Notice of Public Hearing of the Planning & Zoning Commission of the City of Yuma

Pursuant to A.R.S. § 38-431.02, notice is hereby given to the members of the Planning & Zoning Commission of the City of Yuma and to the general public that the Planning & Zoning Commission will hold a hearing open to the public on January 27, 2020, at 4:30 p.m. at the Public Works Training Room, 155 W. 14th St., Yuma, AZ.

Agenda
Planning and Zoning Commission Meeting

Public Works Training Room
155 W. 14TH St.
Yuma, AZ

Monday, January 27, 2020, 4:30 p.m.

CALL TO ORDER

CONSENT CALENDAR – All items listed under the consent calendar will be approved by one motion. There will be no separate discussion of these items unless the Commission or a member of the audience wishes to speak about an item.

APPROVAL OF MINUTES

December 9, 2019 (*3 of 4 required: Hamel, Counts, Ott, and Dammeyer*)

WITHDRAWALS BY APPLICANT – NONE

TIME EXTENSIONS – NONE

CONTINUANCES – NONE

APPROVALS – NONE

PUBLIC HEARINGS – The Planning & Zoning Commission will be considering a vote or action on the following cases. Any vote or action will be considered separately for each case. As a part of the public hearing process, the City Planning & Zoning Commission is authorized to consider appropriate alternate Zoning Districts, which are no more intensive in development activity than the requested Zoning District. Additionally, the Commission is authorized to supplement requested rezoning actions with the Aesthetic Overlay (AO) District and/or the Public Designation (P) District as may be deemed appropriate.

1. **GP-28531-2019:** This is a request by the City of Yuma to adopt the 2020 Tree and Shade Master Plan. This policy document outlines the benefits of trees, an analysis of existing conditions, a vision for the future, and an implementation plan as it specifically relates to our community. The Plan is in accordance with the 2016 Parks & Recreation Master Plan and the City of Yuma 2012 General Plan. *(Continued from January 13, 2020.)*
2. **GP-27420-2019**: This is a General Plan Amendment request by Core Engineering Group on behalf of the Susan Lee Battaile Trust, to change the land use designation from Medium Density Residential to Commercial for approximately 2.82 acres for property located at 7600 E. 32nd Street. *(This is the second of two public hearings.) (Continued from January 13, 2019.)*
3. **ZONE-28098-2019**: This is a request by Edais Engineering, Inc., on behalf of Riedel Construction Company, LLC, to rezone a 19.3-acre parcel from Agriculture (AG) to Low Density Residential (R-1-6), for the property located east of the southeast corner of Avenue 8½E and 40th Street. *(Continued from January 13, 2020.)*
4. **ZONE-28275-2019**: This is a request by Kerry A. Schimpf, on behalf of The Nelson Family Trust, 4/13/95 and Kerry & Gail Schimpf Trust, 11-19-03, and Kyle P. Nelson, to rezone approximately 14.9 acres from the General Commercial (B-2) District to the High Density Residential (R-3) District, while maintaining the existing Aesthetic Overlay (AO) District, for the properties located north of the intersection of E. 8th Street and S. Castle Dome Avenue, Yuma, AZ. *(Continued from January 13, 2020.)*

INFORMATION ITEMS

1. STAFF
2. COMMISSION
3. PUBLIC – Members of the public may address the Planning and Zoning Commission on matters that are not listed on the Commission agenda. The Planning & Zoning Commission cannot discuss or take legal action on any matter raised unless it is properly noticed for discussion and legal action. At the conclusion of the call to the public, individual members of the Commission may respond to criticism made by those who have addressed the Commission, may ask staff to review a matter or may ask that a matter be placed on a future agenda. All Planning & Zoning Commission meetings are recorded.

ADJOURN

In accordance with the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act of 1973, the City of Yuma does not discriminate on the basis of disability in the admission of or access to, or treatment or employment in, its programs, activities, or services. For information regarding rights and provisions of the ADA or Section 504, or to request reasonable accommodations for participation in City programs, activities, or services contact: ADA/Section 504 Coordinator, City of Yuma Human Resources Division, One City Plaza, Yuma, AZ 85364; (928) 373-5125 or TTY (928) 373-5149.

