CITY COUNCIL AGENDA

CITY COUNCIL CHAMBERS . 11465 WEST CIVIC CENTER DRIVE . AVONDALE, AZ 85323

WORK SESSION
October 12, 2009
6:00 PM

CALL TO ORDER BY MAYOR ROGERS

1 ROLL CALL BY THE CITY CLERK

2 INTRODUCTION OF DR. DENNIS RUNYAN, AGUA FRIA UNION HIGH SCHOOL DISTRICT INTERIM SUPERINTENDENT

City Council will welcome Dr. Dennis Runyan, Interim Superintendent of the Agua Fria Union High School District.

3 PRESENTATION ON CITY OF TUCSON RAINWATER HARVESTING AND GRAYWATER INITIATIVES

City Council will receive a presentation from Tucson Council Member Rodney Glassman and City of Tucson staff regarding Tucson ordinances related to rainwater harvesting and residential graywater systems. For information and discussion only.

4 UPDATE ON GREEN FRIDAY PROGRAM

City Council will receive an update on the "Green Friday" schedule for Avondale City Court and will consider whether to continue the program. For information, discussion and direction.

5 ESTRELLA FOOTHILLS SPECIFIC PLAN

City Council will review the Public Draft of the Estrella Foothills Specific Plan. For information, discussion and direction only.

6 DISCUSSION ON NAMING OF AMERICAN SPORTS CENTER

City Council will discuss available options for the naming of the American Sports Center in honor of Randall McDaniel. For information, discussion and direction only.

7 ADJOURNMENT

Respectfully submitted,

Carmen Martinez

Carmen Martinez
City Clerk

Individuals with special accessibility needs, including sight or hearing impaired, large print, or interpreter, should contact the City Clerk at 623-333-1200 or TDD 623-333-0010 at least two business days prior to the Council Meeting.

Personas con necesidades especiales de accesibilidad, incluyendo personas con impedimentos de vista u oído, o con necesidad de impresión grande o interprete, deben comunicarse con la Secretaria de la Ciudad at 623-333-1200 o TDD 623-333-0010 cuando menos dos días hábiles antes de la junta del Concejo.

CITY COUNCIL REPORT

SUBJECT:
Introduction of Dr. Dennis Runyan, Agua Fria Union High School District Interim Superintendent

MEETING DATE:
October 12, 2009

TO: Mayor and Council

FROM: Sammi Curless, Assistant to the Mayor and Council (623)333-1613

THROUGH: Charlie McClendon, City Manager

PURPOSE:

Mayor and Council requested an opportunity to meet Dr. Dennis Runyan in his new capacity as Interim Superintendent of the Agua Fria Union High School District.

BACKGROUND:

Dr. Runyan was selected as the Interim Superintendent on July 28, 2009. Dr. Runyan first came to the Agua Fria Union High School District in 2002 when he was appointed Assistant Principal of Millennium High School. In 2003 Dr. Runyan was appointed the school's Principal. Dr. Runyan has over 22 years of public education experience including 17 years as a school administrator. Dr. Runyan has both a masters degree and a doctorate in educational leadership.

RECOMMENDATION:

No recommendation or action is necessary as this is a worksession item.

ATTACHMENTS:

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No Attachments Available

CITY COUNCIL REPORT

SUBJECT:
Presentation on City of Tucson Rainwater Harvesting and Graywater Initiatives

MEETING DATE:
October 12, 2009

TO: Mayor and Council

FROM: Sammi Curless, Assistant to the Mayor and Council (623)333-1613

THROUGH: Charlie McClendon, City Manager

PURPOSE:

Tucson Councilmember Rodney Glassman and City of Tucson staff requested the opportunity to speak with the City Council regarding Tucson ordinances related to rainwater harvesting and residential graywater systems. This item is presented for information and discussion only.

BACKGROUND:

On September 23, 2008, the Tucson City Council adopted an ordinance calling for the installation of waste plumbing in new single family and duplex residential dwelling units to make future connection of a graywater system easier. In addition, the ordinance also calls for a separate discharge of washing machine graywater directly outside the house which allows for a homeowner to immediately gain the benefits of graywater reuse without having to install a full system throughout the house.

Following the graywater ordinance adoption, on October 14, 2008, the Tucson City Council adopted a Commercial Rainwater Harvesting Ordinance which applies to new commercial construction. Facilities subject to the ordinance must meet 50% of their landscape demand using harvested rainwater, prepare a site water harvesting plan and water budget, meter outdoor water use and use irrigation controls that respond to soil moisture conditions at the site. Facilities have three years to establish plants before the 50% requirement must be met, and the requirement is waived during periods of drought.

Both of these ordinances take effect on June 1, 2010 and were extensively reviewed and discussed by stakeholder groups representing a broad range of interest groups.

DISCUSSION:

Interest in opportunities to recycle water within home and commerical sites is gaining in popularity as residents and business owners become more interested in their "green" responsibility. In addition, the City's Environmental Affairs Commission has established as one of its "first priority" goals the exploration of possibilities for graywater recover/storage onsite for residential and commercial sites for Avondale. The presentation by the City of Tucson provides the City Council and Environmental Affairs Commission their first opportunity to hear about such programs.

RECOMMENDATION:

For discussion and possible direction to staff.

ATTACHMENTS:

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- Rainwater Harvesting Ordinance

- Rainwater Harvesting Development Standard
- Rainwater Harvesting Budget Spreadsheet
- Graywater Ordinance

NOTES:

1. The Ordinance below was adopted by City of Tucson Mayor and Council on October 14, 2008.

2. The Ordinance implementation date is June 1, 2010

3. To see the Ordinance in its context within the Tucson Code, go to **<http://www.municode.com/Resources/gateway.asp?pid=11294&sid=3> and go down to Article 8**

==========

CITY OF TUCSON CODE
ARTICLE VIII. RAINWATER COLLECTION AND DISTRIBUTION REQUIREMENTS

Sec. 6-181. Definitions.

As used in this article, the following terms are defined as follows:

Commercial development means any new non-residential development that is intended to be used primarily for commercial activities, and is subject to the requirements of the International Building Code.

Rainwater means water that has fallen as rain and contains little dissolved mineral matter, or any other form of precipitation.

(Ord. No. 10597, § 1, 10-14-08)

Sec. 6-182. Rainwater harvesting plan.

A. All commercial development and site plans submitted after June 1, 2010, shall include a rainwater harvesting plan. The rainwater harvesting plan shall include a landscape water budget and an implementation plan.

1. The landscape water budget shall calculate the estimated volume of water required yearly for all site landscaping detailed in the development and/or landscape plan.

2. The implementation plan shall show how any combination of capture, conveyance, storage, and distribution will be utilized on-site to harvest rainwater. Implementation plans shall comply with applicable development standards for water harvesting applications.

3. The implementation plan shall also provide for water metering of all on-site landscape water through either:

(a) A separate water meter connected to the main water supply; or,

(b) An irrigation sub-meter.

B. The rainwater harvesting plan shall be submitted concurrently with the site plan and landscape plan.

C. The director of the development services department may authorize alternative compliance with development standards when conditions of topography, site soils or ratio of landscape area to total site area would make strict adherence to standard provisions unreasonable and the alternative compliance advances the spirit of this article.

(Ord. No. 10597, § 1, 10-14-08)

Sec. 6-183. Construction of rainwater harvesting system; minimum landscape budget requirements; request for rainwater harvesting plan revision.

A. All new commercial development built pursuant to a development plan submitted after June 1, 2010, shall include a rainwater harvesting system constructed according to an approved rainwater harvesting plan.

B. No later than three (3) years from the date of issuance of a final certificate of occupancy, and for every year thereafter, fifty (50) percent of the estimated yearly landscape water budget shall be provided by rainwater harvested on-site by a rainwater harvesting system constructed pursuant to an approved rainwater harvesting plan. The fifty (50) percent landscape budget provision shall not apply in any calendar year in which the annual precipitation has fallen below the amount determined in the applicable development standards.

C. Within three (3) years from the date of issuance of a final certificate of occupancy, the applicant, or a successor in interest, may request to revise the rainwater harvesting plan. The request shall be submitted to the director of development services. The request shall be granted only if one of the following is true:

1. A mathematical or engineering error was made in the calculation of water required for on-site landscaping.

2. A variance related to landscape requirements, and which impacts the landscape water budget, is obtained subsequent to the approval of a submitted rainwater harvesting plan.

3. Additional data on site conditions or performance relevant to the subject site has been obtained, and results indicated a needed change in water budget calculations in the rainwater harvesting plan.

(Ord. No. 10597, § 1, 10-14-08)

Sec. 6-184. Restrictions on installation of rainwater harvesting system invalid.

A. Any covenant, restriction or condition contained in any deed, contract, security agreement or other instrument affecting the transfer or sale of, or any interest in, real property which effectively prohibits the installation or use of a rainwater harvesting system is void and unenforceable.

B. A deed, contract, security agreement or other instrument affecting the transfer or sale of, or any interest in, real property entered into before June 1, 2010, shall not be subject to the provisions of this section.

(Ord. No. 10597, § 1, 10-14-08)

Sec. 6-185. Exceptions.

A. That portion of a development which includes the following land uses shall be excepted from the fifty (50) percent rainwater harvesting requirements:

1. Public parks and botanical gardens;

2. Outdoor recreation facilities, whether under public or private ownership, for public use, schools, and day care centers;

3. The playing areas of golf courses;

4. Cemeteries;

5. Natural open space;

6. Crop production.

(Ord. No. 10597, § 1, 10-14-08)

Sec. 6-186. Annual report.

A. A rainwater harvesting landscape water-use budget report shall be submitted annually by the owner or owner's agent to Tucson Water. The report shall include location and ownership information for the property, monthly rainfall totals collected from an on-site gauge or the SAHRA rain gauge closest to the site, monthly site water use data, and monthly relevant sub-meter or service meter data.

(Ord. No. 10597, § 1, 10-14-08)

Sec. 6-187. Violation.

A. Failure to meet the fifty (50) percent rainwater harvesting requirement for landscape irrigation shall constitute water wastage, and notwithstanding any other provision of this section shall constitute a violation of section 27-15 of this Code.

B. The director of development services or the Director of Tucson Water may require that any development not meeting the landscape budget requirements conduct and submit a landscape irrigation audit and report the results with the audit and reporting performed by a third party auditor and paid for by the property owner.

C. The imposition of civil liability shall not preclude the city from taking any other enforcement actions permitted under the code.

(Ord. No. 10597, § 1, 10-14-08)

Sec. 6-188. Applicability.

The provisions of this article shall apply to construction built pursuant to permits issued after June 1, 2010.

(Ord. No. 10597, § 1, 10-14-08)

Secs. 6-189, 6-190. Reserved.

SECTION 10. HYDROLOGY

TABLE OF CONTENTS

10-01.0.0 STORM WATER DETENTION/RETENTION MANUAL

10-02.0.0 CITY OF TUCSON STANDARDS MANUAL FOR DRAINAGE DESIGN AND FLOODPLAIN MANAGEMENT IN TUCSON, ARIZONA

10-03.0.0 COMMERCIAL RAINWATER HARVESTING

STORM WATER DETENTION/RETENTION MAN UAL

Due to the size and nature of this manual, it is unable to be accommodated within the Development Standards Book. The manual is, therefore, printed and bound as an individual booklet and is available as a separate purchase item from the Pima County Transportation and Flood Control District.

For your information, the Table of Contents is included.

TABLE OF CONTENTS

Page

I. Introduction

1.1 Goals and Objectives 1
1.2 Applicability 1
1.3 Detention/Retention Concepts 2
1.4 Policies 5
1.5 Glossary of Terms 9
1.6 List of Symbols 12

III. Detention/Retention Requirements

2.1 Balanced and Critical Basins 13
2.2 Threshold Retention 13
2.3 Location Within Watershed 14
2.4 Retention Feasibility Map 20
2.5 Depth to Groundwater Map 22

I. Design Procedures and Criteria

3.1 Hydrology 25
3.1.1 Precipitation 25
3.1.2 Peaks and Volumes 25
3.1.3 Inflow Hydrographs 26
3.2 Retention 32
3.2.1 Required Storage Volume 32
3.2.2 Method of Disposal 32
3.3 Detention 33
3.3.1 Estimating Detention Storage Volume 33
3.3.2 Outflow Hydrograph Determination (Reservoir Routing) 37
3.3.3 Principal Outlet Structures 45
3.3.4 Embankments 48
3.4 Sedimentation Impacts 50
3.4.1 Estimating Sediment Delivery 50
3.4.2 Methods for Control of Sedimentation 51
3.5 Criteria for Special Detention/Retention Methods 53
3.5.1 Surface Storage 53
3.5.2 Parking Lot Storage 55

3.5.3 Rooftop Storage 55
3.5.4 Underground Storage 55
3.5.5 Subsurface Disposal 55
3.6 Basin Design Requirements 58
3.6.1 Basin Side-Slopes and Depths 58
3.6.2 Security Barriers 59
3.6.3 Multiple Basins 60

IV. Multiple-Use Concepts and Aesthetic Design Guidelines

4.1 Basin Siting 61
4.1.1 Project Scale Sites 61
4.1.2 Individual Parcels 62
4.1.3 Regional Facilities 64
4.1.4 Roadside Basins 64
4.2 Multiple Use Concepts 65
4.2.1 Project Amenity 65
4.2.2 Active Recreation 65
4.2.3 Passive Recreation 67
4.2.4 Urban Open Space 69
4.2.5 Preservation of Native Plant Communities 70
4.2.6 Water Harvesting for Recharge and Re-use 71
4.2.7 Wildlife Habitat 72
4.3 Technical Requirements and Guidelines 74
4.3.1 Basin Configuration 74
4.3.2 Basin Landscaping 85
4.3.3 Erosion Control 96
4.3.4 Landscape Irrigation 97

V. Report Submittal and Review Requirements
5.1 Submittal Procedure 99
5.2 Stormwater Detention/Retention Report Requirements 99

VI. Bibliography .....103 **LIST OF FIGURES**

Open Space and Common Areas 3
Pedestrian Plazas and Courtyards 3
Figure 1.1: Roadway Embankment Storage 4
Figure 1.2: Parking Lot Detention 4
Figure 1.3: Regional Detention Basins 5
Figure 1.4: Definition Sketch for Example 2.1 19
Figure 1.5: Retention Feasibility Map for Eastern Pima County 21
Figure 2.1: Depth to Groundwater, Tucson Basin and Avra Valley 23
Figure 2.2: Example Watershed for Method B 30
Figure 2.3: Hydrograph Determination by Method B 31
Figure 3.1: Graphical Representation of Inflow/Outflow
Figure 3.2: Hydrographs for Type I, II, III, & IV Basins 36
Figure 3.3: Working Curve 43
Inflow/Outflow Hydrograph for Q100 46
Figure 3.4:
Figure 3.5:

Figure 3.6: Typical Multi-Frequency Outlet Structures 47
Figure 3.7: Sediment-Trap Concept 52
Figure 3.8: Conceptual Cross-Section for Engineered Basin Floor 56
Figure 3.9: Typical Dry-Well Installation 57

LIST OF TABLES

Table 3.1: Rainfall Depths of Various Return-Period Events 25
Table 3.2: Hydrograph Rise Times for T_C < 60 Minutes 28
Table 3.3: Ratios for Generation of Pima County Synthetic Flood Hydrograph 29
Table 3.4: Runoff Coefficients 33
Table 3.5: Synthetic Inflow Hydrograph for Example 3.1 39
Table 3.6: Stage-Storage Relationship for Example 3.1 40
Table 3.7: Stage-Discharge Relationship for Example 3.1 41
Table 3.8: Storage-Discharge Relationship for Example 3.1 41
Table 3.9: Working Table for Example 3.1 42
Table 3.10: Routing Table for Example 3.1 44

CITY OF TUCSON STANDARDS MANUAL FOR DRAINAGE DESIGN AND FLOODPLAIN MANAGMENT IN TUCSON, ARIZONA

Due to the size and nature of this manual, it is unable to be accommodated within the Development Standards Book. The manual is, therefore, printed and bound as an individual booklet and is available as a separate purchase item from the City of Tucson Engineering Division.

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TABLE OF CONTENTS

Page

LIST OF FIGURES xi

LIST OF TABLES xv

GLOSSARY xvii

LIST OF SYMBOLS xxvii

CHAPTER I. INTRODUCTION

1.1 Objectives 1.01
1.2 Applicability 1.02
1.3 General Policies 1.02
1.4 Implementation 1.05
1.4.1 Subdivision Assurances 1.05
1.4.2 Private Improvement Agreement 1.05
1.4.3 Public Improvement District 1.06
1.4.4 Private Drainage Improvements 1.06
1.5 Maintenance of Drainage Improvements 1.06
1.5.1 Maintenance of Drainageways 1.07
1.5.2 Maintenance of Detention/Retention Basins 1.08

CHAPTER II. POLICIES, PROCEDURES, AND FORMATS FOR DRAINAGE REPORTS, HYDROLOGY REPORTS, AND DRAINAGE STATEMENTS

2.1 Introduction 2.01
2.1.1 Drainage Report 2.01
2.1.2 Hydrology Report 2.01
2.1.3 Drainage Statement 2.01
2.2 Conditions Requiring Report or Data Submittal 2.02
2.2.1 Rezoning Applications 2.02
2.2.2 Subdivision Plats and Development Plans 2.02

2.2.3 Application for a Building Permit or a Grading Plan 2.03
2.2.4 Condominium Conversions 2.03
2.2.5 Floodplain Use Permits 2.04
2.2.6 Request for Map Revision 2.04
2.3 Report Content and Format 2.05
2.3.1 Drainage Reports and Hydrology Reports 2.05
2.3.1.1 Cover Sheet 2.05
2.3.1.2 Introduction 2.06
2.3.1.3 Hydrology 2.07
2.3.1.4 Floodplain Analyses and Results 2.09
2.3.1.5 Hydraulic Improvements and Hydraulic Structures 2.11
2.3.1.6 Detention Basins and/or Retention Basins 2.12
2.3.1.7 Summary and Conclusions 2.14
2.3.1.8 References 2.15
2.3.1.9 Appendices 2.15
2.3.2 Drainage Statement 2.15
2.4 Quality of Submittals 2.15

CHAPTER III. PLANNING

3.1 Drainage Sub-System 3.01
3.2 Drainage Master Planning 3.01
3.3 Balanced and Critical Basins 3.02
3.4 Flood Plains and Floodways 3.03
3.5 Transportation 3.04

CHAPTER IV. CITY OF TUCSON METHOD FOR ESTIMATING FLOOD PEAKS AND FLOOD HYDROGRAPHS

4.1 Purpose 4.01
4.2 Flood Peak Estimator Procedure 4.01
4.2.1 Step-by-Step Procedure for Estimating Flood Peaks 4.01
4.3 Selection of Basin Factors (n_bs) 4.08
4.3.1 Procedure for Determination of Weighted Basin Factors (n_{bw}s) ..... 4.09 4.3.2 Guidelines for Determination of Dispersed-Flow Watersheds and Underfit Channels 4.12
4.4 Calculating Times of Concentration for Frequent Floods 4.14
4.5 Development of a Flood Hydrograph 4.15

CHAPTER V. FLOODPLAIN DELINEATION

5.1 Purpose 5.01
5.2 Policies 5.01
5.3 Analytical Procedures for Evaluating Floodplain Widths and Depths in Channels with Uniform Hydraulic Roughness 5.02
5.3.1 Normal Flow Depth 5.02

5.3.2 Backwater Flow Depth .....5.03 Analytical Procedures for Evaluating Floodplain
5.4 Widths and
Depths in Channels with Composite Hydraulic Roughness 5.03
5.4.1 Composite Channels 5.03
5.4.2 Manning Roughness Coefficients ..... 5.04 City of Tucson Requirements for
5.5 Evaluating Flood Plains
and Floodways Subject to Agency Review 5.05
5.5.1 Floodplain Delineations..... 5.05
5.5.2 Floodway Delineations.....5.07 Administrative Procedures for Revising Effective
5.6 Flood
Insurance Rate Maps 5.08
5.6.1 Federal Flood Insurance Rate Maps..... 5.08
5.6.2 Map Amendments and Revisions 5.08

CHAPTER VI. EROSION AND SEDIMENTATION

6.1 Introduction 6.01
6.2 Purpose..... 6.01
6.3 Fluvial Geomorphology 6.01
6.3.1 Channel Morphology..... 6.02
6.3.1.1 Hydraulic Geometry of Alluvial Channels..... 6.02
6.3.1.2 Influence of Sediment Load 6.02
6.4 Sediment-Transport Theory 6.03
6.5 Sediment Routing..... 6.04
6.5.1 Simplified Sediment Modeling..... 6.04
6.5.2 Quasi-Dynamic Sediment Modeling..... 6.06
6.5.3 Dynamic Mathematical Modeling 6.07
6.6 Depth of Scour 6.07
6.6.1 General Scour 6.08
6.6.2 Anti-Dune Trough Depth 6.09
6.6.3 Low-Flow Thalweg 6.09
6.6.4 Bend Scour 6.11
6.6.5 Local Scour 6.13
6.6.6 Scour Below Channel Drops..... 6.18
6.7 Scour-Hole Geometry at Culvert Outlets..... 6.20
6.8 Design of Sediment Basins 6.28
6.9 Equilibrium Slopes within Constructed Channels 6.31
6.10 Spacing and Depth of Grade-Control Structures 6.34

CHAPTER VII. EROSION-HAZARD/BUILDING SETBACK CRITERIA

7.1 Introduction 7.01
7.2 Purpose..... 7.01
7.3 Applicability 7.01
7.4 Policies..... 7.02
7.5 Erosion Resistance of Unlined Channels..... 7.02
7.5.1 Allowable-Velocity Approach 7.02

7.5.2 Tractive-Stress Approach 7.04
7.5.3 Tractive-Power Approach 7.15
7.5.4 Effect of Vegetation upon Channel Stability 7.18
7.6 Setbacks 7.18
7.6.1 Equations to Compute Setbacks 7.18
7.6.2 Sediment Supply Rates/Transport Capacity 7.21
7.6.3 Bank Sloughing/Slope Stability 7.22
7.6.4 Detailed Sediment-Transport Analysis 7.23
7.6.5 Drainage Swales, Roads, and P.A.A.L.s 7.23

CHAPTER VIII. OPEN-CHANNEL DESIGN

8.1 Purpose 8.01
8.2 Introduction 8.01
8.3 Requirements for Natural Channels 8.01
8.4 Floodplain Encroachments 8.02
8.5 Constructed Channels 8.03
8.5.1 Channel Geometry 8.03
8.5.1.1 Side-Slopes 8.04
8.5.1.2 Width 8.04
8.5.1.3 Depth 8.05
8.5.1.4 Freeboard 8.07
8.5.2 Safety Considerations 8.08
8.5.3 Right-of-Way 8.08
8.5.4 Bank-Protection Key-Ins and Minor Side Drainage 8.09
8.5.5 Bank-Protection Toe-Downs 8.11
8.5.6 Low-Flow and Compound Channels 8.11
8.5.6.1 Low-Flow Channels 8.11
8.5.6.2 Compound Channels 8.11
8.5.7 Upstream and Downstream Controls 8.12
8.5.8 Channel Slope 8.14
8.5.9 Hydraulic Jump 8.14
8.5.9.1 Height of a Hydraulic Jump 8.15
8.5.9.2 Length of a Hydraulic Jump 8.16
8.5.9.3 Surface Profile of a Hydraulic Jump 8.16
8.5.9.4 Location of a Hydraulic Jump 8.16
8.5.9.5 Undular Hydraulic Jumps 8.16
8.5.10 Flow in a Curved Channel 8.22
8.5.10.1 Superelevation 8.22
8.5.10.2 Easement Curves 8.25
8.5.10.3 Banking 8.25
8.5.10.4 Limiting Curvature 8.26
8.5.11 Transitions 8.26
8.5.11.1 Entrance Transitions 8.26
8.5.11.2 Exit Transitions 8.31
8.5.11.3 Internal Channel Transitions 8.31

8.5.12 Channel Confluences....8.33
8.5.12.1 General Design Guidelines....8.33
8.5.12.2 Momentum Equation....8.35
8.5.12.3 Design Procedure: Supercritical Flow....8.40
8.5.13 Collector Channels....8.43
8.5.13.1 Cross Section and Slope....8.43
8.5.13.2 Depth....8.43
8.5.13.3 Erosion Protection....8.44
8.5.13.4 Sediment....8.46
8.5.13.5 Additional Design Considerations....8.46

CHAPTER IX. CHANNEL STABILIZATION AND HYDRAULIC STRUCTURES

9.1 Introduction....9.01
9.2 Purpose....9.01
9.3 Stabilization Methods....9.01
9.3.1 Soil Cement....9.02
9.3.2 Concrete or Shotcrete....9.02
9.3.3 Rock Riprap....9.02
9.3.3.1 Riprap Sizing....9.02
9.3.3.2 Riprap Gradation, Blanket Thickness, and Stone Shape....9.04
9.3.3.3 Riprap Filters....9.05
9.3.4 Gabion Baskets and Mattresses....9.05
9.3.5 Articulated Revetment Units....9.05
9.3.6 Other Forms of Channel Stabilization....9.06
9.4 Energy Dissipators....9.06
9.4.1 Culvert Outlets....9.06
9.4.2 Channel Outlets....9.06
9.4.3 Channel Drops....9.06
9.4.4 Seepage Forces....9.07
9.5 Bridges9.08
9.5.1 Hydraulic Analysis....9.09
9.5.2 Scour....9.09
9.5.3 Freeboard....9.09
9.6 Structure Aesthetics....9.09

CHAPTER X. STORM DRAINS

10.1 Purpose....10.01
10.2 Introduction....10.01
10.3 Policies....10.01
10.4 Design Discharge and Hydrology....10.02
10.5 Street and Gutter Flow....10.03
10.6 Pavement Inlets....10.08
10.6.1 Capacity of a Grade Inlet in a Sag....10.10
10.6.2 Capacity of a Curb Inlet in a Sag....10.11

10.6.3 Capacity of a Combination Inlet in a Sag 10.12
10.6.4 Capacity of a Slotted Inlet in a Sag 10.12
10.6.5 Capacity of a Grate Inlet on a Continuous Grade 10.14
10.6.6 Capacity of a Curb Inlet on a Continuous Grade 10.17
10.6.7 Capacity of a Combination Inlet on a Continuous Grade.....10.22
10.6.8 Capacity of a Slotted Inlet on a Continuous Grade.....10.22
10.6.9 Clogging 10.24
10.7 Inlet Design Procedure 10.25
10.8 Storm-Drain Calculations 10.26
10.8.1 Normal-Depth Calculations 10.28
10.8.2 Pressure-Flow Calculations: Computation of Hydraulic Grade Line .....
10.8.3 Friction Losses .....
10.8.4 Minor Losses .....
10.8.5 Bend Losses .....
10.8.6 Junction Losses .....
10.8.7 Transition Losses.....
10.8.8 Manhole Losses.....
10.8.9 Entrance and Outlet Losses.....
10.9 Storm-Drain Design Procedure .....
10.9.1 Preliminary Design.....
10.9.2 Final Pipe Sizing: Hydraulic Grade-Line Calculations .....
10.10 Suggested Design Practices .....
10.11 Check List for Design Submittals .....

CHAPTER XI. CULVERTS

11.1 Purpose.....11.01
11.2 Design Criteria and Policies 11.01
11.3 Procedure for Culvert Design 11.01
11.3.1 Step-by-Step Procedure for Sizing Culverts 11.02
11.4 Guidelines for Culvert Design 11.12
11.4.1 Hydraulics of Culverts and Dip Sections 11.12
11.4.2 Culvert Inlets and Outlets.....11.15
11.4.2.1 Inlets 11.15
11.4.2.2 Outlets.....11.15
11.4.3 Debris Grates 11.16
11.4.4 Sedimentation and Erosion.....11.16
11.4.4.1 Inlet Recommendations 11.16
11.4.4.2 Outlet Recommendations 11.16
11.5 Culvert vs. Bridge Crossings.....11.17
11.6 At-Grade (Dip) Crossings.....11.18

CHAPTER XII. STREET AND PARKING LOT DRAINAGE

12.1 Purpose.....12.01

12.2 Street Drainage Design Criteria 12.01
12.2.1 Local, Collector, and Arterial Streets 12.01
12.2.2 Collector and Arterial Streets 12.02
12.3 P.A.A.L. Drainage Design Criteria 12.02
12.4 Alley Drainage Design Criteria 12.03
12.5 Flow-Through Openings in Perimeter Walls 12.03
12.6 Computation of Flow Splits at Intersections 12.05

CHAPTER XIII. FLOODPROOFING

13.1 Purpose 13.01
13.2 Policies 13.01
13.3 When to Floodproof 13.02
13.4 Types of Floodproofing 13.07
13.5 Engineering Aspects 13.10
13.5.1 Flooding Characteristics 13.10
13.5.2 Floodproofing Methods 13.10
13.5.2.1 Sealants 13.10
13.5.2.2 Closures 13.11
13.5.2.3 Floodwalls and Levees 13.11
13.5.2.4 Protection of Utilities 13.13
13.5.2.5 Elevation 13.13

CHAPTER XIV. DETENTION/RETENTION BASINS

14.1 Purpose 14.01
14.2 Design Policies 14.01
14.3 Inspection and Maintenance Policies 14.03
14.4 Fees in Lieu of Detention/Retention Requirements 14.04
14.5 Stormwater-Infiltration Systems 14.04

REFERENCES AND SELECTED BIBLIOGRAPHIES R.01

INDEX I.01

APPENDIX

EVALUATION OF ALTERNATIVE FLOOD-CONTROL
AND EROSION-CONTROL TECHN IQUES FOR
WATERCOURSES IN TUCSON, ARIZONA

COMMERCIAL RAINWATER HARVESTING

10-03.1.0 GENERAL
10-03.2.0 DEFINITIONS
10-03.3.0 DESIGN CONSIDERATIONS AND TECHNICAL REQUIREMENTS
10-03.4.0 RAINWATER HARVESTING PLAN
10-03.5.0 LANDSCAPE AND IRRIGATION REQUIREMENTS
10-03.6.0 MAINTENANCE STANDARDS
10-03.7.0 COMPLIANCE
10-03.8.0 ENFORCEMENT
EXHIBITS

10-03.0.0 COMMERCIAL RAINWATER HARVESTING.

10-03.1.0 GENERAL

1.1 INTRODUCTION. Harvesting rainwater is a useful strategy for providing supplemental irrigation water to commercial landscapes, making more efficient use of the desert's most limited resource--water. The City of Tucson Mayor and Council adopted the Commercial Rainwater Harvesting Ordinance on October 14, 2008 to increase the use of harvested rainwater at commercial sites in Tucson and to decrease use of potable and reclaimed water supplies. The ordinance takes effect June 1, 2010.

1.2 PURPOSE. This Development Standard has been prepared to facilitate effective use of available rainwater resources for landscape irrigation in commercial development as a means of reducing dependency on potable and reclaimed water sources. It clarifies requirements for compliance with Ordinance No. 10597, the Commercial Rainwater Harvesting Ordinance (Ordinance), including the key requirement of meeting 50% of landscape water demand using harvested water. This standard provides:

A. Design considerations and technical requirements for passive and active water harvesting systems;

B. Requirements and guidelines for the preparation and implementation of Rainwater Harvesting Plans;

C. Requirements for landscape and irrigation at water harvesting sites;

D. Recommended maintenance steps;

E. Elements required for compliance with the Ordinance;

F. Enforcement provisions;

G. Water budget assumptions and calculations (Exhibit A)

H. Annual reporting form (Exhibit B)

1.3 APPLICABILITY. This standard applies to all commercial development plans submitted after June 1, 2010.

10-03.2.0 DEFINITIONS

Other than as provided below, definitions used in this Standard are found in the Development Standards Glossary or Sec. 6.2.0 of the *LUC*.

2.1 *Active Water Harvesting*. The collection of stormwater into containment systems for storage and later diversion to beneficial uses.

2.2 *Catchment Areas.* Areas of a site where water is harvested, including where rain falls directly on plant canopies and pervious Water Harvesting Infiltration Areas, and where rain falls on impervious rooftops, sidewalks, parking lots, driveways and other surfaces from which stormwater is directed toward Water Harvesting Infiltration Areas.

2.3 *Catchment Ratio.* The ratio of the water harvesting catchment area to the canopy area of the plants that use water harvested from that catchment area.

2.4 *Commercial development.* Any new non-residential development that is intended to be used primarily for commercial activities, and is subject to the requirements of the International Building Code.

2.5 *Containment systems.* Above-ground tanks, below-ground tanks, other types of above- and below-ground water-holding containers, and associated pipes and transmission equipment that enable beneficial use of harvested water.

2.6 *Evapotranspiration.* The transfer of water from land surface to the atmosphere through the combination of evaporation and plant transpiration.

2.7 *Impervious Subwatersheds.* Discrete nonporous subareas of a site--including rooftops, sidewalks, parking lots, driveways and other impervious areas--that capture stormwater and deliver it through gravity flow to discrete containment systems or Water Harvesting Infiltration Areas.

2.8 *Passive Water Harvesting.* The collection of stormwater directly into Water Harvesting Infiltration Areas without the temporary storage of water in a containment system.

2.9 *Plant Canopy Area.* The area covered by plants as indicated on the landscape plans, including understory, midstory and overstory plants.

2.10 *Rainwater.* Liquid precipitation falling from the sky before it lands on a surface.

2.11 *Stormwater.* Rainwater that has landed on a surface.

2.12 *Water harvesting.* The process of intercepting stormwater and putting it to beneficial use.

2.13 *Water Harvesting Infiltration Areas.* Pervious areas of a site where harvested water collects and soaks into the subsurface to support landscape plants. Water Harvesting Infiltration Areas include exposed soil shaped to hold and infiltrate water, permeable soil subgrades

overlain with impervious pavement that receive water via perforated pipes or other conveyance techniques, structured soil overlain with permeable paving, and other strategies that collect water and allow it to soak into the subsurface to support landscape plants.

10-03.3.0 DESIGN CONSIDERATIONS AND TECHNICAL REQUIREMENTS

Two primary strategies for harvesting water are commonly used in the southwest US to support landscape water needs. Passive water harvesting is accomplished by infiltrating stormwater runoff directly into Water Harvesting Infiltration Areas. Active water harvesting stores harvested water in containment systems located above or below ground so the stored water is available for later beneficial use. The commercial facility may determine the strategy or strategies most appropriate for their site. Design considerations and technical requirements for passive and active water harvesting systems are described in the sections below.

3.1 PASSIVE WATER HARVESTING. Passive water harvesting consists of the collection of stormwater directly in Water Harvesting Infiltration Areas without the temporary storage of water in containment systems. Passive water harvesting functions through gravity-flow of stormwater. It requires no tanks, piping, metering, pumps or other infrastructure associated with containment systems. However, in passive water harvesting, infrastructure components may be needed to route overflow water, pass water under roads or parking lots, or for other purposes conducive to the effective functioning of the passive systems.

A. Passive Water Harvesting Design Considerations. An array of techniques and designs are available to accomplish passive water harvesting. Whatever techniques or designs are used, the items listed below should be considered to create safe, efficient and effective passive water harvesting systems.

1. Use Water Harvesting Infiltration Areas, where feasible, to offset the size of a retention/detention basin that may be needed at a site. Consult Appendix C of the City of Tucson Water Harvesting Guidance Manual for information on the allowed offset.

2. The area and depth of Water Harvesting Infiltration Areas should be determined according to the anticipated volume of harvested water that will enter these areas and the infiltration characteristics of the underlying soil.

3. Plants with similar water demands should be placed in the same areas within Water Harvesting Infiltration Areas.

4. Soils within Water Harvesting Infiltration Areas should be modified as needed to counteract the effects of mechanical compaction and/or poor soil infiltration conditions in order to ensure appropriate water infiltration.

5. The edge of Water Harvesting Infiltration Areas should be set back from building foundations or other structures to allow for positive drainage of water. Consult a soils professional where necessary.

6. Planting areas that harvest water should be recessed below the grade of adjacent hardscapes. Hardscape surfaces should be sloped toward adjacent recessed planting areas.

7. Pedestrian circulation should be designed to discourage cutting across recessed planting areas to avoid soil compaction, erosion, and damage to plants and to minimize the risk of injury to pedestrians.

8. Maximum reveal at the edge of public sidewalks and pedestrian circulation paths should be 2 inches or less to minimize the risk of injury to pedestrians. A minimum 12-inch wide shoulder with a maximum two (2) percent cross-slope away from a public sidewalk or pedestrian circulation path should be provided where possible.

9. Water Harvesting Infiltration Areas should be stabilized for dust control purposes. Techniques could include spreading ½-inch or larger rock, hydroseeding with native seed mixes, or using other stabilizing techniques and materials. Fine-grained particles that could block water infiltration by clogging soil pores should be washed from materials prior to placement. Avoid the use of fine-grade decomposed granite within or directly adjacent to Water Harvesting Infiltration Areas due to the potential for shed silts and clays to reduce water infiltration.

10. Organic mulch is appropriate for reducing evaporation, controlling dust and increasing soil quality in Water Harvesting Infiltration Areas in those locations where the vegetation, water collection, erosion conditions, and slope characteristics are amenable to its use.

B. Passive Water Harvesting Technical Requirements. The following technical requirements apply to all passive water harvesting systems.

1. Water Harvesting Infiltration Areas shall be designed so that water infiltrates into soil within twenty-four (24) hours.

2. Water Harvesting Infiltration Areas shall be designed to minimize ponding in areas that may create a nuisance for pedestrians. Ponding is not allowed on or over public sidewalks or required pedestrian circulation paths.

3. Materials for erosion control shall be specified where they are necessary due to erosion potential. The ground surface treatment of spillways and other areas that convey water flows shall be able to withstand scouring.

3.2 ACTIVE WATER HARVESTING. Active water harvesting stores harvested water in containment systems located above or below ground so the stored water is available for later beneficial use. Active water harvesting systems include the tanks, piping, metering, pumps and other infrastructure elements needed to store and transmit water to a beneficial use. Active water harvesting systems might be gravity-flow based or use pumps depending on the size and needs of the site.

A. Active Water Harvesting Design Considerations. An array of techniques and designs are available to accomplish active water harvesting. Whatever techniques or designs are used, the items listed below should be considered to create safe, efficient and effective active water harvesting systems.

1. Tanks may be constructed of metal, plastic, masonry, reinforced concrete, fiberglass, or other suitable DSD-approved material designed to store water.

2. The dimensions of tanks may be determined by the applicant based on site-specific design needs.

3. Above-ground tank construction material or coating should be opaque to prevent sunlight from inducing algae growth. Any portion of a subsurface tank that is exposed to sunlight should be opaque to prevent sunlight from inducing algae growth.

4. A "first flush device" is intended to prevent the dust, grit, leaves and other materials that may accumulate on a roof from being washed into a water harvesting tank. This is accomplished by deflecting the first flush of stormwater from entering the tank inlet line. The installation of first flush devices is strongly recommended.

5. Inlet piping may convey water overhead from a roof to a tank, or in a U-shaped configuration that conveys water to a lower entry point on the tank. The U-shaped configuration should be designed to hold standing water, and must be pressure rated and sealed to prevent leaks.

6. Designs that involve water falling freely through the air before entering a tank may be allowed provided the design minimizes the entry of light and mosquitoes into the tank.

B. Active Water Harvesting Technical Requirements. The following technical requirements apply to all active water harvesting systems.

1. Materials must be installed per manufacturer's specifications.

2. Tanks shall have a base or foundation that meets manufacturer's specifications. If no specifications are provided by the manufacturer, the base shall be designed by an engineer.

3. Locations of containment systems shall be in accordance with applicable codes.

4. Consult the International Building Code for applicable regulations.

5. Sub-surface storage tanks shall be constructed of materials designed for holding water underground. Below-ground tanks must be designed and installed under the guidance of a civil or structural engineer and/or tanks must be installed per manufacturer's specifications regarding bedding, setting the tank, strapping or other anchoring device, load bearing characteristics and backfill requirements.

6. If debris screening is used for inlets to tanks, screening must be configured in such a way that an unmaintained screen cannot block inlet pipes to a tank. Obstructed screens can prevent water harvesting and back water up on the roof creating unsafe weight load conditions on the roof.

7. There must be a structured overflow device installed with the tank to automatically allow excess infill water to exit the tank safely.

8. An overflow mechanism, separate from that provided inside the tank, shall be provided to ensure that water cannot back up on a roof. Roof overflow drains shall not be connected to tanks.

9. Outlets for overflow pipes shall be positioned so as not to compromise the foundations of buildings or other structures.

10. Tanks and covers shall be constructed of materials appropriate for use for storing water.

11. Tanks must have an inspection port of sufficient size to conduct any necessary visual inspection, maintenance, cleaning, repair and other tasks as described in the manufacturer's specifications.

12. If a manhole is provided with the intent of allowing human access into a tank, it must meet any applicable size and safety requirements.

13. A means should be provided to enable particulate materials that accumulate in the bottom of tanks to be cleaned out or flushed out if needed.

14. Containment systems shall be designed, maintained and operated to prevent mosquito harboring and/or breeding.

15. A reduced-pressure backflow-preventer assembly is required when connecting irrigation from an active water harvesting system to a potable water irrigation system in order to protect the public water system and/or building water system.

16. Hose bibs connected to an active water harvesting system shall be keyed and shall be posted "NON-POTABLE, DO NOT DRINK."

10-03.4.0 RAINWATER HARVESTING PLAN

A Rainwater Harvesting Plan shall be submitted with all applications for commercial developments at which landscaping is required. The Rainwater Harvesting Plan shall consist of two elements: a Site Water Budget and a Water Harvesting Implementation Plan. Preparation of the Rainwater Harvesting Plan elements requires coordination between project managers, site engineers and landscape architects from the inception of the project. The two elements of the Rainwater Harvesting Plan shall illustrate how water harvesting will meet 50 percent of annual landscape water demand, as required by the Ordinance.

4.1 SITE WATER BUDGET. The Site Water Budget shall detail the landscape water demand and the harvested water supply needed to meet 50 percent of landscape demand. The Site Water Budget and the Water Harvesting Implementation Plan shall be consistent with one another.

