Schools will provide and train crossing guards
- Crossing Guards will help children learn to cross streets in a safe manner
- Implementation Guidance (ADOT Traffic Safety for School Areas Guidelines)
 - Not be used at high schools
 - Not be used within 600 feet of a STOP sign, traffic signal, or other School Crossing
 - Not be used in conjunction with STOP signs or traffic signals

SCHOOL ZONES & CROSSINGS

Other things to consider...

- Elementary & Middle Schools vs. High Schools
 - Differences in maturity levels
 - Older students are best treated using the standard pedestrian traffic control
 - Younger children have proven to benefit from the unique School Crossing/adult crossing guard concept
- Engineering Judgement
 - Optimum results are achieved by:
 - The application of engineering judgement
 - Trained & accountable traffic officials
 - Familiar with local conditions
- Consistent Application
 - Traffic control in school areas be uniform throughout the state
 - Use of non-uniform procedures or devices can confuse pedestrians and motorists, which in turn can lead to an increased tendency for collisions

SCHOOL ZONES & CROSSINGS

ADOT School Crossing Warrants

- Average Time Between Gaps
- School Age Pedestrian Volume
- 85th Percentile Approach Speed
- Average Demand Per Gap

****minimum warrant for the installation of a marked School Crossing is satisfied when a location meets school age pedestrian volumes and a combination of other warrants in an urban area***

SCHOOL ZONES & CROSSINGS

Implementation

- Gather and analyze the data for a crossing
 - Traffic Volumes & Speed
 - Pedestrian Volumes
 - School Makeup
- ***Warrants/guidelines are not a substitute for engineering judgement***



TAKEAWAYS

- Warrants are not intended to replace good engineering judgement
- Installation of unwarranted traffic control devices causes potential safety risks
- Evaluation of traffic control devices cannot be done in a vacuum:
 - Must evaluate impact to the entire transportation network
 - Must not only consider high volume, short peak times
- Engineering Standards and guiding documents establish consistency
- Traffic Control devices can make areas safer, but cannot change bad behaviors by motorists and pedestrians
- Safety is everyone's responsibility



SURPRISE
ARIZONA

Questions?

THANK YOU



CITY OF SURPRISE
Regular City Council Work Session

Council Meeting Date: November 21, 2023

Contact Person: Andrea Davis, DIRECTOR -
FINANCE

Submitting Department: Finance

District: Citywide

Staff Recommendations:

Consent: Yes

Regular: Yes

Public Hearing: No

Report/Discussion: Yes

Agenda Wording:

Presentation and discussion pertaining to the draft Land Use Assumptions (LUA), Infrastructure Improvements Plan (IIP) and Development Impact Fees.

Motion:

Discussion only.

Background:

Every five years, pursuant to A.R.S. 9-463.05, the City is required to update the land use assumptions and infrastructure improvements plan which includes updating the City's development impact fees. The City is now within the timeframe for making those updates. The purpose of the presentation is to provide an overview of the development impact fee process, timeline, and reports.

Objective Analysis:

To discuss LUA and IIP.

Policy Compliant:

This item is policy compliant.

Financial Impact:

There is no financial impact related to this item at this time, but future items will impact impact fees - presentation only.

Budget Impact:

There is no anticipated budget impact related to this item at this time, but future items will impact impact fees - presentation only.

FTE Impact:

This item does not have an impact on current staff levels.

ATTACHMENTS:

DRAFT
**Land Use Assumptions,
Infrastructure Improvements Plan,
and Development Fee Report**

**Prepared for:
Surprise, Arizona**

November 13, 2023



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TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
ARIZONA DEVELOPMENT FEE ENABLING LEGISLATION	1
Necessary Public Services.....	1
Infrastructure Improvements Plan.....	2
Qualified Professionals	2
Conceptual Development Fee Calculation	3
Evaluation of Credits/Offsets.....	3
INTRODUCTION TO DEVELOPMENT FEES.....	3
REQUIRED FINDINGS.....	4
DEVELOPMENT FEE REPORT.....	5
DEVELOPMENT FEE COMPONENTS	6
CURRENT DEVELOPMENT FEES	7
Citywide.....	7
SPA 1	7
SPA 2	8
SPA 3	8
SPA 4	8
SPA 5	9
PROPOSED DEVELOPMENT FEES.....	10
South Street Service Area.....	10
North Street Service Area.....	11
West Street Service Area	11
Outside Street Service Area.....	12
SPA 1	12
SPA 2	13
SPA 3	13
SPA 4	13
SPA 5	14
DIFFERENCE BETWEEN PROPOSED AND CURRENT DEVELOPMENT FEES	15
South Street Service Area.....	15
North Street Service Area.....	15
West Street Service Area	16
Outside Street Service Area.....	16
SPA 1	17
SPA 2	17
SPA 3	17
SPA 4	18
SPA 5	18
LAND USE ASSUMPTIONS	19
SUMMARY OF GROWTH INDICATORS	19
RESIDENTIAL DEVELOPMENT.....	22
Recent Residential Construction.....	22
Occupancy Factors	23
Residential Estimates.....	23
Residential Projections	24
NONRESIDENTIAL DEVELOPMENT	27
Nonresidential Demand Factors	27

Nonresidential Estimates	28
Nonresidential Projections	29
AVERAGE WEEKDAY VEHICLE TRIPS.....	33
Residential Trip Generation Rates	33
Nonresidential Trip Generation Rates.....	33
Trip Rate Adjustments.....	34
Commuter Trip Adjustment.....	34
Adjustment for Primary Trips.....	34
Average Weekday Vehicle Trip Estimate	35
Average Weekday Vehicle Trip Projections	36
DEVELOPMENT PROJECTIONS	37
Citywide Projections	37
Street Service Area Projections	38
FIRE FACILITIES.....	41
PROPORTIONATE SHARE.....	41
SERVICE AREA	41
RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT	42
ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES.....	42
Fire Stations – Plan-Based	43
Fire Facilities – Plan-Based	45
Primary Apparatus – Incremental Expansion.....	47
Support Apparatus – Incremental Expansion	48
Development Fee Report – Plan-Based.....	49
PROJECTED DEMAND FOR SERVICES AND COSTS	49
Fire Stations – Plan-Based	50
Fire Facilities – Plan-Based	51
Primary Apparatus – Incremental Expansion.....	52
Support Apparatus – Incremental Expansion	53
FIRE FACILITIES DEVELOPMENT FEES	54
Revenue Credit/Offset.....	54
Fire Facilities Development Fees	54
FIRE FACILITIES DEVELOPMENT FEE REVENUE.....	55
10-YEAR CAPITAL PLAN.....	56
PARKS AND RECREATIONAL FACILITIES IIP	57
PROPORTIONATE SHARE.....	57
SERVICE AREA	57
RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT	58
ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES.....	58
Park Land – Incremental Expansion.....	59
Park Amenities – Incremental Expansion.....	61
Recreation Facilities – Incremental Expansion	63
Pools – Incremental Expansion	64
Development Fee Report – Plan-Based.....	66
PROJECTED DEMAND FOR SERVICES AND COSTS	66
Park Land – Incremental Expansion.....	67
Park Amenities – Incremental Expansion.....	68
Recreation Facilities – Incremental Expansion	69
Pools – Incremental Expansion	70
PARKS AND RECREATIONAL FACILITIES DEVELOPMENT FEES.....	71
Revenue Credit/Offset.....	71
Parks and Recreational Facilities Development Fees	71

PARKS AND RECREATIONAL FACILITIES DEVELOPMENT FEE REVENUE	72
10-YEAR CAPITAL PLAN.....	73
POLICE FACILITIES IIP	74
PROPORTIONATE SHARE.....	74
SERVICE AREA	75
RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT	75
ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES.....	75
Police Facilities – Plan-Based	76
Police Facilities Land – Incremental Expansion	78
Police Vehicles – Incremental Expansion.....	79
Police Equipment – Incremental Expansion.....	81
Development Fee Report – Plan-Based.....	82
PROJECTED DEMAND FOR SERVICES AND COSTS	82
Police Facilities – Plan-Based	83
Police Facilities Land – Incremental Expansion	84
Police Vehicles – Incremental Expansion.....	85
Police Equipment – Incremental Expansion.....	86
POLICE FACILITIES DEVELOPMENT FEES.....	87
Revenue Credit/Offset.....	87
Police Facilities Development Fees.....	87
POLICE FACILITIES DEVELOPMENT FEE REVENUE	88
10-YEAR CAPITAL PLAN.....	89
STREET FACILITIES IIP.....	90
PROPORTIONATE SHARE.....	90
SERVICE AREA	90
RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT	91
Residential Trip Generation Rates	91
Nonresidential Trip Generation Rates.....	91
Trip Rate Adjustments.....	91
Commuter Trip Adjustment.....	92
Adjustment for Pass-By Trips	92
Trip Length Weighting Factor	93
Equivalent Demand Units	93
PROJECTED DEMAND FOR SERVICES AND COSTS	94
Equivalent Demand Units	94
Proportionate Share.....	96
Equity Evaluation	97
ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES.....	98
Roadway Capacity	98
Major Roadway Network	99
Major Roadway Construction Costs.....	99
Major Roadway Improvements – Plan-Based	100
Development Fee Report – Plan-Based	101
STREET FACILITIES DEVELOPMENT FEES.....	102
Revenue Credit/Offset	102
South Service Area.....	102
North Service Area	103
West Service Area	104
STREET FACILITIES DEVELOPMENT FEE REVENUE	105
South Service Area.....	105

North Service Area	106
West Service Area	107
10-YEAR CAPITAL PLAN	108
WATER FACILITIES IIP	109
PROPORTIONATE SHARE	109
SERVICE AREA	109
RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT	111
ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES	112
Existing Demand	112
Wells	112
Other System Components	114
PROJECTED DEMAND FOR SERVICES AND COSTS.....	115
Projected Demand	115
SPA 1 – Cost Recovery / Plan-Based.....	116
SPA 2 – Plan-Based.....	117
SPA 3 – Plan-Based.....	118
Cost per Gallon	118
SPA 4 – Plan-Based.....	119
Development Fee Report – Plan-Based	119
WATER FACILITIES DEVELOPMENT FEES.....	119
Revenue Credit/Offset	119
SPA 1	120
SPA 2	121
SPA 3	122
SPA 4.....	123
WATER FACILITIES DEVELOPMENT FEE REVENUE	124
10-YEAR CAPITAL PLAN	125
WATER RESOURCE FACILITIES IIP	126
PROPORTIONATE SHARE	126
SERVICE AREA	126
RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT	128
ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES	129
Existing Demand	130
PROJECTED DEMAND FOR SERVICES AND COSTS.....	130
Projected Demand	131
Water Resource – Plan-Based.....	131
Development Fee Report – Plan-Based	131
WATER RESOURCE FACILITIES DEVELOPMENT FEES	132
Revenue Credit/Offset	132
Water Resource Facilities Development Fees	132
WATER RESOURCE FACILITIES DEVELOPMENT FEE REVENUE	133
10-YEAR CAPITAL PLAN	134
WASTEWATER FACILITIES IIP.....	135
PROPORTIONATE SHARE	135
SERVICE AREA.....	135
RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT.....	137
ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES	138
Existing Flow.....	138
Other System Components	139

PROJECTED DEMAND FOR SERVICES AND COSTS.....	139
Projected Flow	140
SPA 1 – Cost Recovery / Plan-Based.....	141
SPA 2 – Plan-Based.....	142
SPA 3 – Plan-Based.....	143
SPA 4 / SPA 5 – Plan-Based	144
Cost per Gallon	144
Development Fee Report – Plan-Based	144
WASTEWATER FACILITIES DEVELOPMENT FEES	144
Revenue Credit/Offset	144
SPA 1	145
SPA 2	146
SPA 3	147
SPA 4	148
SPA 5	149
WASTEWATER FACILITIES DEVELOPMENT FEE REVENUE.....	150
10-YEAR CAPITAL PLAN	151
APPENDIX A: FORECAST OF REVENUES OTHER THAN FEES	152
REVENUE PROJECTIONS	152
APPENDIX B: PROFESSIONAL SERVICES	154
APPENDIX C: LAND USE DEFINITIONS.....	155
RESIDENTIAL DEVELOPMENT	155
NONRESIDENTIAL DEVELOPMENT	156
APPENDIX D: MAJOR ROADWAY IMPROVEMENTS COSTS.....	157
MAJOR ROADWAY SECTION COSTS	157
BIG-TICKET ITEM COSTS	161
TRAFFIC SIGNAL COSTS	162
APPENDIX E: MAJOR ROADWAY INVENTORY	163
SOUTH	163
NORTH	168
WEST	171
APPENDIX F: PLANNED MAJOR ROADWAY IMPROVEMENTS	173
SOUTH	173
NORTH	173
WEST	174

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EXECUTIVE SUMMARY

The City of Surprise, Arizona, contracted with TischlerBise to document land use assumptions, prepare the Infrastructure Improvements Plan (hereinafter referred to as the “IIP”), and update development fees pursuant to Arizona Revised Statutes (“ARS”) § 9-436.05 (hereafter referred to as the “Enabling Legislation”). Municipalities in Arizona may assess development fees to offset infrastructure costs to a municipality for necessary public services. The development fees must be based on an Infrastructure Improvements Plan and Land Use Assumptions. The IIP for each type of infrastructure is in the middle section of this document. The proposed development fees are displayed in the Development Fee Report in the next section.

Development fees are one-time payments used to construct system improvements needed to accommodate new development. The fee represents future development’s proportionate share of infrastructure costs. Development fees may be used for infrastructure improvements or debt service for growth related infrastructure. In contrast to general taxes, development fees may not be used for operations, maintenance, replacement, or correcting existing deficiencies. This update of Surprise’s Infrastructure Improvements Plan and associated update to its development fees includes the following necessary public services:

1. Fire Facilities
2. Parks and Recreational Facilities
3. Police Facilities
4. Street Facilities
5. Water Facilities
6. Water Resource Facilities
7. Wastewater Facilities

This plan includes all necessary elements required to be in full compliance with SB 1525.

ARIZONA DEVELOPMENT FEE ENABLING LEGISLATION

The Enabling Legislation governs how development fees are calculated for municipalities in Arizona.

Necessary Public Services

Under the requirements of the Enabling Legislation, development fees may only be used for construction, acquisition or expansion of public facilities that are necessary public services. “Necessary public service” means any of the following categories of facilities that have a life expectancy of three or more years and that are owned and operated on behalf of the municipality: water, wastewater, storm water, library, street, fire, police, and parks and recreational. Additionally, a necessary public service includes any facility that was financed before June 1, 2011, and that meets the following requirements:

1. Development fees were pledged to repay debt service obligations related to the construction of the facility.
2. After August 1, 2014, any development fees collected are used solely for the payment of principal and interest on the portion of the bonds, notes, or other debt service obligations issued before June 1, 2011, to finance construction of the facility.

Infrastructure Improvements Plan

Development fees must be calculated pursuant to an IIP. For each necessary public service that is the subject of a development fee, by law, the IIP shall include the following seven elements:

1. A description of the existing necessary public services in the service area and the costs to update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable.
2. An analysis of the total capacity, the level of current usage and commitments for usage of capacity of the existing necessary public services, which shall be prepared by qualified professionals licensed in this state, as applicable.
3. A description of all or the parts of the necessary public services or facility expansions and their costs necessitated by and attributable to development in the service area based on the approved Land Use Assumptions, including a forecast of the costs of infrastructure, improvements, real property, financing, engineering and architectural services, which shall be prepared by qualified professionals licensed in this state, as applicable.
4. A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial, and industrial.
5. The total number of projected service units necessitated by and attributable to new development in the service area based on the approved Land Use Assumptions and calculated pursuant to generally accepted engineering and planning criteria.
6. The projected demand for necessary public services or facility expansions required by new service units for a period not to exceed ten years.
7. 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.

Qualified Professionals

The IIP must be developed by qualified professionals using generally accepted engineering and planning practices. A qualified professional is defined as “a professional engineer, surveyor, financial analyst or planner providing services within the scope of the person’s license, education, or experience.” TischlerBise is a fiscal, economic, and planning consulting firm specializing in the cost of growth services. Our services include development fees, fiscal impact analysis, infrastructure financing analyses, user fee/cost of service studies, capital improvement plans, and fiscal software. TischlerBise has prepared over 800 development fee studies over the past 30 years for local governments across the United States.

Conceptual Development Fee Calculation

In contrast to project-level improvements, development fees fund growth-related infrastructure that will benefit multiple development projects, or the entire service area (usually referred to as system improvements). The first step is to determine an appropriate demand indicator for the particular type of infrastructure. The demand indicator measures the number of service units for each unit of development. For example, an appropriate indicator of the demand for parks is population growth and the increase in population can be estimated from the average number of persons per housing unit. The second step in the development fee formula is to determine infrastructure improvement units per service unit, typically called level-of-service (LOS) standards. In keeping with the park example, a common LOS standard is improved park acres per thousand people. The third step in the development fee formula is the cost of various infrastructure units. To complete the park example, this part of the formula would establish a cost per acre for land acquisition and/ or park amenities.

Evaluation of Credits/Offsets

Regardless of the methodology, a consideration of credits/offsets is integral to the development of a legally defensible development fee. There are two types of credits/offsets that should be addressed in development fee studies and ordinances. The first is a revenue credit/offset due to possible double payment situations, which could occur when other revenues may contribute to the capital costs of infrastructure covered by the development fee. This type of credit/offset is integrated into the fee calculation, thus reducing the fee amount. The second is a site-specific credit or developer reimbursement for dedication of land or construction of system improvements. This type of credit is addressed in the administration and implementation of the development fee program. For ease of administration, TischlerBise normally recommends developer reimbursements for system improvements.

INTRODUCTION TO DEVELOPMENT FEES

Development fees are one-time payments used to fund capital improvements necessitated by future development. Development fees have been utilized by local governments in various forms for at least fifty years. Development fees do have limitations and should not be regarded as the total solution for infrastructure financing needs. Rather, they should be considered one component of a comprehensive portfolio to ensure adequate provision of public facilities with the goal of maintaining current levels of service in a community. Any community considering facility fees should note the following limitations:

- 1) Fees can only be used to finance capital infrastructure and cannot be used to finance ongoing operations and / or maintenance and rehabilitation costs.
- 2) Fees cannot be deposited in the General Fund. The funds must be accounted for separately in individual accounts and earmarked for the capital expenses for which they were collected.
- 3) Fees cannot be used to correct existing infrastructure deficiencies unless there is a funding plan in place to correct the deficiency for all current residents and businesses in the community.

REQUIRED FINDINGS

There are three reasonable relationship requirements for development fees that are closely related to “rational nexus” or “reasonable relationship” requirements enunciated by a number of state courts. Although the term “dual rational nexus” is often used to characterize the standard by which courts evaluate the validity of development fees under the U. S. Constitution, we prefer a more rigorous formulation that recognizes three elements: “impact or need,” “benefit,” and “proportionality.” The dual rational nexus test explicitly addresses only the first two, although proportionality is reasonably implied, and was specifically mentioned by the U.S. Supreme Court in the *Dolan* case. The reasonable relationship language of the statute is considered less strict than the rational nexus standard used by many courts. Individual elements of the nexus standard are discussed further in the following paragraphs.

Demonstrating an Impact. All future development in a community creates additional demands on some, or all, public facilities provided by local government. If the supply of facilities is not increased to satisfy that additional demand, the quality or availability of public services for the entire community will deteriorate. Development fees may be used to recover the cost of development-related facilities, but only to the extent that the need for facilities is a consequence of development that is subject to the fees. The *Nollan* decision reinforced the principle that development exactions may be used only to mitigate conditions created by the developments upon which they are imposed. That principle clearly applies to development fees. In this study, the impact of development on improvement needs is analyzed in terms of quantifiable relationships between various types of development and the demand for specific facilities, based on applicable level-of-service standards.

Demonstrating a Benefit. A sufficient benefit relationship requires that development fee revenues be segregated from other funds and expended only on the facilities for which the fees were charged. Fees must be expended in a timely manner and the facilities funded by the fees must serve the development paying the fees. However, nothing in the U.S. Constitution or the State enabling Act authorizing development fees requires that facilities funded with fee revenues be available *exclusively* to development paying the fees. In other words, existing development may benefit from these improvements as well.

Procedures for the earmarking and expenditure of fee revenues are typically mandated by the State Enabling Legislation, as are procedures to ensure that the fees are expended expeditiously or refunded. All requirements are intended to ensure that developments benefit from the fees they are required to pay. Thus, an adequate showing of benefit must address procedural as well as substantive issues.

Demonstrating Proportionality. The requirement that exactions be proportional to the impacts of development was clearly stated by the U.S. Supreme Court in the *Dolan* case (although the relevance of that decision to development fees has been debated) and is logically necessary to establish a proper nexus. Proportionality is established through the procedures used to identify development-related facility costs, and in the methods used to calculate development fees for various types of facilities and categories of development. The demand for facilities is measured in terms of relevant and measurable attributes of development.

DEVELOPMENT FEE REPORT

Development fees for the necessary public services made necessary by new development must be based on the same level of service (LOS) provided to existing development in the service area. There are three basic methodologies used to calculate development fees. They examine the past, present, and future status of infrastructure. The objective of evaluating these different methodologies is to determine the best measure of the demand created by new development for additional infrastructure capacity. Each methodology has advantages and disadvantages in a particular situation and can be used simultaneously for different cost components.

Reduced to its simplest terms, the process of calculating development fees involves two main steps: (1) determining the cost of development-related capital improvements and (2) allocating those costs equitably to various types of development. In practice, though, the calculation of development fees can become quite complicated because of the many variables involved in defining the relationship between development and the need for facilities within the designated service area. The following paragraphs discuss basic methodologies for calculating development fees and how those methodologies can be applied.

- **Cost Recovery** (past improvements) - The rationale for recoupment, often called cost recovery, is that new development is paying for its share of the useful life and remaining capacity of facilities already built, or land already purchased, from which new growth will benefit. This methodology is often used for utility systems that must provide adequate capacity before new development can take place.
- **Incremental Expansion** (concurrent improvements) - The incremental expansion methodology documents current LOS standards for each type of public facility, using both quantitative and qualitative measures. This approach assumes there are no existing infrastructure deficiencies or surplus capacity in infrastructure. New development is only paying its proportionate share for growth-related infrastructure. Revenue will be used to expand or provide additional facilities, as needed, to accommodate new development. An incremental expansion cost method is best suited for public facilities that will be expanded in regular increments to keep pace with development.
- **Plan-Based** (future improvements) - The plan-based methodology allocates costs for a specified set of improvements to a specified amount of development. Improvements are typically identified in a long-range facility plan and development potential is identified by a land use plan. There are two basic options for determining the cost per demand unit: (1) total cost of a public facility can be divided by total demand units (average cost), or (2) the growth-share of the public facility cost can be divided by the net increase in demand units over the planning timeframe (marginal cost).

DEVELOPMENT FEE COMPONENTS

Shown below, Figure 1 summarizes service areas, methodologies, and infrastructure cost components.

Figure 1: Proposed Development Fee Service Areas, Methodologies, and Cost Components

Necessary Public Service	Service Area	Cost Recovery	Incremental Expansion	Plan-Based	Cost Allocation
Fire Facilities	Citywide	N/A	Primary Apparatus, Secondary Apparatus	Fire Stations, Fire Facilities, Development Fee Report	Population, Vehicle Trips
Parks and Recreational Facilities	Citywide	N/A	Park Land, Park Amenities, Recreation Facilities, Pools	Development Fee Report	Population, Jobs
Police Facilities	Citywide	N/A	Police Facilities Land, Police Vehicles, Police Equipment	Police Facilities, Development Fee Report	Population, Vehicle Trips
Street Facilities	North	N/A	N/A	Major Roadway Improvements, Development Fee Report	Equivalent Demand Unit (EDU)
	South	N/A	N/A	Major Roadway Improvements, Development Fee Report	Equivalent Demand Unit (EDU)
	West	N/A	N/A	Major Roadway Improvements, Development Fee Report	Equivalent Demand Unit (EDU)
Water Facilities	SPA 1	Water Infrastructure	N/A	Water Infrastructure, Development Fee Report	Average Day Gallons
	SPA 2	N/A	N/A	Water Infrastructure, Development Fee Report	Average Day Gallons
	SPA 3	N/A	N/A	Water Infrastructure, Development Fee Report	Average Day Gallons
	SPA 4	N/A	N/A	Water Infrastructure, Development Fee Report	Average Day Gallons
Water Resource Facilities	Citywide	N/A	N/A	Water Resource, Development Fee Report	Acre-Feet
Wastewater Facilities	SPA 1	Wastewater Infrastructure	N/A	Wastewater Infrastructure, Development Fee Report	Average Day Gallons
	SPA 2	N/A	N/A	Wastewater Infrastructure, Development Fee Report	Average Day Gallons
	SPA 3	N/A	N/A	Wastewater Infrastructure, Development Fee Report	Average Day Gallons
	SPA 4	N/A	N/A	Wastewater Infrastructure, Development Fee Report	Average Day Gallons
	SPA 5	N/A	N/A	Wastewater Infrastructure, Development Fee Report	Average Day Gallons

CURRENT DEVELOPMENT FEES

Current development fees are assessed per dwelling unit for residential development and per 1,000 square feet of floor area for nonresidential development. Current development fees for water, water resource, and wastewater are assessed by meter size.

Citywide

Figure 2: Current Development Fees by Development Type

Residential Fees per Unit						
Development Type	Fire	General Government	Parks & Recreational	Police	Street	Total
Single Family	\$789	\$208	\$1,060	\$385	\$0	\$2,442
Multi-Family	\$481	\$143	\$647	\$235	\$0	\$1,506
Mobile Home	\$442	\$132	\$594	\$216	\$0	\$1,384

Nonresidential Fees per 1,000 Square Feet						
Development Type	Fire	General Government	Parks & Recreational	Police	Street	Total
Industrial	\$166	\$49	\$32	\$81	\$0	\$328
Warehouse	\$95	\$28	\$32	\$46	\$0	\$201
Retail/Commercial	\$876	\$261	\$32	\$427	\$0	\$1,596
Office	\$497	\$148	\$74	\$243	\$0	\$962
Public/Institutional	\$308	\$92	\$85	\$150	\$0	\$635

SPA 1

Figure 3: Current Development Fees by Meter Size

Fees per Meter - SPA 1				
Meter Size	Water	Water Resource	Wastewater	Current Fees
0.75-inch	\$2,985	\$2,279	\$2,192	\$7,456
1.00-inch	\$4,985	\$3,806	\$3,661	\$12,452
1.50-inch	\$9,940	\$7,589	\$7,299	\$24,828
2.00-inch	\$15,910	\$12,147	\$11,683	\$39,740
3.00-inch	\$31,850	\$24,317	\$23,389	\$79,556
4.00-inch	\$49,760	\$37,991	\$36,541	\$124,292
6.00-inch	\$99,490	\$75,959	\$73,059	\$248,508
8.00-inch	\$159,190	\$121,539	\$116,899	\$397,628

SPA 2

Figure 4: Current Development Fees by Meter Size

Fees per Meter - SPA 2				
Meter Size	Water	Water Resource	Wastewater	Current Fees
0.75-inch	\$2,836	\$2,279	\$2,544	\$7,659
1.00-inch	\$4,736	\$3,806	\$4,248	\$12,790
1.50-inch	\$9,444	\$7,589	\$8,472	\$25,505
2.00-inch	\$15,116	\$12,147	\$13,560	\$40,823
3.00-inch	\$30,260	\$24,317	\$27,144	\$81,721
4.00-inch	\$47,276	\$37,991	\$42,408	\$127,675
6.00-inch	\$94,524	\$75,959	\$84,792	\$255,275
8.00-inch	\$151,244	\$121,539	\$135,672	\$408,455

SPA 3

Figure 5: Current Development Fees by Meter Size

Fees per Meter - SPA 3				
Meter Size	Water	Water Resource	Wastewater	Current Fees
0.75-inch	\$2,486	\$2,279	\$0	\$4,765
1.00-inch	\$4,152	\$3,806	\$0	\$7,958
1.50-inch	\$8,278	\$7,589	\$0	\$15,867
2.00-inch	\$13,250	\$12,147	\$0	\$25,397
3.00-inch	\$26,526	\$24,317	\$0	\$50,843
4.00-inch	\$41,442	\$37,991	\$0	\$79,433
6.00-inch	\$82,858	\$75,959	\$0	\$158,817
8.00-inch	\$132,578	\$121,539	\$0	\$254,117

SPA 4

Figure 6: Current Development Fees by Meter Size

Fees per Meter - SPA 4				
Meter Size	Water	Water Resource	Wastewater	Current Fees
0.75-inch	\$0	\$2,279	\$0	\$2,279
1.00-inch	\$0	\$3,806	\$0	\$3,806
1.50-inch	\$0	\$7,589	\$0	\$7,589
2.00-inch	\$0	\$12,147	\$0	\$12,147
3.00-inch	\$0	\$24,317	\$0	\$24,317
4.00-inch	\$0	\$37,991	\$0	\$37,991
6.00-inch	\$0	\$75,959	\$0	\$75,959
8.00-inch	\$0	\$121,539	\$0	\$121,539

SPA 5

Figure 7: Current Development Fees by Meter Size

Fees per Meter - SPA 5				
Meter Size	Water	Water Resource	Wastewater	Current Fees
0.75-inch	\$0	\$2,279	\$0	\$2,279
1.00-inch	\$0	\$3,806	\$0	\$3,806
1.50-inch	\$0	\$7,589	\$0	\$7,589
2.00-inch	\$0	\$12,147	\$0	\$12,147
3.00-inch	\$0	\$24,317	\$0	\$24,317
4.00-inch	\$0	\$37,991	\$0	\$37,991
6.00-inch	\$0	\$75,959	\$0	\$75,959
8.00-inch	\$0	\$121,539	\$0	\$121,539

PROPOSED DEVELOPMENT FEES

Proposed development fees will be assessed per dwelling unit for residential development and per 1,000 square feet of floor area for nonresidential development. Proposed development fees for water, water resource, and wastewater will be assessed by meter size.

The proposed fees represent the maximum allowable fees. Surprise may adopt fees that are less than the amounts shown; however, a reduction in development fee revenue will necessitate an increase in other revenues, a decrease in planned capital improvements, and/or a decrease in level-of-service standards. All costs in the Development Fee Report represent current dollars with no assumed inflation over time. If costs change significantly over time, development fees should be recalculated.

Calculations throughout this report are based on an analysis conducted using Excel software. Most results are discussed in the report using two, three, and four decimal places, which represent rounded figures. However, the analysis itself uses figures carried to their ultimate decimal places; therefore, the sums and products generated in the analysis may not equal the sum or product if the reader replicates the calculation with the factors shown in the report (due to the rounding of figures shown, not in the analysis).

South Street Service Area

Figure 8: Proposed Development Fees by Development Type

Residential Fees per Unit						
Development Type	Fire	General Government ¹	Parks & Recreational	Police	Street (South)	Total
Single Family	\$2,247	\$208	\$2,398	\$738	\$1,208	\$6,799
Multi-Family	\$1,376	\$143	\$1,468	\$452	\$858	\$4,297
Mobile Home	\$949	\$132	\$1,013	\$312	\$918	\$3,324

Nonresidential Fees per 1,000 Square Feet						
Development Type	Fire	General Government ¹	Parks & Recreational	Police	Street (South)	Total
Industrial	\$684	\$49	\$143	\$435	\$205	\$1,516
Warehouse	\$347	\$28	\$42	\$221	\$109	\$747
Retail/Commercial	\$4,129	\$261	\$263	\$2,626	\$1,305	\$8,584
Office	\$1,979	\$148	\$402	\$1,258	\$616	\$4,403
Public/Institutional	\$1,369	\$92	\$252	\$871	\$423	\$3,007

1. Grandfathered fee not calculated in this report

North Street Service Area

Figure 9: Proposed Development Fees by Development Type

Residential Fees per Unit						
Development Type	Fire	General Government ¹	Parks & Recreational	Police	Street (North)	Total
Single Family	\$2,247	\$208	\$2,398	\$738	\$527	\$6,118
Multi-Family	\$1,376	\$143	\$1,468	\$452	\$374	\$3,813
Mobile Home	\$949	\$132	\$1,013	\$312	\$400	\$2,806

Nonresidential Fees per 1,000 Square Feet						
Development Type	Fire	General Government ¹	Parks & Recreational	Police	Street (North)	Total
Industrial	\$684	\$49	\$143	\$435	\$90	\$1,401
Warehouse	\$347	\$28	\$42	\$221	\$47	\$685
Retail/Commercial	\$4,129	\$261	\$263	\$2,626	\$569	\$7,848
Office	\$1,979	\$148	\$402	\$1,258	\$269	\$4,056
Public/Institutional	\$1,369	\$92	\$252	\$871	\$184	\$2,768

1. Grandfathered fee not calculated in this report

West Street Service Area

Figure 10: Proposed Development Fees by Development Type

Residential Fees per Unit						
Development Type	Fire	General Government ¹	Parks & Recreational	Police	Street (West)	Total
Single Family	\$2,247	\$208	\$2,398	\$738	\$2,331	\$7,922
Multi-Family	\$1,376	\$143	\$1,468	\$452	\$1,655	\$5,094
Mobile Home	\$949	\$132	\$1,013	\$312	\$1,772	\$4,178

Nonresidential Fees per 1,000 Square Feet						
Development Type	Fire	General Government ¹	Parks & Recreational	Police	Street (West)	Total
Industrial	\$684	\$49	\$143	\$435	\$396	\$1,707
Warehouse	\$347	\$28	\$42	\$221	\$210	\$848
Retail/Commercial	\$4,129	\$261	\$263	\$2,626	\$2,518	\$9,797
Office	\$1,979	\$148	\$402	\$1,258	\$1,189	\$4,976
Public/Institutional	\$1,369	\$92	\$252	\$871	\$816	\$3,400

1. Grandfathered fee not calculated in this report

Outside Street Service Area

Figure 11: Proposed Development Fees by Development Type

Residential Fees per Unit						
Development Type	Fire	General Government ¹	Parks & Recreational	Police	Street (Outside)	Total
Single Family	\$2,247	\$208	\$2,398	\$738	\$0	\$5,591
Multi-Family	\$1,376	\$143	\$1,468	\$452	\$0	\$3,439
Mobile Home	\$949	\$132	\$1,013	\$312	\$0	\$2,406

Nonresidential Fees per 1,000 Square Feet						
Development Type	Fire	General Government ¹	Parks & Recreational	Police	Street (Outside)	Total
Industrial	\$684	\$49	\$143	\$435	\$0	\$1,311
Warehouse	\$347	\$28	\$42	\$221	\$0	\$638
Retail/Commercial	\$4,129	\$261	\$263	\$2,626	\$0	\$7,279
Office	\$1,979	\$148	\$402	\$1,258	\$0	\$3,787
Public/Institutional	\$1,369	\$92	\$252	\$871	\$0	\$2,584

1. Grandfathered fee not calculated in this report

SPA 1

Figure 12: Proposed Development Fees by Meter Size

Fees per Meter - SPA 1				
Meter Size	Water	Water Resource	Wastewater	Proposed Fees
0.75-inch	\$4,291	\$2,880	\$3,018	\$10,189
1.00-inch	\$7,166	\$4,810	\$5,040	\$17,016
1.50-inch	\$14,290	\$9,591	\$10,049	\$33,930
2.00-inch	\$22,872	\$15,352	\$16,084	\$54,308
3.00-inch	\$45,787	\$30,732	\$32,199	\$108,718
4.00-inch	\$71,534	\$48,013	\$50,305	\$169,852
6.00-inch	\$143,026	\$95,998	\$100,580	\$339,604
8.00-inch	\$228,850	\$153,602	\$160,934	\$543,386

SPA 2

Figure 13: Proposed Development Fees by Meter Size

Fees per Meter - SPA 2				
Meter Size	Water	Water Resource	Wastewater	Proposed Fees
0.75-inch	\$5,702	\$2,880	\$8,495	\$17,077
1.00-inch	\$9,523	\$4,810	\$14,186	\$28,519
1.50-inch	\$18,989	\$9,591	\$28,287	\$56,867
2.00-inch	\$30,394	\$15,352	\$45,276	\$91,022
3.00-inch	\$60,845	\$30,732	\$90,636	\$182,213
4.00-inch	\$95,059	\$48,013	\$141,603	\$284,675
6.00-inch	\$190,061	\$95,998	\$283,122	\$569,181
8.00-inch	\$304,109	\$153,602	\$453,012	\$910,723

SPA 3

Figure 14: Proposed Development Fees by Meter Size

Fees per Meter - SPA 3				
Meter Size	Water	Water Resource	Wastewater	Proposed Fees
0.75-inch	\$2,259	\$2,880	\$9,225	\$14,364
1.00-inch	\$3,773	\$4,810	\$15,406	\$23,989
1.50-inch	\$7,523	\$9,591	\$30,720	\$47,834
2.00-inch	\$12,042	\$15,352	\$49,171	\$76,565
3.00-inch	\$24,106	\$30,732	\$98,434	\$153,272
4.00-inch	\$37,661	\$48,013	\$153,786	\$239,460
6.00-inch	\$75,299	\$95,998	\$307,479	\$478,776
8.00-inch	\$120,483	\$153,602	\$491,985	\$766,070

SPA 4

Figure 15: Proposed Development Fees by Meter Size

Fees per Meter - SPA 4				
Meter Size	Water	Water Resource	Wastewater	Proposed Fees
0.75-inch	\$1,933	\$2,880	\$7,726	\$12,539
1.00-inch	\$3,228	\$4,810	\$12,902	\$20,940
1.50-inch	\$6,436	\$9,591	\$25,727	\$41,754
2.00-inch	\$10,302	\$15,352	\$41,179	\$66,833
3.00-inch	\$20,623	\$30,732	\$82,435	\$133,790
4.00-inch	\$32,220	\$48,013	\$128,791	\$209,024
6.00-inch	\$64,420	\$95,998	\$257,504	\$417,922
8.00-inch	\$103,076	\$153,602	\$412,022	\$668,700

SPA 5

Figure 16: Proposed Development Fees by Meter Size

Fees per Meter - SPA 5				
Meter Size	Water	Water Resource	Wastewater	Proposed Fees
0.75-inch	-	\$2,880	\$7,726	\$10,606
1.00-inch	-	\$4,810	\$12,902	\$17,712
1.50-inch	-	\$9,591	\$25,727	\$35,318
2.00-inch	-	\$15,352	\$41,179	\$56,531
3.00-inch	-	\$30,732	\$82,435	\$113,167
4.00-inch	-	\$48,013	\$128,791	\$176,804
6.00-inch	-	\$95,998	\$257,504	\$353,502
8.00-inch	-	\$153,602	\$412,022	\$565,624

DIFFERENCE BETWEEN PROPOSED AND CURRENT DEVELOPMENT FEES

This section of the report includes the differences between the proposed and current development fees.

South Street Service Area

Figure 17: Difference Between Proposed and Current Development Fees by Development Type

Residential Fees per Unit						
Development Type	Fire	General Government	Parks & Recreational	Police	Street (South)	Difference
Single Family	\$1,458	\$0	\$1,338	\$353	\$1,208	\$4,357
Multi-Family	\$895	\$0	\$821	\$217	\$858	\$2,791
Mobile Home	\$507	\$0	\$419	\$96	\$918	\$1,940

Nonresidential Fees per 1,000 Square Feet						
Development Type	Fire	General Government	Parks & Recreational	Police	Street (South)	Difference
Industrial	\$518	\$0	\$111	\$354	\$205	\$1,188
Warehouse	\$252	\$0	\$10	\$175	\$109	\$546
Retail/Commercial	\$3,253	\$0	\$231	\$2,199	\$1,305	\$6,988
Office	\$1,482	\$0	\$328	\$1,015	\$616	\$3,441
Public/Institutional	\$1,061	\$0	\$167	\$721	\$423	\$2,372

North Street Service Area

Figure 18: Difference Between Proposed and Current Development Fees by Development Type

Residential Fees per Unit						
Development Type	Fire	General Government	Parks & Recreational	Police	Street (North)	Difference
Single Family	\$1,458	\$0	\$1,338	\$353	\$527	\$3,676
Multi-Family	\$895	\$0	\$821	\$217	\$374	\$2,307
Mobile Home	\$507	\$0	\$419	\$96	\$400	\$1,422

Nonresidential Fees per 1,000 Square Feet						
Development Type	Fire	General Government	Parks & Recreational	Police	Street (North)	Difference
Industrial	\$518	\$0	\$111	\$354	\$90	\$1,073
Warehouse	\$252	\$0	\$10	\$175	\$47	\$484
Retail/Commercial	\$3,253	\$0	\$231	\$2,199	\$569	\$6,252
Office	\$1,482	\$0	\$328	\$1,015	\$269	\$3,094
Public/Institutional	\$1,061	\$0	\$167	\$721	\$184	\$2,133

West Street Service Area

Figure 19: Difference Between Proposed and Current Development Fees by Development Type

Residential Fees per Unit						
Development Type	Fire	General Government	Parks & Recreational	Police	Street (West)	Difference
Single Family	\$1,458	\$0	\$1,338	\$353	\$2,331	\$5,480
Multi-Family	\$895	\$0	\$821	\$217	\$1,655	\$3,588
Mobile Home	\$507	\$0	\$419	\$96	\$1,772	\$2,794

Nonresidential Fees per 1,000 Square Feet						
Development Type	Fire	General Government	Parks & Recreational	Police	Street (West)	Difference
Industrial	\$518	\$0	\$111	\$354	\$396	\$1,379
Warehouse	\$252	\$0	\$10	\$175	\$210	\$647
Retail/Commercial	\$3,253	\$0	\$231	\$2,199	\$2,518	\$8,201
Office	\$1,482	\$0	\$328	\$1,015	\$1,189	\$4,014
Public/Institutional	\$1,061	\$0	\$167	\$721	\$816	\$2,765

Outside Street Service Area

Figure 20: Difference Between Proposed and Current Development Fees by Development Type

Residential Fees per Unit						
Development Type	Fire	General Government	Parks & Recreational	Police	Street (Outside)	Difference
Single Family	\$1,458	\$0	\$1,338	\$353	\$0	\$3,149
Multi-Family	\$895	\$0	\$821	\$217	\$0	\$1,933
Mobile Home	\$507	\$0	\$419	\$96	\$0	\$1,022

Nonresidential Fees per 1,000 Square Feet						
Development Type	Fire	General Government	Parks & Recreational	Police	Street (Outside)	Difference
Industrial	\$518	\$0	\$111	\$354	\$0	\$983
Warehouse	\$252	\$0	\$10	\$175	\$0	\$437
Retail/Commercial	\$3,253	\$0	\$231	\$2,199	\$0	\$5,683
Office	\$1,482	\$0	\$328	\$1,015	\$0	\$2,825
Public/Institutional	\$1,061	\$0	\$167	\$721	\$0	\$1,949

SPA 1

Figure 21: Difference Between Proposed and Current Development Fees by Meter Size

Fees per Meter - SPA 1				
Meter Size	Water	Water Resource	Wastewater	Difference
0.75-inch	\$1,306	\$601	\$826	\$2,733
1.00-inch	\$2,181	\$1,004	\$1,379	\$4,564
1.50-inch	\$4,350	\$2,002	\$2,750	\$9,102
2.00-inch	\$6,962	\$3,205	\$4,401	\$14,568
3.00-inch	\$13,937	\$6,415	\$8,810	\$29,162
4.00-inch	\$21,774	\$10,022	\$13,764	\$45,560
6.00-inch	\$43,536	\$20,039	\$27,521	\$91,096
8.00-inch	\$69,660	\$32,063	\$44,035	\$145,758

SPA 2

Figure 22: Difference Between Proposed and Current Development Fees by Meter Size

Fees per Meter - SPA 2				
Meter Size	Water	Water Resource	Wastewater	Difference
0.75-inch	\$2,866	\$601	\$5,951	\$9,418
1.00-inch	\$4,787	\$1,004	\$9,938	\$15,729
1.50-inch	\$9,545	\$2,002	\$19,815	\$31,362
2.00-inch	\$15,278	\$3,205	\$31,716	\$50,199
3.00-inch	\$30,585	\$6,415	\$63,492	\$100,492
4.00-inch	\$47,783	\$10,022	\$99,195	\$157,000
6.00-inch	\$95,537	\$20,039	\$198,330	\$313,906
8.00-inch	\$152,865	\$32,063	\$317,340	\$502,268

SPA 3

Figure 23: Difference Between Proposed and Current Development Fees by Meter Size

Fees per Meter - SPA 3				
Meter Size	Water	Water Resource	Wastewater	Difference
0.75-inch	(\$227)	\$601	\$9,225	\$9,599
1.00-inch	(\$379)	\$1,004	\$15,406	\$16,031
1.50-inch	(\$755)	\$2,002	\$30,720	\$31,967
2.00-inch	(\$1,208)	\$3,205	\$49,171	\$51,168
3.00-inch	(\$2,420)	\$6,415	\$98,434	\$102,429
4.00-inch	(\$3,781)	\$10,022	\$153,786	\$160,027
6.00-inch	(\$7,559)	\$20,039	\$307,479	\$319,959
8.00-inch	(\$12,095)	\$32,063	\$491,985	\$511,953

SPA 4

Figure 24: Difference Between Proposed and Current Development Fees by Meter Size

Fees per Meter - SPA 4				
Meter Size	Water	Water Resource	Wastewater	Difference
0.75-inch	\$1,933	\$601	\$7,726	\$10,260
1.00-inch	\$3,228	\$1,004	\$12,902	\$17,134
1.50-inch	\$6,436	\$2,002	\$25,727	\$34,165
2.00-inch	\$10,302	\$3,205	\$41,179	\$54,686
3.00-inch	\$20,623	\$6,415	\$82,435	\$109,473
4.00-inch	\$32,220	\$10,022	\$128,791	\$171,033
6.00-inch	\$64,420	\$20,039	\$257,504	\$341,963
8.00-inch	\$103,076	\$32,063	\$412,022	\$547,161

SPA 5

Figure 25: Difference Between Proposed and Current Development Fees by Meter Size

Fees per Meter - SPA 5				
Meter Size	Water	Water Resource	Wastewater	Difference
0.75-inch	-	\$601	\$7,726	\$8,327
1.00-inch	-	\$1,004	\$12,902	\$13,906
1.50-inch	-	\$2,002	\$25,727	\$27,729
2.00-inch	-	\$3,205	\$41,179	\$44,384
3.00-inch	-	\$6,415	\$82,435	\$88,850
4.00-inch	-	\$10,022	\$128,791	\$138,813
6.00-inch	-	\$20,039	\$257,504	\$277,543
8.00-inch	-	\$32,063	\$412,022	\$444,085

LAND USE ASSUMPTIONS

Arizona’s Development Fee Act requires the preparation of Land Use Assumptions, which are defined in Arizona Revised Statutes § 9-463.05(T)(6) as:

“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.”