Notice is hereby given, pursuant to the Yuma City Code, Title 15, Chapter 154, Section 02.01, that one or more members of the Planning and Zoning Commission may participate in person or by telephonic, video or internet conferencing. Voting procedures will remain as required by the Yuma City Charter and other applicable laws.

The Commission may vote to hold an executive session for the purpose of obtaining legal advice from the Commission's attorney on any matter listed on the agenda pursuant to A.R.S. § 38-431.03(A)(3).

Planning and Zoning Commission Meeting Minutes
December 9, 2019

A regular meeting of the City of Yuma Planning and Zoning Commission was held on Monday, December 9, 2019, at the City Hall Council Chambers, One City Plaza, Yuma, Arizona.

PLANNING AND ZONING COMMISSION MEMBERS present included Chairman Hamel, and Commissioners Gregory Counts, Tiffany Ott and Vice-Chairman Dammeyer. Commissioners Shara Whitehead, Vinod Mohindra and Jacqueline Follmuth were absent.

STAFF MEMBERS present included Laurie Lineberry, Director of Community Development; Rodney Short, Deputy City Attorney; Agustin Cruz, Senior Civil City Engineer, Alyssa Linville, Assistant Director DCD / Zoning Administrator, Robert Blevins, Principal Planner, Richard Munguia, Senior Planner, Amelia Griffin, Assistant Planner, Charysse Casillas Administrative Assistant and Jessenia Juarez, Administrative Assistant.

Chairman Hamel called the meeting to order at 4:30 p.m. and noted there was a quorum present.

CONSENT CALENDAR

MINUTES – September 9, 2019 & October 14, 2019

WITHDRAWALS BY APPLICANT –

1. **CUP-27954-2019:** This is a request by Nicklaus Engineering, Inc., on behalf of Rearden Management, LLC, for a Conditional Use Permit to allow the cultivation of hemp in the Light Industrial (L-I) District. The property is located at 653 E. 20th Street, Yuma, AZ.

CONTINUANCES – None

APPROVALS -

1. **SUBD-27610-2019:** This is a request by Vega and Vega Engineering, on behalf of Proxima Centauri Development, LLC, for approval of the preliminary plat for the Autumn Valley Subdivision, proposed to be divided into 22 residential lots ranging in size from 6,000 square feet to 11,559 square feet. The property is located at the southeast corner of 16th Street and 44th Avenue, Yuma, AZ. *(Continued from November 25, 2019.)*
2. **SUBD-27629-2019**: This is a request by Dahl, Robins and Associates, on behalf of the First Church of the Nazarene of Yuma, for approval of the final plat for The Village Subdivision. This subdivision contains approximately 2.41 acres and is proposed to be divided into 12 residential lots, ranging in size from approximately 6,247.5 square feet to 9,734.6 square feet, for the property located at the southeast corner of S.13th Avenue and W. 19th Street, Yuma, AZ. *(Continued from November 25, 2019.)*
3. **SUBD-27862-2019**: This is a request by Colvin Engineering, Inc., on behalf of Elliot Construction, Inc., for approval of the final plat for The Araby North Subdivision. This subdivision contains approximately 4.87 acres and is proposed to be divided into 15 residential lots, ranging in size from approximately 10,678 square feet to 12,949 square feet, for the property located at the southeast corner of S. Araby Road and E. 32nd Street, Yuma, AZ. *(Continued from November 25, 2019.)*
4. **SUBD-27953-2019**: This is a request by Dahl, Robins & Associates, Inc., on behalf of Christopher G. Merziotis, for approval of the preliminary plat for the Spirit Park Subdivision. This subdivision will contain approximately 19.31 acres, and is proposed to be divided into 13 industrial lots, ranging in size from 40,432 square feet to 106,862 square feet. The property is located at the southeast corner of Avenue 3E and the 38th Street alignment, Yuma, AZ.

Motion by Counts, second by Ott, to APPROVE the Consent Calendar as presented. Motion carried unanimously (4-0, with 3 absent).