A water budget format is shown in Exhibit A, along with the background data and assumptions used to develop it. This water budget format is available to applicants as an

Excel spreadsheet at <http://www.tucsonaz.gov/dsd/What_s_New/what_s_new.html>. Applicants may use this water budget format to enter site-specific data to develop their Site Water Budget. Alternatively, applicants may develop their own Site Water Budget format. Whichever format is used, the submitted Site Water Budget shall incorporate and provide the information below.

A. Water Demand. Applicants shall use plant water demand categories and data provided in Exhibit A unless alternative assumptions are provided and satisfactorily justified.

B. Water Supply. Applicants shall use the effective monthly rainfall assumptions shown in Exhibit A unless alternative assumptions are provided and satisfactorily justified.

C. Output. Output of the Site Water Budget shall include calculations showing how 50 percent of landscape water demand as an average across the site will be met using harvested rainwater, and shall include assumptions and supporting calculations as necessary to document these outputs. Output of the Site Water Budget shall include total water demand and rainwater supply calculations for each Water Harvesting Infiltration Area at the site.

4.2 WATER HARVESTING IMPLEMENTATION PLAN. The Water Harvesting Implementation Plan (Implementation Plan) shall consist of a separate sheet with a plan view layout of the site. The format and design of the Implementation Plan shall be consistent with the base plan, be it a Development Package (DS 2-01), Plat (DS 2-03), Site Plan (DS 2-04), Development Plan (DS 2-05), or their successor documents, as applicable. The Implementation Plan shall include all details necessary and appropriate to convey the technical concept of the water harvesting system design and to facilitate proper installation and maintenance of the water harvesting system in compliance with the Ordinance and this Standard.

Submittal of the Implementation Plan shall be made concurrently with the Development Plan and Landscape Plan. Revision of the Implementation Plan may be required in conjunction with preparation of the Grading Plan in order to coordinate the construction details and specifications.

A. General Information. The following general information will be provided on the Implementation Plan.

1. The case number located in the lower right corner of the plan.

2. The means by which monthly rainfall data will be obtained and recorded

3. The means by which monthly irrigation data will be obtained and recorded

4. Soil pretreatment techniques, locations and schematics

5. Maintenance notes

6. Monitoring and Annual Reporting Requirements

B. Tabulated Data. The Implementation Plan shall include a table detailing information for each identified Water Harvesting Infiltration Area (WHIA) at the site, and for the site as a whole, as described below.

1. General WHIA information:

   a) WHIA identifier

   b) Spatial size (square feet) of WHIA

   c) Average depth (feet) of WHIA

   d) Capacity (gallons) of WHIA

   e) Type and general location where any sensors that control the irrigation system will be placed

2. Plant canopy information:

   a) Plant canopy area (square feet) that is served by each WHIA, consisting of the sum of understory, midstory and overstory plant canopies at 60 percent of the mature plant sizes

   b) Plant water demand category

   c) Total annual plant water demand (gallons)

3. Information about passive and/or active water harvesting systems serving each WHIA:

   a) For the Subwatershed passively serving each WHIA:

      i. Subwatershed identifier

      ii. Spatial size (square feet) of the subwatershed

      iii. Material the subwatershed is made of or covered with

      iv. Percent of annual plant water demand provided by this subwatershed to the WHIA

   b) For the containment system actively serving each WHIA:

      i. Tank Identifier

      ii. Tank capacity (gallons)

      iii. Tank location

      iv. Percent of annual plant water demand provided by this tank to the WHIA

c) Any additional information needed to document how 50% of irrigation demand will be met using harvested water.

d) Data tabulated for the entire site:

i. Percent of annual landscape water demand met using harvested water

ii. Water harvesting capacity that will offset standard retention/detention basin size, if applicable

e) Additional plan information may be requested or required by the Development Services Department (DSD) Director to evaluate rainwater-harvesting Implementation Plan

C. Mapped Data. The Implementation Plan shall graphically show the following information drawn from tabulated data.

1. For the WHIA:

a) Indicate the boundary of each WHIA and show its identifier

b) Use arrows to show water flow directions within WHIA, including flow direction at inlets and outlets

c) Show location where any sensors that control the irrigation system will be placed

2. Indicate the boundary of the plant canopy area to be served by each WHIA

3. Information about Passive and/or Active Water Harvesting Systems serving each WHIA:

a) Passively supplied water:

i. Indicate the Subwatershed Area serving each WHIA and show its identifier

ii. Use arrows to indicate the flow path water will take from source to WHIA

iii. Indicate spot elevations for the bottoms of water harvesting structures, at spillways, and to define other grades as needed

iv. Indicate the location of all surface or subsurface infiltration structures, pipelines, spillways, French drains, scuppers, curb cuts and other infrastructure elements needed to convey, store or overflow passively supplied water, or to control erosion

b) Actively supplied water:

i. Show tank and show its identifier

ii. Label tank as delivering water by gravity flow or pump

iii. Use arrows to indicate flow path water will take from source to WHIA

iv. Show additional piping, pump and other infrastructure needed to store, overflow, and convey water to WHIA

D. Additional Information. Additional notes shall be provided on the Implementation Plan to ensure current and subsequent site owners and operators are informed of the inspection and maintenance required in Section 6 of this development standard.

10-03.5.0 LANDSCAPE AND IRRIGATION REQUIREMENTS

5.1 LANDSCAPE REQUIREMENTS.

A. Soil pretreatment. Due to construction site compaction, the soils in planting areas might need to be pretreated to ensure adequate infiltration of harvested water. Soil Pretreatment techniques, locations and schematics should be provided on the Implementation Plan.

B. Plant selection and placement. Plants selected for use within discreet Water Harvesting Infiltration Areas should have compatible water needs. Drought tolerant plants native to Tucson are adapted to the seasonal rainfall patterns present in the Sonoran Desert and present an advantage over low-water-use plants from other climates. Plants should be positioned to account for the level of expected inundation. They may be placed on the bottoms or sides of recessed areas or the tops of adjacent soil where their roots can grow toward adjacent moist soil. Other placement considerations should include sun exposure, maintenance requirements, shape, form and aesthetics.

C. Mulch placement. Mulch shall be positioned away from the base of plant trunks to avoid excessive moisture there.

5.2 IRRIGATION REQUIREMENTS.

A. Irrigation control. Irrigation systems shall be fitted with irrigation controllers and shall be capable of monitoring and responding to plant water needs through the use of soil moisture gauges, tensiometers, weather stations and/or evapotranspiration data. The irrigation technology chosen should be capable of preventing the irrigation system from running if sufficient soil moisture is present to support the vegetation. All systems shall include rain shut-off devices. Instruments shall be correctly placed to ensure plants are kept healthy using a combination of harvested and non-harvested water and to ensure the stated water-saving goal of the Ordinance is met.

B. Irrigation timers. Irrigation timers, where used, shall be used in conjunction with other irrigation controls to ensure compliance with the provisions of this development standard.

C. Water-use calculations. Irrigation Plans must include calculations for estimated water use based on assumptions about plant water demand and canopy size used in the Site Water Budget.

D. Drip system efficiency. Drip irrigation systems shall meet and maintain a minimum 80% emission uniformity.

10-03.6.0 MAINTENANCE

6.1 MAINTENANCE REQUIREMENTS. All Passive and Active Water Harvesting System components, Water Harvesting Infiltration Areas, and other site improvements necessary for the water harvesting system to function properly, should be regularly inspected and maintained. The following maintenance requirements should be addressed on the Implementation Plan.

A. All systems. Periodically inspect and clean gutters, leaf screens, and filters. Inspect systems following heavy rains to check for leaks and/or overflow problems. Periodically inspect and maintain Water Harvesting Infiltration Areas to ensure proper infiltration, overflow, and prevention of erosion, if occurring. Repair and correct problems.

B. Passive Systems. In addition to requirements for all systems, to ensure proper functioning of Passive Water Harvesting Systems, periodically inspect and maintain Subwatershed surfaces and infrastructure associated with the system such as French drains, spillways, scuppers and other elements. Repair and correct problems as needed.

C. Active Systems. In addition to requirements for all systems, to ensure proper functioning of Active Water Harvesting Systems periodically inspect tanks, access hatches and associated locks, overflow devices, pipes, pipe joints and connectors, pumps, vents, controllers, and other associated infrastructure. Empty first flush devices as needed after rainfalls to ensure correct operation in the next rainfall. Inspect systems following heavy rains to check for leaks and/or overflow problems. Determine whether sludge should be removed from tanks. Repair and correct problems as needed.

D. Irrigation systems. Irrigation systems and associated controllers, soil moisture sensors, tensiometers, weather stations, and any other associated instruments shall be properly maintained and replaced as needed to ensure the potable and reclaimed water-saving goal of the Ordinance is met.

10-03.7.0 COMPLIANCE

7.1 MONITORING. Monitoring of water use and related information at the site shall be the responsibility of the property owner. Monitoring is required to verify compliance with the approved Water Harvesting Implementation Plan. Monitoring data shall be compiled, along with other necessary information, into an annual report to be submitted to the City by January 30 of each year. The site conditions described below shall be monitored.

A. Monthly water use. Monthly water use for landscape irrigation shall be monitored.

1. Monitoring of monthly potable water use for irrigation of landscape plants is required at sites subject to the Ordinance. Sites shall monitor water use with a Tucson Water Irrigation Service Meter, an equivalent meter from another water provider, or a private sub-meter that meets Accuracy Standards for Private Sub-meters.

2. Monitoring of monthly water use for irrigation of landscape plants is required at sites served by private wells or reclaimed water. Sites shall monitor water use with a private submeter that meets Accuracy Standards for Private Sub-meters.

B. Monthly rainfall. Monthly rainfall shall be monitored using an on-site rain gauge, or a monthly rainfall estimate shall be developed using data from the closest available rain gauge recorded at www.rainlog.org.

7.2 ANNUAL REPORTING. An Annual Report shall be submitted to the Tucson Water Conservation Office by January 30 of each year, on a form provided by that Office (Exhibit B). Each Annual Report shall, at a minimum, contain the following information for the previous calendar year.

A. Name and contact information for site and owner.

B. Name, title and contact information for person who prepares the annual report.

C. Source of rainfall data (on-site gauge or www.rainlog.org).

D. Sources of metered irrigation water other than harvested rainwater used at the site.

E. Monthly and total annual readings of the following: rainfall, projected landscape water demand shown in the approved Rainwater Harvesting Plan, actual metered water use, difference between these amounts.

F. Explanation for any exceedence of annual metered irrigation water use projected in the approved Rainwater Harvesting Plan.

G. Changes to the landscape or irrigation system in the reporting year.

H. Other information as deemed necessary.

10-03.8.0 ENFORCEMENT

The steps described below are required to ensure the site is constructed according to the requirements of the approved Implementation Plan.

8.1 INSPECTIONS.

A. All site-scale grading related to water harvesting Subwatersheds and Water Harvesting Infiltration Areas must be inspected and accepted by DSD prior to application of any surface treatment (e.g concrete, asphalt, rock, etc.) to verify that slopes, recessed areas, overflows and other design elements have been properly graded.

B. All landscape-scale grading in Water Harvesting Infiltration Areas where planting will be conducted must be inspected and accepted by DSD prior to plant installation and application of organic mulch or rock to verify they have been properly graded.

C. DSD will inspect the site for compliance with the provisions of the Rainwater Harvesting Plan prior to issuance of a final certificate of occupancy.

8.2 AUDITS AND REPORTING.

A. Landscape Irrigation Audit. In the event the site fails to meet the percent water harvesting in a reporting year required in the approved Rainwater Harvesting Plan, Tucson Water may request that additional information or documentation be submitted to assist in determining the cause of the violation. A site visit and a landscape irrigation audit may be required to verify the Rainwater Harvesting Plan is being adhered to and all components are properly functioning.

B. Non-compliance. Sites determined to be in non-compliance may be required to submit monitoring reports monthly and may be required to provide Owner's annual certification of continued maintenance and proper operation of water harvesting systems and the irrigation system and associated controls.

8.3 DROUGHT CONTINGENCY. The 50 percent landscape budget provision shall not apply in any calendar year in which the annual precipitation has fallen below nine (9) inches at the site, as reported in the site's annual report.

EXHIBITS

Exhibit A Site Water Budget Assumptions and Calculations

Exhibit B Annual Report Form for Commercial Water Harvesting Sites

EXHIBIT A. SITE WATER BUDGET ASSUMPTIONS AND CALCULATIONS

Designing water harvesting systems at a commercial site requires coordination between site developers, site engineers and landscape architects from the inception of the site design process. The information below is provided to inform site designers and engineers of the assumptions and methods the City recommends for use in designing and engineering water harvesting for a commercial site. This approach can be used both in preparation of the two components of the Rainwater Harvesting Plan: the Site Water Budget and the Water Harvesting Implementation Plan.

Preparing a Site Water Budget that meets the requirements of Commercial Rainwater Harvesting Ordinance and Development Standard 10-03 requires projecting yearly plant water demand for the site landscape then determining how much harvested water supply is needed to meet at least 50% of this demand. Sites may choose to use passive water harvesting (earthworks), active water harvesting (tanks), or a combination of both methods to accomplish this goal. Because most sites will be able to accomplish the 50% goals with passive water harvesting alone, the site design calculations provided at the end of this exhibit focus on data for passive water harvesting sites. An example Site Water Budget is shown in Table A-1. This example is provided to serve as a model for sites undertaking water-harvesting design. An excel spreadsheet of this water budget is available from <http://www.tucsonaz.gov/dsd/What_s_New/what_s_new.html> for use by site designers in preparing their Site Water Budget. This information in turn should be used to prepare the Water Harvesting Implementation Plan. Calculations

1.0 WATER DEMAND ASSUMPTIONS

Multiple techniques can be used to determine how much water is needed to support plants at a site. For purposes of complying with City requirements, the methods and assumptions described below are recommended.

1.1 REFERENCE EVAPOTRANSPIRATION.

To determine how much water plants need, a measurement of how much water plants consume through evapotranspiration is needed. Evapotranspiration is the transfer of water from land surface to the atmosphere through the combination of evaporation and plant transpiration. In the Reference Evapotranspiration Method (ETo Method), water use by plants is estimated for a high-water-use grass cover crop (such as alfalfa) for which evapotranspiration can be directly measured. Monthly Reference ETo values for a high-water-use grass crop in Tucson have been tabulated in Table A-2.

Table A-2. Reference Evapotranspiration (ETo) for Tucson

MONTHLY REFERENCE EVAPOTRANSPIRATION (Inches)											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
3.0	3.72	6.0	8.04	9.96	10.56	9.36	7.92	7.20	5.76	3.60	2.64

Table A-1. Site Water Budget Format

Line	DESCRIPTIONS OF WATER BUDGET COMPONENT	SOURCES FOR EACH WATER HARVESTING INFILTRATION AREAS (WHIAs)	EXAMPLE WHIA
	PLANT WATER DEMAND		
1	Individual WHIA identifier	APPLICANT PROVIDE	WHIA - 1
2	Plant water demand category for this WHIA	APPLICANT PROVIDE USING ADWR PLANT LIST	low
3	Plant canopy area (square feet) for this WHIA. Add the canopies of understory, midstory and overstory plant areas to get total canopy for each WHIA. Assume 60% of mature plant size	APPLICANT PROVIDE. CAN BE BASED ON LANDSCAPE PLAN OR PLANT LIST	1250
4	Plant water demand per year (vertical feet of water per year per square foot of canopy) for this WHIA	APPLICANT USES APPROPRIATE NUMBER BASED ON PLANT WATER DEMAND CATEGORY FOR THIS WHIA	1.7
5	*CALCULATE:* Annual plant water demand for this WHIA based on plant canopy area (gallons)	= line 3 times line 4 times 7.48 gallons/cubic foot of water	15,895
6	**OVERALL WATER HARVESTING SUPPLY**		
7	WHIA area (square feet)	APPLICANT PROVIDE	1000
8	WHIA average depth (feet)	APPLICANT PROVIDE	0.5
9	*CALCULATE:* WHIA capacity (gallons)	line 7 times line 8 times 7.48 gallons/cubic foot of water	3,740
10	**If Passive water harvesting is used:**		
11	Subwatershed identifier	APPLICANT	S-1
12	Ratio of subwatershed area to plant canopy area needed to meet plant water demand in this WHIA in July through March (use March plant water demand as the indicator month) (no units)	APPLICANT USES APPROPRIATE NUMBER BASED ON PLANT WATER DEMAND CATEGORY FOR EACH WHIA	3.85
13	*CALCULATE:* Total catchment area ideally needed to meet plant water demand in March (square feet)	= line 3 x line 12	4,813
14	Actual total catchment area designed for this WHIA including the WHIA area itself (square feet)	APPLICANT PROVIDE	1500
15	*CALCULATE:* Actual catchment ratio for this WHIA	= line 14 divided by line 3	1.20
16	*CALCULATE:* Actual percent of plant water demand that will be met for this WHIA	= 64% times line 15 divided by line 12	20%
17	**If Active water harvesting is used:**		
18	Tank identifier	APPLICANT PROVIDE	T-1
19	above or below ground?	APPLICANT PROVIDE	above
20	tank height (feet)	APPLICANT PROVIDE	8
21	tank diameter (feet)	APPLICANT PROVIDE	6
22	tank capacity (gallons)	APPLICANT PROVIDE	1619
23	tank location	APPLICANT PROVIDE	East corner
24	*CALCULATE:* Percent of plant water demand for this WHIA met by this tank	(Assume tank will be filled and emptied 4 times per year). Total water provided = 4 times line 22 divided by line 5	41%
25	*CALCULATE:* Percent of plant water demand for this WHIA met using harvested rainwater from passive systems and active systems (as applicable)	= line 16 + line 24	61%
26	TOTAL SITE INFORMATION		
27	Percent to total site annual landscape demand met using harvested water	Prorate percent of water harvesting supply based on area of each WHIA	61%
28	Water harvesting capacity offsetting retention basin size capacity	APPLICANT PROVIDE	

1.2 PLANT COEFFICIENTS.

Four categories of plant types are typically used in Tucson. These categories are established based on their water use characteristics (Table A-3). Plant coefficients are an estimate of the water needed by each plant type expressed as a fraction of the water needed for the reference high-water-use grass crop. Plant types and corresponding plant coefficients are shown in Table A-3.

Table A-3. Plant Coefficients for use in Tucson

PLANT TYPE	PLANT COEFFICIENT
Very low water use	0.13 times monthly Reference ETo
Low water use	0.26 times monthly Reference ETo
Moderate water use	0.45 times monthly Reference ETo
High water use	0.65 times monthly Reference ETo

1.3 PLANT WATER DEMAND.

Plant water demand is the water needed over a given period of time to support a landscape. The first step in determining plant water demand is to calculate the inches of water needed per year for each square foot of plant canopy (as seen from a bird's eye view). This is calculated by multiplying Tucson's monthly reference ETo by the plant coefficient for each plant type to be used at a site (Table A-4). Add monthly amounts to get the total annual plant demand per square foot of canopy (Table A-4).

Table A-4. Plant water demand per square foot of plant canopy for Tucson

PLANT TYPE	MONTHLY PLANT WATER DEMAND (Inches)												**ANNUAL DEMAND (Inches)**
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	
Very low water use	0.39	0.48	0.78	1.05	1.29	1.37	1.22	1.03	0.94	0.75	0.47	0.34	10.11
Low water use	0.78	0.97	1.56	2.09	2.59	2.75	2.43	2.06	1.87	1.50	0.94	0.69	20.22
Moderate water use	1.35	1.67	2.70	3.62	4.48	4.75	4.21	3.56	3.24	2.59	1.62	1.19	34.99
High water use	1.95	2.42	3.90	5.23	6.47	6.86	6.08	5.15	4.68	3.74	2.34	1.72	50.54

To calculate various plant water demands for large planted areas, the inches of water needed per square foot of one type of plant canopy is multiplied by the total canopy area for that plant type to get plant water demand. Plant Water Demand should be calculated for each individual Water Harvesting Infiltration Areas. These can then be added together to get total plant water demand for the site.

1.4 ALTERNATIVE CALCULATIONS.

Applicants wishing to use alternative values and methods from those described above may do so. Along with the alternative calculations, they should provide justification for deviation from the assumptions and methods recommended above.

2.0 RAINWATER SUPPLY ASSUMPTIONS

2.1 FACTORS AFFECTING RAINFALL.

Rainfall in the Sonoran Desert is highly variable. Between 1993 and 2008, Tucson's annual rainfall ranged from 7.62 inches to 14.99 inches and averaged 12.17 inches per year. Tucson sites experience localized differences in rainfall primarily due to widely spaced summer monsoon storms. Winter rains tend to cover larger areas with more even distribution of rainfall. The amount of water that can be harvested also depends on how much rain falls each time it rains. Very light rains might not create sufficient runoff to reach waterharvesting basins, while runoff from heavy rains might overflow basins.

2.2 EFFECTIVE AVERAGE ANNUAL RAINFALL.

To comply with the City's Commercial Rainwater Harvesting Ordinance, average rainfall for Tucson should be adjusted to a lower effective average rainfall. Two adjustments should be made: reduce average rainfall by 25% to address localized variability and reduce average rainfall by an additional 25% to remove very light and very heavy rainfall events from monthly rainfall. Tucson's average rainfall and the calculation of effective average rainfall are shown in Table A-5 month-by-month and totaled for the year.

Table A-5. Effective average rainfall for Tucson for use in Site Water Budget calculations

RAINFALL ASSUMPTIONS	MONTHLY AVERAGE RAINFALL (Inches)												**ANNUAL TOTAL (inches)**
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	
Average rainfall	0.99	0.88	0.81	0.28	0.24	0.24	2.07	2.3	1.45	1.21	0.67	1.03	12.17
Effective Average Rainfall	0.50	0.44	0.41	0.14	0.12	0.12	1.04	1.15	0.73	0.61	0.34	0.52	6.09

1.3 ALTERNATIVE CALCULATIONS.

Applicants wishing to use alternative values and methods from those described above may do so. Along with the alternative calculations, they should provide justification for deviation from the assumptions and methods recommended above.

3.0 DETERMINING WATER HARVESTING CATCHMENT NEEDS FOR PASSIVE WATER HARVESTING

3.1 DEFINITION OF CATCHMENT AREA AND CATCHMENT RATIO

Because most commercial sites should be able to accomplish the Ordinance's 50 percent water harvesting goal using passive water harvesting strategies alone, the following information focuses on data for passive water harvesting sites.

Passive water harvesting sites typically consist of an array of Water Harvesting Infiltration Areas, each served by a catchment area that provides harvested water to support the plants within it. To meet the City Ordinance requirements, the site needs to be designed so that 50% of annual plant water demand is met with harvested rainwater as an average across the site. If the 50 percent goal cannot be met at some Water Harvesting Infiltration Areas due to site conditions, then other Water Harvesting Infiltration Areas should be designed to exceed the 50 percent goal in order to achieve 50 percent overall.

Catchment areas are locations at a site from which water is harvested for beneficial use. These locations include areas where rain falls directly into earthen basins and infiltrates into the ground (these are known as Water Harvesting Infiltration Areas. Catchment areas also include locations where rain falls on rooftops, sidewalks, parking lots, driveways and other hard surfaces then flows toward Water Harvesting Infiltration Areas where the water infiltrates into the soil.
The catchment ratio for any given Water Harvesting Infiltration Area is the ratio between the water harvesting catchment area serving it and the canopy area of the plants located within it. As one example, runoff from 100 square feet of sloped parking lot and soil drains to a Water Harvesting Infiltration Area that is planted with trees that have a canopy area of 20 square feet (as seen from a bird's eye view). The catchment ratio for this example is 100 to 20, which can be simplified as 5 to 1.

3.2 CALCULATION OF CATCHMENT AREAS

In Tucson, different types of plants need different amounts of water each month because rainfall and temperature vary from month-to-month (Table A-4). Table A-6 shows the catchment area needed to provide harvested water for each square foot of plant canopy area for different plant types in different months. The data on Table A-6 was calculated using the following equation for each month and each plant type:

$$\text{Catchment area needed} = \frac{\text{Monthly water demand per square foot of plant type}}{\text{Effective monthly rainfall}}$$

Table A-6 . Catchment area needed to meet monthly plant water demand in Tucson

PLANT TYPE	SQUARE FEET OF CATCHMENT AREA NEEDED TO MEET WATER DEMAND FOR EACH SQUARE FOOT OF CANOPY AREA											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Very low water use	0.8	1.0	1.8	7.1	10.3	10.9	1.1	0.9	1.2	1.2	1.3	0.6
Low water use	1.5	2.1	3.7	14.2	20.6	21.8	2.2	1.7	2.5	2.4	2.7	1.3
Moderate water use	2.6	3.6	6.3	24.6	35.6	37.7	3.9	3.0	4.3	4.1	4.6	2.2
High water use	3.8	5.2	9.2	35.6	51.4	54.5	5.6	4.3	6.1	5.9	6.7	3.2

3.3 CALCULATION OF CATCHMENT RATIOS

In Tucson, plants need around 37 percent of their annual water supply in the hot dry months of April, May and June. The remainder of their annual water supply, about 63 percent, is needed in July through March. Figure A-1 illustrates the relationship between plant water demand and

effective rainfall supply in Tucson. In April, May and June there is a large gap between plant water demand and effective rainfall supply. There is a smaller, but still substantial gap between demand and supply in March. The rest of the year, rainwater supply lags behind demand, but not as much as in March through June.
By designing a site that has catchment areas sized to fully meet March plant water demand, the harvested water supply would typically exceed plant water demand in July through February (Figure A-2). This design strategy provides a cushion in meeting the 50 percent goal for the site and is recommended by the City as a general approach.

Based on Table A-6, a landscape composed of low water use plant types would need a catchment ratio of 3.7 to 1 to meet March water demand. This means that for each square foot of plant canopy area (as seen from a bird's eye view), 3.7 square feet of catchment area is needed to collect rainwater from. This area includes the dirt Water Harvesting Infiltration Area the plants are located in, and any parking lot, roof-top, or other hard surface around the plant that drains to that area.

It is best to locate plants of the same type in a Water Harvesting Infiltration Area, though sites may have different plant types in other Water Harvesting Infiltration Areas. Table A-6 can be used to determine appropriate catchment ratios for the plant types used in Tucson.

Figure A-1. Monthly Low-Water-Use Plant

Demand vs Adjusted Rainfall, Tucson, Arizona

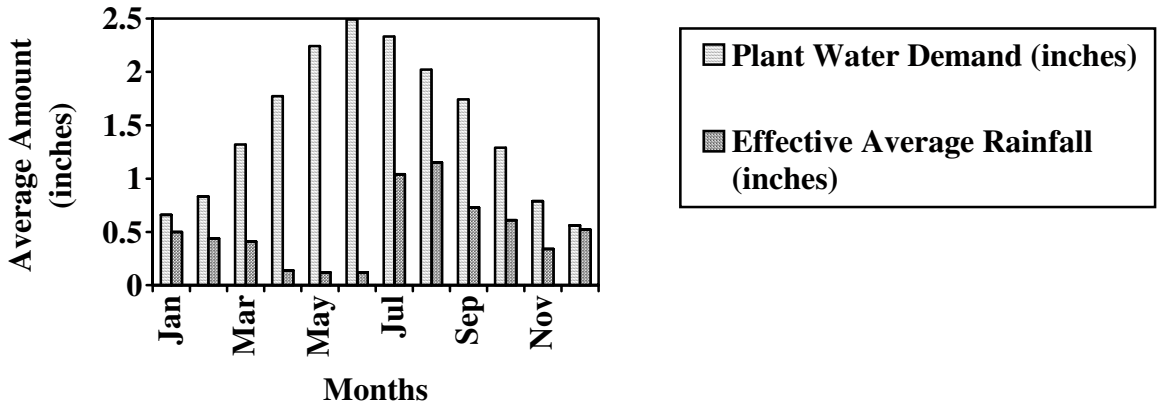
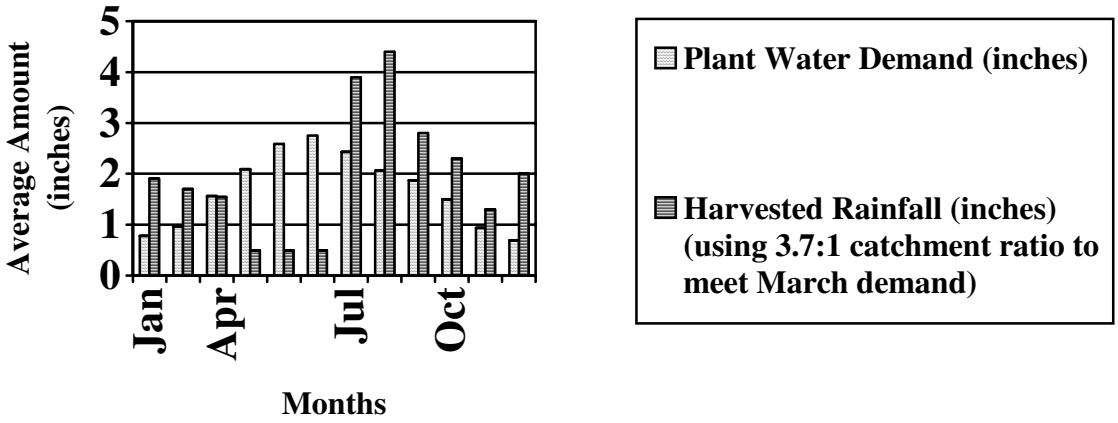


Figure A-2. Monthly Low-Water-Use Plant Demand vs Harvested

rainfall, Tucson, Arizona



ATTACHMENT B. ANNUAL REPORT FORM FOR COMMERCIAL WATER HARVESTING SITES

Annual Water Use Report

Reporting period (month/day/year): from _____ to _____

Project Name

Project Address

Owner name

Report Preparer name Preparer title

Preparer address

Preparer email Preparer phone

Source of rain data (check all that apply): ____on site raingage ___ www.rainlog.org station: note the closest cross streets _____

Source of metered irrigation water (check all that apply): ___Tucson Water, acct # _____
____ water from another water utility ____well water ____ reclaimed water

MONTHS	RAINFALL (inches)	IRRIGATION WATER USE		
		Projected landscape water demand shown in the Rainwater Harvesting Plan (gallons)	Actual metered use (gallons)	Difference (gallons)
January				
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				
ANNUAL TOTAL				

Explanation for any exceedence of annual irrigation water use projected in the approved Rainwater Harvesting Plan:

Changes to the landscape or irrigation system in the reporting year:

AREA BELOW FOR STAFF USE ONLY

Drought conditions exist at the site:

Compliance with Rainwater Harvesting Plan:

Audit required/date/outcome

INTERACTIVE WATER BUDGET SPREADSHEET FORMAT* Note on use of the spreadsheet: Calculations can be done by hand, or by entering data in the spreadsheet file.Cells with active equations use actual column and cell numbers. Typed column letters and typed line numbers are for purposes of guiding hand-done calculations.

	NOTE: THIS EXCEL SPREADSHEET IS A WORK IN PROGRESS. CONTACT MATTHEW FLICK <matthew.flick@tucsonaz.gov>, FOR QUESTIONS, COMMENTS, SUGGESTIONS. ETC.	DATA AND CALCULATION SOURCES FOR WHIAs	EXAMPLE OF DATA ENTRY	Column A	Column B	Column C								DATA AND CALCULATION SOURCES FOR TOTAL SITE
Line #	PLANT WATER DEMAND	Source for data, and how calculations are done for each Water Harvesting Infiltration Areas (WHIA) in columns A through J	Individual Water Harvesting Infiltration area (WHIA)	Individual Water Harvesting Infiltration area (WHIA)	Individual Water Harvesting Infiltration Area (WHIA)	Individual Water Harvesting Infiltration Area (WHIA)	um in di vi du al W	um ind ivi du al Wa ter	um in di vi du al W	um ind ivi du al Wa ter	um in di vi d u al	um ind ivi du al Wa ter	um ind ivi du al Wa ter	Source fordata, and how calculations are done for Total of all Water Harvesting Infiltration Areas at the Site
1	Individual WHIA identifier	APPLICANT	WHIA - 1											-----
2	Plant water demand category for this WHIA	APPLICANT: BASED ON ADWR PLANT LIST	low											-----
3	Plant canopy area (square feet) for this WHIA. Add the canopys of understory, midstory and overstory plant areas to get total canopy area for each WHIA	APPLICANT: CAN BE BASED ON LANDSCAPE PLAN OR PLANT LIST	1250											= sum (line 3 for columns A through J)
4	Plant water demand per year (vertical feet of water per year per square foot of canopy) for this WHIA	GET APPROPRIATE NUMBER FROM TABLE 1 BASED ON ON PLANT WATER DEMAND CATEGORY FOR THIS WHIA	1.7											-----
5	*CALCULATE:* Annual plant water demand for this WHIA based on plant canopy area (gallons)	= line 3 times line 4 times 7.48 gallons per cubic foot of water	15,895	-	-	-	##	-	##	-	##	-	-	=sum (line 5 for columns A through J)
6	**OVERALL WATER HARVESTING SUPPLY**													-----
7	WHIA area (square feet)	APPLICANT	1000											-----
8	WHIA average depth (feet)	APPLICANT	0.5											-----
9	*CALCULATE:* WHIA capacity (gallons)	line 7 times line 8 times 7.48 gallons/cubic ft	3,740	-	-	-	##	-	##	-	##	-	-	-----
10	**If Passive water harvesting is used:**													-----
11	Subwatershed identifier	APPLICANT	S-1											-----
12	Ratio of subwatershed area to plant canopy area needed to meet plant water demand in July through March (use March plant water demand as the indicator month, and effective rainfall in March of 0.41 inches, as shown on Table 3) (no units)	GET APPROPRIATE NUMBER FROM TABLE 2 BASED ON PLANT WATER DEMAND CATEGORY FOR EACH WHIA	3.85											-----
13	*CALCULATE:* Total catchment area ideally needed to meet plant water demand in March (square feet)	= line 3 x line 12	4,813	-	-	-	##	-	##	-	##	-	-	-----
14	Actual total catchment area designed for this WHIA including the WHIA area itself (square feet)	APPLICANT	1500											-----
15	*CALCULATE:* Actual catchment ratio for this WHIA	= line 14 divided by line 3	1.20	#DIV/0!	#DIV/0!	#DIV/0!	##	##	##	##	##	###	##	-----
16	*CALCULATE:* Actual percent of plant water demand that will be met for this WHIA with harvested water	=64% times line 15 divided by line 12	20%	#DIV/0!	#DIV/0!	#DIV/0!	##	##	##	##	##	###	##	-----
17	**If Active water harvesting is used:**													-----
18	Tank identifier	APPLICANT	T-1											-----
19	above or below ground?	APPLICANT	above											-----
20	tank hieght (feet)	APPLICANT	8											-----
21	tank diameter (feet)	APPLICANT	6											-----
22	tank capacity (gallons)	APPLICANT	1619											-----
23	tank location	APPLICANT	north east corner of main building											-----
24	*CALCULATE:* Percent of plant water demand for this WHIA met by this tank	(Assume tank will be filled and emptied 4 times per year) Total water provided = 4 times line 22 divided by line 5	41%	#DIV/0!	#DIV/0!	#DIV/0!	##	##	##	##	##	###	##	-----
25	*CALCULATE:* Percent of plant water demand for this WHIA met using harvested rainwater from passive systems and active systems (as applicable)	= line 16 + line 24	61%	#DIV/0!	#DIV/0!	#DIV/0!	##	##	##	##	##	###	##	-----
26	**TOTAL SITE INFORMATION**													-----
27	Percent to total site annual landscape demand met using harvested water													Prorate the percent provided per WHIA based on size of WHIA. Total =(A25 x A3/L3)+ (B25x B3/L3)+..., etc. for all individual WHIA columns. **IMPORTANT NOTE: WHEN USING THE SPREADSHEET CALCULATOR IN THE CELL TO THE LEFT, DELETE ANY CELLS ON "LINE 25" (TRUE LINE 28) THAT STILL SAY "#DIV/0" AFTER ALL OTHER DATA HAS BEEN FILLED IN ON THE TABLE.**
28	Water harvesting capacity offsetting retention basin size capacity													APPLICANT'S ENGINEER
29	Projected annual metered water use for the site if 50% of annual water use is provided by metered irrigation water (gallons) [50% is the allowed metered water use per the Commercal Rainwater Harvesting Ordinance]													Line L5 times 50%

ADOPTED BY THE
MAYOR AND COUNCIL

_____

ORDINANCE NO. 10579

RELATING TO BUILDINGS, ELECTRICITY, PLUMBING AND MECHANICAL CODE; CREATING THE "RESIDENTIAL GRAY WATER ORDINANCE" REQUIRING INSTALLATION OF GRAY WATER "STUB-OUTS" IN RESIDENTIAL CONSTRUCTION; REQUIRING THAT GRAY WATER SYSTEMS COMPLY WITH APPLICABLE REGULATIONS; AMENDING TUCSON CODE CHAPTER 6, ARTICLE III DIVISION I BY AMENDING SECTION 6-38 AND ADDING SECTION 2602.1.2, "GRAY WATER STUB-OUTS", AS A LOCAL AMENDMENT TO THE INTERNATIONAL RESIDENTIAL CODE; AND DECLARING AN EMERGENCY.

WHEREAS, the State of Arizona's Department of Environmental Quality instituted a general permit for homeowners whose gray water systems meet Best Management Practices; and

WHEREAS, gray water systems constructed and operated according to these Best Management Practices provide a safe method of reducing water demand; and

WHEREAS, gray water is a valuable resource as it makes "double use" of water that otherwise goes down the drain. Gray water systems divert some interior water from clothes washers, bathtubs, showers or bathroom sinks (but not from a kitchen sink, dishwasher or toilet) for use in outdoor irrigation; and

WHEREAS, gray water systems — which recycle household water to a spot where it can be used outdoors — can save a typical household 13,000 gallons of potable water per year; and

WHEREAS installation of stub-outs at the time of constructions greatly facilitates the use of gray water in residences, and

WHEREAS, a desert community should do everything possible to conserve water and promote efficient use of water resources.

BE IT ORDAINED BY THE MAYOR AND COUNCIL OF THE CITY OF TUCSON, ARIZONA, AS FOLLOWS:

SECTION 1. This ordinance shall be known and referred to as the "Residential Gray Water Ordinance."

SECTION 2. The Tucson Code Chapter 6, Buildings, Electricity, Plumbing and Mechanical Code, Article III, Buildings, Division I, Building Code, Section 6-38, *Residential code adopted*, International Residential Code 2006 as adopted by Ordinance 10417 with amendments, is hereby amended by adopting a new section 2602.1.2 as set forth in Attachment A to this ordinance incorporated here as if fully set forth herein.

SECTION 3. The Director of Development Services is authorized to adopt appropriate rules, regulations and Development Standards necessary to implement the provisions of this ordinance.

SECTION 4. The provisions of this ordinance may be modified or waived when it can be satisfactorily demonstrated to the Building Official that compliance with these regulations is impractical due to construction or other physical constraints and an acceptable alternative method of compliance that allows gray water usage is proposed.

SECTION 5. The provisions of Sections 1 through 4 of this ordinance shall apply to construction built pursuant to permits issued after June 1, 2010.

SECTION 6. The various City officers and employees are authorized and directed to perform all acts necessary or desirable to give effect to this ordinance, including, but not limited to, providing an instructional pamphlet setting forth in plain language the requirements of this ordinance.

SECTION 7. If any of the provisions of this ordinance or the application thereof to any person or circumstance is invalid, the invalidity shall not affect other provisions or applications of this ordinance which may give effect without the invalid provision or circumstance, and to the end the provisions of this ordinance are severable.

SECTION 8. WHEREAS, it is necessary for the preservation of the peace, health and safety of the City of Tucson that this ordinance becomes immediately effective, an emergency is hereby declared to exist and this ordinance shall be effective immediately upon its passage and adoption.

PASSED, ADOPTED AND APPROVED BY the Mayor and Council of Tucson, Arizona, _____.

_____
MAYOR

ATTEST:

_____
CITY CLERK

APPROVED TO FORM:

_____
CITY ATTORNEY

REVIEWED BY:

_____
CITY MANAGER

LK/kr
9/17/2008 10:16 AM

ATTACHMENT A to Ordinance 10579

2602.1.2 "Gray Water Applications"

1. All new single family and duplex residential dwelling units shall include either a separate multiple pipe outlet or a diverter valve, and outside "stub-out" installation on clothes washing machine hook-ups, to allow separate discharge of gray water for direct irrigation.

2. All new single family residential dwelling units shall include a building drain or drains for lavatories, showers, and bathtubs, segregated from drains for all other plumbing fixtures, and connected a minimum of three (3) feet from the limits of the foundation, to allow for future installation of a distributed gray water system.

3. All gray water systems shall be designed and operated according to the provisions of the applicable permit authorized by ADEQ under the Arizona Administrative Code, Title 18, Chapter 9.

CITY COUNCIL REPORT

SUBJECT:
Update on Green Friday Program

MEETING DATE:
October 12, 2009

TO: Mayor and Council

FROM: Abril Ruiz-Ortega, Court Administrator (623)333-5822

THROUGH: Charlie McClendon, City Manager

PURPOSE:

This agenda item seeks to provide the City Council with feedback regarding the "Avondale Goes Green--Green Friday" pilot program in the City Court.

BACKGROUND:

A proposal was brought forward by the City Judge and Court Administrator to pilot a Green Friday schedule at the Court. In April 2008, the City Council approved a Green Friday pilot program over a period of three months, during which time staff evaluated its impact on employee productivity/morale and customer service/resident satisfaction. The Court did not participate in the 2008 Green Friday pilot.

The Court's Green Friday pilot was launched on June 29, 2009 with extended hours from 7 a.m. to 6 p.m. Monday through Thursday, closed on Friday. The new schedule provides consistency in staff scheduling, as well as extended hours for customers of the court to assure Avondale residents continue to receive excellent customer service.