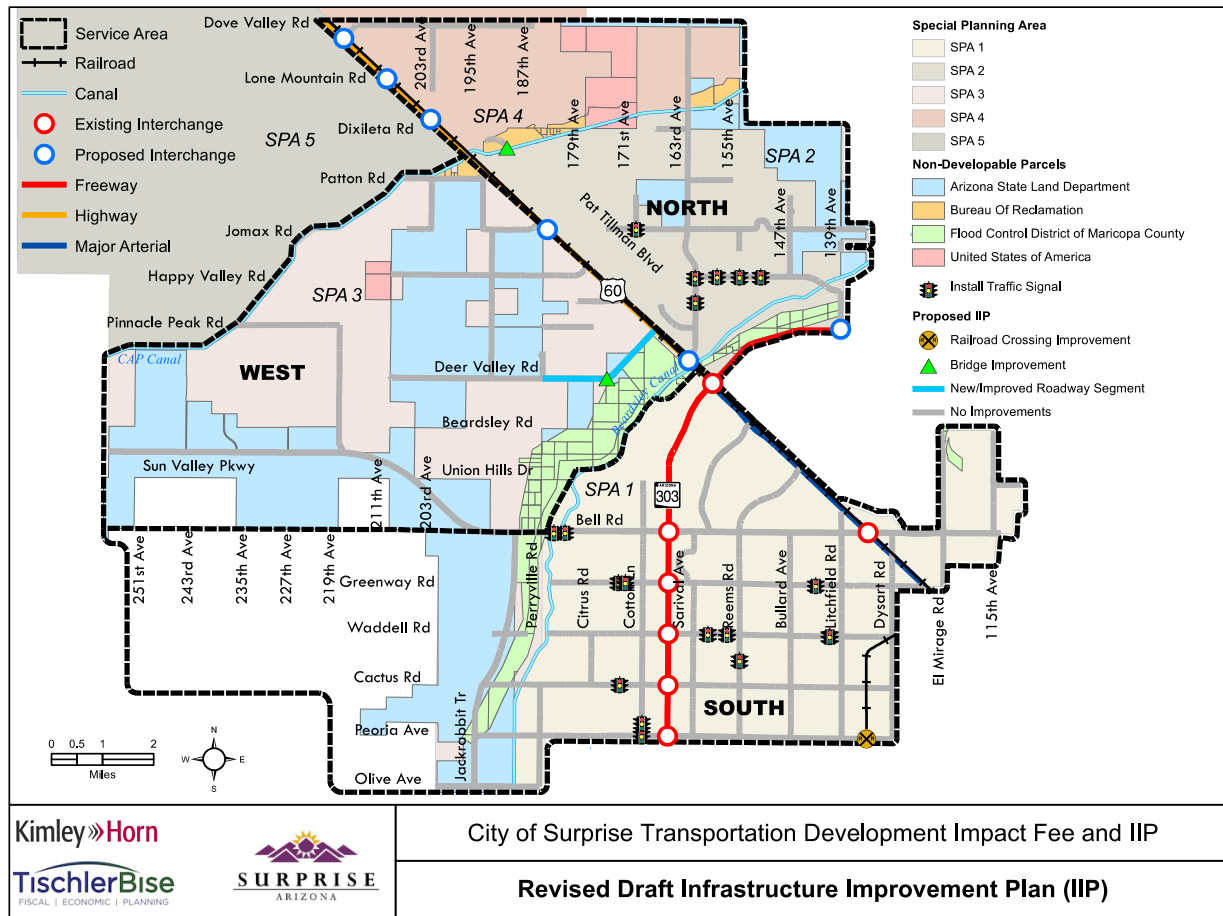
The estimates and projections of residential and nonresidential development in this Land Use Assumptions document are for all areas within Surprise. The current demographic estimates and future development projections will be used in the Infrastructure Improvements Plan (IIP) and in the calculation of development fees. Current demographic data estimates for 2023 are used in calculating levels of service (LOS) provided to existing development in Surprise. Arizona’s Enabling Legislation requires fees to be updated at least every five years and limits the IIP to a maximum of 10 years.

The Infrastructure Improvements Plan (IIP) and the Development Fee Report include multiple service areas. The Fire Facilities IIP, the Parks and Recreational Facilities IIP, and the Police Facilities IIP use a citywide service area. The service area for the Street Facilities IIP is shown in Figure L1. The service area for the Water Facilities IIP, the Water Resource Facilities IIP, and the Wastewater Facilities IIP is shown in Figure L2.

SUMMARY OF GROWTH INDICATORS

Key land use assumptions include population, housing units, and employment projections. TischlerBise projects future development using data provided by the Maricopa Association of Governments (MAG). Development projections are summarized in Figure L20 through Figure L23. These projections will be used to estimate fee revenue and to indicate the anticipated need for growth-related infrastructure. However, development fee methodologies are designed to reduce sensitivity to development projections in the determination of the proportionate share fee amounts. If actual development occurs at a slower rate than projected, fee revenue will decline, but so will the need for growth-related infrastructure. In contrast, if development occurs at a faster rate than anticipated, fee revenue will increase, but Surprise will also need to accelerate infrastructure improvements to keep pace with the actual rate of development. During the next 10 years, residential development projections indicate a population increase of 83,656 persons in 35,921 housing units, and nonresidential development projections indicate an employment increase of 16,444 jobs in approximately 8,542,000 square feet of floor area.

Figure L1: Street Development Fee Service Area



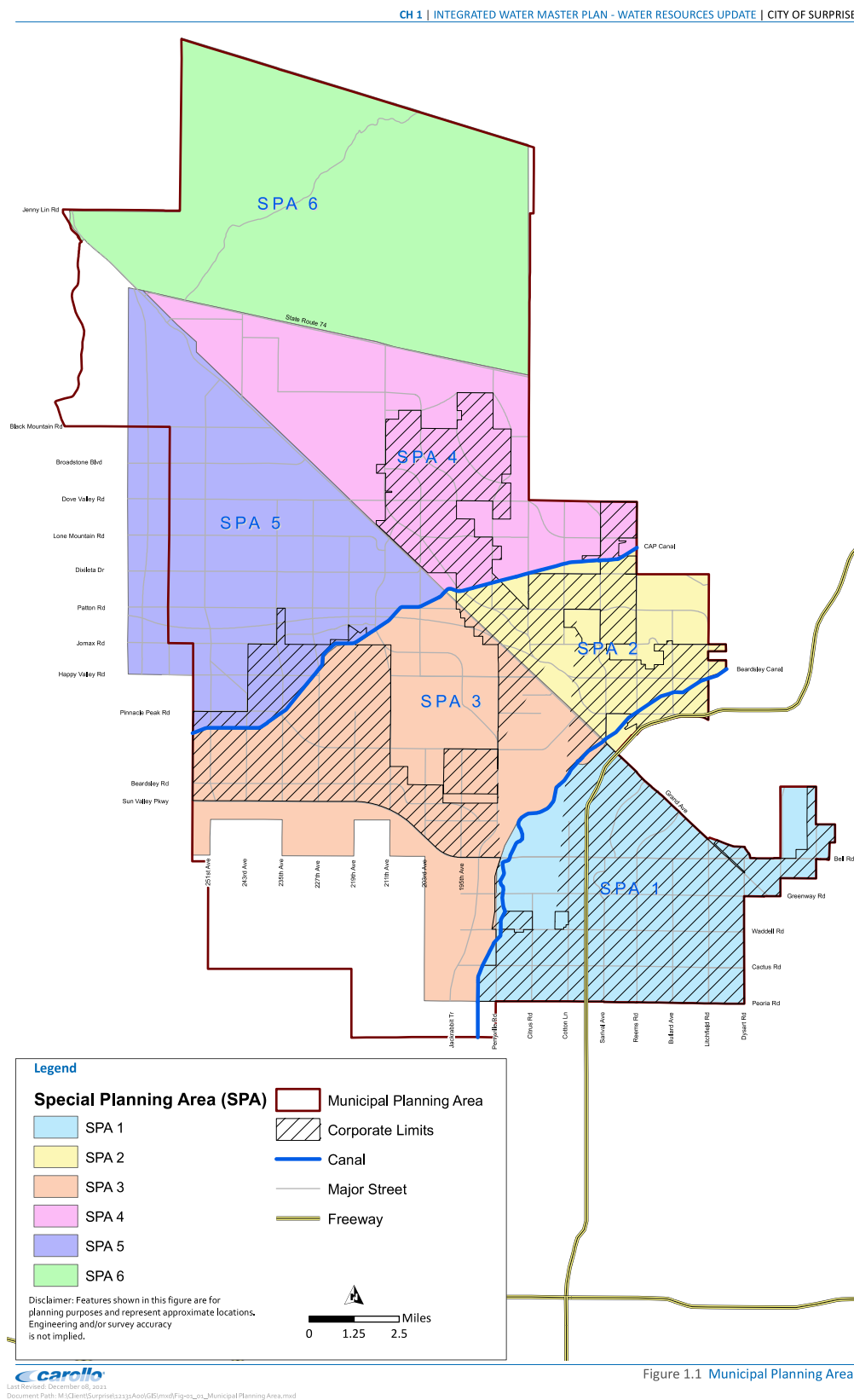
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SURPRISE
 ARIZONA

City of Surprise Transportation Development Impact Fee and IIP

Revised Draft Infrastructure Improvement Plan (IIP)

Figure L2: Utility Development Impact Fee Service Area



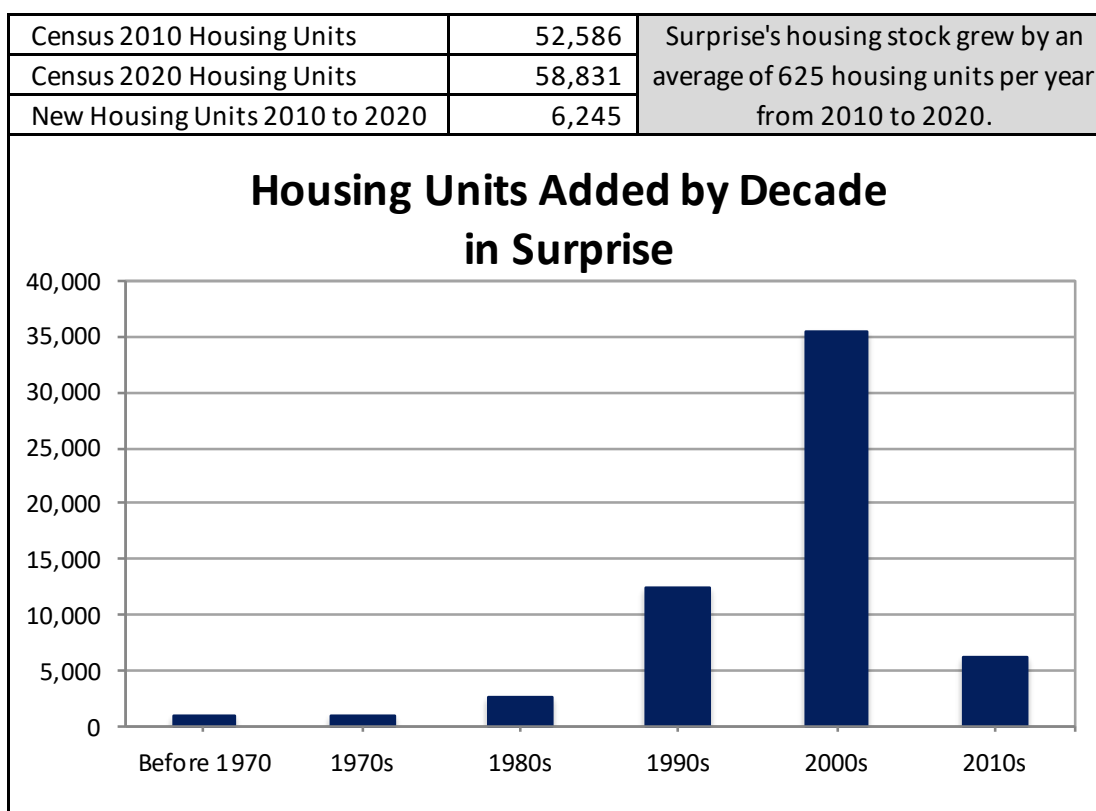
RESIDENTIAL DEVELOPMENT

This section details current estimates and future projections of residential development including population and housing units.

Recent Residential Construction

Development fees require an analysis of current levels of service. For residential development, current levels of service are determined using estimates of population and housing units. Shown below, Figure L3 indicates the estimated number of housing units added by decade according to data obtained from the U.S. Census Bureau. In the previous decade, Surprise's housing stock grew by an average of 625 housing units per year.

Figure L3: Housing Units by Decade



Source: U.S. Census Bureau, Census 2020 Summary File 1, Census 2010 Summary File 1, 2017-2021 5-Year American Community Survey (for 2000s and earlier, adjusted to yield total units in 2010).

Occupancy Factors

According to the U.S. Census Bureau, a household is a housing unit occupied by year-round residents. Development fees often use per capita standards and persons per housing unit (PPHU) or persons per household (PPH) to derive proportionate share fee amounts. When fee calculations use PPHU, infrastructure standards are derived using year-round population. When fee calculations use PPH, the development fee methodology assumes a higher percentage of housing units will be occupied, thus requiring seasonal or peak population to be used when deriving infrastructure standards. TischlerBise recommends that development fees for residential development use persons per housing unit.

Residential development fees group housing units into three categories. Single-family units include detached and attached units. Multi-family units include duplexes and structures with two or more units on an individual parcel of land. Mobile home units include mobile homes and recreational vehicles. Figure L4 below shows the occupancy estimates for Surprise based on 2017-2021 American Community Survey 5-Year Estimates. Single-family units averaged 2.58 persons per housing unit, multi-family units averaged 1.58 persons per housing unit, and mobile home units averaged 1.09 persons per housing unit. The estimates shown below are used only to calculate occupancy factors and may not match population and housing unit estimates shown throughout this report.

Figure L4: Occupancy Factors

Housing Type	Persons	Households	Persons per Household	Housing Units	Persons per Housing Unit	Housing Mix	Vacancy Rate
Single Family ¹	130,567	46,291	2.82	50,626	2.58	86.6%	8.56%
Multi-Family ²	7,708	4,089	1.89	4,865	1.58	8.3%	15.95%
Mobile Home ³	3,256	1,825	1.78	2,992	1.09	5.1%	39.00%
Total	141,531	52,205	2.71	58,483	2.42	100.0%	10.73%

Source: U.S. Census Bureau, 2017-2021 American Community Survey 5-Year Estimates

1. Includes detached and attached (i.e., townhouses) units.
2. Includes dwellings in structures with two or more units.
3. Includes mobile homes and RV units.

Residential Estimates

According to estimates published by the U.S. Census Bureau, Surprise's 2020 population included 141,758 persons living in 58,831 housing units. The Maricopa Association of Governments (MAG) released updated socioeconomic projections in June 2023. Using traffic analysis zone (TAZ) data provided by MAG, and occupancy factors shown in Figure L4, existing residential development in 2023 included 172,866 persons living in 73,013 housing units.

Figure L5: Residential Estimates

Surprise, Arizona	2020	2023
	Census ¹	Base Year
Population	141,758	172,866
Housing Units	58,831	73,013

1. U.S. Census Bureau, 2020
2. TischlerBise calculation using Maricopa Association of Governments (MAG) housing unit projections and ACS occupancy factors.

Residential Projections

Population and housing unit projections illustrate the possible future pace of service demands, revenues, and expenditures. To the extent these factors change, the projected need for infrastructure will also change. If development occurs at a faster rate than projected, the demand for infrastructure will increase at a corresponding rate. If development occurs at a slower rate than projected, the demand for infrastructure will decrease at a corresponding rate. For this study, the analysis assumes the occupancy factors shown in Figure L4 will remain constant throughout the 10-year projection period.

Citywide Projections

TischlerBise projects residential development using housing unit data provided by the Maricopa Association of Governments (MAG) and data provided by Community Development Department staff (multi-family development in SPA 1 and SPA 2 only). To project housing units from 2023 to 2030, TischlerBise applies a straight-line projection from MAG 2020 housing unit estimates to MAG 2030 housing unit projections. To project housing units from 2030 to 2033, TischlerBise applies a straight-line projection from MAG 2030 housing unit projections to MAG 2040 housing unit projections. For multi-family development in SPA 1 and SPA 2, the analysis uses data provided by Community Development Department staff (instead of MAG data) that reflects multi-family development currently in the development pipeline. Based on these assumptions, 10-year projections include an increase of 35,921 housing units.

To convert housing units to population, the analysis multiplies occupancy factors shown in Figure L4 to the housing unit projections shown below. For example, the 10-year increase of 27,023 single-family units multiplied by 2.58 persons per housing unit equals 69,718 persons in new single-family units. Based on these assumptions, the 10-year projections include an increase of 83,656 persons.

Figure L6: Residential Projections

Surprise, Arizona	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10-Year Increase
	Base	1	2	3	4	5	6	7	8	9	10	
Population												
Single-Family	153,323	160,839	168,354	175,870	183,386	190,901	198,417	205,932	211,636	217,339	223,042	69,718
Multi-Family	16,194	17,552	18,910	20,268	21,626	22,984	24,342	25,700	27,087	28,474	29,862	13,667
Mobile Home	3,349	3,378	3,407	3,436	3,465	3,494	3,523	3,552	3,575	3,597	3,619	270
Total	172,866	181,769	190,671	199,574	208,477	217,380	226,282	235,185	242,297	249,410	256,522	83,656
Housing Units												
Single-Family	59,934	62,847	65,760	68,673	71,586	74,499	77,412	80,325	82,536	84,746	86,957	27,023
Multi-Family	9,973	10,833	11,692	12,552	13,411	14,271	15,130	15,990	16,868	17,746	18,624	8,650
Mobile Home	3,106	3,133	3,159	3,186	3,213	3,239	3,266	3,293	3,313	3,333	3,354	248
Total	73,013	76,813	80,612	84,411	88,210	92,010	95,809	99,608	102,717	105,825	108,934	35,921

Street Service Area Projections

The following figures include residential development projections associated with the street development fee service area. TischlerBise projects future residential development for each subarea using the same methodology as the citywide development projections.

Figure L7: Residential Projections – Street Development Fee Service Area (North)

Street Development Fee Service Area - North	2023 Base	2024 1	2025 2	2026 3	2027 4	2028 5	2029 6	2030 7	2031 8	2032 9	2033 10	10-Year Increase
Population												
Single-Family	16,684	20,247	23,809	27,371	30,934	34,496	38,058	41,620	44,651	47,681	50,711	34,027
Multi-Family	819	1,225	1,632	2,038	2,444	2,850	3,256	3,662	4,067	4,472	4,878	4,058
Mobile Home	191	205	219	232	246	260	274	288	299	311	323	132
Total	17,695	21,677	25,659	29,641	33,623	37,606	41,588	45,570	49,017	52,465	55,912	38,217
Housing Units												
Single-Family	6,489	7,870	9,250	10,631	12,012	13,393	14,773	16,154	17,329	18,503	19,678	13,189
Multi-Family	295	552	809	1,066	1,323	1,580	1,837	2,094	2,350	2,607	2,863	2,569
Mobile Home	177	189	202	215	227	240	253	265	276	287	298	121
Total	6,960	8,611	10,261	11,911	13,562	15,212	16,863	18,513	19,955	21,397	22,838	15,878

Figure L8: Residential Projections – Street Development Fee Service Area (South)

Street Development Fee Service Area - South	2023 Base	2024 1	2025 2	2026 3	2027 4	2028 5	2029 6	2030 7	2031 8	2032 9	2033 10	10-Year Increase
Population												
Single-Family	127,038	128,587	130,137	131,686	133,235	134,785	136,334	137,883	138,432	138,980	139,528	12,490
Multi-Family	15,171	16,102	17,033	17,964	18,895	19,827	20,758	21,689	22,620	23,551	24,482	9,311
Mobile Home	3,070	3,076	3,082	3,088	3,094	3,100	3,106	3,112	3,114	3,116	3,119	48
Total	145,279	147,766	150,252	152,739	155,225	157,711	160,198	162,684	164,166	165,647	167,129	21,849
Housing Units												
Single-Family	49,777	50,378	50,978	51,579	52,179	52,780	53,380	53,981	54,193	54,406	54,618	4,841
Multi-Family	9,639	10,229	10,818	11,407	11,996	12,586	13,175	13,764	14,354	14,943	15,532	5,893
Mobile Home	2,852	2,857	2,863	2,868	2,874	2,879	2,885	2,890	2,892	2,894	2,896	44
Total	62,268	63,464	64,659	65,854	67,050	68,245	69,440	70,636	71,439	72,243	73,047	10,779

Figure L9: Residential Projections – Street Development Fee Service Area (West)

Street Development Fee Service Area - West	2023 Base	2024 1	2025 2	2026 3	2027 4	2028 5	2029 6	2030 7	2031 8	2032 9	2033 10	10-Year Increase
Population												
Single-Family	9,601	12,005	14,409	16,813	19,217	21,621	24,025	26,429	28,553	30,678	32,802	23,201
Multi-Family	204	224	245	266	287	308	329	349	400	451	502	298
Mobile Home	88	97	106	115	125	134	143	153	161	169	177	90
Total	9,892	12,326	14,760	17,194	19,628	22,063	24,497	26,931	29,114	31,298	33,482	23,590
Housing Units												
Single-Family	3,668	4,600	5,532	6,463	7,395	8,327	9,259	10,190	11,014	11,837	12,661	8,993
Multi-Family	40	53	66	79	92	106	119	132	164	196	228	189
Mobile Home	77	86	94	103	111	120	129	137	145	152	160	82
Total	3,785	4,738	5,692	6,645	7,599	8,552	9,506	10,459	11,323	12,186	13,049	9,264

NONRESIDENTIAL DEVELOPMENT

This section details current estimates and future projections of nonresidential development including jobs and nonresidential floor area.

Nonresidential Demand Factors

TischlerBise uses the term jobs to refer to employment by place of work. In Figure L10, gray shading indicates the nonresidential development prototypes used to derive employment densities. For nonresidential development, TischlerBise uses data published in Trip Generation, Institute of Transportation Engineers, 11th Edition (2021). The prototype for industrial development is Industrial Park (ITE 130) with 864 square feet of floor area per employee. For warehouse development, the proxy is Warehousing (ITE 150) with 2,953 square feet of floor area per employee. Public/institutional development uses Nursing Home (ITE 620) with 490 square feet of floor area per employee. For office development, the proxy is General Office (ITE 710) with 307 square feet of floor area per employee. The prototype for retail/commercial development is Shopping Center (ITE 820) with 471 square feet of floor area per employee.

Figure L10: Nonresidential Demand Units

ITE Code	Land Use / Size	Demand Unit	Wkdy Trip Ends Per Dmd Unit ¹	Wkdy Trip Ends Per Employee ¹	Employees per Dmd Unit	Square Feet Per Employee
110	Light Industrial	1,000 Sq Ft	4.87	3.10	1.57	637
130	Industrial Park	1,000 Sq Ft	3.37	2.91	1.16	864
140	Manufacturing	1,000 Sq Ft	4.75	2.51	1.89	528
150	Warehousing	1,000 Sq Ft	1.71	5.05	0.34	2,953
310	Hotel	room	7.99	14.34	0.56	na
520	Elementary School	student	2.27	22.50	0.10	na
525	High School	student	1.94	21.95	0.09	na
540	Community College	student	1.15	14.61	0.08	na
565	Day Care	student	4.09	21.38	0.19	na
610	Hospital	1,000 Sq Ft	10.77	3.77	2.86	350
620	Nursing Home	1,000 Sq Ft	6.75	3.31	2.04	490
710	General Office (avg size)	1,000 Sq Ft	10.84	3.33	3.26	307
720	Medical-Dental Office	1,000 Sq Ft	36.00	8.71	4.13	242
730	Government Office	1,000 Sq Ft	22.59	7.45	3.03	330
750	Office Park	1,000 Sq Ft	11.07	3.54	3.13	320
760	Research & Dev Center	1,000 Sq Ft	11.08	3.37	3.29	304
770	Business Park	1,000 Sq Ft	12.44	4.04	3.08	325
820	Shopping Center (avg size)	1,000 Sq Ft	37.01	17.42	2.12	471

1. Trip Generation, Institute of Transportation Engineers, 11th Edition (2021).

Nonresidential Estimates

The Maricopa Association of Governments (MAG) released updated socioeconomic projections in June 2023. According to MAG estimates, site-based employment included 22,366 jobs in 2020. According to data provided by the Maricopa County Tax Assessor, nonresidential development included 20,327,059 square feet of floor area in 2020. To estimate employment in 2023, TischlerBise applied a straight-line projection from MAG 2020 employment estimates to MAG 2030 employment projections. To estimate nonresidential floor area in 2023, TischlerBise used a combination of recently completed projects and ITE employment density factors. For 2023, projected nonresidential development includes 27,035 jobs and 25,386,225 square feet of nonresidential floor area.

Figure L11: Nonresidential Estimates

Industry Type	2020 Jobs ¹	Percent of Total Jobs	2020 Estimated Floor Area ²
Industrial	1,864	8%	822,847
Warehouse	389	2%	4,423,342
Retail/Commercial	11,555	52%	6,670,736
Office	5,739	26%	2,056,628
Public/Institutional	2,819	13%	6,353,506
Total	22,366	100%	20,327,059

1. Socioeconomic Projections (June 2023), Maricopa Association of Governments (MAG).
2. Maricopa County Tax Assessor, 2020.

Industry Type	2023 Jobs ¹	Percent of Total Jobs	2023 Estimated Floor Area ¹
Industrial	2,603	10%	2,097,956
Warehouse	542	2%	5,332,128
Retail/Commercial	12,309	46%	7,380,433
Office	7,920	29%	3,396,615
Public/Institutional	3,661	14%	7,179,094
Total	27,035	100%	25,386,225

1. TischlerBise estimate.

Nonresidential Projections

Employment and floor area projections are used to illustrate the possible future pace of service demands, revenues, and expenditures. To the extent these factors change, the projected need for infrastructure will also change. If development occurs at a more rapid rate than projected, the demand for infrastructure will increase at a corresponding rate. If development occurs at a slower rate than projected, the demand for infrastructure will also decrease.

Citywide Projections

TischlerBise projects nonresidential development using employment data, by development type, provided by the Maricopa Association of Governments (MAG). To project employment from 2023 to 2030, TischlerBise applies a straight-line projection from MAG 2020 employment estimates to MAG 2030 employment projections. To project employment from 2030 to 2033, TischlerBise applies a straight-line projection from MAG 2030 employment projections to MAG 2040 employment projections. Based on these assumptions, 10-year projections include an increase of 16,444 jobs citywide. To convert employment to nonresidential floor area, the analysis multiplies nonresidential demand factors shown in Figure L10 by the employment projections shown below. For example, the 10-year increase of 2,245 industrial jobs multiplied by 864 square feet per industrial job equals approximately 1,938,000 square feet of additional industrial development. Based on these assumptions, 10-year projections include an increase of approximately 8,542,000 square feet of nonresidential floor area citywide.

Figure L12: Nonresidential Projections

Surprise, Arizona	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10-Year
	Base	1	2	3	4	5	6	7	8	9	10	Increase
Employment												
Industrial	2,603	2,849	3,095	3,341	3,587	3,833	4,079	4,326	4,500	4,673	4,847	2,245
Warehouse	542	594	645	696	748	799	850	901	938	974	1,010	468
Retail/Commercial	12,309	12,560	12,812	13,063	13,314	13,565	13,817	14,068	14,541	15,014	15,486	3,178
Office	7,920	8,647	9,374	10,101	10,828	11,555	12,282	13,009	13,950	14,890	15,831	7,911
Public/Institutional	3,661	3,941	4,222	4,503	4,783	5,064	5,344	5,625	5,852	6,078	6,305	2,644
Total	27,035	28,591	30,148	31,704	33,260	34,816	36,373	37,929	39,779	41,629	43,479	16,444
Nonres. Sq Ft (x1,000)												
Industrial	2,098	2,310	2,523	2,736	2,948	3,161	3,373	3,586	3,736	3,886	4,036	1,938
Warehouse	5,332	5,484	5,635	5,787	5,938	6,089	6,241	6,392	6,499	6,606	6,714	1,381
Retail/Commercial	7,380	7,499	7,617	7,735	7,854	7,972	8,090	8,208	8,431	8,653	8,876	1,496
Office	3,397	3,620	3,843	4,067	4,290	4,513	4,737	4,960	5,249	5,538	5,827	2,430
Public/Institutional	7,179	7,317	7,454	7,592	7,729	7,867	8,005	8,142	8,253	8,364	8,475	1,296
Total	25,386	26,229	27,073	27,916	28,759	29,602	30,445	31,289	32,168	33,048	33,928	8,542

Street Service Area Projections

The following figures include nonresidential development projections associated with the street development fee service area. TischlerBise projects future nonresidential development for each subarea using the same methodology as the citywide development projections.

Figure L13: Nonresidential Projections – Street Development Fee Service Area (North)

Street Development Fee Service Area - North	2023 Base	2024 1	2025 2	2026 3	2027 4	2028 5	2029 6	2030 7	2031 8	2032 9	2033 10	10-Year Increase
Employment												
Industrial	42	54	67	80	93	105	118	131	142	153	164	122
Warehouse	9	11	14	17	19	22	25	27	30	32	34	25
Retail/Commercial	174	227	280	333	386	440	493	546	735	923	1,112	939
Office	287	368	449	529	610	691	772	853	1,232	1,611	1,990	1,703
Public/Institutional	440	526	612	698	784	871	957	1,043	1,154	1,264	1,375	935
Total	950	1,186	1,422	1,657	1,893	2,129	2,364	2,600	3,292	3,983	4,675	3,724
Nonres. Sq Ft (x1,000)												
Industrial	66	77	88	99	110	121	132	143	153	162	172	106
Warehouse	47	55	63	71	78	86	94	102	109	116	122	75
Retail/Commercial	181	206	231	256	281	306	331	356	445	534	622	442
Office	149	174	199	224	249	273	298	323	439	556	672	523
Public/Institutional	617	659	701	743	786	828	870	913	967	1,021	1,075	459
Total	1,060	1,171	1,282	1,393	1,504	1,615	1,726	1,837	2,112	2,388	2,664	1,604

Figure L14: Nonresidential Projections – Street Development Fee Service Area (South)

Street Development Fee Service Area - South	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10-Year Increase
	Base	1	2	3	4	5	6	7	8	9	10	
Employment												
Industrial	2,516	2,749	2,982	3,215	3,448	3,681	3,914	4,147	4,301	4,456	4,610	2,094
Warehouse	524	573	621	670	719	767	816	864	896	929	961	436
Retail/Commercial	12,040	12,223	12,406	12,589	12,772	12,956	13,139	13,322	13,491	13,660	13,830	1,790
Office	7,347	7,914	8,482	9,049	9,617	10,184	10,752	11,319	11,763	12,207	12,650	5,304
Public/Institutional	2,906	2,999	3,093	3,186	3,280	3,373	3,467	3,560	3,585	3,609	3,634	728
Total	25,332	26,458	27,584	28,709	29,835	30,961	32,086	33,212	34,036	34,860	35,685	10,353
Nonres. Sq Ft (x1,000)												
Industrial	2,030	2,231	2,432	2,633	2,834	3,036	3,237	3,438	3,571	3,705	3,838	1,808
Warehouse	5,281	5,424	5,568	5,711	5,855	5,998	6,141	6,285	6,380	6,475	6,570	1,289
Retail/Commercial	7,128	7,214	7,300	7,386	7,473	7,559	7,645	7,731	7,811	7,891	7,970	843
Office	3,103	3,277	3,451	3,626	3,800	3,974	4,149	4,323	4,459	4,596	4,732	1,629
Public/Institutional	6,246	6,292	6,337	6,383	6,429	6,475	6,521	6,567	6,579	6,591	6,603	357
Total	23,787	24,438	25,089	25,740	26,391	27,042	27,693	28,344	28,800	29,257	29,713	5,926

Figure L15: Nonresidential Projections – Street Development Fee Service Area (West)

Street Development Fee Service Area - West	2023 Base	2024 1	2025 2	2026 3	2027 4	2028 5	2029 6	2030 7	2031 8	2032 9	2033 10	10-Year Increase
Employment												
Industrial	45	46	46	46	47	47	48	48	56	65	73	28
Warehouse	9	9	10	10	10	10	10	10	12	14	15	6
Retail/Commercial	96	111	126	140	155	170	185	200	315	430	545	449
Office	287	365	444	523	601	680	758	837	955	1,073	1,190	904
Public/Institutional	316	417	518	618	719	820	921	1,022	1,113	1,205	1,296	981
Total	753	948	1,143	1,337	1,532	1,727	1,922	2,117	2,451	2,786	3,120	2,367
Nonres. Sq Ft (x1,000)												
Industrial	2	3	3	3	4	4	4	5	12	19	27	24
Warehouse	4	4	4	5	5	5	6	6	11	16	21	17
Retail/Commercial	72	79	86	93	100	107	114	121	175	229	283	211
Office	145	169	193	217	241	266	290	314	350	386	422	278
Public/Institutional	317	366	416	465	515	564	614	663	708	753	797	481
Total	540	621	702	783	865	946	1,027	1,108	1,256	1,404	1,551	1,011

AVERAGE WEEKDAY VEHICLE TRIPS

Surprise will use average weekday vehicle trips (AWVT) for fire facilities fees and police facilities fees. Components used to determine AWVT include average weekday vehicle trip generation rates, adjustments for commuting patterns, and adjustments for pass-by trips.

Residential Trip Generation Rates

For residential development, TischlerBise uses trip generation rates published in Trip Generation, Institute of Transportation Engineers, 11th Edition (2021). For single-family development, the proxy is Single Family Detached Housing (ITE 210), and this type of development generates 9.43 average weekday vehicle trip ends per unit. For multi-family development, the proxy is Multifamily Housing Low-Rise (ITE 220), and this type of development generates 6.74 average weekday vehicle trip ends per unit. For mobile home development, the proxy is Mobile Home Park (ITE 240), and this type of development generates 7.12 average weekday vehicle trip ends per unit.

Nonresidential Trip Generation Rates

For nonresidential development, TischlerBise uses trip generation rates published in Trip Generation, Institute of Transportation Engineers, 11th Edition (2021). The prototype for industrial development is Industrial Park (ITE 130) which generates 3.37 average weekday vehicle trip ends per 1,000 square feet of floor area. For warehouse development, the proxy is Warehousing (ITE 150), and it generates 1.71 average weekday vehicle trip ends per 1,000 square feet of floor area. Public/institutional development uses Nursing Home (ITE 620) and generates 6.75 average weekday vehicle trip ends per 1,000 square feet of floor area. For office development, the proxy is General Office (ITE 710), and it generates 10.84 average weekday vehicle trip ends per 1,000 square feet of floor area. The prototype for retail/commercial development is Shopping Center (ITE 820) which generates 37.01 average weekday vehicle trips per 1,000 square feet of floor area.

Figure L16: Average Weekday Vehicle Trip Ends by Land Use

ITE Code	Land Use / Size	Demand Unit	Wkdy Trip Ends Per Dmd Unit ¹	Wkdy Trip Ends Per Employee ¹	Employees per Dmd Unit	Square Feet Per Employee
110	Light Industrial	1,000 Sq Ft	4.87	3.10	1.57	637
130	Industrial Park	1,000 Sq Ft	3.37	2.91	1.16	864
140	Manufacturing	1,000 Sq Ft	4.75	2.51	1.89	528
150	Warehousing	1,000 Sq Ft	1.71	5.05	0.34	2,953
310	Hotel	room	7.99	14.34	0.56	na
565	Day Care	student	4.09	21.38	0.19	na
610	Hospital	1,000 Sq Ft	10.77	3.77	2.86	350
620	Nursing Home	1,000 Sq Ft	6.75	3.31	2.04	490
710	General Office (avg size)	1,000 Sq Ft	10.84	3.33	3.26	307
720	Medical-Dental Office	1,000 Sq Ft	36.00	8.71	4.13	242
730	Government Office	1,000 Sq Ft	22.59	7.45	3.03	330
750	Office Park	1,000 Sq Ft	11.07	3.54	3.13	320
760	Research & Dev Center	1,000 Sq Ft	11.08	3.37	3.29	304
770	Business Park	1,000 Sq Ft	12.44	4.04	3.08	325
820	Shopping Center (avg size)	1,000 Sq Ft	37.01	17.42	2.12	471

1. Trip Generation, Institute of Transportation Engineers, 11th Edition (2021).

Trip Rate Adjustments

To calculate vehicle trips, trip generation rates require an adjustment factor to avoid double counting each trip at both the origin and destination points. Therefore, the trip adjustment factor is 50 percent.

Commuter Trip Adjustment

Residential development has a larger trip adjustment factor of 64 percent to account for commuters leaving Surprise for work. According to the 2009 National Household Travel Survey (see Table 30) weekday work trips are typically 31 percent of production trips (i.e., all out-bound trips, which are 50 percent of all trip ends). As shown in Figure L17, the U.S. Census Bureau's OnTheMap web application indicates 90 percent of resident workers traveled outside of Surprise for work in 2019. In combination, these factors ($0.31 \times 0.50 \times 0.90 = 0.14$) support the additional 14 percent allocation of trips to residential development.

Figure L17: Commuter Trip Adjustment

Trip Adjustment Factor for Commuters	
Employed Residents	55,711
Residents Living and Working in Surprise	5,624
Residents Commuting Outside Surprise for Work	50,087
Percent Commuting out of Surprise	90%
Additional Production Trips ¹	14%
Residential Trip Adjustment Factor	64%

Source: U.S. Census Bureau, OnTheMap Application (version 6.8.1) and LEHD Origin-Destination Employment Statistics, 2019.

1. According to the National Household Travel Survey (2009)*, published in December 2011 (see Table 30), home-based work trips are typically 30.99 percent of "production" trips, in other words, out-bound trips (which are 50 percent of all trip ends). Also, LED OnTheMap data from 2019 indicate that 90 percent of Surprise's workers travel outside the city for work. In combination, these factors ($0.3099 \times 0.50 \times 0.90 = 0.139$) account for 14 percent of additional production trips. The total adjustment factor for residential includes attraction trips (50 percent of trip ends) plus the journey-to-work commuting adjustment (14 percent of production trips) for a total of 64 percent.

*<http://nhts.ornl.gov/publications.shtml> ; Summary of Travel Trends - Table "Daily Travel Statistics by Weekday vs. Weekend"

Adjustment for Primary Trips

For retail/commercial and office development, the primary trip factor is less than 100 percent because these types of development attract vehicles as they pass by on arterial and collector roads. For example, when someone stops at a convenience store on the way home from work, the convenience store is not the primary destination. For retail/commercial development, ITE data indicate 45 percent of the vehicles that enter are passing by on their way to some other primary destination. The remaining 55 percent of attraction trips have the retail/commercial site as their primary destination. Because attraction trips are half of all trips, the retail/commercial trip adjustment factor is 55 percent multiplied by 50 percent, or approximately 28 percent of the trip ends. For office development, 90 percent of attraction trips are assumed to be primary trips based on detailed studies conducted as part of Tindale-Oliver 2016 Hillsborough County Mobility Fee Study. Because attraction trips are half of all trips, the office trip adjustment factor is 90 percent multiplied by 50 percent, or 45 percent of the trip ends.

Average Weekday Vehicle Trip Estimate

Shown below in Figure L18, multiplying average weekday vehicle trip ends and trip adjustment factors (discussed on the previous page) by Surprise's existing development units provides the average weekday vehicle trips generated by existing development. As shown below, Surprise's existing citywide development generates 542,897 vehicle trips on an average weekday.

Figure L18: Average Weekday Vehicle Trips by Land Use

Development Type	Development Unit	ITE Code	Avg Wkday VTE	Trip Adjustment	2023 Dev Units	2023 Veh Trips
Single Family	HU	210	9.43	64%	59,934	361,715
Multi-Family	HU	220	6.74	64%	9,973	43,021
Mobile Home	HU	240	7.12	64%	3,106	14,153
Industrial	KSF	130	3.37	50%	2,098	3,535
Warehouse	KSF	150	1.71	50%	5,332	4,559
Retail/Commercial	KSF	820	37.01	28%	7,380	75,116
Office	KSF	710	10.84	45%	3,397	16,569
Public/Institutional	KSF	620	6.75	50%	7,179	24,229
Total						542,897

Average Weekday Vehicle Trip Projections

Shown below, Figure L19 includes a projection of citywide vehicle trips. TischlerBise uses the nonresidential projections shown below for the fire and police service areas.

Figure L19: Average Weekday Vehicle Trip Projections

Surprise, Arizona		Base	1	2	3	4	5	6	7	8	9	10	10-Year
		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Increase
Development	Single Family Units	59,934	62,847	65,760	68,673	71,586	74,499	77,412	80,325	82,536	84,746	86,957	27,023
	Multi-Family Units	9,973	10,833	11,692	12,552	13,411	14,271	15,130	15,990	16,868	17,746	18,624	8,650
	Mobile Home Units	3,106	3,133	3,159	3,186	3,213	3,239	3,266	3,293	3,313	3,333	3,354	248
	Industrial KSF	2,098	2,310	2,523	2,736	2,948	3,161	3,373	3,586	3,736	3,886	4,036	1,938
	Warehouse KSF	5,332	5,484	5,635	5,787	5,938	6,089	6,241	6,392	6,499	6,606	6,714	1,381
	Retail/Commercial KSF	7,380	7,499	7,617	7,735	7,854	7,972	8,090	8,208	8,431	8,653	8,876	1,496
	Office KSF	3,397	3,620	3,843	4,067	4,290	4,513	4,737	4,960	5,249	5,538	5,827	2,430
	Public/Institutional KSF	7,179	7,317	7,454	7,592	7,729	7,867	8,005	8,142	8,253	8,364	8,475	1,296
Average Weekday Vehicle Trips	Single-Family Trips	361,715	379,295	396,876	414,457	432,037	449,618	467,199	484,779	498,120	511,461	524,802	163,087
	Multi-Family Trips	43,021	46,729	50,436	54,144	57,851	61,559	65,266	68,974	72,761	76,548	80,335	37,314
	Mobile Home Trips	14,153	14,274	14,396	14,518	14,640	14,761	14,883	15,005	15,097	15,190	15,282	1,130
	Residential Trips	418,888	440,298	461,708	483,118	504,528	525,938	547,348	568,758	585,978	603,199	620,419	201,531
	Industrial Trips	3,535	3,893	4,251	4,609	4,967	5,326	5,684	6,042	6,295	6,548	6,801	3,266
	Warehouse Trips	4,559	4,688	4,818	4,947	5,077	5,206	5,336	5,465	5,557	5,649	5,740	1,181
	Retail/Commercial Trips	75,116	76,320	77,524	78,728	79,932	81,135	82,339	83,543	85,808	88,073	90,338	15,222
	Office Trips	16,569	17,658	18,748	19,837	20,926	22,016	23,105	24,195	25,604	27,013	28,423	11,854
	Public/Institutional Trips	24,229	24,694	25,158	25,623	26,087	26,551	27,016	27,480	27,855	28,230	28,605	4,375
	Nonresidential Trips	124,008	127,254	130,499	133,744	136,989	140,235	143,480	146,725	151,119	155,513	159,906	35,898
Total Vehicle Trips		542,897	567,552	592,207	616,862	641,517	666,173	690,828	715,483	737,097	758,711	780,325	237,429

DEVELOPMENT PROJECTIONS

Citywide Projections

Provided below is a summary of development projections used in the Development Fee Report. Base year estimates for 2023 are used in the fee calculations. Development projections are used to illustrate a possible future pace of demand for service units and cash flows resulting from revenues and expenditures associated with those demands.

Figure L20: Development Projections

Surprise, Arizona	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	10-Year
	Base	1	2	3	4	5	6	7	8	9	10	Increase
Population												
Single-Family	153,323	160,839	168,354	175,870	183,386	190,901	198,417	205,932	211,636	217,339	223,042	69,718
Multi-Family	16,194	17,552	18,910	20,268	21,626	22,984	24,342	25,700	27,087	28,474	29,862	13,667
Mobile Home	3,349	3,378	3,407	3,436	3,465	3,494	3,523	3,552	3,575	3,597	3,619	270
Total	172,866	181,769	190,671	199,574	208,477	217,380	226,282	235,185	242,297	249,410	256,522	83,656
Housing Units												
Single-Family	59,934	62,847	65,760	68,673	71,586	74,499	77,412	80,325	82,536	84,746	86,957	27,023
Multi-Family	9,973	10,833	11,692	12,552	13,411	14,271	15,130	15,990	16,868	17,746	18,624	8,650
Mobile Home	3,106	3,133	3,159	3,186	3,213	3,239	3,266	3,293	3,313	3,333	3,354	248
Total	73,013	76,813	80,612	84,411	88,210	92,010	95,809	99,608	102,717	105,825	108,934	35,921
Employment												
Industrial	2,603	2,849	3,095	3,341	3,587	3,833	4,079	4,326	4,500	4,673	4,847	2,245
Warehouse	542	594	645	696	748	799	850	901	938	974	1,010	468
Retail/Commercial	12,309	12,560	12,812	13,063	13,314	13,565	13,817	14,068	14,541	15,014	15,486	3,178
Office	7,920	8,647	9,374	10,101	10,828	11,555	12,282	13,009	13,950	14,890	15,831	7,911
Public/Institutional	3,661	3,941	4,222	4,503	4,783	5,064	5,344	5,625	5,852	6,078	6,305	2,644
Total	27,035	28,591	30,148	31,704	33,260	34,816	36,373	37,929	39,779	41,629	43,479	16,444
Nonres. Sq Ft (x1,000)												
Industrial	2,098	2,310	2,523	2,736	2,948	3,161	3,373	3,586	3,736	3,886	4,036	1,938
Warehouse	5,332	5,484	5,635	5,787	5,938	6,089	6,241	6,392	6,499	6,606	6,714	1,381
Retail/Commercial	7,380	7,499	7,617	7,735	7,854	7,972	8,090	8,208	8,431	8,653	8,876	1,496
Office	3,397	3,620	3,843	4,067	4,290	4,513	4,737	4,960	5,249	5,538	5,827	2,430
Public/Institutional	7,179	7,317	7,454	7,592	7,729	7,867	8,005	8,142	8,253	8,364	8,475	1,296
Total	25,386	26,229	27,073	27,916	28,759	29,602	30,445	31,289	32,168	33,048	33,928	8,542

Street Service Area Projections

TischlerBise uses these projections as the basis for the street facilities development fees.

Figure L21: Development Projections – Street Development Fee Service Area (North)

Street Development Fee Service Area - North	2023 Base	2024 1	2025 2	2026 3	2027 4	2028 5	2029 6	2030 7	2031 8	2032 9	2033 10	10-Year Increase
Population												
Single-Family	16,684	20,247	23,809	27,371	30,934	34,496	38,058	41,620	44,651	47,681	50,711	34,027
Multi-Family	819	1,225	1,632	2,038	2,444	2,850	3,256	3,662	4,067	4,472	4,878	4,058
Mobile Home	191	205	219	232	246	260	274	288	299	311	323	132
Total	17,695	21,677	25,659	29,641	33,623	37,606	41,588	45,570	49,017	52,465	55,912	38,217
Housing Units												
Single-Family	6,489	7,870	9,250	10,631	12,012	13,393	14,773	16,154	17,329	18,503	19,678	13,189
Multi-Family	295	552	809	1,066	1,323	1,580	1,837	2,094	2,350	2,607	2,863	2,569
Mobile Home	177	189	202	215	227	240	253	265	276	287	298	121
Total	6,960	8,611	10,261	11,911	13,562	15,212	16,863	18,513	19,955	21,397	22,838	15,878
Employment												
Industrial	42	54	67	80	93	105	118	131	142	153	164	122
Warehouse	9	11	14	17	19	22	25	27	30	32	34	25
Retail/Commercial	174	227	280	333	386	440	493	546	735	923	1,112	939
Office	287	368	449	529	610	691	772	853	1,232	1,611	1,990	1,703
Public/Institutional	440	526	612	698	784	871	957	1,043	1,154	1,264	1,375	935
Total	950	1,186	1,422	1,657	1,893	2,129	2,364	2,600	3,292	3,983	4,675	3,724
Nonres. Sq Ft (x1,000)												
Industrial	66	77	88	99	110	121	132	143	153	162	172	106
Warehouse	47	55	63	71	78	86	94	102	109	116	122	75
Retail/Commercial	181	206	231	256	281	306	331	356	445	534	622	442
Office	149	174	199	224	249	273	298	323	439	556	672	523
Public/Institutional	617	659	701	743	786	828	870	913	967	1,021	1,075	459
Total	1,060	1,171	1,282	1,393	1,504	1,615	1,726	1,837	2,112	2,388	2,664	1,604

Figure L22: Development Projections – Street Development Fee Service Area (South)

Street Development Fee Service Area - South	2023 Base	2024 1	2025 2	2026 3	2027 4	2028 5	2029 6	2030 7	2031 8	2032 9	2033 10	10-Year Increase
Population												
Single-Family	127,038	128,587	130,137	131,686	133,235	134,785	136,334	137,883	138,432	138,980	139,528	12,490
Multi-Family	15,171	16,102	17,033	17,964	18,895	19,827	20,758	21,689	22,620	23,551	24,482	9,311
Mobile Home	3,070	3,076	3,082	3,088	3,094	3,100	3,106	3,112	3,114	3,116	3,119	48
Total	145,279	147,766	150,252	152,739	155,225	157,711	160,198	162,684	164,166	165,647	167,129	21,849
Housing Units												
Single-Family	49,777	50,378	50,978	51,579	52,179	52,780	53,380	53,981	54,193	54,406	54,618	4,841
Multi-Family	9,639	10,229	10,818	11,407	11,996	12,586	13,175	13,764	14,354	14,943	15,532	5,893
Mobile Home	2,852	2,857	2,863	2,868	2,874	2,879	2,885	2,890	2,892	2,894	2,896	44
Total	62,268	63,464	64,659	65,854	67,050	68,245	69,440	70,636	71,439	72,243	73,047	10,779
Employment												
Industrial	2,516	2,749	2,982	3,215	3,448	3,681	3,914	4,147	4,301	4,456	4,610	2,094
Warehouse	524	573	621	670	719	767	816	864	896	929	961	436
Retail/Commercial	12,040	12,223	12,406	12,589	12,772	12,956	13,139	13,322	13,491	13,660	13,830	1,790
Office	7,347	7,914	8,482	9,049	9,617	10,184	10,752	11,319	11,763	12,207	12,650	5,304
Public/Institutional	2,906	2,999	3,093	3,186	3,280	3,373	3,467	3,560	3,585	3,609	3,634	728
Total	25,332	26,458	27,584	28,709	29,835	30,961	32,086	33,212	34,036	34,860	35,685	10,353
Nonres. Sq Ft (x1,000)												
Industrial	2,030	2,231	2,432	2,633	2,834	3,036	3,237	3,438	3,571	3,705	3,838	1,808
Warehouse	5,281	5,424	5,568	5,711	5,855	5,998	6,141	6,285	6,380	6,475	6,570	1,289
Retail/Commercial	7,128	7,214	7,300	7,386	7,473	7,559	7,645	7,731	7,811	7,891	7,970	843
Office	3,103	3,277	3,451	3,626	3,800	3,974	4,149	4,323	4,459	4,596	4,732	1,629
Public/Institutional	6,246	6,292	6,337	6,383	6,429	6,475	6,521	6,567	6,579	6,591	6,603	357
Total	23,787	24,438	25,089	25,740	26,391	27,042	27,693	28,344	28,800	29,257	29,713	5,926

Figure L23: Development Projections – Street Development Fee Service Area (West)

Street Development Fee Service Area - West	2023 Base	2024 1	2025 2	2026 3	2027 4	2028 5	2029 6	2030 7	2031 8	2032 9	2033 10	10-Year Increase
Population												
Single-Family	9,601	12,005	14,409	16,813	19,217	21,621	24,025	26,429	28,553	30,678	32,802	23,201
Multi-Family	204	224	245	266	287	308	329	349	400	451	502	298
Mobile Home	88	97	106	115	125	134	143	153	161	169	177	90
Total	9,892	12,326	14,760	17,194	19,628	22,063	24,497	26,931	29,114	31,298	33,482	23,590
Housing Units												
Single-Family	3,668	4,600	5,532	6,463	7,395	8,327	9,259	10,190	11,014	11,837	12,661	8,993
Multi-Family	40	53	66	79	92	106	119	132	164	196	228	189
Mobile Home	77	86	94	103	111	120	129	137	145	152	160	82
Total	3,785	4,738	5,692	6,645	7,599	8,552	9,506	10,459	11,323	12,186	13,049	9,264
Employment												
Industrial	45	46	46	46	47	47	48	48	56	65	73	28
Warehouse	9	9	10	10	10	10	10	10	12	14	15	6
Retail/Commercial	96	111	126	140	155	170	185	200	315	430	545	449
Office	287	365	444	523	601	680	758	837	955	1,073	1,190	904
Public/Institutional	316	417	518	618	719	820	921	1,022	1,113	1,205	1,296	981
Total	753	948	1,143	1,337	1,532	1,727	1,922	2,117	2,451	2,786	3,120	2,367
Nonres. Sq Ft (x1,000)												
Industrial	2	3	3	3	4	4	4	5	12	19	27	24
Warehouse	4	4	4	5	5	5	6	6	11	16	21	17
Retail/Commercial	72	79	86	93	100	107	114	121	175	229	283	211
Office	145	169	193	217	241	266	290	314	350	386	422	278
Public/Institutional	317	366	416	465	515	564	614	663	708	753	797	481
Total	540	621	702	783	865	946	1,027	1,108	1,256	1,404	1,551	1,011

FIRE FACILITIES

ARS § 9-463.05 (T)(7)(f) defines the eligible facilities and assets for the Fire Facilities IIP:

“Fire and police facilities, including all appurtenances, equipment and vehicles. Fire and 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 or airplanes or a facility that is used for training firefighters or officers from more than one station or substation.”