PUBLIC HEARINGS

GP-27420-2019: This is a General Plan Amendment request by Core Engineering Group on behalf of the Susan Lee Battaile Trust, to change the land use designation from Medium Density Residential to Commercial for approximately 2.82 acres for property located at 7600 E. 32nd Street. (*This is the first of two public hearings*.)

Jennifer Albers, Principal Planner, summarized the staff report.

QUESTIONS FOR STAFF
None

APPLICANT / APPLICANT'S REPRESENTATIVE
Kevin Burge, 200 E. 16TH Street #150, Yuma, AZ, thanked staff for their professionalism.

PUBLIC COMMENT
None

MOTION
Motion by Counts, second by Dammeyer to CLOSE Case Number GP-27420-2019. Motion carried unanimously (4-0, with 3 absent).

ZONE-27899-2019: This is a request by Dahl, Robins, and Associates, on behalf of Yucca Land Company, LLC, to rezone approximately 19.3 acres from the Agriculture (AG) District to the Medium Density Residential (R-2) District and Medium Density Single-Family Residential (R-2-5) District, for the property located at the southeast corner of Avenue 7 ½ E and 44th Street, Yuma, AZ.

Richard Munguia, Senior Planner, summarized the staff report, recommending **APPROVAL**.

QUESTIONS FOR STAFF
None

APPLICANT / APPLICANT'S REPRESENTATIVE
None

PUBLIC COMMENT
None

MOTION
Motion by Ott, second by Dammeyer to APPROVE Case Number ZONE-27899-2019. Motion carried unanimously (4-0, with 3 absent).

VAR-27386-2019: This is an appeal of a previously approved variance which was approved by the Hearing Officer on September 26, 2019. The variance request was to allow the location of an accessory structure in line with the principal dwelling in the Low Density (R-1-6) District, for the property located at 1441 W. 16th Place, Yuma, AZ.

Alyssa Linville, Assistant Director DCD / Zoning Administrator, summarized the staff report.

QUESTIONS FOR STAFF
Chairman Hamel asked if the four criteria were on pages 1 & 2 of the staff report.

Alyssa Linville said yes and explained that the Hearing Officer grants the variance when the findings of fact are made that all four criteria have been met.

APPLICANT / APPLICANT'S REPRESENTATIVE
David Chapman, 1441 W. 16th Place, Yuma, AZ, stated that the property owner mailings did not provide the correct neighborhood meeting information. He added that neighboring property owners would have attended the meeting if they had the correct information. **Chapman** expressed his concern with the proposed structure. He added that this structure would diminish property value and did not match the immediate area. **Chapman** said he was opposed to the construction of the structure and noted that the Hearing Officer's decision did not meet all of the four criteria required to grant a variance.

Chairman Hamel asked for clarification on how this proposal was detrimental. **Chapman** said this request would not complement the existing homes surrounding this property. **Chapman** added that this structure did not match the characteristics of the existing home.

Chairman Hamel asked for clarification on where his property was located. **Chapman** said his home was to the right of the subject property.

Commissioner Counts asked for clarification on how this proposal was detrimental to him. **Chapman** said it did not match the characteristics of the surrounding homes. **Counts** asked if there was a Homeowners' Association for this area. **Chapman** said no.

Counts asked if Chapman was the original owner of his home. **Chapman** said no.

Chairman Hamel asked for the appellee to come forward

Roberta McDermott, 1441 W. 16th Place, Yuma, AZ, questioned why the proposed $3,000 structure would decrease her neighbor's property value. **McDermott** added the structure would match the color of the existing home on the property.

Chairman Hamel asked for clarification on the roof and the setback of the proposed structure.

Chris Morris said he was the contractor for this proposal. **Morris** explained the proposed structure met the 7' setback**. Morris** said the original proposal had windows on the structure but they have now been removed. **Morris** explained there was a pool on this property that restricted the location of a detached structure. **Morris** added that the pool was on the property when McDermott purchased the home. **Morris** noted that the four criteria had been met with this request.