The Court's Green Friday program was preceded by a public information and outreach effort that included print, and television, (ABC News 15 announced the new Court hours on June 29, 2009). The Avondale City Court was the second court in the state and first in the West Valley to "go green" on Friday (Mesa Municipal Court launched "4 for Mesa" in March 2009). Staff has been contacted by Municipal Courts throughout Maricopa County and a Municipal Court in Darby, Kansas asking Avondale City Court staff how its Green Friday program was implemented.

DISCUSSION:

Staff evaluated Avondale's Green Friday initiative in the following areas:

Court Date Scheduling

Court matters continue to be scheduled with traffic arraignments on Tuesdays and criminal arraignments on Wednesdays. All other court matters such as civil hearings and pretrial conferences are scheduled Monday through Thursday. Pro tem coverage is provided on Fridays and weekends to cover jail court when the Judge is not available. Video arraignment is another option for Fridays, weekends and holidays.

Customer Service

The court security officer, who is the first point of contact, received several comments from the public that have been favorable. One person stated they liked the idea of being able to take care of their court business without missing time from work, another commented he loved the extended hours; he was able to get an extension on his traffic ticket at 5:50pm, and a woman was relieved we had a judge available after 5pm so she could file an order of protection. Others mentioned it would be nice if more courts had this same type of schedule.

The Court Administrator, Court Supervisor, and the Court Security Officer opened the Court every Friday in July for three hours to accept any payments due or to arraign civil traffic cases that may have been scheduled for a Friday. The numbers trickled down from servicing 15 customers the second Friday of July (the first Friday was a holiday) to 6 on the last Friday of July. A glitch in the photo red light program scheduled matters for three consecutive Fridays, (August 28th, September 4th and September 11th) which required the Court to handle the docket on those days.

Staff at the front counter kept track of the number of walk-in customers who took advantage of the extended customer hours Monday through Thursday (7 to 8 a.m. and 5 to 6 p.m.). The numbers are as follows:

July	20
August	183
September	304
Totals	507 (average of 169 customers served a month)

The numbers do not include telephone calls received during the 7 to 8 a.m. and 5 to 6 p.m. hours.

Minimal concerns were raised. The Citizen Liaison works Monday through Friday and takes customer calls on Friday. He reported that four people called asking for instructions to pay their fines and were told to contact the Court on Monday to make payment arrangements without any further penalties. Although the Court Administrator and the Court Supervisor opened the Courts every Friday in July for 3 hours to accept any payments or civil traffic arraignments, Monday payments were also accepted. Staff also explained a new drop box has been installed in front of the Court building.

Any calls to request to reschedule court appearances and or questions related to cases were taken care of the following Monday. There have been no major complaints from the public about Green Friday schedules.

Other key changes staff made to enhance awareness of the new court hours include: revisions made to the information provided to the public via the court's telephone auto attendant, and payment orders are now issued with a Monday through Thursday payment due date (excluding Fridays and weekends). Receipts were updated adding the new court hours. Court staff continues to verbally notify customers of the new hours at the front counter and by telephone.

Online Payment System
A contract amendment was approved on September 14, 2009 allowing the Court to accept on line payments. Statistics are not yet available on this enhancement.

Employee Survey
City Court staff were surveyed regarding their opinions about Green Friday. The survey conducted during the period of September 2nd - September 17th, 2009 brought in 12 responses (approximately 86% of the workforce). Ninety-one percent (91%) of those surveyed said they want to continue with the Green Friday schedule. The negative comments were, “do not like being here until 6:00 pm”. Overwhelmingly staff is very positive about the Green Friday schedule. Some employees have said they prefer the Green Friday schedule to other alternate schedules because with the Green Friday schedule the full staff is there all four days. Staff has also commented that the defendants are not rushing in at 5:00 pm to pay tickets and then staff has to stay after 5 p.m. to finish up. Staff says that they feel more productive working 4/10's as opposed to an 8-hour day; others have said that by scheduling personal appointments on Friday they are less likely to take time off work during the week.

Facilities and Energy
Staff assessed the direct savings that was realized by operating four days a week during the trial period. The frequency of janitorial services was reduced one day to correspond to the new court hours. The contracted janitorial company reduced their monthly fee by $197.00, which provided an estimated annual savings of $2,364 a year.

The frequency of armored transportation services with Brinks was reduced to four days each week. The contracted services reduced their monthly fee by $90.27, which provided an estimated annual savings of $1,083.00.

Staff tracked the electrical use of the building and compared the two (2) month trial period to the two (2) months of use last year (September's numbers not available until mid-October). For the months of July 2008 and August 2008 the average monthly electrical usage on a 5-day work schedule was 16780 KWH. During the trial period of July 2009 and August 2009 the average monthly electrical usage on a 4-day work schedule was 14560 KWH. The associated dollar savings of lower energy usage is an average monthly savings of $76.36 a month, or a projected annual savings of $916.32.

Observing Holidays -
To continue with the Green Friday schedule for Court, state and federal holidays on the City Calendar will continue to be observed. The Court will close on those observed holidays. Should the holiday fall on a Friday, Courts will not close on Thursday. Employees' holiday benefits will not be affected, nor will the City incur any additional costs associated with holiday pay. Employees will continue to receive 88 hours of holiday pay, which goes into a “Holiday Bank”.

BUDGETARY IMPACT:

The Green Friday schedule has helped the City realize cost savings from reduced energy consumption, janitorial services and armored transportation services.

RECOMMENDATION:

Staff recommends that Council adopt the Green Friday scheduled for the City Court based on the favorable results from the pilot program.

ATTACHMENTS:

Click to download

- Green Friday Information Packet

Our new City Court hours are designed to serve you better *and* help the environment!

Customer-Convenience Hours:

Monday - Thursday, 7 am - 6 pm • Closed on Fridays

Public Information Office

For immediate release: May 18, 2009

Contact: Ingrid Melle, Public Information, (623) 333-1614

Avondale City Court to Pilot "Green Friday" Schedule Beginning June 29

Beginning June 29, the Avondale City Court will pilot a Green Friday program, mirroring City Hall's successful four-day work week initiative. The new schedule at the court is aimed at enhancing customer service by extending court hours four days a week, and promoting air quality by closing on Fridays.

During this four-month-long trial period, the Avondale City Court will be open for business from 7 a.m. to 6 p.m. Monday through Thursday, and will be closed on Fridays. Avondale City Court is the second city court in Maricopa County to close on Fridays. Mesa Municipal Court moved to a four-day work week schedule on March 31.

"Extending our customer hours beyond the traditional 8 a.m. to 5 p.m. workday will make the Court more accessible to the public," said Avondale City Judge Richard Lynch.

To minimize the impact of a Friday closure, the Avondale City Court will be launching its on-line services for paying court fines and fees, to coincide with the introduction of the new court schedule. Initial Appearances (I.A) for arrested or "in-custody" defendants -- required by law to be seen by a judge within 24 hours -- will be conducted by pro-tem judges or via video arraignment from Avondale's detention facility.

In June 2008, Avondale was the first city in the Valley to "go green" with its four-day work week. With gas prices at an all-time high, the program was received favorably by residents and employees alike. Green Friday was first proposed by the Employee Retention and Recruitment committee, which suggested that the program would not only benefit employees and customers, it would also help Avondale do its part for the environment.

As a result of switching to a four-day work week, Avondale has reduced its annual janitorial costs by approximately $9,500. Annual average electrical savings are approximately $45,000. Additionally, by keeping approximately 200 cars off the road during peak hours on Friday, Green Friday is helping Avondale meet the requirements of Maricopa County's Trip Reduction program aimed at reducing traffic impacts on air quality. Employees are saving approximately 150,000 miles a year by not driving to work on Friday; approximately 200,000 lbs of CO2 emissions are reduced annually by switching to a four-day work week schedule.

It's a trend that is catching on in Arizona -- Queen Creek, Buckeye, Fountain Hills and Mesa have all adopted a four-day work week. Researchers from the Romney Institute of Public Management at Brigham Young University examined the effects of implementing a compressed work week for employees in city government, studying more than 150 cities (including Avondale) in 38 states. Their research showed that employees working the 4/10 workweek reported lower levels of work-family conflict than their counterparts working a traditional schedule, and that productivity and ability to serve citizens was increased, rather than diminished. That has certainly been the case for Avondale – employees surveyed reported being absent from work less often, and having more family and personal time. Employees also strongly felt that the alternative work schedule has improved citizen access to government due to the extended work hours.

For more information, visit www.avondale.org/green ###

Southwest Valley

Avondale City Court will try shorter workweek

by **David Madrid** - May 26, 2009 11:11 AM
The Arizona Republic

Mark Henle/The Arizona Republic

Judge Richard Lynch (right) talks with a defendant in his Avondale Court. The court will pilot a Green Friday program, mirroring Avondale City Hall's Successful four-day work week initiative, beginning on June 29, 2009.

What is the color of Avondale?

You could say green as the city continues its environmentally conscious ways, adding the Avondale City Court to its Green Friday program.

Beginning June 29, the court will pilot the shorter-workweek program, mirroring City Hall's successful initiative.

That means the court will go to a four-day workweek, which the city believes will enhance customer service. The court's 14 employees will still work their 40 hours, but in four days instead of five.

During this four-month trial period, the Avondale City Court will be open from 7 a.m. to 6 p.m. Mondays through Thursdays.

The City Court is the second in Maricopa County to close on Fridays. Mesa Municipal Court moved to a four-day workweek on March 31.

"I just see positives all around for it," said Avondale City Judge Richard Lynch. "I think it's going to change things. Expanding the Monday through Thursday hours for the public means we can start at 7 a.m. and then go to 6 p.m., so people hopefully can get their court business done without having to miss work."

Avondale adopted Green Friday on Oct. 6, after its four-month pilot program was deemed a success.
Results showed savings in electricity and water for the city and gas savings for city employees.

To minimize the impact of closing Fridays, the court will launch online services to pay fines and fees when the new court schedule begins.

Initial appearances by defendants who have been arrested or who are in custody will be conducted by pro-tem judges or via video arraignment from Avondale's detention facility. Under the law, those defendants must be seen by a judge within 24 hours.

"We will be closed on Friday, but I don't see that as a big problem," the judge said. "Here's why: Typically, our Friday docket is order-of-protection hearings and injunction hearings. That can be easily moved to our extended hours during the week."

Friday walk-in business usually consists of people who are early or late to court, Lynch said.

"I think this is going to make things run smoother for the community once everyone gets used to it," Lynch said.

Last June, Avondale began its Green Friday pilot program. It was the first city in the Valley to go to the four-day workweek. With gas prices at an all-time high then, the program was received favorably by residents and employees alike.

Green Friday was proposed by the Avondale Employee Retention and Recruitment Committee, which suggested that the program would benefit employees and customers while helping Avondale do its part for the environment.

As a result of switching to a four-day workweek, Avondale has reduced its annual janitorial costs by about $9,500. Annual average electrical savings are about $45,000.

By keeping about 200 cars off the road during Friday peak hours, Green Friday is helping Avondale meet its Maricopa County Trip Reduction Program requirements aimed at improving air quality.

It's a trend that is catching on in Arizona. Queen Creek, Buckeye, Fountain Hills and Mesa have adopted a four-day workweek.

Avondale employees surveyed about the program reported being absent from work less and having more family and personal time. Employees also strongly felt that the alternative work schedule has improved citizen access to government due to the extended work hours.

"I'm anxious to see how it will work out," Lynch said of the court program. "I don't anticipate there will be a problem. It's an experimental trial period, which the (City) Council will review in October, so we'll see what happens then."

West Valley View
The community newspaper of Avondale, Buckeye, Goodyear, Litchfield Park & Tolleson, AZ
Phone (623) 535-8439

Tuesday, June 16, 2009

Avondale completes 1st year under green schedule

Tuesday, June 16, 2009

This month marks Avondale's one-year anniversary since the city moved to a four-day workweek.

Once the trial program that began last June was deemed a success, City Hall employees began working 7 a.m. to 6 p.m. Monday through Thursday.

As the city prepares to move its court system to the same setup later this month, Avondale employees say they've been pleased with the results.

"We're busy and by the end of the day Thursday we're tired, but I think the consensus is that the three-day weekend to spend time with family has made it worthwhile," City Manager Charlie McClendon said.

McClendon's assessment echoes those of his colleagues, who were recently surveyed by Brigham Young University. The survey sought Avondale employees' opinions on working an alternative work schedule.

In the survey, 90.1 percent of respondents either agreed or strongly agreed that their experience working an alternate work schedule has been a positive one, with 62.6 percent strongly agreeing.

The program, known as "Green Friday," was proposed by the Employee Retention and Recruitment Committee, which took the idea to the City Council. It was put in place as a measure to recruit and retain employees, save energy, reduce operational costs and address government mandates regarding air quality compliance for employers.

As a result of the move, Avondale has reduced its annual janitorial costs by $10,000, while the city's electrical savings are approximately $45,000.

The city's new schedule also has helped it meet the requirements of Maricopa County's Trip Reduction program, aimed at reducing traffic effects on air quality.

Avondale's move has garnered attention around the state as Buckeye, Fountain Hills, Queen Creek and most recently Mesa have followed suit, all adopting the four-day workweek.

Not only has the schedule been beneficial to the environment and to city employees, residents also appear to favor the new schedule.

"We haven't had any complaints about it at all," said Pier Simeri, the city's Community Relations and Public Affairs director. "A lot of the response we've gotten is positive. Because we're open at 7 a.m. and until 6 in the evening, people are able to get things taken care of here without missing work."

Avondale City Clerk Carmen Martinez, who has been dealing with an influx of residents looking to get passports recently, said people are

often waiting outside when the doors open at 7 a.m.

In addition to the extended hours, Avondale employees concluded they're getting more done in just four days, as 71 percent agreed or strongly agreed that they have seen an increase in their productivity since the change in schedules was made.

Marc Buckhout can be reached by e-mail at mbuckhout@westvalleyview.com.

Related Links

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DEVELOPMENT SERVICES

SUBJECT:
Estrella Foothills Specific Plan

MEETING DATE:
October 12, 2009

TO: Mayor and Council

FROM: Tracy Stevens, Planning Manager (623-333-4012)

THROUGH: Charlie McClendon, City Manager

REQUEST: Staff is seeking comment and direction from the City Council regarding the Public Draft of the Estrella Foothills Specific Plan. Comments received will help staff prepare the final version of the plan to bring forward for adoption in the coming months.

LOCATION: Estrella Foothills:
Northern boundary - Lower Buckeye Road
Southern boundary - Estrella Mountain Regional Park
Eastern boundary - 107th Avenue
Western boundary - Litchfield Road

APPLICANT: Avondale Planning Staff

BACKGROUND:

The Estrella Foothills study area covers that portion of the City generally bordered by Lower Buckeye Road on the north, Estrella Mountain Regional Park on the south, Litchfield Road on the west, and 107th Avenue on the east (Exhibit A).

On April 14, 2008, staff held a kick-off meeting with Council for the Estrella Foothills Specific Plan to outline the goals, timeline, and proposed process of the project. On June 30, 2008, Council held a visioning session for the Estrella Foothills area to create a common vision for the area, and to give staff direction for the how to proceed with the planning of the area. In June of 2008, staff went on a tour of the area with Council members to facilitate a common understanding of the area's existing conditions, assets, constraints, and possibilities. On November 3, 2008, Council approved a contract with David Evans and Associates (DEA) to serve as planning consultants for the Estrella Foothills Specific Plan process.

In January 2009, staff mailed out public comment cards to all property owners within the Estrella Foothills area. On February 11, 2009, City staff held an open house for citizens to review the three Land Use Alternative Plans. The three alternative plans and the public comments gathered through the comment card and at the open house were presented to the City Council on March 9, 2009. At that meeting, the Council selected Alterative 2 as the Preferred Alternative with some alterations.

Over the summer of 2009, staff and the Estrella Foothills Technical Advisory Committee (made up of other City departments) worked with David Evans and Associates to create a draft plan that incorporates Council's vision for the area with comments and concerns expressed by the residents, property owners, and other interested parties in the area.

On September 21, 2009, the Public Draft of the plan was released for public review and comment via the City of Avondale website. Staff is currently accepting public comment on the draft through October 29, 2009.

SUMMARY OF REQUEST:

The Estrella Foothills Specific Plan is divided into six chapters:

- Introduction
- Existing Conditions
- Estrella Foothills Specific Plan
- Urban Design Guidelines
- Ecotourism, Conservation, and Natural and Historic Areas
- Implementation

Introduction

The Introduction chapter broadly lays out City Council's vision for the area and outlines Council's six guiding principals for the plan. The Introduction also outlines the boundaries of the study area, discusses the relationship between the plan and the City's General Plan, and discusses the public involvement to date.

Existing Conditions

The Existing Conditions chapter includes discussion of the current General Plan land use categories for the area, existing economic conditions for the area, existing traffic and circulation conditions, and a discussion of the planned State Route 801 and what it means to the area.

Estrella Foothills Specific Plan

The third chapter includes the Preferred Alternative land use plan, new land use categories proposed as part of the Preferred Alternative, economic projections and traffic and circulation projections for the future land use development as shown on the Preferred Alternative. This chapter also includes the projected absorption rates for the different land uses in the plan. Finally, this chapter provides new rural street cross-sections to be used in the area as new residential developments are built and existing streets are improved. These cross-sections are designed to maintain the rural feel of the area.

The Preferred Alternative land use plan includes a number of new land use designations unique to Estrella Foothills. These include:

Sports and Entertainment - Comprised of the Phoenix International Raceway property, the designation is designed to accommodate future expansion of the raceway and associated tourism-related development.

Festival District - Located at the intersection of Avondale Boulevard and the preferred State Route 801 alignment, this area is designed to be a pedestrian-oriented entertainment and recreation district. Buildings would generally be mixed-use and at least three stories tall.

Village District - Located west of the Festival District, the Village District is planned to be the residential component of the entertainment and recreation area. Residential developments in this area would be a minimum of 12 dwelling units per acre, and buildings generally would be at least two to three stories tall.

Riverwalk District - The Riverwalk District is designed to take advantage of the future Durango Regional Channel as a pedestrian-oriented waterway with mixed-use and office buildings along the banks. Any residential development in the Riverwalk District would be at least 12 units per acre, and buildings would be a minimum of three stories.

This chapter also includes a new roadway proposal that staff has been recently exploring. This proposed roadway is called the Agua Fria Parkway, and is shown on the Preferred Alternative land use map. This proposed roadway could provide unique development opportunities in Estrella Foothills and alleviate potential circulation problems in the future. The design, cost, and feasibility of this project will need to be studied at a future date. The concept of the roadway is included in the Public Draft.

Urban Design Guidelines

The Urban Design Guidelines were created to provide guidelines for future development in the Estrella Foothills area to create a unique look and feel for the area. The guidelines include discussion about residential and non-residential architecture, materials, colors, site design, landscaping, signage, and lighting. These guidelines will help maintain the rural character of Estrella Foothills, while setting development in the area apart from other developments in the rest of the city.

Ecotourism, Conservation, and Natural and Historic Areas

The fifth chapter discusses critical aspects of the existing Estrella Foothills area and their relationship with future development. This includes aspects such as wildlife, natural areas, potential archeologically significant sites, mineral extraction sites. This chapter also discusses the possibility of future development including facilities for water reuse. The fifth chapter also includes a discussion of the importance of the views of the Estrella Mountains from all parts of the Estrella Foothills area. At the time of development, especially development of the Festival District, Village District, Riverwalk District, and Sports and Entertainment District, view studies will need to be conducted by the developers to ensure that new buildings to not impede or adversely affect the views of the mountains from surrounding properties.

Implementation

The final chapter includes implementation strategies for achieving the goals discussed throughout the plan, and ideas for measures to be put into place to bring about the overall vision of the plan.

RECOMMENDATION:

Staff is seeking input from the City Council on the Public Draft as a whole, and particularly on the land use plan, design guidelines, ecotourism, conservation, natural and historic areas, development standards and maximum building heights, and implementation strategies contained within the draft plan.

Following this work session and the close of the public comment period on October 29, 2009, staff will make the necessary changes, additions, and corrections to the draft plan. The final proposed Specific Plan will be presented at a public hearing to the Planning Commission in November. Staff is currently targeting a December City Council hearing for final adoption.

ATTACHMENTS:

Click to download

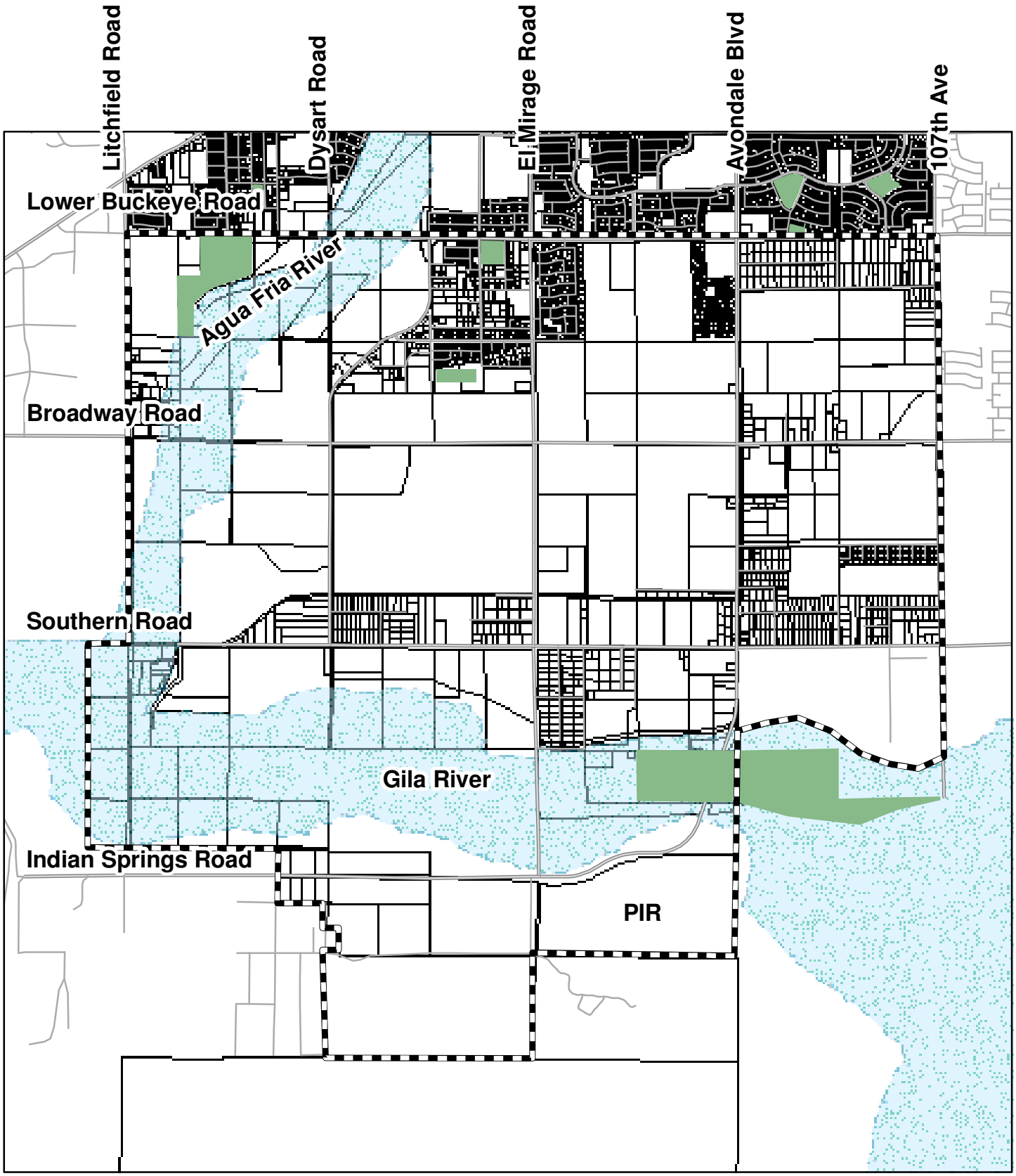
- Exhibit A - Estrella Foothills study area
- Exhibit B - 4-14-08 MCC WS minutes
- Exhibit C - 6-30-08 MCC minutes
- Exhibit D - 3-9-09 MCC WS minutes
- Estrella Foothills Specific Plan Public Draft
- May 6, 2009 Arizona Rock Producers Association comment letter
- June 5, 2009 Lakin Ranch/Journey Land Group comment letter

PROJECT MANAGER:

Scott Wilken, Senior Planner (623-333-4016)

Estrella Foothills Specific Plan Study Area

Exhibit A



Legend

- Parks
- Floodways

EXHIBIT B

Excerpt of the Minutes of the regular City Council work session held April 14, 2008 at 6:00 p.m. in the Council Chambers.

MEMBERS PRESENT

Mayor Lopez-Rogers and Council Members

Jim Buster
Frank Scott
Chuck Wolf
Stephanie Karlin
Jim McDonald

ALSO PRESENT

Charlie McClendon, City Manager
Andrew McGuire, City Attorney
Holly Ward, Community Media Relations Manager, Maricopa County Dept. of Air Quality
Margaret Boone-Pixley, Assistant Traffic Engineer
Tracy Stevens, Planning Manager, Development Services Department
Eric Morgan, Planner II, Development Services Department
Scott Wilken, Senior Planner, Development Services
Sammi Curless, Assistant to the Mayor and Council
Carmen Martinez, Deputy City Clerk

SOUTH AVONDALE SPECIFIC PLAN INTRODUCTION – SP-08-3

Charlie McClendon, stated the City Council has adopted a goal to update the General Plan related to areas of Avondale south of Lower Buckeye Road and that Tracy Stevens would present this item.

Tracy Stevens, Planning Manager, reviewed that the City of Avondale General Plan was adopted by voters in September of 2002, and since that time the area which borders Lower Buckeye to the Estrella Foothills has not been studied. The FY 05/06 budget set aside funding towards a Specific Plan update for this area. From the 1900s to 1990 the area has been predominately agriculture. A housing boom began in 1990 and lasted until 2006. The total study area is 12.61 square miles. 3.4 square miles is entitled and 3.2 square miles are in a flood plain or a utility corridor, leaving approximately 6 square miles for development. The population estimates at build out are approximately 20,000 people for this area.

Ms. Stevens explained that through the process Staff will be looking at six guiding principles: 1) Foster a distinctive and attractive community by creating a stronger sense of place, providing a mix of land uses, taking advantage of innovative building designs, and creating diversity in housing and walkable neighborhoods. 2) Preserve the open space. She indicated the area encompasses natural farmland and the natural beauty of the Gila River and the Estrella Mountains, and staff will have to consider critical environmental issues. 3) Strengthen and direct development toward existing communities. 4) Provide multi-modal transportation choices. 5) Make development decisions that are predictable, fair, and cost effective. 6) Encourage public participation within the community and with stakeholders.

Scott Wilken, Senior Planner, Development Services Department, outlined the scope of work to include eight primary steps:

1) Evaluate the current conditions. This includes land use analysis looking at residential-commercial area aspects, such as densities and intensities, potential expansion of PIR, (Phoenix International Raceway), and possible development opportunities in the area. Civil engineering and transportation issues such as water and sewer infrastructure, the proposed freeway corridor, major arterials will need to be addressed. Staff will examine cultural resources and potential archeological sites in the area and study locations for public facilities, as well as open space and parks to include the Tres Rios levee, the El Rio Project, and the Buckeye Irrigation District Pilot Lake, as well as the rivers and trails system which staff would like to connect with trail systems already in place.

2) Identify Opportunities and Constraints, including the proposed alignment of State Route 801, studying regional master plans, surrounding general plans from the cities of Phoenix and Goodyear, and plans in existing communities. Staff will work closely with the Water Resources Department to address water and wastewater treatment issues. Staff will be working with the sand and gravel operations in the area and will study the flood plains. Mr. Wilken noted there is great potential for development opportunities with State Route 801, the Gila River with the Tres Rios Levee, the large trail system that will transverse the area, PIR and the Estrella Mountain Park and habitat restoration view corridors.

3) Visioning Process to include public outreach with surveys, neighborhood meetings, and focus groups. Staff is planning to create unique teams involving City Departments, property owners and stakeholders to build consensus to establish a realistic vision and consider the markets conditions to move forward.

4) Goals and Objectives including considering land use designations to ensure that future development follows Council's goals, ensure market and environmental sustainability, creating recreational opportunities, and keeping new development

in the area from becoming isolated from the rest of the City. Evaluation criteria will be comprehensive and ensure fair consideration of all alternatives.

5) Preparation of Alternatives. Staff will prepare the alternatives they believe are appropriate and will bring those to the public, the Planning Commission and Council to formulate a vision.

6) Evaluation of Alternatives. Staff will evaluate the alternatives in the areas of planning, civil engineering/utilities, transportation planning/engineering, cultural resources, open space and parks, public facilities, and public involvement, and will balance the needs of the stakeholders with what is most important.

7) Engage Stakeholders. Staff is compiling a list of all the school districts, utility companies, major landowners, neighboring cities, as well as Maricopa County, ADOT, MCDOT, and County Parks to engage them in this process. Staff will offer a number of venues for communication and participation to include surveys, flyers, newsletters and workshops, and will soon launch a web page and perhaps a blog. A closure workshop will be held at the conclusion so that everybody who participates will know what their participation came to.

8) Approval Process. Throughout the approval process, Staff will maintain a critical path and have a thorough and transparent process. Public involvement will be early and active and the public hearing process will be more involved than usual.

Mr. Wilken laid out a rough timeline for the Council. He stated public visioning meetings would occur in June/July of 2008. Staff will present alternatives to the City Council and the public by the 3rd quarter of 2008; review of the first draft and a neighborhood meeting will occur in 4th quarter 2008, review by the Planning Commission and the City Council at Work Sessions. Staff plans to prepare a draft plan by the 1st quarter of 2009 and have Planning Commission public hearings on the draft plan in 2nd quarter 2009. It is expected that final adoption of the Specific Plan and General Plan Amendments will take place in August 2009.

Mayor Lopez Rogers stated the process should start with visioning sessions similar to those that were conducted for the City Center Plan and the Old Town Revitalization Plan. She asked for Council Members' opinions.

Council Member Wolf expressed concern and suggested that the project should be shelved until the City can afford to have a consultant come in and guide the City through the visioning process. He added that he was open to a visioning session, but a public outreach process would not hold much benefit. He pointed out that water resource issues must categorize the baseline assessment for development.

Council Member Karlin echoed Council Member Wolf's sentiments. She stated this area is one of the City's last areas for planning and the Council should shelve the project at this point until things can be put in place. She pointed out there are significant archeological sites in the area and an environmental impact study needs to be done. She suggested going ahead with a visioning session.

Mayor Lopez Rogers directed staff to proceed with a visioning session to decide whether or not to move forward. Charlie McClendon, City Manager, stated that a session could be scheduled in the next 30 to 60 days.

EXHIBIT C

Excerpt of the Minutes of the special City Council work session held June 30, 2008 at 5:00 p.m. in the Council Chambers.

MEMBERS PRESENT

Mayor Lopez-Rogers and Council Members

Jim Buster
Frank Scott
Chuck Wolf
Stephanie Karlin
Jim McDonald

ALSO PRESENT

Charlie McClendon, City Manager
Brian Berndt, Development Services Director
Scott Wilken, Senior Planner, Development Services
Carmen Martinez, Deputy City Clerk

ESTRELLA FOOTHILLS SPECIFIC PLAN VISIONING DISCUSSION

Mayor Lopez Rogers thanked the Council for going on the bus tour and thanked the Staff for updating the Council along the way. She reminded the Council that the purpose of the special meeting was to look at the big picture for the Estrella Foothills area, and details will be addressed in the future.

Charlie McClendon, City Manager, agreed and indicated that staff is seeking feedback from the Council on what they see as the vision for the area south of Lower Buckeye Road. He stated Brian Berndt and Scott Wilken would give the presentation and lead the discussion.

Scott Wilken, Senior Planner, Development Services Department, stated that the subject area is 12.6 square miles and approximately 5 to 6 square miles are already developed or entitled; it is bordered by Lower Buckeye Road on the north, Litchfield Road on the west, 107th Avenue and Avondale Blvd. on the east, and the Estrella Mountain Regional Park on the south. He indicated that the SR 801 alignment and the utility corridors are key issue in the area.

Brian Berndt, Development Services Director, stated is seeking to identify the assets of the area, the challenges of the area, and the visions for the area from the Council's perspective and is seeking to obtain that information in the form of answers to the following questions:

1. **What do you think are the most important assets in the area; what do you value most about the area; what are your favorite things about the area?**

Council Member Karlin stated the Gila River and the Agua Fria River are assets.

Council Member McDonald stated that the river is a huge asset for the City. He commented that the City definitely wants the Route 801 southern alignment and the opportunity to save the corridor for key residential and business opportunities.

Council Member McDonald stated this is a key opportunity to create a natural preserve area where people can live and work.

Council Member Scott stated the Gila and Agua Fria Rivers are very important, and also the projects planned within the rivers will be an asset. He likes the openness of the area and the views of the mountain. He remarked that the very rural lifestyle will be affected once changes are made to the area and suggested maintaining the natural feel, which will act as a draw to the area.

Council Member Wolf stated the rivers themselves are not enough. The Tres Rios, West Valley Recreational Corridor, and the key interconnection points will be critical assets. He added the large amounts of land adjacent to PIR (Phoenix International Raceway) can be considered an asset.

Council Member Buster arrived at 5:40 p.m. and Mayor Lopez Rogers brought him into the discussion.

Council Member Buster stated the assets of the area include the fact that it is wide open and there are beautiful areas. He thinks the area right above PIR is a unique area that can be developed with perhaps a luxury hotel. He noted there are great residential areas that are essentially wide-open farmland and it remains to be seen how those areas will be impacted by the freeway routes. He pointed out there are some poorly planned and blighted properties as well, but they can be improved. There are nice areas for residential and horse properties, as well as amenities, to include the canals which add to the ambiance. He believes development will take some planning because of the diversity of current uses, and the proposed uses are complicated by freeways and power lines.

Mayor Lopez Rogers stated there are opportunities in the area like those that the City of Tempe had with lakes and rivers. Another asset is the relationship Avondale has with the County. She suggested having activities to connect people, such as through parks and the lakes.

Council Member McDonald stated the power lines are a challenge and an opportunity to create walking trails and parks. He suggested a golf course along

the power lines would invite higher-end houses and would show that the views of the Estrella Foothills represent a beautiful place to have a home inspire of the power lines.

Mayor Lopez Rogers stated that Monument Hill is also a great asset, as well as the partnership with the Gila River Indian community and a possible casino on the other side of the mountain.

Mr. Berndt posed the next question.

2. What are the biggest challenges for the area?

Council Member Karlin replied that the biggest challenges are the flood plain and the unincorporated land that will need to be annexed.

Council Member McDonald pointed out the challenge is huge working with the County and ADOT (Arizona Department of Transportation) as far as the 801 alignment. Depending on where the freeway alignment goes, there will be no way not to inconvenience somebody, which will require community involvement.

Mr. Berndt asked if the greatest concern is because so many property owners are in the unincorporated area and they have a different interest than the City.

Council Member McDonald asked how many unincorporated communities have been approached and what are their opinions regarding incorporation.

Mr. Berndt suggested an annexation policy as part of the Council's vision.

Mayor Lopez Rogers stated annexation will be a challenge.

Council Member McDonald stated another challenge is making Lakin Ranch a reality, as well as developing other planned communities in the area.

Council Member Buster stated the challenge is to find out where the 801 alignment will be. Depending on where the freeway is located, it will influence the type of land use, whether more residential or more commercial property. The Council needs to think through what the potential freeway alignments will do in terms of impacting the land use in the area.

Mr. Berndt asked the Council Members if the southern alignment will be an asset, which Council Member Buster confirmed.

Council Member Scott stated the annexation of the properties is a challenge, in that many people moved there because people want to live with less regulations. Taking over the water companies will be a challenge, and as well as bringing the

people onto the City services. He stated the southern alignment of the 801 will be an asset and any other alignment would be a challenge because the power line and the 801 would split the area twice and leave about three miles of dead space, which will be doomed to commercial and light industrial.

Mr. Berndt stated that Staff realizes there is a north and south Avondale problem because of the I-10 bisecting the City in half, and the southern 801 alignment would create another division. With the County enlarging Highway 85, the City is further dissected and the provision of City services would be a challenge.

Council Member Wolf stated that there are problems with both the northern and southern alignments and added that the southern 801 alignment could be an asset, but the alignment needs to be modified because as currently designed it takes out an undeveloped area with the most potential. He pointed out that some additional challenges are the vast number of archeological areas, very limited infrastructure and the wastewater treatment plant. He suggested that the wastewater treatment plant needs to be managed so as not to inhibit development around it.

Mayor Lopez Rogers stated the total infrastructure system needs to be addressed.

Council Member Buster suggested that the City will have to work with some of the existing uses in order to incorporate those, such as was done with Glenarm Farms.

Mayor Lopez Rogers stated a culture change in that area would be a challenge.

Charlie McClendon, City Manager, stated the effluent line from 91st Avenue is a challenge because not only does it take land out of use, but when the City has to cross it with its utilities, it is much more costly.

Council Member Karlin stated another challenge is the mining of the gravel pits since many of then have long-term leases. Truck traffic to and from the gravel pits needs to be considered.

Mayor Lopez Rogers stated that the El Mirage alignment and levee represent challenges because it will change the way El Mirage can manage traffic.

Council Member Buster stated hat the City needs to make sure that residential zoning is not allowed closed to the pits to avoid noise and dust complaints.

Mayor Lopez Rogers stated the power lines, the Meridian, Monument Hill, and the rivers could be considered both assets and challenges.

Mr. Berndt stated after discussing the challenges, they can discuss the vision as far as capturing the assets and reducing the challenges.

Council Member McDonald stated a challenge is to properly market the changes the City will make and make sure the homebuilders understand the vision for the area.

Mr. Berndt stated that in regards to the levee, drainage has not been discussed as a significant challenge for the area.

Mayor Lopez Rogers stated another challenge is a multimodal transportation system.

Mayor Lopez Rogers and Council Member Karlin agreed that one of the greatest challenges will be with bringing people onboard with the potential changes since current residents wish to keep their lifestyle and they will tend to oppose change and be more vocal about it. Mayor Rogers indicated she hopes the City can incorporate this area in the same manner as Glenarm Farms.

Mr. Berndt the City needs to have a discussion with the residents to explain to them that the City is not trying to take away their property rights or lifestyles and that the City recognizes the unique characteristics of the area.

Council Member Wolf stated a key piece is the implementation of new development standards to allow for larger lots, better density and open space management.

3. What would make this area better and what ideas do you have for the area?

Council Member Karlin stated she would like the Council to keep the area as pristine as possible by keeping the integrity of the mountains, the rivers and national habitats.

Council Member McDonald stated he agrees with keeping the character of the area alive and remarked that the horse property at 107th Avenue and Thomas Road is a great example of pockets that add a lot of character to a city. He suggested working to get good master planned communities that will keep the mountain views intact and preserve the acre lots as best as possible and perhaps add more.

Council Member Buster stated it is important to keep the view sheds and have less density closer to the mountains and rivers. He thinks Lakin Ranch is a fine development, and closer to Southern should be more open and less dense.

Council Member Scott agreed with the other Council Members' comments. He thinks it would be best to blend all the things and flow from higher density houses down to horse properties, and back into a greenbelt open space with the river and the mountains. That way the people who chose to live more rural can buy bigger

lots and others can buy smaller lots through mixed housing options, with all the amenities of a full-blown city 10 minutes away.

Council Member Wolf stated the last thing he thinks of when looking at this area is pristine because it is crisscrossed by 500,000 volt power lines and 110 inch pipe that runs secondary effluent out to Palo Verde, as well as huge drainage runoff ditches, a potential freeway, and all of it is farm property. He sees the area as highly utilized with industrial elements. He suggested the focus be to look at a sustainable development that encourages an active and diverse lifestyle. He sees three major areas of focus: 1) residential projects that have a strong mix, with the minimum standards being what is in the current Code. 2) commercial and class A office will be located. 3) active recreational opportunities to include the West Valley Recreational Corridor, Tres Rios, and the park system, with the largest park being Estrella Mountain Regional Park. He thinks it will be dynamite to provide a way for people to get to the Estrellas and spend the day. He would like to see a golf course in the area, as well as a sustainable active and diverse lifestyle. He sees a practical component to sustainability, in that while it is important in environmental terms, it concerns recreational and quality of life issues as well. He thinks with that in mind the City can build a development that will not harm the environment and will still provide a benefit to people.

Council Member Karlin stated there are some opportunities as far as business, such as low level warehouses and industrial parks.

Council Member Wolf stated he would not be in favor of warehouse in the area because that type of development brings in trucks and pollution.

Mayor Lopez Rogers stated that open space for parks and recreational corridors are part of connectivity, and diverse employment and residential areas are important so people can work, live, invest and retire in those areas. She suggested being as diverse as possible without losing the culture of the area.

Mr. Berndt stated that most people envision many warehouses with a freeway going through the area and suggested developing a policy with flexibility for development along the freeway alignment.

Council Member Scott stated that the northern alignment would lead to a much more commercial corridor and what happens in the area will be predicated by the freeway alignment. He asked what the timeframe is on the freeway alignment.

Mayor Lopez Rogers stated the alignment route would probably be known in late fall and that the State is now focusing on capturing the right-of-way. She added that the Council should make a statement that the northern alignment is not appropriate

Council Member McDonald agreed with Council Member Buster in that a northern alignment will change the vision greatly. He agrees with Council Member Wolf on having Class A office because it opens the door for trucking and warehousing, but the office and warehousing do not have to be side by side. He agrees that the plan should state what the Council wants for the area.

Mr. Berndt pointed out there is a fairly highly concentrated employment section at the southeast corner of Lower Buckeye and Litchfield Road, which will handle a substantial amount of the industrial needs.

Mr. Berndt asked the Council Members to prioritize their comments in order of importance.

Mayor Lopez Rogers stated she had a speaker card from Dr. Christina Risley-Curtiss.

Mr. Berndt stated that once the priorities are listed they will start meeting with neighborhood groups. He added that the Tolleson School District has purchased the property on the Lakin Ranch and Scott Wilken met with Littleton School District today and they are very anxious to see more schools built in this area.