The Fire Facilities IIP includes components for fire stations, fire facilities, primary apparatus, support apparatus, and the cost of preparing the Fire Facilities IIP and related development fee report. The plan-based methodology is used for fire stations, fire facilities, and the development fee report. The incremental expansion methodology is used for primary apparatus and support apparatus.

PROPORTIONATE SHARE

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. The Fire Facilities IIP and development fees will allocate the cost of fire services between residential and nonresidential based on fire calls for service. Based on call data for FY2020 – FY2022, residential development generates approximately 75 percent of fire calls for service and nonresidential development accounts for the remaining 25 percent.

Figure F1: Proportionate Share

Description	FY 2020	FY 2021	FY 2022	Total
Residential	10,082	11,784	12,369	34,235
Nonresidential	3,684	3,424	4,190	11,298
Total	13,766	15,208	16,559	45,533

Description	FY 2020	FY 2021	FY 2022	Total
Residential	73%	77%	75%	75%
Nonresidential	27%	23%	25%	25%
Total	100%	100%	100%	100%

Source: Surprise Fire Department

The proportionate share of costs attributable to residential development will be allocated to population and then converted to an appropriate amount by type of housing unit. Since nonresidential calls for service were unavailable by specific nonresidential use, TischlerBise recommends using vehicle trips as the nonresidential demand indicator for fire services. Trip generation rates are highest for retail/commercial development and lowest for industrial development. Office and public/institutional trip generation rates fall between the other two categories. This ranking of trip generation rates is consistent with the relative demand for fire services from nonresidential development.

SERVICE AREA

Surprise’s Fire Department strives to provide a uniform response time within the city limits; therefore, there is a single service area for the Fire Facilities IIP.

RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT

ARS § 9-463.05(E)(4) requires:

“A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial and industrial.”

Figure F2 displays the demand indicators for residential and nonresidential land uses. For residential development, the table displays the number of persons per housing unit. For nonresidential development, the table displays the number of average weekday vehicle trips per thousand square feet of floor area.

Figure F2: Ratio of Service Unit to Development Unit

Residential Development	
Development Type	Persons per Housing Unit ¹
Single-Family	2.58
Multi-Family	1.58
Mobile Home	1.09

Nonresidential Development			
Development Type	AWVTE per 1,000 Sq Ft ¹	Trip Rate Adjustment	AWVT per 1,000 Sq Ft ¹
Industrial	3.37	50%	1.69
Warehouse	1.71	50%	0.86
Retail/Commercial	37.01	28%	10.18
Office	10.84	45%	4.88
Public/Institutional	6.75	50%	3.38

1. See Land Use Assumptions

ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES

ARS § 9-463.05(E)(1) requires:

“A description of the existing necessary public services in the service area and the costs to upgrade, update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable.”

ARS § 9-463.05(E)(2) requires:

“An analysis of the total capacity, the level of current usage and commitments for usage of capacity of the existing necessary public services, which shall be prepared by qualified professionals licensed in this state, as applicable.”

Fire Stations – Plan-Based

Surprise currently provides 109,621 square feet of fire stations to existing development, and Surprise plans to construct additional fire stations to serve future development.

Figure F3: Existing Fire Stations

Description	Square Feet
Fire Station 301	15,531
Fire Station 302	7,000
Fire Station 303	13,632
Fire Station 304	20,824
Fire Station 305	16,472
Fire Station 306	10,145
Fire Station 307	10,145
Fire Station 308	15,872
Total	109,621

Source: Surprise Fire Department

Surprise plans to use future development fee revenue to repay the outstanding obligation related to Fire Station 303. The total obligation for Fire Station 303 is \$94,005, and the outstanding obligation is \$3,788. Based on a cost of approximately \$7 per square foot (\$94,005 total obligation / 13,632 total square feet), the proportionate share of Fire Station 303 related to the outstanding obligation is 549 square feet (\$3,788 outstanding obligation / \$7 per square foot).

Figure F4: Fire Station 303 Obligation

Fire Station 303	Square Feet	Obligation ¹	Cost per Sq Ft
Outstanding Obligation	549	\$3,788	\$7
Retired Obligation	13,083	\$90,217	\$7
Total	13,632	\$94,005	\$7

Source: Surprise Fire Department

1. Surprise Finance Department

As shown below in Figure F5, Surprise plans to repay outstanding obligations related to Fire Station 303 and to construct 54,000 square feet of fire stations during the next 10 years. The total cost is \$70,503,788, and the associated floor area is 54,549 square feet. Based on these projects, the analysis uses a cost of \$1,292 per square foot for fire stations (\$70,503,788 total cost / 54,549 total square feet).

Figure F5: Fire Station Cost Factors

Description	Square Feet	Cost	Cost per Sq Ft
Fire Station 303	549	\$3,788	\$7
Future Fire Station	16,000	\$18,000,000	\$1,125
Future Fire Station	16,000	\$21,000,000	\$1,313
Future Fire Station	22,000	\$31,500,000	\$1,432
Total	54,549	\$70,503,788	\$1,292

Source: Surprise Fire Department

Surprise plans to provide 163,621 square feet of fire stations to all development in 2033. To allocate the proportionate share of demand for fire stations to residential and nonresidential development, this analysis uses proportionate share factors shown in Figure F1. The planned level of service for residential development is 0.4796 square feet per person (163,621 total square feet X 75 percent residential share / 256,522 persons). The planned nonresidential level of service is 0.2539 square feet per vehicle trip (163,621 total square feet X 25 percent nonresidential share / 159,926 vehicle trips).

Based on the outstanding obligations for Fire Station 303 and the construction cost estimates for future fire stations shown in Figure F5, the analysis uses a cost of \$1,292 per square foot (\$70,503,788 total cost / 54,549 total square feet). For fire stations, the cost is \$619.85 per person (0.4796 square feet per person X \$1,292 per square foot) and \$328.15 per vehicle trip (0.2539 square feet per vehicle trip X \$1,292 per square foot).

Figure F6: Planned Level of Service

Cost Factors	
Cost per Square Foot	\$1,292

Level-of-Service (LOS) Standards	
Existing Square Feet ¹	109,072
Cost Recovery Square Feet ²	549
Planned Square Feet	54,000
Total Square Feet	163,621
Residential	
Residential Share	75%
2033 Population	256,522
Square Feet per Person	0.4796
Cost per Person	\$619.85
Nonresidential	
Nonresidential Share	25%
2033 Vehicle Trips	159,906
Square Feet per Vehicle Trip	0.2539
Cost per Vehicle Trip	\$328.15

Source: Surprise Fire Department

1. Excludes share related to outstanding obligations
2. Fire Station 303 share of outstanding obligations

Fire Facilities – Plan-Based

Surprise currently provides 25,000 square feet of fire facilities to existing development, and Surprise plans to construct additional fire facilities to serve future development.

Figure F7: Existing Fire Facilities

Description	Square Feet
Public Safety Building (share)	10,000
Evidence & Readiness Center	15,000
Total	25,000

Source: Surprise Fire Department

Surprise plans to use future development fee revenue to repay the outstanding obligation related to the Public Safety Building. The total obligation is \$1,563,515, and the outstanding obligation is \$63,023. Based on a cost of approximately \$156 per square foot (\$1,563,515 total obligation / 10,000 total square feet), the proportionate share of the Public Safety Building related to the outstanding obligation is 403 square feet (\$63,023 outstanding obligation / \$156 per square foot).

Figure F8: Public Safety Building Obligation

Public Safety Building	Square Feet	Obligation ¹	Cost per Sq Ft
Outstanding Obligation	403	\$63,023	\$156
Retired Obligation	9,597	\$1,500,492	\$156
Total	10,000	\$1,563,515	\$156

Source: Surprise Fire Department

1. Surprise Finance Department

As shown below in Figure F9, Surprise plans to repay outstanding obligations related to the Public Safety Building and to construct a Public Safety Administration and Operations facility during the next 10 years. The planned Public Safety Administration and Operations facility is 90,000 square feet, and it will replace the existing Public Safety Building for a net increase of 80,000 square feet (90,000 planned square feet – 10,000 existing square feet). The total cost of planned fire facilities is \$100,063,023, and the associated floor area is 90,403 square feet. Based on these projects, the analysis uses a cost of \$1,107 per square foot for fire facilities (\$100,063,023 total cost / 90,403 total square feet). The planned Public Safety Administration and Operations facility will serve all development in Surprise through 2043.

Figure F9: Fire Facilities Cost Factors

Description	Square Feet	Cost	Cost per Sq Ft
Public Safety Building	403	\$63,023	\$156
Public Safety Admin & Ops	90,000	\$100,000,000	\$1,111
Total	90,403	\$100,063,023	\$1,107

Source: Surprise Fire Department

Surprise plans to provide 105,000 square feet of fire facilities to serve all development in 2043. To allocate the proportionate share of demand for fire facilities to residential and nonresidential development, this analysis uses proportionate share factors shown in Figure F1. The planned level of service for residential development is 0.2499 square feet per person (105,000 total square feet X 75 percent residential share / 315,975 persons). The planned nonresidential level of service is 0.1278 square feet per vehicle trip (105,000 total square feet X 25 percent nonresidential share / 203,844 vehicle trips).

Based on the outstanding obligations for the Public Safety Building and the construction cost estimate for the future Public Safety Administration and Operations facility shown in Figure F9, the analysis uses a cost of \$1,107 per square foot (\$100,063,023 total cost / 90,403 total square feet). For fire facilities, the cost is \$276.55 per person (0.2499 square feet per person X \$1,107 per square foot) and \$141.47 per vehicle trip (0.1278 square feet per vehicle trip X \$1,107 per square foot).

Figure F10: Planned Level of Service

Cost Factors	
Cost per Square Foot	\$1,107

Level-of-Service (LOS) Standards	
Existing Square Feet ¹	24,597
Cost Recovery Square Feet ²	403
Planned Square Feet	90,000
Replacement Square Feet ³	(10,000)
Total Square Feet	105,000
Residential	
Residential Share	75%
2043 Population	315,975
Square Feet per Person	0.2499
Cost per Person	\$276.55
Nonresidential	
Nonresidential Share	25%
2043 Vehicle Trips	203,844
Square Feet per Vehicle Trip	0.1278
Cost per Vehicle Trip	\$141.47

Source: Surprise Fire Department

1. Excludes share related to outstanding obligations
2. Public Safety Building share of outstanding obligations
3. The Public Safety Administration and Operations facility will replace the existing Public Safety Building

Primary Apparatus – Incremental Expansion

Surprise currently serves existing development with 12 primary apparatus, and Surprise plans to acquire additional primary apparatus to serve future development. To allocate the proportionate share of demand for primary apparatus to residential and nonresidential development, this analysis uses proportionate share factors shown in Figure F1. The existing level of service for residential development is 0.00005 units per person (12 units X 75 percent residential share / 172,866 persons). The nonresidential level of service is 0.00002 units per vehicle trip (12 units X 25 percent nonresidential share / 124,008 vehicle trips).

Based on the replacement cost of the existing primary apparatus fleet, the analysis uses \$1,408,333 per unit (\$16,900,000 total cost / 12 units) as a proxy for future primary apparatus costs. For primary apparatus, the cost is \$73.51 per person (0.00005 units per person X \$1,408,333 per unit) and \$33.82 per vehicle trip (0.00002 units per vehicle trip X \$1,408,333 per unit).

Figure F11: Existing Level of Service

Description	Units	Unit Cost	Total Cost
Engine	11	\$1,300,000	\$14,300,000
Ladder Truck	1	\$2,600,000	\$2,600,000
Total	12	\$1,408,333	\$16,900,000

Cost Factors	
Weighted Average per Unit	\$1,408,333

Level-of-Service (LOS) Standards	
Existing Units	12
Residential	
Residential Share	75%
2023 Population	172,866
Units per Person	0.00005
Cost per Person	\$73.51
Nonresidential	
Nonresidential Share	25%
2023 Vehicle Trips	124,008
Units per Vehicle Trip	0.00002
Cost per Vehicle Trip	\$33.82

Source: Surprise Fire Department

Support Apparatus – Incremental Expansion

Surprise currently serves existing development with 10 support apparatus, and Surprise plans to acquire additional support apparatus to serve future development. To allocate the proportionate share of demand for support apparatus to residential and nonresidential development, this analysis uses proportionate share factors shown in Figure F1. The existing level of service for residential development is 0.00004 units per person (10 units X 75 percent residential share / 172,866 persons). The nonresidential level of service is 0.00002 units per vehicle trip (10 units X 25 percent nonresidential share / 124,008 vehicle trips).

Based on the replacement cost of the existing support apparatus fleet, the analysis uses \$419,000 per unit (\$4,190,000 total cost / 10 units) as a proxy for future support apparatus costs. For support apparatus, the cost is \$18.22 per person (0.00004 units per person X \$419,000 per unit) and \$8.38 per vehicle trip (0.00002 units per vehicle trip X \$419,000 per unit).

Figure F12: Existing Level of Service

Description	Units	Unit Cost	Total Cost
Brush Truck	2	\$450,000	\$900,000
Tanker	1	\$350,000	\$350,000
Ambulance	5	\$550,000	\$2,750,000
BC Response Vehicle	2	\$95,000	\$190,000
Total	10	\$419,000	\$4,190,000

Cost Factors	
Weighted Average per Unit	\$419,000

Level-of-Service (LOS) Standards	
Existing Units	10
Residential	
Residential Share	75%
2023 Population	172,866
Units per Person	0.00004
Cost per Person	\$18.22
Nonresidential	
Nonresidential Share	25%
2023 Vehicle Trips	124,008
Units per Vehicle Trip	0.00002
Cost per Vehicle Trip	\$8.38

Source: Surprise Fire Department

Development Fee Report – Plan-Based

The cost to prepare the Fire Facilities IIP and related development fee report totals \$16,230. Surprise plans to update its report every five years. Based on this cost, proportionate share, and five-year projections of future development from the *Land Use Assumptions* document, the cost is \$0.27 per person and \$0.25 per vehicle trip.

Figure F13: IIP and Development Fee Report

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Change	Cost per Service Unit
Fire	\$16,230	Residential	75%	Population	44,514	\$0.27
		Nonresidential	25%	Vehicle Trips	16,226	\$0.25

PROJECTED DEMAND FOR SERVICES AND COSTS

ARS § 9-463.05(E)(5) requires:

“The total number of projected service units necessitated by and attributable to new development in the service area based on the approved land use assumptions and calculated pursuant to generally accepted engineering and planning criteria.”

ARS § 9-463.05(E)(6) requires:

“The projected demand for necessary public services or facility expansions required by new service units for a period not to exceed ten years.”

As shown in the *Land Use Assumptions* document, Surprise’s population is expected to increase by 83,656 persons and nonresidential vehicle trips are expected to increase by 35,898 trips over the next 10 years. To reach the planned level of service, Surprise will need to construct 54,000 square feet of fire stations and 90,000 square feet of fire facilities over the next 10 years. To maintain the existing level of service, Surprise will need to expand the apparatus fleet by approximately five primary units and approximately four support units over the next 10 years. The following pages include a more detailed projection of demand for services and costs for the Fire Facilities IIP.

Fire Stations – Plan-Based

Surprise will use development fees to repay obligations associated with Fire Station 303 and to construct additional fire stations over the next 10 years. Based on a projected population increase of 83,656 persons, future residential development demands approximately 40,120 square feet of planned fire facilities (83,656 additional persons X 0.4796 square feet per person). With projected nonresidential growth of 35,898 vehicle trips, future nonresidential development demands approximately 9,114 square feet of planned fire facilities (35,898 additional vehicle trips X 0.2539 square feet per vehicle trip). Future development demands 49,234 square feet of fire facilities at a cost of \$63,633,980 (49,233.8 square feet X \$1,292 per square foot). The remaining cost of \$6,869,808 represents existing development's share of planned fire stations (\$70,503,788 total fire stations cost - \$63,633,980 growth cost).

Figure F14: Projected Demand

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Fire Stations	0.4796 Square Feet	per Person	\$1,292
	0.2539 Square Feet	per Vehicle Trip	

Demand for Fire Stations					
Year	Population	Vehicle Trips	Square Feet		
			Residential	Nonresidential	Total
2023	172,866	124,008	82,902.5	31,484.7	114,387.2
2024	181,769	127,254	87,172.1	32,308.6	119,480.7
2025	190,671	130,499	91,441.6	33,132.6	124,574.2
2026	199,574	133,744	95,711.1	33,956.5	129,667.7
2027	208,477	136,989	99,980.7	34,780.5	134,761.1
2028	217,380	140,235	104,250.2	35,604.4	139,854.6
2029	226,282	143,480	108,519.8	36,428.3	144,948.1
2030	235,185	146,725	112,789.3	37,252.3	150,041.6
2031	242,297	151,119	116,200.2	38,367.8	154,568.1
2032	249,410	155,513	119,611.2	39,483.4	159,094.5
2033	256,522	159,906	123,022.1	40,598.9	163,621.0
10-Yr Increase	83,656	35,898	40,119.6	9,114.2	49,233.8

Growth-Related Expenditures	\$51,853,982	\$11,779,998	\$63,633,980
Non-Growth Expenditures	\$1,155,861	\$5,713,947	\$6,869,808
Total Expenditures	\$53,009,843	\$17,493,945	\$70,503,788

Fire Facilities – Plan-Based

Surprise will use development fees to repay obligations associated with the Public Safety Building and to construct the Public Safety Administration and Operations facility within the next 10 years. Based on a 20-year projected population increase of 143,109 persons, future residential development demands approximately 35,756 square feet of planned fire facilities (143,109 additional persons X 0.2499 square feet per person). With a 20-year projected increase of 79,836 vehicle trips, future nonresidential development demands approximately 10,204 square feet of planned fire facilities (79,836 additional vehicle trips X 0.1278 square feet per vehicle trip). Future development demands approximately 45,960 square feet of fire facilities at a cost of \$50,870,851 (45,959.8 square feet X \$1,107 per square foot). The remaining cost of \$49,192,172 represents existing development's share of planned fire facilities (\$100,063,023 total fire facilities cost - \$50,870,851 growth cost).

Figure F15: Projected Demand

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Fire Facilities	0.2499 Square Feet	per Person	\$1,107
	0.1278 Square Feet	per Vehicle Trip	

Demand for Fire Facilities					
Year	Population	Vehicle Trips	Square Feet		
			Residential	Nonresidential	Total
2023	172,866	124,008	43,190.6	15,849.6	59,040.2
2024	181,769	127,254	45,415.0	16,264.3	61,679.3
2025	190,671	130,499	47,639.3	16,679.1	64,318.4
2026	199,574	133,744	49,863.7	17,093.9	66,957.6
2027	208,477	136,989	52,088.0	17,508.7	69,596.7
2028	217,380	140,235	54,312.4	17,923.4	72,235.8
2029	226,282	143,480	56,536.7	18,338.2	74,875.0
2030	235,185	146,725	58,761.1	18,753.0	77,514.1
2031	242,297	151,119	60,538.1	19,314.6	79,852.7
2032	249,410	155,513	62,315.1	19,876.1	82,191.3
2033	256,522	159,906	64,092.2	20,437.7	84,529.9
2038	286,249	181,875	71,519.4	23,245.6	94,764.9
2043	315,975	203,844	78,946.6	26,053.4	105,000.0
20-Yr Increase	143,109	79,836	35,756.0	10,203.8	45,959.8

Growth-Related Expenditures	\$39,576,667	\$11,294,183	\$50,870,851
Non-Growth Expenditures	\$35,657,945	\$13,534,228	\$49,192,172
Total Expenditures	\$75,234,612	\$24,828,411	\$100,063,023

Primary Apparatus – Incremental Expansion

Surprise plans to maintain its level of service for primary apparatus over the next 10 years. Based on a projected population increase of 83,656 persons, future residential development demands approximately four primary apparatus (83,656 additional persons X 0.00005 units per person). With projected nonresidential growth of 35,898 vehicle trips, future nonresidential development demands approximately one primary apparatus (35,898 additional vehicle trips X 0.00002 units per vehicle trip). Future development demands approximately five primary apparatus at a cost of \$7,363,111 (5.2 units X \$1,408,333 per unit). Surprise may use development fees to expand its primary apparatus fleet.

Figure F16: Projected Demand

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Primary Apparatus	0.00005 Units	per Person	\$1,408,333
	0.00002 Units	per Vehicle Trip	

Demand for Primary Apparatus					
Year	Population	Vehicle Trips	Units		
			Residential	Nonresidential	Total
2023	172,866	124,008	9.0	3.0	12.0
2024	181,769	127,254	9.5	3.1	12.5
2025	190,671	130,499	10.0	3.1	13.1
2026	199,574	133,744	10.4	3.2	13.6
2027	208,477	136,989	10.9	3.3	14.2
2028	217,380	140,235	11.3	3.4	14.7
2029	226,282	143,480	11.8	3.4	15.3
2030	235,185	146,725	12.3	3.5	15.8
2031	242,297	151,119	12.6	3.6	16.3
2032	249,410	155,513	13.0	3.7	16.8
2033	256,522	159,906	13.4	3.8	17.2
10-Yr Increase	83,656	35,898	4.4	0.9	5.2

Growth-Related Expenditures	\$6,149,213	\$1,213,898	\$7,363,111
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Support Apparatus – Incremental Expansion

Surprise plans to maintain its level of service for support apparatus over the next 10 years. Based on a projected population increase of 83,656 persons, future residential development demands approximately four support apparatus (83,656 additional persons X 0.00004 units per person). With projected nonresidential growth of 35,898 vehicle trips, future nonresidential development demands approximately one support apparatus (35,898 additional vehicle trips X 0.00002 units per vehicle trip). Future development demands approximately four support apparatus at a cost of \$1,825,529 (4.4 units X \$419,000 per unit). Surprise may use development fees to expand its support apparatus fleet.

Figure F17: Projected Demand

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Support Apparatus	0.00004 Units	per Person	\$419,000
	0.00002 Units	per Vehicle Trip	

Demand for Support Apparatus					
Year	Population	Vehicle Trips	Units		
			Residential	Nonresidential	Total
2023	172,866	124,008	7.5	2.5	10.0
2024	181,769	127,254	7.9	2.5	10.5
2025	190,671	130,499	8.3	2.6	10.9
2026	199,574	133,744	8.7	2.7	11.4
2027	208,477	136,989	9.1	2.7	11.8
2028	217,380	140,235	9.5	2.8	12.3
2029	226,282	143,480	9.8	2.9	12.7
2030	235,185	146,725	10.2	2.9	13.2
2031	242,297	151,119	10.5	3.0	13.6
2032	249,410	155,513	10.8	3.1	14.0
2033	256,522	159,906	11.2	3.2	14.4
10-Yr Increase	83,656	35,898	3.6	0.7	4.4

Growth-Related Expenditures	\$1,524,568	\$300,961	\$1,825,529
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FIRE FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

A revenue credit/offset is necessary for development fees, because Surprise's construction transaction privilege tax rate exceeds the amount of the transaction privilege tax rate imposed on the majority of other transaction privilege tax classifications. Appendix A contains the forecast of revenues required by Arizona's Enabling Legislation (ARS § 9-463.05(E)(7)).

Fire Facilities Development Fees

Infrastructure components and cost factors for fire facilities are summarized in the upper portion of Figure F18. The cost per service unit for fire facilities is \$870.85 per person and \$405.65 per vehicle trip.

Fire facilities development fees for residential development are assessed according to the number of persons per housing unit. The fee of \$2,247 for a single-family unit is calculated using a cost per service unit of \$870.85 per person multiplied by a demand unit of 2.58 persons per housing unit.

Nonresidential development fees are calculated using vehicle trips as the service unit. The fee of \$684 per 1,000 square feet of industrial development is derived from a cost per service unit of \$405.65 per vehicle trip multiplied by a demand unit of 1.69 vehicle trips per 1,000 square feet.

Figure F18: Fire Facilities Development Fees

Fee Component	Cost per Person	Cost per Trip
Fire Stations	\$619.85	\$328.15
Fire Facilities	\$276.55	\$141.47
Primary Apparatus	\$73.51	\$33.82
Support Apparatus	\$18.22	\$8.38
Development Fee Report	\$0.27	\$0.25
Excess Construction Sales Tax	(\$117.55)	(\$106.42)
Total	\$870.85	\$405.65

Residential Fees per Unit				
Development Type	Persons per Housing Unit ¹	Proposed Fees	Current Fees	Difference
Single-Family	2.58	\$2,247	\$789	\$1,458
Multi-Family	1.58	\$1,376	\$481	\$895
Mobile Home	1.09	\$949	\$442	\$507

Nonresidential Fees per 1,000 Square Feet				
Development Type	AWVT per 1,000 Sq Ft ¹	Proposed Fees	Current Fees	Difference
Industrial	1.69	\$684	\$166	\$518
Warehouse	0.86	\$347	\$95	\$252
Retail/Commercial	10.18	\$4,129	\$876	\$3,253
Office	4.88	\$1,979	\$497	\$1,482
Public/Institutional	3.38	\$1,369	\$308	\$1,061

1. See Land Use Assumptions

FIRE FACILITIES DEVELOPMENT FEE REVENUE

Appendix A contains the forecast of revenues required by Arizona's enabling legislation (ARS § 9-463.05(E)(7)). In accordance with state law, this report includes an IIP for fire facilities needed to accommodate future development. Projected fee revenue shown in Figure F19 is based on the development projections in the *Land Use Assumptions* document and the updated fire facilities development fees. If development occurs at a more rapid rate than projected, the demand for infrastructure will increase and development fee revenue will increase at a corresponding rate. If development occurs at a slower rate than projected, the demand for infrastructure will also decrease, along with development fee revenue. Projected development fee revenue over the next 20 years equals \$116,746,533 and total projected expenditures equal \$172,812,463. The remaining balance represents existing development's share of planned costs for fire stations and fire facilities.

Figure F19: Fire Facilities Development Fee Revenue

Fee Component	Growth Share		Existing Share	Total
	Years 1-10	Years 11-20		
Fire Stations	\$63,633,980	\$0	\$6,869,808	\$70,503,788
Fire Facilities	\$28,213,394	\$22,657,457	\$49,192,172	\$100,063,023
Primary Apparatus	\$7,363,111	\$0	\$0	\$7,363,111
Support Apparatus	\$1,825,529	\$0	\$0	\$1,825,529
Development Fee Report	\$16,230	\$0	\$0	\$16,230
Excess Constr. Sales Tax	(\$6,959,218)	\$0	\$0	(\$6,959,218)
Total	\$94,093,025	\$22,657,457	\$56,061,981	\$172,812,463

		Single Family \$2,247 per unit	Multi-Family \$1,376 per unit	Mobile Home \$949 per unit	Industrial \$684 per 1,000 sq ft	Warehouse \$347 per 1,000 sq ft	Ret/Comm \$4,129 per 1,000 sq ft	Office \$1,979 per 1,000 sq ft	Public/Inst \$1,369 per 1,000 sq ft
Year		Hsg Unit	Hsg Unit	Hsg Unit	KSF	KSF	KSF	KSF	KSF
Base	2023	59,934	9,973	3,106	2,098	5,332	7,380	3,397	7,179
Year 1	2024	62,847	10,833	3,133	2,310	5,484	7,499	3,620	7,317
Year 2	2025	65,760	11,692	3,159	2,523	5,635	7,617	3,843	7,454
Year 3	2026	68,673	12,552	3,186	2,736	5,787	7,735	4,067	7,592
Year 4	2027	71,586	13,411	3,213	2,948	5,938	7,854	4,290	7,729
Year 5	2028	74,499	14,271	3,239	3,161	6,089	7,972	4,513	7,867
Year 6	2029	77,412	15,130	3,266	3,373	6,241	8,090	4,737	8,005
Year 7	2030	80,325	15,990	3,293	3,586	6,392	8,208	4,960	8,142
Year 8	2031	82,536	16,868	3,313	3,736	6,499	8,431	5,249	8,253
Year 9	2032	84,746	17,746	3,333	3,886	6,606	8,653	5,538	8,364
Year 10	2033	86,957	18,624	3,354	4,036	6,714	8,876	5,827	8,475
10-Year Increase		27,023	8,650	248	1,938	1,381	1,496	2,430	1,296
Projected Revenue		\$64,484,622	\$12,708,924	\$245,106	\$1,481,270	\$535,768	\$7,151,764	\$5,488,566	\$1,992,855

Projected Fee Revenue (Years 1-10)	\$94,088,874
Projected Fee Revenue (Years 11-20)	\$22,657,659
Total Expenditures	\$172,812,463

10-YEAR CAPITAL PLAN

The figure shown below includes potential fire capital expenditures during the next 10 years. The list of potential capital expenditures is representational of future growth-related fire capital expenditures.

Figure F20: Fire Facilities Capital Plan

Project Type	Description	Fiscal Year	Cost
CIP	Fire Station	2024	\$18,000,000
CIP	Ambulance (x2)	2024	\$1,100,000
CIP	Ladder Truck	2028	\$2,508,000
CIP	Fire Station	2026-2028	\$21,000,000
CIP	Fire Station	2030+	\$31,500,000
CIP	Public Safety Admin & Ops	2030+	\$100,000,000
Debt Service	Fire Station 303	2024	\$3,788
Debt Service	Public Safety Building (share)	2024	\$63,023
Study Cost	Development Fee Update	2024-2029	\$16,230
Total			\$174,191,041

PARKS AND RECREATIONAL FACILITIES IIP

ARS § 9-463.05 (T)(7)(g) defines the facilities and assets that can be included in the Parks and Recreational Facilities IIP:

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

The Parks and Recreational Facilities IIP includes components for park land, park amenities, recreation facilities, pools, and the cost of preparing the Parks and Recreational Facilities IIP and related Development Fee Report. The incremental expansion methodology is used for park land, park amenities, recreation facilities, and pools. The plan-based methodology is used for the Development Fee Report.

PROPORTIONATE SHARE

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. The Parks and Recreational Facilities IIP and development fees allocate the cost of necessary public services between residential and nonresidential based on functional population. The Arizona Office of Economic Opportunity estimates Surprise’s 2019 population equal to 136,194 persons. Based on 2019 estimates from the U.S. Census Bureau’s OnTheMap web application, 16,952 inflow commuters traveled to Surprise for work in 2019. The proportionate share is based on cumulative impact hours per year with a resident potentially impacting parks and recreational facilities 8,760 hours per year and an inflow commuter potentially impacting parks and recreational facilities 1,600 hours per year. For parks and recreational facilities, residential development generates 98 percent of demand and nonresidential development generates the remaining two percent of demand.

Figure PR1: Proportionate Share

Development Type	Service Unit	Impact Days per Year	Total Impact Hours per Year	Proportionate Share
Residential	136,194 residents	8,760 hours	1,193,059,440	98%
Nonresidential	16,952 inflow commuters	1,600 hours	27,123,200	2%
Total			1,220,182,640	100%

Residential Impact: 8,760 hours per year (24 hours per day X 365 days per year)

Nonresidential Impact: 1,600 hours per year (8 hours per day X 4 days per week X 50 weeks per year)

SERVICE AREA

Surprise provides access to parks and recreational facilities throughout the city; therefore, there is a single service area for the Parks and Recreational Facilities IIP.

RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT

ARS § 9-463.05(E)(4) requires:

“A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial and industrial.”

Figure PR2 displays the demand indicators for residential and nonresidential land uses. For residential development, the table displays the number of persons per housing unit. For nonresidential development, the table displays the number of jobs per thousand square feet of floor area.

Figure PR2: Ratio of Service Unit to Development Unit

Residential Development	
Development Type	Persons per Housing Unit ¹
Single-Family	2.58
Multi-Family	1.58
Mobile Home	1.09

Nonresidential Development	
Development Type	Jobs per 1,000 Sq Ft ¹
Industrial	1.16
Warehouse	0.34
Retail/Commercial	2.12
Office	3.26
Public/Institutional	2.04

1. See Land Use Assumptions

ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES

ARS § 9-463.05(E)(1) requires:

“A description of the existing necessary public services in the service area and the costs to upgrade, update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable.”

ARS § 9-463.05(E)(2) requires:

“An analysis of the total capacity, the level of current usage and commitments for usage of capacity of the existing necessary public services, which shall be prepared by qualified professionals licensed in this state, as applicable.”

Park Land – Incremental Expansion

Surprise currently provides 386.15 acres of park land and plans to acquire additional park land to serve future development. Surprise Recreation Campus includes the Spring Training Campus, and this analysis excludes the portion of the park that includes the Spring Training Campus. The analysis includes 306.55 acres of eligible park land.

Figure PR3: Existing Park Land

Description	Total Acres	Eligible Acres
Bicentennial Park / Lizard Run	17.94	17.94
DreamCatcher Park	4.14	4.14
Gaines Park (North and South)	4.20	4.20
Heritage (Marley) Park North	12.01	12.01
Heritage (Marley) Park South	15.61	15.61
Section 10 / Pocket Park	1.02	1.02
Mark Coronado Park	7.55	7.55
Sierra Montana Park	9.42	9.42
Surprise Community Park ¹	30.80	30.80
Dick McComb Park East	21.94	21.94
Dick McComb Park West	30.00	30.00
Johnson Townhome Park	0.60	0.60
Surprise Tennis / Racquet Complex	22.76	22.76
Veramonte Park	8.58	8.58
Youth Baseball Complex	4.60	4.60
Asante Community Park	53.80	53.80
Stonebrook Park	3.19	3.19
3 Star Park	0.94	0.94
The Fields at Countryside	12.20	12.20
Surprise Recreation Campus ²	124.85	45.25
Total	386.15	306.55

Source: Surprise Parks and Recreation Department

1. Excludes library and aquatics center

2. Eligible Acres: Excludes Spring Training Campus

To allocate the proportionate share of demand for park land to residential and nonresidential development, this analysis uses the proportionate share shown in Figure PR1. The existing level of service for residential development is 0.00174 acres per person (306.55 eligible acres X 98 percent residential share / 172,866 persons). For nonresidential development, the existing level of service is 0.00023 acres per job (306.55 eligible acres X two percent nonresidential share / 27,035 jobs).

Based on estimates provided by the Surprise Finance Department, the cost to acquire park land is \$180,000 per acre. For park land, the cost is \$312.82 per person (0.00174 acres per person X \$180,000 per acre) and \$40.82 per job (0.00023 acres per job X \$180,000 per acre).

Figure PR4: Existing Level of Service

Cost Factors	
Cost per Acre - Land Acquisition	\$180,000

Level-of-Service (LOS) Standards	
Eligible Acres	306.55
Residential	
Residential Share	98%
2023 Population	172,866
Eligible Acres per Person	0.00174
Cost per Person	\$312.82
Nonresidential	
Nonresidential Share	2%
2023 Jobs	27,035
Eligible Acres per Job	0.00023
Cost per Job	\$40.82

Source: Surprise Parks and Recreation Department

Park Amenities – Incremental Expansion

Surprise currently provides 179.5 park amenities in its existing parks and plans to construct additional park amenities to serve future development. Based on costs provided by Surprise’s Parks and Recreation Department to construct recent park amenities, the total cost of existing park amenities is \$65,563,295.

Figure PR5: Existing Park Amenities

Description	Units	Unit Cost	Total Cost
Baseball Field, Lighted	4.0	\$777,793	\$3,111,171
Baseball/Softball Field, Not Lighted	2.0	\$340,613	\$681,226
Softball Field, Adult, Lighted	10.0	\$775,057	\$7,750,570
Multi-Purpose Field, Not Lighted	7.5	\$112,860	\$846,450
Multi-Purpose Field, Lighted	14.0	\$776,862	\$10,876,069
Soccer Field, Lighted	2.0	\$1,558,162	\$3,116,324
Basketball Court, Lighted	5.5	\$223,020	\$1,226,610
Basketball Court, Not Lighted	3.5	\$113,280	\$396,480
Tennis Court, Lighted	25.0	\$152,100	\$3,802,500
Pickleball Court	16.0	\$105,565	\$1,689,045
Sand Volleyball Court	7.0	\$83,333	\$583,333
Single Picnic Ramada (12' x 12')	22.0	\$56,250	\$1,237,500
Double Picnic Ramada (12' x 24')	11.0	\$93,750	\$1,031,250
Pavillion (24' x 24')	1.0	\$259,600	\$259,600
Playground, Small (40' x 50')	8.0	\$534,000	\$4,272,000
Playground, Large (80' x 100')	6.0	\$704,000	\$4,224,000
Dog Park	2.0	\$702,000	\$1,404,000
Restroom	12.0	\$534,404	\$6,412,852
Restroom / Concession Facilities	3.0	\$787,500	\$2,362,500
Splash Pad	3.0	\$800,000	\$2,400,000
Skate Park at Dick McComb Park	1.0	\$750,000	\$750,000
Paved Parking Lot	13.0	\$521,380	\$6,777,936
Lizard Run Pedestrian Bridge	1.0	\$351,878	\$351,878
Total	179.5	\$365,255	\$65,563,295

Source: Surprise Parks and Recreation Department

To allocate the proportionate share of demand for park amenities to residential and nonresidential development, this analysis uses the proportionate share shown in Figure PR1. The existing level of service for residential development is 0.00102 units per person (179.5 units X 98 percent residential share / 172,866 persons). For nonresidential development, the existing level of service is 0.00013 units per job (179.5 units X two percent nonresidential share / 27,035 jobs).

Based on the total cost of existing park amenities, the weighted average cost for existing park amenities is \$365,255 per unit (\$65,563,295 total cost / 179.5 units). For park amenities, the cost is \$371.69 per person (0.00102 units per person X \$365,255 per unit) and \$48.50 per job (0.00013 units per job X \$365,255 per unit).

Figure PR6: Existing Level of Service

Cost Factors	
Weighted Average per Unit	\$365,255

Level-of-Service (LOS) Standards	
Existing Units	179.5
Residential	
Residential Share	98%
2023 Population	172,866
Units per Person	0.00102
Cost per Person	\$371.69
Nonresidential	
Nonresidential Share	2%
2023 Jobs	27,035
Units per Job	0.00013
Cost per Job	\$48.50

Source: Surprise Parks and Recreation Department

Recreation Facilities – Incremental Expansion

Surprise currently provides 43,400 square feet of recreation facilities and plans to construct additional recreation facilities to serve future development. The Enabling Legislation limits recreation facilities to “three thousand square feet that provide a direct benefit to development.” To comply with the Enabling Legislation, Surprise will use 12,000 square feet in the level-of-service standards.

To allocate the proportionate share of demand for recreation facilities to residential and nonresidential development, this analysis uses proportionate share shown in Figure PR1. The level of service for residential development is 0.0680 eligible square feet per person (12,000 eligible square feet X 98 percent residential share / 172,866 persons). The nonresidential level of service is 0.0089 eligible square feet per job (12,000 eligible square feet X two percent nonresidential share / 27,035 jobs).

Surprise provided a construction cost of \$600 per square foot. For recreation facilities, the cost is \$40.82 per person (0.0680 eligible square feet per person X \$600 per square foot) and \$5.33 per job (0.0089 eligible square feet per job X \$600 per square foot).

Figure PR7: Existing Level of Service

Description	Total Square Feet	Eligible Square Feet
Villanueva Gym	10,100	3,000
Tennis and Racquet Complex	9,300	3,000
Countryside Recreation Center	14,000	3,000
Sierra Montana Recreation Center	10,000	3,000
Total	43,400	12,000

Cost Factors	
Cost per Square Foot	\$600

Level-of-Service (LOS) Standards	
Eligible Square Feet	12,000
Residential	
Residential Share	98%
2023 Population	172,866
Eligible Square Feet per Person	0.0680
Cost per Person	\$40.82
Nonresidential	
Nonresidential Share	2%
2023 Jobs	27,035
Eligible Square Feet per Job	0.0089
Cost per Job	\$5.33

Source: Surprise Parks and Recreation Department

Pools – Incremental Expansion

Surprise currently provides existing development with two pools and plans to construct an additional pool to serve future development. The legislation for Senate Bill 1525 prohibits aquatic centers but allows swimming pools, however no definition is provided in the Enabling Legislation. The City of Chandler’s System Development Fee Update (2018) references the Arizona League of Cities and Towns proposed definition of an aquatic center to provide clarification:

“An aquatic center is a facility designed to host non-recreational competitive functions generally occurring within water; including, not limited to, water polo games, swimming meets, and diving events. Such facility may be indoors, outdoors, or any combination thereof, and includes all necessary supporting amenities, including but not limited to, locker rooms, offices, snack bars, bleacher seating, and shade structures.”

The pool will be designed and built in alignment with the Arizona League of Cities and Towns language. As a necessary function of the pool, the construction of a new building could be needed that may include changing rooms, restrooms, storage for pool equipment and chemicals, concession area, parking, etc.

Figure PR8: Existing Pools

Description	Units
Hollyhock Pool	1
Surprise Aquatic Center	1
Total	2

Source: Surprise Parks and Recreation Department

To allocate the proportionate share of demand for pools to residential and nonresidential development, this analysis uses the proportionate share shown in Figure PR1. The existing level of service for residential development is 0.000011 units per person (two units X 98 percent residential share / 172,866 persons). For nonresidential development, the existing level of service is 0.000001 units per job (two units X two percent nonresidential share / 27,035 jobs).

Based on costs provided by Surprise's Parks and Recreation Department, the cost to construct a pool is \$33,000,000. For pools, the cost is \$374.16 per person (0.000011 units per person X \$33,000,000 per unit) and \$48.83 per job (0.000001 units per job X \$33,000,000 per unit).

Figure PR9: Existing Level of Service

Cost Factors	
New Community Pool	\$33,000,000

Level-of-Service (LOS) Standards	
Existing Pools	2
Residential	
Residential Share	98%
2023 Population	172,866
Pools per Person	0.000011
Cost per Person	\$374.16
Nonresidential	
Nonresidential Share	2%
2023 Jobs	27,035
Pools per Job	0.000001
Cost per Job	\$48.83

Source: Surprise Parks and Recreation Department

Development Fee Report – Plan-Based

The cost to prepare the Parks and Recreational Facilities IIP and development fees totals \$15,000. Surprise plans to update its report every five years. Based on this cost, proportionate share, and five-year projections of new development from the *Land Use Assumptions* document, the cost is \$0.33 per person and \$0.04 per job.

Figure PR10: IIP and Development Fee Report

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Change	Cost per Service Unit
Parks and Recreational	\$15,000	Residential	98%	Population	44,514	\$0.33
		Nonresidential	2%	Jobs	7,782	\$0.04

PROJECTED DEMAND FOR SERVICES AND COSTS

ARS § 9-463.05(E)(5) requires:

“The total number of projected service units necessitated by and attributable to new development in the service area based on the approved land use assumptions and calculated pursuant to generally accepted engineering and planning criteria.”

ARS § 9-463.05(E)(6) requires:

“The projected demand for necessary public services or facility expansions required by new service units for a period not to exceed ten years.”

As shown in the *Land Use Assumptions* document, Surprise’s population is projected to increase by 83,656 persons and employment is expected to increase by 16,444 jobs over the next 10 years. To maintain the existing levels of service, Surprise will need to acquire approximately 149 acres of park land, construct approximately 87 park amenities, construct approximately 5,800 square feet of recreation facilities, and construct approximately one pool over the next 10 years. The following pages include a more detailed projection of demand for services and costs for the Parks and Recreational Facilities IIP.

Park Land – Incremental Expansion

Surprise plans to maintain its existing level of service for park land over the next 10 years. Based on a projected population increase of 83,656 persons, future residential development demands approximately 145.4 acres of park land (83,656 additional persons X 0.00174 eligible acres per person). With projected employment growth of 16,444 jobs, future nonresidential development demands approximately 3.7 acres of park land (16,444 additional jobs X 0.00023 eligible acres per job). Future development demands 149.11 additional acres of park land at a cost of \$26,840,352 (149.11 acres X \$180,000 per acre). Surprise may use development fees to acquire additional park land.

Figure PR11: Projected Demand

Type of Infrastructure	Level of Service	Demand Unit	Cost per Acre
Park Land	0.00174 Eligible Acres	per Person	\$180,000
	0.00023 Eligible Acres	per Job	

Demand for Park Land					
Year	Population	Jobs	Eligible Acres		
			Residential	Nonresidential	Total
2023	172,866	27,035	300.42	6.13	306.55
2024	181,769	28,591	315.89	6.48	322.37
2025	190,671	30,148	331.36	6.84	338.20
2026	199,574	31,704	346.83	7.19	354.02
2027	208,477	33,260	362.31	7.54	369.85
2028	217,380	34,816	377.78	7.90	385.67
2029	226,282	36,373	393.25	8.25	401.50
2030	235,185	37,929	408.72	8.60	417.32
2031	242,297	39,779	421.08	9.02	430.10
2032	249,410	41,629	433.44	9.44	442.88
2033	256,522	43,479	445.80	9.86	455.66
10-Yr Increase	83,656	16,444	145.38	3.73	149.11

Growth-Related Expenditures	\$26,169,095	\$671,258	\$26,840,352
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Park Amenities – Incremental Expansion

Surprise plans to maintain its existing level of service for park amenities over the next 10 years. Based on a projected population increase of 83,656 persons, future residential development demands approximately 85.1 park amenities (83,656 additional persons X 0.00102 amenities per person). With projected employment growth of 16,444 jobs, future nonresidential development demands approximately 2.2 park amenities (16,444 additional jobs X 0.00013 amenities per job). Future development demands 87.3 additional park amenities at a cost of \$31,891,515 (87.3 amenities X \$365,255 per amenity). Surprise may use development fees to construct additional park amenities.