Chapman expressed his concern with the construction of the proposed structure. **Chapman** said he was not opposed to a detached structure that matched the architectural style of the existing residence.

Chairman Hamel said he agreed with the Hearing Officer's decision.

PUBLIC COMMENT
None

MOTION
Motion by Dammeyer, second by Ott to APPROVE Case Number VAR-27386-2019. Motion carried unanimously (4-0, with 3 absent).

INFORMATION ITEMS
Staff
Laurie Lineberry, Director of Community Development, informed the Commission she is retiring and this is her last Planning and Zoning Commission meeting.

Commission
Chairman Hamel congratulated Lineberry on her retirement and thanked her for her years of service and what she has done for the community.

Public
None

ADJOURNMENT
The meeting was adjourned at 5:11 p.m.

Minutes approved this _____ day of _____, 2019

_____
Chairman

STAFF REPORT TO THE PLANNING AND ZONING COMMISSION
DEPARTMENT OF COMMUNITY DEVELOPMENT
COMMUNITY PLANNING DIVISION
CASE TYPE – GENERAL PLAN AMENDMENT
Case Planner: Naomi G. Leeman

Hearing Date: **January 27, 2020** **Case Number**: **GP-28531-2019**

Project Description/ Location: This is a request by the City of Yuma to adopt the 2020 Tree & Shade Master Plan. This policy document outlines the benefits of trees, an analysis of existing conditions of the urban forest, a vision for the future, and an implementation plan as it specifically relates to our community. The Plan is in accordance with the 2016 Parks & Recreation Master Plan and the City of Yuma 2012 General Plan.

Staff Recommendation: Staff recommends the Planning and Zoning Commission **APPROVE** the request to adopt the 2020 Tree & Shade Master Plan.

Suggested Motion: Move to **APPROVE** the request to adopt the 2020 Tree & Shade Master Plan.

Staff Analysis: This is a General Plan Amendment request by the City of Yuma to adopt the 2020 Tree & Shade Master Plan. This policy document outlines the benefits of trees, an analysis of existing conditions of the urban forest, a vision for the future, and an implementation plan as it specifically relates to our community. The Plan is in accordance with the 2012 General Plan and the 2016 Parks & Recreation Master Plan and is the first of its kind for Yuma. Attachment B is the 2020 Tree & Shade Master Plan.

Plan Summary. The Tree & Shade Master Plan aims to develop a vision for a healthier, more livable, and prosperous Yuma by investing in the care and maintenance of the urban forest and shade structures. Trees in the urban environment offer many benefits that impact the environment, the health and safety of the community, and even the economy. Trees and shade increase the walkability and quality of life of our community. The term *urban forest* encompasses all the trees within the urban area; those planted on both public and private lands. This plan aims to create a vision to expand the entire urban forest, with a particular focus on the portion of the urban forest located in the public rights-of-way and managed by the City. City-managed trees include those lining streets, in parks, retention basins, and on other public properties. To implement the vision, the plan takes a close look at existing policies, procedures, and regulations to ensure the City has a unified approach to encouraging tree plantings and maintaining them following best practices. The final goal is to raise awareness of the importance of trees and form partnerships with community organizations to implement the vision for a sustainable city of trees. Involvement of private citizens and organizations is absolutely critical to the successful implementation of the plan's goals.

Plan Guidance. Guidance for this plan can be found in the City of Yuma's 2012 General Plan, in the State of Arizona's commitment to mitigating drought, and in the federal Surgeon General's Call to Action issued in 2015. Yuma's General Plan is the primary document guiding decision making in the City. Both the Conservation,

Environment, & Energy Element and the Parks, Recreation & Open Space Element explicitly express the need for a Street Tree and Shade Master Plan or an Urban Forestry Master Plan to "guide the overall management and preservation of tree canopy throughout the city" as well as "to promote walkability and mitigate heat islands". The Conservation element stresses the importance of the city to use low water use desert landscaping to increase natural and man-made shading for parking lots, streets, and pedestrian areas. The Transportation Element confirms this goal by advocating for "landscaping guidelines for streets, medians, and parkways that address maintenance, design review, water conservation, and safety factors". The Transportation Element also mentions the importance of traffic calming to provide safe and convenient access for all users. Throughout the General Plan, each element seeks to elevate the quality of life of the community -- a proven benefit of street trees.