Dr. Christina Risley-Curtiss stated she lives in one of the unincorporated areas the Council is planning for and indicated that the Council has the opportunity to make the area something that will draw people which does not include high density at the north end of Lakin Ranch. She indicated she moved to the area to be able to keep her animals and for a quite lifestyle but PIR events obstruct her enjoyment of the Estrella Mountains becomes a small city down there. Dr. Curtiss suggested high-end horse properties to cater to that population. She challenged the Council to find a way for the residents of the area to be heard now and not after the vision is developed. She stated the goal is to take the area and make it something really special as opposed to something the City already has.

Charlie McClendon, City Manager, stated staff is aware that the residents in that area choose to live there for a variety of reasons. Staff has identified all the property owners to ensure they are notified of public meetings. Staff will work to identify the areas that will remain as they are and they areas which will need to transition and how to ease that transition. The residents will be involved in this process.

Mayor Lopez Rogers stated that she knows it is frustrating for residents, but the Council has to start somewhere. She indicated that this is the only undeveloped area that remains in the city and it is a great opportunity to do things right and give the residents the opportunity to offer input.

Mr. Berndt stated that Staff will begin public participation over the next several months, basing the discussion on Council's direction tonight. Staff will follow-up with the Council on input from the neighborhoods.

Council Member Wolf cautioned that Staff should be careful not to bring too much of the Council's vision and direction into the community discussions. He would like to see input from the residents.

Charlie McClendon, City Manager, stated that Staff will update the Council periodically on the input received from the residents. At an appropriate time they will provide tools that allow the Council Members to see what various policy options might produce in terms of the physical appearance and what that may mean to the City in terms of cost of services and revenue.

In reply to a comment from Mayor Lopez Rogers, Mr. McClendon stated PIR would be part of the discussions, as well as any other business owners in the area that care to be involved.

Dr. Curtiss stated another asset is the temperature in the area, which drops five degrees at night and in the morning, and the City does not want another heat island.

Mayor Lopez Rogers stated that Dr. Curtiss would be taking her on a tour and invited the other Council Members to join them.

Mr. Berndt stated he appreciated the Council's comments and direction, and Staff will return to Council to go over the schedule.

EXHIBIT D

Minutes of the Work Session held March 9, 2009 at 6:00 p.m. in the Council Chambers.

MEMBERS PRESENT

Mayor Lopez-Rogers and Council Members

Ken Weiss, Vice Mayor
Jim Buster
Frank Scott
Jason Earp
Stephanie Karlin
Jim McDonald

ALSO PRESENT

Charlie McClendon, City Manager
Andrew McGuire, City Attorney
Scott Wilken, Senior Planner, Development Services Department
Dave Fitzhugh, Assistant City Manager
Carmen Martinez, City Clerk

ESTRELLA FOOTHILLS SPECIFIC PLAN LAND USE ALTERNATIVES DISCUSSION

Recommended land use alternatives and the results of public participation for the Estrella Foothills Specific Plan.

Charlie McClendon, City Manager, stated that following a public process to develop land use alternatives and base on the vision of the City Council, Staff has developed land use alternatives for the Estrella Foothills area. Three alternatives have been developed, and Scott Wilken, Senior Planner, will give a presentation on the alternatives.

Scott Wilken, Senior Planner, Development Services Department, reviewed the timeline that has been followed in this process which has included visioning session, Council tour of the area, retention of a consultant to assist in the planning process and public outreach including public meetings.

Early in the process, Council defined the assets of the Estrella Foothills area to include the Gila and Agua Fria Rivers, the Estrella Mountain views, Monument Hill, and the rural/agricultural atmosphere. Challenges of the area to include the area is in a flood plain; the challenge of the SR801 alignment, which is still undetermined; and the limited infrastructure in the area. Council presented ideas to make the area better including maintaining the existing character of the area,

preserving the mountain and river views, providing sustainable development, providing an active and diverse lifestyle, creating a greenbelt and preserving the open space of the Gila River, creating an area for Commercial and Class A office, and creating a golf course.

City Council asked Staff to conduct public participation. The public defined the most important aspects of the area to include the Estrella Mountain Views, the rural atmosphere and lifestyle, the Gila River, and the quality of streets. The public believes the most appropriate development along the Gila River would be natural recreation and parks, natural open space, entertainment areas, low density residential, and shopping areas. The public defined the preferred residential density to be 1 to 2.5 du/acre or 2.5 to 4 du/acre. The public defined the most appropriate development under power lines to include walking, horse and multi-use trails, as well as a golf course.

Staff developed three land use alternatives and is seeking direction from the Council on how to proceed. Staff recommends that the Council choose one plan, or aspects of one or more plans, in order to develop a land use plan for the area.

ALTERNATIVE 1
This plan depicts a southern alignment of SR801, which is the Council's preferred alignment. If Maricopa County chooses the southern alignment, Staff believes there will be projects similar to what is in the General Plan now. Along the freeway will be Employment and Freeway-Commercial.

ALTERNATIVE 2
Destination Festival District – Alternative 2 introduces a new land use category, the Destination Festival District, which will be the entertainment hub of the Estrella Foothills and will take advantage of the Phoenix International Raceway (PIR). This district will also include family-oriented activities, a permanent population, as well as hospitality, shopping and concert venues. This district is comparable to Branson, Missouri. Outdoor entertainment and nightlife would be key components of this area. An outdoor amphitheater, play areas for children and chess tables would be included.

Village District – Alternative 2 introduces the Village District as a complement to the Destination Festival District. The Village District will focus on residential development mixed with shopping and restaurant uses, along with high-density residential and developments with residential above shops on the first floor.

Riverwalk District – Alternative 2 introduces the Riverwalk District along the Durango Regional Conveyance Channel. Staff envisions a riverwalk such as seen in San Antonio, Texas with residential and restaurants along the canal, multi-story office buildings, and Class A office. This district will also complement the Destination Festival District.

Other Districts - PIR would like to expand their use and create hotels and resorts for visitors, for which Staff would create a designation area south of Indian Springs Road. Staff is proposing a Corporate Park District to include pure office type uses and the use of Business Park/Industrial, such as that along Eliseo Felix Way. Staff is envisioning that the Destination Festival and Village Districts will connect to the Riverwalk District and then extend up to the commercial and higher density growth area at Avondale Blvd. and Broadway Road. Staff is proposing that if SR801 takes the southern alignment, the General Plan is amended to include the area between Southern Avenue and the Gila River that is not currently within the General Plan planning area.

ALTERNATIVE 3
This plan is similar to Alternatives 1 and 2 and includes a rural low density area along the Agua Fria River, with the Destination Festival District and Village District combined to stretch from Avondale Blvd. to El Mirage Road on the south side of the freeway. A Corporate Park District would be included on the south side of the freeway, with a lot of Freeway-Commercial development between Avondale Blvd. and El Mirage on the north side of the proposed freeway. Staff also proposes in Alternative 3 that the area between Southern Avenue and the Gila River be taken into the General Plan planning area through a General Plan Amendment.

Mr. Wilken stated that after an alterative plan is selected by the Council, Staff will develop a Draft Outline Plan and then develop a Draft Administrative Plan from April through June 2009. A Planning Commission hearing could be scheduled in August 2009 and City Council could review in September 2009. Staff hopes to have the documents ready for adoption by the Council by October 2009.

Council Member Buster asked what Staff plans to do if the SR801 alignment takes the northern alignment. Mr. Wilken replied that Staff is focusing on plans for a southern alignment at this point. The other options are to put the plan on hold and wait until ADOT (Arizona Department of Transportation) makes a decision, or to create two plans, one for a northern alignment and one for a southern alignment. Staff does not feel this option is the best use of time. Staff believes the Estrella Foothills Specific Plan will be adopted well before ADOT makes a decision, which might nudge the County to choose the southern alignment.

Council Member Buster stated at one time the Council was envisioning the City Center Plan to have some of the aspects that are shown in Alternatives 2 and 3 for the Estrella Foothills and question if it made sense to duplicate amenities. Mr. Wilken replied that Staff believes that the two plans will complement each other and pointed out the distinct differences between the two areas.

Council Member Buster stated the City Center area was planned as a destination area and he sees that same concept planned for the Estrella Foothills land use plan and wondered what the market will dictate if the same concepts are used in both areas. Mr. Wilken replied this is a very long term plan and the actual development will depend on the freeway alignment. Construction of the actual freeway is not expected for10 to 20 years. Staff will study the economics of the situation all along the line.

Council Member Buster stated he likes Alternative 2 and likes taking advantage of the City's proximity to the river and to PIR. He believes the first stage is getting Avondale Blvd. up and running.

Council Member McDonald stated that doing nothing is not a good idea. He prefers Alternative 2. He asked for clarification on the resorts planned in relation to PIR. Mr. Wilken stated that Staff has been in discussion with PIR, and their vision includes a resort and hotels which would fit in well with Alternative 2.

Council Member McDonald stated he likes the amount of Corporate development along the freeway and asked if Staff had any height recommendations for the area. Mr. Wilken replied that Staff had not studied height allowances for the area but will focus on maintaining the views of the mountains.

Council Member McDonald stated he likes the plans for the Destination Festival and Village Districts and asked about the canal depicted on the plan maps. Mr. Wilken indicated that that Durango Regional Channel has a 200 foot wide right-of-way as required by the Flood Control District and the maps depict the ultimate layout for the channel which is based on what was being planned for the Lakin Ranch Property by Pulte Homes. He further indicated that the channel will widen and narrow throughout the area and ultimately will be wider than it is now.

Council Member McDonald asked if the channel would be dry at times. Charlie McClendon, City Manager, replied that under the current plan of the Flood Control District, the channel is for storm water conveyance and therefore will be dry most of the time and only carry water during storm events; the channel may have recreational amenities that can be used during the low flow times. Much of the channel is still being engineered.

Dave Fitzhugh, Assistant City Manager, commented that there is an SRP ditch that runs along the east side of Avondale Blvd. and there has been talk about working with SRP to convey some of that water through the Durango Regional Conveyance Channel. The idea is to create an amenity in the Estrella Foothills area by allowing storm water to go through but slowing down the flow and allow it to accumulate to create a lake-type environment. This type of project will take

a number of years and discussions. Staff has yet to approach SRP or the Flood Control District with this concept.

Mr. Wilken stated that Staff has informally broached the idea of a dam with the Flood Control District and SRP. It was indicated that the SRP water is required to go through the area and he does not know if a portion of the water can be diverted to the Estrella Foothills area. SRP indicated that on average there is a 40 cfs water flow.

Council Member McDonald stated he would like an option for the channel to remain full of water or at least flow slowly. He prefers Alternative 2.

Vice Mayor Weise stated there was discussion in February 2006 about changing the alignments of the levees for Tres Rios River. He asked where Tres Rios River falls on the plan map. Mr. Wilken pointed out Tres Rios River on the map and stated the latest alignment was for the river go up El Mirage Road.

Dave Fitzhugh, Assistant City Manager, stated there has been a change in the alignment of the Tres Rios River west of El Mirage. The Corps of Engineers has been working on an alternative and there are a number of issues to be resolved. A one to two foot high levee is planned for the west side of El Mirage Road from the river up to Southern Avenue, and then along the south side of Southern Avenue from El Mirage over to the river. One reason for this alignment is the cost and ability to acquire land in the area. There is a gravel pit at the southwest corner of Southern Avenue and El Mirage Road that dramatically increased the cost of constructing the levee that had been planned. The gravel pit is about 70 feet deep and the levee would have to be built up 70 feet because of the pit. The levee will have to be shifted back down along the river if the SR801 takes the northern alignment.

Vice Mayor Weise shared that the Gila River Indian Community (GRIC) has plans for a project on the other side of PIR and suggested maintaining the communication channels open to avoid surprises. Mr. Fitzhugh assured the Council that Staff will have open communication.

Vice Mayor Weise agreed that doing nothing is not an option. He prefers Alternative 2, but can live with Alternative 3.

Council Member Karlin stated she cannot see on the plans that the El Rio River has been taken into consideration. She referred to a previous plan for trails that would extend from Lake Pleasant all the way down to the confluence of the three rivers. She does not see plans for the trails in these alternative plans. She would like as much open space as possible and is not in favor of the SR801 even being in the area. She prefers Alterative 2 with allowance for trails as previously discussed. Mr. Wilken stated that Staff is on the same page as Council Member

Karlin in every respect and added that he is working closely with the El Rio Project to incorporate a recreational lake at the confluence of the three rivers. He pointed out a trail on the plan map that would connect with the El Rio trails and run up the Agua Fria into the County trail system that extends to Lake Pleasant. Any development along the north bank of the Gila River will require a trail. Staff has been focusing on land use up to this point and does not have all the trail crossings depicted but believes it is important to take advantage of the river and allow people to recreate on the river. He added that the public thinks trails under power lines are very important and Staff is planning to connect trails to the Agua Fria trail and perhaps to the Riverwalk District, and then connect to the destination festival area. The plan is for people to be able to use the trails and go anywhere without having to drive. The trails will be very open and will be in specific areas along the river and in the right-of-way of the power lines. Connectivity between the residential developments and the trails will be a pursued.

Council Member Karlin stated that the City will have to wait until the levees are built before the concept can be developed. Mr. Wilken shared that the El Rio Project Committee has discussed multiple trails through the rivers. Most of the El Rio Project is not in Avondale. His position on the committee was to see what is planned for Goodyear and Buckeye in order to incorporate that with the plans for the Estrella Foothills Specific Plan. One idea is for a natural trail in the flood way. Paved trials are not planned for the river. The levees are key to the plan for the other trails. Staff is using the Parks and Recreation Master Plan currently and will incorporate a lot of the work they are doing into the Estrella Foothills Plan.

Council Member Karlin asked if the areas planned for development north of the river around the freeway are also in the flood plain. Mr. Wilken replied that some of the area is in the flood plain. Council Member Karlin asked if planned development would have to wait until the levees are constructed. Mr. Wilken replied that development for areas in the flood plain would have to wait until the levees are constructed.

Council Member Scott stated he prefers Alternative 2. The whole matter revolves around the SR801 alignment. He is in favor of including the parcels of land to the south that are not in the General Plan currently through a General Plan Amendment.

Council Member Earp stated he prefers Alternative 2. He wants to make sure the City will be flexible to deal with the market conditions.

Mayor Lopez Rogers stated that in light of the proposal that the SR801 may be a parkway as opposed to a freeway, she prefers Alternative 2. If the SR801 is a parkway instead of a freeway, there will be less traffic volumes. She suggested that Staff touch base with GRIC and PIR again.

Mr. Wilken stated that currently the General Plan depicts the area east of the Agua Fria as rural low density. Staff is showing that area as medium density and he wants to make sure the Council is comfortable with that. Low density is shown in the southern portion of the Lakin property. The density at Avondale Blvd. and Broadway is increased. The Diamond P Ranch PAD calls for medium-high density, while Staff plans for medium density and he wants to make sure Council approves of that change. Staff plans for the riverwalk to extend for about a mile along the river and extend to Southern Avenue to be adjacent to a destination freeway, and they would like Council's approval on that as well.

Council Member Buster pointed out that at the Neighborhood Meeting on February 11, 2009, the attendees had been asked to pick out their favorite alternative, and Alternative 2 was the least favorite. Mr. Wilken replied that many people he had talked to expressed concern about maintaining the views of the mountains, and without having all the details, people may have felt that Corporate Park and the Destination Festival District would have heights that would obstruct the views. Many people do not want any development in the area and would like the area to remain rural/agricultural. If the freeway is built, it will be difficult to keep the area rural/agricultural. These alternative plans are the best attempt to take advantage of the freeway. The fact that Alternative 2 is the most dense and represents the biggest change might also have influenced the public's preference. Some people expressed a preference for Alternative 1, as that plan represents the least change.

Council Member Buster stated the SR801 alignment may cause the City to set all three alternatives aside.

Vice Mayor Weise stated discussion had been held on the development of estate or executive style homes of one acre or larger, and he believes that would make a lot of sense in the Estrella Foothills area. He would like to see a part of the plan dedicated to that type of zoning and added he believes there is a market for estate or executive homes. He believes that once the public understands the type of development, the height of the buildings, and the density planned, they will feel more comfortable with the plans.

Mayor Lopez Rogers stated the SR801 alignment will dictate what is planned for the Estrella Foothills area and the Council and Staff must prepare for this. As the Council prefers the southern alignment of the SR801, that is what is prepared for in the General Plan. If Council agrees, Staff will move forward with Alternative 2.

Mr. Wilken asked if there was objection from the Council to changing the density of Diamond P Ranch from medium-high density to medium density.

Council Member Earp stated he preferred medium density as opposed to medium-high density. He asked what effect that would have. Mr. Wilken replied that the Diamond P Ranch PAD has been approved with the lots being closer to medium density. Diamond P Ranch could return to the City and request an amendment to the PAD to construct more houses on smaller lots than what was originally approved. This would produce more people in the area and have a slightly greater impact on the schools, and would also produce more customers.

Council Member Earp asked if medium density would affect the City's recruitment process. Mr. Wilken stated he did not believe it would have much effect either way. Council Member Earp stated in that case, he would prefer medium density.

Mayor Lopez Rogers stated in first discussions on the Diamond P Ranch property, they had considered low density from Broadway south and an increase in density toward the river. She asked for objections from the Council and heard none.

Mayor Lopez Rogers called for a motion to adjourn.

PUBLIC DRAFT

ESTRELLA FOOTHILLS

SPECIFIC PLAN

City of Avondale

DRAFT

PUBLIC DRAFT

ESTRELLA FOOTHILLS SPECIFIC PLAN

CITY OF AVONDALE, ARIZONA

Prepared for:

City of Avondale, Arizona

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September 2009

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Table of Contents

Executive Summary i
Chapter 1: Introduction 1
Chapter 2: Existing Conditions 5
Chapter 3: Estrella Foothills Specific Plan 19
Chapter 4: Urban Design Guidelines 47
Chapter 5: Ecotourism, Conservation, and Natural and Historic Areas 69
Chapter 6: Implementation 71

List of Figures

Figure 2-1: Existing Estrella Foothills Land Use Plan 7
Figure 2-2: Existing Roadway Network Classification, Lanes and ADT 15
Figure 3-1: Preferred Alternative Land Use Plan 20
Figure 3-2: Multi-family Capture Rates 27
Figure 3-3: Corporate Park Capture Rates 27
Figure 3-4: Anticipated Future Volumes 33
Figure 3-5: Recommended Lanes and Roadway Classification 37
Figure 3-6 through Figure 3-9: Street Cross Sections ..... 43 - 46

List of Tables

Table 2-1: Existing Estrella Foothills Land Use Category Acres and Percentages 6
Table 2-2: Opportunities and Constraints Analysis 8
Table 2-3: Roadway Classification 14
Table 2-4: Existing (2009) Major Road Network Inventory 17
Table 2-5: Existing (2009) ADT Counts 18
Table 3-1: 2030 Estrella Foothills Land Use Category Acres and Percentages 24
Table 3-2: Development Program Summary 28
Table 3-3: Absorption Pattern 29
Table 3-4: Summary of Benefits 30
Table 3-5: ITE Land Use Categories 32
Table 3-6: Daily Volume Thresholds for Urbanized Areas 34
Table 3-7: LOS Qualitative Descriptions 35
Table 3-8: Roadway Network Analysis Results ..... 38 - 42

Appendices

Appendix A: Key Model Input Value Assumptions A-1
Appendix B: Listed Species B-1

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EXECUTIVE SUMMARY

The Estrella Foothills Specific Plan implements the City of Avondale's General Plan (2002) by providing detailed goals, objectives and policies pertaining to the specific area. The Estrella Foothills Specific Plan addresses unique characteristics, supports land use planning, and implements strategies applicable to the area. The Plan will ensure the quality of development and consistency of character within the context of community-wide goals. The Plan incorporates the needs of existing residents and builds on the existing development in the area, plans for a multi-modal transportation system, and identifies key natural features to protect and enhance as natural areas and recreational amenities.

City Council established six guiding principles for this plan:

- Foster a distinctive and attractive community by creating a stronger sense of place, providing a mix of land uses, taking advantage of innovative building designs, and creating diversity in housing and walkable neighborhoods.
- Preserve the open space including natural farmland, the Gila River and the Estrella Mountains.
- Strengthen and direct development toward existing communities.
- Provide multi-modal transportation choices such as bike lanes, trails and pedestrian amenities.
- Make development decisions that are predictable, fair, and cost effective.
- Encourage public participation within the community and with stakeholders.

Estrella Foothills Vision

The Estrella Foothills area is a distinct community within the City of Avondale and the greater Phoenix area. Residents and tourists alike are drawn to the distinct sense of place, livable communities, and visual and physical connections to natural features. The area offers a range of land uses, minimizing the distances residents have to travel for basic services, employment opportunities, and residential choices. The Estrella Foothills area has a healthy economic base. The SR 801 corridor provides improved access to the region and Phoenix International Raceway, and it also has developed as a major business and industry pulse point for the region. The architecture is distinct and utilizes innovative and sustainable building designs and technologies. As the area has grown and evolved the older neighborhoods have been preserved and enhanced. The area is physically connected by sidewalks, bike lanes, trails, walkways, transit lanes and a trolley system. Estrella Foothills is rich with interactive public places that foster a strong sense of community and pride in the area.

How This Plan Is Organized:

This plan has six chapters. Chapter one provides the framework for developing a specific plan. This includes the purpose of the plan, the boundaries that delineate the study area, and the plan process and authority. An important component in any planning process is the public involvement. While a planning framework is established through the City of Avondale's 2002 General Plan, the outcome of a planning process is guided by public input. The public's involvement in the Estrella Foothills Specific Plan is described at the end of Chapter one.

There are many existing factors that define the future direction of an area. Chapter two describes the existing conditions of the Estrella Foothills area. The existing conditions are described through three essential themes: land use, economic, and circulation. These themes provide not only a glimpse of what is currently on the ground, but factors that influence what is happening in the area today. This section also describes the SR 801 project. While SR 801 is not built yet, it is a public infrastructure project that will have significant impact on the plan area. The Estrella Foothills area has the opportunity, through this planning process, to determine how it will incorporate SR 801 through the designation of adjacent land uses and development of an integrated circulation system.

Chapter three provides the vision of the Estrella Foothills area in 2030 and the goals and objectives specifically identified for the Estrella Foothills area. The proposed land use plan, circulation system, and economic opportunities for the Estrella Foothills area will guide future development in the area. Chapter four provides design principles, goals and guidelines for future development. Chapter five identifies the importance of ecotourism, conservation and access to natural features, and protection of natural and historic resources. Chapter six defines the specific actions required to achieve change in the Estrella Foothills area in ways that conform to the vision.

The Preferred Alternative Plan

The Preferred Alternative Plan for Estrella Foothills is illustrated on the following page.

The Preferred Alternative for the Estrella Foothills area includes new land use designations that foster a mixed use festival village atmosphere in the heart of the Estrella Foothills area. These vibrant districts stretch along the proposed 200' Durango Regional Conveyance Channel (DRCC) underneath the SR 801 corridor and terminate at the Gila River and the associated nature trail. New and enhanced connections across the Gila River integrate the sports and entertainment district adjacent to PIR with the rest of the Estrella Foothills area. Lower density residential uses are buffered by open space or transition to medium and high density residential uses. The SR 801 corridor is buffered by corporate parks and regional commercial uses. The proposed circulation network establishes a ½ mile street grid and integrates facilities for pedestrians, bikes, and transit use. The circulation system connects major natural features, destination areas, and employment centers. Large areas are preserved for natural areas, trails, and recreational uses.

Timing of the Plan

This plan establishes a long term vision for the Estrella Foothills area. This is a 30 year plan. The plan is largely impacted by the SR 801 project, and without the project it is unlikely that the vision for Estrella Foothills will become a reality. If SR 801 is developed it will likely take 20 years for the project to be constructed and another 5 to 10 years for land development to respond. This plan helps establish a foundation for future growth associated with SR 801 in alignment with the Estrella Foothills Vision.

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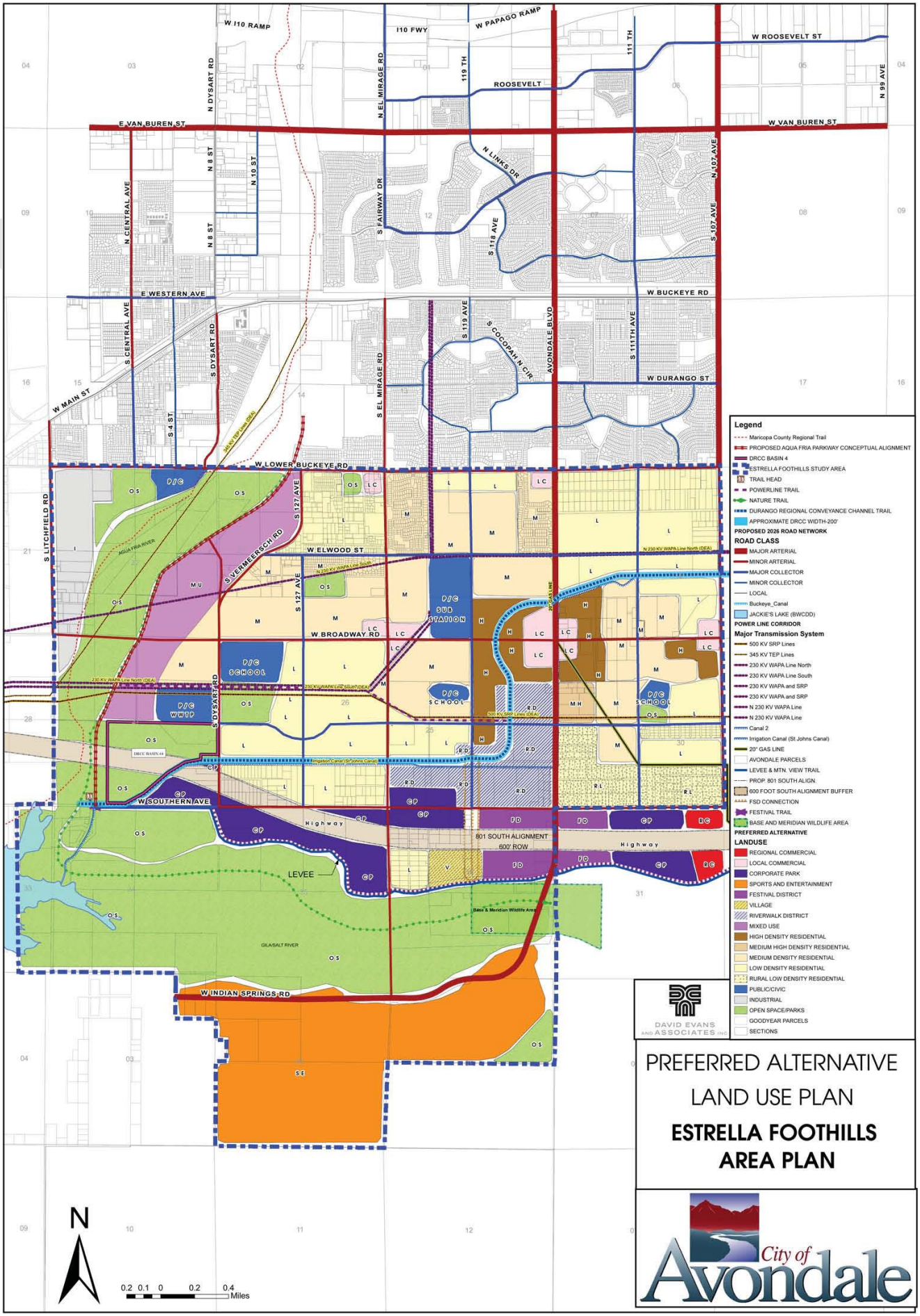
PREFERRED ALTERNATIVE
LAND USE PLAN
ESTRELLA FOOTHILLS
AREA PLAN
Legend
Maricopa County Regional Trail
PROPOSED AQUA FRIA PARKWAY CONCEPTUAL ALIGNMENT
DRCC BASIN 4
ESTRELLA FOOTHILLS STUDY AREA
TRAIL HEAD
POWERLINE TRAIL
NATURE TRAIL
DURANGO REGIONAL CONVEYANCE CHANNEL TRAIL
APPROXIMATE DRCC WIDTH-200'
PROPOSED 2026 ROAD NETWORK
ROAD CLASS
MAJOR ARTERIAL
MINOR ARTERIAL
MAJOR COLLECTOR
MINOR COLLECTOR
LOCAL
Buckeye_Canal
JACKIE'S LAKE (BWCDD)
POWER LINE CORRIDOR
Major Transmission System
500 KV SRP Lines
345 KV TEP Lines
230 KV WAPA Line North
230 KV WAPA Line South
230 KV WAPA and SRP
230 KV WAPA and SRP
N 230 KV WAPA Line
N 230 KV WAPA Line
Canal 2
Irrigation Canal (St Johns Canal)
20" GAS LINE
AVONDALE PARCELS
LEVEE & MTN. VIEW TRAIL
PROP. 801 SOUTH ALIGN.
600 FOOT SOUTH ALIGNMENT BUFFER
FSD CONNECTION
FESTIVAL TRAIL
BASE AND MERIDIAN WILDLIFE AREA
PREFERRED ALTERNATIVE
LANDUSE
REGIONAL COMMERCIAL
LOCAL COMMERCIAL
CORPORATE PARK
SPORTS AND ENTERTAINMENT
FESTIVAL DISTRICT
VILLAGE
RIVERWALK DISTRICT
MIXED USE
HIGH DENSITY RESIDENTIAL
MEDIUM HIGH DENSITY RESIDENTIAL
MEDIUM DENSITY RESIDENTIAL
LOW DENSITY RESIDENTIAL
RURAL LOW DENSITY RESIDENTIAL
PUBLIC/CIVIC
INDUSTRIAL
OPEN SPACE/PARKS
GOODYEAR PARCELS
SECTIONS
DAVID EVANS AND ASSOCIATES INC
City of Avondale
N
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N 99 AVE
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N 107 AVE
S 107 AVE
N CENTRAL AVE
N 8 ST
N 10 ST
S FAIRWAY DR
S 118 AVE
E WESTERN AVE
W BUCKEYE RD
S CENTRAL AVE
S DYSART RD
S 119 AVE
S COCOPAH CIR
AVONDALE BLVD
S 111TH AVE
W DURANGO ST
W MAIN ST
S 4 ST
S EL MIRAGE RD
W LOWER BUCKEYE RD
S LITCHFIELD RD
S 127 AVE
S VERMEERSCH RD
W ELWOOD ST
W BROADWAY RD
P/C SUB STATION
P/C SCHOOL
P/C WWTP
W SOUTHERN AVE
801 SOUTH ALIGNMENT
600' ROW
LEVEE
GILA/SALT RIVER
W INDIAN SPRINGS RD
AGUA FRIA RIVER
DRCC BASIN 4
Irrigation Canal (St Johns Canal)
Base & Meridian Wildlife Area

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CHAPTER 1: INTRODUCTION

Purpose and Intent of the Plan

The Estrella Foothills Specific Plan implements the City of Avondale's General Plan (2002) by providing more detailed goals, objectives and policies pertaining to the area. The Estrella Foothills Specific Plan addresses unique characteristics and support land use planning and implementation strategies applicable to the area. The Plan will ensure the quality of development and consistency of character within the context of community-wide goals. The Plan incorporates the needs of existing residents and builds on the existing development in the area, plans for a multi-modal transportation system, and identifies key natural features to protect and enhance as natural areas and recreational amenities.

City Council established six guiding principles for this plan:

- Foster a distinctive and attractive community by creating a stronger sense of place, providing a mix of land uses, taking advantage of innovative building designs, and creating diversity in housing and walkable neighborhoods.
- Preserve the open space including natural farmland, the Gila River and the Estrella Mountains.
- Strengthen and direct development toward existing communities.
- Provide multi-modal transportation choices.
- Make development decisions that are predictable, fair, and cost effective.
- Encourage public participation within the community and with stakeholders.

Study Area

The Plan area encompasses the area that is defined by the following roadways or geographic features: Lower Buckeye road on the north, the Estrella Mountain Regional Park on the south, Litchfield Road on the west to W. Southern Ave., then continue one quarter mile west, then south one mile to Estrella Mountain Reginal Park and 107th Ave., and on the east to W. Southern Ave. then continuing south, plus or minus one half mile , then west to Avondale Blvd., then south to Estrella Mountain Park.. The total study area is 12.6 square miles. 3.4 square miles is already developed or entitled and 3.2 square miles are in a flood plain or a utility corridor, leaving approximately 6 square miles for development. The study area is shown in Figure 2-1 as well as in the Executive Summary.

Plan Process and Authority

The Avondale General Plan (2002) identifies the need to develop a specific land use plan for the Estrella Foothills area to accommodate a more varied future land use pattern, provide for natural resource protection, and incorporate a transportation system that supports the desired land use pattern.

The Estrella Foothills Specific Plan implements the goals and objectives of the Avondale General Plan that guide the general development pattern of Avondale as well as provides specific objectives relating to planning for the Estrella Foothills area. The following existing goals from the Avondale General Plan (2002) provide the context for how the Estrella Foothills Plan was developed.

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Land Use

The Avondale General Plan land use goals 1-7 provide the context for developing the land use portion of the Estrella Foothills Plan. **Land Use Goal 1** stresses the need to maintain a demographically and culturally diverse, sustainable community by providing a range of densities and land uses, including single family, multi-family, office, and commercial uses for future residents. **Land Use Goal 2** identifies the need to ensure that "land uses meet the long-term social and economic goals of the community" and provides specific policy direction for developing a plan for the Avondale Planning Area for setting residential densities south of Lower Buckeye Road.

Land use goals 3-7 are similar in that they provide direction for future land use planning and coordination efforts for the Estrella Foothills area. **Land Use Goal 3** stresses minimization of conflicts between land uses and is sensitive to existing agricultural operations. **Land Use Goal 4** encourages development patterns that use land in an efficient and sustainable manner. **Land Use Goal 5** identifies the need to plan for the future of active and planned mining sites. **Land Use Goal 6** requires coordination between neighboring communities to encourage regional land use planning to provide more sustainable land use patterns. **Land Use Goal 7** encourages coordination for developing existing and new school sites.

Economic

Economic Goals 1 and 2 encourage the development of this Plan. **Economic Goal 1** identifies specific areas where desired land uses can support a diverse range of sustainable economic opportunity, specifically, the area south of and along the Gila River for resort development, commercial and tourism uses in the vicinity of Phoenix International Raceway (PIR), encouraging commercial service areas that have unique planning and design features that are compatible with adjacent land uses, and encouraging development of the "South Core" at the intersection of Broadway Road and Avondale Boulevard for neighborhood shopping and employment. **Economic Goal 2** focuses on regional economic development efforts by encouraging development that will increase the City's sales tax revenues and promoting arts and cultural activities that attract area residents and tourists to Avondale.

Circulation

The Avondale General Plan defines the need for future multi-modal connections within the planning area and provides specific locations where future multi-modal connections are desired. **Circulation Goal 1** requires that a multi-modal transportation system be developed that supports and is integrated with the land use element of the Avondale General Plan, including providing a variety of transportation options adjacent to regional attractions, such as Phoenix International Raceway (PIR) and Estrella Mountain Regional Park, developing a park-and-ride or shuttle service to coincide with special events at PIR, and developing non-vehicular circulation plans for growth areas. **Circulation Goal 4** encourages developing transportation connections between current and future development to new residential, recreation, and employment areas, specifically, extending Dysart Road to the south beyond the Estrella Mountains to serve the area and future recreational needs. **Circulation Goals 5 and 7** stress the importance of developing a transportation system that serves the needs of multiple types of users including rail, vehicles, pedestrians and cyclists. The Avondale General Plan stresses the need to reduces reliance on the automobile (**Circulation Goal 6**) and provide a range of non-motorized options (**Circulation Goal 8**). Finally **Circulation Goal 9** states that development should occur in a fashion that reduces the use of the automobile.

Estrella Foothills Public Involvement

Citizens participated in developing and commenting on the preferred land use pattern for the area. Avondale City Council and Avondale Long Range Planning staff held a kickoff meeting on April 14, 2008 to define the project's goals and planning process. The City Council met again on June 30th, 2008 to define the vision for the Estrella Foothills area and provide direction for planning staff to carry forward with the planning process.

The City of Avondale developed three land use scenarios for the Estrella Foothills area and posted them on the City's website for public review. The website identified the three land use alternatives being considered and provided a schedule for upcoming public meetings. The City established a Technical Advisory Committee to review the land use scenarios and provide input.

The City developed an outreach plan that included direct mail, public open houses, and public meetings where community members could comment on the options and general direction of the plan. In January 2009, the City mailed comment cards to all 1,090 property owners within the project area, asking their opinion about future development in the area. City staff also developed and presented maps and other project information at local libraries available between January 2009 and February 2009 to provide greater clarity for local residents on the types of future land uses under consideration. Notice was sent to all property owners and others within 500 feet of the project area inviting them to a public open house held at the Civic Center Council Chambers on February 11, 2009, where City staff and its consultant team were on hand to answers questions and provide information as needed.

On March 9, 2009, City Council convened for a discussion on the Estrella Foothills Plan, the three land use alternatives under consideration, and the results of the open house and the direct mail questionnaire. City staff presented the options and City Council reviewed responses and public testimony at the City Council session. City Council approved Alternative Two, with minor revisions, as the Preferred Alternative.

The Plan was reviewed by Planning Commission following a series of public hearings and adopted by City Council on [INSERT ADOPTION DATE].

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CHAPTER 2: EXISTING CONDITIONS

Existing Land Use

The Estrella Foothills existing land uses are comprised mostly of rural-low and low density uses. There are pockets of medium density towards the northern portion of the planning area. Most of the rural-low density is adjacent to the Gila River. The Gila and Aqua Fria rivers are major features of the area that are framed by the Estrella Mountains to the south. These provide for rich visual aesthetics.

The main attraction in the area is Phoenix International Raceway (PIR). PIR was established in 1964 and was built to replace the Arizona Fairgrounds raceway.

Existing Land Use Categories and Definitions

The existing land use categories, as shown on Figure 2-1, are intended to portray the overall character of development for the area and generally reflect existing and planned land uses larger than ten acres. The categories designate the general distribution, location, and extent of land uses. The land use categories shown on the 2002 General Plan Land Use Map are described below:

Employment

This use encourages facilities that provide employment opportunities. The types of uses allowed in the employment category include general office and enclosed industrial uses, along with retail and commercial uses that support these primary employment uses.

Commercial

This use provides for the daily needs of goods and services of the residents within the surrounding area. The types of uses allowed in this category include grocery stores, gas stations, neighborhood services and office. Preferred locations are major arterial intersections, although other locations may be deemed acceptable, based on the merits of the project. In addition, services that provide shopping and basic services for the immediate area (i.e. “neighborhood commercial”) may be allowed in any land use classification, based upon the merits of the development proposal. Generally, a neighborhood commercial development would not be greater than five acres and would require adequate buffering to protect surrounding land uses.

Public Facilities

Public facilities include parks, schools, electric substations, wells, City owned and operated water and wastewater treatment plants, police and fire stations, equipment and vehicle maintenance yards and refueling facilities, administrative buildings, landfills, transfer stations, prisons and other public uses. Consideration will be given to surrounding land uses, prior to locating any of these facilities within the City.

Rural Low Density Residential

Rural Low Density Residential will not exceed a density of one single-family detached dwelling unit per acre. Churches, parks, open spaces and pubic facilities are permitted in this land use category.

Low Density Residential

Low density residential will contain densities that range from 1 to 2.5 single-family detached dwelling units per acre. Churches, parks, open spaces and pubic facilities are permitted in this land use category.

Medium Density Residential

Medium density residential will contain densities that range from 2.5 to 4 single-family attached and detached dwelling units per acre. Churches, parks, open spaces and pubic facilities are permitted in this land use category.

Medium High Density Residential

Medium high density residential will contain densities that range from 4 to 8 dwelling units per acre and can include single-family attached and detached, condominiums, patio homes and town home development. Churches, parks, open spaces and pubic facilities are permitted in this land use category.

Open Space

Open space is planned to set aside areas of active and passive recreation and to preserve areas of critical natural habitat.