Figure PR12: Projected Demand

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Park Amenities	0.00102 Units	per Person	\$365,255
	0.00013 Units	per Job	

Demand for Park Amenities					
Year	Population	Jobs	Units		
			Residential	Nonresidential	Total
2023	172,866	27,035	175.9	3.6	179.5
2024	181,769	28,591	185.0	3.8	188.8
2025	190,671	30,148	194.0	4.0	198.0
2026	199,574	31,704	203.1	4.2	207.3
2027	208,477	33,260	212.1	4.4	216.6
2028	217,380	34,816	221.2	4.6	225.8
2029	226,282	36,373	230.3	4.8	235.1
2030	235,185	37,929	239.3	5.0	244.4
2031	242,297	39,779	246.6	5.3	251.8
2032	249,410	41,629	253.8	5.5	259.3
2033	256,522	43,479	261.0	5.8	266.8
10-Yr Increase	83,656	16,444	85.1	2.2	87.3

Growth-Related Expenditures	\$31,093,932	\$797,583	\$31,891,515
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Recreation Facilities – Incremental Expansion

Surprise plans to maintain its eligible level of service for recreation over the next 10 years. Based on a projected population increase of 83,656 persons, future residential development demands approximately 5,691 square feet of recreation facilities (83,656 additional persons X 0.0680 eligible square feet per person). With projected employment growth of 16,444 jobs, future nonresidential development demands approximately 146 square feet of recreation facilities (16,444 additional jobs X 0.0089 eligible square feet per job). Future development demands approximately 5,837.1 square feet of recreation facilities at a cost of \$3,502,248 (5,837.1 square feet X \$600 per square foot). Surprise may use development fees to construct additional recreation facilities.

Figure PR13: Projected Demand

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Recreation Facilities	0.0680 Eligible Sq Ft	per Person	\$600
	0.0089 Eligible Sq Ft	per Job	

Demand for Recreation Facilities					
Year	Population	Jobs	Eligible Square Feet		
			Residential	Nonresidential	Total
2023	172,866	27,035	11,760.0	240.0	12,000.0
2024	181,769	28,591	12,365.6	253.8	12,619.5
2025	190,671	30,148	12,971.3	267.6	13,238.9
2026	199,574	31,704	13,576.9	281.4	13,858.4
2027	208,477	33,260	14,182.6	295.3	14,477.9
2028	217,380	34,816	14,788.2	309.1	15,097.3
2029	226,282	36,373	15,393.9	322.9	15,716.8
2030	235,185	37,929	15,999.5	336.7	16,336.3
2031	242,297	39,779	16,483.4	353.1	16,836.5
2032	249,410	41,629	16,967.2	369.6	17,336.8
2033	256,522	43,479	17,451.1	386.0	17,837.1
10-Yr Increase	83,656	16,444	5,691.1	146.0	5,837.1

Growth-Related Expenditures	\$3,414,659	\$87,589	\$3,502,248
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Pools – Incremental Expansion

Surprise plans to maintain its existing level of service for pools over the next 10 years. Based on a projected population increase of 83,656 persons, future residential development demands approximately 0.95 pools (83,656 additional persons X 0.000011 pools per person). With projected employment growth of 16,444 jobs, future nonresidential development demands approximately 0.02 pools (16,444 additional jobs X 0.000001 pools per job). Future development demands 0.97 pools at a cost of \$32,103,939 (0.97 pools X \$33,000,000 per pool). Surprise may use development fees to construct additional pools.

Figure PR14: Projected Demand

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Pools	0.000011 Pools	per Person	\$33,000,000
	0.000001 Pools	per Job	

Demand for Pools					
Year	Population	Jobs	Pools		
			Residential	Nonresidential	Total
2023	172,866	27,035	1.96	0.04	2.00
2024	181,769	28,591	2.06	0.04	2.10
2025	190,671	30,148	2.16	0.04	2.21
2026	199,574	31,704	2.26	0.05	2.31
2027	208,477	33,260	2.36	0.05	2.41
2028	217,380	34,816	2.46	0.05	2.52
2029	226,282	36,373	2.57	0.05	2.62
2030	235,185	37,929	2.67	0.06	2.72
2031	242,297	39,779	2.75	0.06	2.81
2032	249,410	41,629	2.83	0.06	2.89
2033	256,522	43,479	2.91	0.06	2.97
10-Yr Increase	83,656	16,444	0.95	0.02	0.97

Growth-Related Expenditures	\$31,301,043	\$802,896	\$32,103,939
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PARKS AND RECREATIONAL FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

A revenue credit/offset is necessary for development fees, because Surprise's construction transaction privilege tax rate exceeds the amount of the transaction privilege tax rate imposed on the majority of other transaction privilege tax classifications. Appendix A contains the forecast of revenues required by Arizona's Enabling Legislation (ARS § 9-463.05(E)(7)).

Parks and Recreational Facilities Development Fees

Infrastructure components and cost factors for parks and recreational facilities are summarized in the upper portion of Figure PR15. The cost per service unit is \$929.34 per person and \$123.62 per job.

Parks and recreational facilities fees for residential development are assessed according to the number of persons per housing unit. The fee of \$2,398 for a single-family unit is calculated using a cost per service unit of \$929.34 per person multiplied by a demand unit of 2.58 persons per housing unit.

Nonresidential development fees are calculated using jobs as the service unit. The fee of \$143 per 1,000 square feet of industrial development is derived from a cost per service unit of \$123.62 per job multiplied by a demand unit of 1.16 jobs per 1,000 square feet.

Figure PR15: Parks and Recreational Facilities Development Fees

Fee Component	Cost per Person	Cost per Job
Park Land	\$312.82	\$40.82
Park Amenities	\$371.69	\$48.50
Recreation Facilities	\$40.82	\$5.33
Pools	\$374.16	\$48.83
Development Fee Report	\$0.33	\$0.04
Excess Construction Sales Tax	(\$170.48)	(\$19.90)
Total	\$929.34	\$123.62

Residential Fees per Unit						
Development Type	Persons per Housing Unit ¹	Proposed Fees	Adopted Fees ²	Difference (from adopted)	Current Fees	Difference (from current)
Single-Family	2.58	\$2,398	\$1,845	\$553	\$1,060	\$1,338
Multi-Family	1.58	\$1,468	\$1,227	\$241	\$647	\$821
Mobile Home	1.09	\$1,013	\$1,289	(\$276)	\$594	\$419

Nonresidential Fees per 1,000 Square Feet						
Development Type	Jobs per 1,000 Sq Ft ¹	Proposed Fees	Adopted Fees ²	Difference (from adopted)	Current Fees	Difference (from current)
Industrial	1.16	\$143	\$32	\$111	\$32	\$111
Warehouse	0.34	\$42	\$32	\$10	\$32	\$10
Retail/Commercial	2.12	\$263	\$32	\$231	\$32	\$231
Office	3.26	\$402	\$74	\$328	\$74	\$328
Public/Institutional	2.04	\$252	\$85	\$167	\$85	\$167

1. See Park Land Use Assumptions

2. Adopted fees for residential development include a grandfathered park fee that has been retired

PARKS AND RECREATIONAL FACILITIES DEVELOPMENT FEE REVENUE

Appendix A contains the forecast of revenues required by Arizona's Enabling Legislation (ARS § 9-463.05(E)(7)). In accordance with state law, this report includes an IIP for parks and recreational facilities needed to accommodate new development. Projected fee revenue shown in Figure PR16 is based on the development projections in the *Land Use Assumptions* document and the updated development fees for parks and recreational facilities shown in Figure PR15. If development occurs at a more rapid rate than projected, the demand for infrastructure will increase and development fee revenue will increase at a corresponding rate. If development occurs at a slower rate than projected, the demand for infrastructure will also decrease, along with development fee revenue. Projected development fee revenue equals \$86,609,301, and projected expenditures equal \$86,609,339.

Figure PR16: Parks and Recreational Facilities Development Fee Revenue

Fee Component	Growth Share	Existing Share	Total
Park Land	\$26,840,352	\$0	\$26,840,352
Park Amenities	\$31,891,515	\$0	\$31,891,515
Recreation Facilities	\$3,502,248	\$0	\$3,502,248
Pools	\$32,103,939	\$0	\$32,103,939
Development Fee Report	\$15,000	\$0	\$15,000
Excess Constr. Sales Tax	(\$7,743,715)	\$0	(\$7,743,715)
Total	\$86,609,339	\$0	\$86,609,339

		Single Family \$2,398 per unit	Multi-Family \$1,468 per unit	Mobile Home \$1,013 per unit	Industrial \$143 per 1,000 sq ft	Warehouse \$42 per 1,000 sq ft	Ret/Comm \$263 per 1,000 sq ft	Office \$402 per 1,000 sq ft	Public/Inst \$252 per 1,000 sq ft
Year		Hsg Unit	Hsg Unit	Hsg Unit	KSF	KSF	KSF	KSF	KSF
Base	2023	59,934	9,973	3,106	2,098	5,332	7,380	3,397	7,179
Year 1	2024	62,847	10,833	3,133	2,310	5,484	7,499	3,620	7,317
Year 2	2025	65,760	11,692	3,159	2,523	5,635	7,617	3,843	7,454
Year 3	2026	68,673	12,552	3,186	2,736	5,787	7,735	4,067	7,592
Year 4	2027	71,586	13,411	3,213	2,948	5,938	7,854	4,290	7,729
Year 5	2028	74,499	14,271	3,239	3,161	6,089	7,972	4,513	7,867
Year 6	2029	77,412	15,130	3,266	3,373	6,241	8,090	4,737	8,005
Year 7	2030	80,325	15,990	3,293	3,586	6,392	8,208	4,960	8,142
Year 8	2031	82,536	16,868	3,313	3,736	6,499	8,431	5,249	8,253
Year 9	2032	84,746	17,746	3,333	3,886	6,606	8,653	5,538	8,364
Year 10	2033	86,957	18,624	3,354	4,036	6,714	8,876	5,827	8,475
10-Year Increase		27,023	8,650	248	1,938	1,381	1,496	2,430	1,296
Projected Revenue		\$70,260,883	\$13,871,411	\$272,304	\$297,580	\$62,022	\$430,954	\$1,062,807	\$351,340

Projected Fee Revenue	\$86,609,301
Total Expenditures	\$86,609,339

10-YEAR CAPITAL PLAN

The figure shown below includes potential parks and recreational capital expenditures during the next 10 years. The list of potential capital expenditures is representational of future growth-related parks and recreational capital expenditures.

Figure PR17: Parks and Recreational Facilities Capital Plan

Project Type	Description	Fiscal Year	Cost
CIP	Community Pool	2024	\$35,000,000
CIP	City Park Improvements	2025-2028	\$6,500,000
CIP	McMicken Park - Design	2025	\$2,700,000
CIP	New Park - Perryville & Cactus	2024	\$8,836,800
CIP	New Park - Perryville & Cactus	2024	\$8,836,800
CIP	Park West Surprise (SPA 1)	2028-2032	\$15,000,000
CIP	Park North Surprise (SPA 2)	2028-2032	\$25,000,000
CIP	Park Northwest Surprise (SPA 3)	2028-2032	\$15,000,000
CIP	Trails	2028-2032	\$10,000,000
Dev Credit	Asante Park	2024-2033	\$3,877,407
Study Cost	Development Fee Update	2024-2029	\$15,000
Total			\$130,766,007

Source: Surprise Parks and Recreation Department

POLICE FACILITIES IIP

ARS § 9-463.05 (T)(7)(f) defines the eligible facilities and assets for the Police Facilities IIP:

“Fire and police facilities, including all appurtenances, equipment and vehicles. Fire and 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 or airplanes or a facility that is used for training firefighters or officers from more than one station or substation.”

The Police Facilities IIP includes components for police facilities, police facilities land, police vehicles, police equipment, and the cost of preparing the Police Facilities IIP and related Development Fee Report. The incremental expansion methodology, based on the current level of service, is used for police facilities land, police vehicles, and police equipment. The plan-based methodology is used for police facilities and the Development Fee Report.

PROPORTIONATE SHARE

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. The Police Facilities IIP and development fees will allocate the cost of police infrastructure between residential and nonresidential using calls for service. Based on FY2020-FY2022 call data provided by the Surprise Police Department, residential development accounts for approximately 61 percent of demand and nonresidential development accounts for the remaining 39 percent of demand.

Figure P1: Proportionate Share

Description	FY 2020	FY 2021	FY 2022	Total
Residential	30,742	29,529	29,151	89,422
Nonresidential	20,089	19,238	18,838	58,165
Total	50,831	48,767	47,989	147,587

Description	FY 2020	FY 2021	FY 2022	Total
Residential	60%	61%	61%	61%
Nonresidential	40%	39%	39%	39%
Total	100%	100%	100%	100%

Source: Surprise Police Department

The proportionate share of costs attributable to residential development will be allocated to population and then converted to an appropriate amount by type of housing unit. Since nonresidential calls for service were unavailable by specific nonresidential use, TischlerBise recommends using vehicle trips as the nonresidential demand indicator for police services. Trip generation rates are highest for retail/commercial development and lowest for industrial development. Office and public/institutional trip generation rates fall between the other two categories. This ranking of trip generation rates is consistent with the relative demand for police services from nonresidential development.

SERVICE AREA

Surprise's Police Department strives to provide a uniform response time within the city limits; therefore, there is a single service area for the Police Facilities IIP.

RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT

ARS § 9-463.05(E)(4) requires:

"A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial and industrial."

Figure P2 displays the demand indicators for residential and nonresidential land uses. For residential development, the table displays the persons per housing unit. For nonresidential development, the table displays the number of average weekday vehicle trips generated per thousand square feet of floor area.

Figure P2: Ratio of Service Unit to Development Unit

Residential Development			
Development Type	Persons per Housing Unit ¹		
Single-Family	2.58		
Multi-Family	1.58		
Mobile Home	1.09		

Nonresidential Development			
Development Type	AWVTE per 1,000 Sq Ft ¹	Trip Rate Adjustment	AWVT per 1,000 Sq Ft ¹
Industrial	3.37	50%	1.69
Warehouse	1.71	50%	0.86
Retail/Commercial	37.01	28%	10.18
Office	10.84	45%	4.88
Public/Institutional	6.75	50%	3.38

1. See Land Use Assumptions

ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES

ARS § 9-463.05(E)(1) requires:

"A description of the existing necessary public services in the service area and the costs to upgrade, update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable."

ARS § 9-463.05(E)(2) requires:

"An analysis of the total capacity, the level of current usage and commitments for usage of capacity of the existing necessary public services, which shall be prepared by qualified professionals licensed in this state, as applicable."

Police Facilities – Plan-Based

Surprise currently provides 70,844 square feet of police facilities to existing development, and Surprise plans to construct additional police facilities to serve future development.

Figure P3: Existing Police Facilities

Description	Square Feet	Acres
Public Safety Building (share)	42,500	7.82
Evidence & Readiness Center	27,944	4.54
Techcelerator Police Storage	400	0.00
Total	70,844	12.36

Source: Surprise Police Department

Surprise plans to use future development fee revenue to repay the outstanding obligation related to the Public Safety Building. The total obligation is \$2,786,022, and the outstanding obligation is \$135,214. Based on a cost of approximately \$65 per square foot (\$2,768,022 total obligation / 42,500 total square feet), the proportionate share of the Public Safety Building related to the outstanding obligation is 2,076 square feet (\$135,214 outstanding obligation / \$65 per square foot).

Figure P4: Public Safety Building Obligation

Public Safety Building	Square Feet	Obligation ¹	Cost per Sq Ft
Outstanding Debt	2,076	\$135,214	\$65
Retired Debt	40,424	\$2,632,808	\$65
Total	42,500	\$2,768,022	\$65

Source: Surprise Police Department

1. Surprise Finance Department

As shown below in Figure P5, Surprise plans to repay outstanding obligations related to the Public Safety Building and to construct 60,000 square feet of police facilities during the next 10 years. The total cost is \$48,135,214, and the associated floor area is 62,076 square feet. Based on these projects, the analysis uses a cost of \$775 per square foot for police facilities (\$48,135,214 total cost / 62,076 total square feet). The planned police facilities will serve all development in Surprise through 2038.

Figure P5: Police Facilities Cost Factors

Description	Square Feet	Cost	Cost per Sq Ft
Public Safety Building (share)	2,076	\$135,214	\$65
Future Police Substation	30,000	\$22,000,000	\$733
Future Police Substation	30,000	\$26,000,000	\$867
Total	62,076	\$48,135,214	\$775

Source: Surprise Police Department

Surprise plans to provide 130,844 square feet of police facilities to all development in 2038. To allocate the proportionate share of demand for police facilities to residential and nonresidential development, this analysis uses proportionate share factors shown in Figure P1. The planned level of service for residential development is 0.2770 square feet per person (130,844 total square feet X 61 percent residential share / 286,249 persons). The planned nonresidential level of service is 0.2835 square feet per vehicle trip (130,844 total square feet X 39 percent nonresidential share / 181,875 vehicle trips).

Based on the outstanding obligations for the Public Safety Building and the construction cost estimates for future police facilities shown in Figure P5, the analysis uses a cost of \$775 per square foot (\$48,135,214 total cost / 62,076 total square feet). For police facilities, the cost is \$214.76 per person (0.2770 square feet per person X \$775 per square foot) and \$219.85 per vehicle trip (0.2835 square feet per vehicle trip X \$775 per square foot).

Figure P6: Planned Level of Service

Cost Factors	
Cost per Square Foot	\$775

Level-of-Service (LOS) Standards	
Existing Square Feet ¹	68,768
Cost Recovery Square Feet ²	2,076
Planned Square Feet	60,000
Total Square Feet	130,844
Residential	
Residential Share	61%
2038 Population	286,249
Square Feet per Person	0.2770
Cost per Person	\$214.76
Nonresidential	
Nonresidential Share	39%
2038 Vehicle Trips	181,875
Square Feet per Vehicle Trip	0.2835
Cost per Vehicle Trip	\$219.85

Source: Surprise Police Department

1. Excludes share related to outstanding obligations
2. Public Safety Building share of outstanding obligations

Police Facilities Land – Incremental Expansion

Surprise police facilities currently occupy 12.36 acres of land, and Surprise plans to acquire additional land for police facilities to serve future development. To allocate the proportionate share of demand for land to residential and nonresidential development, this analysis uses calls for service outlined in Figure P1. The existing level of service for residential development is 0.00004 acres per person (12.36 acres X 61 percent residential share / 172,866 persons). The nonresidential level of service is 0.00004 acres per vehicle trip (12.36 acres X 39 percent nonresidential share / 124,008 vehicle trips).

Based on the weighted average cost of potential land acquisitions provided by the Surprise Police Department, the land acquisition cost is \$162,000 per acre (\$810,000 total cost / 5.0 acres). For police facilities land, the cost is \$7.02 per person (0.00004 acres per person X \$162,000 per acre) and \$6.36 per vehicle trip (0.00004 acres per vehicle trip X \$162,000 per acre).

Figure P7: Existing Level of Service

Cost Factors	
Cost per Acre	\$162,000

Level-of-Service (LOS) Standards	
Existing Acres	12.36
Residential	
Residential Share	61%
2023 Population	172,866
Acres per Person	0.00004
Cost per Person	\$7.02
Nonresidential	
Nonresidential Share	39%
2023 Vehicle Trips	124,008
Acres per Vehicle Trip	0.00004
Cost per Vehicle Trip	\$6.36

Source: Surprise Police Department

Description	Acres	Cost	Cost per Acre
Land - Police Facilities	3.00	\$500,000	\$166,667
Land - Police Facilities	2.00	\$310,000	\$155,000
Total	5.00	\$810,000	\$162,000

Source: Surprise Police Department

Police Vehicles – Incremental Expansion

Surprise has 142 police vehicles in its existing fleet with a total cost of \$13,274,500, and Surprise plans to acquire additional police vehicles to serve future development. The weighted average cost of the existing fleet is \$93,482 per unit (\$13,274,500 total cost / 142 units).

Figure P8: Existing Police Vehicles

Description	Units	Unit Cost	Total Cost
Patrol Vehicle (marked units)	66	\$89,000	\$5,874,000
Police Heavy Van	1	\$225,000	\$225,000
CID and Unmarked Vehicles	27	\$66,500	\$1,795,500
MCC and old MCC	2	\$1,000,000	\$2,000,000
Motor's	9	\$39,000	\$351,000
BearCat	1	\$450,000	\$450,000
Side by Side	2	\$25,000	\$50,000
Side by Side (Ranger)	1	\$20,000	\$20,000
Motor's - Unmarked	3	\$60,000	\$180,000
K9	5	\$90,000	\$450,000
Animal Control	3	\$75,000	\$225,000
CP Vehicle	5	\$89,000	\$445,000
Patrol Lieutenant vehicles	6	\$75,000	\$450,000
ASD Commander & LT	2	\$66,500	\$133,000
POD Commander	2	\$66,500	\$133,000
Property & Evidence vans	2	\$72,000	\$144,000
TSD Commander & LT	2	\$66,500	\$133,000
Property & Evidence vans	2	\$72,000	\$144,000
Crime Scene Van	1	\$72,000	\$72,000
Total	142	\$93,482	\$13,274,500

Source: Surprise Police Department

To allocate the proportionate share of demand for police vehicles to residential and nonresidential development, this analysis uses calls for service outlined in Figure P1. The existing level of service for residential development is 0.0005 units per person (142 vehicles X 61 percent residential share / 172,866 persons). The nonresidential level of service is 0.0005 units per vehicle trip (142 vehicles X 39 percent nonresidential share / 124,008 vehicle trips).

Based on the total cost of existing police vehicles, the weighted average cost for a new police vehicle is \$93,482 per vehicle (\$13,274,500 total cost / 142 units). For police vehicles, the cost is \$46.53 per person (0.0005 units per person X \$93,482 per vehicle) and \$42.19 per vehicle trip (0.0005 units per vehicle trip X \$93,482 per vehicle).

Figure P9: Existing Level of Service

Cost Factors	
Weighted Average per Unit	\$93,482

Level-of-Service (LOS) Standards	
Existing Units	142
Residential	
Residential Share	61%
2023 Population	172,866
Units per Person	0.0005
Cost per Person	\$46.53
Nonresidential	
Nonresidential Share	39%
2023 Vehicle Trips	124,008
Units per Vehicle Trip	0.0005
Cost per Vehicle Trip	\$42.19

Source: Surprise Police Department

Police Equipment – Incremental Expansion

Surprise has 1,324 units of police equipment with a total cost of \$13,614,115, and Surprise plans to acquire additional units to serve future development. To allocate the proportionate share of demand for police equipment to residential and nonresidential development, this analysis uses calls for service outlined in Figure P1. The existing level of service for residential development is 0.0046 units per person (1,324 units X 61 percent residential share / 172,866 persons). The nonresidential level of service is 0.0042 units per vehicle trip (1,324 units X 39 percent nonresidential share / 124,008 vehicle trips).

Based on the total cost of existing police equipment, the weighted average cost for a new unit is \$10,823 per unit (\$13,614,115 total cost / 1,324 units). For police equipment, the cost is \$47.72 per person (0.0046 units per person X \$10,283 per unit) and \$43.27 per vehicle trip (0.0042 units per vehicle trip X \$10,283 per unit).

Figure P10: Existing Level of Service

Cost Factors	
Existing Equipment (Units)	1,324
Existing Equipment (Cost)	\$13,614,115
Weighted Average per Unit	\$10,283

Level-of-Service (LOS) Standards	
Existing Units	1,324
Residential	
Residential Share	61%
2023 Population	172,866
Units per Person	0.0046
Cost per Person	\$47.72
Nonresidential	
Nonresidential Share	39%
2023 Vehicle Trips	124,008
Units per Vehicle Trip	0.0042
Cost per Vehicle Trip	\$43.27

Source: Surprise Police Department

Development Fee Report – Plan-Based

The cost to prepare the Police Facilities IIP and related Development Fee Report totals \$16,230. Surprise plans to update its report every five years. Based on this cost, proportionate share, and five-year projections of new residential and nonresidential development from the *Land Use Assumptions* document, the cost is \$0.22 per person and \$0.39 per vehicle trip.

Figure P11: IIP and Development Fee Report

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Change	Cost per Service Unit
Police	\$16,230	Residential	61%	Population	44,514	\$0.22
		Nonresidential	39%	Vehicle Trips	16,226	\$0.39

PROJECTED DEMAND FOR SERVICES AND COSTS

ARS § 9-463.05(E)(5) requires:

“The total number of projected service units necessitated by and attributable to new development in the service area based on the approved land use assumptions and calculated pursuant to generally accepted engineering and planning criteria.”

ARS § 9-463.05(E)(6) requires:

“The projected demand for necessary public services or facility expansions required by new service units for a period not to exceed ten years.”

As shown in the *Land Use Assumptions* document, Surprise’s population is expected to increase by 83,656 persons and nonresidential vehicle trips are expected to increase by 35,898 vehicle trips over the next 10 years. To reach the planned level of service, Surprise will construct 60,000 square feet of police facilities over the next 10 years. To maintain the existing levels of service, Surprise will need to acquire approximately five acres of land, 58 police vehicles, and 539 units of police equipment over the next 10 years. The following pages include a more detailed projection of demand for services and costs for the Police Facilities IIP.

Police Facilities – Plan-Based

Surprise will use development fees to repay obligations associated with the Public Safety Building and to construct police facilities within the next 10 years. Based on a 15-year projected population increase of 113,383 persons, future residential development demands approximately 31,402 square feet of planned police facilities (113,383 additional persons X 0.2770 square feet per person). With a 15-year projected increase of 57,867 vehicle trips, future nonresidential development demands approximately 16,407 square feet of planned police facilities (57,867 additional vehicle trips X 0.2835 square feet per vehicle trip). Future development demands approximately 47,809 square feet of police facilities at a cost of \$37,071,899 (47,808.6 square feet X \$775 per square foot). The remaining cost of \$11,063,315 represents existing development's share of planned police facilities (\$48,135,214 total police facilities cost - \$37,071,899 growth cost).

Figure P12: Projected Demand

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Police Facilities	0.2770 Square Feet	per Person	\$775
	0.2835 Square Feet	per Vehicle Trip	

Demand for Police Facilities					
Year	Population	Vehicle Trips	Square Feet		
			Residential	Nonresidential	Total
2023	172,866	124,008	47,875.8	35,159.7	83,035.4
2024	181,769	127,254	50,341.4	36,079.8	86,421.2
2025	190,671	130,499	52,807.1	36,999.9	89,807.0
2026	199,574	133,744	55,272.7	37,920.0	93,192.7
2027	208,477	136,989	57,738.3	38,840.1	96,578.5
2028	217,380	140,235	60,204.0	39,760.2	99,964.2
2029	226,282	143,480	62,669.6	40,680.3	103,350.0
2030	235,185	146,725	65,135.3	41,600.5	106,735.7
2031	242,297	151,119	67,105.1	42,846.2	109,951.3
2032	249,410	155,513	69,074.9	44,092.0	113,166.8
2033	256,522	159,906	71,044.6	45,337.7	116,382.4
2034	262,467	164,300	72,691.2	46,583.5	119,274.7
2035	268,413	168,694	74,337.8	47,829.2	122,167.0
2036	274,358	173,088	75,984.4	49,075.0	125,059.3
2037	280,303	177,482	77,630.9	50,320.7	127,951.7
2038	286,249	181,875	79,277.5	51,566.5	130,844.0
15-Yr Increase	113,383	57,867	31,401.7	16,406.8	47,808.6

Growth-Related Expenditures	\$24,349,663	\$12,722,236	\$37,071,899
Non-Growth Expenditures	\$4,815,149	\$6,248,166	\$11,063,315
Total Expenditures	\$29,164,812	\$18,970,402	\$48,135,214

Police Facilities Land – Incremental Expansion

Surprise plans to maintain its existing level of service for police facilities land over the next 10 years. Based on a projected population increase of 83,656 persons, future residential development demands an additional 3.62 acres of land (83,656 additional persons X 0.00004 acres per person). With a 10-year projected increase of 35,898 vehicle trips, future nonresidential development demands an additional 1.41 acres of land (35,898 additional vehicle trips X 0.00004 acres per vehicle trip). Future development demands 5.04 acres of land at a cost of \$815,678 (5.04 acres X \$162,000 per acre). Surprise may use development fees to acquire additional land for police facilities.

Figure P13: Projected Demand

Type of Infrastructure	Level of Service	Demand Unit	Cost per Acre
Police Facilities Land	0.00004 Acres	per Person	\$162,000
	0.00004 Acres	per Vehicle Trip	

Demand for Police Facilities Land					
Year	Population	Vehicle Trips	Acres		
			Residential	Nonresidential	Total
2023	172,866	124,008	7.49	4.87	12.36
2024	181,769	127,254	7.88	5.00	12.88
2025	190,671	130,499	8.26	5.13	13.39
2026	199,574	133,744	8.65	5.25	13.90
2027	208,477	136,989	9.03	5.38	14.41
2028	217,380	140,235	9.42	5.51	14.93
2029	226,282	143,480	9.80	5.64	15.44
2030	235,185	146,725	10.19	5.76	15.95
2031	242,297	151,119	10.50	5.94	16.44
2032	249,410	155,513	10.81	6.11	16.92
2033	256,522	159,906	11.11	6.28	17.40
10-Yr Increase	83,656	35,898	3.62	1.41	5.04

Growth-Related Expenditures	\$587,204	\$228,474	\$815,678
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Police Vehicles – Incremental Expansion

Surprise plans to maintain its existing level of service for police vehicles over the next 10 years. Based on a projected population increase of 83,656 persons, future residential development demands approximately 42 police vehicles (83,656 additional persons X 0.0005 vehicles per person). With a 10-year projected increase of 35,898 vehicle trips, future nonresidential development demands approximately 16 police vehicles (35,898 additional vehicle trips X 0.0005 vehicles per vehicle trip). Future development demands approximately 58 police vehicles at a cost of \$5,406,712 (57.8 units X \$93,482 per vehicle). Surprise may use development fees to expand its police vehicle fleet.

Figure P14: Projected Demand

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Police Vehicles	0.0005 Units	per Person	\$93,482
	0.0005 Units	per Vehicle Trip	

Demand for Police Vehicles					
Year	Population	Vehicle Trips	Units		
			Residential	Nonresidential	Total
2023	172,866	124,008	86.0	56.0	142.0
2024	181,769	127,254	90.5	57.4	147.9
2025	190,671	130,499	94.9	58.9	153.8
2026	199,574	133,744	99.3	60.4	159.7
2027	208,477	136,989	103.8	61.8	165.6
2028	217,380	140,235	108.2	63.3	171.5
2029	226,282	143,480	112.6	64.8	177.4
2030	235,185	146,725	117.1	66.2	183.3
2031	242,297	151,119	120.6	68.2	188.8
2032	249,410	155,513	124.1	70.2	194.3
2033	256,522	159,906	127.7	72.2	199.8
10-Yr Increase	83,656	35,898	41.6	16.2	57.8

Growth-Related Expenditures	\$3,892,273	\$1,514,440	\$5,406,712
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Police Equipment – Incremental Expansion

Surprise plans to maintain its existing level of service for police equipment over the next 10 years. Based on a projected population increase of 83,656 persons, future residential development demands approximately 388 units of police equipment (83,656 additional persons X 0.0046 units per person). With a 10-year projected increase of 35,898 vehicle trips, future nonresidential development demands approximately 151 units of police equipment (35,898 additional vehicle trips X 0.0042 units per vehicle trip). Future development demands approximately 539 units of equipment at a cost of \$5,545,038 (539.3 units X \$10,283 per unit). Surprise may use development fees to acquire additional police equipment.

Figure P15: Projected Demand

Type of Infrastructure	Level of Service	Demand Unit	Cost per Unit
Police Equipment	0.0046 Units	per Person	\$10,283
	0.0042 Units	per Vehicle Trip	

Demand for Police Equipment					
Year	Population	Vehicle Trips	Units		
			Residential	Nonresidential	Total
2023	172,866	124,008	802.2	521.8	1,324.0
2024	181,769	127,254	843.5	535.5	1,379.0
2025	190,671	130,499	884.8	549.1	1,433.9
2026	199,574	133,744	926.1	562.8	1,488.9
2027	208,477	136,989	967.5	576.4	1,543.9
2028	217,380	140,235	1,008.8	590.1	1,598.8
2029	226,282	143,480	1,050.1	603.7	1,653.8
2030	235,185	146,725	1,091.4	617.4	1,708.8
2031	242,297	151,119	1,124.4	635.9	1,760.3
2032	249,410	155,513	1,157.4	654.4	1,811.8
2033	256,522	159,906	1,190.4	672.8	1,863.3
10-Yr Increase	83,656	35,898	388.2	151.1	539.3

Growth-Related Expenditures	\$3,991,853	\$1,553,185	\$5,545,038
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POLICE FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

A revenue credit/offset is necessary for development fees, because Surprise's construction transaction privilege tax rate exceeds the amount of the transaction privilege tax rate imposed on the majority of other transaction privilege tax classifications. Appendix A contains the forecast of revenues required by Arizona's Enabling Legislation (ARS § 9-463.05(E)(7)).

Police Facilities Development Fees

Infrastructure components and cost factors for police facilities are summarized in the upper portion of Figure P16. The cost per service unit for police facilities is \$285.94 per person and \$257.98 per vehicle trip.

Police facilities development fees for residential development are assessed according to the number of persons per housing unit. The fee of \$738 for single-family unit is calculated using a cost per service unit of \$285.94 per person multiplied by a demand unit of 2.58 persons per housing unit.

Nonresidential development fees are calculated using vehicle trips as the service unit. The fee of \$435 per 1,000 square feet of industrial development is derived from a cost per service unit of \$257.98 per vehicle trip multiplied by a demand unit of 1.69 vehicle trips per 1,000 square feet.

Figure P16: Police Facilities Development Fees

Fee Component	Cost per Person	Cost per Trip
Police Facilities	\$214.76	\$219.85
Police Facilities Land	\$7.02	\$6.36
Police Vehicles	\$46.53	\$42.19
Police Equipment	\$47.72	\$43.27
Development Fee Report	\$0.22	\$0.39
Excess Construction Sales Tax	(\$30.31)	(\$54.08)
Total	\$285.94	\$257.98

Residential Fees per Unit				
Development Type	Persons per Housing Unit ¹	Proposed Fees	Current Fees	Difference
Single-Family	2.58	\$738	\$385	\$353
Multi-Family	1.58	\$452	\$235	\$217
Mobile Home	1.09	\$312	\$216	\$96

Nonresidential Fees per 1,000 Square Feet				
Development Type	AWVT per 1,000 Sq Ft ¹	Proposed Fees	Current Fees	Difference
Industrial	1.69	\$435	\$81	\$354
Warehouse	0.86	\$221	\$46	\$175
Retail/Commercial	10.18	\$2,626	\$427	\$2,199
Office	4.88	\$1,258	\$243	\$1,015
Public/Institutional	3.38	\$871	\$150	\$721

1. See Land Use Assumptions

POLICE FACILITIES DEVELOPMENT FEE REVENUE

Appendix A contains revenue forecasts required by Arizona's Enabling Legislation (ARS § 9-463.05(E)(7)). Projected fee revenue shown in Figure P17 is based on the development projections in the *Land Use Assumptions* document and the updated police facilities development fees. If development occurs faster than projected, the demand for infrastructure will increase along with development fee revenue. If development occurs slower than projected, the demand for infrastructure will decrease and development fee revenue will decrease at a similar rate. Projected development fee revenue over the next 15 years equals \$46,628,741, and projected expenditures equal \$57,692,190. The remaining balance represents existing development's share of planned costs for police facilities.

Figure P17: Police Facilities Development Fee Revenue

Fee Component	Growth Share		Existing Share	Total
	Years 1-10	Years 11-15		
Police Facilities	\$25,857,996	\$11,213,903	\$11,063,315	\$48,135,214
Police Facilities Land	\$815,678	\$0	\$0	\$815,678
Police Vehicles	\$5,406,712	\$0	\$0	\$5,406,712
Police Equipment	\$5,545,038	\$0	\$0	\$5,545,038
Development Fee Report	\$16,230	\$0	\$0	\$16,230
Excess Constr. Sales Tax	(\$2,226,682)	\$0	\$0	(\$2,226,682)
Total	\$35,414,972	\$11,213,903	\$11,063,315	\$57,692,190

		Single Family \$738 per unit	Multi-Family \$452 per unit	Mobile Home \$312 per unit	Industrial \$435 per 1,000 sq ft	Warehouse \$221 per 1,000 sq ft	Ret/Comm \$2,626 per 1,000 sq ft	Office \$1,258 per 1,000 sq ft	Public/Inst \$871 per 1,000 sq ft
Year		Hsg Unit	Hsg Unit	Hsg Unit	KSF	KSF	KSF	KSF	KSF
Base	2023	59,934	9,973	3,106	2,098	5,332	7,380	3,397	7,179
Year 1	2024	62,847	10,833	3,133	2,310	5,484	7,499	3,620	7,317
Year 2	2025	65,760	11,692	3,159	2,523	5,635	7,617	3,843	7,454
Year 3	2026	68,673	12,552	3,186	2,736	5,787	7,735	4,067	7,592
Year 4	2027	71,586	13,411	3,213	2,948	5,938	7,854	4,290	7,729
Year 5	2028	74,499	14,271	3,239	3,161	6,089	7,972	4,513	7,867
Year 6	2029	77,412	15,130	3,266	3,373	6,241	8,090	4,737	8,005
Year 7	2030	80,325	15,990	3,293	3,586	6,392	8,208	4,960	8,142
Year 8	2031	82,536	16,868	3,313	3,736	6,499	8,431	5,249	8,253
Year 9	2032	84,746	17,746	3,333	3,886	6,606	8,653	5,538	8,364
Year 10	2033	86,957	18,624	3,354	4,036	6,714	8,876	5,827	8,475
10-Year Increase		27,023	8,650	248	1,938	1,381	1,496	2,430	1,296
Projected Revenue		\$20,902,412	\$4,114,871	\$81,010	\$921,638	\$333,351	\$4,421,008	\$3,401,941	\$1,238,578

Projected Fee Revenue (Years 1-10)	\$35,414,808
Projected Fee Revenue (Years 11-15)	\$11,213,933
Total Expenditures	\$57,692,190

10-YEAR CAPITAL PLAN

The figure shown below includes potential police capital expenditures during the next 10 years. The list of potential capital expenditures is representational of future growth-related police capital expenditures.

Figure P18: Police Facilities Capital Plan

Project Type	Description	Fiscal Year	Cost
CIP	Police Substation	2025	\$24,121,799
CIP	Police Substation	2026-2028	\$28,850,000
CIP	Patrol Take Home Vehicles	2024	\$2,931,200
CIP	Armored Surveillance Van	2024	\$200,000
Debt Service	Public Safety Building (share)	2024	\$135,214
Study Cost	Development Fee Update	2024-2029	\$16,230
Total			\$56,254,443

STREET FACILITIES IIP

ARS § 9-463.05 (T)(7)(e) defines the eligible facilities and assets for the Street Facilities IIP:

“Street facilities located in the service area, including arterial or collector streets or roads that have been designated on an officially adopted plan of the municipality, traffic signals and rights-of-way and improvements thereon.”

The Street Facilities IIP includes components for major roadway improvements and the cost of preparing the Street Facilities IIP and related Development Fee Report. The plan-based methodology is used for major roadway improvements and the Development Fee Report.

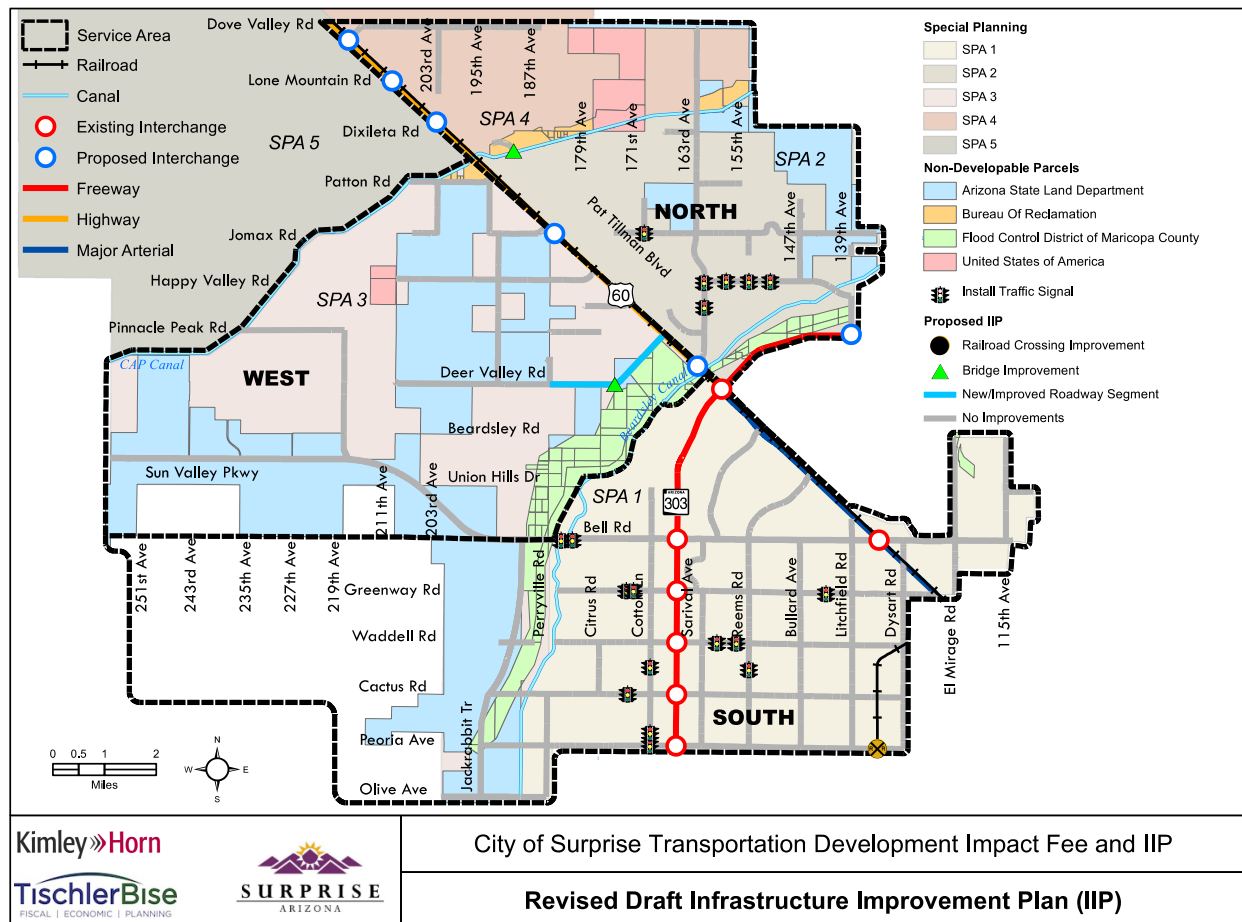
PROPORTIONATE SHARE

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. The Street Facilities IIP and development fees will allocate the cost of necessary public services between residential and nonresidential based on trip generation rates, trip adjustment factors, and trip lengths.

SERVICE AREA

As shown in Figure S1, there are three service areas for the Street Facilities IIP: south, north, and west.

Figure S1: Street Development Impact Fee Service Area



RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT

ARS § 9-463.05(E)(4) requires:

“A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial and industrial.”

Surprise will use an equivalent demand unit (EDU), based on vehicle miles traveled (VMT), as the demand unit for street facilities fees. Components used to determine VMT include average weekday vehicle trip generation rates, adjustments for commuting patterns and pass-by trips, and trip length weighting factors.

Residential Trip Generation Rates

For residential development, TischlerBise uses trip generation rates published in Trip Generation, Institute of Transportation Engineers, 11th Edition (2021). For single-family development, the proxy is Single Family Detached Housing (ITE 210), and this type of development generates 9.43 average weekday vehicle trip ends per unit. For multi-family development, the proxy is Multifamily Housing Low-Rise (ITE 220), and this type of development generates 6.74 average weekday vehicle trip ends per unit. For mobile home development, the proxy is Mobile Home Park (ITE 240), and this type of development generates 7.12 average weekday vehicle trip ends per unit.

Nonresidential Trip Generation Rates

For nonresidential development, TischlerBise uses trip generation rates published in Trip Generation, Institute of Transportation Engineers, 11th Edition (2021). The prototype for industrial development is Industrial Park (ITE 130) which generates 3.37 average weekday vehicle trip ends per 1,000 square feet of floor area. For warehouse development, the prototype is Warehousing (ITE 150), and it generates 1.71 average weekday vehicle trip ends per 1,000 square feet of floor area. The prototype for retail / commercial development is Shopping Center (ITE 820) which generates 37.01 average weekday vehicle trips per 1,000 square feet of floor area. For office development, the prototype is General Office (ITE 710), and it generates 10.84 average weekday vehicle trip ends per 1,000 square feet of floor area. The prototype for public / institutional development is Nursing Home (ITE 620), and it generates 6.75 average weekday vehicle trip ends per 1,000 square feet of floor area.

Trip Rate Adjustments

To calculate street facilities fees, trip generation rates require an adjustment factor to avoid double counting each trip at both the origin and destination points. Therefore, the basic trip adjustment factor is 50 percent. As discussed further in this section, the development fee methodology includes additional adjustments to make the fees proportionate to the infrastructure demand for particular types of development.

Commuter Trip Adjustment

Residential development has a larger trip adjustment factor of 64 percent to account for commuters leaving Surprise for work. According to the 2009 National Household Travel Survey (see Table 30) weekday work trips are typically 31 percent of production trips (i.e., all out-bound trips, which are 50 percent of all trip ends). As shown in Figure S2, the U.S. Census Bureau's OnTheMap web application indicates 90 percent of resident workers traveled outside of Surprise for work in 2019. In combination, these factors ($0.31 \times 0.50 \times 0.90 = 0.14$) support the additional 14 percent allocation of trips to residential development.

Figure S2: Commuter Trip Adjustment

Trip Adjustment Factor for Commuters	
Employed Residents	55,711
Residents Living and Working in Surprise	5,624
Residents Commuting Outside Surprise for Work	50,087
Percent Commuting out of Surprise	90%
Additional Production Trips ¹	14%
Residential Trip Adjustment Factor	64%

Source: U.S. Census Bureau, OnTheMap Application (version 6.8.1) and LEHD Origin-Destination Employment Statistics, 2019.

1. According to the National Household Travel Survey (2009)*, published in December 2011 (see Table 30), home-based work trips are typically 30.99 percent of "production" trips, in other words, out-bound trips (which are 50 percent of all trip ends). Also, LED OnTheMap data from 2019 indicate that 90 percent of Surprise's workers travel outside the city for work. In combination, these factors ($0.3099 \times 0.50 \times 0.90 = 0.139$) account for 14 percent of additional production trips. The total adjustment factor for residential includes attraction trips (50 percent of trip ends) plus the journey-to-work commuting adjustment (14 percent of production trips) for a total of 64 percent.

*<http://nhts.ornl.gov/publications.shtml> ; Summary of Travel Trends - Table "Daily Travel Statistics by Weekday vs. Weekend"

Adjustment for Pass-By Trips

Primary trips are defined as trips that are not pass-by trips. 100 percent of residential, industrial, warehouse, and public / institutional trips are assumed to be primary trips. For retail / commercial development and office development, the trip adjustment factor is less than 50 percent because these types of development attract vehicles as they pass by on arterial and collector roads. For example, when someone stops at a convenience store on the way home from work, the convenience store is not the primary destination. For the average shopping center, ITE data indicate 45 percent of the vehicles that enter are passing by on their way to some other primary destination. The remaining 55 percent of attraction trips have the retail / commercial site as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor is 55 percent multiplied by 50 percent, or approximately 28 percent of the trip ends. For office development, data published by Tindale-Oliver in the 2016 Hillsborough County Mobility Fee Study indicate 10 percent of the vehicles that enter are passing by on their way to some other primary destination. The remaining 90 percent of attraction trips have the office site as their primary destination. Because attraction trips are half of all trips, the trip adjustment factor is 90 percent multiplied by 50 percent, or approximately 45 percent of the trip ends.

Trip Length Weighting Factor

The development fee methodology includes a percentage adjustment, or weighting factor, to account for trip length variation by type of land use. As documented in Table 6a, Table 6b, and Table 6c of the 2017 National Household Travel Survey, the average trip length for all purposes equals 10.50 miles. Vehicle trips from residential development are approximately 117 percent of the average trip length. The residential trip length adjustment factor includes data on home-based work trips, social, and recreational purposes. Conversely, shopping trips associated with retail / commercial development are roughly 75 percent of the average trip length while other nonresidential development typically accounts for trips that are 73 percent of the average for all trips.

Equivalent Demand Units

The Street Facilities IIP and development fees use an equivalent demand unit (EDU) to compare demand between land uses. An EDU represents demand generated by an average single-family unit, and the EDUs shown below represent demand generated per development unit for each land use. The development unit for residential development is a dwelling unit, and the development unit for nonresidential development is 1,000 square feet of floor area (KSF). This analysis uses trip generation rates published in Trip Generation, Institute of Transportation Engineers, 11th Edition (2021).