In 2019, Arizona's state legislature voted to join six other states in passing the Drought Contingency Plan in response to drought conditions caused by climate change. At first glance, it seems counter-intuitive to plant trees during drought conditions. But trees, particularly native species, actually serve to mitigate negative conditions caused by drought. Native trees send deep, water-seeking roots into the soil to tap into local groundwater, drawing it to the surface and redistributing it vertically through the root structure thereby making it available for other plants to use. Tree cover slows evaporation of water from soils and nearby bodies of water, mitigating the severity of the drought. Additionally, the process of transpiration by which the water used in photosynthesis is released from the leaves into the air cools the surrounding air. This process, in addition to the shade cast by trees, serves to reduce the urban heat island effect that makes cities hotter.

In 2015, the Surgeon General issued a Call to Action to the nation to promote walking and walkable communities. The Call to Action recognizes the importance of physical activity for all ages as an important way to reduce risk for chronic diseases and related risk factors. One of the strategic goals is to "design communities that make it safe and easy to walk for people of all ages and abilities". Safety concerns posed by traffic create a barrier to walking and the Surgeon General recommends using street design policies to encourage physical activity and walking. Street lighting and landscape, such as street trees, when designed properly can be used to reduce traffic speeds and improve the pedestrian experience. Street trees are an integral part of the pedestrian experience because they provide shade, street enclosure, and aesthetic benefits.

National Precedent. Nationwide, communities are making trees and shade a priority. Some of the biggest cities in the country – including New York City, Los Angeles, Chicago, Houston, and Phoenix – have adopted tree initiatives to promote sustainability and combat climate change. The plans promoted by these cities propose public-private efforts to increase the number of trees. The plans view the urban forest as a critical asset and essential to continued success as leading 21st Century sustainable cities. Shade and the environmental benefits provided by trees are especially important in arid desert cities. Among Arizona cities, Phoenix, Tucson, Avondale, Gilbert, and Goodyear have adopted plans to guide tree plantings.

Purpose. The plan is intended for use by City staff and the residents of the Yuma community to guide management of the urban forest within the City's public domain. The planning effort and associated documents encourage consistent maintenance practices for City staff across departments and for landscape contractors who manage public and private portions of the urban forest. It will assist landowners and developers in the selection of tree species appropriate for different locations and purposes.

Recommendations will guide future policy and incentive programs to encourage growth of the urban forest. Plans of this nature are a requirement for certain federal and state funding opportunities, so the plan also serves to make Yuma more competitive when seeking funding. The plan and associated outreach also serve to help the general public develop a better understanding of the importance of the urban forest. The partnerships established during the planning process will hopefully continue to grow stronger and more robust in the future.

Plan Development. Encouraging practices to support and grow Yuma's urban forest has been a topic of discussion in the City for years. Staff began research for the project in 2016. In 2017, the City's Landscape Regulations were updated to encourage trees over shrubs, groundcover, or turf. This change was in response to comments from local landscape experts, City maintenance staff, and developers who recognize the benefits trees offer over other types of landscape. In late 2018, a grant application to the Department of Forestry & Fire Management (DFFM) highlighted the need for a Tree & Shade Master Plan to guide development of the urban forest, and thus the planning process began. The plan was developed as a joint effort between the Parks & Recreation, Community Development, and Public Works Departments.

Public Input. An extensive public outreach effort was conducted to assess public support and input throughout the planning process. In early 2019, a Planning Task Force of residents representing a variety of local organizations was formed. The Task Force met monthly for nine months throughout the planning process to provide guidance and input on implementation. Task Force members were challenged to commit to assisting in implementing the goals of the plan by planting trees, volunteering, or educating the broader public.