Table 2-1: Existing Estrella Foothills Land Use Category Acres and Percentages

Existing Estrella Foothills Land Use Category Acres and Percentages (1/9/2009)				
Description/(Abbreviation)	Acres	% Land Use	Dwelling Unit Target	Estimated Population
Employment (E)	498.3	6.9%	0	
Commercial (C)	122.7	1.7%	0	
Medium High Density Residential (MH)	80.0	1.1%	320	1097
Medium Density Residential (M)	1167.8	16.2%	2920	10014
Low Density Residential (L)	1701.0	23.6%	1701	5834
Rural Low Density Residential (RL)	1550.6	21.5%	1551	5319
Public Facility (PF)	95.8	1.3%	0	
Open Space (OS)	1988.4	27.6%	0	
TOTAL	7,204.4	100%	6,492	22,264
Above Acre Calculations DO NOT include Maricopa County land located south of Southern Avenue and east of Avondale Boulevard.				
Population based on :	Single Family	3.43 persons per dwelling unit		
	Multi-family	2.52 persons per dwelling unit		

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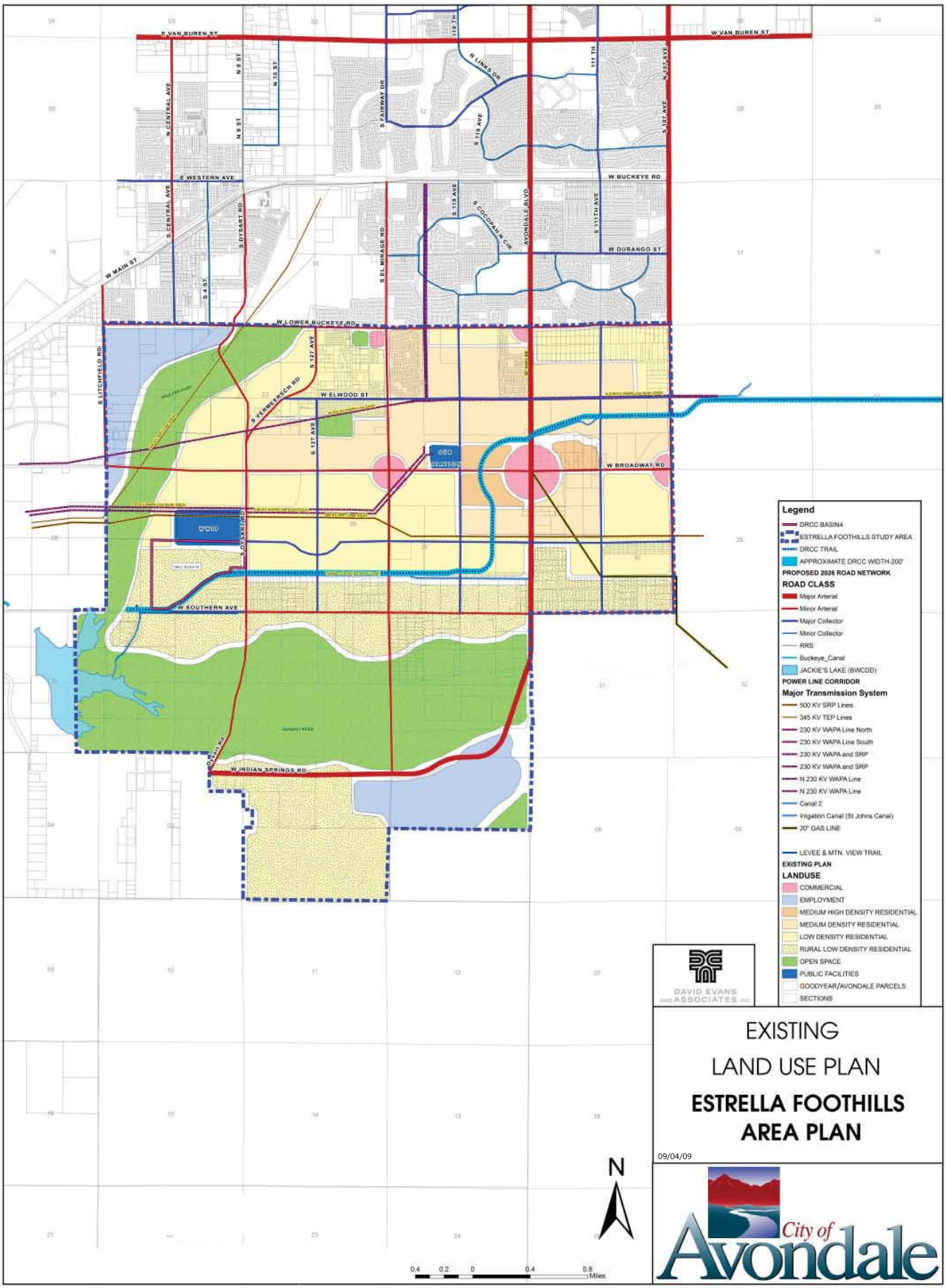
Figure 2-1: Existing Estrella Foothills Land Use Plan



Existing Opportunities and Constraints

There are specific opportunities and constraints applicable to the Estrella Foothills area. These issues begin to establish the direction of the area plan by identifying ways to capitalize on the unique features of the area and identifying ways to solve or mitigate the constraints of the area. City Council, City staff, local stakeholders and the consultant team identified several opportunities and constraints within the project area prior to developing the land use alternatives. Many factors were considered when the land use alternatives were developed and helped in the selection of the Preferred Alternative. Specifically, the project identified several issues, opportunities, and constraints within the project area, as noted in Table 2-2, below.

Table 2-2: Opportunities and Constraints Analysis

Opportunities and Constraints Analysis		
Issue	Opportunity	Constraint
The planned Durango Regional Conveyance Channel	The recreational activities that are possible along the banks of the planned Durango Regional Conveyance Channel and St. Johns Channel can provide a destination for residents and tourists.	Perceived barrier and obstacle.
Saint Johns Channel		Costs associated with mitigating the use of the channel .
530 KV Electric Transmission Lines	Use the 530KV and 230KV Transmission line corridors for trails and/or parking. Open space amenity.	Transmission corridors can be detractors for nearby development and can bisect areas where development can occur. Significant visual impact.
230 KV Electric Transmission Lines		
The SR 801 freeway (planned)	Will provide freeway access into Estrella Foothills, which brings with it the possibility of greater economic development and provides improved access to the Phoenix International Raceway. Lessens strain on arterial streets and adjacent roads.	Highways typically generate higher noise levels that are not conducive for some development. Higher traffic volumes are not conducive for non-motorized travel. Can create physical and perceived barriers.
Gila River	The recreational activities that are possible on the Gila and Agua Fria Rivers can make Avondale a destination for residents and tourists. Wildlife watching and ecotourism.	Can create physical and perceived barriers. Increased maintenance and safety measures.
Agua Fria River		
PIR (Phoenix International Raceway)	Draws spectators for events, which support area businesses. Can build upon that by expanding uses at PIR during non-event times with other complementary development (entertainment etc.)	Traffic control and noise levels during events.
Proximity to Estrella Mountains	Provides panoramic backdrop for future development.	Perceived barrier and obstacle.
Open Areas	Natural areas provide habitat to native flora and fauna. Can also provide recreational opportunities.	
Agricultural	Agricultural history can be celebrated and supported to continue.	Creates need to buffer uses; find a unique way to mix agriculture with suburban lifestyle.
Floodplain areas	Can be used for active and passive recreation activities. Floodplains can also provide habitat areas for plants and animals.	Limits development potential in areas prone to flooding.
Existing neighborhoods	Provide connectivity to adjacent neighborhoods and create a sense of community.	Need to provide continuity to existing neighborhoods

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Existing Economic/Market Conditions

The City of Avondale has grown rapidly and very successfully. The current economic climate presents many challenges. However, this is the time to position the area to take advantage of an improving market when that occurs. The existing economic situation is summarized below.

City-Wide Existing Conditions

This information is based upon the study of existing market conditions in the City Center Study[1] and from other sources.

Retail

On a per capita basis, Avondale has (in 2007) about 15 percent more square feet per capita of both neighborhood and community serving retail space than Maricopa County. The implication of this finding is that Avondale is serving as a focus of retail activity for a larger area than within its own boundary. At the same time, much of this "excess" retail space, which is concentrated in the "community center" category (and which includes some higher-level or regional shopping), is located north of Interstate 10. Interstate 10 bisects the city and is a physical shopping barrier to residents living south of I-10. As a consequence, there is a significant shortage of retail to service the existing population south of I-10 – a shortage that will only increase given current growth projections. On this basis, Avondale will have a deficit of 312,102 square feet of regional serving retail in 2010 and by 2020 this will grow to 465,356 square feet. However, the impending Estrella Falls regional shopping center, although also located north of I-10 and in Goodyear, will be a factor in meeting the needs for specific types of regional shopping. By 2020 another 400,000 square feet of neighborhood-serving retail will be needed, much of which could be built south of I-10.

Office

The Western Suburb market area[2] is underserved in office space. According to Landiscor, a total of 464,040 square feet of space exists in this area as of 2007; all of which is categorized as low-rise buildings. Maricopa County has 10.7 square feet of low-rise office space per person, while the Western Suburb area has 1.9 square feet per person. Avondale currently boasts 7.0 square feet (low-rise space) per capita. Currently there are no mid- or high-rise buildings in the Western Suburb area.

Under existing conditions, Avondale's best opportunity for office development is most likely to be at the City Center project. A review of the findings of the City Center Market Analysis provides a way of assessing Avondale's potential for office development, given a location that would encourage office developers and tenants to locate there. The City Center Market Analysis indicates that the combination of existing office space, plus planned (in 2006) space of over 1.2 million square feet, will give Avondale a surplus of total office space in the near future, if Avondale gets its "fair share" of office development on a per capita basis. However if the west metro area in total is to have its fair share, a deficit would still apply to the total west side, and Avondale's space would be concentrated in the "low rise" category, leaving room for additional development of mid- and high-rise space in the near future and for the foreseeable future. Overall Avondale could support an additional 300,000 square feet of mid- and high-rise space by 2010, which increases to 500,000 square feet by 2020. With

[1] ESI Corp. Avondale City Center Market Analysis. March 2007

[2] A data-reporting area used in the 2007 ESI Corp study that can be very roughly described as west of 83rd Avenue south of Camelback Road, and west of Avondale Blvd. north of Camelback.

the absence of any office concentration in the Western Suburb area today, there exists a strong potential for Avondale to capture more than 500,000 square feet of mid- and high-rise office space given its proximity to I-10, Loop 101, two regional hospitals, and Sky Harbor International Airport. Under an even more optimistic scenario, according to the Avondale City Center Specific Plan, Avondale could be positioned (in a place such as the City Center, where suitable complementary amenities could also be developed) as a unique office area for mid-and high-rise office, capturing 1 to 3 million square feet of office space.[3] (As the source document generally discussed development potential in terms of a 2020 time frame, the City Center would not necessarily compete with any longer-term office development that might be planned for Estrella Foothills.

Hotel

The potential for significant hotel development in Avondale is generally tied, at present, to the City Center area being successful in establishing an attractive environment for office development and appropriate amenities.

Factors Affecting Distribution of Office Space in the Metro Region

In all of metro Phoenix, office space is roughly 30 percent[4] of industrial space. However, because the employment density of office space is higher than industrial, office space houses close to ½ of all employees. In west metro Phoenix, defined for this purpose as west of 7th Avenue (in Phoenix) and south of Indian School Road, office space (excluding government) is closer to 1 percent of industrial space, and houses less than 5 percent of employees. Another way of looking at this is that the west metro area has over 30 percent of the metro region's industrial space (including warehouses), about 50 percent of the warehouse space, and just 1-1/2 percent of the office space.[5]

As of the 2000 Census, 20 percent of Maricopa County workers residing in the County worked in the three primary industrial-space-using economic sectors of manufacturing, wholesale trade, and transportation and warehousing plus utilities. For Avondale in 2000 (when the population was less than half what it is now), 27 percent of working residents worked in these sectors.[6] In other words, if residents and jobs were in perfect balance in Avondale in 2000, the city would have had proportionately more industrial space, compared to office and other work space, than the county as a whole – but only about 1-1/3 times as much. These numbers are still far removed from the mismatch of industrial to office space in the west side of metro Phoenix, as discussed above.

All of these figures reinforce the City Center concept that Avondale can potentially become a focus for office development and office employment, just as it is for retail. At the moment, however, industrial, and especially warehousing, is the primary development play in Avondale for employment-type uses.

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[3] Avondale City Center Specific Plan, adopted August 11, 2008.

[4] The estimate is complicated by the fact that data-reporting entities commonly report industrial space as inclusive of owner-occupied space, while office space excludes owner-occupied (including government).

[5] Base data from Grubb & Ellis, Industrial Market Trends, and Office Market Trends, Phoenix, 4th Quarter 2008.

[6] 2000 Census of Population and Housing.

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Estrella Foothills Area Existing Conditions

Retail

The current estimate of population in the planning area is 3,000 persons, in 732 households.[1] This population base would support approximately 28,000 square feet of local-serving retail space. If the build-out population reaches a planning target of 6,000 households, a total of 228,000 square feet of retail space (which includes some office-type uses typically found in shopping centers) could theoretically be supported.

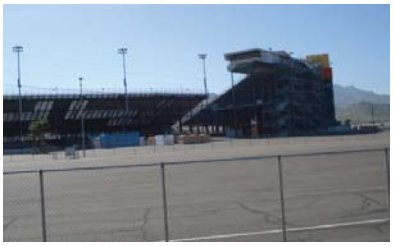
Currently, there are two convenience markets but no shopping centers in the planning area. Planned centers and one partially developed center exist adjacent to the planning area on the north side of Lower Buckeye Road.[2] At the northwest corner of Avondale Blvd. and Lower Buckeye Road, Triple G is marketing to anchor tenants, shop-space tenants and pad users in a 12-acre center of 107,000 square feet. At the northeast corner of El Mirage Road and Lower Buckeye, Triple G is marketing to anchor tenants, shop space tenants and pad users in a 6-acre center. The Sanctuary center, a 6-acre project at the northwest corner of 107th Avenue and Lower Buckeye, is partially developed, anchored by a Los Alamos Carniceria and a Sonic Drive-In, accompanied by mostly service-type shop tenants. The center developers appear to be marketing space for adjacent vacant land. These centers, which alone could total over 200,000 square feet, could if developed siphon close to half of the ultimate demand for space within the planning area (assuming that their trade area is eventually equal in population both to the north and south of Lower Buckeye), if the planning area is developed under the existing General Plan pattern.

Light Industrial

Business Park and Office Development: The Ancona Avondale Center, located at the southeast corner of Litchfield and Lower Buckeye Road, on the portion of Estrella Foothills west of the Agua Fria River (in the triangular parcel) is the only industrial or business park in the Estrella Foothills planning area. The 78-acre site is zoned A-1. There are no planned projects in or near the planning area involving these kinds of uses, or any existing uses of note that entail typical industrial building development. There are existing gravel mining operations along the Gila River.

Other Development Influences

Phoenix International Raceway (PIR), at the southernmost end of the Estrella Foothills area, is a major NASCAR auto racing facility as well as a venue for other activities and experiences that tend to accompany major race events, such as high-performance karting, ride-alongs in NASCAR-type cars, and freestyle MX events.[3] It is a significant tourist attraction for the state as well as Avondale. PIR has extensive land holdings, which could potentially be developed in ancillary tourism related projects. According to a 2006 study, the facility provides an annual overall economic benefit of $473 million to the Arizona economy.[4] The traffic generated by PIR has variable existing and potential economic effects on the planning area, due to traffic controls currently in place that direct much of the patron traffic around the Estrella Foothills area.



[1] 2000 Census data indicate that these are large households.

[2] Source: City of Avondale Economic Development, Google Earth, Landiscor Aerial Photo Book, and McClure Consulting, LLC field notes.

[3] Source is PIR website.

[4] Timothey Hogan, Center for Competitiveness and Prosperity Research, W. P. Carey School of Business, Arizona State University, Economic Impact Analysis: Phoenix International Raceway Calendar Year 2005 Operations. August 2006.

The City of Avondale sponsored the preparation of the Old Town Avondale Revitalization Plan, which was prepared in 2008 and is awaiting formal adoption. As currently configured, the plan would encourage redevelopment of the Old Town area into more intensive uses, including new housing as well as specialty retail and other uses, and revitalization of existing uses. Although the focus of the plan is generally on the Western Avenue and Main Street corridors, the boundaries of the plan area extend south to Lower Buckeye Road and east to the Agua Fria River – close to the planning area. To the extent this plan is successful, that success will increase the attractiveness of the Estrella Foothills area for residential and potentially other uses.

The City Center plan is intended to encourage development of high-quality employment and other space in Avondale, near City Hall. This plan will increase Avondale's potential for such development in other locations.

Retail Trends

Retail development patterns are constantly evolving. Open-air centers now tend to be favored over traditional enclosed malls. Open-air centers tend to be more customer-friendly in terms of accessibility and also allow more flexibility in changing tenants and their stores. Smaller-footprint stores such as grocers Fresh & Easy, and the 15,000 square-foot Marketside Wal-Mart stores also offer additional flexibility. The market for small shops is expanding into on-line retailers who want to supplement their websites with actual (some quite small) stores. "Pop-up retail," specialty stores that take over vacant or temporary space in retail centers for only a few days or weeks, also add flexibility and interest to centers.[5]

Residential Development

The Estrella Foothills planning area's residential development has been limited until about 2006 to, primarily, large-lot "ranchettes," mostly along Southern Avenue, and to a lesser extent along the south side of Lower Buckeye Road. In the 2000 Census, the range of housing values [6] in the planning area was $52,100 to $122,800, compared to the overall Maricopa County median value of $129,200. The median year housing structures were built range from 1975 to 1976, compared to the median-year-built for overall Maricopa County, at 1982. [7]

New home construction that has occurred since 2005 is primarily in two communities located on the south side of Lower Buckeye Road, near El Mirage Road – Cantada Ranch and Rio Vista Estates. Cantada Ranch is approximately 60 percent built-out, which is a low rate of absorption for projects (two subdivisions by the same builder) that essentially started at the beginning of 2006,[8] even allowing for the current slowdown. Rio Vista Estates had a more brisk sales rate than Cantada early on, although this rate slowed in 2007. The project is now close to build-out. The homes in the two communities sold for approximately $200,000 to $300,000 in 2007 (per aerial photo books) and have a current price range of $140,000-$228,000 (per Richmond American Homes and Montalbano Homes corporate websites).

Cantada Ranch and Rio Vista Estates, at 80 acres and about 15 acres, respectively, are relatively small projects. Large master planned communities of several hundred acres or more would accelerate Estrella Foothills' integration into the rest of the city.

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[5] Some of this material is taken from Gregory Gunter's article, "Retail in an evolving economy," in Urban Land Magazine, January 2009.

[6] Median value (dollars) for specified owner-occupied housing units.

[7] The Census data areas do not lie entirely within the planning area. The figures used are for areas that are primarily within Estrella Foothills.

[8] Sources: Landicor Aerial Information; Rupp Phoenix Aerial Photo Book.

Existing Circulation

This section of the Circulation Element describes the existing roadway network and existing traffic conditions within the study area.

Most of the planned arterial network within the study is currently in place though with narrower sections than what is anticipated at buildout. All arterials within the study area have 2 travel lanes with the exception of Avondale Blvd. and Indian Springs Rd. which are currently four (4) lane facilities. There are few constructed collector roadways within the study area. An exception is a short stretch of Elwood St. which is constructed from Vermeersch Rd. to El Mirage Rd.

Functional Classification

The functional classification of roadways within the study area is depicted in Figure 2-2. The roadway system in the City is divided into the following functional classes as defined in the City of Avondale General Plan (2002 Update):

- Freeways
- Roads of Regional Significance (RSS)
- Arterial Streets
- Collector Streets (Major & Primary)
- Local Streets

Note, there are no existing Freeways or Roads of Regional Significance in the plan area. One of the alignments being considered for the new Route 801 freeway passes through the plan area generally parallel and just south of Southern Ave. General descriptions of these categories as described in the City's General Plan are provided below:

Freeway

Freeways are arterial highways with full control of access. They are intended to provide high levels of safety and efficiency in the movement of large volumes of traffic at high speeds.

Roads of Regional Significance (RRS)

The RRS can be characterized streets with major access control, channelized intersections, restricted on-street parking, and high travel speeds. RRS should be spaced at two-mile intervals and should provide adequate connection to the arterial streets.

Arterial Streets

Arterial streets provide functional service to retail, commercial, and industrial land uses. Arterial streets are moderate volume traffic circulation facilities that carry a medium percentage of the total urban traffic. Traffic movements are at high speeds. Arterial streets do not penetrate residential neighborhoods. Arterial streets should be spaced at one-mile intervals and should, when possible and practical, provide adequate connection to major collector streets.

Major Collector

The major collector exhibits the following characteristics: traffic movements are between traffic generators within the jurisdiction and between traffic generators and routes of higher classification. Urban major collectors usually experience low side friction traffic. Developments may front directly on a major collector. They are usually located on mid-section lines.

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Primary Collectors

Primary collectors are usually located on quarter section lines and are intended to carry traffic through a residential neighborhood. On-street parking is usually prohibited and homes do not front on the collector.

Local Streets

The local street consists of traffic movements between collectors and adjacent lands involving relatively short distances. They are usually utilized in commercial, employment, and residential areas and serve abutting land uses. There are frequent access points that require speed reductions.

Table 2-3: Roadway Classification

Roadway Classification			
Roadway Classification	Right-of-Way	Primary Function	Access Control
Freeway	Minimum 12 lanes and minimum lane width of 12'	Mobility	Full
Road of Regional Significance	130'-150'	Mobility	Very High
Arterial	130'	Mobility	High
Major Collector	100'	Mobility/Access	Moderate
Primary Collector	80'	Mobility/Access	Low
Local Street (Urban/Rural)	50'	Access	Low

SR 801 and what it means to the Estrella Foothills Area

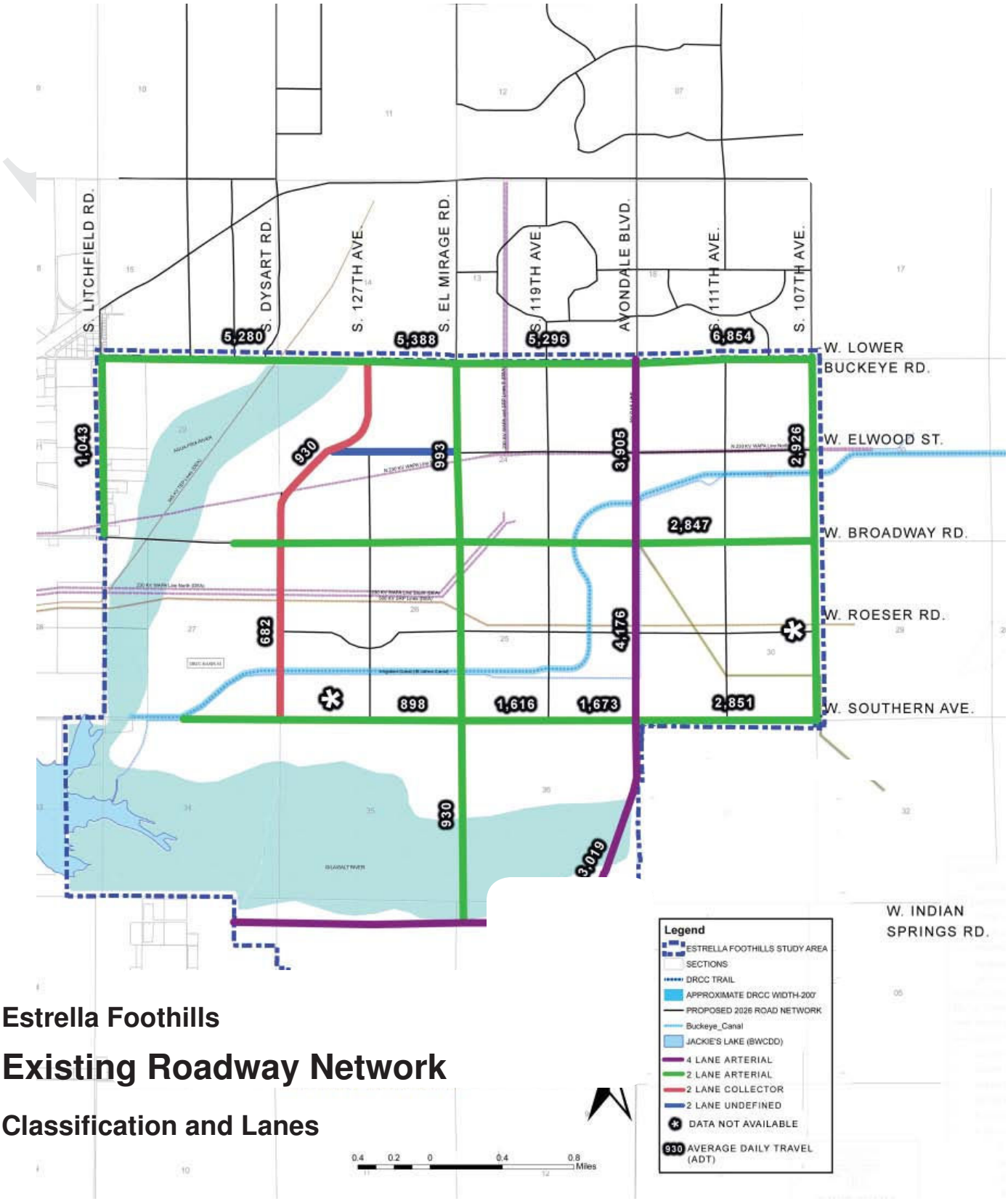
In November 2004, voters in Maricopa County approved an extension to an existing sales tax funding transportation improvements. A significant portion of those funds will go toward improvements of I-10, which experiences significant volumes of traffic in the southwest part of the Phoenix metro area. However, rapid growth in the neighboring communities of Avondale, Buckeye, and Goodyear is expected to worsen the congestion on the interstate in spite of improvements, necessitating the construction of a reliever route.[1]

Although no construction has begun for the route, planning documents have identified a study area running roughly 5 miles (8.0 km) south of and parallel to I-10. In addition to reducing commuter traffic on I-10, SR 801 will run near the industrial and warehouse district in southwest Phoenix, allowing the significant truck traffic that services these districts to avoid commuter traffic, and as such is envisioned as an alternate truck route.

Construction is not anticipated to begin before 2021 according to current ADOT planning documents, to be completed sometime by 2026. While development associated with SR 801 could occur prior to 2026, it is likely that it would be another 5-10 years for significant land development to occur. The Estrella Foothills area will be largely impacted by SR801, and it is unlikely that the Estrella Foothills Vision will become a reality without the project.

[1] Arizona Department of Transportation Website

Figure 2-2: Existing Roadway Network Classification, Lanes, and ADT



Estrella Foothills

Existing Roadway Network

Classification and Lanes

Existing Transportation Network

The following further describes the existing roadway network within the study area. Additional information is provided in tabular format in Table 2.4.

Litchfield Rd.

Litchfield is designated an arterial roadway and is currently a two lane north-south roadway extending from Broadway Rd. north to and beyond Lower Buckeye Rd. North of the planning area it provides interchange access to I-10.

Dysart Rd.

Dysart is designated as a collector and is currently a two lane north-south roadway extending from Southern Ave. to Broadway Rd. North of Broadway, Dysart transitions to Vermeersch Rd. Outside and north of the planning area, Dysart starts north of the Agua Fria River and extends north of I-10 with interchange access to I-10.

Vermeersch. Rd.

Vermeersch is designated a collector roadway and is currently a two lane facility. It serves as the extension of Dysart north of Broadway, angles to the east and connects 127th south of Lower Buckeye Rd.

El Mirage Rd.

El Mirage is designated an arterial roadway and is currently a two lane north-south facility extending from Indian Springs Rd. to Lower Buckeye Rd. It extends to the North outside the planning area. It provides one of the two at grade crossing of the Gila River within the planning area. North of the study area it is a discontinuous route and does not currently provide interchange access to I-10.

Avondale Blvd.

Avondale Bvld. is designated an arterial roadway and is currently a four lane north-south facility within the planning area. It provides one of two bridge crossings of the Gila River within the planning area. South of the river it angles west and transitions to Indian Springs Rd., along an east-west orientation. It provides the primary access to the Phoenix International Raceway. North of the study it provides interchange access to I-10.

107th Ave.

107th is designated an arterial roadway and is currently a two lane north-south roadway. North of the planning area, it provides interchange access to I-10.

Lower Buckeye Rd.

Lower Buckeye is designated an arterial roadway and is currently a two lane east-west roadway passing through and constituting the northerly boundary of the planning area. Lower Buckeye provides the only at grade crossing of the Agua Fria River within the planning area.

Broadway Rd.

Broadway is designated an arterial roadway and is currently a two lane east-west facility from Dysart to Avondale Blvd. within the study area. Broadway continues to the east of the study area.

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Southern Ave.

Southern is designated an arterial roadway and is currently a two lane east-west facility. Within the study area Southern is in place from west of Dysart to 107th and continues east of 107th outside the study area.

Indian Springs Rd.

Indian Springs is designated an arterial roadway and is currently a four lane east-west facility and provides access to southwestern Avondale. Indian Springs is the southern most arterial in the planning area. It transitions to and becomes Avondale Blvd. near the Gila River and Phoenix International Raceway. It continues west into Goodyear.

Table 2-4: Existing (2009) Major Road Network Inventory

Existing Major Road Network Inventory				
Corridor	Functional Classification	Posted Speed (mph)	# of Lanes	Bike Lanes
North-South Corridors				
107th Ave	Minor Arterial	40	2	No
111th Ave	Major Collector	45	2	No
Avondale Blvd.	Major Arterial	40-50	4	No
119th Ave	Major Collector	35	2	No
El Mirage Road	Minor Arterial	40-45	2	No
127th Ave	Major Collector	35	2	No
Dysart Road	Minor Arterial	40-45	2	No
Litchfield Road	Minor Arterial	45	2	No
East-West Corridors				
Lower Buckeye Road	Minor Arterial	35-45	2	No
Elwood Street	Major Collector	35	2	No
Broadway Road	Minor Arterial	25-50	2	No
Southern Ave	Minor Arterial	45	2	No
Indian Springs Road	Minor Arterial	40	4	No

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Existing Traffic Volumes

Limited existing traffic volume data is available for roadways within the planning area. See Table 2-5 and Figure 2-2 for existing ADT counts available from the City of Avondale and Maricopa County.

Table 2-5: Existing (2009) ADT Counts

Existing ADT Counts			
Road	Segment		ADT
	From	To	
Lower Buckeye	Litchfield	127th	5,280
	127th	El Mirage	5,388
	El Mirage	Avondale	5,296
	Avondale	107th	6,854
Broadway	Avondale	111th	2,847
Litchfield	Lower Buckeye	Broadway	1,043
127th/Vermeersch/Dysart	Lower Buckeye	Broadway	930
El Mirage	Lower Buckeye	Broadway	993
	Southern	South of Southern	930
Avondale	Lower Buckeye	Broadway	3,905
107th	Lower Buckeye	Broadway	2,926
Dysart	Broadway	Southern	682
Avondale	Broadway	Southern	4,176
	Southern	Indian Springs	3,019
Southern	127th	El Mirage	898
	El Mirage	119th	1,616
	119th	Avondale	1,673
	Avondale	107th	2,851
Broadway	Avondale	111th	3,045

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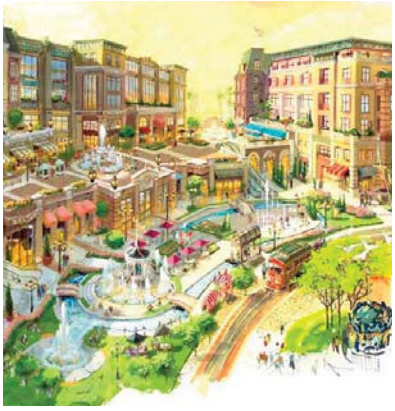
CHAPTER 3: ESTRELLA FOOTHILLS SPECIFIC PLAN

Estrella Foothills Vision

The Estrella Foothills area is a distinct community within the City of Avondale and the greater Phoenix area. Residents and tourists alike are drawn to the distinct sense of place, livable communities, and visual and physical connections to natural features. The area offers a range of land uses, minimizing the distances residents have to travel for basic services, employment opportunities, and residential choices. The Estrella Foothills area has a healthy economic base. The SR 801 corridor provides improved access to the region and Phoenix International Raceway, and it also has developed as a major business and industry pulse point for the region. The architecture is distinct and utilizes innovative and sustainable building designs and technologies. As the area has grown and evolved the older neighborhoods have been preserved and enhanced. The area is physically connected by sidewalks, bike lanes, trails, walkways, transit lanes and a trolley system. Estrella Foothills is rich with interactive public places that foster a strong sense of community and pride in the area.

Images are illustrative and not intended to represent anticipated densities



The Preferred Alternative Plan

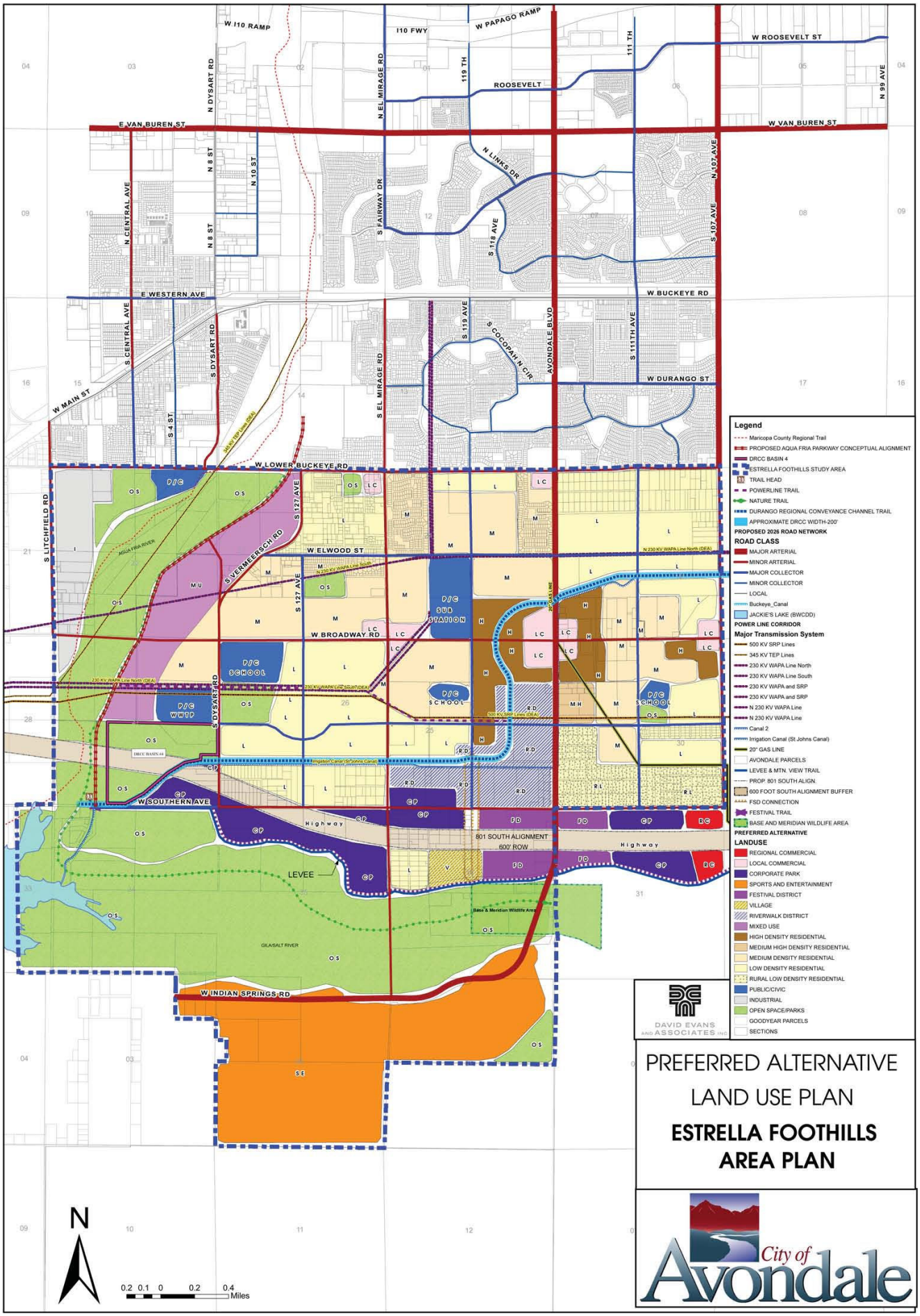
The Preferred Alternative Plan for Estrella Foothills is illustrated in Figure 3-1.

The Preferred Alternative for the Estrella Foothills area includes new land use designations that foster a mixed use festival village atmosphere in the heart of the Estrella Foothills area. These vibrant districts stretch along the proposed 200' Durango Regional Conveyance Channel (DRCC) underneath the SR 801 corridor and terminate at the Gila River and the associated nature trail. New and enhanced connections across the Gila River integrate the sports and entertainment district adjacent to PIR with the rest of the Estrella Foothills area. Lower density residential uses are buffered by open space or transition to medium and high density residential uses. The SR 801 corridor is buffered by corporate parks and regional commercial uses. The proposed circulation network establishes a ½ mile street grid and integrates facilities for pedestrians, bikes, and transit use. The circulation system connects major natural features, destination areas, and employment centers. Large areas are preserved for natural areas, trails, and recreational uses.

Estrella Foothills Land Use Element

The Land Use Element focuses on the different uses of land through the existing and recommended designations within the Estrella Foothills study area. The recommendations and policies discussed in this Element provide a guide for future development and redevelopment of land. The land use element is intended to guide growth and development in the community in a manner that is consistent with the community's vision. The Land Use Element will help the City develop and prioritize useful implementation tools. It helps developers identify planned areas to advance projects, and it helps residents better anticipate change for the future. The Land Use Element also ties together the circulation and economic planning.

Figure 3-1: Preferred Alternative Land Use Plan



Land Use Categories: 2030

Land use designations/categories serve as a tool to establish contiguous and compatible land development consistent with the community's vision. The land use designations shown on Figure 3-1 are defined below. These definitions establish general guidelines for land development in each designation. The zoning ordinance implements these land use designations through specific zones and applicable development standards. 2030 Estrella Foothills Land Use Category Acres and Percentages are shown on Table 3-1.

Images are illustrative and not intended to represent anticipated densities

Rural Low Density Residential (up to 1 du/per acre)

Rural low density is residential land that will not exceed a density of one single-family detached dwelling unit per acre. This type of development promotes a rural lifestyle where livestock privileges may be a part of the character. Areas in this category are generally larger lots with accessory structures that may be used for livestock. Churches, parks, open spaces, and public facilities are permitted in this land use category.

Low Density Residential (up to 2.5 du/per acre)

Low density is residential land that will contain densities that range between one to two and one half single-family detached dwelling units per acre. These residences are typically large detached estate type homes of one or two stories, with significant privacy and open space that enjoy; residing among open areas, the panoramic views of the Estrella Mountains, and may have substantial land for agricultural uses. Churches, parks, open spaces, and public facilities are permitted in this land use category.

Medium Density Residential (2.5 to 4 du/per acre)

Medium density is residential land that will contain densities that range up to four single-family dwelling units per acre. This land use category provides for a suburban lifestyle with planned detached single family residential communities with neighborhood facilities such as churches, parks, open space, and public facilities.

Medium/High Density Residential (4 to 12 du/per acre)

Medium/high density is residential land that will contain densities that allow up to twelve dwelling units per acre, and may include single family attached or detached, condominiums, duplexes, patio homes, casitas or townhome housing choices. The variety of housing choices may be in a planned and cluster development setting with substantial open space for recreational amenities to service the residents. Churches, parks, open space, and public facilities are permitted in this land use category.

High Density Residential (more than 12 du/per acre)

High density is residential land that will contain densities more than twelve dwelling units per acre. These residences have limited private outdoor space, and may rely on shared or common open space for recreation. These residences may be part of a mixed-use development, master planned community or have access to nearby open space or other multi-modal amenities. Proximity to employment, entertainment and pedestrian activities in this land use will encourage interaction and create an urban environment.

Regional Commercial

Land use category to accommodate the more intense use of the I-10 Freeway, Loop 101, and other future freeway or parkway corridors. This category allows flexibility for development by promoting community wide and regional retail destinations, commercial complexes and services to a larger trade area.

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Images are illustrative and not intended to represent anticipated densities

Local Commercial

Land use category that is used primarily for the local residents to include: retail, service, and medical uses serving consumers residing in adjacent residential areas. This category includes many types of buildings, including offices, restaurants, and retail in proximately to residential development that promotes a walk-able community.

Mixed Use

Land use for a mixture of, residential, office, and commercial. This category encourages creatively designed developments which create a core living environment, reflective of a village concept, where opportunities are provided in a vertically integrated building to allow residents to live, work, and recreate within the same development. Basic criteria for development include reasonable scale to the surrounding neighborhood, proportionate ratios for each use, encouragement of alternative modes of transportation, such as bicycling, walking, and commuter rail which creates a plan that allows access to and integration of transit facilities or connections to and is developed similar to a town center.

Industrial

The industrial land use category is intended to allow for warehousing, manufacturing and processing businesses. This category is typically characterized as development that due to noise, smell, or some other special consideration is not appropriate for a Business Park industry but may include research, refining, assembly, manufacturing and fabrication of products, demolition, wholesaling or distribution. Uses typically have external effects such as power or utility equipment, large truck delivery and transmission corridors for power or water. The areas designated for industrial uses have adequate transportation and activity access with an emphasis on minimal conflict with existing adjacent land uses. This land use will encourage and facilitate the development of environmentally sensitive land uses to include solar, wind, and renewable energy facilities.

Corporate Park

The Corporate Park designation is intended to attract major corporations to Avondale. This area would include high-rise class-A office buildings with a unified, modern architecture theme.

Open Space/Parks

The Open Space and Parks land use category identifies existing City parks, Estrella Mountains, and corridors designated for public recreation in the Parks and Recreation Master Plan. Open space is planned to set aside areas of active and passive recreation for Avondale residents and to preserve areas of critical natural habitat. Open space areas are also designated for wildlife watching areas, birding, ecotourism, conservation, and preservation of riparian areas on floodplains adjacent to the Gila River. Parks and open space allocations will be implemented as a component of development approvals as urbanization and development occurs.

Public/Civic

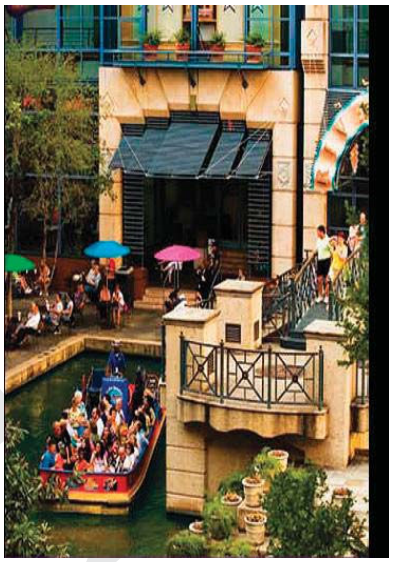
The Public/Civic land use category provides for a variety of civic and public facilities for the health, safety, and welfare of the residents. Types of uses found in this category include government buildings, City Hall, police, fire stations, water and wastewater treatment sites, well sites, and electric substation or neighborhood assistance facilities.

Sports and Entertainment

The Sports and Entertainment district provides for regional level sports and entertainment. Land uses include large-scale developments such as the Phoenix International Raceway and its associated uses, public gardens and plazas, mid to high rise office buildings, resort and retail establishments, recreational vehicle parking and showrooms, museum,

parking garages, indoor and outdoor venues, and residential living as urban style housing, casitas, and timeshares, or estate housing that accommodates garages and storage for racing vehicles.