Figure S3: Ratio of Service Unit to Development Unit

Land Use ¹	Development Unit ²	Trip Generation Calculations					Traffic Impact Calculations			EDU ⁷ Factor
		Total Daily Trip Rate (veh/day)	% Primary Trips ³	Trip End Split ⁴	Combined Trip Adj. Factor	Adjusted Daily Trip Rate (veh/day)	Average Trip Length Weighting Factor ⁵	Average Trip Length (miles) ⁵	Daily Travel Demand (VMT) ⁶	
Single-Family Detached (ITE LUC 210)	DWU	9.43	100%	64%	64%	6.04	117%	12.30	74.23	1.00
Multi-Family (ITE LUC 220)	DWU	6.74	100%	64%	64%	4.31	117%	12.30	53.06	0.71
Mobile Home (ITE LUC 240)	DWU	7.12	100%	64%	64%	4.56	117%	12.30	56.05	0.76
Industrial (ITE LUC 130)	KSF	3.37	100%	50%	50%	1.69	73%	7.70	12.97	0.17
Warehouse (ITE LUC 150)	KSF	1.71	100%	50%	50%	0.86	73%	7.70	6.58	0.09
Retail/Commercial (ITE LUC 820)	KSF	37.01	55%	50%	28%	10.18	75%	7.90	80.40	1.08
Office (ITE LUC 710)	KSF	10.84	90%	50%	45%	4.88	73%	7.70	37.56	0.51
Public/Institutional (ITE LUC 620)	KSF	6.75	100%	50%	50%	3.38	73%	7.70	25.99	0.35

1. ITE LUC stands for Institute of Transportation Engineers (ITE) *Trip Generation*, 11th Ed. Land Use Code (LUC). ITE is the source of the unadjusted trip generation rates used in this study.

2. Units of measure used for trip generation and impact fee calculations include "DWU" (Residential Dwelling Unit) and "KSF" (1,000 square feet).

3. % Primary Trips refers to the portion of trips that are not pass-by trips. 100% of residential, industrial, warehouse, and public/institutional trips are assumed to be primary trips. 55% of retail/commercial trips are assumed to be primary trips based on ITE Trip Generation Handbook, 3rd Ed. data indicating 45% pass-by traffic trips are typical during the PM peak hour. 90% of office trips are assumed to be primary trips based on detailed studies conducted as part of Tindale-Oliver 2016 Hillsborough County Mobility Fee Study.

4. Trip End is a term used to recognize that a single trip made from one land use to another is considered both an inbound trip generated by (i.e. attracted to) the land use defining the trip's termination point, and an outbound trip generated (i.e. produced) by the trip's origination point. These two trip ends only impact the travel route between them one time. To avoid double counting, it is necessary to discount those outbound/production trips that terminate internal to the service area. Production trips that terminate outside the service area should not be discounted, as they will not have been also recognized as an inbound trip for other development internal to the service area. Residential land uses account for >50% of trip ends because in Surprise, 90% of residents travel outside Surprise for work per the U.S. Census 2017 OnTheMap Inflow/Outflow Report. Work trips account for 31% of outbound trips per Table 30 in the FHWA 2017 National Household Travel Survey. Multiplying those two numbers by the 50% of trips that are outbound and then adding them to the 50% of trips that are inbound results in a total trip end split of 64% for residential land uses.

5. Average trip length value of 10.5 and trip length weighting factors were derived from Table 6b of the FHWA 2017 National Household Travel Survey.

6. VMT stands for vehicle miles traveled. One vehicle using one mile of road to complete a trip is equal to one vehicle-mile of demand.

7. EDU = Equivalent Demand Unit; the number of single-family residential DWU trips it would take to cause the same travel demand impact of a single development unit of any other type.

PROJECTED DEMAND FOR SERVICES AND COSTS

ARS § 9-463.05(E)(5) requires:

“The total number of projected service units necessitated by and attributable to new development in the service area based on the approved land use assumptions and calculated pursuant to generally accepted engineering and planning criteria.”

ARS § 9-463.05(E)(6) requires:

“The projected demand for necessary public services or facility expansions required by new service units for a period not to exceed ten years.”

The estimates and projections outlined in this section represent the EDUs used in the development of the Street Facilities IIP. To calculate EDUs, the analysis applies the EDU factors shown in Figure S3 to the development projections outlined in the *Land Use Assumptions* document.

Equivalent Demand Units

South Service Area

Existing development in the south service area represents 71,074 EDUs in the 2023 base year. Over the next 10 years, projected growth generates an additional 11,348 EDUs. In 2043, the anticipated ultimate buildout of the road network, projected development equals 86,959 EDUs.

Figure S4: Projected Equivalent Demand Units – South Service Area

South Equivalent Demand Units (EDU)				
Land Use	Existing (2023)	Growth (2023-2033)	Total (2033)	Ultimate (2043)
Single-Family Residential	49,777	4,841	54,618	56,743
Multi-Family Residential	6,844	4,184	11,028	11,514
Mobile Home	2,167	34	2,201	2,216
Industrial	345	307	652	879
Warehouse	475	116	591	677
Retail/Commercial	7,698	910	8,608	9,468
Office	1,582	831	2,413	3,109
Public/Institutional	2,186	125	2,311	2,353
Total, South	71,074	11,348	82,422	86,959

North Service Area

Existing development in the north service area represents 7,334 EDUs in the 2023 base year. Over the next 10 years, projected growth generates an additional 16,035 EDUs. In 2043, the anticipated ultimate buildout of the road network, projected development equals 37,233 EDUs.

Figure S5: Projected Equivalent Demand Units – North Service Area

North Equivalent Demand Units (EDU)				
Land Use	Existing (2023)	Growth (2023-2033)	Total (2033)	Ultimate (2043)
Single-Family Residential	6,489	13,189	19,678	31,423
Multi-Family Residential	209	1,824	2,033	2,307
Mobile Home	134	92	226	308
Industrial	11	18	29	45
Warehouse	4	7	11	17
Retail/Commercial	195	477	672	1,631
Office	76	267	343	936
Public/Institutional	216	161	377	566
Total, North	7,334	16,035	23,369	37,233

West Service Area

Existing development in the west service area represents 4,018 EDUs in the 2023 base year. Over the next 10 years, projected growth generates an additional 9,734 EDUs. In 2043, the anticipated ultimate buildout of the road network, projected development equals 23,215 EDUs.

Figure S6: Projected Equivalent Demand Units – West Service Area

West Equivalent Demand Units (EDU)				
Land Use	Existing (2023)	Growth (2023-2033)	Total (2033)	Ultimate (2043)
Single-Family Residential	3,668	8,993	12,661	20,896
Multi-Family Residential	28	134	162	390
Mobile Home	59	63	122	179
Industrial	0	4	4	17
Warehouse	0	2	2	7
Retail/Commercial	78	228	306	890
Office	74	142	216	400
Public/Institutional	111	168	279	436
Total, West	4,018	9,734	13,752	23,215

Proportionate Share

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. The analysis uses an equity calculation to ensure the level of service used to calculate development fees does not exceed the existing level of service. This involves comparing the proportional relationship between the existing, growth (10-year), and ultimate roadway capacities to the existing, growth (10-year), and ultimate EDUs. If the growth share of EDUs divided by the growth share of capacity equals a ratio of one, future development will pay its proportionate share of planned major roadway improvements. If the ratio is less than one, development fees must be adjusted to ensure future development does not pay more than its proportionate share of planned major roadway improvements. If the ratio is greater than one, additional major roadway improvements may be added to the Street Facilities IIP.

South Service Area

As shown below, the City of Surprise can construct up to 498,358 vehicle miles of capacity in the south service area without exceeding the 10-year share of EDUs. The Street Facilities IIP for the south service area will not exceed this amount.

Figure S7: Projected Demand and LOS C Capacity – South Service Area

South	LOS C Capacity (vehicle-miles)	LOS C Capacity % of Ultimate (2043)	EDUs	EDUs % of Ultimate (2043)	EDU % / Capacity % Ratio
Existing (2023) Major Roadways	1,908,248	50.0%	71,074	81.7%	1.64
10-Year IIP (2023-2033) Major Roadways	498,358	13.0%	11,348	13.0%	1.00
Ultimate (2043) Major Roadways	3,818,888	100.0%	86,959	100.0%	1.00

North Service Area

The City of Surprise can construct up to 1,340,856 vehicle miles of capacity in the north service area without exceeding the 10-year share of EDUs. The Street Facilities IIP for the north service area will not exceed this amount.

Figure S8: Projected Demand and LOS C Capacity – North Service Area

North	LOS C Capacity (vehicle-miles)	LOS C Capacity % of Ultimate (2043)	EDUs	EDUs % of Ultimate (2043)	EDU % / Capacity % Ratio
Existing (2023) Major Roadways	272,739	8.8%	7,334	19.7%	2.25
10-Year IIP (2023-2033) Major Roadways	1,340,856	43.1%	16,035	43.1%	1.00
Ultimate (2043) Major Roadways	3,113,446	100.0%	37,233	100.0%	1.00

West Service Area

As shown below, the City of Surprise can construct up to 1,264,331 vehicle miles of capacity in the west service area without exceeding the 10-year share of EDUs. The Street Facilities IIP for the west service area will not exceed this amount.

Figure S9: Projected Demand and LOS C Capacity – West Service Area

West	LOS C Capacity (vehicle-miles)	LOS C Capacity % of Ultimate (2043)	EDUs	EDUs % of Ultimate (2043)	EDU % / Capacity % Ratio
Existing (2023) Major Roadways	412,441	13.7%	4,018	17.3%	1.27
10-Year IIP (2023-2033) Major Roadways	1,264,331	41.9%	9,734	41.9%	1.00
Ultimate (2043) Major Roadways	3,015,353	100.0%	23,215	100.0%	1.00

Equity Evaluation

Once the City of Surprise determined the improvements to include in the Street Facilities IIP, the next step was to perform an equity check to confirm that the capacity added by the improvements was proportional to EDU growth. Figure S10 compares the maximum allowable IIP capacity increase to the Street Facilities IIP capacity increase. With the increase in capacity from the Street Facilities IIP being less than the maximum allowable IIP capacity, there is no need to adjust the Street Facilities IIP for excess capacity. Appendix F includes a detailed list of planned major roadway improvements, by service area, included in the Streets Facilities IIP.

Figure S10: Capacity Comparison

Service Area	Maximum Allowable IIP Increase in Vehicle- Miles of LOS C Capacity	IIP Segments Increase in Vehicle-Miles of LOS C Capacity
South	498,358	6,341
North	1,340,856	11,455
West	1,264,331	94,699
Total	3,103,545	112,494

Note: Priority increases in capacity exclude improvements that do not increase the number of through lanes

ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES

ARS § 9-463.05(E)(1) requires:

“A description of the existing necessary public services in the service area and the costs to upgrade, update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable.”

ARS § 9-463.05(E)(2) requires:

“An analysis of the total capacity, the level of current usage and commitments for usage of capacity of the existing necessary public services, which shall be prepared by qualified professionals licensed in this state, as applicable.”

Roadway Capacity

The City of Surprise General Plan 2035 outlines vehicle capacity by functional classification and identifies LOS C as the desired level of service for its road network. The Street Facilities IIP uses LOS C for roadways with medians and applies a five-percent reduction to LOS C for roadways with a two-way left-turn lane.

Figure S11: Roadway Capacity

Roadway Type	# of Travel Lanes	LOS A	LOS B	LOS C	LOS C w/ TWLTL*	LOS D	LOS E
Freeways	4	47,940	55,930	63,920	-	71,910	79,900
	6	73,980	86,310	98,640	-	110,970	123,300
	8	100,080	116,760	133,440	-	150,120	166,800
	10	126,180	147,210	168,240	-	189,270	210,300
Limited Access Parkway	4	29,280	34,160	39,040	-	43,920	48,800
	6	43,740	51,030	58,320	-	65,610	72,900
	8	57,960	67,620	77,280	-	86,940	96,600
Major Arterial	5	30,480	35,560	40,640	38,610	45,720	50,800
	6	36,480	42,560	48,640	46,210	54,720	60,800
Minor Arterial	3	12,960	15,120	17,280	16,420	19,440	21,600
	4	21,540	25,130	28,720	27,280	32,310	35,900
Major Collector	2	5,100	5,950	6,800	6,460	7,650	8,500
	3	8,520	9,940	11,360	10,790	12,780	14,200
	4	10,560	12,320	14,080	13,380	15,840	17,600
Minor Collector	2	3,360	3,920	4,480	-	5,040	5,600
Local Street	2	1,200	1,400	1,600	-	1,800	2,000

*Capacity reduction of 5% assumed for Major Collectors, Minor Arterials, and Major Arterials if road has two-way left-turn lane (TWLTL) instead of median per City of Surprise General Plan 2035, desired LOS level is LOS C

Major Roadway Network

Shown below in Figure S12, Kimley-Horn provided an inventory of existing and planned major roadway segments. The existing major roadway network consists of 134.78 centerline miles and 2,593,428 vehicle miles of capacity (VMC). The ultimate major roadway network will include 248.75 centerline miles and 9,947,687 VMC. See Appendix E for a detailed inventory.

Figure S12: Major Roadway Network

Service Area	Existing Major Street Network Centerline Length (miles)	Ultimate Major Street Network Centerline Length (miles)	Existing Vehicle-Miles of LOS C Capacity	Ultimate Vehicle-Miles of LOS C Capacity
South	79.64	95.37	1,908,248	3,818,888
North	25.82	79.79	272,739	3,113,446
West	29.32	73.59	412,441	3,015,353
Total	134.78	248.75	2,593,428	9,947,687

Major Roadway Construction Costs

Shown below, Figure S13 includes typical major roadway construction costs used in the Street Facilities IIP for one mile of minor arterial, major arterial, and parkway. State statutes regarding development fees indicate costs must be related to improvements needed to accommodate growth. For street facilities development fees, agencies typically interpret this to mean that any items related to increasing roadway capacity can be included. Items not related to roadway capacity, such as sidewalks, streetlights, storm drains, and contractor mobilization are usually excluded. Since right-of-way is often dedicated by developers, right-of-way costs are excluded from the development fee calculations. Figure S13 shows the proposed bid items, quantities, and unit costs for one mile of minor arterial (four lanes), major arterial (six lanes), and parkway (six lanes) included in the development fee calculations.

Some roadway segments have additional constraints or improvement needs beyond the typical major roadway sections. For example, relocating a large power pole or well, or constructing a large box culvert, increases the cost of an improvement project. These costs could be present on some of the roadway segments included in the Street Facilities IIP and will be added on top of the typical costs on a segment-by-segment basis depending on the needs of each segment. Appendix D includes a detailed breakdown of unit costs used in the Street Facilities IIP.

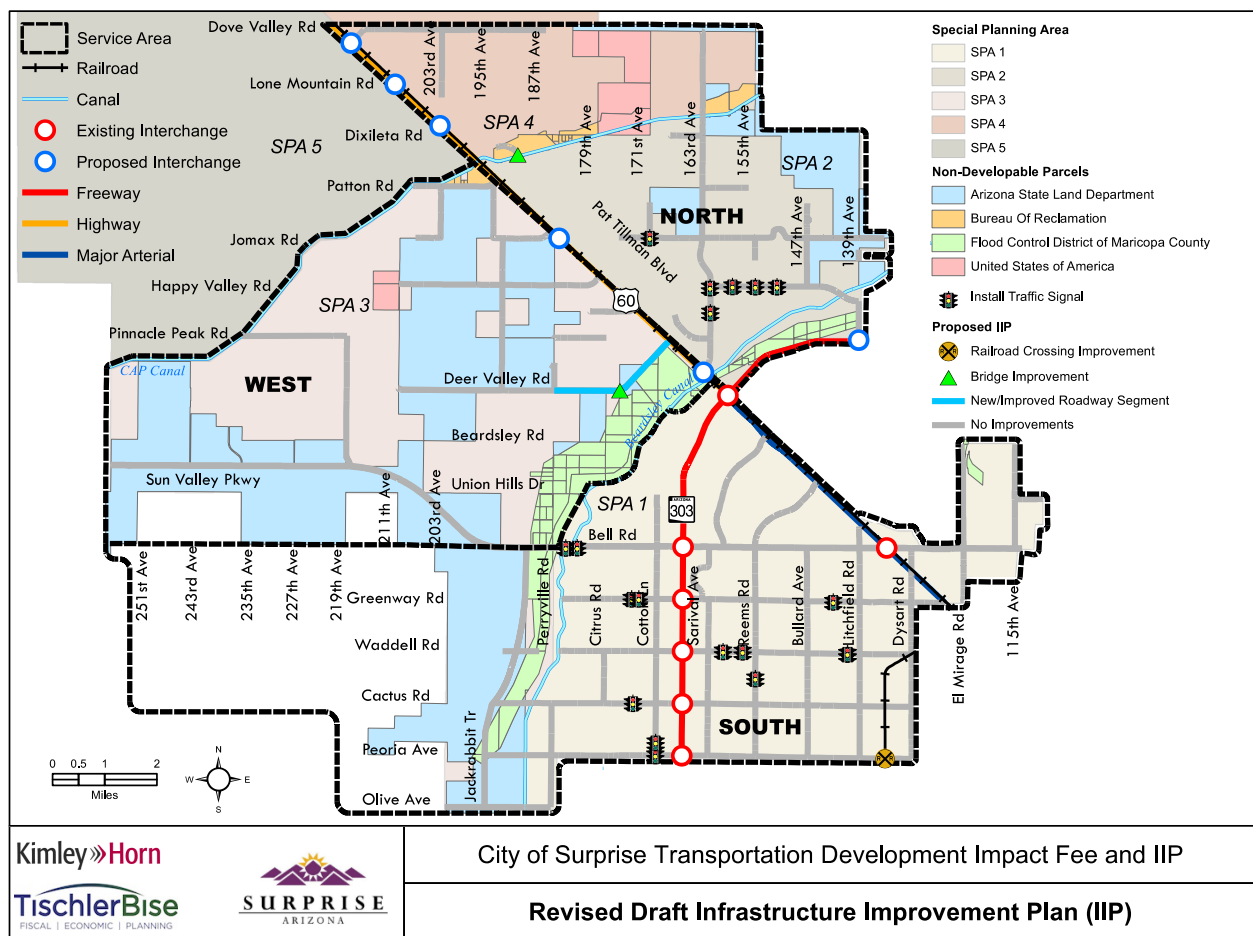
Figure S13: Roadway Construction Costs

Cross-Section Type		Capacity (veh/day)	Total Roadway Construction Cost (per mile)	IIP Costs Only Roadway Construction Cost (per mile)
Number of Lanes	Functional Classification			
4	Minor Arterial	28,720	\$20,553,361	\$7,129,093
6	Major Arterial	48,640	\$23,837,737	\$8,607,195
6	Parkway	58,320	\$30,995,772	\$10,345,954

Major Roadway Improvements – Plan-Based

The map in Figure S14 shows the planned major roadway improvements included in the Street Facilities IIP. The street facilities development fees use a plan-based methodology to allocate costs related to major roadway improvements to future development during the next 10 years. City staff identified major roadway improvements within the city limits that provide a regional benefit and were unlikely to be constructed by a developer through the City's half-street improvement requirements (e.g., canal and drainageway bridges, and at-grade railroad crossings). City staff also identified traffic signals needed to serve future development within the next 10 years. The traffic signal component of the street facilities development fees will replace the existing in-lieu fee for traffic signals. The Street Facilities IIP also includes improvements to the north half of Deer Valley Road between US 60 and 187th Avenue. Appendix F includes a detailed list of planned major roadway improvements, by service area, included in the Streets Facilities IIP.

Figure S14: Planned Major Roadway Improvements



The following figure provides the total construction cost of planned major roadway improvements included in the Street Facilities IIP. The costs shown in Figure S15 are based on the construction costs detailed in Appendix D and the planned improvements identified in Figure S14. Detailed descriptions and cost estimates for each major roadway improvement included in the Street Facilities IIP can be found in Appendix F.

Figure S15: Planned Major Roadway Improvements Costs

Street Segment			South IIP Scope of Improvements	Preliminary Estimate of IIP Roadway Construction Cost
Description	From	To		
Peoria Ave	Railroad Crossing	Railroad Crossing	widen at-grade railroad crossing to 4 lanes	\$5,086,552
Traffic Signals*			install traffic signals at 12 locations	\$11,007,000
Total, South				\$16,093,552

*See Appendix F for more detail

Street Segment			North IIP Scope of Improvements	Preliminary Estimate of IIP Roadway Construction Cost
Description	From	To		
Pat Tillman Blvd	CAP Canal	CAP Canal	6-lane bridge over CAP Canal	\$6,309,904
Traffic Signals*			install traffic signals at 6 locations	\$5,504,000
Total, North				\$11,813,904

*See Appendix F for more detail

Street Segment			West IIP Scope of Improvements	Preliminary Estimate of IIP Roadway Construction Cost
Description	From	To		
Deer Valley Rd	US 60 / Grand Ave	178th Ave	construct north half-street improvements (3 westbound lanes) with 4 culvert extensions	\$6,750,796
Deer Valley Rd	178th Ave	187th Ave	construct north half-street improvements (3 westbound lanes) with 3-lane bridge over wash and 1 culvert extension	\$17,985,943
Total, West				\$24,736,739

Development Fee Report – Plan-Based

The cost to prepare the Street Facilities IIP and related Development Fee Report totals \$228,950. Surprise plans to update its report every five years. Based on this cost, proportionate share, and five-year projections of new residential and nonresidential development from the *Land Use Assumptions* document, the cost is \$11.79 per EDU.

Figure S16: IIP and Development Fee Report

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Change	Cost per Service Unit
Street	\$228,950	All Development	100%	EDU	19,417	\$11.79

STREET FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

A revenue credit/offset is necessary for development fees, because Surprise's construction transaction privilege tax rate exceeds the amount of the transaction privilege tax rate imposed on the majority of other transaction privilege tax classifications. Appendix A contains the forecast of revenues required by Arizona's Enabling Legislation (ARS § 9-463.05(E)(7)).

South Service Area

Infrastructure components and cost factors for street facilities in the south service area are summarized in the upper portion of Figure S17. The cost per service unit for street facilities is \$1,208.30 per EDU.

Street facilities development fees for residential development are assessed according to the number of EDUs per housing unit. The fee of \$1,208 for a single-family unit is calculated using a cost per service unit of \$1,208.30 per EDU multiplied by a demand unit of 1.00 EDU per housing unit.

Street facilities development fees for nonresidential development are assessed according to the number of EDUs per 1,000 square feet. The fee of \$205 per 1,000 square feet of industrial development is derived from a cost per service unit of \$1,208.30 per EDU multiplied by a demand unit of 0.17 EDUs per 1,000 square feet.

Figure S17: Street Facilities Development Fees

Fee Component	Cost per EDU
Major Roadway Improvements	\$1,418.18
Development Fee Report	\$11.79
Excess Construction Sales Tax	(\$221.67)
Total	\$1,208.30

Residential Fees per Unit				
Development Type	EDU per Unit ¹	Proposed Fees	Current Fees	Difference
Single-Family	1.00	\$1,208	\$0	\$1,208
Multi-Family	0.71	\$858	\$0	\$858
Mobile Home	0.76	\$918	\$0	\$918

Nonresidential Fees per 1,000 Square Feet				
Development Type	EDU per 1,000 Sq Ft ¹	Proposed Fees	Current Fees	Difference
Industrial	0.17	\$205	\$0	\$205
Warehouse	0.09	\$109	\$0	\$109
Retail/Commercial	1.08	\$1,305	\$0	\$1,305
Office	0.51	\$616	\$0	\$616
Public/Institutional	0.35	\$423	\$0	\$423

1. See Land Use Assumptions

North Service Area

Infrastructure components and cost factors for street facilities in the north service area are summarized in the upper portion of Figure S18. The cost per service unit for street facilities is \$526.88 per EDU.

Street facilities development fees for residential development are assessed according to the number of EDUs per housing unit. The fee of \$527 for a single-family unit is calculated using a cost per service unit of \$526.88 per EDU multiplied by a demand unit of 1.00 EDU per housing unit.

Street facilities development fees for nonresidential development are assessed according to the number of EDUs per 1,000 square feet. The fee of \$90 per 1,000 square feet of industrial development is derived from a cost per service unit of \$526.88 per EDU multiplied by a demand unit of 0.17 EDUs per 1,000 square feet.

Figure S18: Street Facilities Development Fees

Fee Component	Cost per EDU
Major Roadway Improvements	\$736.76
Development Fee Report	\$11.79
Excess Construction Sales Tax	(\$221.67)
Total	\$526.88

Residential Fees per Unit				
Development Type	EDU per Unit ¹	Proposed Fees	Current Fees	Difference
Single-Family	1.00	\$527	\$0	\$527
Multi-Family	0.71	\$374	\$0	\$374
Mobile Home	0.76	\$400	\$0	\$400

Nonresidential Fees per 1,000 Square Feet				
Development Type	EDU per 1,000 Sq Ft ¹	Proposed Fees	Current Fees	Difference
Industrial	0.17	\$90	\$0	\$90
Warehouse	0.09	\$47	\$0	\$47
Retail/Commercial	1.08	\$569	\$0	\$569
Office	0.51	\$269	\$0	\$269
Public/Institutional	0.35	\$184	\$0	\$184

1. See Land Use Assumptions

West Service Area

Infrastructure components and cost factors for street facilities in the west service area are summarized in the upper portion of Figure S19. The cost per service unit for street facilities is \$2,331.39 per EDU.

Street facilities development fees for residential development are assessed according to the number of EDUs per housing unit. The fee of \$2,331 for a single-family unit is calculated using a cost per service unit of \$2,331.39 per EDU multiplied by a demand unit of 1.00 EDU per housing unit.

Street facilities development fees for nonresidential development are assessed according to the number of EDUs per 1,000 square feet. The fee of \$396 per 1,000 square feet of industrial development is derived from a cost per service unit of \$2,331.39 per EDU multiplied by a demand unit of 0.17 EDUs per 1,000 square feet.

Figure S19: Street Facilities Development Fees

Fee Component	Cost per EDU
Major Roadway Improvements	\$2,541.27
Development Fee Report	\$11.79
Excess Construction Sales Tax	(\$221.67)
Total	\$2,331.39

Residential Fees per Unit				
Development Type	EDU per Unit ¹	Proposed Fees	Current Fees	Difference
Single-Family	1.00	\$2,331	\$0	\$2,331
Multi-Family	0.71	\$1,655	\$0	\$1,655
Mobile Home	0.76	\$1,772	\$0	\$1,772

Nonresidential Fees per 1,000 Square Feet				
Development Type	EDU per 1,000 Sq Ft ¹	Proposed Fees	Current Fees	Difference
Industrial	0.17	\$396	\$0	\$396
Warehouse	0.09	\$210	\$0	\$210
Retail/Commercial	1.08	\$2,518	\$0	\$2,518
Office	0.51	\$1,189	\$0	\$1,189
Public/Institutional	0.35	\$816	\$0	\$816

1. See Land Use Assumptions

STREET FACILITIES DEVELOPMENT FEE REVENUE

Appendix A contains revenue forecasts required by Arizona's Enabling Legislation (ARS § 9-463.05(E)(7)).

South Service Area

Projected fee revenue shown in Figure S20 is based on the development projections in the *Land Use Assumptions* document and the updated street facilities development fees. If development occurs faster than projected, the demand for infrastructure will increase along with development fee revenue. If development occurs slower than projected, the demand for infrastructure will decrease and development fee revenue will decrease at a similar rate. Projected development fee revenue over the next 10 years equals \$14,762,275, and projected expenditures equal \$14,762,278.

Figure S20: Street Facilities Development Fee Revenue

Fee Component	Growth Share	Existing Share	Total
Major Roadway Improvements	\$16,093,552	\$0	\$16,093,552
Development Fee Report	\$74,792	\$0	\$74,792
Excess Construction Sales Tax	(\$1,406,065)		(\$1,406,065)
Total	\$14,762,278	\$0	\$14,762,278

		Single Family \$1,208 per unit	Multi-Family \$858 per unit	Mobile Home \$918 per unit	Industrial \$205 per 1,000 sq ft	Warehouse \$109 per 1,000 sq ft	Ret/Comm \$1,305 per 1,000 sq ft	Office \$616 per 1,000 sq ft	Public/Inst \$423 per 1,000 sq ft
Year		Hsg Unit	Hsg Unit	Hsg Unit	KSF	KSF	KSF	KSF	KSF
Base	2023	49,777	9,639	2,852	2,030	5,281	7,128	3,103	6,246
Year 1	2024	50,378	10,229	2,857	2,231	5,424	7,214	3,277	6,292
Year 2	2025	50,978	10,818	2,863	2,432	5,568	7,300	3,451	6,337
Year 3	2026	51,579	11,407	2,868	2,633	5,711	7,386	3,626	6,383
Year 4	2027	52,179	11,996	2,874	2,834	5,855	7,473	3,800	6,429
Year 5	2028	52,780	12,586	2,879	3,036	5,998	7,559	3,974	6,475
Year 6	2029	53,380	13,175	2,885	3,237	6,141	7,645	4,149	6,521
Year 7	2030	53,981	13,764	2,890	3,438	6,285	7,731	4,323	6,567
Year 8	2031	54,193	14,354	2,892	3,571	6,380	7,811	4,459	6,579
Year 9	2032	54,406	14,943	2,894	3,705	6,475	7,891	4,596	6,591
Year 10	2033	54,618	15,532	2,896	3,838	6,570	7,970	4,732	6,603
10-Year Increase		4,841	5,893	44	1,808	1,289	843	1,629	357
Projected Revenue		\$6,235,364	\$5,494,636	\$43,014	\$400,086	\$150,960	\$1,192,710	\$1,085,150	\$160,356

Projected Fee Revenue	\$14,762,275
Total Expenditures	\$14,762,278

North Service Area

Projected fee revenue shown in Figure S21 is based on the development projections in the *Land Use Assumptions* document and the updated street facilities development fees. If development occurs faster than projected, the demand for infrastructure will increase along with development fee revenue. If development occurs slower than projected, the demand for infrastructure will decrease and development fee revenue will decrease at a similar rate. Projected development fee revenue over the next 10 years equals \$10,102,293, and projected expenditures equal \$10,103,586.

Figure S21: Street Facilities Development Fee Revenue

Fee Component	Growth Share	Existing Share	Total
Major Roadway Improvements	\$11,813,904	\$0	\$11,813,904
Development Fee Report	\$96,087	\$0	\$96,087
Excess Construction Sales Tax	(\$1,806,405)		(\$1,806,405)
Total	\$10,103,586	\$0	\$10,103,586

		Single Family \$527 per unit	Multi-Family \$374 per unit	Mobile Home \$400 per unit	Industrial \$90 per 1,000 sq ft	Warehouse \$47 per 1,000 sq ft	Ret/Comm \$569 per 1,000 sq ft	Office \$269 per 1,000 sq ft	Public/Inst \$184 per 1,000 sq ft
Year		Hsg Unit	Hsg Unit	Hsg Unit	KSF	KSF	KSF	KSF	KSF
Base	2023	6,489	295	177	66	47	181	149	617
Year 1	2024	7,870	552	189	77	55	206	174	659
Year 2	2025	9,250	809	202	88	63	231	199	701
Year 3	2026	10,631	1,066	215	99	71	256	224	743
Year 4	2027	12,012	1,323	227	110	78	281	249	786
Year 5	2028	13,393	1,580	240	121	86	306	273	828
Year 6	2029	14,773	1,837	253	132	94	331	298	870
Year 7	2030	16,154	2,094	265	143	102	356	323	913
Year 8	2031	17,329	2,350	276	153	109	445	439	967
Year 9	2032	18,503	2,607	287	162	116	534	556	1,021
Year 10	2033	19,678	2,863	298	172	122	622	672	1,075
10-Year Increase		13,189	2,569	121	106	75	442	523	459
Projected Revenue		\$8,267,995	\$1,152,110	\$57,643	\$11,256	\$4,232	\$323,111	\$183,215	\$102,731

Projected Fee Revenue	\$10,102,293
Total Expenditures	\$10,103,586

West Service Area

Projected fee revenue shown in Figure S22 is based on the development projections in the *Land Use Assumptions* document and the updated street facilities development fees. If development occurs faster than projected, the demand for infrastructure will increase along with development fee revenue. If development occurs slower than projected, the demand for infrastructure will decrease and development fee revenue will decrease at a similar rate. Projected development fee revenue over the next 10 years equals \$23,699,389, and projected expenditures equal \$23,703,076.

Figure S22: Street Facilities Development Fee Revenue

Fee Component	Growth Share	Existing Share	Total
Major Roadway Improvements	\$24,736,739	\$0	\$24,736,739
Development Fee Report	\$58,072	\$0	\$58,072
Excess Construction Sales Tax	(\$1,091,735)		(\$1,091,735)
Total	\$23,703,076	\$0	\$23,703,076

		Single Family \$2,331 per unit	Multi-Family \$1,655 per unit	Mobile Home \$1,772 per unit	Industrial \$396 per 1,000 sq ft	Warehouse \$210 per 1,000 sq ft	Ret/Comm \$2,518 per 1,000 sq ft	Office \$1,189 per 1,000 sq ft	Public/Inst \$816 per 1,000 sq ft
Year		Hsg Unit	Hsg Unit	Hsg Unit	KSF	KSF	KSF	KSF	KSF
Base	2023	3,668	40	77	2	4	72	145	317
Year 1	2024	4,600	53	86	3	4	79	169	366
Year 2	2025	5,532	66	94	3	4	86	193	416
Year 3	2026	6,463	79	103	3	5	93	217	465
Year 4	2027	7,395	92	111	4	5	100	241	515
Year 5	2028	8,327	106	120	4	5	107	266	564
Year 6	2029	9,259	119	129	4	6	114	290	614
Year 7	2030	10,190	132	137	5	6	121	314	663
Year 8	2031	11,014	164	145	12	11	175	350	708
Year 9	2032	11,837	196	152	19	16	229	386	753
Year 10	2033	12,661	228	160	27	21	283	422	797
10-Year Increase		8,993	189	82	24	17	211	278	481
Projected Revenue		\$21,875,405	\$330,788	\$151,555	\$10,305	\$3,864	\$571,156	\$346,837	\$409,479

Projected Fee Revenue	\$23,699,389
Total Expenditures	\$23,703,076

10-YEAR CAPITAL PLAN

The figure shown below includes planned street capital expenditures during the next 10 years.

Figure S23: Street Facilities Capital Plan

Project Type	Description	Fiscal Year	Cost
CIP	Peoria Ave: Solar Canyon Way to 136th Ave (RR Crossing)	2024-2033	\$5,086,552
CIP	Cactus Road at Magnolia Drive	2024-2033	\$917,250
CIP	Greenway Road at 175th Avenue	2024-2033	\$917,250
CIP	Greenway Road at Verde Vista Drive	2024-2033	\$917,250
CIP	Sweetwater Avenue at Cotton Lane	2024-2033	\$917,250
CIP	Greenway Road at Civic Center Road	2024-2033	\$917,250
CIP	Peoria Avenue at Cotton Lane	2024-2033	\$917,250
CIP	Sweetwater Avenue at Reems Road	2024-2033	\$917,250
CIP	Waddell Road at 157th Avenue	2024-2033	\$917,250
CIP	Waddell Road at Legacy Park Way	2024-2033	\$917,250
CIP	Bell Road at 183rd Avenue	2024-2033	\$917,250
CIP	Bell Road at Bell Point Boulevard	2024-2033	\$917,250
CIP	Cotton Lane at 1/4 mile north of Peoria Ave	2024-2033	\$917,250
Study Cost	Development Fee Update	2024-2029	\$74,792
Subtotal, South			\$16,168,344
CIP	Pat Tillman Blvd: Asante Blvd to CAP Canal (Bridge)	2024-2033	\$3,154,952
CIP	Pat Tillman Blvd: CAP Canal to Dove Valley Rd (Bridge)	2024-2033	\$3,154,952
CIP	151st Avenue at Happy Valley Road	2024-2033	\$917,333
CIP	155th Avenue at Happy Valley Road	2024-2033	\$917,333
CIP	159th Avenue at Happy Valley Road	2024-2033	\$917,333
CIP	163rd Avenue at Asante Boulevard	2024-2033	\$917,333
CIP	163rd Avenue at Happy Valley Road	2024-2033	\$917,333
CIP	171st Avenue at Jomax Road	2024-2033	\$917,333
Study Cost	Development Fee Update	2024-2029	\$96,087
Subtotal, North			\$11,909,991
CIP	Deer Valley Rd: US 60/Grand Ave to 178th Ave	2024-2033	\$6,750,796
CIP	Deer Valley Rd: 178th Ave to 195th Ave	2024-2033	\$17,985,943
Study Cost	Development Fee Update	2024-2029	\$58,072
Subtotal, West			\$24,794,811
Total			\$52,873,145

WATER FACILITIES IIP

ARS § 9-463.05 (T)(7)(a) defines the eligible facilities and assets for the Water Facilities IIP:

“Water facilities, including the supply, transportation, treatment, purification and distribution of water, and any appurtenances for those facilities.”

The Water Facilities IIP includes components for wells, arsenic treatment, booster pump stations, storage tanks, water lines, land, and the cost of preparing the Water Facilities IIP and related Development Fee Report. SPA 1 uses a combined cost recovery and plan-based methodology. SPA 2 and SPA 3 use a plan-based methodology.

PROPORTIONATE SHARE

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. The Water Facilities IIP and development fees will allocate the cost of necessary public services between both residential and nonresidential development using max day demand factors.

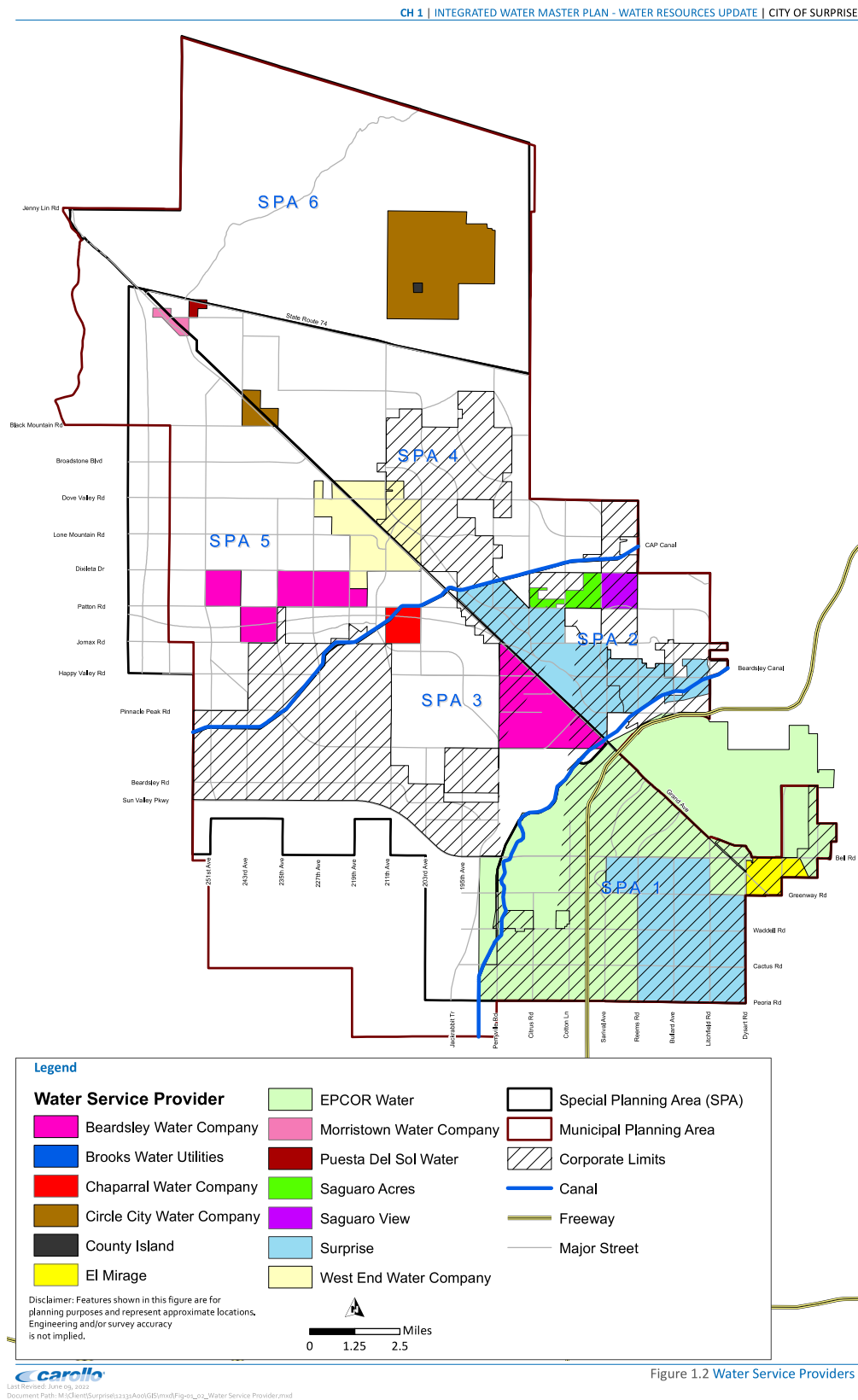
SERVICE AREA

As shown in Figure W1, the City’s Municipal Planning Area (MPA) is divided into six Special Planning Areas (SPAs). The SPAs are separated by major geographic barriers - Grand Avenue/BNSF Railroad line, the Beardsley Canal, the Central Arizona Project (CAP) Canal, and SR 74. The SPA borders form natural boundaries for the water service areas. Surprise will assess water facilities development fees in SPA 1, SPA 2, SPA 3, and SPA 4.

The City’s existing water facilities consist of three separate systems located in SPA 1, SPA 2, and SPA 3 with limited potential for interconnection. The existing service areas are acceptable for these facilities as they are defined as the incorporated area, or City utility service area, and may be expanded in the future within the respective SPAs. The water system relies on groundwater, which is pumped to the surface by wells. The wells are connected by transmission lines that convey the water to a water supply facility (WSF), where the water is treated, stored in tanks, and pumped into a system of pressurized distribution lines. The WSFs are interconnected within SPAs where practical to provide emergency backup. It is reasonable to use the SPAs as water service areas.

The City is not the only water provider in its planning area. In addition to individual developments that use on-site wells and do not connect to the City’s distribution system, there are also several private water providers.

Figure W1: Water Facilities Development Fee Service Area



RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT

ARS § 9-463.05(E)(4) requires:

“A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial and industrial.”

To calculate water and wastewater development fees, the demand associated with different types of customers must be expressed in a common unit of measurement called a service unit. The service unit for the City’s water and wastewater fees is an equivalent demand unit (EDU). An EDU is a single-family dwelling unit, or its equivalent in terms of water demand, defined as the potential demand resulting from a 0.75-inch diameter or smaller meter. According to the 2022 Water Resource Master Plan, average day demand from a single-family unit is 320 gallons. The analysis uses average day demand of 320 gallons per EDU.

The number of water service units associated with meters larger than 0.75 inches is determined by the capacity of the water meter relative to the capacity of a 0.75-inch meter. Figure W2 presents EDU multipliers for various meter sizes based on meter capacities from the American Water Works Association.

Figure W2: Ratio of Service Unit to Development Unit

Demand per Equivalent Demand Unit	
Development Type	Average Day Demand ¹
Single Family (EDU)	320

Demand per Equivalent Demand Unit		
Meter Size	Capacity Ratio ²	Average Day Demand
0.75-inch	1.00	320
1.00-inch	1.67	534
1.50-inch	3.33	1,066
2.00-inch	5.33	1,706
3.00-inch	10.67	3,414
4.00-inch	16.67	5,334
6.00-inch	33.33	10,666
8.00-inch	53.33	17,066

1. 2022 Water Resource Master Plan

2. AWWA Manual of Water Supply Practices M-1, 7th Edition

ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES

ARS § 9-463.05(E)(2) requires:

“An analysis of the total capacity, the level of current usage and commitments for usage of capacity of the existing necessary public services, which shall be prepared by qualified professionals licensed in this state, as applicable.”

Existing Demand

Using water demand factors from the 2022 Water Resource Master Plan, average day demand from Surprise water customers in 2023 is approximately 10.11 million gallons.

Figure W3: Existing Demand

Year	Average Day Demand (mgd)				Equivalent Demand Units (EDU)			
	SPA 1	SPA 2	SPA 3	Total	SPA 1	SPA 2	SPA 3	Total
Base 2023	7.51	1.93	0.67	10.11	23,469	6,037	2,080	31,586

Level of service (LOS) generally refers to the ratio of capacity to demand. One of the principles of development fee analysis is that future development should not be required to pay for a higher LOS than existing development currently receives. Consequently, it is important to determine the existing LOS.

For water facilities, the capacity of water production facilities is generally used as reflective of the capacity of the entire water system. However, some components of the system may have more capacity or less capacity than needed for full utilization of production facilities. The existing water system consists of wells, water supply facilities (WSFs) consisting of booster pump stations, storage tanks, and water treatment facilities serving a group of wells, transmission lines from wells to WSFs, distribution lines from WSFs to customers, and land for wells and WSFs.

Wells

Existing well production capacity is summarized in Figure W4. Total capacity of individual wells is shown in acre-feet per year (ac-ft/yr) and millions of gallons per day (MGD). The City’s design criteria indicate the capacity of a system of wells should be measured in terms of firm capacity (total capacity less the capacity of the largest well) to account for the eventuality that a well may be out of service. Firm capacity is determined at the level of the group of wells served by a water supply facility. Existing well firm capacity is 19.56 million gallons for SPA 1, 5.72 million gallons for SPA 2, and 2.45 million gallons for SPA 3.

Figure W4: Existing Well Firm Capacity

Description	Max Permitted Volume		Firm Capacity
	(ac-ft/yr)	(mgd)	
SPA 1			
Mountain Vista Ranch Water Supply Facility			
Mountain Vista Ranch 1	4,032	3.60	n/a
Mountain Vista Ranch 2	2,178	1.94	1.94
Subtotal, Mountain Vista Ranch WSF	6,210	5.54	1.94
Ashton Ranch Water Supply Facility			
Ashton Ranch 1	3,064	2.74	2.74
Orchards	4,816	4.30	n/a
Surprise Center	1,460	1.30	1.30
Royal Ranch	1,872	1.67	1.67
Sierra Verde	2,100	1.88	1.88
Subtotal, Ashton Ranch WSF	13,312	11.89	7.59
Roseview Water Supply Facility			
Roseview	839	0.75	n/a
Litchfield Manor	710	0.63	0.63
Subtotal, Roseview WSF	1,549	1.38	0.63
Rancho Gabriela Water Supply Facility			
Rancho Gabriela 1	1,290	1.15	1.15
Rancho Gabriela 2	971	0.87	0.87
Surprise Pointe	1,210	1.08	1.08
Summit	2,903	2.59	2.59
Marley Park 1	4,032	3.60	n/a
Marley Park 2	928	0.83	0.83
Marley Park 3	3,226	2.88	2.88
Subtotal, Rancho Gabriela WSF	14,560	13.00	9.40
Subtotal, SPA 1	35,631	31.81	19.56
SPA 2			
Desert Oasis Water Supply Facility			
Desert Oasis 1	1,258	1.12	1.12
Desert Oasis 2	1,291	1.15	1.15
Asante 1	1,935	1.73	n/a
Asante 4	1,435	1.28	1.28
Subtotal, Desert Oasis WSF	5,919	5.28	3.56
Rancho Mercado Water Supply Facility			
Rancho Mercado 1	2,421	2.16	2.16
Rancho Mercado 2	2,421	2.16	n/a
Subtotal, Rancho Mercado WSF	4,842	4.32	2.16
Subtotal, SPA 2	10,761	9.61	5.72
SPA 3			
West Deer Valley Water Supply Facility			
Buena Vista 1	2,870	2.56	n/a
Buena Vista 2	2,742	2.45	2.45
Subtotal, West Deer Valley WSF	5,612	5.01	2.45
Subtotal, SPA 3	5,612	5.01	2.45
Total	52,004	46.43	27.73

Source: 2022 Water Resource Master Plan, Table 4.1

Firm capacity deals with the reliability of the well system to produce water. That capacity must be adequate to accommodate periods of peak water demand. The City's water design criteria require firm capacity be adequate to accommodate max day demand (two times average day demand). The existing levels of service for wells in SPA 1, SPA 2, and SPA 3 are summarized in Figure W5. Each SPA has enough capacity to accommodate current max day demand.