A public survey designed to gauge public opinion and solicit input was conducted from May to September 2019. The survey was available in print and online formats, in both English and Spanish. The survey received 445 responses and provided critical insight to inform the recommendations of this plan. Approximately 450 copies were distributed to local fifth grade students at the following schools: Desert Mesa Elementary, Gary A. Knox Elementary, G.W. Carver Elementary, James B. Rolle Elementary, and Palmcroft Elementary. Because of the long-term impacts and benefits of trees, it was especially important to get input and involvement from Yuma's youth.

As a joint effort between three departments, this plan has also been reviewed by each department's associated citizen commissions: the Parks, Arts, & Recreation Commission (approved on December 19, 2019); the Clean & Beautiful Commission (approved on December 17, 2019); and now the Planning & Zoning Commission. In conjunction with this master planning effort, the tree ordinance was reviewed, repealed, and replaced (O2019-038 adopted December 4, 2019) and a 5-Year Tree Care & Maintenance Plan was developed to provide staff more technical guidance for City maintenance procedures.

Plan Organization. The plan is organized in four chapters focusing on the following topics: 1) the benefits of trees; 2) an analysis of Yuma's existing urban forest; 3) a comprehensive vision for the urban forest over the next ten years and beyond; and, 4) an implementation plan specific to Yuma.

1) ***Benefits.*** Trees in the urban environment offer a host of benefits for the health and safety of the community, for the environment, and for the economy. Trees and shade increase the walkability and quality of life in our community, which

is especially important in the heat of Yuma summers. Tree-lined streets have been shown to calm traffic speeds, increase property values, absorb pollutants, intercept stormwater, lower ambient temperatures, and increase pavement life. Trees that provide shade to buildings lower energy consumption and views of trees improve psychological health. The benefits provided by trees outweigh their maintenance and associated costs. From a financial perspective, the urban forest is one of the few public infrastructure investments that increases in value over time. Planted for a relatively small upfront cost, as the tree ages and grows, the benefits offered increase. A larger tree casts more shade, its leaves sequester more CO2, and its canopy and roots intercept more stormwater runoff. As with other infrastructure elements (roads, pipes, street lights, etc.), trees require regular maintenance to function properly and provide maximum benefits to the community. Also like other infrastructure elements, trees offer so many benefits that they are considered an essential part of every street.

2) ***Analysis.*** Based on analysis of 2018 aerial images, the overall tree canopy coverage for the City of Yuma (excluding the Estancia annexation to the south) was 3.5%. Areas zoned for residential uses have the highest canopy density at 5.5%, while lands zoned for agricultural use have the lowest canopy density at 1.8%. The City of Yuma manages and maintains approximately 7,500 trees in the parks, along streets, in retention basins, and at other City facilities. Tree maintenance is split between the Parks Recreation Department's Urban Forestry Division and the Public Works Department's Street Maintenance and Basin Maintenance crews. Parks and Recreation has three certified arborists on staff and while Public Works does not have any arborists on staff, they contract with private arborists for certain tree maintenance activities. Yuma's hot, dry, and salty environment presents a unique set of conditions that must be carefully considered when planting and maintaining the urban forest. Planting the right tree in the right place is of upmost importance.

3) ***Vision.*** The plan envisions Yuma as a desert oasis; an oasis to be enjoyed by residents, visitors, and wildlife. Trees plantings must be wisely prioritized to provide the most benefits and to create shade oases equitably throughout the city. The plan challenges Yuma to effectively double the number of existing trees to increase the canopy from the existing 3.5% to a 7% canopy. For desert cities, American Forests recommends that a 15% canopy coverage as an attainable target. Yuma's goal of 7% canopy can be achieved by planting trees along streets, paths, and rights-of-way; in parks and open spaces; and on private property in neighborhoods and parking lots. As a whole, the Yuma community (both public and private entities) aims to plant 10,000 trees each year over the next ten years. In addition to adding trees along streets, near paths, and in parks; planting trees on private property offers the greatest opportunity. Residential yards in particular offer great potential; if each household added just one more tree to their yard, that would amount to 40,000 trees. The plan offers recommendations on where tree planting projects will have the greatest impact on walkability, safety, equity, and aesthetics.