Images are illustrative and not intended to represent anticipated densities



Festival District

The Festival District is designed as a pedestrian-oriented, entertainment, and recreation district. It establishes a festival atmosphere through a variety of uses including a shopping center and entertainment destination with a unique theme. Numerous entertainment and recreation venues, formal and informal, indoor and outdoor, are encouraged including facilities for live theater, music, events and seasonal festivals. The designation promotes uses such as restaurants with covered outdoor seating areas, spas, activity-oriented retail, family amusement, recreation services, gift shops, and office uses. The district also allows uses such as hotels, music studios, specialty food grocers and arcades.

Village District

The Village District blends seamlessly into the Festival District. All buildings in this district include residential uses to a minimum of 12 dwelling units per acre. Buildings in this designation are intended to be mixed use. Specialty retail uses in this area would include activity-oriented retailers such as candy and fudge making shops, glass blowing artists, and fashion jewelry makers, where the product is made within the customer's sight. Other specialty retail may include coffee shops, pubs and cafes that feature live entertainment, fun fashion clothing and shoe store, tourist oriented shop, specialty food store and so forth. The second level and above may be restaurant, hotel, and/or residential. Nightlife venues are expected.

River Walk District

The River Walk District includes upscale mixed use buildings with lush landscaping. All buildings in this district include residential uses to a minimum of 12 dwelling units per acre and are a minimum of three stories. Shade structures are abundant along the Durango Regional Channel providing year round use. The buildings face the canal and abut the River Walk (the pedestrian walkway). Automobile parking is in parking garages or lots in the rear of the buildings or on side streets, but not on the canal side of the building. A pedestrian walkway is recommended to be 30 to 50 feet wide, and to travel along the east side of the canal. Pedestrian bridges cross the channel to provide access to the uses on the other side. Land uses allowed include boutiques, residential, specialty grocers, restaurants, cafes, high end hotels, and tourist oriented services.

Agua Fria Parkway

The Agua Fria Parkway is a conceptual new public street that would be built on the top of a levee on the east bank of the Agua Fria River in Estrella Foothills. This street would run from Southern Avenue at the south end to Lower Buckeye Road, and, potentially, continuing north to Buckeye Road (MC85). The Agua Fria Parkway would provide a new north-south connection for the area, while removing large areas of land from the Agua Fria River floodplain on the east side of the river, increasing development opportunity to those properties. The Preferred Alternative Land Use Plan shows the land immediately adjacent to the east side of the parkway alignment conceptually as Mixed-Use, allowing for a wide variety of development opportunities along the Agua Fria Parkway. The Agua Fria Parkway and associated development could have the potential to become an important and unique development in Estrella Foothills and the City of Avondale as a whole. Properties along the east side of the proposed parkway are shown as Mixed-Use on the Preferred Alternative. However, if, following further study, the Agua Fria Parkway is deemed not feasible and is not constructed, the land is most appropriate as Medium Density Residential.

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Table 3-1: 2030 Estrella Foothills Land Use Category Acres and Percentages

2030 Estrella Foothills Land Use Category Acres and Percentages (9/2009)				
Description/(Abbreviation)	Acres	% Land Use	Target du/acre	Dwelling Unit Target
Rural Low Density Residential (RL)	177.7	2%	1	177.4
Low Density Residential (L)	1205.1	17%	2	2410.2
Medium Density Residential (MH)	1029.1	14%	3	3087.3
Medium High Density Residential (M)	32.4	less than 1%	8	259.2
High Density Residential (MH)	210.6	3%	12	2527.2
Festival District	72.2	less than 1%	12	866.4
Riverwalk District	209.8	3%	12	2517.6
Village District	39.5	less than 1%	12	474
Mix Use District	284.4	4%	12	3412.8
Sports and Entertainment District	827.4	11%	na	0
Corporate Park	221.1	3%	na	0
Industrial	143.4	2%	na	0
Highway ROW	288.8	4%	na	0
Local Commercial	109.6	2%	na	0
Public /Civic	221.3	3%	na	0
Open Space (OS)	2147.7	30%	na	0
TOTAL	7,220.1	100%		15,732.1

Above Acre Calculations DO NOT include Maricopa County land located south of Southern Avenue and east of Avondale Boulevard.

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Estrella Foothills Economic Element

Land use Demand for the Preferred Alternative

A fundamental assumption of this analysis is that large-scale development of nonresidential uses along the 801 corridor will begin in earnest after 2020, although there are opportunities for development prior to that, as discussed below. According to the Arizona Department of Transportation, the 801 is funded for construction in 2023 to 2025.[1] Up to that time, one of the primary competitive locations within Avondale for some of the office, business park, and specialty retail uses will be the Avondale City Center area. Based on the Avondale City Center Market Analysis, the City Center land could be largely absorbed, or at the least the development pattern should be well established, by 2020.

Essentially, the City Center and the 801 corridor should be different enough in the nature of their location that direct competition would not necessarily be an issue. As a location for employment activity, the 801 corridor provides a unique amenity-oriented setting that would be particularly attractive to companies seeking to attract knowledge workers, for whom an enjoyable workplace is a factor in their employment decision-making.

The primary competition for the uses planned for the 801 corridor in the Estrella Foothills Plan, in terms of an amenity-related employment center, is the rest of the corridor extending from the South Mountain Freeway, at approximately 55th Ave. in Phoenix,[2] west to the MC 85 junction near the boundary of Goodyear and Buckeye. In Phoenix, development along the corridor will be complicated by the presence of existing residential areas, which have been developed in accordance with Phoenix's plan for the Estrella Village. In Goodyear, the corridor passes through an area already planned primarily for industrial use, and the city's latest general plan[3] indicates a High Intensity Mixed Use Corridor Overlay designation. As a practical matter, the presence of the Phoenix Goodyear Airport to the north, and the generally industrial character of the corridor through Goodyear, will limit the options for creative development along the 801. With the southern alignment of the 801, Avondale has the best opportunity of the three cities for tying the amenity of the riverfront into development options.

For the entertainment uses, the sports and entertainment-retail complex in Glendale at the 101 and Glendale Avenue will be a prime competitive location. As this report is being prepared, the Tohono O'odham Nation has announced plans to develop a resort-casino in this same general location, which would add to that area's competitive strength for entertainment venues. Other casino locations throughout the Valley also constitute competitive sites for entertainment facilities, including the fact that they already have some form of entertainment venue in-house. Finally, a development team has been working for several years to bring an entertainment complex to downtown Phoenix; however that environment would be substantially different from the 801 corridor in Estrella Foothills.

[1] http://www.dot.state.az.us/Highways/valley_freeways/SR801/East/index.asp

[2] Although the alignment is not final, the 55th Avenue Alternative was selected as the preliminary preferred option for the Western Section of the South Mountain Freeway. ttp://www.dot.state.az.us/Highways/Valley_Freeways/Loop_202/South_Mountain/background.asp

[3] Goodyear General Plan - 2003 2013, revised April 2008.

Development sequence

Residential development within the Estrella Foothills Specific Plan could proceed as soon as the housing market recovers, without regard to the presence of the 801. Development is likely to proceed in a pattern from north to south, until the planned community associated with the Lakin property begins to develop. Retail development will keep pace with residential, except that the commercial core at Broadway Road and Avondale Boulevard will not be fully developed until most of the residential, including the multifamily and specially designated areas such as the Riverwalk district, is approaching buildout.

The presence of the 801 will be a significant factor driving development activity of nonresidential uses in the corridor. At the same time, unique aspects of the Estrella Foothills Specific Plan, and the fact that the area is already attractive for traditional residential development, will accelerate some of the nonresidential as well as residential development activity. Both the Riverwalk District and the Village represent unique, amenity-oriented residential settings that will both attract additional residential activity while simultaneously creating opportunities for specialty retail, restaurants, and office and similar development within their mixed-use environments. These areas will be the seeds for making Estrella Foothills a regional destination prior to the presence of the 801. The Destination Entertainment/Resort District (associated with PIR track and adjacent property) can also proceed with development prior to completion of the 801, although perhaps at a more modest scale than what is ultimately achievable with the roadway.

The combination of these occurrences, the presence of PIR, and the inclusion of the Destination Festival District (DFD) within the Estrella Foothills Specific Plan, could attract destination-type entertainment venues to the DFD prior to the roadway's completion. Large-scale corporate entities could also be attracted to the area prior to the roadway's completion, for these same reasons. In general, major employers have more autonomy with respect to location choice because they are a large enough magnet for prospective workers. A business park developer, in contrast, must be sensitive to the needs of (mostly) smaller companies that will need locations from which they can remain competitive for (access to) workers, transportation costs, etc. As a strategic position, the City could promote Estrella Foothills as a unique corporate site (with qualities that make it distinct from the City Center), for either industrial or office functions, immediately on adoption of this area plan. With the arrival of major employers, marketing of the location to smaller firms becomes more achievable.

Development and Fiscal Analysis Model

The Estrella Foothills Development and Fiscal Analysis Model was constructed to serve two purposes relative to the preferred plan alternative: 1) to provide a framework for estimating development activity for both residential and nonresidential uses; 2) to estimate the fiscal and employment benefits of retail, business park/industrial, office, entertainment, resort, multi-family and single family residential, and mixed use space to the city from development within the Estrella Foothills planning area.

The model is based on fairly conservative estimates of population growth in Avondale, and is generally calibrated to expected overall employment growth in Avondale. The Estrella Foothills area capture rates for each use follow an "S" curve pattern (seen in Figure 3-2 and Figure 3-3 below) that reflects typical growth scenarios in which growth increases initially at a low rate, rises rapidly while conditions are becoming more optimal, then levels. Two examples are shown in Figures 3-2 and 3-3, for multi-family and the corporate park.

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Figure 3-2: Multi-family Capture Rates

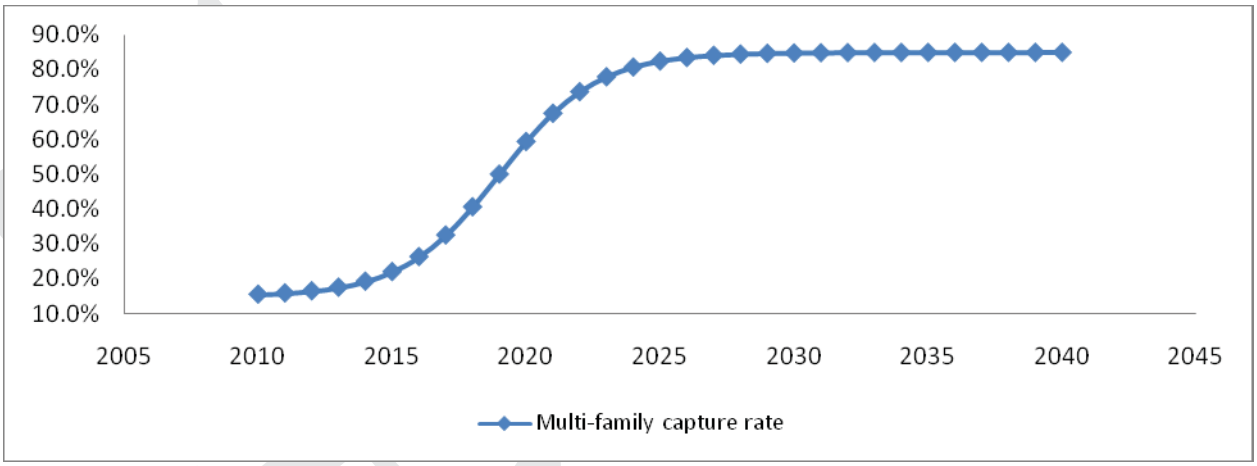
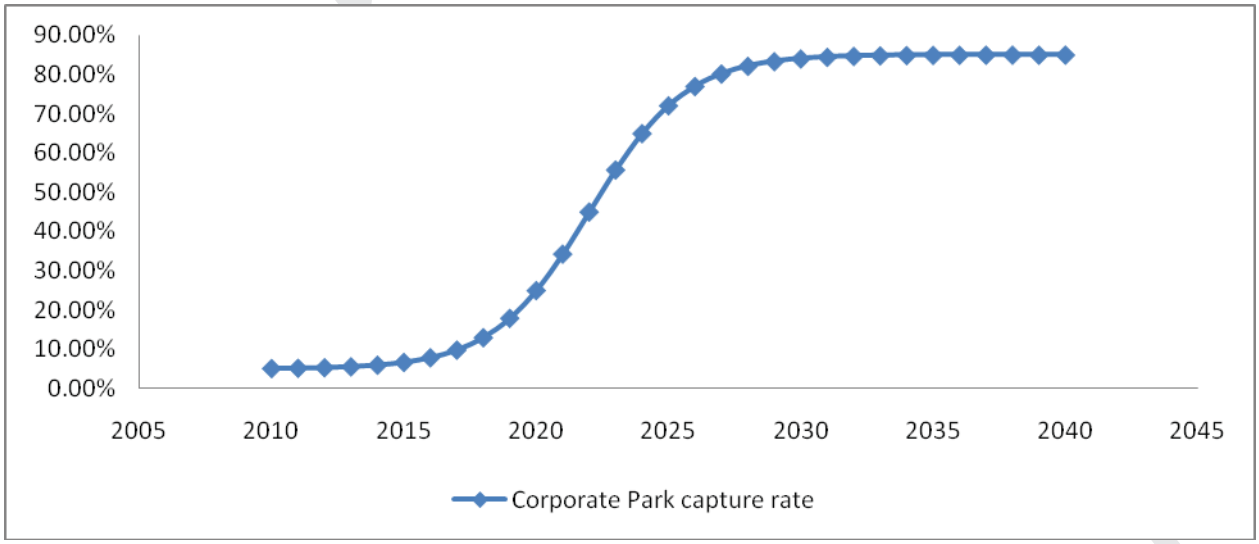


Figure 3-3: Corporate Park Capture Rates



According to the MAG projections, employment in Avondale will increase at a faster rate than population. This is to be expected for a suburban community, where the economy continues to mature. For example, MAG projects Avondale's population to increase by 16% from 2020 to 2030, and employment by 41%, over twice the rate of increase. If Avondale achieves this level of employment by 2030, it would have a similar employment-to-population ratio as MAG has forecast for Goodyear in 2020.

This model applies specific assumptions regarding level of development and other factors. For example, the model converts FARs from a "net" value to a "gross" value to reflect the difference between a broad designation of land use and finished lots.

Key assumptions are the following:

- The Estrella Foothills area will be a major focus of growth, starting in the near future for residential use and considerably later for non-residential uses. Subsequent to the substantial build-out of the City Center area, Estrella Foothills will become the primary location in Avondale for new office and industrial uses.
- The most speculative uses, related to entertainment, are projected in the model to have reasonably successful but unspectacular levels of development. The destination entertainment/resort land use south of the river is assumed for this modeling purpose to be developed at an overall low level of land coverage over the analysis period of 2010-2040.
- With the model's current configuration, some vacant land remains for most uses at the end of the analysis period in 2040[1]. This is partly a reflection of the assumptions applied, as described above, and partly an acknowledgment that some land in its originally planned designation could be excess inventory, potentially converting to some other use eventually.
- The model summarizes estimates of construction costs and taxes, rental/lease taxes, sales tax generation, employment, and property value for property tax purposes and property tax generation over a 30-year period (2010-2040).

A summary of the development program as modeled in this version and the absorption through 2040 is shown in Table 3-2. Key model inputs are shown in Appendix A.

Table 3-2: Development Program Summary

Development Program Summary		
Use Category	Program Capacity	Absorption as of 2040
Retail	1,785,501	1,275,322
Office or ofc/ind mix	4,263,155	2,325,331
Residential (units)	10,699	8,096
Entertainment	1,512,827	856,279
Resort	435,204	300,000
Industrial	2,853,594	2,261,714
Sum SF only	10,850,280	7,018,645

[1] MAG population projections for 2010, 2020, and 2030 were adjusted to reflect population estimates prepared by the Arizona Department of Commerce for 2007 and 2008. With the estimates as a base, MAG's percentage increases were applied to derive a set of revised projections, after decreasing the projected growth rates for the most recent years. Intermediate years between the 10-year projections intervals are derived from straight-line interpolation, and numbers for 2030-2040 were generated in a similar fashion, extending the 2020-2030 trends. The future populations could be generally underestimated given that the Estrella Foothills area has been re-designated from an overall low density to higher density development.

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The absorption pattern is shown on Table 3-3, and the resulting fiscal and economic benefits are summarized on Table 3-4. All figures are in 2009 dollars. The figures are not equivalent because the square footage is in building area and the acreage reflects our usage of Floor Area Ratios (FAR) when relating floor area to acreage by usage type. We used different FAR values for office, retail and resort uses. The FAR, for all uses, was further reduced to account for the area taken up by roadways and other infrastructure. This adjusted FAR was used to calculate the supportable SF by programmed use based upon the allocated acreage.

Table 3-3: Absorption Pattern

	NEW Development after 2010, in sq. ft. (top table) and acres except as noted				
	2015	**2020**	**2025**	**2030**	**2040**
Projected developed SF					
Business Park / Industrial	49,678	301,596	714,847	1,187,491	2,261,714
Corporate Park	26,340	102,656	380,786	831,752	1,886,406
Destination Festival District	0	0	61,851	174,437	428,139
Specialty regional retail/rests.	0	0	33,947	91,067	212,797
Destination Entertainment / Resort	0	0	61,851	174,437	428,139
Resort	0	150,000	150,000	300,000	300,000
River Walk District (1)	85	254	532	860	1,525
Specialty regional retail/services	11,276	61,242	113,499	167,810	256,346
Office	0	17,856	100,267	193,952	407,823
Freeway Commercial	0	0	28,290	81,789	195,910
Commercial	0	12,412	57,809	111,995	226,125
Neighborhood Commercial	31,655	69,123	120,648	178,503	300,243
Village (1)	16	48	100	162	287
Specialty regional retail/rests.	2,608	41,462	64,351	64,351	64,351
Mixed Use (1)	10	29	61	98	174
Local/regional retail	0	13,566	19,550	19,550	19,550
Service offices	0	0	31,102	31,102	31,102
Multi-Family (1)	10	29	62	100	177
High Density Residential (1)	62	185	389	628	1,115
Medium High Density Residential (1)	155	338	507	681	1,032
Medium Density Residential (1)	697	1,504	2,028	2,028	2,028
Low Density Residential (1)	445	959	1,293	1,293	1,293
Rural Low Density Residential (1)	160	344	464	464	464
Total SF, non-residential	**121,556**	**769,912**	**1,938,799**	**3,608,236**	**7,018,645**
Total # of residential units	**1,638**	**3,691**	**5,436**	**6,314**	**8,096**

(1) Residential elements are expressed in number of units

	2015	**2020**	**2025**	**2030**	**2040**
Projected developed acreage					
Business Park / Industrial	3.8	23.3	55.2	91.6	174.5
Corporate Park	2.0	7.9	29.4	64.2	145.6
Destination Festival District	0.0	0.0	7.6	21.4	52.6
Specialty regional retail/rests.	0.0	0.0	4.2	11.2	26.1
Destination Entertainment / Resort	0.0	0.0	11.1	31.4	77.1
Resort	0.0	20.3	20.3	40.5	40.5
River Walk District	4.9	14.8	31.0	50.1	89.0
Specialty regional retail/services	1.4	7.5	13.9	20.6	31.5
Office	0.0	1.4	7.7	15.0	31.5
Freeway Commercial	0.0	0.0	3.5	10.0	24.1
Commercial	0.0	1.5	7.1	13.7	27.8
Neighborhood Commercial	3.9	8.5	14.8	21.9	36.9
Village	1.1	3.2	6.7	10.8	19.1
Specialty regional retail/rests.	0.3	5.1	7.9	7.9	7.9
Mixed Use	0.6	1.9	4.1	6.6	11.6
Local/regional retail	0.0	1.7	2.4	2.4	2.4
Service offices	0.0	0.0	2.4	2.4	2.4
Multi-Family	0.8	2.5	5.2	8.3	14.8
High Density Residential	7.7	23.2	48.6	78.5	139.3
Medium High Density Residential	38.6	84.6	126.8	170.3	257.9
Medium Density Residential	278.9	601.6	811.2	811.2	811.2
Low Density Residential	444.5	958.9	1,293.1	1,293.1	1,293.1
Rural Low Density Residential	159.6	344.2	464.2	464.2	464.2
Total Non-residential acreage	**11.5**	**77.1**	**187.5**	**354.3**	**680.7**
Total Residential acreage	**936.8**	**2,034.8**	**2,790.8**	**2,893.1**	**3,100.2**

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Table 3-4: Summary of Benefits

	Tax payments, employment and wages				
	2015	**2020**	**2025**	**2030**	**2040**
Annual receipts as of dates shown					
Sales Taxes	$292,015	$1,499,397	$3,569,085	$6,538,746	$12,300,545
Retail sales taxes	$292,015	$1,268,421	$2,809,280	$4,585,356	$8,178,000
Resort lodging sales tax	$0	$230,977	$230,977	$461,953	$461,953
Entertaiment District sales tax	$0	$0	$528,828	$1,491,437	$3,660,592
Rental/Lease Taxes	**$180,458**	**$496,313**	**$1,002,187**	**$1,563,163**	**$2,750,044**
Residential rental tax	$150,887	$357,377	$570,977	$743,695	$1,056,837
Commercial lease tax	$29,571	$138,936	$431,210	$819,469	$1,693,206
Property taxes, total					
City	**$370,583**	**$1,021,424**	**$1,769,397**	**$2,528,954**	**$4,037,967**
Residential	$328,289	$736,485	$1,073,223	$1,228,765	$1,543,650
Non-residential	$42,294	$284,939	$696,174	$1,300,189	$2,494,316
One-time cumulative construction tax receipts as of dates shown	**$6,125,139**	**$14,550,996**	**$21,600,536**	**$26,811,118**	**$37,333,874**
Full-time Employment as of dates shown	**179**	**897**	**2,710**	**5,025**	**10,251**
Projected employment wages from employment as of date shown	**$6,759,374**	**$34,349,689**	**$104,677,872**	**$192,177,605**	**$389,088,206**

The following points provide another way of summarizing the benefits:

- The combined sales taxes generated by the resort, retail and entertainment districts are:

  2020: $1,499,397

  2030: $6,538,746

  2040: $12,300,545

- The annual sales taxes for the retail square footage alone are:

  2020: $1,268,421

  2030: $4,585,356

  2040: $8,178,000

- The leasing taxes generated by the new commercial/industrial development are:

  2020: $138,936

  2030: $819,469

  2040: $1,693,206

- The rental taxes generated by the new single family and multi-family units are:

  2020: $357,377

  2030: $743,695

  2040: $1,056,837

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Estrella Foothills Circulation Element

The Circulation Element focuses on transportation and the circulation and movement of vehicles, bicycles and pedestrians through the existing and recommended future transportation network within the Estrella Foothills study area. The recommendations and policies discussed in this Element provide a guide for future development and expansion of the transportation system.

Most of the subject study area is currently under agricultural use or undeveloped. Other areas are developed to a lower density than what is contemplated in the proposed Land Use Plan. Traffic growth within the study area will be generated primarily from development of these areas.

A citywide Transportation Plan was completed in 2006. However, the model and analysis were based on different land use assumptions than what was developed as part of this study. Furthermore, the Transportation Plan did not define the collector roadway network within the Estrella Foothills planning area.

This Element provides new and additional traffic forecasting based on the preferred land use plan for this area, reviews and updates arterial capacity needs and provides recommended roadway sections for collector roads within the plan area.

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Traffic Forecast Methodology

Traffic forecasts for the planning area were derived by applying the Institute of Transportation Engineers (ITE) trip generation rates from the 8th Edition of the Trip Generation Manual to the proposed land uses discussed and identified in the Land Use section of this plan. Land use densities and assumptions were based on data shown in Table 3.3 Table 3.5 lists the ITE Land Use Categories that were applied to each of the contemplated land uses in the Land Use Plan.

Table 3-5: ITE Land Use Categories

ITE Land Use Categories		
LAND USE	ITE CODE	ITE LAND USE DESCRIPTION
Business Park/Industrial	770	Business Park
Corporate Park	750	Office Park
Festival District	820	Shopping Center
Sports and Entertainment	230	Residential Condominium/Townhouse
River Walk District	230	Residential Condominium/Townhouse
	710	General Office Building
	820	Shopping Center
Regional Commercial	820	Shopping Center
Local Commercial	820	Shopping Center
Village	230	Residential Condominium/Townhouse
	820	Shopping Center
Mixed Use	230	Residential Condominium/Townhouse
	710	General Office Building
	820	Shopping Center
High Density Residential	220	Apartment
	210	Single-Family Detached Housing
Medium High Density Residential	210	Single-Family Detached Housing
Medium Density Residential	210	Single-Family Detached Housing
Low Density Residential	210	Single-Family Detached Housing
Rural Low Density Residential	210	Single-Family Detached Housing
Public Facility	110	General Light Industrial
Public/Civic	520	Elementary School
	522	Middle School/Junior High School
	530	High School

Traffic Assignment Methodology

Select zone analysis data for TAZ's within the plan area was provided by Maricopa Association of Governments based on their current regional model. This data was used as a general guide and aid to determine the trip distribution and assignment within the plan area. Note, that the model assumes and includes the existence of Route 801 passing through the study area. As such a significant amount of the traffic was assumed to use Route 801 for longer trips outside the study area and as the primary route for travel to/from major trip draws such as downtown Phoenix. This lessened the amount of traffic assumed to use the north/south routes north of the study area to access I-10.

See Figure 3.4 for a graphical depiction of the anticipated future volumes on existing and planned arterial and collector roadways within the plan area. Anticipated volumes by roadway segment are also shown in Figure 3.4.

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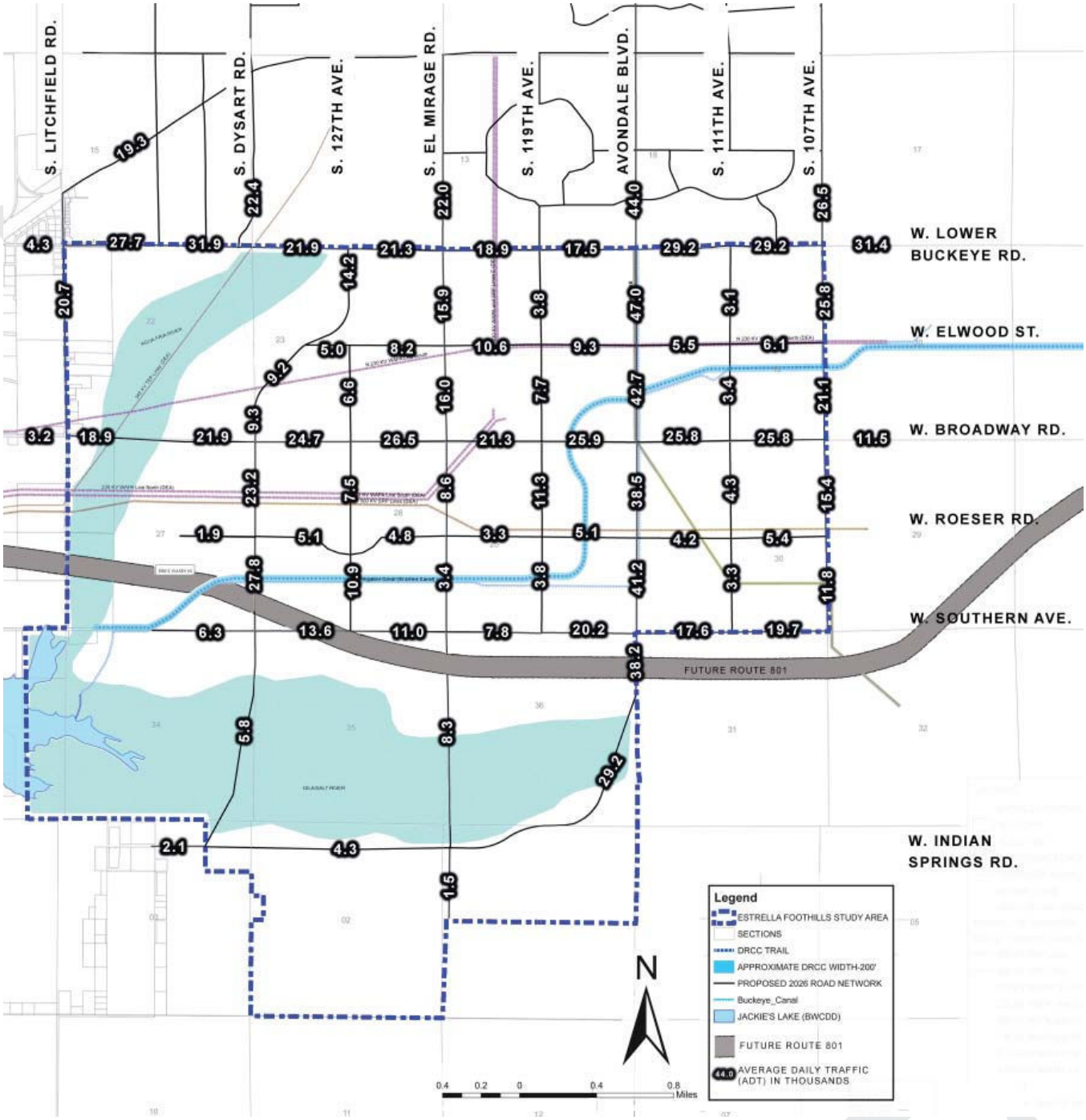
Figure 3-4: Anticipated Future Volumes



Estrella Foothills

Anticipated Future Volumes 2030

Existing and Planned Arterial and Collector Roadways

Roadway Network Analysis Methodology

The traffic volumes used for future conditions analysis purposes are based on anticipated volumes as calculated and distributed to the roadway network as described in the above sections. For existing roadways, existing ADT values were added to the growth/projected volumes for each roadway segment analyzed to arrive at the total volume value utilized for analysis purposes.

The roadway segment performance analysis for future year conditions (2029) was based on the Level of Service (LOS) concept. Planning level segment LOS for future roadway network analysis was estimated using the volume thresholds provided in Quality/Level of Service (Q/LOS) Handbook, 2002 by the State of Florida Department of Transportation (FDOT); this is consistent with the approach utilized in the 2006 Avondale Transportation Plan. The Q/LOS segment LOS analysis takes into account daily traffic volumes, number of lanes, signal spacing and speed limits on arterial roadways compared to basic daily traffic volume ranges for various classifications. LOS thresholds are illustrated in Table 3-6, below.

Table 3-6: Daily Volume Thresholds for Urbanized Areas

Daily Volume Thresholds for Urbanized Areas						
CLASS	# OF LANES	LEVEL OF SERVICE				
		A	B	C	D	E
I - Arterials (Arterials with speed limits of at least 45 mph and a signal density of less that two (2) signals per mile)	2	**	4,200	13,800	16,400	16,900
	4	4,800	29,300	34,700	35,700	***
	6	7,300	44,700	52,100	53,500	***
II - Arterials (Arterials with speed limits of at least 35 mph and a signal density from 2 to 4.5 signals per mile)	2	**	1,900	11,200	15,400	16,300
	4	**	4,100	26,000	32,700	34,500
	6	**	6,500	40,300	49,200	51,800
III - Arterials (Arterials with speed limits of at least 35 mph and a signal density of at least 4.5 signals per mile)	2	**	**	5,300	12,600	15,500
	4	**	**	12,400	28,900	32,800
	6	**	**	19,500	44,700	49,300
Collector-Undivided (W/o Left Turn Lanes)	2	**	**	3,840	8,000	10,080
Collector-Undivided (W/ Left Turn Lanes)	2	**	**	4,800	10,000	12,600
Collector - Divided	4	**	**	11,100	21,700	25,200

Notes:
** Cannot be achieved using table input value defaults.
*** Not applicable for that level of service letter grade. Volumes greater than level of service D become F because Intersection Capacities have been reached.
Source: State of Florida Department of Transportation, Quality/Level of Service Handbook, 2002

The levels of service for arterial and collector roadways within the plan area are illustrated in Table 3-8.

The City's General Plan recommends maintaining LOS of C or better on all its arterials with LOS D allowed during the peak hours. For the future segment LOS analysis, LOS D was considered an acceptable level of service.

(Note: The calculated LOS are intended to serve as a planning guideline and are not an exact description of the actual operating LOS on a particular roadway segment. The actual functional capacity of roadway

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facilities is based on the ability of arterial intersections to accommodate peak hour volumes. Special design of intersections to achieve acceptable LOS could result in higher capacities. Peak hour intersection LOS provides a more precise indication of actual performance of the circulation system on arterials in an urban environment.)

Table 3-7 provides qualitative description of the various LOS categories.

Table 3-7: LOS Qualitative Descriptions

LOS Qualitative Descriptions	
LEVEL OF SERVICE	TECHNICAL DESCRIPTION
A	**Free-flow operations** at average travel speeds, 90 percent of free-flow speed, vehicles completely unimpeded; delay at signalized intersections is minimal.
B	**Reasonably unimpeded operations** at average travel speeds, 70 percent of free-flow speed, delays at signalized intersections are not significant.
C	**Stable operations** with more restricted midblock maneuvers than LOS B, longer queues, adverse signal coordination, 50 percent of free-flow speed.
D	**Borders on unstable conditions** with substantial increases in approach delay and decreases in travel speed 40 percent of free-flow speed.
E	**Significant delays**, 33 percent or less of the free-flow speed.
F	**Extremely low speeds, intersection congestion,** long delays, extensive queuing, one-third to one-fourth of free-flow.

Additional Analysis Assumptions

The following summarizes key assumptions and issues that impact the analysis results and improvement recommendations:

- The southerly Route 801 alignment is assumed located south of Southern Ave. through most of the plan area.
- Only two connections to SR 801 were assumed for the plan area. Interchanges were assumed to be at Dysart and Avondale.
- No expansion or additional traffic directly associated with the raceway is assumed.
- Definitive plans for the Sports Entertainment district west of the raceway and west of El Mirage were unknown. For the purposes of this analysis, development of approximately ½ of the area during the 20 year planning horizon was assumed west of El Mirage. The development was assumed to be a mixed-use resort.

Recommended Roadway Network and Improvements

Based on the anticipated traffic volumes, some existing arterial roadways will need to be widened to provide additional travel lanes and capacity. Recommendations for the collector roadway network and necessary lane or cross-section are based on the anticipated volumes. The recommended arterial and collector roadway network and number of lanes required are depicted in Figure 3-5. This information is also summarized in Table 3-8.

Note that in some cases a higher roadway classification is recommended than what is needed in terms of number lanes (i.e. 2 lanes required and recommended but classification recommended to be 4-lane major collector). This approach provides the additional right-of-way associated with the major

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collector designation allowing for future widening if traffic growth continues beyond the buildout analysis horizon or if certain areas are built to a higher density than what was assumed for the analysis completed for this plan.

Alternate Modes of Transportation (Bike, Pedestrian & Transit)

There are limited existing facilities in the plan area that cater to non-vehicular traffic. As the plan area develops and transportation facilities are expanded to meet current standards and capacity demands, it is important to include construction of facilities that support non-vehicular transportation. Opportunities to provide enhancements to bike and pedestrian facilities should be explored. As an example, commercial/retail areas should be designed to provide convenient non-vehicular (as well as vehicular) access to adjacent office or residential should be encouraged. These considerations allow for convenient and desirable means to make non-vehicular trips between neighboring uses and reduce traffic volumes on adjacent arterial and collector roadways. These policies are consistent with the goals and polices documented within the General Plan Circulation Element.

Additional Considerations

Intersection Level Improvements

The analysis completed for this plan is general in nature and does not address intersection level capacity demands and improvement needs. As specific portions of the area develop, detailed peak hour intersection and corridor analysis should be performed to identify intersection and site access improvement needs. The operation of critical arterial-arterial and arterial-collector intersections are often the determining factor in the quality of operations of arterial corridors. Stated differently, intersections are the weak link in the roadway network system. As such, these intersections may require additional turn lanes and wider right-of-way cross sections on the approaches to the intersection.

A detailed operational analysis will address such issues as the need for right turn lanes, dual left turn lanes, access restrictions, intersection spacing impacts, appropriate traffic signal phasing and timing as well as other improvement needs that can not be addressed in a study of this type and scope.

Collector Network

Additional evaluation to define the appropriate ROW and roadway cross-section should be conducted at the time of development of specific areas. In some cases widening of collector sections near arterial intersections may be warranted to accommodate turn lanes or additional travel lanes in order to increase intersection capacity. At the time of development the location and alignment of planned collector roadways should be further analyzed and defined.

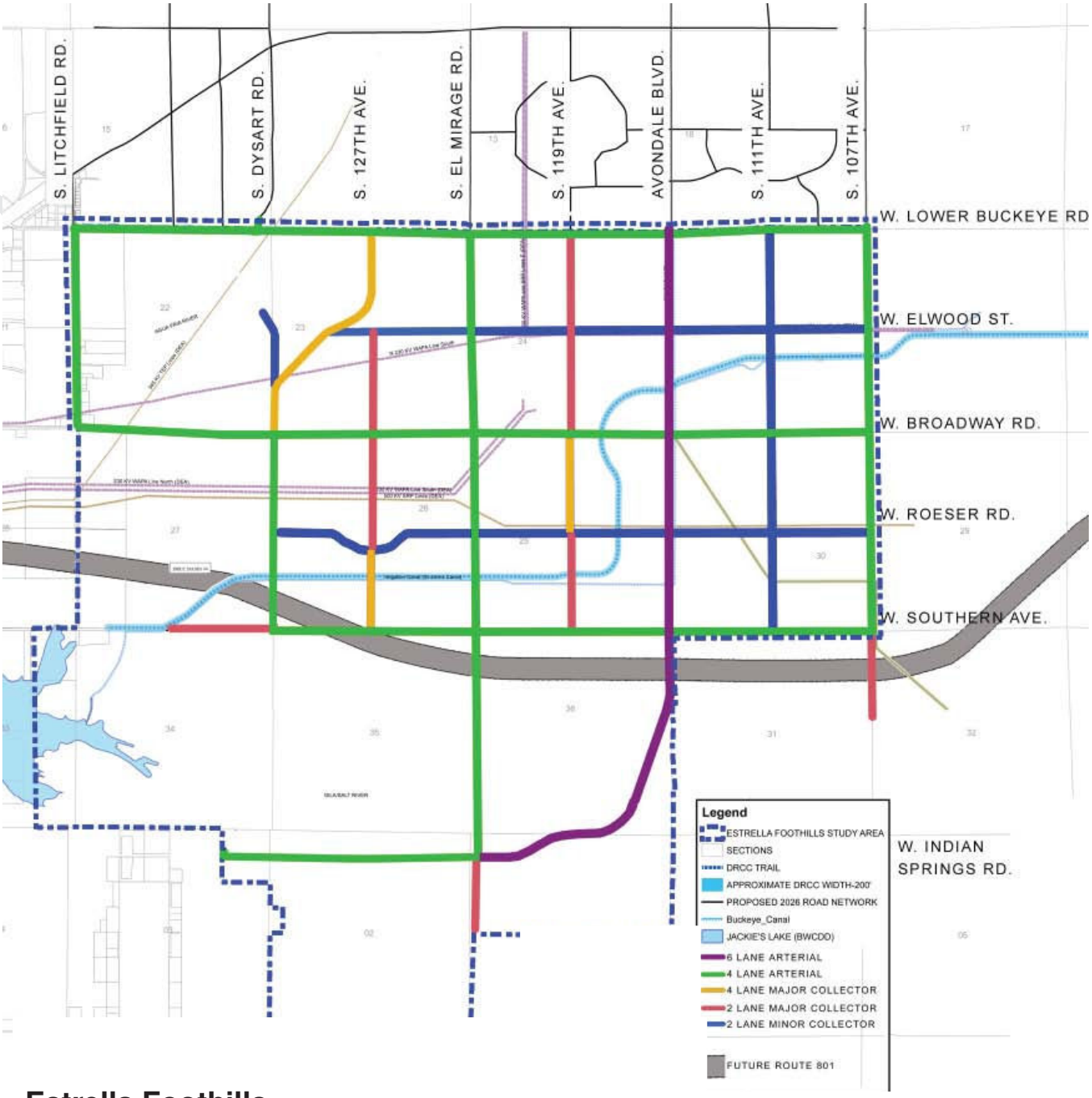
Special Event Traffic

Special event traffic such as what occurs during major events at the Phoenix International Raceway place substantial demand on the roadway network. The analysis completed for this plan did not attempt to address the peak demands associated with this facility. Due the infrequency of such events roadways are generally not designed to accommodate the traffic demand at typical level of service thresholds. Typically, the most cost effective approach to deal with such situations is the implementation of special event traffic management plans and installation and use of ITS improvements that can help mitigate the impact of the unique and high traffic demand. Examples, of ITS facilities that may be of benefit include:

- Changeable or Dynamic Message Signs (DMS) that can direct traffic to alternative routes, parking locations, etc.
- Advanced Adaptive Signal Timing and Special Signal Timing Plans

Implementation of such improvements should be considered for the predominant routes that provide access to the raceway such as Avondale Blvd.