Figure W5: Existing Well Level of Service

Existing Level of Service for Wells	SPA 1	SPA 2	SPA 3	Total
Average Day Demand (mgd), 2023	7.51	1.93	0.67	10.11
x Peaking Factor ¹	2.00	2.00	2.00	2.00
Max Day Demand (mgd), 2023	15.02	3.86	1.33	20.21
Long-Term Firm Capacity (mgd)	19.56	5.72	2.45	27.73
– Max Day Demand (mgd), 2023	(15.02)	(3.86)	(1.33)	(20.21)
Excess Capacity (mgd)	4.54	1.86	1.12	7.52
÷ Long-Term Firm Capacity (mgd)	19.56	5.72	2.45	27.73
Percent Excess Capacity	23.2%	32.5%	45.7%	27.1%

1. 2022 Water Resource Master Plan

Other System Components

SPA 1 is the service area with the most developed water system, while SPA 2 and SPA 3 have smaller systems. Figure W6 shows quantities for other system components of the existing water systems in the three SPAs (line costs per foot generally increase proportionally with the inches of pipe diameter, making inch-feet a reasonable summary unit for comparison). The quantities are then converted into quantities per MGD of well capacity. Arsenic treatment has been omitted from this analysis, because the need for treatment varies by location.

Figure W6: Existing Level of Service for Other System Components

Description	Unit	Existing Quantity			Quantity per Well MGD		
		SPA 1	SPA 2	SPA 3	SPA 1	SPA 2	SPA 3
Wells	mgd	19.56	5.72	2.45	1.00	1.00	1.00
Booster Pump Stations	mgd	43.78	21.60	4.87	2.24	3.78	1.99
Storage Tanks	mg	12.87	5.02	1.50	0.66	0.88	0.61
Water Lines	in.-ft (000s)	5,644	1,525	255	288.50	266.75	104.02
Land	acres	31.56	5.05	5.00	1.61	0.88	2.04

PROJECTED DEMAND FOR SERVICES AND COSTS

ARS § 9-463.05(E)(1) requires:

“A description of the existing necessary public services in the service area and the costs to upgrade, update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable.”

ARS § 9-463.05(E)(5) requires:

“The total number of projected service units necessitated by and attributable to new development in the service area based on the approved land use assumptions and calculated pursuant to generally accepted engineering and planning criteria.”

ARS § 9-463.05(E)(6) requires:

“The projected demand for necessary public services or facility expansions required by new service units for a period not to exceed ten years.”

Projected Demand

Shown below, Figure W7 includes projected average day demand over the next 10 years. The analysis uses projected average day water demand from the 2022 Water Resource Master Plan. Projected average day demand increases by approximately 7.17 million gallons over the next 10 years.

Figure W7: Projected Demand

Year	Average Day Demand (mgd)				Equivalent Demand Units (EDU)			
	SPA 1	SPA 2	SPA 3	Total	SPA 1	SPA 2	SPA 3	Total
Base 2023	7.51	1.93	0.67	10.11	23,469	6,037	2,080	31,586
1 2024	7.88	2.42	0.70	11.00	24,613	7,573	2,185	34,372
2 2025	8.24	2.92	0.73	11.89	25,757	9,110	2,291	37,158
3 2026	8.50	3.41	0.78	12.68	26,550	10,645	2,424	39,619
4 2027	8.75	3.90	0.82	13.47	27,344	12,181	2,556	42,081
5 2028	9.00	4.39	0.86	14.25	28,137	13,716	2,689	44,542
6 2029	9.26	4.88	0.90	15.04	28,931	15,251	2,822	47,004
7 2030	9.51	5.37	0.95	15.83	29,724	16,786	2,955	49,465
8 2031	9.56	5.63	1.12	16.31	29,879	17,604	3,487	50,970
9 2032	9.61	5.89	1.29	16.79	30,034	18,421	4,020	52,474
10 2033	9.66	6.16	1.46	17.27	30,188	19,239	4,552	53,979
10-Yr Increase	2.15	4.22	0.79	7.17	6,719	13,202	2,472	22,393

Shown below, Figure W8 shows the projected 2033 level of service for wells in each SPA. Based on projected max day demand and existing firm capacity, SPA 1 will have 0.24 million gallons of available capacity, SPA 2 will have a deficit of 6.59 million gallons, and SPA 3 will have a deficit of 0.46 million gallons.

Figure W8: Future Well Level of Service

Future Level of Service for Wells	SPA 1	SPA 2	SPA 3	Total
Average Day Demand (mgd), 2033	9.66	6.16	1.46	17.27
x Peaking Factor ¹	2.00	2.00	2.00	2.00
Max Day Demand (mgd), 2033	19.32	12.31	2.91	34.55
Long-Term Firm Capacity (mgd)	19.56	5.72	2.45	27.73
– Max Day Demand (mgd), 2033	(19.32)	(12.31)	(2.91)	(34.55)
Excess Capacity (mgd)	0.24	(6.59)	(0.46)	(6.82)
÷ Long-Term Firm Capacity (mgd)	19.56	5.72	2.45	27.73
Percent Excess Capacity	1.3%	-115.3%	-18.9%	-24.6%

1. 2022 Water Resource Master Plan

SPA 1 – Cost Recovery / Plan-Based

This analysis uses a hybrid cost recovery and plan-based methodology for SPA 1, because the existing system has some excess capacity available to serve new customers. Existing water facilities in SPA 1 are summarized below. Unit costs for the system components are based on a combination of estimates in the City's 2009 Water Master Plan, recent construction costs, and planned construction costs. Current system value is the product of existing quantity times the unit cost. The SPA 1 system value equals \$325,422,008.

Figure W9: SPA 1 Cost Factors

SPA 1				
Description	Unit	Existing	Unit Cost	System Value
Wells	each	16.00	\$6,000,000	\$96,000,000
Arsenic Treatment	mgd	20.01	\$2,777,778	\$55,583,333
Booster Pump Stations	mgd	43.78	\$1,049,383	\$45,941,975
Storage Tanks, < 2.5 mg	mg	9.37	\$2,333,333	\$21,863,333
Storage Tanks, 2.5 - < 4.0 mg	mg	3.50	\$2,053,058	\$7,185,703
Storage Tanks, 4.0 - < 7.5 mg	mg	0.00	\$1,586,123	\$0
Water Lines, 10"	linear ft	22,695	\$169	\$3,835,455
Water Lines, 12"	linear ft	217,035	\$202	\$43,841,070
Water Lines, 16"	linear ft	89,911	\$270	\$24,275,970
Water Lines, 20"	linear ft	39,032	\$392	\$15,300,544
Water Lines, 24"	linear ft	14,521	\$416	\$6,040,736
Water Lines, 30"	linear ft	8,178	\$516	\$4,219,848
Land	acres	31.56	\$42,270	\$1,334,041
Total				\$325,422,008

Source: Surprise Water Resource Management Department

SPA 2 – Plan-Based

This analysis uses a plan-based methodology for SPA 2, because the future system does not have enough excess capacity available to serve new customers. Existing water facilities in SPA 2 are summarized below. Unit costs for the system components are based on a combination of estimates in the City's 2009 Water Master Plan, recent construction costs, and planned construction costs. Current system value is the product of existing quantity times the unit cost. The SPA 2 system value equals \$120,324,940.

Figure W10: SPA 2 Cost Factors

SPA 2				
Description	Unit	Existing	Unit Cost	System Value
Wells	each	6.00	\$6,000,000	\$36,000,000
Arsenic Treatment	mgd	8.64	\$2,777,778	\$24,000,000
Booster Pump Stations	mgd	21.60	\$1,049,383	\$22,666,667
Storage Tanks, < 2.5 mg	mg	5.02	\$2,333,333	\$11,713,333
Storage Tanks, 2.5 - < 4.0 mg	mg	0	\$2,053,058	\$0
Storage Tanks, 4.0 - < 7.5 mg	mg	0	\$1,586,123	\$0
Water Lines, 10"	linear ft	2,644	\$169	\$446,836
Water Lines, 12"	linear ft	38,358	\$202	\$7,748,316
Water Lines, 16"	linear ft	63,934	\$270	\$17,262,180
Water Lines, 20"	linear ft	0	\$392	\$0
Water Lines, 24"	linear ft	659	\$416	\$274,144
Water Lines, 30"	linear ft	0	\$516	\$0
Land	acres	5.05	\$42,270	\$213,464
Total				\$120,324,940

Source: Surprise Water Resource Management Department

SPA 3 – Plan-Based

This analysis uses a plan-based methodology for SPA 3, because the future system does not have enough excess capacity available to serve new customers. Existing water facilities in SPA 3 are summarized below. Unit costs for the system components are based on a combination of estimates in the City's 2009 Water Master Plan, recent construction costs, and planned construction costs. Current system value is the product of existing quantity times the unit cost. The SPA 3 system value equals \$25,166,002.

Figure W11: SPA 3 Cost Factors

SPA 3				
Description	Unit	Existing	Unit Cost	System Value
Wells	each	2.00	\$6,000,000	\$12,000,000
Arsenic Treatment	mgd	0.00	\$2,777,778	\$0
Booster Pump Stations	mgd	4.87	\$1,049,383	\$5,110,494
Storage Tanks, < 2.5 mg	mg	1.50	\$2,333,333	\$3,500,000
Storage Tanks, 2.5 - < 4.0 mg	mg	0	\$2,053,058	\$0
Storage Tanks, 4.0 - < 7.5 mg	mg	0	\$1,586,123	\$0
Water Lines, 10"	linear ft	20	\$169	\$3,380
Water Lines, 12"	linear ft	108	\$202	\$21,816
Water Lines, 16"	linear ft	9,343	\$270	\$2,522,610
Water Lines, 20"	linear ft	0	\$392	\$0
Water Lines, 24"	linear ft	4,080	\$416	\$1,697,280
Water Lines, 30"	linear ft	192	\$516	\$99,072
Land	acres	5.00	\$42,270	\$211,350
Total				\$25,166,002

Source: Surprise Water Resource Management Department

Cost per Gallon

The cost per gallon is calculated as system value divided by well capacity. The cost is \$16.63 per gallon in SPA 1, \$21.04 per gallon in SPA 2, and \$10.28 per gallon in SPA 3.

Figure W12: Cost per Gallon

Description	System Value			Well Capacity (mgd)			Cost per Gallon		
	SPA 1	SPA 2	SPA 3	SPA 1	SPA 2	SPA 3	SPA 1	SPA 2	SPA 3
Wells	\$96,000,000	\$36,000,000	\$12,000,000	19.56	5.72	2.45	\$4.91	\$6.29	\$4.90
Arsenic Treatment	\$55,583,333	\$24,000,000	\$0	19.56	5.72	2.45	\$2.84	\$4.20	\$0.00
Booster Pump Stations	\$45,941,975	\$22,666,667	\$5,110,494	19.56	5.72	2.45	\$2.35	\$3.96	\$2.09
Storage Tanks	\$29,049,036	\$11,713,333	\$3,500,000	19.56	5.72	2.45	\$1.48	\$2.05	\$1.43
Water Lines	\$97,513,623	\$25,731,476	\$4,344,158	19.56	5.72	2.45	\$4.98	\$4.50	\$1.77
Land	\$1,334,041	\$213,464	\$211,350	19.56	5.72	2.45	\$0.07	\$0.04	\$0.09
Total	\$325,422,008	\$120,324,940	\$25,166,002	n/a	n/a	n/a	\$16.63	\$21.04	\$10.28

SPA 4 – Plan-Based

This analysis uses a plan-based methodology for SPA 4. Developers will construct WSFs and wells for Marisol Ranch and Sunhaven in SPA 4. The planned facilities will cost \$30,000,000 and provide 3.24 mgd of well capacity. The analysis uses a cost of \$9.26 per gallon (\$30,000,000 cost / 3.24 mgd) for SPA 4.

Figure W13: SPA 4 Cost Factors

Description	Cost	Well Capacity (mgd)	Cost per Gallon
Marisol Ranch WSF and Wells	\$15,000,000	1.62	\$9.26
Sunhaven WSF and Wells	\$15,000,000	1.62	\$9.26
Total	\$30,000,000	3.24	\$9.26

Source: Surprise Water Resource Management Department

Development Fee Report – Plan-Based

The cost to prepare the Water Facilities IIP and related Development Fee Report totals \$30,000. Surprise plans to update its report every five years. Based on this cost, proportionate share, and five-year projections in Figure W7, the cost is \$0.01 per gallon.

Figure W14: IIP and Development Fee Report

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Change	Cost per Service Unit
Water	\$30,000	All Development	100%	Avg Gallons	4,336,702	\$0.01

WATER FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

A revenue credit/offset is necessary for development fees, because Surprise’s construction transaction privilege tax rate exceeds the amount of the transaction privilege tax rate imposed on the majority of other transaction privilege tax classifications. Appendix A contains the forecast of revenues required by Arizona’s Enabling Legislation (ARS § 9-463.05(E)(7)).

SPA 1

The cost per service unit is \$13.41 per gallon for water facilities development fees in SPA 1, and Surprise will assess water facilities development fees by meter size. The base 0.75-inch meter is equivalent to a single-family unit, and a capacity ratio is used to convert the base meter fee proportionately for larger meters. The capacity ratios are calculated based on data published in *AWWA Manual of Water Supply Practices M-1, 7th Edition*.

The 0.75-inch fee (single-family fee) of \$4,291 is calculated using a cost per service unit of \$13.41 per gallon, multiplied by 320 average day gallons, multiplied by a capacity ratio of 1.00. For meters larger than 0.75 inches, the fee is calculated using a cost per service unit of \$13.41 per gallon, multiplied by 320 average day gallons, multiplied by the associated capacity ratio.

Figure W15: Water Facilities Development Fees

Fee Component	Cost per Gallon
Wells	\$4.91
Arsenic Treatment	\$2.84
Booster Pump Stations	\$2.35
Storage Tanks	\$1.48
Water Lines	\$4.98
Land	\$0.07
Development Fee Report	\$0.01
Excess Construction Sales Tax	(\$3.23)
Total	\$13.41

Development Type	Average Day Gallons
Single Family (EDU)	320

Fees per Meter				
Meter Size	Capacity Ratio ¹	Proposed Fees	Current Fees	Difference
0.75-inch	1.00	\$4,291	\$2,985	\$1,306
1.00-inch	1.67	\$7,166	\$4,985	\$2,181
1.50-inch	3.33	\$14,290	\$9,940	\$4,350
2.00-inch	5.33	\$22,872	\$15,910	\$6,962
3.00-inch	10.67	\$45,787	\$31,850	\$13,937
4.00-inch	16.67	\$71,534	\$49,760	\$21,774
6.00-inch	33.33	\$143,026	\$99,490	\$43,536
8.00-inch	53.33	\$228,850	\$159,190	\$69,660

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SPA 2

The cost per service unit is \$17.82 per gallon for water facilities development fees in SPA 2, and Surprise will assess water facilities development fees by meter size. The base 0.75-inch meter is equivalent to a single-family unit, and a capacity ratio is used to convert the base meter fee proportionately for larger meters. The capacity ratios are calculated based on data published in *AWWA Manual of Water Supply Practices M-1, 7th Edition*.

The 0.75-inch fee (single-family fee) of \$5,702 is calculated using a cost per service unit of \$17.82 per gallon, multiplied by 320 average day gallons, multiplied by a capacity ratio of 1.00. For meters larger than 0.75 inches, the fee is calculated using a cost per service unit of \$17.82 per gallon, multiplied by 320 average day gallons, multiplied by the associated capacity ratio.

Figure W16: Water Facilities Development Fees

Fee Component	Cost per Gallon
Wells	\$6.29
Arsenic Treatment	\$4.20
Booster Pump Stations	\$3.96
Storage Tanks	\$2.05
Water Lines	\$4.50
Land	\$0.04
Development Fee Report	\$0.01
Excess Construction Sales Tax	(\$3.23)
Total	\$17.82

Development Type	Average Day Gallons
Single Family (EDU)	320

Fees per Meter				
Meter Size	Capacity Ratio ¹	Proposed Fees	Current Fees	Difference
0.75-inch	1.00	\$5,702	\$2,836	\$2,866
1.00-inch	1.67	\$9,523	\$4,736	\$4,787
1.50-inch	3.33	\$18,989	\$9,444	\$9,545
2.00-inch	5.33	\$30,394	\$15,116	\$15,278
3.00-inch	10.67	\$60,845	\$30,260	\$30,585
4.00-inch	16.67	\$95,059	\$47,276	\$47,783
6.00-inch	33.33	\$190,061	\$94,524	\$95,537
8.00-inch	53.33	\$304,109	\$151,244	\$152,865

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SPA 3

The cost per service unit is \$7.06 per gallon for water facilities development fees in SPA 3, and Surprise will assess water facilities development fees by meter size. The base 0.75-inch meter is equivalent to a single-family unit, and a capacity ratio is used to convert the base meter fee proportionately for larger meters. The capacity ratios are calculated based on data published in *AWWA Manual of Water Supply Practices M-1, 7th Edition*.

The 0.75-inch fee (single-family fee) of \$2,259 is calculated using a cost per service unit of \$7.06 per gallon, multiplied by 320 average day gallons, multiplied by a capacity ratio of 1.00. For meters larger than 0.75 inches, the fee is calculated using a cost per service unit of \$7.06 per gallon, multiplied by 320 average day gallons, multiplied by the associated capacity ratio.

Figure W17: Water Facilities Development Fees

Fee Component	Cost per Gallon
Wells	\$4.90
Arsenic Treatment	\$0.00
Booster Pump Stations	\$2.09
Storage Tanks	\$1.43
Water Lines	\$1.77
Land	\$0.09
Development Fee Report	\$0.01
Excess Construction Sales Tax	(\$3.23)
Total	\$7.06

Development Type	Average Day Gallons
Single Family (EDU)	320

Fees per Meter				
Meter Size	Capacity Ratio ¹	Proposed Fees	Current Fees	Difference
0.75-inch	1.00	\$2,259	\$2,486	(\$227)
1.00-inch	1.67	\$3,773	\$4,152	(\$379)
1.50-inch	3.33	\$7,523	\$8,278	(\$755)
2.00-inch	5.33	\$12,042	\$13,250	(\$1,208)
3.00-inch	10.67	\$24,106	\$26,526	(\$2,420)
4.00-inch	16.67	\$37,661	\$41,442	(\$3,781)
6.00-inch	33.33	\$75,299	\$82,858	(\$7,559)
8.00-inch	53.33	\$120,483	\$132,578	(\$12,095)

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SPA 4

The cost per service unit is \$6.04 per gallon for water facilities development fees in SPA 4, and Surprise will assess water facilities development fees by meter size. The base 0.75-inch meter is equivalent to a single-family unit, and a capacity ratio is used to convert the base meter fee proportionately for larger meters. The capacity ratios are calculated based on data published in *AWWA Manual of Water Supply Practices M-1, 7th Edition*.

The 0.75-inch fee (single-family fee) of \$1,933 is calculated using a cost per service unit of \$6.04 per gallon, multiplied by 320 average day gallons, multiplied by a capacity ratio of 1.00. For meters larger than 0.75 inches, the fee is calculated using a cost per service unit of \$6.04 per gallon, multiplied by 320 average day gallons, multiplied by the associated capacity ratio.

Figure W18: Water Facilities Development Fees

Fee Component	Cost per Gallon
Planned WSFs and Wells	\$9.26
Development Fee Report	\$0.01
Excess Construction Sales Tax	(\$3.23)
Total	\$6.04

Development Type	Average Day Gallons
Single Family (EDU)	320

Fees per Meter				
Meter Size	Capacity Ratio ¹	Proposed Fees	Current Fees	Difference
0.75-inch	1.00	\$1,933	\$0	\$1,933
1.00-inch	1.67	\$3,228	\$0	\$3,228
1.50-inch	3.33	\$6,436	\$0	\$6,436
2.00-inch	5.33	\$10,302	\$0	\$10,302
3.00-inch	10.67	\$20,623	\$0	\$20,623
4.00-inch	16.67	\$32,220	\$0	\$32,220
6.00-inch	33.33	\$64,420	\$0	\$64,420
8.00-inch	53.33	\$103,076	\$0	\$103,076

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WATER FACILITIES DEVELOPMENT FEE REVENUE

Appendix A contains revenue forecasts required by Arizona’s Enabling Legislation (ARS § 9-463.05(E)(7)). Projected fee revenue shown in Figure W19 is based on EDU projections in Figure W7 and the updated water facilities development fees. If development occurs faster than projected, the demand for infrastructure will increase along with development fee revenue. If development occurs slower than projected, the demand for infrastructure will decrease and development fee revenue will decrease at a similar rate. Projected development fee revenue over the next 10 years equals \$30,943,093 in SPA 1, \$80,966,520 in SPA 2, and \$7,503,248 in SPA 3.

Figure W19: Water Facilities Development Fees Revenue

Fee Component	SPA 1	SPA 2	SPA 3
Water Facilities	\$35,758,253	\$88,886,555	\$8,131,475
Development Fee Report	\$10,335	\$16,999	\$1,348
Excess Construction Sales Tax	(\$4,825,495)	(\$7,937,034)	(\$629,575)
Total	\$30,943,093	\$80,966,520	\$7,503,248

		SPA 1 \$4,291 per EDU	SPA 2 \$5,702 per EDU	SPA 3 \$2,259 per EDU
Year		EDU	EDU	EDU
Base	2023	23,469	6,037	2,080
Year 1	2024	24,613	7,573	2,185
Year 2	2025	25,757	9,110	2,291
Year 3	2026	26,550	10,645	2,424
Year 4	2027	27,344	12,181	2,556
Year 5	2028	28,137	13,716	2,689
Year 6	2029	28,931	15,251	2,822
Year 7	2030	29,724	16,786	2,955
Year 8	2031	29,879	17,604	3,487
Year 9	2032	30,034	18,421	4,020
Year 10	2033	30,188	19,239	4,552
10-Year Increase		6,719	13,202	2,472
Projected Revenue		\$30,943,093	\$80,966,520	\$7,503,248

Projected Fee Revenue	\$119,412,861
Total Expenditures	\$119,412,861

10-YEAR CAPITAL PLAN

The figure shown below includes planned water capital expenditures during the next 10 years.

Figure W19: Water Facilities Capital Plan

Project Type	Description	Fiscal Year	Cost
CIP	SPA 1 Rancho Gabriela Agriculture Well	2030-2031	\$3,442,300
CIP	SPA 1 Rancho Gabriela Arsenic Expansion	2026-2028	\$2,895,000
Dev Agreement	Marley Park #3	2024-2033	\$2,500,000
Dev Agreement	WSF Expansion 2B	2024-2033	\$1,785,998
Dev Agreement	Well, WSF Expansion, Lines	2024-2033	\$1,824,840
Dev Agreement	Section 15 Arsenic	2024-2033	\$2,510,434
Study Cost	Development Fee Update	2024-2029	\$10,335
Subtotal, SPA 1			\$14,968,907
CIP	Rancho Mercado WSF Phase II	2026-2028	\$1,900,000
CIP	Rancho Mercado Well 3	2026-2027	\$4,621,000
CIP	Rancho Mercado Well 2	2024	\$3,000,000
CIP	Desert Oasis WSF (Arsenic / Tank capacity)	2024	\$2,523,100
Dev Agreement	Asante Wells 1-4	2024-2028	\$24,000,000
Dev Agreement	Zone 2A BPS and Arsenic Treatment	2026-2033	\$27,766,359
Dev Agreement	Desert Oasis WSF Phase I Reservoir Expansion	2026-2033	\$8,021,337
Dev Agreement	Zone 3A BPS and Arsenic Treatment	2026-2033	\$15,390,621
Dev Agreement	Desert Oasis WSF Phase II Reservoir Expansion	2026-2033	\$8,931,839
Study Cost	Development Fee Update	2024-2029	\$16,999
Subtotal, SPA 2			\$96,171,255
Dev Agreement	Surprise Foothills WSF and Wells	2024-2030	\$25,000,000
Study Cost	Development Fee Update	2024-2029	\$1,348
Subtotal, SPA 3			\$25,001,348
Dev Agreement	Sunhaven WSF and Wells	2027	\$15,000,000
Dev Agreement	Marisol Ranch WSF and Wells	2027	\$15,000,000
Study Cost	Development Fee Update	2024-2029	\$1,318
Subtotal, SPA 4			\$30,001,318
Total			\$166,142,828

WATER RESOURCE FACILITIES IIP

ARS § 9-463.05 (T)(7)(a) defines the eligible facilities and assets for the Water Facilities IIP:

“Water facilities, including the supply, transportation, treatment, purification and distribution of water, and any appurtenances for those facilities.”

The Water Resource Facilities IIP includes components for acquisition of water resources and the cost of preparing the Water Resource Facilities IIP and related Development Fee Report. The plan-based methodology is used for water resource and the Development Fee Report.

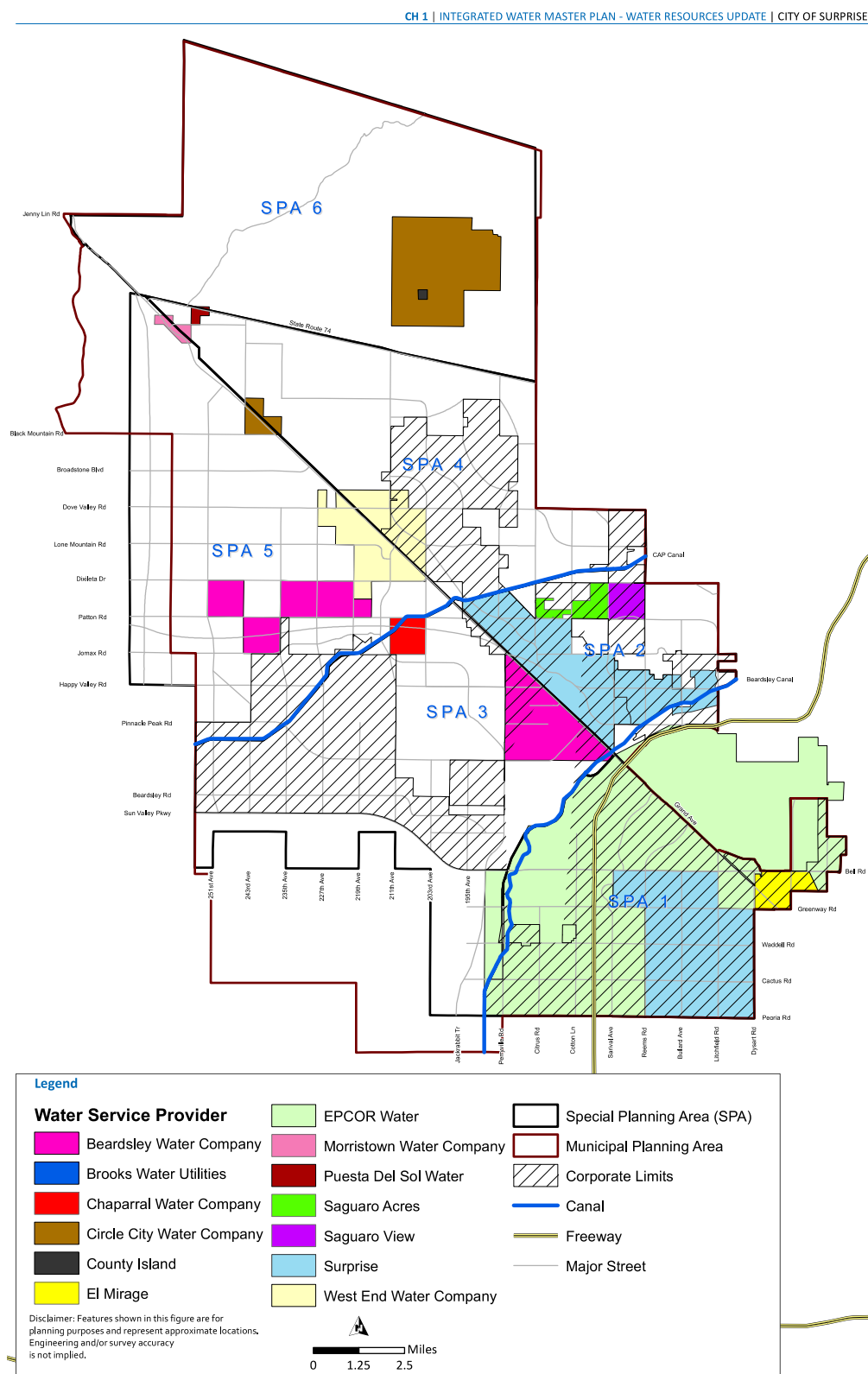
PROPORTIONATE SHARE

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. The Water Resource Facilities IIP and development fees will allocate the cost of necessary public services between both residential and nonresidential development using annual demand factors.

SERVICE AREA

The City of Surprise is an assured water service provider within its water service area, which is shown in Figure WR1. The City is allowed to treat and deliver no more than its total demonstrated 100-year supply. Because this requirement applies to the entire area served by the City water system, a single, citywide service area is appropriate for its Water Resource Facilities Development Fee.

Figure WR1: Water Resource Facilities Development Fee Service Area



RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT

ARS § 9-463.05(E)(4) requires:

“A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial and industrial.”

Future development places demand on the City’s available water resources. However, some of the water used by new customers is returned to the City in the form of wastewater influent flows to its water reclamation facilities (WRFs). Surprise plans to ultimately reclaim all treated effluent for either direct reuse, for recharge, or for long-term storage credits. Shown below in Figure WR2, the 2022 Water Resource Master Plan indicates 42 percent of water is returned in the form of wastewater influent, with the remainder used for irrigation or other uses. Surprise can reclaim or recharge 90 percent of its wastewater influent, which means 37.8 percent of water use can be reclaimed or recharged (42.0 percent water returned as wastewater influent X 90 percent efficiency factor = 37.8 percent reclaimed or recharged). The remaining 62.2 percent of water use that is not recoverable for reuse or recharge is used to determine the water resource demand of a new customer.

Figure WR2: Water Recovery Factor

Water Recovery Factor	
Water Returned as Wastewater Influent	42.0%
x Efficiency Factor (Influent / Effluent Ratio)	90.0%
Water Reclaimed / Recharged	37.8%
Water Not Reclaimed / Recharged	62.2%
Total Water Use	100.0%

Source: 2022 Water Resource Master Plan

To deliver water, Surprise must demonstrate sufficient 100-year renewable supply to accommodate existing demand and 10-year demand. Surprise currently has a demonstrated 100-year supply for current customers, as well as some excess capacity, but will need to dramatically expand its water resource portfolio in the future to accommodate future development. If growth is to pay for its share of water resources, future development will pay a development fee sufficient to acquire their own 100-year supply. However, the adopted Water Acquisition Policy states that “To ensure enough reserves are in place to meet present and future water demands ... the City will maintain a minimum balance ... equal to 15 years or 15 times the City’s service area net demand .”

As shown in Figure WR3, average day water resource demand is 199 gallons (320 average day gallons X 62.2 percent of water not reclaimed or recharged) per equivalent demand unit (EDU), and annual water resource demand is 72,635 gallons (199 average day gallons X 365 days) or 0.2229 acre-feet (72,635 gallons / 325,851 gallons per acre-foot). For a 15-year supply, long-term water resource demand is 3.3435 acre-feet per EDU (0.2229 acre-feet per year X 15 years).

Figure WR3: Long-Term Water Resource Demand per EDU

Water Resource Demand per EDU	
Average Day Demand (gallons)	320
x Percent of Water Not Reclaimed / Recharged	62.2%
Average Day Water Resource Demand (gallons)	199
x Days per Year	365
Annual Water Resource Demand (gallons)	72,635
÷ Gallons per Acre-Foot	325,851
Annual Water Resource Demand (acre-feet)	0.2229
x Years	15
Long-Term Water Resource Demand (acre-feet)	3.3435

Source: 2022 Water Resource Master Plan

Water resource development fees are assessed by meter size, and the analysis uses long-term water resource demand from single-family units equal to 3.3435 acre-feet as the demand factor for a 0.75-inch meter. For meters larger than 0.75 inches, long-term water resource demand is calculated by multiplying long-term water resource demand from existing single-family units by the capacity ratio for the corresponding meter size. Figure WR4 displays the demand indicators by meter size.

Figure WR4: Ratio of Service Unit to Development Unit

Demand per Unit	
Development Type	Long-Term Demand (AF)
Single Family (EDU)	3.3435

Demand per Meter		
Meter Size	Capacity Ratio ¹	Long-Term Demand (AF)
0.75-inch	1.00	3.3435
1.00-inch	1.67	5.5836
1.50-inch	3.33	11.1339
2.00-inch	5.33	17.8209
3.00-inch	10.67	35.6751
4.00-inch	16.67	55.7361
6.00-inch	33.33	111.4389
8.00-inch	53.33	178.3089

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ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES

ARS § 9-463.05(E)(2) requires:

“An analysis of the total capacity, the level of current usage and commitments for usage of capacity of the existing necessary public services, which shall be prepared by qualified professionals licensed in this state, as applicable.”

Existing Demand

Applying the water resource demand factor of 62.2 percent shown in Figure WR2 to annual water demand from the 2022 Water Resource Master Plan results in existing water resource demand of approximately 7,041 acre-feet per year.

Figure WR5: Existing Demand

Year	Annual Water Resource Demand (AFY)			
	SPA 1	SPA 2	SPA 3	Total
Base 2023	5,232	1,346	464	7,041

Source: TischlerBise calculation based on 62.2 percent of annual water demand

PROJECTED DEMAND FOR SERVICES AND COSTS

ARS § 9-463.05(E)(1) requires:

“A description of the existing necessary public services in the service area and the costs to upgrade, update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable.”

ARS § 9-463.05(E)(5) requires:

“The total number of projected service units necessitated by and attributable to new development in the service area based on the approved land use assumptions and calculated pursuant to generally accepted engineering and planning criteria.”

ARS § 9-463.05(E)(6) requires:

“The projected demand for necessary public services or facility expansions required by new service units for a period not to exceed ten years.”

Projected Demand

Figure WR6 includes projected annual water resource demand over the next 10 years. To project future annual water resource demand, the analysis applies the water resource demand factor of 62.2 percent shown in Figure WR2 to projected annual water demand projections from the 2022 Water Resource Master Plan. Projected demand increases by 4,992 acre-feet over the next 10 years.

Figure WR6: Projected Demand

Year	Annual Water Resource Demand (AFY)				Equivalent Demand Units (EDU)			
	SPA 1	SPA 2	SPA 3	Total	SPA 1	SPA 2	SPA 3	Total
Base 2023	5,232	1,346	464	7,041	23,471	6,037	2,080	31,588
1 2024	5,487	1,688	487	7,662	24,615	7,574	2,186	34,375
2 2025	5,742	2,031	511	8,283	25,759	9,111	2,291	37,161
3 2026	5,919	2,373	540	8,832	26,553	10,646	2,424	39,623
4 2027	6,095	2,715	570	9,381	27,346	12,182	2,557	42,084
5 2028	6,272	3,058	599	9,929	28,140	13,717	2,689	44,546
6 2029	6,449	3,400	629	10,478	28,933	15,252	2,822	47,008
7 2030	6,626	3,742	659	11,027	29,727	16,788	2,955	49,470
8 2031	6,661	3,924	777	11,362	29,882	17,605	3,488	50,974
9 2032	6,695	4,106	896	11,698	30,036	18,423	4,020	52,479
10 2033	6,730	4,289	1,015	12,033	30,191	19,240	4,552	53,984
10-Yr Increase	1,498	2,943	551	4,992	6,720	13,203	2,472	22,395

Source: TischlerBise calculation based on 62.2 percent of annual water demand

Water Resource – Plan-Based

The City of Surprise plans to acquire additional water resources to meet demand from future development. The average cost of recent and potential water resource acquisitions is \$1,091 per acre-foot. The analysis uses this cost as a proxy for future water resource acquisition costs.

Figure WR7: Water Resource Acquisition Costs

Description	Cost per Acre-Foot
Extinguishment Credits	\$315
Tribal Lease of LTSC	\$500
CAGR	\$850
Bartlett Dam Estimate	\$2,700
Average	\$1,091

Source: Surprise Water Resource Management Department

Development Fee Report – Plan-Based

The cost to prepare the Water Resource Facilities IIP and related Development Fee Report totals \$12,000. Surprise plans to update its report every five years. Based on this cost, proportionate share, and five-year projections of long-term annual water resource demand, the cost is \$0.28 per acre-foot.

Figure WR8: IIP and Development Fee Report

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Change	Cost per Service Unit
Water Resource	\$12,000	All Development	100%	Acre-Feet	43,325	\$0.28

WATER RESOURCE FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

A revenue credit/offset is necessary for development fees, because Surprise's construction transaction privilege tax rate exceeds the amount of the transaction privilege tax rate imposed on the majority of other transaction privilege tax classifications. Appendix A contains the forecast of revenues required by Arizona's Enabling Legislation (ARS § 9-463.05(E)(7)).

Water Resource Facilities Development Fees

The cost per service unit is \$861.44 per acre-foot for water resource facilities development fees, and Surprise will assess water resource facilities development fees by meter size. The base 0.75-inch meter is equivalent to a single-family unit, and a capacity ratio is used to convert the base meter fee proportionately for larger meters. The capacity ratios are calculated based on data published in *AWWA Manual of Water Supply Practices M-1, 7th Edition*.

The 0.75-inch fee (single-family fee) of \$2,880 is calculated using a cost per service unit of \$861.44 per acre-foot, multiplied by 3.3435 acre-feet, multiplied by a capacity ratio of 1.00. For meters larger than 0.75 inches, the fee is calculated using a cost per service unit of \$861.44 per acre-foot, multiplied by 3.3435 acre-feet, multiplied by the associated capacity ratio.

Figure WR9: Water Resource Facilities Development Fees

Fee Component	Cost per AF
Water Resource	\$1,091.00
Development Fee Report	\$0.28
Excess Construction Sales Tax	(\$229.84)
Total	\$861.44

Development Type	Long-Term Demand (AF)
Single Family (EDU)	3.3435

Fees per Meter				
Meter Size	Capacity Ratio ¹	Proposed Fees	Current Fees	Difference
0.75-inch	1.00	\$2,880	\$2,279	\$601
1.00-inch	1.67	\$4,810	\$3,806	\$1,004
1.50-inch	3.33	\$9,591	\$7,589	\$2,002
2.00-inch	5.33	\$15,352	\$12,147	\$3,205
3.00-inch	10.67	\$30,732	\$24,317	\$6,415
4.00-inch	16.67	\$48,013	\$37,991	\$10,022
6.00-inch	33.33	\$95,998	\$75,959	\$20,039
8.00-inch	53.33	\$153,602	\$121,539	\$32,063

1. AWWA Manual of Water Supply Practices M-1, 7th Edition

WATER RESOURCE FACILITIES DEVELOPMENT FEE REVENUE

Appendix A contains revenue forecasts required by Arizona's Enabling Legislation (ARS § 9-463.05(E)(7)). Projected fee revenue shown in Figure WR10 is based on EDU projections in Figure WR6 and the updated water resource facilities development fees. If development occurs faster than projected, the demand for infrastructure will increase along with development fee revenue. If development occurs slower than projected, the demand for infrastructure will decrease and development fee revenue will decrease at a similar rate. Projected development fee revenue over the next 10 years equals \$71,746,841, and projected expenditures equal \$71,747,432.

Figure WR10: Water Resource Facilities Development Fees Revenue

Fee Component	Growth Share	Existing Share	Total
Water Resource	\$81,692,823	\$0	\$81,692,823
Development Fee Report	\$12,000	\$0	\$12,000
Excess Construction Sales Tax	(\$9,957,391)	\$0	(\$9,957,391)
Total	\$71,747,432	\$0	\$71,747,432

		SPA 1 \$2,880 per EDU	SPA 2 \$2,880 per EDU	SPA 3 \$2,880 per EDU
Year		EDU	EDU	EDU
Base	2023	23,471	6,037	2,080
Year 1	2024	24,615	7,574	2,186
Year 2	2025	25,759	9,111	2,291
Year 3	2026	26,553	10,646	2,424
Year 4	2027	27,346	12,182	2,557
Year 5	2028	28,140	13,717	2,689
Year 6	2029	28,933	15,252	2,822
Year 7	2030	29,727	16,788	2,955
Year 8	2031	29,882	17,605	3,488
Year 9	2032	30,036	18,423	4,020
Year 10	2033	30,191	19,240	4,552
10-Year Increase		6,720	13,203	2,472
Projected Revenue		\$20,929,489	\$42,267,647	\$8,549,705

Projected Fee Revenue	\$71,746,841
Total Expenditures	\$71,747,432

10-YEAR CAPITAL PLAN

The figure shown below includes potential water resource capital expenditures during the next 10 years.

Figure WR11: Water Resource Facilities Capital Plan

Project Type	Description	Fiscal Year	Cost
CIP	Water Acquisitions	2024-2028	\$28,000,000
CIP	Circle City Water Acquisition (legal)	2024	\$575,000
CIP	Circle City Water Acquisition	2025-2029	\$15,000,000
Study Cost	Development Fee Update	2024-2029	\$12,000
Total			\$43,587,000

WASTEWATER FACILITIES IIP

ARS § 9-463.05 (T)(7)(b) defines the eligible facilities and assets for the Wastewater Facilities IIP:

“Wastewater facilities, including collection, interception, transportation, treatment and disposal of wastewater, and any appurtenances for those facilities.”

The Wastewater Facilities IIP includes components for water reclamation facilities (WRFs), land, wastewater lines, reclaimed lines, recharge basins, other wastewater improvements (lift stations, reclaimed booster stations, vadose zone wells, and monitoring wells), and the cost of preparing the Wastewater Facilities IIP and related Development Fee Report. SPA 1 uses a combined cost recovery and plan-based methodology, and the remaining SPA 2, SPA 3, SPA 4, and SPA 5 use a plan-based methodology.

PROPORTIONATE SHARE

ARS § 9-463.05 (B)(3) states that the development fee shall not exceed a proportionate share of the cost of necessary public services needed to accommodate new development. The Wastewater Facilities IIP and development fees will allocate the cost of necessary public services between both residential and nonresidential development using max day demand factors.

SERVICE AREA

As shown in Figure WW1, there are six service areas for the Wastewater Facilities IIP. The City’s Municipal Planning Area (MPA) is divided into six Special Planning Areas (SPAs). The SPAs are separated by major geographic barriers - Grand Avenue/BNSF Railroad line, the Beardsley Canal, the Central Arizona Project (CAP) Canal, and SR 74. The SPA borders form natural boundaries for the wastewater service areas. Surprise will assess wastewater facilities development fees in SPA 1, SPA 2, SPA 3, SPA 4, and SPA 5.

Surprise is the primary service provider for all its Municipal Planning Area (MPA), except for a small area that is served by EPCOR, a private utility. Surprise currently provides wastewater service to most of the developed areas of SPA 1, SPA 2, and SPA 3. Surprise entered into an annexation development agreement with a developer in SPA 2 and SPA 3, and the developer built a water reclamation facility. Based on the terms of the annexation development agreement, parties subject to the agreement will not pay development fees related to wastewater infrastructure. Although most future development within SPA 2 and SPA 3 is a party to the annexation development agreement, the analysis includes a wastewater development fee for future development within SPA 2 and SPA 3 that is not a party to the annexation development agreement.

SPA 4 and SPA 5 will be served by a common water reclamation facility, so the analysis uses the same wastewater development fee for future development in SPA 4 and SPA 5. The analysis does not include a wastewater development fee for SPA 6.

Figure WW1: Wastewater Facilities Development Fee Service Area

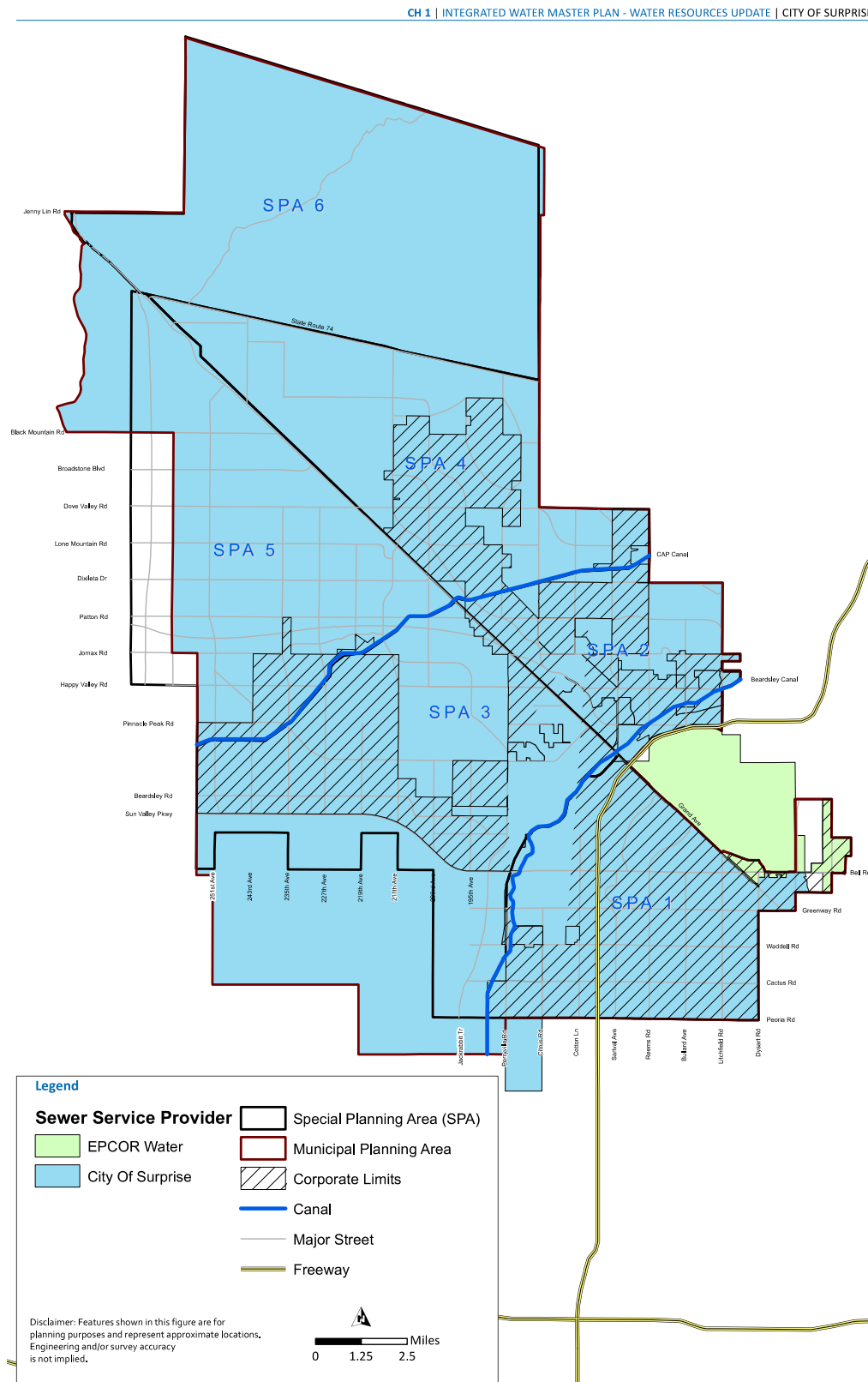


Figure 1.3 Sewer Service Providers

RATIO OF SERVICE UNIT TO DEVELOPMENT UNIT

ARS § 9-463.05(E)(4) requires:

“A table establishing the specific level or quantity of use, consumption, generation or discharge of a service unit for each category of necessary public services or facility expansions and an equivalency or conversion table establishing the ratio of a service unit to various types of land uses, including residential, commercial and industrial.”

To calculate water and wastewater development fees, the demand associated with different types of customers must be expressed in a common unit of measurement called a service unit. The service unit for the City’s water and wastewater fees is an equivalent demand unit (EDU). An EDU is a single-family dwelling unit, or its equivalent in terms of water demand, defined as the potential demand resulting from a 0.75-inch diameter or smaller meter.

The number of wastewater service units associated with meters larger than 0.75 inches is determined by the capacity of the meter relative to the capacity of a 0.75-inch meter. Figure WW2 presents EDU multipliers for various meter sizes based on meter capacities from the American Water Works Association. According to the 2022 Water Resource Master Plan, average day flow from a single-family unit is 210 gallons, so the analysis uses average day flow of 210 gallons per EDU.

Figure WW2: Ratio of Service Unit to Development Unit

Demand per Equivalent Demand Unit	
Development Type	Average Day Demand ¹
Single Family (EDU)	210

Demand per Equivalent Demand Unit		
Meter Size	Capacity Ratio ²	Average Day Demand
0.75-inch	1.00	210
1.00-inch	1.67	351
1.50-inch	3.33	699
2.00-inch	5.33	1,119
3.00-inch	10.67	2,241
4.00-inch	16.67	3,501
6.00-inch	33.33	6,999
8.00-inch	53.33	11,199

1. 2022 Water Resource Master Plan

2. AWWA Manual of Water Supply Practices M-1, 7th Edition

ANALYSIS OF CAPACITY, USAGE, AND COSTS OF EXISTING PUBLIC SERVICES

ARS § 9-463.05(E)(2) requires:

“An analysis of the total capacity, the level of current usage and commitments for usage of capacity of the existing necessary public services, which shall be prepared by qualified professionals licensed in this state, as applicable.”