4) ***Implementation.*** To reach the goal of planting 100,000 trees, community involvement in implementation is imperative. The City's commitment to planting trees sets the stage, but a majority of the 100,000 trees will be planted on private property at the discretion of private property owners. In conjunction with the Planning Task Force, twenty tree planting and outreach projects are outlined in the plan. Each project is envisioned as a partnership between a City department and a community partner such as an organization, company, or group of residents. A *Trees for Yuma* consortium, made up of local organizations and residents interested in trees, is being formed in order to continue the efforts to implement this plan. In addition to leading by example, the City plays an important role in setting and enforcing policies that encourage trees and protect our existing tree canopy. These policies include the Tree Ordinance (recently repealed and adopted in December 2019), Landscape Regulations (updated in 2017), 5-Year Tree Care & Maintenance Plan, Xeriscape Conversion Program, and Complete Streets policy. Planting an additional 100,000 trees does not come without impacts, and the short and long-term impacts of increasing Yuma's tree canopy need to be well understood. There are many funding sources available to support tree planting projects: donations, grants, City funds, special taxing districts; to name a few. For implementation to be successful, the City and community need to continue efforts to spread the word about the importance of trees. Ongoing outreach efforts will begin following the plan's adoption.

1. Does the proposed amendment impact any elements of the General Plan?

Yes The 2020 Tree & Shade Master Plan was developed in accordance with and at the direction of the 2012 General Plan.

2. Does the proposed amendment impact any of the facility plans?

No The 2020 Tree & Shade Master Plan is a new facility plan.

3. Is the proposed amendment in conflict with Council's prior actions?

No The amendment reflects completed projects and recent City Council actions to provide bicycle facilities for the citizens of the City of Yuma. This update is a continuation of those efforts.

Scheduled Public Hearings:

X	City of Yuma Planning and Zoning Commission: January 13, 2020
	City of Yuma City Council: February 5, 2020

Public Comments Received: None Received
Agency Comments: None Received

Attachments

A	B	C
Staff Worksheet	2020 Tree & Shade Master Plan	2020 Tree & Shade Master Plan Appendices

Prepared By: Naomi G. Leeman **Date:** 12/26/2019

Naomi G. Leeman, AICP,
Planning Consultant Naomi.Leeman@YumaAZ.gov

Approved By: Alyssa Linville **Date:** 12.26.19

Alyssa Linville, Assistant Director of Community Development

ATTACHMENT A
STAFF WORKSHEET

STAFF RESEARCH – GENERAL PLAN AMENDMENT

CASE #: GP-28531-2019
CASE PLANNER: NAOMI LEEMAN

NOTIFICATION

- **Legal Ad Published: The Sun** 12/20/19
- **Display Ad Published:** 12/20/19
- **660' Vicinity Mailing:** N/A
- **54 Commenting/Reviewing Agencies noticed:** 11/27/19
- **Site Posted**: N/A
- **Neighborhood Meeting:** N/A
- **Hearing Dates:** 1/13/20
- **Comments Due:** 12/09/19