Figure 3-5: Recommended Lanes and Roadway Classification



Estrella Foothills

Recommended Lanes and Roadway Classification

Table 3-8: Roadway Network Analysis Results

East / West Corridors

Roadway Network Analysis Results			TOTAL ADT									
Segment	From	To	EX + Estrella Foothills	Capacity Threshold at LOS D	LOS	Number of Lanes	Existing Roadway Classification per 2006 Transportation Plan	Transportation Plan Recommend Future Classification and Lanes	Capacity Threshold at LOS D for Rec'd Condition	LOS	Rec'd Number of Lanes	Rec'd Class.
Lower Buckeye	*West of Litchfield*	*Litchfield*	*4323*	*15,400*	*C*	*2*	*2-Lane Arterial*	*4-Lane Arterial*	*32,700*	*C*	*4*	**Arterial**
	Litchfield	Central	27729	15,400	F	2	2-Lane Arterial	4-Lane Arterial	32,700	D	4	
	Central	Dysart	31939	15,400	F	2	2-Lane Arterial	4-Lane Arterial	32,700	D	4	
	Dysart	127th	21853	15,400	F	2	2-Lane Arterial	4-Lane Arterial	32,700	C	4	
	127th	El Mirage	21329	15,400	F	2	2-Lane Arterial	4-Lane Arterial	32,700	C	4	
	El Mirage	119th	18875	15,400	F	2	2-Lane Arterial	4-Lane Arterial	32,700	C	4	
	119th	Avondale	17527	15,400	F	2	2-Lane Arterial	4-Lane Arterial	32,700	C	4	
	Avondale	111th	29237	15,400	F	2	2-Lane Arterial	4-Lane Arterial	32,700	D	4	
	111th	107th	29203	15,400	F	2	2-Lane Arterial	4-Lane Arterial	32,700	D	4	
	107th	99th	31393	15,400	F	2	2-Lane Arterial	4-Lane Arterial	32,700	D	4	
Elwood	Vermeersch	127th	4948	10,000	D	2	Undefined	Undefined Collector	21,700	C	2	**Minor Collector**
	127th	El Mirage	8208	10,000	D	2	Undefined	Undefined Collector	21,700	C	2	
	El Mirage	119th	10582	10,000	E	2	Undefined	Undefined Collector	21,700	C	2	
	119th	Avondale	9321	10,000	n/a	DNE	DNE	Undefined Collector	21,700	C	2	
	Avondale	111th	5496	10,000	n/a	DNE	DNE	Undefined Collector	21,700	C	2	
	111th	107th	6078	10,000	n/a	DNE	DNE	Undefined Collector	21,700	C	2	
Broadway	*West of Litchfield*	*Litchfield*	*3164*	*15,400*	*C*	*2*	*2-Lane Arterial*	*4-Lane Arterial*	*15,400*	*C*	*2*	**Arterial**
	Litchfield	Central	18936	15,400	F	2	2-Lane Arterial	4-Lane Arterial	32,700	C	4	
	Central	Dysart	21933	15,400	F	2	2-Lane Arterial	4-Lane Arterial	32,700	C	4	
	Dysart	127th	24677	15,400	F	2	2-Lane Arterial	4-Lane Arterial	32,700	C	4	
	127th	El Mirage	26500	15,400	F	2	2-Lane Arterial	4-Lane Arterial	32,700	D	4	
	El Mirage	119th	21271	15,400	F	2	2-Lane Arterial	4-Lane Arterial	32,700	C	4	
	119th	Avondale	25852	15,400	F	2	2-Lane Arterial	4-Lane Arterial	32,700	C	4	
	Avondale	111th	25788	15,400	F	2	2-Lane Arterial	4-Lane Arterial	32,700	C	4	
	111th	107th	25633	15,400	F	2	2-Lane Arterial	4-Lane Arterial	32,700	C	4	
	107th	99th	11498	15,400	D	2	2-Lane Arterial	4-Lane Arterial	15,400	C	2	

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Table 3-8: Roadway Network Analysis Results Continued

East / West Corridors Continued

Roadway Network Analysis Results			TOTAL ADT	Capacity Threshold at LOS D	LOS	Number of Lanes	Existing Roadway Classification per 2006 Transportation Plan	Transportation Plan Recommend Future Classification and Lanes	Capacity Threshold at LOS D for Rec'd Condition	LOS	Rec'd Number of Lanes	Rec'd Class.
Segment	From	To	EX + Estrella Foothills									
Roeser	West of Avondale	Dysart	1899	10,000	n/a	DNE	DNE	Undefined Collector	21,700	C	2	**Minor Collector**
	Dysart	127th	5058	10,000	n/a	DNE	DNE	Undefined Collector	21,700	C	2	
	127th	El Mirage	4804	10,000	n/a	DNE	DNE	Undefined Collector	21,700	C	2	
	El Mirage	119th	3302	10,000	n/a	DNE	DNE	Undefined Collector	21,700	C	2	
	119th	Avondale	5099	10,000	n/a	DNE	DNE	Undefined Collector	21,700	C	2	
	Avondale	111th	4193	10,000	n/a	DNE	DNE	Undefined Collector	21,700	C	2	
	111th	107th	5397	10,000	n/a	DNE	DNE	Undefined Collector	21,700	C	2	
Southern	West of Dysart	Dysart	6278	15,400	C	2	2-Lane Arterial	4-Lane Arterial	10,000	D	2	**Major Collector**
	Dysart	127th	13594	15,400	D	2	2-Lane Arterial	4-Lane Arterial	32,700	C	4	**Arterial**
	127th	El Mirage	11006	15,400	C	2	2-Lane Arterial	4-Lane Arterial	32,700	C	4	
	El Mirage	119th	7767	15,400	C	2	2-Lane Arterial	4-Lane Arterial	32,700	C	4	
	119th	Avondale	20174	15,400	F	2	2-Lane Arterial	4-Lane Arterial	32,700	C	4	
	Avondale	111th	17589	15,400	F	2	2-Lane Arterial	4-Lane Arterial	32,700	C	4	
	111th	107th	19668	15,400	F	2	2-Lane Arterial	4-Lane Arterial	32,700	C	4	
Indian Springs	West of Dysart	Dysart	2052	15,400	C	2	2-Lane Arterial	4-Lane Arterial	32,700	B	4	**Arterial**
	Dysart	El Mirage	4338	15,400	C	2	2-Lane Arterial	4-Lane Arterial	32,700	C	4	

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Source: David Evans and Associates, May, 2009

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Table 3-8: Roadway Network Analysis Results Continued

North/South Corridors

Roadway Network Analysis Results			TOTAL ADT	Capacity Threshold at LOS D	LOS	Number of Lanes	Existing Roadway Classification per 2006 Transportation Plan	Transportation Plan Recommend Future Classification and Lanes	Capacity Threshold at LOS D for Rec'd Condition	LOS	Rec'd Number of Lanes	Rec'd Class.
Segment	From	To	EX + Estrella Foothills									
Litchfield	*N. of Lower Buckeye*	*Lower Buckeye*	*19255*	*15,400*	*F*	*2*	*2-Lane Arterial*	*4-Lane Arterial*	*32,700*	*C*	*2*	Arterial
	Lower Buckeye	Broadway	20728	15,400	F	2	2-Lane Arterial	4-Lane Arterial	32,700	C	2	
Vermeersch	Broadway	Elwood	9154	10,000	D	2	Collector	Undefined Collector	21,700	C	2	Minor Collector
Dysart	*Buckeye*	*Lower Buckeye*	*22429*	*15,400*	*n/a*	*DNE*	*DNE*	*Undefined Collector*	*32,700*	*C*	*4*	Arterial
	Lower Buckeye	Elwood/ Vermeersch	DNE	15,400	n/a	DNE	DNE	DNE	DNE	DNE	DNE	Major Collector
	Elwood/ Vermeersch	Broadway	9300	15,400	C	2	Collector	Undefined Collector	21,700	C	4	
	Broadway	Roeser	23231	15,400	F	2	Collector	Undefined Collector	32,700	C	4	Arterial
	Roeser	SR 801 WB Ramps	27892	15,400	F	2	Collector	Undefined Collector	32,700	D	4	
	SR 801 WB Ramps	SR 801 EB Ramps	20306	15,400	F	2	Collector	Undefined Collector	32,700	C	4	
	SR 801 EB Ramps	Southern	13460	15,400	D	2	Collector	Undefined Collector	32,700	C	4	
	Southern	Indian Springs	5780	15,400	n/a	DNE	DNE	Undefined Collector	32,700	C	4	
127th	Lower Buckeye	Elwood	14232	10,000	F	2	Collector	Undefined Collector	21,700	D	2	Major Collector
	Elwood	Broadway	6584	10,000	n/a	DNE	DNE	Undefined Collector	10,000	D	2	
	Broadway	Roeser	7470	10,000	n/a	DNE	DNE	Undefined Collector	10,000	D	2	
	Roeser	Southern	10915	10,000	n/a	DNE	DNE	Undefined Collector	21,700	C	4	
El Mirage	*Buckeye*	*Lower Buckeye*	*21990*	*15,400*	*F*	*2*	*Arterial*	*4-Lane Arterial*	*32,700*	*C*	*4*	Arterial
	Lower Buckeye	Elwood	15901	15,400	E	2	Arterial	4-Lane Arterial	32,700	C	4	
	Elwood	Broadway	16048	15,400	E	2	Arterial	4-Lane Arterial	32,700	C	4	
	Broadway	Roeser	8648	15,400	C	2	Arterial	4-Lane Arterial	32,700	C	4	
	Roeser	Southern	3351	15,400	C	2	Arterial	4-Lane Arterial	32,700	B	4	

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Table 3-8: Roadway Network Analysis Results Continued

North/South Corridors Continued												
Roadway Network Analysis Results			TOTAL ADT	Capacity Threshold at LOS D	LOS	Number of Lanes	Existing Roadway Classification per 2006 Transportation Plan	Transportation Plan Recommend Future Classification and Lanes	Capacity Threshold at LOS D for Rec'd Condition	LOS	Rec'd Number of Lanes	Rec'd Class.
Segment	From	To	EX + Estrella Foothills									
El Mirage cont.	Project Access N	Indian Springs	8343	15,400	C	2	Arterial	4-Lane Arterial	32,700	C	4	Arterial
	Indian Springs	South of	1519	15,400	n/a	DNE	DNE	4-Lane Arterial	10,000	C	2	Major Collector
119th	Lower Buckeye	Elwood	3786	10,000	n/a	DNE	DNE	Undefined Collector	10,000	C	2	Major Collector
	Elwood	Broadway	7671	10,000	n/a	DNE	DNE	Undefined Collector	10,000	D	2	
	Broadway	Roeser	11297	10,000	n/a	DNE	DNE	Undefined Collector	21,700	D	4	
	Roeser	Southern	3806	10,000	n/a	DNE	DNE	Undefined Collector	10,000	C	2	
Avondale	*Buckeye*	*Lower Buckeye*	44037	32,700	F	4	Arterial	4-Lane Arterial	49,200	D	6	Arterial
	Lower Buckeye	Elwood	46965	32,700	F	4	Arterial	4-Lane Arterial	49,200	D	6	
	Elwood	Broadway	42675	32,700	F	4	Arterial	4-Lane Arterial	49,200	D	6	
	Broadway	Roeser	38463	32,700	F	4	Arterial	4-Lane Arterial	49,200	C	6	
	Roeser	Southern	41237	32,700	F	4	Arterial	4-Lane Arterial	49,200	D	6	
	Southern	SR 801 WB Ramps	38206	32,700	F	4	Arterial	4-Lane Arterial	49,200	C	6	

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Table 3-8: Roadway Network Analysis Results Continued

North/South Corridors Continued												
Roadway Network Analysis Results			TOTAL ADT	Capacity Threshold at LOS D	LOS	Number of Lanes	Existing Roadway Classification per 2006 Transportation Plan	Transportation Plan Recommend Future Classification and Lanes	Capacity Threshold at LOS D for Rec'd Condition	LOS	Rec'd Number of Lanes	Rec'd Class.
Segment	From	To	EX + Estrella Foothills									
Avondale cont.	SR 801 WB Ramps	SR 801 EB Ramps	29416	32,700	D	4	Arterial	4-Lane Arterial	49,200	C	6	Arterial
	SR 801 EB Ramps	El Mirage	29240	32,700	D	4	Arterial	4-Lane Arterial	49,200	C	6	
111th	Lower Buckeye	Elwood	3072	10,000	n/a	DNE	DNE	Undefined Collector	10,000	C	2	Minor Collector
	Elwood	Broadway	3398	10,000	n/a	DNE	DNE	Undefined Collector	10,000	C	2	
	Broadway	Roeser	4333	10,000	n/a	DNE	DNE	Undefined Collector	10,000	C	2	
	Roeser	Southern	3314	10,000	n/a	DNE	DNE	Undefined Collector	10,000	C	2	
107th	*Buckeye*	*Lower Buckeye*	*26521*	*15,400*	*F*	*2*	*Arterial*	*4-Lane Arterial*	*32,700*	*D*	*4*	Arterial
	Lower Buckeye	Elwood	25849	15,400	F	2	Arterial	4-Lane Arterial	32,700	C	4	
	Elwood	Broadway	21081	15,400	F	2	Arterial	4-Lane Arterial	32,700	C	4	
	Broadway	Roeser	15351	15,400	D	2	Arterial	4-Lane Arterial	32,700	C	4	
	Roeser	Southern	11765	15,400	D	2	Arterial	4-Lane Arterial	32,700	C	4	

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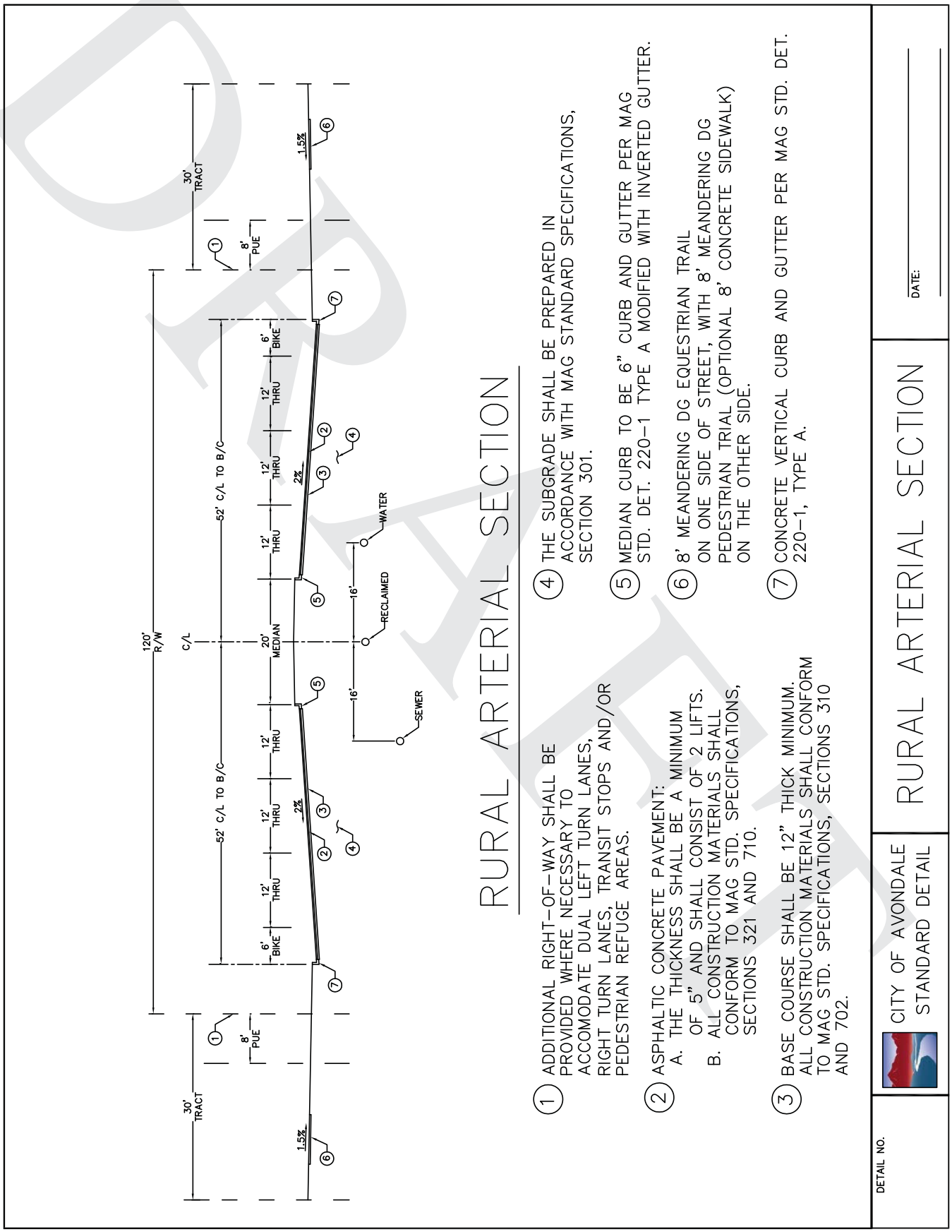
Street Cross Sections

Figure 3-6: Rural Arterial



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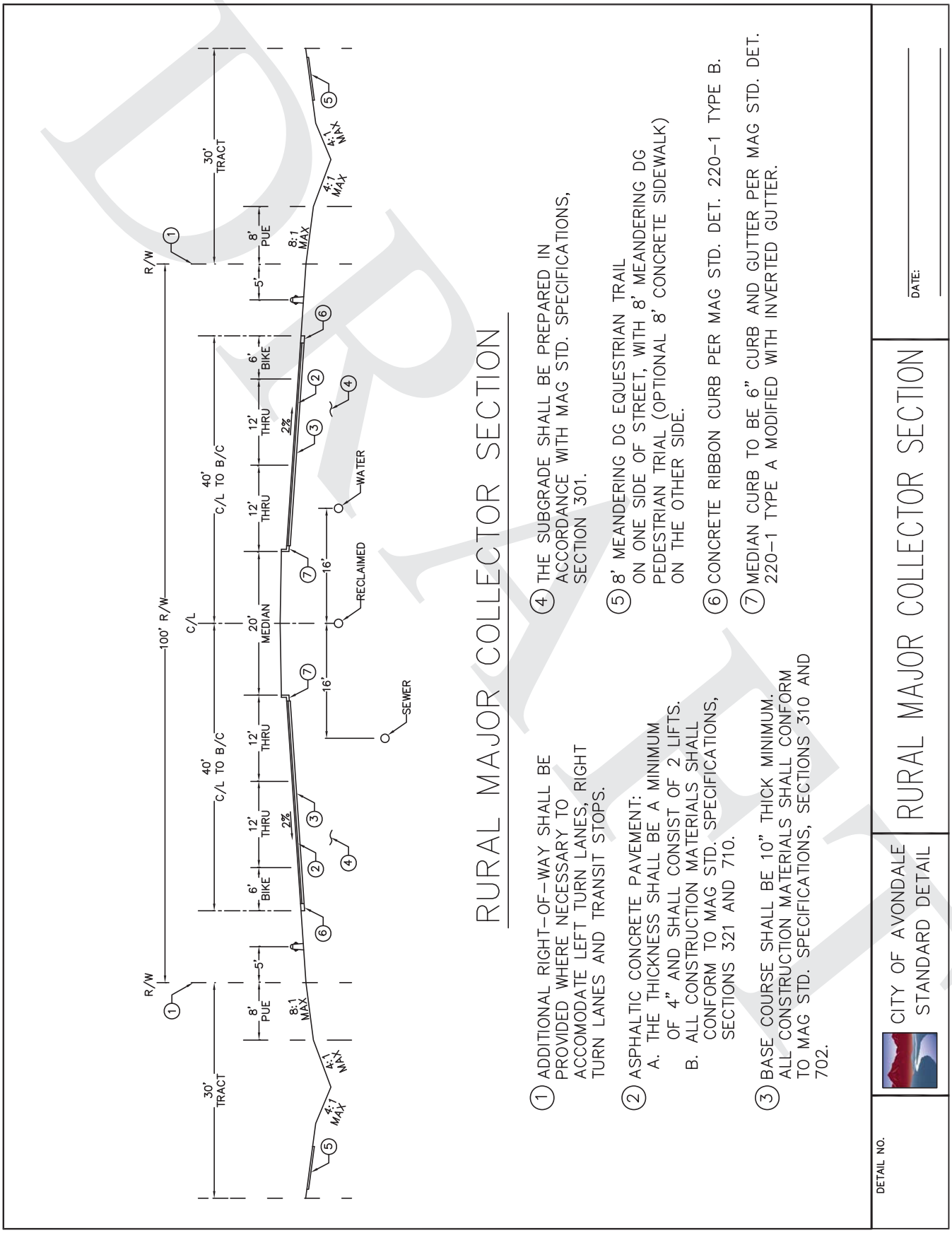
Street Cross Sections

Figure 3-7: Rural Major Collector



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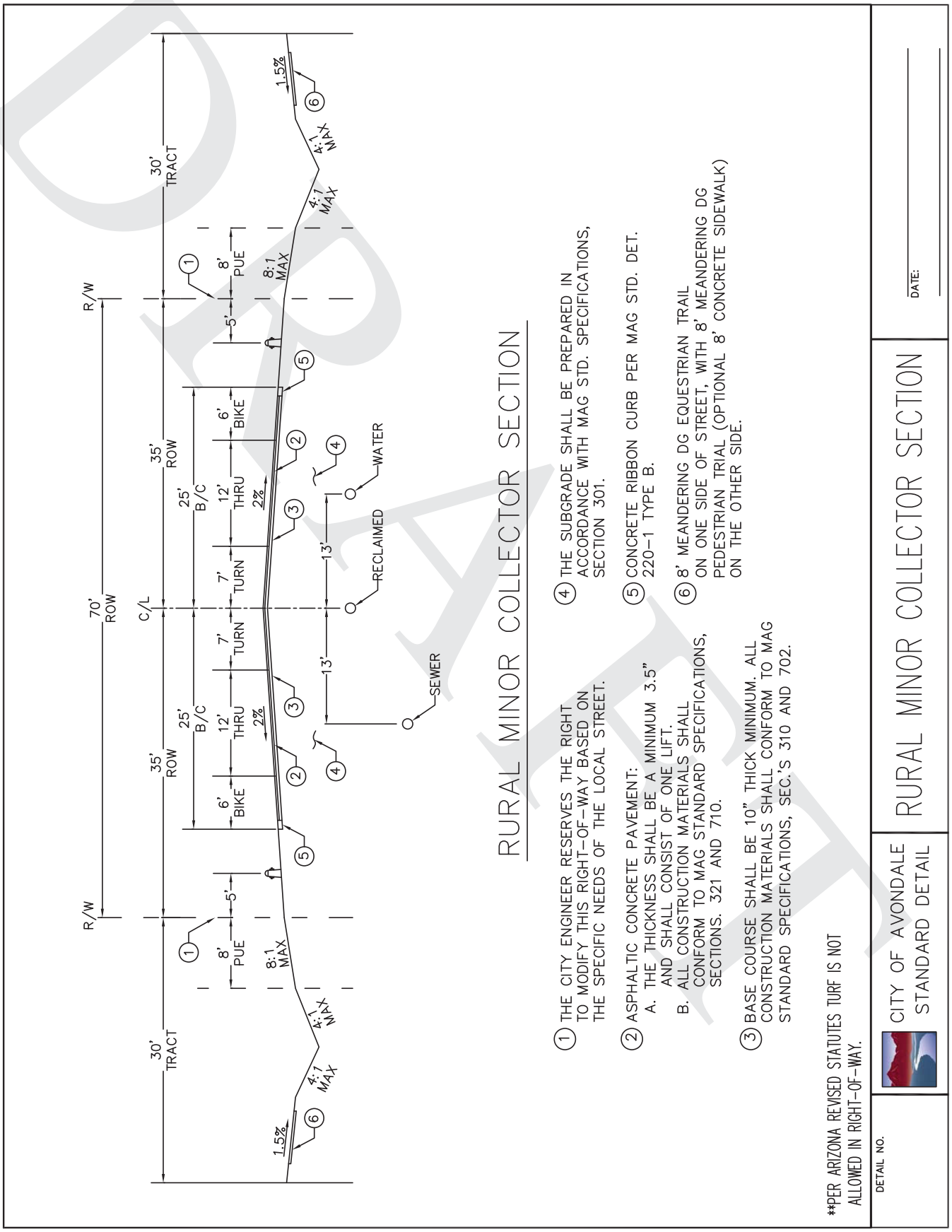
Street Cross Sections

Figure 3-8: Rural Minor Collector



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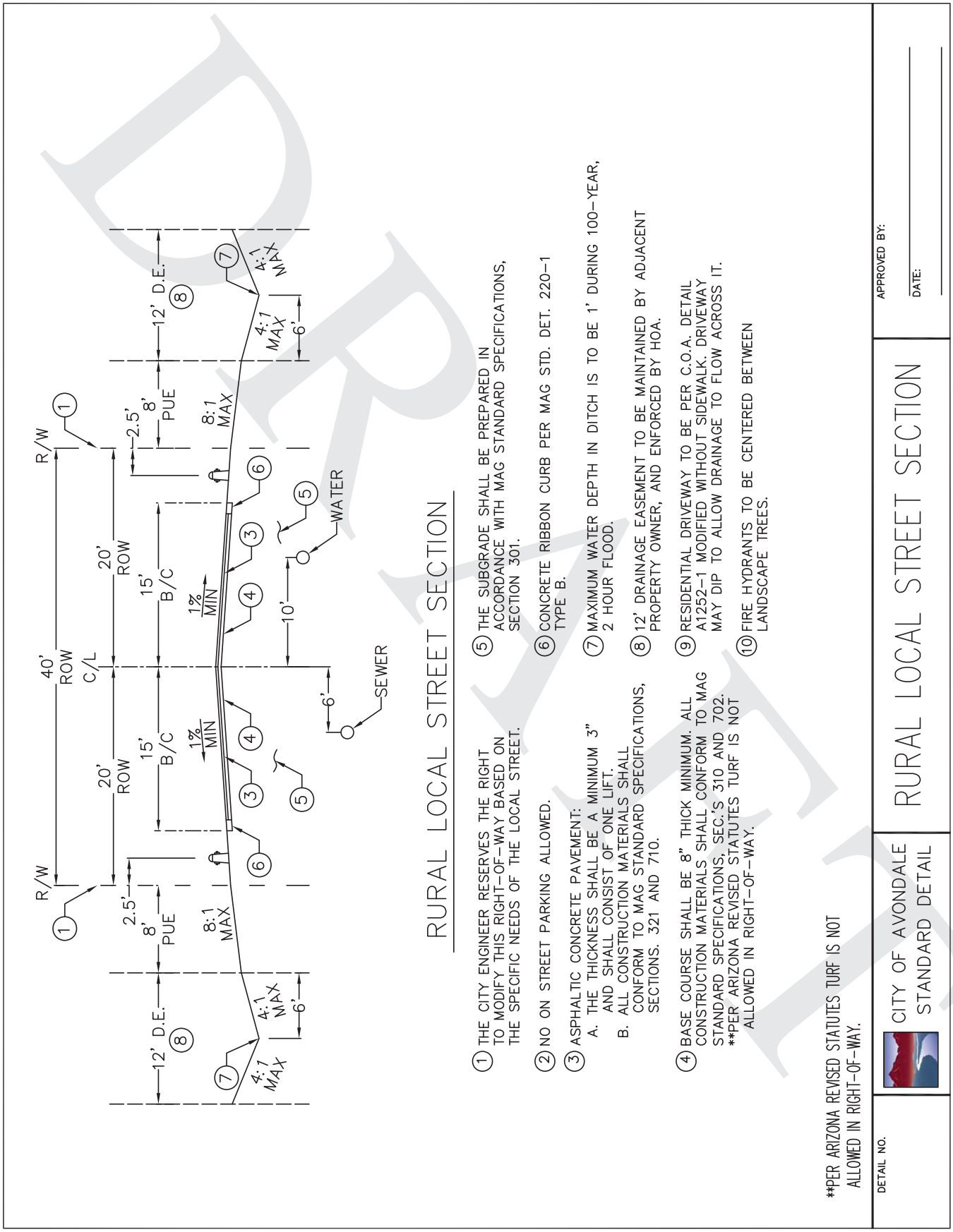
Street Cross Sections

Figure 3-9: Rural Local



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CHAPTER 4: URBAN DESIGN GUIDELINES

Overview

The Sonoran desert environment has attracted people to this region throughout history. The cycle of seasons here brings astonishing diversity in plant life and temperature, light and shadow, texture and color, and quality of life. Indigenous plant life has adapted to the extreme conditions; people too! In doing so, people have developed an appreciation for this environment and a respect for its vitality and beauty. For a large part of the year, outdoor living is a primary component of people's relationship with the environment- both natural and built. This is an inherent theme when it comes to development in the Estrella Foothills area.

Further, Avondale characterizes this southern part of it's boundaries as rural, building upon its heritage of ranching, agriculture, and open territorial feeling. This genuine and contextual sense of place shall be maintained and enhanced as areas within its boundaries develop. Each place should radiate an authentic identity in which the relationship of everything in sight compounds the value of each individual element. The Estrella Foothills design theme shall be reinforced by three guiding principles, principles by which development shall consider and incorporate as the Estrella Foothills area grows:

- Land Form: The Estrella Mountains. These mountains signify a framework by which the relationship of everything in sight respects, responds to, and relates to, thereby compounding the value of each individually and collectively as a built environment.
- Water: The Gila and Agua Fria Rivers. These water bodies signify a fluidity of connections from one space or district to the next. These transitions are recognizable yet logical and memorable.
- Indigenous Landscape: Native plants and people. Build upon the values of the natural environment and incorporate a sense of place unique to this part of Avondale.

Each project shall be evaluated on the basis of its overall framework, its continuity from one development to the next as well as within, and its environmental setting.

In concert with the Estrella Foothills fundamental design principles and their purpose, these design guidelines are intended to accomplish 5 main goals through development:

1. Create community character by creatively controlling architectural and urban variety;
2. Balance the relationship between varying land-uses and development with the natural environment;
3. Integrate entertainment-related uses with environmentally-based recreation by means of open space elements, connections, and circulation;
4. Minimize the visual impact of development through strong site planning;
5. Establish and maintain view corridors to the Estrella Mountains.

Understanding the philosophy of the principles and goals, the Estrella Foothills Specific Plan design guidelines embody the essence of form by which this area shall mature.

Vision

While every community requires variety to accomplish a creative environment, this variety requires control. Determining this vision for the Estrella Foothills will guide all design within its boundary by a collection of styles that have similar design methodologies and gestures, and in turn will contribute to an overall sense of place unique to the Estrella Foothills area.

Styles or descriptions that invoke the physical imagery specific to Estrella Foothills are:

- Spanish Colonial
- Santa Fe
- Prairie
- Santa Barbara
- Ranch Hacienda
- Spanish Mission
- Tuscan
- Italianate
- Mediterranean
- Craftsman
- Post Modern
- Southwest Modern
- Organic

What these styles all share is an agreement in appearance that is recognizable yet varied as they relate to the natural environment of place. Each style is appropriate on its own yet must flow well with its location and proximity to adjacent developments for design consistency and continuity. These styles allow for this to take place compatibly. In the end, the Estrella Foothills shall establish its own unique southwest identity engaging to local residents, regional citizens and visitors alike.

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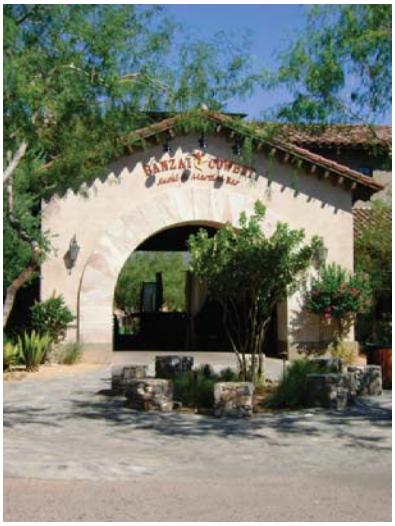
Key Design Elements

1. Pedestrian-connected development. Link development by a network of necessary and recreational access ways that are independent of vehicular traffic and that allows for logical and enjoyable journey from one part of the Estrella Foothills to the next.
2. A Distinguishable Skyline. Organize building mass that emphasizes height differentiation, variety of massing, and range of roof treatments. At urban developments, utilize architectural features such as towers, domes, stepped parapets, spires, etc. for an interesting and identifiable skyline that captures the essence of the prized ridge line of the Estrella Foothills. At a residential level, vary roof lines, materials, and features to accommodate this design ideal.
3. Shade. Critical to development in this environment is shade. Roofed colonnades, trellised pergolas, arcades, awnings, and strong tree canopies contribute to a deliberate and continuous zone of comfort.
4. Building Facades. A variety of rich materials, quality color, and superior detailing that is both a backdrop for the street life yet appealing to the observer.
5. Monumentation. Enforce Estrella Foothill's new identity with strategic monumentation and gateway features in concert with the established style and character of this area. These features must incorporate water as a subtle but known quality echoing the Gila River.
6. Lighting. Create delightful accents, deliberate highlights, and warm glows emanating from structures along with an overall comfortable level of lighting for an evening attraction to the area.
7. Architectural Depth. Authentic depth at building facades such as recessed windows and other opportunities will enhance the quality of design and provide for a beautiful interplay of light and shade.
8. Views. Appropriate siting and orientation of buildings recognize and preserve major vistas to the Estrella Foothills, Gila River, and Agua Fria River.
9. Sustainability. Environmental responsiveness and design principles for sustainable architecture are important elements. Design strategies and building techniques, which minimize environmental impact, reduce energy consumption, and endure over time, should be utilized.
10. Site. The design of the exterior spaces within and between all Estrella Foothills developments is considered the fabric by which the area as a whole is connected. Plazas and courtyards at commercial and office uses, and neighborhood parks and greens at residential uses should be connected by a network of walkway and non-vehicular movement systems to unify the area and accommodate the recreational nature of the area. These connections should be enhanced rather than hindered by development.

Each element must be included as part of every development to be considered an acceptable project in this area.



Materials and Features/General Architecture

Scale, Mass, and Height

- Development at the project perimeter is appropriately scaled and oriented in relation to the surrounding areas.
- Provide appropriate variations in character and scale within and among development areas.
- Provide a well-defined base, middle, and top of building. Break buildings into smaller masses to reduce bulk. Other techniques to deal with building scale and massing include:
    - Variation in roof form and parapet heights;
    - Clearly pronounced recesses and projections;
    - Wall plane offsets per building module;
    - Deep set windows with mullions;
    - Ground level arcades and second floor galleries/balconies;
    - Pronounced, protected, and recessed entries;
    - Vertical accents or focal points, especially at corners and main entries.
- Enhance the architectural treatment at corners, particularly along pedestrian-oriented commercial streets, by changing height, scale, mass, and color to frame the pedestrian zone.

Character

The architectural style in the Estrella Foothills area must be reflective of the area's Vision. Building designs must express color, materials, and details that embody this Vision and relay a sense of context to this part of Avondale. The styles and imagery described in the Vision relate to the natural environment of place and share an agreement of appearance that is recognizably southwest.

- Relate forms, details, color, and materials to their surroundings by compatible or well-considered contrast. Creatively combine new and traditional materials and forms. Style should reflect a natural, organic, and lasting feel.
- Celebrate entries into buildings and into developments overall.
- Estrella Foothills represents a unique experience, a very special place. Integration of all architecture, colors, materials, signage, lighting, and landscape per development and per total area is valued and expected.

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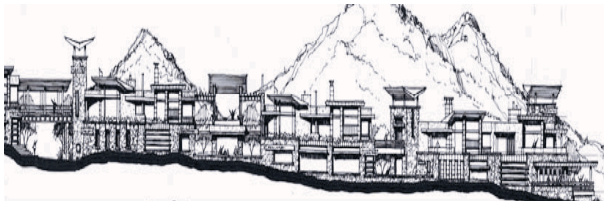
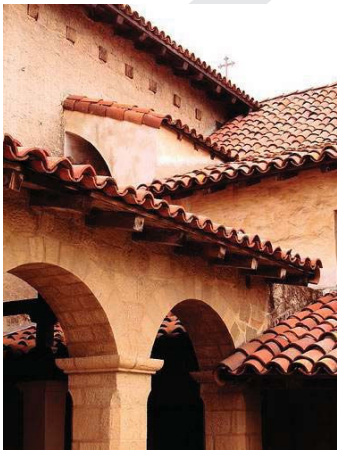
Gateways

- Gateway features shall be architectural in nature with the purpose of expressing a sense of passage from one development to the next introducing a new and special environment.
- Locate gateway features close to curbside corners, and incorporate the sidewalk transition into the gateway feature itself.
- Gateway features should include multiple roof treatments, facades that strongly engage street corners, and massing that is continuous and minimizes the expression of possible stories or floor levels.

Roofs/Roofline

- Different roof treatments complement the idea of appropriate variety for the Estrella Foothills area and supports the principle of form. Roofs may be pitched, flat, domed, vaulted, or a combination of these forms.
- Roofing treatments include:
  - Finished metal (corrugated, standing seam, painted or natural);
  - Clay tile (flat or barrel profile);
  - Concrete tile (flat or barrel profile);
  - Cedar shingle;
  - Slate.
- Use features such as distinct and multiple architectural roof forms, clearly pronounced eaves, and distinct parapet designs and cornice treatments to achieve a well-defined building top.





Facades

- Incorporate the greatest degree of detail of design and authentic materials and articulation at street level.
- Simple, less refined materials may be used on higher facades that are not at the pedestrian level.
- A variety of textures and natural materials should be used to provide visual interest and richness, particularly at the pedestrian level. Materials should be used honestly and reflect their inherent qualities
- Features such as shade structures, deep roof overhangs and recessed windows should be incorporated.
- Express consistent architectural detail and character at all sides of a building.

Façade Shade Treatments

All sidewalks adjacent to buildings require a shade treatment. Treatments include trellises, pergolas, arcades, and awning/canopy systems. Systems should be connected to the façade, but may be stand alone. A cantilevered shade canopy system is also acceptable.

Arcade Systems

- Critical dimension from ground floor to lowest point of the shade structure is 15 feet to 18 feet;
- Column materials include a range from cast stone, stone veneer, and metal/steel;
- Arcade detailing includes varying roof materials, roof color, roof pitch, column massing, column spacing, column materials, and arcade openings from building to building;
- Design system continuous with the façade, not stand alone.

Trellis Systems

- Critical dimension from top to bottom is 12 feet minimum and 18 feet maximum;
- Column materials include wood (minimum 8 inch x 8 inch for columns), square-painted metal, and stone/precast concrete columns;
- Vines;
- Design system continuous with the façade or stand alone.

Pergola Systems

- Critical dimension from ground floor to lowest point of the shade structure is 10 feet to 12 feet;
- Materials include wood, stone/precast concrete, metal/steel;
- Vines;
- Design system continuous with the façade or stand alone.

Awning/Canopy Systems

- Critical dimension from ground floor to the end of the canopy structure is 12 feet minimum to 15 feet maximum;
- Canvas cover shall include a metal bracing/framing system;
- Canopies should be cantilevered, but if columns are needed, provide steel posts with stone veneer;
- Design system to be continuous with the façade, not stand alone.

Window Treatments

- The range of window sizes, shapes and treatments should be extensive.
- Windows and glass should be a dominant feature at commercial uses.
- Shapes and sizes of windows should be related to the specific streetscape.
- Provided glass with mullions and deep recesses for significant shadow lines.
- Exterior glass must be clear. All glass shall be tempered.
- Stained, leaded, etched, beveled and fritted glass, and other types of innovative glazing are encouraged. Reflective glass is not permitted.
- Generously utilize canopy treatments at windows to provide a variety of shapes, sizes, and color to facades.

Metal Accents

- Incorporate metal accents in the following manner:
  - Cantilevered entryway canopy
  - Window railing
  - Window accent
  - Special logo treatment
  - Façade accent panels
  - Lighting features
  - Special sculpture
- Textured or brushed stainless steel, galvanized, sandblasted, patina, rusted, etched and imprinted metals are encouraged in creative applications.

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Materials

- Create a palette of materials associated to the region with rich desert colors, coarse textures, and sustainable qualities. Materials should convey honest expression and permanence while avoiding the look of being applied rather than integrated.
- Materials used shall be high quality, durable, genuine, and code compliant. Acceptable materials include:
  - Sandstone
  - Limestone
  - Native stone
  - Limited precast concrete
  - Stucco (a light dash, sand or smooth finish)
  - Glass
  - Tile (accent only)
  - Wood
  - Textured concrete
  - Sandblasted concrete
  - Corten steel
  - Stainless steel
  - Galvanized aluminum
  - Oxidized copper
  - Exposed aggregate concrete
  - Rammed earth
- Plaster or stucco finishes must be used in combination with other high-quality materials and should not be the primary building material.
- Rich and varying materials are desirable on wall planes, roofs, and the ground plane.
- Materials selected should be consistently expressed through all architectural elements including accessory structures, walls, and signage.
- Interior spaces should be extended into the outdoors both physically and visually when appropriate.

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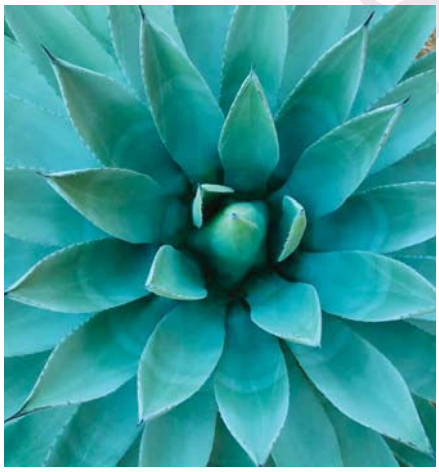
Color

- The desert setting provides the palette for color in the Estrella Foothills area. Desert hues present at both sunrise and sunset provide a natural, native, and quality of color that will enrich each development and enhance the Vision set forth in these guidelines.
- Color is a key feature in the Estrella Foothills area. Color shall not only distinguish one development to the next, but it will also identify a range of appropriate colors per land use. This will help define development zones within the Estrella Foothills area.
- Incorporate color into architectural features.
- Color needs to blend and complement the natural features of the area and not be obtrusive or contrasting.



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Materials and Features/Residential Architecture

The Estrella Foothills residential areas are similarly envisioned to be rich and vibrant communities with open spaces, natural features, pedestrian-connected movements, and other amenities. These architectural styles of Estrella Foothills echo the imagery of the southwest, and respect the cultural and historical heritage which is unique to this part of Avondale. They are compatible styles and complement the southwest design palette for the Estrella Foothills. The five residential styles that are acceptable include:

- Spanish Colonial;
- Hacienda;
- Ranch;
- Territorial/Pueblo; and
- Southwest Contemporary.

While these styles are identified within the overall vision of the Estrella Foothills area, they are specifically identified in order to reinforce and enhance the indigenous feel and sense of place of the area.