Existing Flow

Using wastewater flow factors from the 2022 Water Resource Master Plan, average day flow from Surprise wastewater customers in 2023 is approximately 11.83 million gallons. Existing wastewater service units are estimated based on existing wastewater flow and the service unit multipliers described in the previous section of this report. As shown below, the City’s current wastewater customer base amounts to 56,332 service units (EDUs).

Figure WW3: Existing Flow

Year	Average Day Flow (mgd)				Service Units (EDUs)			
	SPA 1	SPA 2	SPA 3	Total	SPA 1	SPA 2	SPA 3	Total
Base 2023	10.54	0.77	0.52	11.83	50,201	3,674	2,458	56,332

Level of service (LOS) generally refers to the ratio of capacity to demand. One of the principles of development fee analysis is that future development should not be required to pay for a higher LOS than existing development currently receives. Consequently, it is important to determine the existing LOS.

The capacity of water reclamation facilities (WRFs) is generally reflective of the capacity of the entire wastewater system. However, other components of the system may have more capacity or less capacity than needed for full utilization of WRFs and will be evaluated separately. The capacities of the existing WRFs are summarized in Figure WW4.

Figure WW4: Existing Water Reclamation Facility Capacity

Description	Status	Total Capacity (mgd)
SPA 1		
Plant 1	Existing (Inactive)	0.8
Plant 2	Existing (Inactive)	2.7
Plant 3	Existing	4.8
Plant 4	Existing	4.0
Plant 5	Existing	4.0
Subtotal, SPA 1		16.3
SPA 2		
Plant 1	Existing	1.2
Plant 2	Existing	2.0
Subtotal, SPA 2		3.2
SPA 3		
Plant 1	Existing	1.8
Subtotal, SPA 3		1.8
Total		21.3

Source: 2022 Integrated Water Master Plan

The existing levels of service for WRFs in SPA 1, SPA 2, and SPA 3 are summarized in Figure WW5. Each SPA has enough capacity to accommodate current average day flow.

Figure WW5: Existing WRF Level of Service

Existing Level of Service for WRFs	SPA 1	SPA 2	SPA 3	Total
Existing Treatment Capacity (mgd)	16.30	3.20	1.80	21.30
- Average Day Influent Flow (mgd), 2023	(10.54)	(0.77)	(0.52)	(11.83)
Available Capacity (mgd)	5.76	2.43	1.28	9.47
Capacity Used, 2023	64.7%	24.1%	28.7%	55.5%

Other System Components

SPA 1 is the service area with the most developed wastewater system. Figure WW6 includes quantities for WRF and non-WRF components for SPA 1, SPA 2, and SPA 3. Line costs per foot generally increase proportionally with the inches in diameter of the pipe, making inch-feet a reasonable summary unit for comparison. The component quantities are then converted into quantities per MGD of WRF capacity.

In the existing SPA 2 system, WRF land, wastewater collection lines, and recharge basins are somewhat undersized for full utilization of existing WRF capacity, while reclaimed lines are oversized. In the existing SPA 3 system, reclaimed lines are somewhat undersized for full utilization of existing WRF capacity, while WRF land, wastewater collection lines, and recharge basins are oversized.

Figure WW6: Existing Level of Service for Other System Components

Description	Unit	Existing Quantity			Quantity per WRF MGD		
		SPA 1	SPA 2	SPA 3	SPA 1	SPA 2	SPA 3
WRFs	mgd	16.30	3.20	1.80	1.00	1.00	1.00
WRF land	acres	174.45	23.94	140.31	11	7	78
Wastewater Lines	1,000 in.-ft	8,593	1,209	1,182	527	378	657
Reclaimed Lines	1,000 in.-ft	1,808	476	0	111	149	0
Recharge Basins	acres	25.50	1.06	8.30	1.56	0.33	4.61

Source: Surprise Water Resource Management Department

PROJECTED DEMAND FOR SERVICES AND COSTS

ARS § 9-463.05(E)(1) requires:

“A description of the existing necessary public services in the service area and the costs to upgrade, update, improve, expand, correct or replace those necessary public services to meet existing needs and usage and stricter safety, efficiency, environmental or regulatory standards, which shall be prepared by qualified professionals licensed in this state, as applicable.”

ARS § 9-463.05(E)(5) requires:

“The total number of projected service units necessitated by and attributable to new development in the service area based on the approved land use assumptions and calculated pursuant to generally accepted engineering and planning criteria.”

ARS § 9-463.05(E)(6) requires:

“The projected demand for necessary public services or facility expansions required by new service units for a period not to exceed ten years.”

Projected Flow

Shown below, Figure WW7 includes projected average day flow over the next 10 years from the 2022 Water Resource Master Plan.

Figure WW7: Projected Flow

Year	Average Day Flow (mgd)				Service Units (EDUs)			
	SPA 1	SPA 2	SPA 3	Total	SPA 1	SPA 2	SPA 3	Total
Base 2023	10.54	0.77	0.52	11.83	50,201	3,674	2,458	56,332
1 2024	10.88	0.97	0.62	12.47	51,827	4,615	2,949	59,391
2 2025	11.23	1.17	0.72	13.11	53,454	5,557	3,440	62,450
3 2026	11.55	1.37	0.79	13.70	55,002	6,502	3,745	65,249
4 2027	11.88	1.56	0.85	14.29	56,551	7,447	4,050	68,047
5 2028	12.20	1.76	0.91	14.88	58,099	8,391	4,356	70,846
6 2029	12.53	1.96	0.98	15.47	59,648	9,336	4,661	73,644
7 2030	12.85	2.16	1.04	16.05	61,196	10,281	4,966	76,443
8 2031	12.96	2.26	1.12	16.35	61,729	10,775	5,352	77,856
9 2032	13.08	2.37	1.21	16.65	62,262	11,269	5,738	79,270
10 2033	13.19	2.47	1.29	16.94	62,796	11,763	6,124	80,683
10-Yr Increase	2.64	1.70	0.77	5.11	12,595	8,089	3,667	24,351

Surprise must begin planning and design of treatment capacity expansion when utilization reaches 80 percent of available capacity and must begin construction when utilization reaches 90 percent of available capacity. Shown below, Figure WW8 shows the projected 2033 level of service for WRFs in each SPA. Based on projected average day flow in 2033 and existing capacity, SPA 1 will exceed 80 percent capacity utilization (the 2022 Water Resource Master Plan identifies buildout demand of 15.8 MGD), SPA 2 will exceed 77 percent capacity utilization (80 percent capacity utilization in 2034), and SPA 3 will exceed 71 percent capacity utilization (80 percent capacity utilization in 2035).

Figure WW8: Future WRF Level of Service

Future Level of Service for WRFs	SPA 1	SPA 2	SPA 3	Total
Existing Treatment Capacity (mgd)	16.30	3.20	1.80	21.30
- Average Day Influent Flow (mgd), 2033	(13.19)	(2.47)	(1.29)	(16.94)
Available Capacity (mgd)	3.11	0.73	0.51	4.36
Capacity Used, 2033	80.9%	77.2%	71.4%	79.5%

SPA 1 – Cost Recovery / Plan-Based

This analysis uses a hybrid cost recovery and plan-based methodology for SPA 1, because the existing system has some excess capacity available to serve new customers. Existing wastewater facilities in SPA 1 are summarized below. Unit costs for the system components are based on a combination of estimates in the City's 2009 Water Master Plan, recent construction costs, and planned construction costs. Current system value is the product of existing quantity times the unit cost. The SPA 1 system value equals \$347,665,492.

Figure WW9: SPA 1 Cost Factors

SPA 1				
Description	Unit	Existing	Unit Cost	System Value
WRFs, 13<18 mgd	mgd	16.30	\$10,887,960	\$177,473,748
Lift Stations	mgd	4.70	\$1,116,979	\$5,249,801
WRF Land	acres	174.45	\$42,270	\$7,374,002
Wastewater Lines, 10"	linear ft	111,230	\$135	\$15,016,050
Wastewater Lines, 12"	linear ft	125,705	\$159	\$19,987,095
Wastewater Lines, 15"	linear ft	81,631	\$186	\$15,183,366
Wastewater Lines, 18"	linear ft	45,970	\$223	\$10,251,310
Wastewater Lines, 21"	linear ft	16,195	\$265	\$4,291,675
Wastewater Lines, 24"	linear ft	48,572	\$287	\$13,940,164
Wastewater Lines, 27"	linear ft	23,196	\$314	\$7,283,544
Wastewater Lines, 30"	linear ft	30,656	\$342	\$10,484,352
Wastewater Lines, 36"	linear ft	4,843	\$397	\$1,922,671
Wastewater Lines, 42"	linear ft	10,645	\$452	\$4,811,540
Wastewater Lines, 48"	linear ft	5,138	\$507	\$2,604,966
Reclaimed Lines, 10"	linear ft	550	\$169	\$92,950
Reclaimed Lines, 12"	linear ft	29,050	\$202	\$5,868,100
Reclaimed Lines, 16"	linear ft	21,600	\$270	\$5,832,000
Reclaimed Lines, 20"	linear ft	33,530	\$392	\$13,143,760
Reclaimed Lines, 24"	linear ft	6,180	\$416	\$2,570,880
Reclaimed Lines, 30"	linear ft	9,650	\$516	\$4,979,400
Reclaimed Booster Stations, 1-3	mgd	16.56	\$359,764	\$5,957,692
Vadose Zone Wells	each	20	\$350,000	\$7,000,000
Monitoring Well	each	2	\$495,713	\$991,426
Recharge Basins	acres	25.50	\$210,000	\$5,355,000
Total				\$347,665,492

Source: Surprise Water Resource Management Department

SPA 2 – Plan-Based

This analysis uses a plan-based methodology for SPA 2. Surprise entered into an annexation development agreement with a developer in SPA 2, and the developer built a water reclamation facility. Based on the terms of the annexation development agreement, parties subject to the agreement will not pay development fees related to wastewater infrastructure. Although most future development within SPA 2 is a party to the annexation development agreement, the analysis includes a wastewater development fee for future development within SPA 2 that is not a party to the annexation development agreement.

Existing wastewater facilities in SPA 2 are summarized below. Unit costs for the system components are based on a combination of estimates in the City's 2009 Water Master Plan, recent construction costs, and planned construction costs. Current system value is the product of existing quantity times the unit cost. The SPA 2 system value equals \$151,671,552.

Figure WW10: SPA 2 Cost Factors

SPA 2				
Description	Unit	Existing	Unit Cost	System Value
WRFs, <7 mgd	mgd	3.20	\$39,095,375	\$125,105,200
Lift Stations	mgd	0.00	\$1,116,979	\$0
WRF Land	acres	23.94	\$42,270	\$1,011,944
Wastewater Lines, 10"	linear ft	7,351	\$135	\$992,385
Wastewater Lines, 12"	linear ft	5,605	\$159	\$891,195
Wastewater Lines, 15"	linear ft	12,157	\$186	\$2,261,202
Wastewater Lines, 18"	linear ft	9,329	\$223	\$2,080,367
Wastewater Lines, 21"	linear ft	0	\$265	\$0
Wastewater Lines, 24"	linear ft	11,679	\$287	\$3,351,873
Wastewater Lines, 27"	linear ft	0	\$314	\$0
Wastewater Lines, 30"	linear ft	13,921	\$342	\$4,760,982
Wastewater Lines, 36"	linear ft	558	\$397	\$221,526
Wastewater Lines, 42"	linear ft	0	\$452	\$0
Wastewater Lines, 48"	linear ft	0	\$507	\$0
Reclaimed Lines, 10"	linear ft	0	\$169	\$0
Reclaimed Lines, 12"	linear ft	12,813	\$202	\$2,588,246
Reclaimed Lines, 16"	linear ft	20,158	\$270	\$5,442,606
Reclaimed Lines, 20"	linear ft	0	\$392	\$0
Reclaimed Lines, 24"	linear ft	0	\$416	\$0
Reclaimed Lines, 30"	linear ft	0	\$516	\$0
Reclaimed Booster Stations, 1-3	mgd	0.00	\$359,764	\$0
Vadose Zone Wells	each	5	\$350,000	\$1,750,000
Monitoring Well	each	2	\$495,713	\$991,426
Recharge Basins	acres	1.06	\$210,000	\$222,600
Total				\$151,671,552

Source: Surprise Water Resource Management Department

SPA 3 – Plan-Based

This analysis uses a plan-based methodology for SPA 3. Surprise entered into an annexation development agreement with a developer in SPA 3, and the developer built a water reclamation facility. Based on the terms of the annexation development agreement, parties subject to the agreement will not pay development fees related to wastewater infrastructure. Although most future development within SPA 3 is a party to the annexation development agreement, the analysis includes a wastewater development fee for future development within SPA 3 that is not a party to the annexation development agreement.

Existing wastewater facilities in SPA 3 are summarized below. Unit costs for the system components are based on a combination of estimates in the City's 2009 Water Master Plan, recent construction costs, and planned construction costs. Current system value is the product of existing quantity times the unit cost. The SPA 3 system value equals \$91,600,604.

Figure WW11: SPA 3 Cost Factors

SPA 3				
Description	Unit	Existing	Unit Cost	System Value
WRFs, <7 mgd	mgd	1.80	\$39,095,375	\$70,371,675
Lift Stations	mgd	0.00	\$1,116,979	\$0
WRF Land	acres	140.31	\$42,270	\$5,930,904
Wastewater Lines, 10"	linear ft	50	\$135	\$6,683
Wastewater Lines, 12"	linear ft	4,009	\$159	\$637,431
Wastewater Lines, 15"	linear ft	8,347	\$186	\$1,552,542
Wastewater Lines, 18"	linear ft	0	\$223	\$0
Wastewater Lines, 21"	linear ft	0	\$265	\$0
Wastewater Lines, 24"	linear ft	2,644	\$287	\$758,828
Wastewater Lines, 27"	linear ft	0	\$314	\$0
Wastewater Lines, 30"	linear ft	15,875	\$342	\$5,429,250
Wastewater Lines, 36"	linear ft	12,987	\$397	\$5,155,839
Wastewater Lines, 42"	linear ft	23	\$452	\$10,396
Wastewater Lines, 48"	linear ft	8	\$507	\$4,056
Reclaimed Lines, 10"	linear ft	0	\$169	\$0
Reclaimed Lines, 12"	linear ft	0	\$202	\$0
Reclaimed Lines, 16"	linear ft	0	\$270	\$0
Reclaimed Lines, 20"	linear ft	0	\$392	\$0
Reclaimed Lines, 24"	linear ft	0	\$416	\$0
Reclaimed Lines, 30"	linear ft	0	\$516	\$0
Reclaimed Booster Stations, 1-3	mgd	0.00	\$359,764	\$0
Vadose Zone Wells	each	0	\$350,000	\$0
Monitoring Well	each	0	\$495,713	\$0
Recharge Basins	acres	8.30	\$210,000	\$1,743,000
Total				\$91,600,604

Source: Surprise Water Resource Management Department

SPA 4 / SPA 5 – Plan-Based

This analysis uses a plan-based methodology for SPA 4 and SPA 5. Surprise plans to construct a combined WRF for SPA 4 and SPA 5. The planned facility will cost \$17,500,000 and provide 0.40 mgd of treatment capacity. The analysis uses a cost of \$43.75 per gallon (\$17,500,000 cost / 0.40 mgd) for SPA 4 and SPA 5.

Figure WW12: SPA 4 / SPA 5 Cost Factors

Description	Cost	WRF Capacity (mgd)	Cost per Gallon
SPA 4/5 Combined WRF	\$17,500,000	0.40	\$43.75

Source: Surprise Water Resource Management Department

Cost per Gallon

The cost per gallon is calculated as system value divided by WRF capacity. The cost is \$21.33 per gallon in SPA 1, \$47.41 per gallon in SPA 2, and \$50.89 per gallon in SPA 3.

Figure WW13: Cost per Gallon

Description	System Value			WRF Capacity (mgd)			Cost per Gallon		
	SPA 1	SPA 2	SPA 3	SPA 1	SPA 2	SPA 3	SPA 1	SPA 2	SPA 3
WRFs	\$177,473,748	\$125,105,200	\$70,371,675	16.30	3.20	1.80	\$10.89	\$39.10	\$39.10
WRF land	\$7,374,002	\$1,011,944	\$5,930,904	16.30	3.20	1.80	\$0.45	\$0.32	\$3.29
Wastewater Lines	\$105,776,733	\$14,559,530	\$13,555,025	16.30	3.20	1.80	\$6.49	\$4.55	\$7.53
Reclaimed Lines	\$32,487,090	\$8,030,852	\$0	16.30	3.20	1.80	\$1.99	\$2.51	\$0.00
Recharge Basins	\$5,355,000	\$222,600	\$1,743,000	16.30	3.20	1.80	\$0.33	\$0.07	\$0.97
Other*	\$19,198,919	\$2,741,426	\$0	16.30	3.20	1.80	\$1.18	\$0.86	\$0.00
Total	\$347,665,492	\$151,671,552	\$91,600,604	n/a	n/a	n/a	\$21.33	\$47.41	\$50.89

*Includes lift stations, reclaimed booster stations, and vadose zone/monitoring wells.

Source: WRF capacity used for all components; cost per gallon is system value divided by capacity.

Development Fee Report – Plan-Based

The cost to prepare the Wastewater Facilities IIP and related Development Fee Report totals \$30,000. Surprise plans to update its report every five years. Based on this cost, proportionate share, and five-year projections in Figure WW7, the cost is \$0.01 per gallon.

Figure WW14: IIP and Development Fee Report

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Change	Cost per Service Unit
Wastewater	\$30,000	All Development	100%	Avg Gallons	3,277,750	\$0.01

WASTEWATER FACILITIES DEVELOPMENT FEES

Revenue Credit/Offset

A revenue credit/offset is necessary for development fees, because Surprise's construction transaction privilege tax rate exceeds the amount of the transaction privilege tax rate imposed on the majority of other transaction privilege tax classifications. Appendix A contains the forecast of revenues required by Arizona's Enabling Legislation (ARS § 9-463.05(E)(7)).

SPA 1

The cost per service unit is \$14.37 per gallon for wastewater facilities development fees in SPA 1, and Surprise will assess wastewater facilities development fees by meter size. The base 0.75-inch meter is equivalent to a single-family unit, and a capacity ratio is used to convert the base meter fee proportionately for larger meters. The capacity ratios are calculated based on data published in *AWWA Manual of Water Supply Practices M-1, 7th Edition*.

The 0.75-inch fee (single-family fee) of \$3,018 is calculated using a cost per service unit of \$14.37 per gallon, multiplied by 210 average day gallons, multiplied by a capacity ratio of 1.00. For meters larger than 0.75 inches, the fee is calculated using a cost per service unit of \$14.37 per gallon, multiplied by 210 average day gallons, multiplied by the associated capacity ratio.

Figure WW15: Wastewater Facilities Development Fees

Fee Component	Cost per Gallon
WRFs	\$10.89
WRF land	\$0.45
Wastewater Lines	\$6.49
Reclaimed Lines	\$1.99
Recharge Basins	\$0.33
Other	\$1.18
Development Fee Report	\$0.01
Excess Construction Sales Tax	(\$6.97)
Total	\$14.37

Development Type	Average Day Gallons
Single Family (EDU)	210

Fees per Meter				
Meter Size	Capacity Ratio ¹	Proposed Fees	Current Fees	Difference
0.75-inch	1.00	\$3,018	\$2,192	\$826
1.00-inch	1.67	\$5,040	\$3,661	\$1,379
1.50-inch	3.33	\$10,049	\$7,299	\$2,750
2.00-inch	5.33	\$16,084	\$11,683	\$4,401
3.00-inch	10.67	\$32,199	\$23,389	\$8,810
4.00-inch	16.67	\$50,305	\$36,541	\$13,764
6.00-inch	33.33	\$100,580	\$73,059	\$27,521
8.00-inch	53.33	\$160,934	\$116,899	\$44,035

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SPA 2

The cost per service unit is \$40.45 per gallon for wastewater facilities development fees in SPA 2, and Surprise will assess wastewater facilities development fees by meter size. The base 0.75-inch meter is equivalent to a single-family unit, and a capacity ratio is used to convert the base meter fee proportionately for larger meters. The capacity ratios are calculated based on data published in *AWWA Manual of Water Supply Practices M-1, 7th Edition*.

The 0.75-inch fee (single-family fee) of \$8,495 is calculated using a cost per service unit of \$40.45 per gallon, multiplied by 210 average day gallons, multiplied by a capacity ratio of 1.00. For meters larger than 0.75 inches, the fee is calculated using a cost per service unit of \$40.45 per gallon, multiplied by 210 average day gallons, multiplied by the associated capacity ratio.

Figure WW16: Wastewater Facilities Development Fees

Fee Component	Cost per Gallon
WRFs	\$39.10
WRF land	\$0.32
Wastewater Lines	\$4.55
Reclaimed Lines	\$2.51
Recharge Basins	\$0.07
Other	\$0.86
Development Fee Report	\$0.01
Excess Construction Sales Tax	(\$6.97)
Total	\$40.45

Development Type	Average Day Gallons
Single Family (EDU)	210

Fees per Meter				
Meter Size	Capacity Ratio ¹	Proposed Fees	Current Fees	Difference
0.75-inch	1.00	\$8,495	\$2,544	\$5,951
1.00-inch	1.67	\$14,186	\$4,248	\$9,938
1.50-inch	3.33	\$28,287	\$8,472	\$19,815
2.00-inch	5.33	\$45,276	\$13,560	\$31,716
3.00-inch	10.67	\$90,636	\$27,144	\$63,492
4.00-inch	16.67	\$141,603	\$42,408	\$99,195
6.00-inch	33.33	\$283,122	\$84,792	\$198,330
8.00-inch	53.33	\$453,012	\$135,672	\$317,340

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SPA 3

The cost per service unit is \$43.93 per gallon for wastewater facilities development fees in SPA 3, and Surprise will assess wastewater facilities development fees by meter size. The base 0.75-inch meter is equivalent to a single-family unit, and a capacity ratio is used to convert the base meter fee proportionately for larger meters. The capacity ratios are calculated based on data published in *AWWA Manual of Water Supply Practices M-1, 7th Edition*.

The 0.75-inch fee (single-family fee) of \$9,225 is calculated using a cost per service unit of \$43.93 per gallon, multiplied by 210 average day gallons, multiplied by a capacity ratio of 1.00. For meters larger than 0.75 inches, the fee is calculated using a cost per service unit of \$43.93 per gallon, multiplied by 210 average day gallons, multiplied by the associated capacity ratio.

Figure WW17: Wastewater Facilities Development Fees

Fee Component	Cost per Gallon
WRFs	\$39.10
WRF land	\$3.29
Wastewater Lines	\$7.53
Reclaimed Lines	\$0.00
Recharge Basins	\$0.97
Other	\$0.00
Development Fee Report	\$0.01
Excess Construction Sales Tax	(\$6.97)
Total	\$43.93

Development Type	Average Day Gallons
Single Family (EDU)	210

Fees per Meter				
Meter Size	Capacity Ratio ¹	Proposed Fees	Current Fees	Difference
0.75-inch	1.00	\$9,225	\$0	\$9,225
1.00-inch	1.67	\$15,406	\$0	\$15,406
1.50-inch	3.33	\$30,720	\$0	\$30,720
2.00-inch	5.33	\$49,171	\$0	\$49,171
3.00-inch	10.67	\$98,434	\$0	\$98,434
4.00-inch	16.67	\$153,786	\$0	\$153,786
6.00-inch	33.33	\$307,479	\$0	\$307,479
8.00-inch	53.33	\$491,985	\$0	\$491,985

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SPA 4

The cost per service unit is \$36.79 per gallon for wastewater facilities development fees in SPA 4, and Surprise will assess wastewater facilities development fees by meter size. The base 0.75-inch meter is equivalent to a single-family unit, and a capacity ratio is used to convert the base meter fee proportionately for larger meters. The capacity ratios are calculated based on data published in *AWWA Manual of Water Supply Practices M-1, 7th Edition*.

The 0.75-inch fee (single-family fee) of \$7,726 is calculated using a cost per service unit of \$36.79 per gallon, multiplied by 210 average day gallons, multiplied by a capacity ratio of 1.00. For meters larger than 0.75 inches, the fee is calculated using a cost per service unit of \$36.79 per gallon, multiplied by 210 average day gallons, multiplied by the associated capacity ratio.

Figure WW18: Wastewater Facilities Development Fees

Fee Component	Cost per Gallon
SPA 4/5 Combined WRF	\$43.75
Development Fee Report	\$0.01
Excess Construction Sales Tax	(\$6.97)
Total	\$36.79

Development Type	Average Day Gallons
Single Family (EDU)	210

Fees per Meter				
Meter Size	Capacity Ratio ¹	Proposed Fees	Current Fees	Difference
0.75-inch	1.00	\$7,726	\$0	\$7,726
1.00-inch	1.67	\$12,902	\$0	\$12,902
1.50-inch	3.33	\$25,727	\$0	\$25,727
2.00-inch	5.33	\$41,179	\$0	\$41,179
3.00-inch	10.67	\$82,435	\$0	\$82,435
4.00-inch	16.67	\$128,791	\$0	\$128,791
6.00-inch	33.33	\$257,504	\$0	\$257,504
8.00-inch	53.33	\$412,022	\$0	\$412,022

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SPA 5

The cost per service unit is \$36.79 per gallon for wastewater facilities development fees in SPA 5, and Surprise will assess wastewater facilities development fees by meter size. The base 0.75-inch meter is equivalent to a single-family unit, and a capacity ratio is used to convert the base meter fee proportionately for larger meters. The capacity ratios are calculated based on data published in *AWWA Manual of Water Supply Practices M-1, 7th Edition*.

The 0.75-inch fee (single-family fee) of \$7,726 is calculated using a cost per service unit of \$36.79 per gallon, multiplied by 210 average day gallons, multiplied by a capacity ratio of 1.00. For meters larger than 0.75 inches, the fee is calculated using a cost per service unit of \$36.79 per gallon, multiplied by 210 average day gallons, multiplied by the associated capacity ratio.

Figure WW19: Wastewater Facilities Development Fees

Fee Component	Cost per Gallon
SPA 4/5 Combined WRF	\$43.75
Development Fee Report	\$0.01
Excess Construction Sales Tax	(\$6.97)
Total	\$36.79

Development Type	Average Day Gallons
Single Family (EDU)	210

Fees per Meter				
Meter Size	Capacity Ratio ¹	Proposed Fees	Current Fees	Difference
0.75-inch	1.00	\$7,726	\$0	\$7,726
1.00-inch	1.67	\$12,902	\$0	\$12,902
1.50-inch	3.33	\$25,727	\$0	\$25,727
2.00-inch	5.33	\$41,179	\$0	\$41,179
3.00-inch	10.67	\$82,435	\$0	\$82,435
4.00-inch	16.67	\$128,791	\$0	\$128,791
6.00-inch	33.33	\$257,504	\$0	\$257,504
8.00-inch	53.33	\$412,022	\$0	\$412,022

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WASTEWATER FACILITIES DEVELOPMENT FEE REVENUE

Appendix A contains revenue forecasts required by Arizona's Enabling Legislation (ARS § 9-463.05(E)(7)). Projected fee revenue shown in Figure WW20 is based on EDU projections in Figure WW7 and the updated wastewater facilities development fees. If development occurs faster than projected, the demand for infrastructure will increase along with development fee revenue. If development occurs slower than projected, the demand for infrastructure will decrease and development fee revenue will decrease at a similar rate. Projected development fee revenue over the next 10 years equals \$44,869,962 in SPA 1, \$73,643,141 in SPA 2, and \$36,411,703 in SPA 3. Actual fee revenue will vary due to existing development agreements.

Figure WW20: Wastewater Facilities Development Fees Revenue

Fee Component	SPA 1	SPA 2	SPA 3
Wastewater Facilities	\$56,415,278	\$80,539,503	\$39,186,159
Development Fee Report	\$15,181	\$9,068	\$3,648
Excess Construction Sales Tax	(\$11,560,496)	(\$6,905,430)	(\$2,778,104)
Total	\$44,869,962	\$73,643,141	\$36,411,703

		SPA 1 \$3,018 per EDU	SPA 2 \$8,495 per EDU	SPA 3 \$9,225 per EDU
Year		EDU	EDU	EDU
Base	2023	50,201	3,674	2,458
Year 1	2024	51,827	4,615	2,949
Year 2	2025	53,454	5,557	3,440
Year 3	2026	55,002	6,502	3,745
Year 4	2027	56,551	7,447	4,050
Year 5	2028	58,099	8,391	4,356
Year 6	2029	59,648	9,336	4,661
Year 7	2030	61,196	10,281	4,966
Year 8	2031	61,729	10,775	5,352
Year 9	2032	62,262	11,269	5,738
Year 10	2033	62,796	11,763	6,124
10-Year Increase		12,595	8,089	3,667
Projected Revenue		\$44,869,962	\$73,643,141	\$36,411,703

Projected Fee Revenue	\$154,924,806
Total Expenditures	\$154,924,806

10-YEAR CAPITAL PLAN

The figure shown below includes planned wastewater capital expenditures during the next 10 years.

Figure WW21: Wastewater Facilities Capital Plan

Project Type	Description	Fiscal Year	Cost
Debt Service	SPA 1 WRF, Series 2018	2024-2033	\$21,490,501
Study Cost	Development Fee Update	2024-2029	\$15,181
Subtotal, SPA 1			\$21,505,681
CIP	SPA 2 Plant Expansion	2033	\$31,276,300
CIP	SPA 2 WRF Land Purchase	2026	\$300,000
CIP	SPA 2 Recharge Expansion	2028-2029	\$5,870,900
Dev Agreement	Plant 1 and 2 Developer Obligations	2024-2033	\$26,620,391
Study Cost	Development Fee Update	2024-2029	\$9,068
Subtotal, SPA 2			\$64,076,659
CIP	SPA 3 Recharge Expansion	2029-2030	\$10,633,000
CIP	SPA 3 Plant Expansion	2030+	\$31,276,300
Study Cost	Development Fee Update	2024-2029	\$3,648
Subtotal, SPA 3			\$41,912,948
Dev Agreement	Marisol Ranch WRF Expansion and Lift Station	2027	\$17,500,000
Dev Agreement	Sunhaven Lift Station	2027	\$4,500,000
Dev Agreement	SPA 4/SPA 5 Plant	2030+	\$15,638,150
Study Cost	Development Fee Update	2024-2029	\$1,121
Subtotal, SPA 4			\$37,639,271
Dev Agreement	SPA 4/SPA 5 Plant	2030+	\$15,638,150
Study Cost	Development Fee Update	2024-2029	\$982
Subtotal, SPA 5			\$15,639,132
Total			\$180,773,692

APPENDIX A: FORECAST OF REVENUES OTHER THAN FEES

ARS § 9-463.05(E)(7) requires:

“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.”

ARS § 9-463.05(B)(12) states,

“The municipality shall forecast the contribution to be made in the future in cash or by taxes, fees, assessments or other sources of revenue derived from the property owner towards the capital costs of the necessary public service covered by the development fee and shall include these contributions in determining the extent of the burden imposed by the development. Beginning August 1, 2014, for purposes of calculating the required offset to development fees pursuant to this subsection, if a municipality imposes a construction contracting or similar excise tax rate in excess of the percentage amount of the transaction privilege tax rate imposed on the majority of other transaction privilege tax classifications, the entire excess portion of the construction contracting or similar excise tax shall be treated as a contribution to the capital costs of necessary public services provided to development for which development fees are assessed, unless the excess portion was already taken into account for such purpose pursuant to this subsection.”

REVENUE PROJECTIONS

Surprise has a construction sales tax rate of 3.7 percent and the majority of other sales tax rates is 2.2 percent; therefore, the required offset described above is applicable. Shown in Figure A1, Surprise provided the required forecast of construction sales tax revenue over a period of five years. Based on projections in the FY2024 Budget, the excess portion of 1.5 percent includes \$68,016,900 over the next five years.

Figure A1: Revenue Projections

Funding Source	Forecast FY2024	Forecast FY2025	Forecast FY2026	Forecast FY2027	Forecast FY2028	Total (5 Years)
Construction Sales Tax - 1.5%	\$15,705,500	\$14,135,000	\$13,428,200	\$13,025,400	\$11,722,800	\$68,016,900
Construction Sales Tax - 2.2%	\$23,034,700	\$20,731,200	\$19,694,700	\$19,103,800	\$18,721,800	\$101,286,200
Total, Construction Sales Tax	\$38,740,200	\$34,866,200	\$33,122,900	\$32,129,200	\$30,444,600	\$169,303,100

Source: City of Surprise, FY2024 Budget

As shown in Figure A2, the analysis allocates the excess construction sales tax revenue to projected development during the next five years. The credit per service unit shown below is included as a credit in the development fee calculations.

Figure A2: Excess Construction Sales Tax Credit

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Change	Credit per Service Unit
Fire	\$6,959,218	Residential	75%	Population	44,514	\$117.55
		Nonresidential	25%	Vehicle Trips	16,226	\$106.42
Parks and Recreational	\$7,743,715	Residential	98%	Population	44,514	\$170.48
		Nonresidential	2%	Jobs	7,782	\$19.90
Police	\$2,226,682	Residential	61%	Population	44,514	\$30.31
		Nonresidential	39%	Vehicle Trips	16,226	\$54.08
Street	\$4,304,205	All Development	100%	EDU	19,417	\$221.67
Water	\$13,966,803	All Development	100%	Avg Gallons	4,336,702	\$3.23
Water Resource	\$9,957,391	All Development	100%	Acre-Feet	43,325	\$229.84
Wastewater	\$22,858,886	All Development	100%	Avg Gallons	3,277,750	\$6.97
Total	\$68,016,900					

APPENDIX B: PROFESSIONAL SERVICES

As stated in Arizona’s development fee enabling legislation, “a municipality may assess development fees to offset costs to the municipality associated with providing necessary public services to a development, including the costs of infrastructure, improvements, real property, engineering and architectural services, financing and professional services required for the preparation or revision of a development fee pursuant to this section, including the relevant portion of the infrastructure improvements plan” (see ARS § 9-463.05.A). Because development fees must be updated at least every five years, the cost of professional services is allocated to the projected increase in service units, over five years (see Figure B1). Qualified professionals must develop the IIP, using generally accepted engineering and planning practices. A qualified professional is defined as “a professional engineer, surveyor, financial analyst or planner providing services within the scope of the person's license, education or experience”.

Figure B1: Cost of Professional Services

Necessary Public Service	Cost	Proportionate Share		Service Unit	5-Year Change	Cost per Service Unit
Fire	\$16,230	Residential	75%	Population	44,514	\$0.27
		Nonresidential	25%	Vehicle Trips	16,226	\$0.25
Parks and Recreational	\$15,000	Residential	98%	Population	44,514	\$0.33
		Nonresidential	2%	Jobs	7,782	\$0.04
Police	\$16,230	Residential	61%	Population	44,514	\$0.22
		Nonresidential	39%	Vehicle Trips	16,226	\$0.39
Street	\$228,950	All Development	100%	EDU	19,417	\$11.79
Water	\$30,000	All Development	100%	Avg Gallons	4,336,702	\$0.01
Water Resource	\$12,000	All Development	100%	Acre-Feet	43,325	\$0.28
Wastewater	\$30,000	All Development	100%	Avg Gallons	3,277,750	\$0.01
Total	\$348,410					

APPENDIX C: LAND USE DEFINITIONS

RESIDENTIAL DEVELOPMENT

As discussed below, residential development categories are based on data from the U.S. Census Bureau, American Community Survey. Development fees will be assessed to all new residential units. One-time development fees are determined by site capacity (i.e., number of residential units).

Single Family:

1. Single-family detached is a one-unit structure detached from any other house, that is, with open space on all four sides. Such structures are considered detached even if they have an adjoining shed or garage. A one-family house that contains a business is considered detached if the building has open space on all four sides.
2. Single-family attached (townhouse) is a one-unit structure that has one or more walls extending from ground to roof separating it from adjoining structures. In row houses (sometimes called townhouses), double houses, or houses attached to nonresidential structures, each house is a separate, attached structure if the dividing or common wall goes from ground to roof.

Multi-Family:

1. Includes units in structures containing two or more housing units, further categorized as units in structures with “2, 3 or 4, 5 to 9, 10 to 19, 20 to 49, and 50 or more apartments.”
2. Includes both occupied and vacant mobile homes, to which no permanent rooms have been added. Mobile homes used only for business purposes or for extra sleeping space and mobile homes for sale on a dealer's lot, at the factory, or in storage are not counted in the housing inventory.
3. Includes any living quarters occupied as a housing unit that does not fit the other categories (e.g., houseboats, railroad cars, campers, and vans). Recreational vehicles, boats, vans, railroad cars, and the like are included only if they are occupied as a current place of residence.

NONRESIDENTIAL DEVELOPMENT

The proposed general nonresidential development categories (defined below) can be used for all new construction. Nonresidential development categories represent general groups of land uses that share similar average weekday vehicle trip generation rates and employment densities (i.e., jobs per thousand square feet of floor area).

Industrial: Establishments primarily engaged in the production of goods. By way of example, industrial includes manufacturing plants, utility substations, power generation facilities, and telecommunications buildings.

Office: Establishments providing management, administrative, professional, or business services; personal and health care services. By way of example, office includes banks, business offices, medical clinics, and hospitals.

Public/Institutional: Public and quasi-public buildings providing educational, social assistance, or religious services. By way of example, institutional includes schools, universities, churches, daycare facilities, and government buildings.

Retail/Commercial: Establishments primarily selling merchandise, eating/drinking places, entertainment uses, and lodging. By way of example, commercial includes shopping centers, supermarkets, pharmacies, restaurants, bars, nightclubs, automobile dealerships, movie theaters, and lodging.

Warehouse: Establishments primarily engaged in transportation or storage of goods. By way of example, warehouse includes distribution warehouses and trucking companies.

APPENDIX D: MAJOR ROADWAY IMPROVEMENTS COSTS

MAJOR ROADWAY SECTION COSTS

Major roadway section costs shown below include typical roadway section costs used in the Street Facilities IIP for one mile of parkway, major arterial, and minor arterial. State statutes regarding development fees indicate costs must be related to improvements needed to accommodate growth. For street facilities development fees, agencies typically interpret this to mean that any items related to increasing roadway capacity can be included. Items not related to roadway capacity, such as sidewalks, streetlights, storm drains, and contractor mobilization are usually excluded. Since right-of-way is often dedicated by developers, right-of-way costs are excluded from the development fee calculations. The costs shown below include the proposed bid items, quantities, and unit costs for one mile of parkway (six lanes), major arterial (six lanes), and minor arterial (four lanes) included in the development fee calculations. These costs represent 57 percent to 60 percent of the total costs shown on the following pages.

Item	Unit Cost	Parkway		Major Arterial		Minor Arterial	
		Amount	Total	Amount	Total	Amount	Total
Subgrade preparation and compaction (SY)	\$8.36	42,240	\$353,194	46,933	\$392,435	34,027	\$284,520
Asphalt concrete pavement (Ton)	\$152.61	11,880	\$1,813,064	13,200	\$2,014,515	9,570	\$1,460,524
Aggregate base course (Ton)	\$56.35	19,958	\$1,124,577	22,176	\$1,249,556	16,078	\$905,950
Concrete single curb – median (LF)	\$25.96	10,560	\$274,121	10,560	\$274,121	10,560	\$274,121
Landscaping – median (SY)	\$56.16	36,960	\$2,075,674	9,387	\$527,174	9,387	\$527,174
Signs – both sides (EA)	\$656.14	52	\$34,119	52	\$34,119	52	\$34,119
Traffic signal (EA)	\$624,000.00	2	\$1,248,000	2	\$1,248,000	2	\$1,248,000
Traffic control (LF)	\$21.84	5,280	\$115,315	5,280	\$115,315	5,280	\$115,315
Subtotal, Construction Costs			\$7,038,064		\$5,855,235		\$4,849,723
Preliminary and final design costs (% of constr cost)	15%		\$1,055,710		\$878,285		\$727,458
COS admin costs (design and constr mgmt) (% of constr cost)	32%		\$2,252,180		\$1,873,675		\$1,551,911
Subtotal, Soft Costs			\$3,307,890		\$2,751,960		\$2,279,370
Total, per mile (2023)			\$10,345,954		\$8,607,195		\$7,129,093

City of Surprise
Standard Parkway Cross-Section
 Detail No. 3-01

Item	Width/Frequency Per Design Standards	Unit	Quantity	AVERAGE	
				Unit Cost	Total
Subgrade Preparation	36 Feet Wide Per Side	SY	42,240	\$8.36	\$353,193.98
AC Pavement	36 Feet Wide Per Side, 5" Thick	Ton	11,880	\$152.61	\$1,813,063.82
Aggregate Base Course	36 Feet Wide Per Side, 9" Thick	Ton	19,958	\$56.35	\$1,124,577.42
Curb & Gutter, MAG Det 220-1, Type A		LF	10,560	\$26.22	\$276,921.22
Single Curb, MAG Det 222, Type A		LF	10,560	\$25.96	\$274,120.70
Median Grading	63 Feet Wide	SY	36,960	\$11.70	\$432,432.00
Parkway Grading	16 Feet Inside, 2 Feet Outside Per Side	SY	21,120	\$16.50	\$348,581.38
Concrete Sidewalk, MAG Det 230	12 Feet Wide Per Side	SF	126,720	\$7.14	\$905,389.06
Intersection Curb Ramps	4 at main intersection, 4 at mid-block intersection	Each	8	\$5,071.51	\$40,572.11
Storm Drain Catch Basin	660 Foot Standard Spacing Per Side	Each	16	\$8,528.47	\$136,455.57
18" Storm Drain Pipe, RGRCP Class III		LF	5,280	\$184.20	\$972,601.34
Storm Drain Manholes	400 Foot Maximum Spacing	Each	13	\$8,338.96	\$108,406.54
Street Sign		Each	52	\$656.14	\$34,119.07
Pavement Marking	4" Equivalent, add 15% to account for intersections	LF	6,072	\$0.58	\$3,504.76
Traffic Signals	4 at main intersection, 4 at mid-block intersection	Each	2	\$624,000.00	\$1,248,000.00
Street Lighting	Every 200 Feet Per Side	Each	53	\$3,120.00	\$165,360.00
Landscaping and Irrigation	Median and Parkway Landscaping	SY	58,080	\$56.16	\$3,261,772.80
Sub Total Construction Cost					\$11,499,071.77
Mobilization/Demobilization			10%		\$1,150,000.00
SWPPP			1%		\$115,000.00
Traffic Control			12%		\$1,379,900.00
Construction Surveying & Layout			2%		\$230,000.00
Contractor QA/QC			4%		\$460,000.00
Contractor Facilities			5%		\$575,000.00
Site Management			5%		\$575,000.00
Contingency (Allowance for Extra Work, Inflation)			20%		\$2,299,900.00
Total Construction Cost					\$18,283,871.77
Preliminary and Final Design			15%		\$2,742,600.00
Internal City Costs					
Design Project Management			12%		\$2,194,100.00
Construction Management			20%		\$3,656,800.00
Right-of-Way Costs		SF	1,056,000	\$3.90	\$4,118,400.00
GRAND TOTAL					\$30,995,771.77

City of Surprise
Standard Major Arterial Cross-Section
 Detail No. 3-02B

				AVERAGE	
Item	Width/Frequency Per Design Standards	Unit	Quantity	Unit Cost	Total
Subgrade Preparation	40 Feet Wide Per Side	SY	46,933	\$8.36	\$392,434.97
AC Pavement	40 Feet Wide Per Side, 5" Thick	Ton	13,200	\$152.61	\$2,014,515.36
Aggregate Base Course	40 Feet Wide Per Side, 9" Thick	Ton	22,176	\$56.35	\$1,249,555.51
Curb & Gutter, MAG Det 220-1, Type A		LF	10,560	\$26.22	\$276,921.22
Single Curb, MAG Det 222, Type A		LF	10,560	\$25.96	\$274,120.70
Median Grading	16 Feet Wide	SY	9,387	\$11.70	\$109,827.90
Parkway Grading	10 Feet Inside, 1.5 Feet Outside Per Side	SY	13,493	\$16.50	\$222,699.27
Concrete Sidewalk, MAG Det 230	6 Feet Wide Per Side	SF	63,360	\$7.14	\$452,694.53
Intersection Curb Ramps	4 at main intersection, 4 at mid-block intersection	Each	8	\$5,071.51	\$40,572.11
Storm Drain Catch Basin	660 Foot Standard Spacing Per Side	Each	16	\$8,528.47	\$136,455.57
18" Storm Drain Pipe, RGRCP Class III		LF	5,280	\$184.20	\$972,601.34
Storm Drain Manholes	400 Foot Maximum Spacing	Each	13	\$8,338.96	\$108,406.54
Street Sign		Each	52	\$656.14	\$34,119.07
Pavement Marking	4" Equivalent, add 15% to account for intersections	LF	30,360	\$0.58	\$17,523.79
Traffic Signals	4 at main intersection, 4 at mid-block intersection	Each	2	\$624,000.00	\$1,248,000.00
Street Lighting	Every 200 Feet Per Side	Each	53	\$3,120.00	\$164,736.00
Landscaping and Irrigation	Median and Parkway Landscaping	SY	22,880	\$56.16	\$1,284,940.80
				Sub Total Construction Cost	\$9,000,124.68
Mobilization/Demobilization			10%		\$900,100.00
SWPPP			1%		\$90,100.00
Traffic Control			12%		\$1,080,100.00
Construction Surveying & Layout			2%		\$180,100.00
Contractor QA/QC			4%		\$360,100.00
Contractor Facilities			5%		\$450,100.00
Site Management			5%		\$450,100.00
Contingency (Allowance for Extra Work, Inflation)			20%		\$1,800,100.00
				Total Construction Cost	\$14,310,924.68
Preliminary and Final Design			15%		\$2,146,700.00
Internal City Costs					
Design Project Management			12%		\$1,717,400.00
Construction Management			20%		\$2,862,200.00
Right-of-Way Costs		SF	718,080	\$3.90	\$2,800,512.00
				GRAND TOTAL	\$23,837,736.68

City of Surprise
Standard Minor Arterial Cross-Section
 Detail No. 3-03

Item	Width/Frequency Per Design Standards	Unit	Quantity	AVERAGE	
				Unit Cost	Total
Subgrade Preparation	29 Feet Wide Per Side	SY	34,027	\$8.36	\$284,520.16
AC Pavement	29 Feet Wide Per Side, 5" Thick	Ton	9,570	\$152.61	\$1,460,523.64
Aggregate Base Course	29 Feet Wide Per Side, 9" Thick	Ton	16,078	\$56.35	\$905,950.28
Curb & Gutter, MAG Det 220-1, Type A		LF	10,560	\$26.22	\$276,921.22
Single Curb, MAG Det 222, Type A		LF	10,560	\$25.96	\$274,120.70
Median Grading	16 Feet Wide	SY	9,387	\$11.70	\$109,827.90
Parkway Grading	8 Feet Inside, 1.5 Feet Outside Per Side	SY	11,147	\$16.50	\$183,979.01
Concrete Sidewalk, MAG Det 230	6 Feet Wide Per Side	SF	63,360	\$7.14	\$452,694.53
Intersection Curb Ramps	4 at main intersection, 4 at mid-block intersection	Each	8	\$5,071.51	\$40,572.11
Storm Drain Catch Basin	660 Foot Standard Spacing Per Side	Each	16	\$8,528.47	\$136,455.57
18" Storm Drain Pipe, RGRCP Class III		LF	5,280	\$184.20	\$972,601.34
Storm Drain Manholes	400 Foot Maximum Spacing	Each	13	\$8,338.96	\$108,406.54
Street Sign		Each	52	\$656.14	\$34,119.07
Pavement Marking	4" Equivalent, add 15% to account for intersections	LF	30,360	\$0.58	\$17,523.79
Traffic Signals	4 at main intersection, 4 at mid-block intersection	Each	2	\$624,000.00	\$1,248,000.00
Street Lighting	Every 200 Feet Per Side	Each	53	\$3,120.00	\$164,736.00
Landscaping and Irrigation	Median and Parkway Landscaping	SY	20,534	\$56.16	\$1,153,189.44
Sub Total Construction Cost					\$7,824,141.30
Mobilization/Demobilization			10%		\$782,500.00
SWPPP			1%		\$78,300.00
Traffic Control			12%		\$938,900.00
Construction Surveying & Layout			2%		\$156,500.00
Contractor QA/QC			4%		\$313,000.00
Contractor Facilities			5%		\$391,300.00
Site Management			5%		\$391,300.00
Contingency (Allowance for Extra Work, Inflation)			20%		\$1,564,900.00
Total Construction Cost					\$12,440,841.30
Preliminary and Final Design			15%		\$1,866,200.00
Internal City Costs					
Design Project Management			12%		\$1,493,000.00
Construction Management			20%		\$2,488,200.00
Right-of-Way Costs		SF	580,800	\$3.90	\$2,265,120.00
GRAND TOTAL					\$20,553,361.30

BIG-TICKET ITEM COSTS

Some roadway segments have additional constraints or improvement needs beyond the typical roadway sections. For example, relocating a large power pole or well, or constructing a large box culvert, increases the cost of an improvement project. This table shows the proposed “big-ticket” items and unit costs that could be present on some of the roadway segments included in the Street Facilities IIP. These costs will be added on top of the typical costs on a segment-by-segment basis depending on the needs of each segment.