The homes in the Estrella Foothills area are intended to relate internally per individual architectural style, yet compliment neighboring developments with this southwest cohesive design quality. Five main principles to incorporate into all residential developments are:

1. Consider using low profile, horizontally-oriented facades by employing simple forms and construction methods. The visual impact must be minimal, and shall be considered from vantage points near and far.
2. Compose building facades with a minimum of two materials and a maximum of three materials. Trim and glazing materials may be in addition to the designated material quantity. Color, massing, shape, and texture are complementary and sympathetic to the adjacent streetscape and natural surroundings. All materials and colors shall meet the qualifications as set forth herein.
3. Incorporate building features such as deep porches and overhangs with exposed structure as these elements enhance the visual quality and readily serve the intended architectural character of the area by including relevant materials and details.
4. Apply authenticity and historically accurate interpretations of the set architectural styles in order to provide for an overall genuine appearance and character of each development. Massing and aesthetics should convey integrity and quality of design.
5. Build “green” by enhancing energy efficiency, using environmentally-responsible materials, providing for safe indoor air environments, providing for efficient water use, and reducing the generation of solid waste.

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Spanish Colonial Architecture

General

Utilize this architectural style in its contemporary form by employing an asymmetrical composition, informal entrances, balconies and colonnades. Provide a simple, yet elegant, design composition with refined details in the fascias, windows, and walls. Limited openings and details lend themselves to elegant, understated focal points and views. Often times, the use of exterior staircases and tower elements complement the visual interest to the building. With one primary building mass and several “wings”, courtyards and terraces are formed to blend with natural grade and create usable outdoor spaces. Typically the main building mass is an L, U or H shaped mass with an entry terrace and arched entry element. The use of a circular or square entry tower can be used as a vertical element to create an interesting visual approach. Often times, the use of second-story balconies is used to break up the large primary mass. Shed and gable roofs forms are the defining rooflines used for this design.

Major Architectural Elements

- Roof forms are typically shed or gable with limited conical roofs. Tile should be used as the roof material.
- Structural supports are typically arched arcades with precast concrete or canterra columns with the use of corbels, beams and rafter tails. Stucco pilasters with decorative trim with arches are also used.
- Exterior materials are usually limited to one primary material with subsequent materials used only as accents around window headers and sills. Stucco eave details and exterior walls are characteristics of these designs; however, painted or whitewashed brick may be used with color, size and texture.

Accent and Detail Elements

- If arched windows and doors occur, they should have a full round arch shape with divided lites. They can be square, rectilinear, round, or oval in shape. French doors should have divided lites also. Windows should be non-reflective and non-mirrored.
- Trim details should include exposed wood rafters and stucco cove details. Chimneys should be simple in design and unornamented. Gable end vents should be decorative. Railings, gates, grilles and fences should be wrought iron or metal.
- Site walls should match the exterior material of the building and should have a simple, understated cap.

Hacienda Architecture

General

Hacienda architecture is primarily designed around a central courtyard as a focal point. Because of the climatic conditions in Arizona, this type of architecture has been used for many years to help compromise the desire for outdoor living with extreme temperatures. The central courtyard typically has a traditional water feature and canopy trees to enhance the beauty of being in this outdoor space. Typically this architectural design has two predominant exterior materials, stone and exterior plaster, to maintain its rustic connection to the past. The roof can be clay-tiled or flat, with timber elements and exposed rafter tails. Parapet walls are capped with artful masonry and stone details. Vertical accent elements are typically stone to give the appearance of a horizontal architectural profile. This architecture is more casual and informal than the Spanish Colonial architecture. Hacienda buildings are L, U or H shaped and forms around a central courtyard. Covered terraces are typically used to transition from one-story to two-story building masses. Separate building masses should be linked with covered walkways for a horizontal appearance.

Major Architectural Elements

- Roof forms can range from shed and gable to flat. No conical roofs are present. Typically, some flat roof masses occur for accent or buildings are entirely designed with flat roofs.
- Structural supports are typically square wood posts (minimum 8” x 8”) with corbels, beams and rafter tails. Square masonry or stucco pilasters are used and columns can be round pre-cast or stone.
- Exterior materials are usually stucco with stone accents that are used to provide distinct contrast to the stucco material. The use of natural earth tone brick may be used upon color, size and texture approval.

Accent and Detail Elements

- Windows and doors should be rectilinear or square in shape. They can be arched, but only in selected configurations. The use of planked shutters should be limited. French doors should have divided lites as well and should be used in applications other than the primary entrance door. Windows should be non-reflective and non-mirrored.
- Trim details should include exposed wood rafters. Chimneys should be simple in design and unornamented. Gable end vents should be decorative.
- Railings, gates, grilles and fences should be wrought iron or metal.
- Site walls should be stone or an approved size, color, and textured brick with a simple, understated cap.

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Ranch Architecture

General

Ranch architecture is most commonly associated with the southwest because of its strong influences to the historical ranch heritage. With its horizontal design, large overhangs, front porches and natural materials, the character of Ranch style is found throughout the state and reminiscent of the past. Typically these buildings are rectilinear, L or H shaped in design to provide a street presence. Much like the Hacienda architecture, Ranch designed buildings are informal and allow for a casual, inviting atmosphere. Courtyards, porches, shaded patios and raised terraces are typically oriented toward to the street to also aid in the inviting character.

Major Architectural Elements

- Roof forms are primarily gable roofs. However, limited use of shed or hip roofs may be used over patios and porches. Typically the roof material is clay tile.
- Structural supports are typically square wood posts (minimum 8”x8”) with corbels, beams and rafter tails. Square masonry or stucco pilasters are used and columns can be round pre-cast or stone.
- Exterior materials are usually stucco with stone accents that are used to provide distinct contrast to the stucco material. The use of natural earth tone brick may be used upon color, size and texture approval.

Accent and Detail Elements

- Windows and doors should be rectilinear or square in shape. They can be arched, but only in selected configurations. The use of planked shutters should be limited. Tiled roof awnings may be used over windows. French doors should have divided lites as well and should be used in applications other than the primary entrance door. Windows should be non-reflective and non-mirrored
- Trim details should include exposed wood rafters. Chimneys should be simple in design and unornamented. Gable end vents should be decorative.
- Railings, gates, grilles and fences should be wrought iron or metal.
- Site walls should be stone or an approved size, color and textured brick with a simple, understated cap.

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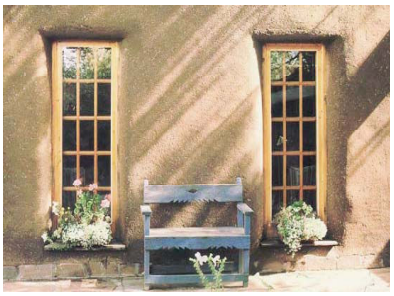
Pueblo/Territorial Architecture



General

Pueblo architecture has roots that go back to the Native Americans that settled in the Southwest. Utilizing what was available, Adobe was the most common building material for these homes. The Adobe was a good material for the hot days and the cool nights of the desert. Today, Pueblo architecture is still present throughout Arizona, although adobe is not always used. Pueblo buildings are typically long, low, rectilinear plans with flat roofs.

Major Architectural Elements

- Roof forms are primarily flat roofs. However, limited use of shed or hip roofs may be used over patios and porches. Typically the sloped roof material is clay tile.
- Structural supports are typically square wood posts with corbels, beams and rafter tails. Square or round pilasters are used and columns can be wood, stucco or stone.
- Exterior materials are usually stucco with stone accents that are used to provide distinct contrast to the stucco material. The use of natural earth tone brick may be used upon color, size and texture approval.

Accent and Detail Elements

- Windows and doors should be rectilinear or square in shape. They can be arched, but only in selected configurations. The use of planked shutters should be limited. Tiled roof awnings may be used over windows. French doors should have divided lites as well and should be used in applications other than the primary entrance door. Windows should be non-reflective and non-mirrored.
- Trim details should include exposed wood rafters. Chimneys should be simple in design and unornamented. Gable end vents should be decorative.
- Railings, gates, grilles and fences should be wrought iron or metal.
- Site walls should be stone or an approved size, color and textured with a simple, understated cap.

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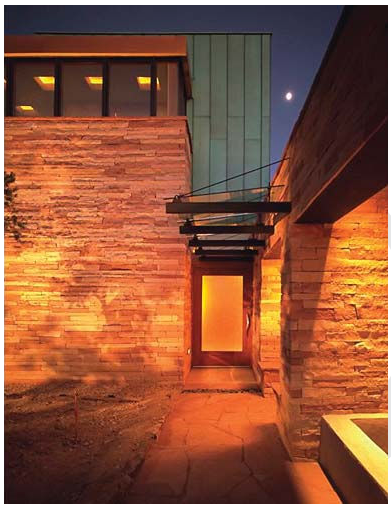
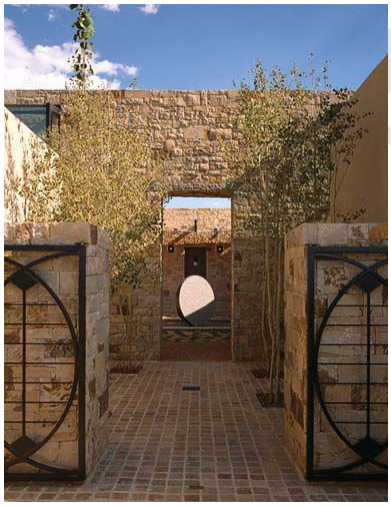


Southwest Modern

General

Southwest Modern architecture is open to interpretation, but is mainly characterized by materials and finishes. It is sensitive to the existing landscape, landforms, and climate. Much like the Ranch style, Southwest Modern utilizes large overhangs to mitigate climate and encourage outdoor living. Many times, this style of architecture tries to create a feeling of bringing the outdoors inside. Various materials are used including gabion walls, concrete, rammed earth, masonry, rusted metals, and zinc. However, all of the materials used keep their "raw" or unfinished form to age naturally and further blend into the desert surroundings as time progresses. Shiny materials and bright colors are usually avoided except to create an accent that clearly contrasts the muted colors of the desert. The homes are generally angular and linear to mimic the sharp angles of the desert mountains, rocks, and other forms. They are also typically one story to maintain a low profile and appear part of the desert.

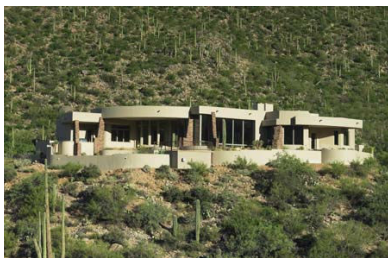


Major Architectural Elements

- Roof forms can vary in shapes including arched, shed, or flat. Typically these roofs are metal and unfinished to create a dark color that blends into the desert as they are exposed to the elements.
- Structural supports are typically square or round with simple design. Corbels and ornament are not part of the design in order to create a finished look.
- Exterior materials can be a wide variety of materials. The key is to have an unfinished, natural, low reflective material to help the design blend into the desert.

Accent and Details

- Windows and doors can be a variety of shapes and sizes. They can have a deep recess to give the appearance of thick walls and respond to the hot climate. Typically, windows do not have divided lites to give the appearance of a modern and finished look.
- Trim details should be simple and non-ornamental. Chimneys should also be simple in design, and non-ornamental.
- Tailings, gates, grilles, and fences should be rusted metal to further blend into the desert.
- Site walls should be stone or another simple material but textured with no ornamentation or cap.



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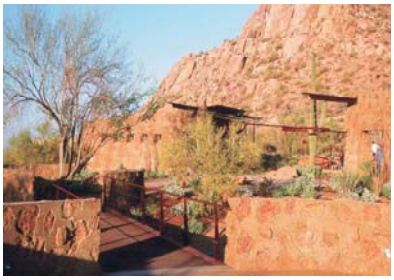
Site Design

Site Planning

- Provide public open spaces such as plazas, courtyards, and terraces with established edges that contribute character to the development regardless of spatial style or use. Vary the size and scale of these spaces to accommodate different functions of outdoor activity.
- Incorporate parks and open space within the fabric of neighborhoods. Consider a hierarchy of these spaces by pocket parks, to neighborhood parks, to community parks.
- Streetscapes should provide continuity among adjacent uses through use of cohesive landscaping, decorative paving, street furniture, public art and integrated infrastructure elements. The streetscape theme and its elements will be simple Old Arizona character, consisting of natural occurring materials. In commercial areas, individual businesses are encouraged to provide street furniture promoting this theme.
- Integrate the development materials and color palette into the landscape and hardscape for continuity and cohesion; install accessories (furnishings, lighting, signage, planting) that are visually interesting and comfortable.
- Creatively incorporate special paving materials at public open spaces with interesting patterns, colors, and details in concert with the palette of materials used at the development. Complement tree plantings and the organization of planting beds with paving patterns and alternating materials.
- Provide focal features at public spaces that have purpose and quality aesthetics.
- Consciously and imaginatively incorporate art into all public open spaces.
- Provide lush plantings and a dominant tree canopy for shade and visual interest.
- Incorporate water and shade to complement these public spaces. Where people gather, shade is required. Line walkways with trees if a structural system is not designed.



Landscape

- Landscape design should respond to the desert environment by utilizing a variety of mature landscape materials indigenous to the arid region.
- The character of the area should be emphasized through the careful selection of planting materials in terms of scale, density, and arrangement.
- The landscaping should complement the built environment while relating to the various uses.
- Consider formal grid patterns of trees at streetscapes, plazas, courtyards, and squares. Natural planting arrangements may occur at buffers, neighborhood parks, and areas associated with recreation.

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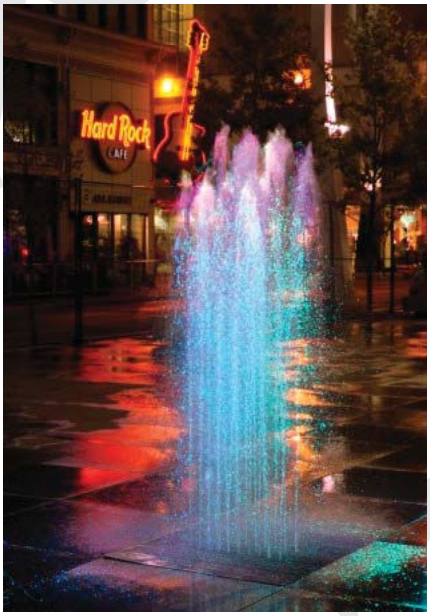
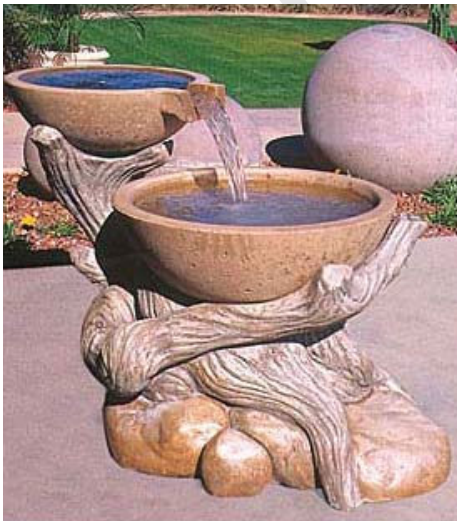
Water

- Water is a vital design component whether visual, auditory, or interactive as it provides a sense of coolness and connection to the Gila River. Incorporate water features of varying size and purpose throughout each development site.
- Locate water features strategically that complement the pedestrian experience and create focal places for activity.
- Incorporate water into arrival sequencing and monumentation at key areas or specific development gateways.





Signage

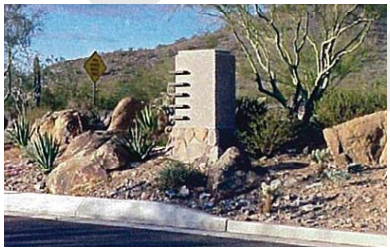
Signs within the Estrella Foothills area require administrative approval per Zoning. Signs shall meet the standards as set forth in the City's signage ordinance. These design guidelines establish the aesthetic criteria expected for signs in this area.

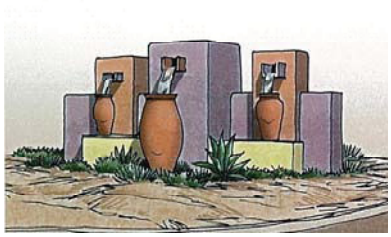
- Signage should consider the distinctive qualities and character of the surrounding context in terms of materials and color as defined herein, location, and illumination.
- Signage should be designed to be complementary to the architecture, landscaping and design theme for the site, with due
- Consideration for visibility and legibility. Appropriately design and scale these elements for both identification and integral ornamentation purposes.

Lighting

Lighting can create the feeling of different environments within the same site. Because of the night time sky, limit lighting to its basic intent in order to make each site a subtle environment from the street, the neighbors, and the community, rather than focal points. Lighting should provide both an aesthetic and safety value to an area, as well as enhance and encourage evening activities.

- Lighting should not line driveways, sidewalks and paths in order to prevent a “runway” type feel and look to the landscape and site.
- All lighting should be architecturally integrated into any structure. All security lighting shall be motion activated. Any flood lights shall be used at a minimum and located directly beneath overhangs.
- The number of exterior lighting fixtures shall be limited to lighting areas safely yet efficiently.
- No colored bulbs are allowed except for seasonal events or decorative lighting effects.
- Lights aimed at building surfaces, or using the reflection of the building surface as the primary source of pedestrian light is not permitted.
- Street, pedestrian, parking lot, and decorative light fixtures shall match the style of fixtures shown in these design guidelines. The source of light shall be concealed from view as not to disturb neighbors and the streetscape. Streetlight poles are also important lighting elements that establish the look and character of the Estrella Foothills. These poles should be compatible with the fixtures defined herein.
- Energy efficient lighting systems are encouraged and all light fixtures are to be cut-offs and shielded to prevent night sky pollution.
- Avoid lighting the surface of garage doors. Indirect lighting recessed into eaves above the side walls adjacent to garage doors or diffused wall mounted light fixtures providing light on a wall surface is encouraged. No lenses or exposed light sources are permitted.
- Pedestrian-scaled lighting is required along all streets and in all public plazas, courtyards, and open spaces where people gather.
- Pedestrian-scaled lighting fixtures should average between 16’ and 22’ in height. Public parking area lighting is not to exceed 25’ in height.





Gateway Monumentation

- Visually enhance and identify the Estrella Foothills area with Primary, Secondary, and Neighborhood/District Gateway monuments and intensive landscaping that complements the area and overall vision.
- Locate gateway monumentation throughout the Estrella Foothills area strategically as a point of reference for all visitors as well as providing for a strong "first impression" to the area. Monuments should be focal features distinguishing this area from other parts of Avondale, and be distinctive and recognizable when approaching from a distance.
- Enhancing gateway areas should be a cooperative investment and should be reinforced through higher private development design and public infrastructure standards.

Primary Gateways

Primary gateways are focal points typically located around highway interchanges, major entrances to the Estrella Foothills area, or primary entrances to key destinations.

Features include:

- Water in terms of a fountain element, reference to the Estrella Mountains, and indigenous plant material.
- Materials that are distinctive and recognizable as specified herein, and utilized in a creative manner.
- Enhanced landscaping in the public right-of-way and on private property that identifies, complements, and strengthens the recognition of this area.
- Consider incorporating other elements such as lighting, art, and unique signage and graphics.

Secondary Gateways

Similar to Primary Gateways, these monuments serve as focal points around major street intersections and entrances into the Estrella Foothills area. Features include those elements listed for Primary Gateways with the exception of scale.

Neighborhood/District Gateways

These gateways highlight particular neighborhoods and business districts. They are typically located at major entrances that help announce a development and transition from the public setting of major corridors to the more private setting of a neighborhood or business district. Features include those elements listed for Primary Gateways with the exception of scale.

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CHAPTER 5: ECOTOURISM, CONSERVATION, AND NATURAL AND HISTORIC AREAS

Ecotourism, Wildlife, and Natural Areas

The land in and around the Gila River and Agua Fria River are some of the most environmentally sensitive and significant areas within Estrella Foothills and the City of Avondale. Preservation of these areas and protection of the native wildlife in the area is a priority of the City. Additionally, views of the Estrella Mountains, and the mountains themselves, have been identified as among the most important assets in the area. The beds of the two rivers are also key locations for the extraction of sand and gravel. At the same time, the area is home to a wide variety of birds and other wildlife. All of these factors must be considered and accounted for when site planning and developing the areas near the rivers.

As discussed in the Land Use Element of this plan, an important factor in future development of Estrella Foothills will be the melding of natural areas, hiking trails, open spaces and high intensity commercial and residential development through the use of appropriately designed buffers. The Festival District and Village District are envisioned to be developed close to the Gila River, with pedestrian trails connecting the developments to trails in and along the Gila River. These trails will ultimately connect to trail systems further west along the Gila River, east into Phoenix along the Salt River, and north along the Agua Fria River. This provides an opportunity to connect Estrella Foothills residents with other recreational activities in other parts of the Valley, but also to bring people from across the Valley to Estrella Foothills.

As part of the development of the Village and Festival Districts, a trail cross-section shall be designed that provides adequate connection between the developments and trails along the Gila River, while maintaining appropriate buffers between the trail and development.

The Estrella Mountains are frequently cited as one of the most popular aspects of Estrella Foothills among area residents. As high-intensity development occurs in the area, the development will need to ensure that view corridors of the mountains are preserved for current and future residents. View studies should be conducted as part of site planning for the area. Equally important is the preservation of the mountains themselves. To date, the City of Avondale has not had a hillside preservation ordinance. Creating regulations to preserve the mountains will become critical for the future of Estrella Foothills as development occurs south of the Gila River. The City should create a hillside ordinance.

Current and future development relies on minerals extracted from nearby rivers, especially the Gila River. The City recognizes the importance of mineral extraction and processing operations in Estrella Foothills. During site planning, buffering measures will need to be taken to ensure that mineral extraction and processing operations do not adversely effect the future development envisioned by this plan. Likewise, the City needs to work closely with operators of mineral extraction and processing to ensure that expansions of these operations do not impinge on current or future development. Finally, the City needs to support a strong partnership with operators within Estrella Foothills to develop mutually beneficial plans to provide effective means for supporting long term reclamation plans to aid in the development of recreation and trail opportunities along the Gila River and Agua Fria River, and to ensure that development near the rivers can coexist with existing and future sand and gravel operations.

Bird watching and wildlife viewing is a major tourist attraction for the City of Avondale, increasing the tourist activity around the Gila River in Estrella Foothills is an important factor for the future growth of the area. The area is home to a multitude of bird and wildlife species (see Appendix B for a more complete list compiled by the Arizona Game and Fish Department), especially in the Base and Meridian Wildlife Park, located at the Avondale Boulevard bridge over the Gila River. The City needs to continue to work closely and partner with other governmental agencies, including the Arizona Game and Fish Department, the Bureau of Land Management, Maricopa County Flood Control District and other governmental agencies, to implement a

program that identifies the best areas for bird watching and wildlife viewing; to ensure that adequate safe and legal access is provided to those areas; and to integrate bird watching and wildlife areas into trail systems along the Gila River to expand passive recreational opportunities in the area. The trail system should include such things as trailhead signs with maps, program opportunities and access guides. These areas could also include interpretive exhibits to relay basic information about the site and the Gila River itself. Additionally, during site planning for development near the Gila River (on both the north and south sides), measures need to be taken to ensure that noise and light from the development do not adversely impact trails, natural areas, and wildlife viewing corridors.

Archeological Sites

The City of Avondale complies with and supports the Antiquities Act of 1906, the Arizona Antiquities Act of 1960, and the North American Graves Protection and Repatriation Act (NAGPRA) of 1990. The Gila River and Agua Fria River have a long history as home to various Native American settlements. As such, the Estrella Foothills area likely contains important archeological sites. Maps of exact archaeological locations are not easily attainable by the public to avoid looting and unauthorized excavation of sites. In order to preserve the archeological heritage of Estrella Foothills, developers need to investigate the archeological significance of their sites prior to commencement of development.

Prior to issuance of a permit for construction or grading on a site for new development within the Estrella Foothills area, the developer shall obtain an Archaeological Class 1 survey from the Arizona State Museum and provide it to the City. The survey contains the results of literature and records research of the site and within one mile.

The City should adopt an Ordinance to protect prehistoric cultural resources. The Ordinance should require a Class 3 site survey by a those listed as permitted to work on State lands on the Arizona State Museum website, and should contain a requirement that should site work uncover unanticipated cultural resources all work must stop and the site investigated by an archaeologist on the Arizona State Museum website to determine further courses of action.

Non-potable Water Lines

Perhaps the most critical resource we rely on in our quest for sustainability is water. As Avondale continues to grow and develop, the demand for water increases. Avondale is looking for ways to wisely manage our water supply to ensure that sufficient water will be there for our future generations. One approach that has been found to provide a substantial amount of additional water for communities is the reclamation of wastewater produced by the communities themselves for unrestricted non-potable purposes, such as landscape and market crop irrigation, industry, cooling towers, air conditioning, construction, vehicle washing, and environmental enhancement. This is done by providing dual distribution systems, one for potable and one for non-potable water.

The City should study the costs and benefits of using non-potable water in future developments and determine if using this system benefits the area and the City as a whole. Estrella Foothills could be the first area within Avondale to have the benefits of lower cost non-potable water available for use. Non-potable lines would be constructed at the same time as the potable water and sewer lines. As development within the Estrella Foothills continues the line would be tied into a water source, and HOAs and commercial properties would be notified that the non-potable water line has been tied into a source and is now available for use.

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CHAPTER 6: IMPLEMENTATION

Land Use

- Develop a Master Plan/Concept Plan for the Destination Festival District, Village District, and River Walk District
- Develop appropriate zoning for the new districts including design guidelines, development standards, landscaping requirements adjacent to River Walk, building orientation, parking lot (location, orientation, and screening)
- Develop design standards/themes for Corporate Park and Business Park / Industrial designations
- Conduct a view study for areas that have view sensitivity (views to canal, river, mountains, natural areas)
- Conduct a sound/noise study to evaluate and mitigate noise impacts of the adjacent freeway and PIR on the residents of the Village District. Evaluate noise generated by developments within the Village District on existing rural neighborhoods in the area.
- Prioritize public investment in features associated with Festival District, Village District, and River Walk District: amphitheater, parks, plazas, public art, district appropriate signage, pedestrian walkway, bridges, and way-finding kiosks.
- Coordinate and develop Durango Regional Channel design guidelines applicable to length of channel (and extending outside of the Estrella Foothills Area).

Economic Vitality

- Develop a Economic Development Strategic Plan for this area.
- Incorporate Estrella Foothills plan into the Economic Development Department's promotional materials and strategic plan.
- Promote Estrella Foothills as a unique corporate site (with amenity-based qualities that make it distinct from the City Center), for either industrial or office functions.
- Promote sports and entertainment uses as part of an entertainment hub concept that would relate to both PIR and the amenity of the riverfront, with the potential for enhanced transportation and other attractions in the future.
- Work closely with PIR to encourage future development and expansion opportunities for their property.

Circulation

The following roadway improvements are recommended:

- Litchfield: Construct two lane roadway section. Preserve arterial R/W and classification.
- Dysart: Upgrade to a 4 lane arterial classification from Southern to Broadway. Construct as a 4-lane facility.
- 127th: Classify as Major Collector. Construct 2 lane section Elwood to Roeser. Construct 4 lane section Roeser to Southern. Construct 4 lane section north of Vermeersch/Dysart.
- El Mirage: Maintain arterial classification and widen to 4 lanes from Lower Buckeye to Indian Springs. Classify as a Major Collector and construct 2 lane section south of Indian Springs.
- 119th: Classify as a Major Collector and construct 2 lane section from Lower Buckeye to Southern except construct 4 lanes from Roeser to Broadway.
- Avondale: Widen to 6 lanes and maintain arterial classification.
- 111th: Classify and Construct 2 lane Minor Collector section.

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- 107th: Maintain arterial classification and widen to 4 lanes from Lower Buckeye to Southern. South of Southern classify as Major Collector and construct 2 lane section.
- Vermeersch: Classify and construct to Minor Collector section.
- Lower Buckeye: Maintain arterial classification. Widen to 4 lane section.
- Elwood: Classify and Construct 2 lane Minor Collector section.
- Broadway: Maintain Arterial Classification and widen to 4 lane section.
- Roeser: Classify and Construct 2 lane Minor Collector section.
- Southern: Maintain Arterial classification and widen to 4 lane section from Dysart to 107th. West of Dysart classify as Major Collector and construct 2 lane section.
- Indian Springs: Maintain Arterial classification and 4 lanes. Widen and upgrade to meet 4 lane arterial cross-section standards.
- Study the feasibility of the proposed Agua Fria Parkway as development opportunities arise in the future to determine the cost, feasibility, and improvements needed to construct this street.

Ecotourism, Conservation, and Natural and Historic Areas

- Develop a trail cross section of connections between the Gila River and development.
- Conduct view studies as part of site planning to preserve views to the Estrella Mountains.
- Create a hillside ordinance to preserve the mountains.
- Implement a wildlife program that identifies bird watching and wildlife viewing areas.
- Adopt an ordinance to protect prehistoric cultural resources.
- Study the costs and benefits of using non-potable water in future developments.

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APPENDICES

Appendix A: Key Model Input Value Assumptions A-1

Appendix B: Listed Species B-1

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Appendix A: Key Model Input Value Assumptions

Appendix A. Key Model Input Value Assumptions

Description	Abbreviation	Orig. acres	Adj. acres	Original Density Target (5)	Density Target	Dwelling Units Target	% allocated to other uses	% assumed to be intensely	FAR (on gross-net basis)	Programmed SF for non-residential uses	Total Construction Cost, per SF or unit	Total Bldg Value (incl. land for res.)	% leased	ADDED Land Value/SF (with	Net leasable	Scheduled Peak Occupancy	Residential Rental Rates (per unit/per year)	Residential Occupancy Rate	Commercial lease rates (per SF/year)
Business Park / Industrial	BP/I	220	0	0	0	0	0%	0%	29.75%	2,853,594	$95	$137	75.0%	$3.00	100%	95%	$0	0%	$7.50
Corporate Park	CP	295	0	0	0	0	0%	0%	29.75%	3,824,230	$160	$230	75.0%	$3.50	100%	95%	$0	0%	$20.00
Destination Festival District	DFD	129	97	0	0	0	25%	70%	18.70%	787,487	$125	$180	50.0%	$4.00	100%	95%	$0	0%	$20.00
Specialty regional retail/rests.		0	32	0	0	0	0%	0%	18.70%	262,496	$120	$173	50.0%	$5.00	100%	95%	$0	0%	$22.00
Destination Entertainment / Resort	DE/R	522	131	0	0	0	75%	0%	12.75%	725,339	$140	$201	50.0%	$3.00	100%	95%	$0	0%	$20.00
Resort		0	392	0	0	0	0%	15%	17.00%	435,204	$160	$230	0.0%	$5.00	0%	0%	$0	0%	$0.00
River Walk District	RD	210	147	12	17	2,518	30%	0%			$110,000	$183,425	0.0%	$0.00	0%	0%	$10,200	92%	$0.00
Specialty regional retail/services		0	31	0	0	0	0%	0%	18.70%	256,346	$120	$173	50.0%	$5.00	100%	95%	$0	0%	$22.00
Office		0	31	0	0	0	0%	0%	29.75%	407,823	$175	$252	80.0%	$5.00	100%	95%	$0	0%	$20.00
Freeway Commercial	FC	36	0	0	0	0	0%	0%	18.70%	289,988	$110	$158	50.0%	$5.00	100%	95%	$0	0%	$22.00
Commercial	C	59	0	0	0	0	0%	0%	18.70%	477,339	$115	$165	50.0%	$5.00	100%	95%	$0	0%	$22.00
Neighborhood Commercial	NC	51	0	0	0	0	0%	0%	18.70%	415,432	$115	$165	60.0%	$5.00	100%	95%	$0	0%	$22.00
Village	V	40	32	12	15	474	20%	0%			$110,000	$183,425	0.0%	$0.00	0%	0%	$10,200	92%	$0.00
Specialty regional retail/rests.		0	8	0	0	0	0%	0%	18.70%	64,351	$120	$173	50.0%	$5.00	100%	95%	$0	0%	$22.00
Mixed Use	MU	24	19	12	15	288	20%	0%			$110,000	$183,425	0.0%	$0.00	0%	0%	$10,200	92%	$0.00
Local/regional retail		0	2	0	0	0	0%	0%	18.70%	19,550	$120	$173	50.0%	$5.00	100%	95%	$0	0%	$22.00
Service offices		0	2	0	0	0	0%	0%	29.75%	31,102	$170	$244	80.0%	$5.00	100%	95%	$0	0%	$20.00
Multi-Family	MF	24	0	12	12	293	0%	0%			$110,000	$183,425	0.0%	$0.00	0%	0%	$10,200	92%	$0.00
High Density Residential	H	230	0	8	8	1,840	0%	0%			$110,000	$183,425	0.0%	$0.00	0%	0%	$10,200	92%	$0.00
Medium High Density Residential	MH	375	0	4	4	1,501	0%	0%			$110,000	$183,425	0.0%	$0.00	0%	0%	$10,200	92%	$0.00
Medium Density Residential	M	811	0	3	3	2,028	0%	0%			$150,000	$250,125	0.0%	$0.00	0%	0%	$13,200	95%	$0.00
Low Density Residential	L	1,293	0	1	1	1,293	0%	0%			$150,000	$250,125	0.0%	$0.00	0%	0%	$13,200	95%	$0.00
Rural Low Density Residential	RL	464	0	1	1	464	0%	0%			$150,000	$250,125	0.0%	$0.00	0%	0%	$13,200	95%	$0.00
		4,783				10,699													

Resort sub-model					
Year	# of rooms	SF/Room	Occupancy Rate	$ per night	$ per room per year
2017	300	500	75.0%	$150	$41,063
2027	300	500	75.0%	$150	$41,063

DRAFT

DRAFT

Appendix B: Listed Species

Listed species are among the most common in the Estrella Foothills area near the Gila River; other species may also be encountered. Letters following bird names indicate whether the species is primarily observed in the Summer (S), Winter (W), or as a year-round resident (R).

Birds

Pied-billed grebe, R
Double-crested cormorant, R
Least bittern, R
Green heron, r
Great blue heron, R
Snowy egret, R
Black-crowned night heron, R
Turkey vulture, S
Cooper's hawk, W
Red-tailed hawk, R
Bald eagle, W
Northern harrier, W
Osprey, W
American kestrel, R
Gambel's quail, R
Yuma clapper rail, S
Virginia rail, R
Sora, W
Common gallinule, R
American coot, R
Killdeer, R
Common snipe, W
Spotted sandpiper, W
Least sandpiper, W
Mallard, R
Gadwall, W
Pintail, W
Green-winged teal, W
Northern shoveler, W
American widgeon, W
Ring-necked duck, W
Common merganser, W
Ruddy duck, W
White-winged dove, S
Mourning dove, R
Rock pigeon, R
Greater roadrunner, R
Barn owl, R
Great horned owl, R
Western screech-owl, R
Common poorwill, S
Lesser nighthawk, S
Black-chinned hummingbird, S
Anna's hummingbird, R
Belted kingfisher, W
Northern flicker, R
Gila woodpecker, R
Ladder-backed woodpecker, R
Western kingbird, S
Ash-throated flycatcher, S
Black phoebe, W
Say's phoebe, W
Rough-winged swallow, S
Cliff swallow, S
Loggerhead shrike, W
Verdin, R
Bewicks's wren, W
Cactus wren, R
Marsh wren, W
Northern mockingbird, R
Black-tailed gnatcatcher, R
Ruby-crowned kinglet, W
American pipet, W
Phainopepla, R
Common starling, R
Orange-crowned warbler, W
Lucy's warbler, S
Yellow-rumped warbler, W
Common yellowthroat, S
Northern cardinal, R
Abert's towhee, R
Black-throated sparrow, R
Dark-eyed junco, W
White-crowned sparrow, W
Song sparrow, R
Northern oriole, S
Western meadowlark, W
Red-winged blackbird, R
Yellow-headed blackbird, W
Brown-headed cowbird, S
Brewer's blackbird, W
Great-tailed grackle, R
House finch, R
House sparrow, R

Source: Arizona Game and Fish Department

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Appendix B: Listed Species Continue

Mammals

Western pipistrelle (bat)
Desert cottontail rabbit
Black-tailed jackrabbit
Harris's antelope squirrel
Botta's pocket gopher
Desert pocket mouse
Merriam's kangaroo rat
Beaver
Cactus mouse
Deer mouse
Southern grasshopper mouse
Arizona cotton rat
White-throated wood rat
Muskrat
Coyote
Raccoon
Badger
Spotted skunk
Striped skunk
Bobcat
Collared peccary (javelina)
Mule deer

Amphibians

Woodhouse toad
Sonoran desert toad
Bullfrog
Rio grande leopard frog

Reptiles

Red-eared slider (turtle)
Texas spiny softshell turtle
Western banded gecko
Desert iguana
Zebra-tailed lizard
Desert spiny lizard
Ornate tree lizard
Long-tailed brush lizard
Common side-blotched lizard
Tiger whiptail (lizard)
Gila monster
Coachwhip (snake)
Gophersnake
Long-nosed snake
Western diamondback rattlesnake
Sidewinder (rattlesnake)
Mojave rattlesnake

DRAFT

Source: Arizona Game and Fish Department

ARIZONA
ROCK
PRODUCTS
ASSOCIATION

CITY OF AVONDALE
MAY 14 2009
DEVELOPMENT SERVICES

May 6, 2009

Scott Wilken
Development Services
11465 W. Civic Center Drive, Suite 110
Avondale, AZ 85323-6894

RE: The Estrella Foothills Area Plan

Dear Scott,

Thank you for your opportunity to talk to you on Friday, May 1 regarding the Estrella Foothills Area Plan. The Arizona Rock Products Association and its members would like to be included in upcoming discussions and serve as a resource to the City. We would like to continue communications regarding this important project and how our industry can play a role in its success.

For over 50 years, the Arizona Rock Products Association (ARPA) has been providing representation for over 41 member companies involved with the production of aggregates, asphaltic concrete, ready mix concrete, asphalt, lime products, and portland cement. Our members include over 63 associate members providing related transportation, contracting, and consulting services.

After talking to you and reading the letter that went out to property owners in January, ARPA became aware of the need to communicate our interest in the project, it's impact on the aggregate industry and a desire to be identified as an significant stakeholder.

We are hopeful the study will recognize the importance of the local mining industry as not only a vital source of materials, but also as a provider of needed jobs, tax revenues and responsible community oriented companies within this area plan. Additionally, ARPA requests that alternatives included in the plan will take into account the benefits of working with local aggregate operations.

Please feel free to contact me if you have any questions. I am looking forward to sitting down with you soon to discuss how ARPA can be involved.

Regards,

Steve Trussell

Steve Trussell

cc: Mayor Marie Lopez Rogers
Vice Mayor Ken Weise
Councilmember Jim Buster
Councilmember Stephanie Karlin
Councilmember Jason Earp
Councilmember Frank Scott
Councilmember Jim McDonald

916 West Adams Street • Phoenix, AZ 85007-2732
(602) 271-0346 • Fax (602) 255-0363 • www.azrockproducts.com

June 5, 2009

Ms. Tracy Stevens
Planning Manager
City of Avondale
11465 W. Civic Center Drive, Suite 110
Avondale, Arizona 85323-6804

RE: Proposed Estrella Foothills Area Plan

Dear Ms. Stevens:

As the manager of the property referred to as Lakin Ranch, I would like to take this opportunity to formally object to the Estrella Foothills Area Plan *("Preferred Alternative Land Use Plan")* currently proposed per the City of Avondale website. Our objections to this Land Use Plan are as follows:

1. There is one large regional park indicated within the entire boundary of Lakin Ranch. We feel that multiple smaller parks, identified within and coordinated with development phases, all connected by the various pedestrian accessible corridors best suits this development. Previous coordination between our consultants and City staff has resulted in staff concurrence with this philosophy. In addition, we believe that this issue should not be addressed by the General Plan, and instead should be a land planning issue relative to Lakin Ranch.

2. The Land Use Plan has the entire Durango Channel within the Lakin Ranch development. This has not been coordinated with the Lakin family. Flood Control District documentation estimates this facility to cost between $14 million and $18 million. This is a tremendous burden to place on the property and no allowance has been proposed for reimbursement/payment for these facilities.

3. We oppose the concept of a narrow Riverwalk district within the Lakin property. The Durango Channnel is not a river, instead it is proposed as a large regional storm drainage facility.

4. Two major collectors (119th and 127th Ave) are proposed to bisect the property at half section lines. These collector cross-sections consist of 4-lane divided roadway within 100 foot right of way. We object to these roadways for the following reasons:
    * They serve minimal traffic impact as they basically extend from Elwood to Southern

* Each requires a bridge over the proposed Durango Channel
* Each crosses the 11 foot diameter reclaimed waterline that serves the Palo Verde nuclear plant. These crossings are very expensive, and can only be constructed during one two-week period every year.
* Each traverses through small county land parcels that could never participate in the construction cost.
* Each serves to further divide the property into small tracts that will not result in a cohesive master planned community.

A reasonable alternative would be to terminate each of these roadways from the north at Broadway Avenue.

5. The Land Use Plan includes an East/West major collector proposed south of Broadway which serves no significant traffic relief and requires a bridge over the Durango channel and further segments the property.

6. We oppose the proposed Land Use Plan's density requirements reflected on Lakin Ranch.. Our representatives submitted a proposed land use plan to staff on March 2 that contains significantly less high density and more medium density uses. We believe that our proposal results in similar project density with significantly more ability to create a meaningful master planned community.

7. The proposed Land Use Plan reduces the residential component of Lakin Ranch into a series of eighteen (18) individual islands, each one separated by either a major roadway or a major utility facility.

This concludes our preliminary evaluation of the proposed Land Use Plan. Please feel free to contact me if you have any questions regarding this evaluation and thanks very much for your consideration.

Sincerely,

Tom Blake

Tom Blake
Journey Land Group

cc: Mr. Scott Wilkens

CITY COUNCIL REPORT

SUBJECT:
Discussion on Naming of American Sports Center

MEETING DATE:
October 12, 2009

TO: Mayor and Council

FROM: Sammi Curless, Assistant to the Mayor and Council (623) 333-1613

THROUGH: Charlie McClendon, City Manager

PURPOSE:

Mayor Lopez Rogers would like to discuss the naming options available for American Sports Center in honor of Randall McDaniel.

ATTACHMENTS:

Click to download

No Attachments Available