Item	Unit	Cost	Comments
Underground 12kV power line	LF	\$390.00	
Underground 69kV power line	LF	\$1,872.00	
Relocate 12kV pole	EA	\$31,200.00	
Relocate 69kV pole	EA	\$124,800.00	
Relocate 230 kV pole	EA	\$234,000.00	
Relocate turning pole	EA	\$234,000.00	
Relocate electric cabinet	EA	\$15,600.00	
Relocate 500 kV lattice tower	EA	\$780,000.00	
Relocate well site	EA	\$1,560,000.00	
Relocate gas pressure regulator	EA	\$156,000.00	Likely not a project cost-- usually SWG's responsibility
Remove/replace pipe culvert	LF	\$273.00	
Box culvert (reinforced concrete)	CY	\$1,560.00	
Box culvert removal	EA	\$6,240.00	
Box culvert headwall	EA	\$15,600.00	
Remove/replace unlined irrigation ditch	LF	\$78.00	
Remove/replace concrete-lined irrigation ditch	LF	\$156.00	
Remove/replace concrete-lined irrigation crossing	LF	\$327.60	
Remove/replace concrete-lined irrigation trash rack	EA	\$12,480.00	
Remove/replace concrete-lined irrigation headwall	EA	\$7,800.00	
Remove/replace concrete-lined irrigation turnout structure	EA	\$31,200.00	
Widen slab bridge/canal crossing	SF	\$351.00	
Widen railroad crossing	EA	\$1,560,000.00	For gates and panels
Relocate lift station	EA	\$1,560,000.00	
Fill medium drainage ditch (1' bottom with 1:1 slopes at 1' deep)	LF	\$3.12	
Fill large drainage ditch (4' bottom with 2:1 slopes at 4' deep)	LF	\$4.68	
Dip/Low-flow crossing culvert	EA	\$156,000.00	

TRAFFIC SIGNAL COSTS

Traffic signal costs shown below include typical costs used in the Street Facilities IIP for traffic signals. State statutes regarding development fees indicate costs must be related to improvements needed to accommodate growth. For street facilities development fees, agencies typically interpret this to mean that any items related to increasing roadway capacity can be included. Items not related to roadway capacity, such as sidewalks, streetlights, storm drains, and contractor mobilization are usually excluded. Since right-of-way is often dedicated by developers, right-of-way costs are excluded from the development fee calculations. The costs shown below include the proposed bid items, quantities, and unit costs for traffic signals included in the development fee calculations.

Item	Unit Cost	Parkway		Major Arterial		Minor Arterial	
		Amount	Total	Amount	Total	Amount	Total
Subgrade preparation and compaction (SY)	\$8.36	-	\$0	-	\$0	-	\$0
Asphalt concrete pavement (Ton)	\$152.61	-	\$0	-	\$0	-	\$0
Aggregate base course (Ton)	\$56.35	-	\$0	-	\$0	-	\$0
Concrete single curb -- median (LF)	\$25.96	-	\$0	-	\$0	-	\$0
Landscaping -- median (SY)	\$56.16	-	\$0	-	\$0	-	\$0
Signs -- both sides (EA)	\$656.14	-	\$0	-	\$0	-	\$0
Traffic signal (EA)	\$624,000.00	1	\$624,000	1	\$624,000	1	\$624,000
Traffic control (LF)	\$21.84	-	\$0	-	\$0	-	\$0
Subtotal, Construction Costs			\$624,000		\$624,000		\$624,000
Preliminary and final design costs (% of constr cost)	15%		\$93,600		\$93,600		\$93,600
COS admin costs (design and constr mgmt) (% of constr cost)	32%		\$199,680		\$199,680		\$199,680
Subtotal, Soft Costs			\$293,280		\$293,280		\$293,280
Total, per mile (2023)			\$917,280		\$917,280		\$917,280

APPENDIX E: MAJOR ROADWAY INVENTORY

SOUTH

Street Segment				Existing Length (miles)	Ultimate Length (miles)	Existing Cross-Section	Ultimate Functional Classification	Existing Number of Lanes	Ultimate Number of Lanes	Value of Existing Roadway	Value of Ultimate Roadway	Existing LOS C Capacity (veh-miles)	Ultimate LOS C Capacity (veh-miles)
Segment Name	Road	From	To										
BER	Beardsley Road	115th Avenue	Old El Mirage Road	0.00	1.00	Does Not Exist	Minor Arterial	0	4	\$0	\$7,129,093	0	28,720
UN	Union Hills	111th Avenue	115th Avenue	0.53	0.53	Major Collector w/ TWLTL	Minor Arterial	2	4	\$2,159,097	\$12,789,354	3,424	15,222
BEL	Bell Road	114th Avenue (1,150' E)	Beardsley Canal	9.00	9.00	Major Arterial	Major Arterial	6	6	\$77,464,756	\$77,464,756	437,760	437,760
BE	Bell Road	Beardsley Canal	195th Avenue	1.30	1.30	Minor Arterial	Major Arterial	4	6	\$6,216,308	\$11,189,354	37,336	63,232
GR	Greenway Road	US 60/Grand Avenue	Dysart Road	0.64	0.64	Major Collector w/ TWLTL	Major Arterial	3	6	\$3,060,336	\$8,079,485	6,906	31,130
GR	Greenway Road	Dysart Road	Litchfield Road	1.00	1.00	Minor Arterial w/ TWLTL	Minor Arterial	4	4	\$6,110,651	\$7,129,093	27,280	28,720
GR	Greenway Road	Litchfield Road	Bullard Avenue	1.00	1.00	Minor Arterial	Minor Arterial	4	4	\$7,129,093	\$7,129,093	28,720	28,720
GR	Greenway Road	Bullard Avenue	Sarival Avenue	1.90	1.90	Minor Arterial w/ TWLTL	Minor Arterial	4	4	\$11,610,237	\$13,545,276	51,832	54,568
GR	Greenway Road	Sarival Avenue	Cotton Lane	1.00	1.00	Minor Arterial	Minor Arterial	4	4	\$7,129,093	\$7,129,093	28,720	28,720
GR	Greenway Road	Cotton Lane	179th Avenue/Citrus Road	1.00	1.00	Major Collector w/ TWLTL	Minor Arterial	2	4	\$4,073,767	\$15,420,609	6,460	28,720
GR	Greenway Road	179th Avenue/Citrus Road	Beardsley Canal	0.81	0.81	Local Street	Minor Arterial	2	4	\$1,649,876	\$13,294,389	1,296	23,263
GR	Greenway Road	Beardsley Canal	McMicken Dam	0.00	0.27	Does Not Exist	Minor Arterial	0	4	\$0	\$3,190,210	0	7,754
GR	Greenway Road	McMicken Dam	195th Avenue	0.00	0.92	Does Not Exist	Minor Arterial	0	4	\$0	\$7,546,412	0	26,422
WA	Waddell Road	Dysart Road	Litchfield Road	1.00	1.00	Major Arterial w/ TWLTL	Major Arterial	6	6	\$7,650,840	\$8,607,195	46,210	48,640
WA	Waddell Road	Litchfield Road	Bullard Avenue	1.00	1.00	Major Arterial	Major Arterial	6	6	\$8,607,195	\$8,607,195	48,640	48,640
WA	Waddell Road	Bullard Avenue	Reems Road	1.00	1.00	Major Arterial w/ TWLTL	Major Arterial	6	6	\$7,650,840	\$8,607,195	46,210	48,640

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Surprise, Arizona

Street Segment				Existing Length (miles)	Ultimate Length (miles)	Existing Cross-Section	Ultimate Functional Classification	Existing Number of Lanes	Ultimate Number of Lanes	Value of Existing Roadway	Value of Ultimate Roadway	Existing LOS C Capacity (veh-miles)	Ultimate LOS C Capacity (veh-miles)
Segment Name	Road	From	To										
WA	Waddell Road	Reems Road	Loop 303	1.40	1.40	Major Arterial	Major Arterial	6	6	\$12,050,073	\$12,050,073	64,694	68,096
WA	Waddell Road	Loop 303	Cotton Lane	0.50	0.50	Major Arterial	Major Arterial	5	6	\$3,825,420	\$4,624,958	20,320	24,320
WA	Waddell Road	Cotton Lane	175th Avenue	0.52	0.52	Minor Collector	Major Arterial	2	6	\$994,609	\$6,534,052	2,330	25,293
WA	Waddell Road	175th Avenue	Citrus Road	0.50	0.50	Minor Arterial	Minor Arterial	4	4	\$3,564,546	\$3,564,546	14,360	14,360
WA	Waddell Road	Citrus Road	Beardsley Canal	0.82	0.82	Local Street	Minor Arterial	2	4	\$1,670,245	\$12,335,721	1,312	23,550
WA	Waddell Road	Beardsley Canal	McMicken Dam	0.00	0.30	Does Not Exist	Minor Arterial	0	4	\$0	\$4,597,132	0	8,616
WA	Waddell Road	McMicken Dam	195th Avenue	0.00	0.94	Does Not Exist	Minor Arterial	0	4	\$0	\$7,688,994	0	26,997
CA	Cactus Road	Dysart Road	Railroad Crossing	0.51	0.51	Major Arterial	Major Arterial	5	6	\$3,901,928	\$4,389,669	20,726	24,806
CA	Cactus Road	Railroad Crossing	Litchfield Road	0.48	0.48	Minor Collector	Major Arterial	2	6	\$1,444,829	\$6,705,485	2,150	23,347
CA	Cactus Road	Litchfield Road	Bullard Avenue	1.00	1.00	Minor Arterial	Major Arterial	4	6	\$6,694,485	\$9,121,371	28,720	48,640
CA	Cactus Road	Bullard Avenue	Reems Road	1.00	1.00	Minor Arterial w/ TWLTL	Major Arterial	4	6	\$5,738,130	\$29,161,381	27,280	48,640
CA	Cactus Road	Reems Road	Sarival Avenue	0.91	0.91	Major Collector w/ TWLTL	Major Arterial	2	6	\$1,740,566	\$28,144,344	5,879	44,262
CA	Cactus Road	Sarival Avenue	Autoshow Ave	0.75	0.75	Major Collector	Major Arterial	5	6	\$6,455,396	\$18,482,294	8,520	36,480
CA	Cactus Road	Autoshow Ave	Cotton Lane	0.25	0.25	Major Collector w/ TWLTL	Major Arterial	2	6	\$478,178	\$3,967,483	1,615	12,160
CA	Cactus Road	Cotton Lane	175th Avenue	0.50	0.50	Minor Arterial	Major Arterial	3	6	\$3,825,420	\$14,297,894	8,640	24,320
CA	Cactus Road	175th Avenue	Perryville Road	1.50	1.50	Minor Collector	Major Arterial	2	6	\$2,869,065	\$25,829,465	6,720	72,960
CA	Cactus Road	Perryville Road	Beardsley Canal	0.35	0.35	Local Street	Major Arterial	2	6	\$0	\$5,037,086	560	17,024
CA	Cactus Road	Beardsley Canal	McMicken Dam	0.00	0.25	Does Not Exist	Major Arterial	0	6	\$0	\$8,252,818	0	12,160
CA	Cactus Road	McMicken Dam	Jackrabbit Trail	0.00	0.80	Does Not Exist	Major Arterial	0	6	\$0	\$7,873,402	0	38,912
PE	Peoria Avenue	Dysart Road	Solar Canyon Way	0.30	0.30	Minor Arterial w/ TWLTL	Minor Arterial	3	4	\$1,222,130	\$9,073,677	4,926	8,616
PE	Peoria Avenue	Solar Canyon Way	136th Avenue	0.32	0.32	Minor Collector	Minor Arterial	2	4	\$726,107	\$9,551,502	1,434	9,190
PE	Peoria Avenue	136th Avenue	Litchfield Road	0.38	0.38	Major Collector w/ TWLTL	Minor Arterial	2	4	\$1,161,024	\$7,577,659	2,455	10,914

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Surprise, Arizona

Street Segment				Existing Length (miles)	Ultimate Length (miles)	Existing Cross-Section	Ultimate Functional Classification	Existing Number of Lanes	Ultimate Number of Lanes	Value of Existing Roadway	Value of Ultimate Roadway	Existing LOS C Capacity (veh-miles)	Ultimate LOS C Capacity (veh-miles)
Segment Name	Road	From	To										
PE	Peoria Avenue	Litchfield Road	Bullard Avenue	1.00	1.00	Minor Collector	Minor Arterial	2	4	\$3,055,325	\$8,101,528	4,480	28,720
PE	Peoria Avenue	Bullard Avenue	Reems Road	1.00	1.00	Minor Collector	Minor Arterial	2	4	\$2,036,884	\$19,181,378	4,480	28,720
PE	Peoria Avenue	Reems Road	Sarival Avenue	0.92	0.92	Minor Arterial w/ TWLTL	Minor Arterial	4	4	\$5,621,799	\$6,558,765	25,098	26,422
PE	Peoria Avenue	Sarival Avenue	Loop 303	0.50	0.50	Minor Collector	Minor Arterial	2	4	\$1,018,442	\$5,733,726	2,240	14,360
PE	Peoria Avenue	Loop 303	Cotton Lane	0.50	0.50	Minor Collector	Major Arterial	2	6	\$956,355	\$8,915,114	2,240	24,320
PE	Peoria Avenue	Cotton Lane	183rd Lane	1.60	1.60	Minor Collector	Major Arterial	2	6	\$3,060,336	\$24,922,704	7,168	77,824
PE	Peoria Avenue	183rd Lane	Perryville Road	0.40	0.40	Minor Arterial	Major Arterial	3	6	\$1,912,710	\$10,056,467	6,912	19,456
PE	Peoria Avenue	Perryville Road	Beardsley Canal	0.50	0.50	Minor Collector	Major Arterial	2	6	\$1,434,533	\$6,353,874	2,240	24,320
PE	Peoria Avenue	Beardsley Canal	Jackrabbit Trail	0.00	0.80	Does Not Exist	Major Arterial	0	6	\$0	\$8,087,642	0	38,912
OL	Olive Avenue	Perryville Road	Beardsley Canal	0.50	0.50	Minor Collector	Major Arterial	2	6	\$956,355	\$8,211,335	2,240	24,320
OL	Olive Avenue	Beardsley Canal	203rd Avenue	1.50	1.50	Minor Collector	Major Arterial	2	6	\$2,869,065	\$21,847,814	6,720	72,960
115A	115th Avenue	Beardsley Road	Union Hills Drive	0.95	0.95	Local Street	Major Arterial	2	6	\$1,817,075	\$9,783,635	1,520	46,208
115A	115th Avenue	Union Hills Drive	Bell Road	0.95	0.95	Major Collector	Major Arterial	2	6	\$1,817,075	\$12,514,794	6,460	46,208
115A	115th Avenue	Bell Road	Irish Gold Dr	0.00	0.45	Does Not Exist	Minor Arterial	0	4	\$0	\$3,208,092	0	12,924
EM	El Mirage Road	Beardsley Road	Bell Road	2.00	2.00	Minor Arterial	Major Arterial	4	6	\$9,563,550	\$17,214,390	57,440	97,280
EM	El Mirage Road	Bell Road	Greenway Road	1.04	1.04	Minor Arterial w/ TWLTL	Major Arterial	4	6	\$5,967,655	\$10,879,643	28,371	50,586
DY	Dysart Road	Bell Road	Waddell Road	2.00	2.00	Minor Arterial w/ TWLTL	Major Arterial	4	6	\$11,476,260	\$69,172,678	54,560	97,280
DY	Dysart Road	Waddell Road	Soledad Street	0.25	0.25	Major Arterial	Major Arterial	6	6	\$2,151,799	\$2,151,799	12,160	12,160
DY	Dysart Road	Soledad Street	Sweetwater Avenue	0.25	0.25	Major Arterial w/ TWLTL	Major Arterial	5	6	\$1,673,621	\$2,347,427	9,653	12,160
DY	Dysart Road	Sweetwater Avenue	Cactus Road	0.50	0.50	Minor Arterial	Major Arterial	4	6	\$3,347,243	\$5,653,310	14,360	24,320

DRAFT Land Use Assumptions, Infrastructure Improvements Plan, and Development Fee Report
Surprise, Arizona

Street Segment				Existing Length (miles)	Ultimate Length (miles)	Existing Cross-Section	Ultimate Functional Classification	Existing Number of Lanes	Ultimate Number of Lanes	Value of Existing Roadway	Value of Ultimate Roadway	Existing LOS C Capacity (veh-miles)	Ultimate LOS C Capacity (veh-miles)
Segment Name	Road	From	To										
DY	Dysart Road	Cactus Road	Peoria Avenue	1.00	1.00	Minor Arterial w/ TWLTL	Major Arterial	4	6	\$5,738,130	\$24,643,059	27,280	48,640
LI	Litchfield Road	US 60/Grand Avenue	Bell Road	0.47	0.47	Minor Arterial w/ TWLTL	Minor Arterial	4	4	\$2,872,006	\$3,350,674	12,822	13,498
LI	Litchfield Road	Bell Road	Stalter Street	0.68	0.68	Minor Arterial	Minor Arterial	4	4	\$4,847,783	\$4,847,783	19,530	19,530
LI	Litchfield Road	Stalter Street	Greenway Road	0.35	0.35	Minor Arterial w/ TWLTL	Minor Arterial	4	4	\$2,138,728	\$2,495,182	9,548	10,052
LI	Litchfield Road	Greenway Road	Waddell Road	1.00	1.00	Minor Arterial	Minor Arterial	4	4	\$7,129,093	\$7,129,093	28,720	28,720
LI	Litchfield Road	Waddell Road	Peoria Avenue	2.00	2.00	Minor Arterial	Minor Arterial	4	4	\$14,258,186	\$14,258,186	57,440	57,440
BU	Bullard Avenue	Bell Road	Cholla Street	3.50	3.50	Minor Arterial	Minor Arterial	4	4	\$24,951,825	\$24,951,825	100,520	100,520
BU	Bullard Avenue	Cholla Street	Peoria Avenue	0.50	0.50	Minor Arterial	Minor Arterial	3	4	\$2,546,105	\$3,660,954	8,640	14,360
RE	Reems Road	Grand Avenue	Mountain View Blvd (745' S)	0.38	0.38	Major Arterial w/ TWLTL	Major Arterial	6	6	\$2,907,319	\$3,270,734	17,560	18,483
RE	Reems Road	Mountain View Blvd (745' S)	Bell Road	1.45	1.45	Major Arterial	Major Arterial	6	6	\$12,480,433	\$12,480,433	70,528	70,528
RE	Reems Road	Bell Road	Cactus Road	3.00	3.00	Minor Arterial w/ TWLTL	Major Arterial	4	6	\$17,214,390	\$32,049,028	81,840	145,920
RE	Reems Road	Cactus Road	Peoria Avenue	1.00	1.00	Minor Arterial	Major Arterial	4	6	\$6,694,485	\$8,769,161	28,720	48,640
SU	Sunrise Blvd	US 60/Grand Avenue	Bell Road	2.50	2.50	Minor Arterial	Minor Arterial	4	4	\$17,822,732	\$17,822,732	71,800	71,800
SA	Sarival Avenue	Bell Road	Young Street	0.18	0.18	Minor Arterial	Minor Arterial	4	4	\$1,283,237	\$1,283,237	5,170	5,170
SA	Sarival Avenue/NRP	Young Street	Greenway Road	1.07	1.07	Minor Arterial w/ TWLTL	Minor Arterial	4	4	\$6,538,397	\$7,628,129	29,190	30,730
SA	Sarival Avenue	Greenway Road	Waddell Road	1.00	1.00	Minor Collector	Minor Arterial	2	4	\$3,055,325	\$31,809,541	4,480	28,720
SA	Sarival Avenue	Waddell Road	Alexandria Way	0.25	0.25	Minor Arterial	Minor Arterial	4	4	\$1,782,273	\$1,782,273	7,180	7,180
SA	Sarival Avenue	Alexandria Way	Larkspur Dr	0.55	0.55	Minor Collector	Minor Arterial	2	4	\$1,120,286	\$3,921,001	2,464	15,796
SA	Sarival Avenue	Larkspur Dr	Cactus Road	0.25	0.25	Minor Arterial	Minor Arterial	4	4	\$1,782,273	\$1,782,273	7,180	7,180
SA	Sarival Avenue	Cactus Road	Jenan Drive	0.25	0.25	Minor Collector	Minor Arterial	2	4	\$509,221	\$2,666,013	1,120	7,180

DRAFT Land Use Assumptions, Infrastructure Improvements Plan, and Development Fee Report
Surprise, Arizona

Street Segment				Existing Length (miles)	Ultimate Length (miles)	Existing Cross-Section	Ultimate Functional Classification	Existing Number of Lanes	Ultimate Number of Lanes	Value of Existing Roadway	Value of Ultimate Roadway	Existing LOS C Capacity (veh-miles)	Ultimate LOS C Capacity (veh-miles)
Segment Name	Road	From	To										
SA	Sarival Avenue	Jenan Drive	Cholla Street	0.25	0.25	Minor Arterial w/ TWLTL	Minor Arterial	4	4	\$1,527,663	\$1,782,273	6,820	7,180
SA	Sarival Avenue	Cholla Street	Peoria Avenue	0.50	0.50	Minor Arterial w/ TWLTL	Minor Arterial	3	4	\$2,546,105	\$5,452,536	8,210	14,360
CO	Cotton Lane	Union Hills Drive	Bell Road (300' N)	0.95	0.95	Minor Collector	Minor Arterial	2	4	\$2,902,559	\$12,627,817	4,256	27,284
CO	Cotton Lane	Bell Road (300' N)	Bell Road (670' S)	0.17	0.17	Minor Arterial w/ TWLTL	Minor Arterial	4	4	\$1,038,811	\$1,211,946	4,638	4,882
CO	Cotton Lane	Bell Road (670' S)	Greenway Road	0.88	0.88	Minor Collector	Minor Arterial	2	4	\$3,584,915	\$6,337,874	3,942	25,274
CO	Cotton Lane	Greenway Road	Greenway Road (1,200' S)	0.23	0.23	Minor Arterial	Major Arterial	4	6	\$1,539,732	\$2,045,534	6,606	11,187
CO	Cotton Lane	Greenway Road (1,200' S)	Acoma Drive	0.25	0.25	Major Collector w/ TWLTL	Major Arterial	2	6	\$956,355	\$2,556,712	1,615	12,160
CO	Cotton Lane	Acoma Drive	Hearn Road	0.28	0.28	Minor Collector	Major Arterial	2	6	\$535,559	\$2,812,357	1,254	13,619
CO	Cotton Lane	Hearn Road	Waddell Road (655' S)	0.37	0.37	Major Collector w/ TWLTL	Major Arterial	2	6	\$1,061,554	\$3,184,662	2,390	17,997
CO	Cotton Lane	Waddell Road (655' S)	Peoria Avenue	1.85	1.85	Minor Collector	Major Arterial	2	6	\$10,615,541	\$41,466,610	8,288	89,984
CI	Citrus Road	Greenway Road	Waddell Road	0.00	1.00	Does Not Exist	Minor Arterial	0	4	\$0	\$7,129,093	0	28,720
CI	Citrus Road	Waddell Road	Cactus Road	1.00	1.00	Minor Collector	Minor Arterial	2	4	\$7,129,093	\$7,468,068	4,480	28,720
CI	Citrus Road	Cactus Road	Peoria Avenue	0.00	1.00	Does Not Exist	Minor Arterial	0	4	\$0	\$7,129,093	0	28,720
PER	Perryville Road	Greenway Road	Greenway Road (2,110' S)	0.00	0.40	Does Not Exist	Minor Arterial	0	4	\$0	\$2,851,637	0	11,488
PER	Perryville Road	Greenway Road (2,110' S)	Cactus Road	0.00	1.60	Does Not Exist	Minor Arterial	0	4	\$0	\$15,312,679	0	45,952
PER	Perryville Road	Cactus Road	Shangri La Road	0.50	0.50	Major Collector	Minor Arterial	3	4	\$2,036,884	\$3,596,682	3,400	14,360
PER	Perryville Road	Shangri La Road	Peoria Avenue	0.50	0.50	Minor Arterial	Minor Arterial	4	4	\$3,564,546	\$3,564,546	14,360	14,360
PER	Perryville Road	Peoria Avenue	Olive Avenue	1.00	1.00	Minor Collector	Minor Arterial	2	4	\$3,055,325	\$7,219,074	4,480	28,720
JA	Jackrabbit Trail	Bell Road	Olive Avenue	0.00	6.00	Does Not Exist	Major Arterial	0	6	\$0	\$62,296,254	0	291,840
Total, South				79.64	95.37	-	-	279	482	\$449,377,186	\$1,123,261,682	1,908,248	3,818,888

NORTH

Street Segment				Existing Length (miles)	Ultimate Length (miles)	Existing Cross-Section	Ultimate Functional Classification	Existing Number of Lanes	Ultimate Number of Lanes	Value of Existing Roadway	Value of Ultimate Roadway	Existing LOS C Capacity (veh-miles)	Ultimate LOS C Capacity (veh-miles)
Segment Name	Road	From	To										
DO	Dove Valley Road	155th Avenue	179th Avenue	0.00	3.10	Does Not Exist	Minor Arterial	0	4	\$0	\$31,220,894	0	89,032
DO	Dove Valley Road	Lone Mountain Road	187th Avenue	0.00	1.80	Does Not Exist	Parkway	0	6	\$0	\$11,522,094	0	104,976
DO	Dove Valley Road	187th Avenue	Center Street	3.50	3.50	Minor Collector	Parkway	2	6	\$8,046,853	\$34,598,936	15,680	204,120
CE	Center Street	Dove Valley Road	US 60/Grand Avenue	0.36	0.36	Minor Collector	Parkway	2	6	\$827,676	\$12,638,300	1,613	20,995
QR	Quail Run Road	195th Avenue	203rd Avenue	0.00	0.70	Does Not Exist	Minor Arterial	0	4	\$0	\$16,040,459	0	20,104
LO	Lone Mountain Road	155th Avenue	Dove Valley Road	0.00	2.85	Does Not Exist	Major Arterial	0	6	\$0	\$35,393,980	0	138,624
LO	Lone Mountain Road	Dove Valley Road	US 60/Grand Avenue	0.00	3.30	Does Not Exist	Major Arterial	0	6	\$0	\$38,351,719	0	160,512
DI	Dixileta Road	139th Avenue	163rd Avenue	0.00	3.00	Does Not Exist	Minor Arterial	0	4	\$0	\$42,701,000	0	86,160
DI	Dixileta Road	163rd Avenue	168th Drive	0.62	0.62	Local Street	Minor Arterial	2	4	\$1,262,868	\$16,006,340	992	17,806
DI	Dixileta Drive	168th Drive	179th Avenue	0.00	1.38	Does Not Exist	Minor Arterial	0	4	\$0	\$13,524,003	0	39,634
DI	Dixileta Drive	187th Avenue	Lone Mountain Road	0.00	1.10	Does Not Exist	Minor Arterial	0	4	\$0	\$9,564,693	0	31,592
PA	Patton Road	139th Avenue	157th Avenue	0.00	2.25	Does Not Exist	Minor Arterial	0	4	\$0	\$9,220,406	0	64,620
PA	Patton Road	157th Avenue	163rd Avenue	0.75	0.75	Local Street	Minor Arterial	2	4	\$1,527,663	\$18,167,099	1,200	21,540
PA	Patton Road	163rd Avenue	Pat Tillman Boulevard	0.00	2.40	Does Not Exist	Minor Arterial	0	4	\$0	\$23,013,331	0	68,928
JO	Jomax Road	El Granada Blvd (135th Avenue)	175th Lane	5.30	5.30	Minor Collector	Minor Arterial	2	4	\$10,795,483	\$35,059,869	23,744	152,216
JO	Jomax Road	175th Lane	179th Avenue	0.00	0.37	Does Not Exist	Minor Arterial	0	4	\$0	\$15,184,968	0	10,626
JO	Jomax Road	Pat Tillman Boulevard	US 60/Grand Avenue	0.00	1.00	Does Not Exist	Major Arterial	0	6	\$0	\$11,005,305	0	48,640
HA	Happy Valley Road	139th Avenue	Rancho Mercado Parkway	0.54	0.54	Minor Arterial	Major Arterial	4	6	\$3,615,022	\$5,930,343	15,509	26,266

DRAFT Land Use Assumptions, Infrastructure Improvements Plan, and Development Fee Report
Surprise, Arizona

Street Segment				Existing Length (miles)	Ultimate Length (miles)	Existing Cross-Section	Ultimate Functional Classification	Existing Number of Lanes	Ultimate Number of Lanes	Value of Existing Roadway	Value of Ultimate Roadway	Existing LOS C Capacity (veh-miles)	Ultimate LOS C Capacity (veh-miles)
Segment Name	Road	From	To										
HA	Happy Valley Road	Rancho Mercado Parkway	147th Avenue	0.50	0.50	Minor Collector	Major Arterial	2	6	\$1,434,533	\$5,703,274	2,240	24,320
HA	Happy Valley Road	147th Avenue	163rd Avenue	1.84	1.84	Minor Arterial	Major Arterial	4	6	\$12,317,852	\$26,033,874	52,845	89,498
HA	Happy Valley Road	163rd Avenue	Pat Tillman Boulevard	0.00	0.96	Does Not Exist	Major Arterial	0	6	\$0	\$11,620,421	0	46,694
PI	Pinnacle Peak Road	147th Avenue	163rd Avenue	0.00	1.85	Does Not Exist	Minor Arterial	0	4	\$0	\$17,208,549	0	53,132
139A	139th Avenue	Dixileta Drive	Briles Road	0.00	2.13	Does Not Exist	Minor Arterial	0	4	\$0	\$8,554,911	0	61,174
139A	139th Avenue	Briles Road	Yearling Road	0.25	0.25	Minor Collector	Minor Arterial	2	4	\$763,831	\$19,248,550	1,700	7,180
139A	139th Avenue	Yearling Road	Happy Valley Road	0.00	0.70	Does Not Exist	Minor Arterial	0	4	\$0	\$13,144,966	0	20,104
139A	139th Avenue	Happy Valley Road	Loop 303	0.00	0.80	Does Not Exist	Minor Arterial	0	4	\$0	\$27,432,639	0	22,976
147A	147th Avenue	Dynamite Boulevard	Black Hill Road	0.00	0.28	Does Not Exist	Minor Arterial	0	4	\$0	\$17,588,121	0	8,042
147A	147th Avenue	Black Hill Road	Happy Valley Road	1.63	1.63	Minor Collector	Minor Arterial	2	4	\$3,320,120	\$57,270,424	11,084	46,814
147A	147th Avenue	Happy Valley Road	Pinnacle Peak Road	0.00	1.00	Does Not Exist	Minor Arterial	2	4	\$3,055,325	\$19,041,646	0	28,720
155A	155th Avenue	Dove Valley Road	CAP Canal	0.00	1.20	Does Not Exist	Minor Arterial	0	4	\$0	\$10,596,722	0	34,464
155A	155th Avenue	CAP Canal	Jomax Road	0.00	2.70	Does Not Exist	Minor Arterial	0	4	\$0	\$4,216,691	0	77,544
155A	155th Avenue	Jomax Road	Frontier Road	0.43	0.43	Minor Collector	Minor Arterial	2	4	\$875,860	\$4,038,661	2,924	12,350
155A	155th Avenue	Frontier Road	Pinnacle Peak Road	0.00	1.50	Does Not Exist	Minor Arterial	0	4	\$0	\$11,985,415	0	43,080
163A	163rd Avenue	Dove Valley Road	CAP Canal	1.62	1.70	Minor Collector	Parkway	2	6	\$3,908,471	\$41,571,315	7,258	99,144
163A	163rd Avenue	CAP Canal	Jomax Road	2.33	2.33	Minor Collector	Parkway	2	6	\$5,356,905	\$13,118,178	10,438	135,886
163A	163rd Avenue	Jomax Road	Desert Oasis Boulevard	0.47	0.47	Major Collector	Major Arterial	3	6	\$1,348,461	\$24,170,458	5,339	22,861
163A	163rd Avenue	Desert Oasis Boulevard	Desert Oasis Blvd (1,930' S)	0.36	0.36	Major Collector	Major Arterial	2	6	\$1,032,863	\$10,822,183	2,448	17,510

DRAFT Land Use Assumptions, Infrastructure Improvements Plan, and Development Fee Report
Surprise, Arizona

Street Segment				Existing Length (miles)	Ultimate Length (miles)	Existing Cross-Section	Ultimate Functional Classification	Existing Number of Lanes	Ultimate Number of Lanes	Value of Existing Roadway	Value of Ultimate Roadway	Existing LOS C Capacity (veh-miles)	Ultimate LOS C Capacity (veh-miles)
Segment Name	Road	From	To										
163A	163rd Avenue	Desert Oasis Blvd (1,930' S)	Surprise Fire Station 304	0.19	0.19	Minor Collector	Major Arterial	2	6	\$545,122	\$11,219,750	851	9,242
163A	163rd Avenue	Surprise Fire Station 304	San Ysidrio Road	0.22	0.22	Minor Arterial	Major Arterial	4	6	\$1,051,991	\$7,129,093	6,318	10,701
163A	163rd Avenue	San Ysidrio Road	Asante Blvd	0.25	0.25	Major Arterial	Major Arterial	5	6	\$1,912,710	\$12,119,458	10,160	12,160
163A	163rd Avenue	Asante Blvd	Pinnacle Peak Road	0.50	0.50	Major Arterial	Major Arterial	6	6	\$4,303,598	\$18,075,110	24,320	24,320
163A	163rd Avenue	Pinnacle Peak Road	US 60/Grand Avenue	0.73	0.73	Minor Arterial	Major Arterial	4	6	\$4,188,835	\$10,529,716	20,966	35,507
171A	171st Avenue	Dove Valley Road	CAP Canal	0.00	1.70	Does Not Exist	Minor Arterial	0	4	\$0	\$16,053,044	0	48,824
171A	171st Avenue	CAP Canal	Gambit Trail	0.00	1.50	Does Not Exist	Minor Arterial	0	4	\$0	\$34,298,629	0	43,080
171A	171st Avenue	Gambit Trail	Jomax Road	0.70	0.70	Minor Collector	Minor Arterial	2	4	\$2,138,728	\$7,746,476	3,136	20,104
179A	179th Avenue	Lone Mountain Road	CAP Canal	0.00	1.00	Does Not Exist	Minor Arterial	0	4	\$0	\$30,525,091	0	28,720
179A	179th Avenue	CAP Canal	Pat Tillman Boulevard	0.00	1.70	Does Not Exist	Minor Arterial	0	4	\$0	\$37,974,990	0	48,824
187A	187th Avenue	Dove Valley Road	CAP Canal	0.00	2.10	Does Not Exist	Major Arterial	0	6	\$0	\$9,164,384	0	102,144
187A	187th Avenue	CAP Canal	Pat Tillman Boulevard	0.00	0.85	Does Not Exist	Major Arterial	0	6	\$0	\$628,365,451	0	41,344
195A	195th Avenue	Dove Valley Road	Lone Mountain Road	0.00	1.20	Does Not Exist	Minor Arterial	0	4	\$0	\$0	0	34,464
203A	203rd Avenue	Dove Valley Road	Pat Tillman Boulevard	1.83	1.40	Minor Collector	Major Arterial	2	6	\$2,677,794	\$10,783,235	8,198	68,096
PT	Pat Tillman Boulevard	163rd Avenue	Asante Boulevard	0.90	0.90	Major Arterial	Major Arterial	6	6	\$7,746,476	\$0	43,776	43,776
PT	Pat Tillman Boulevard	Asante Boulevard	CAP Canal	0.00	4.50	Does Not Exist	Major Arterial	0	6	\$0	\$3,154,952	0	218,880
PT	Pat Tillman Boulevard	CAP Canal	Dove Valley Road	0.00	3.40	Does Not Exist	Major Arterial	0	6	\$0	\$3,154,952	0	165,376
Total, North				25.82	79.79	-	-	68	266	\$84,055,040	\$1,562,805,067	272,739	3,113,446

WEST

Street Segment				Existing Length (miles)	Ultimate Length (miles)	Existing Cross-Section	Ultimate Functional Classification	Existing Number of Lanes	Ultimate Number of Lanes	Value of Existing Roadway	Value of Ultimate Roadway	Existing LOS C Capacity (veh-miles)	Ultimate LOS C Capacity (veh-miles)
Segment Name	Road	From	To										
PA	Patton Road	US 60/Grand Avenue	CAP Canal	1.65	1.65	Minor Collector	Minor Arterial	2	4	\$3,360,858	\$33,703,857	7,392	47,388
JO	Jomax Road	US 60/Grand Avenue	195th Avenue	1.15	0.00	Minor Collector	Does Not Exist	2	0	\$0	\$0	5,152	0
JO	Jomax Road	195th Avenue	203rd Avenue	0.00	1.10	Does Not Exist	Major Arterial	0	6	\$0	\$9,467,915	0	53,504
JO	Jomax Road	203rd Avenue	207th Avenue	0.50	0.50	Local Street	Major Arterial	2	6	\$956,355	\$14,484,282	800	24,320
JO	Jomax Road	207th Avenue	211th Avenue	0.00	0.50	Does Not Exist	Major Arterial	0	6	\$0	\$4,303,598	0	24,320
HA	Happy Valley Road	US 60/Grand Avenue	211th Avenue	3.88	3.88	Minor Collector	Minor Arterial	2	4	\$7,903,109	\$46,588,984	17,382	111,434
NO	Norwich Drive	US 60/Grand Avenue	181st Drive	0.85	0.85	Minor Collector	Minor Arterial	2	4	\$1,731,351	\$23,421,203	3,808	24,412
PI	Pinnacle Peak Road	Citrus Road	187th Avenue	1.00	0.00	Minor Collector	Does Not Exist	2	0	\$0	\$0	4,480	0
PI	Pinnacle Peak Road	219th Avenue	223rd Avenue	0.50	0.50	Local Street	Does Not Exist	2	0	\$0	\$0	800	0
PI	Pinnacle Peak Road	Deer Valley Road	CAP Canal	0.00	1.40	Does Not Exist	Parkway	0	6	\$0	\$21,941,494	0	81,648
DE	Deer Valley Road	US 60/Grand Avenue	178th Avenue	1.32	1.32	Minor Collector	Parkway	2	6	\$2,496,676	\$15,514,127	5,914	76,982
DE	Deer Valley Road	178th Avenue	195th Avenue	2.25	2.25	Minor Collector	Parkway	2	6	\$4,255,697	\$31,870,154	10,080	131,220
DE	Deer Valley Road	195th Avenue	219th Avenue	0.00	2.98	Does Not Exist	Parkway	0	6	\$0	\$139,482,758	0	173,794
DE	Deer Valley Road	219th Avenue	227th Avenue/Pinnacle Peak Road	0.00	1.00	Does Not Exist	Parkway	0	6	\$0	\$10,345,954	0	58,320
DE	Deer Valley Road	227th Avenue/Pinnacle Peak Road	255th Avenue	0.00	3.50	Does Not Exist	Minor Arterial	0	4	\$0	\$95,972,385	0	100,520
BER	Beardsley Road	Union Hills Drive	255th Avenue	0.00	8.50	Does Not Exist	Minor Arterial	0	4	\$0	\$75,347,713	0	244,120
UN	Union Hills Drive	Jackrabbit Trail	203rd Avenue	0.00	2.00	Does Not Exist	Minor Arterial	0	4	\$0	\$14,258,186	0	57,440
SU	Sun Valley Parkway	195th Avenue	255th Avenue	8.30	8.30	Parkway	Parkway	4	6	\$47,706,342	\$96,204,331	324,032	484,056

DRAFT Land Use Assumptions, Infrastructure Improvements Plan, and Development Fee Report
Surprise, Arizona

Street Segment				Existing Length (miles)	Ultimate Length (miles)	Existing Cross-Section	Ultimate Functional Classification	Existing Number of Lanes	Ultimate Number of Lanes	Value of Existing Roadway	Value of Ultimate Roadway	Existing LOS C Capacity (veh-miles)	Ultimate LOS C Capacity (veh-miles)
Segment Name	Road	From	To										
187A	187th Avenue	Happy Valley Road	Williams Drive	0.00	1.51	Does Not Exist	Minor Arterial	0	4	\$0	\$10,764,930	0	43,367
187A	187th Avenue	Williams Drive	Jackrabbit Trail	0.51	0.30	Minor Collector	Minor Arterial	2	4	\$916,598	\$2,302,621	2,285	8,616
195A	195th Avenue	Patton Road	Jomax Road	1.03	0.00	Minor Collector	Does Not Exist	2	0	\$0	\$0	4,614	0
JA	Jackrabbit Trail	Jomax Road	Pinnacle Peak Road	1.88	1.88	Minor Collector	Major Arterial	2	6	\$3,595,895	\$24,279,799	8,422	91,443
JA	Jackrabbit Trail	Pinnacle Peak Road	Deer Valley Road	0.00	1.35	Does Not Exist	Major Arterial	0	6	\$0	\$11,619,713	0	65,664
JA	Jackrabbit Trail	Deer Valley Road	Bell Road	0.00	3.25	Does Not Exist	Major Arterial	0	6	\$0	\$178,209,184	0	158,080
195A	195th Avenue	Pinnacle Peak Road	Deer Valley Road	1.00	0.00	Minor Collector	Does Not Exist	2	0	\$0	\$0	4,480	0
195A	195th Avenue	Deer Valley Road	Bell Road	0.00	3.00	Does Not Exist	Minor Arterial	0	4	\$0	\$92,680,994	0	86,160
203A	203rd Avenue	CAP Canal	Patton Road	0.00	0.05	Does Not Exist	Minor Arterial	0	4	\$0	\$51,982,939	0	1,436
203A	203rd Avenue	Patton Road	Jomax Road	1.00	1.00	Local Street	Minor Arterial	2	4	\$2,036,884	\$27,490,462	1,600	28,720
203A	203rd Avenue	Jomax Road	Happy Valley Road	0.00	0.89	Does Not Exist	Minor Arterial	0	4	\$0	\$6,344,893	0	25,561
203A	203rd Avenue	Deer Valley Road	Sun Valley Parkway	0.00	2.20	Does Not Exist	Minor Arterial	0	4	\$0	\$84,519,316	0	63,184
211A	211th Avenue	CAP Canal	Jomax Road	0.00	0.56	Does Not Exist	Major Arterial	0	6	\$0	\$11,129,933	0	27,238
211A	211th Avenue	Jomax Road	Sun Valley Parkway	0.00	4.60	Does Not Exist	Major Arterial	0	6	\$0	\$132,739,293	0	223,744
219A	219th Avenue	Pinnacle Peak Road	Sun Valley Parkway	2.50	2.50	Minor Collector	Minor Arterial	2	4	\$5,092,209	\$103,175,948	11,200	71,800
227A	227th Avenue	CAP Canal	Sun Valley Parkway	0.00	3.65	Does Not Exist	Major Arterial	0	6	\$0	\$55,754,462	0	177,536
235A	235th Avenue	CAP Canal	Sun Valley Parkway	0.00	2.47	Does Not Exist	Minor Arterial	0	4	\$0	\$22,771,508	0	70,938
243A	243rd Avenue	CAP Canal	Sun Valley Parkway	0.00	2.00	Does Not Exist	Parkway	0	6	\$0	\$38,802,150	0	116,640
251A	251st Avenue	CAP Canal	Sun Valley Parkway	0.00	2.15	Does Not Exist	Minor Arterial	0	4	\$0	\$27,865,410	0	61,748
Total, West				29.32	73.59	-	-	34	160	\$80,051,973	\$1,515,340,494	412,441	3,015,353

APPENDIX F: PLANNED MAJOR ROADWAY IMPROVEMENTS

SOUTH

Segment Name	Road	Street Segment		Existing Length (miles)	Existing Number of Lanes	Ultimate Functional Classification	Ultimate Length (miles)	Ultimate Number of Lanes	IIP Number of Lanes	Percent Physically Complete with IIP	Increase in LOS C Capacity with IIP (veh-miles)	Preliminary Estimate of IIP Roadway Construction Cost
		From	To									
PE	Peoria Avenue	Solar Canyon Way	136th Avenue	0.32	2	Minor Arterial	0.32	4	4	100%	776	\$5,086,552
-	Cactus Road	Traffic Signal	at Magnolia Drive	-	-	-	-	-	-	100%	-	\$917,250
-	Greenway Road	Traffic Signal	at 175th Avenue	-	-	-	-	-	-	100%	-	\$917,250
-	Greenway Road	Traffic Signal	at Verde Vista Drive	-	-	-	-	-	-	100%	-	\$917,250
-	Sweetwater Avenue	Traffic Signal	at Cotton Lane	-	-	-	-	-	-	100%	-	\$917,250
-	Greenway Road	Traffic Signal	at Civic Center Road	-	-	-	-	-	-	100%	-	\$917,250
-	Peoria Avenue	Traffic Signal	at Cotton Lane	-	-	-	-	-	-	100%	-	\$917,250
-	Sweetwater Avenue	Traffic Signal	at Reems Road	-	-	-	-	-	-	100%	-	\$917,250
-	Waddell Road	Traffic Signal	at 157th Avenue	-	-	-	-	-	-	100%	-	\$917,250
-	Waddell Road	Traffic Signal	at Legacy Park Way	-	-	-	-	-	-	100%	-	\$917,250
-	Bell Road	Traffic Signal	at 183rd Avenue	-	-	-	-	-	-	100%	-	\$917,250
-	Bell Road	Traffic Signal	at Bell Point Boulevard	-	-	-	-	-	-	100%	-	\$917,250
-	Cotton Lane	Traffic Signal	at 1/4 mile north of Peoria Ave	-	-	-	-	-	-	100%	-	\$917,250
Total, South												\$16,093,552

NORTH

Segment Name	Road	Street Segment		Existing Length (miles)	Existing Number of Lanes	Ultimate Functional Classification	Ultimate Length (miles)	Ultimate Number of Lanes	IIP Number of Lanes	Percent Physically Complete with IIP	Increase in LOS C Capacity with IIP (veh-miles)	Preliminary Estimate of IIP Roadway Construction Cost
		From	To									
PT	Pat Tillman Boulevard	Asante Boulevard	CAP Canal	0.00	0	Major Arterial	4.50	6	6	100%	1,532	\$3,154,952
PT	Pat Tillman Boulevard	CAP Canal	Dove Valley Road	0.00	0	Major Arterial	3.40	6	6	100%	9,923	\$3,154,952
-	151st Avenue	Traffic Signal	at Happy Valley Road	-	-	-	-	-	-	100%	-	\$917,333
-	155th Avenue	Traffic Signal	at Happy Valley Road	-	-	-	-	-	-	100%	-	\$917,333
-	159th Avenue	Traffic Signal	at Happy Valley Road	-	-	-	-	-	-	100%	-	\$917,333
-	163rd Avenue	Traffic Signal	at Asante Boulevard	-	-	-	-	-	-	100%	-	\$917,333
-	163rd Avenue	Traffic Signal	at Happy Valley Road	-	-	-	-	-	-	100%	-	\$917,333
-	171st Avenue	Traffic Signal	at Jomax Road	-	-	-	-	-	-	100%	-	\$917,333
Total, North												\$11,813,904

DRAFT Land Use Assumptions, Infrastructure Improvements Plan, and Development Fee Report
Surprise, Arizona

WEST

Street Segment				Existing Length (miles)	Existing Number of Lanes	Ultimate Functional Classification	Ultimate Length (miles)	Ultimate Number of Lanes	IIP Number of Lanes	Percent Physically Complete with IIP	Increase in LOS C Capacity with IIP (veh-miles)	Preliminary Estimate of IIP Roadway Construction Cost
Segment Name	Road	From	To									
DE	Deer Valley Road	US 60/Grand Avenue	178th Avenue	1.32	2	Parkway	1.32	6	6	100%	54,722	\$6,750,796
DE	Deer Valley Road	178th Avenue	195th Avenue	2.25	2	Parkway	2.25	6	6	100%	39,976	\$17,985,943
Total, West												\$24,736,739