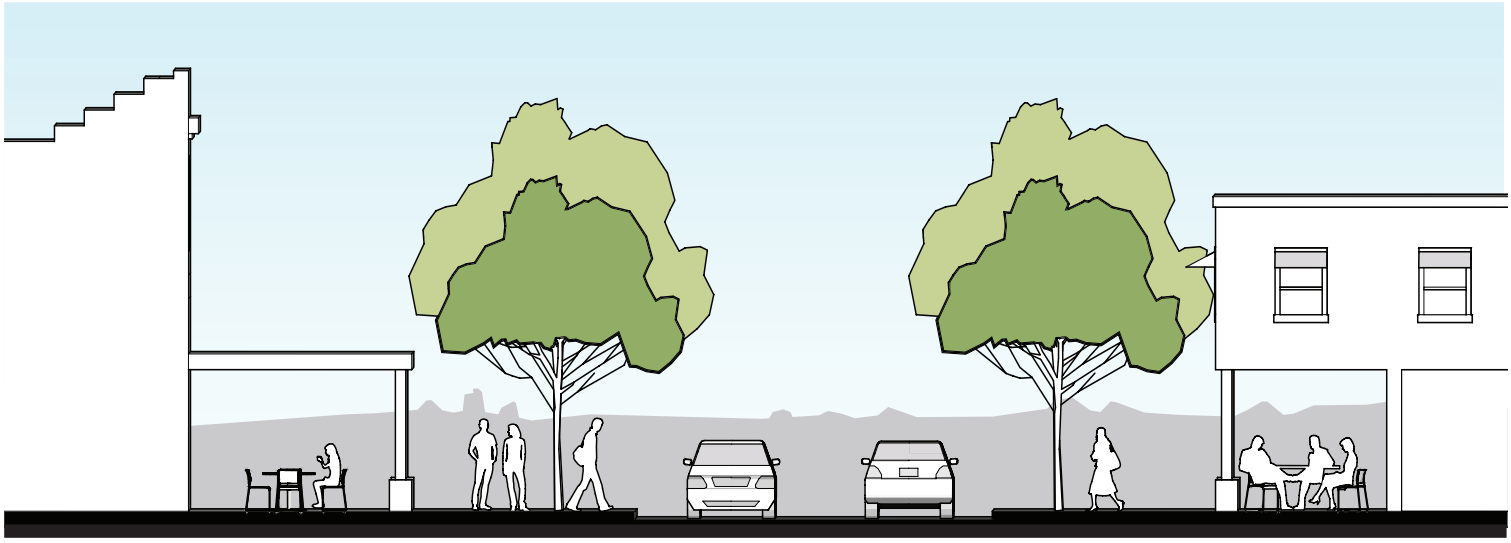
External List	*Response Received*	*Date Received*	*"No Comment"*	*Written Comments*
Yuma Metropolitan Planning Organization (ARS)	NR			
Yuma County Engineering	NR			
Yuma County Flood Control District	NR			
Yuma County Planning & Zoning (ARS)	NR			
Yuma County Public Works	NR			
Yuma County Airport Authority	Yes	12/11/19	X	
Yuma County Chamber of Commerce	NR			
Greater Yuma Econ. Development Corp.	NR			
Yuma County School Superintendent	NR			
YUHS District #70 (ARS)	NR			
Yuma Elementary School District #1 (ARS)	NR			
Crane School District #13 (ARS)	NR			
City of San Luis (ARS)	NR			
City of Somerton (ARS)	NR			
Imperial County, California (ARS)	NR			
Qwest Communications (ARS)	NR			
Arizona Public Service (ARS)	NR			
Time Warner Cable (ARS)	NR			
Southwest Gas (ARS)	NR			
Arizona Department of Transportation	NR			
Arizona Fish & Game Dept.	NR			
Arizona Department of Commerce (ARS)	NR			
Arizona State Attorney General (ARS)	NR			
Arizona Dept. of Water Resources (ARS)	NR			
Arizona State Land Department (ARS)	NR			
MCAS / C P & L Office (ARS)	NR			
USDA – NRCS	NR			
Bureau of Land Management (ARS)	NR			
US Border Patrol	NR			
US Postal Service	NR			
Quechan Tribal Office	NR			
Cocopah Indian Tribe	NR			
Yuma County Water Users' Association	Yes	12/13/19	X	

Yuma Irrigation District	NR			
Yuma Mesa Irrigation Drainage District	NR			
Unit B Irrigation District	NR			
Yuma County Association of Realtors	NR			
Yuma County Contractor's Association	NR			
AZ Society of Military Engineers (ASME)	NR			
AZ Society of Civil Engineers (ASCE)	NR			
AZ Society of Professional Engineers (ASPE)	NR			
El Paso Natural Gas Co.	NR			
Western Area Power Administration	NR			

City of Yuma Internal List	***Response Received***	***Date Received***	***"No Comment"***	***Written Comments***
Susan Smith, Police	NR			
Rod Hamilton, Police	NR			
Damon Chango, Parks and Rec – Admin	NR			
Ron Ramirez, Parks and Rec – Grounds	NR			
Jeff Kramer, City Engineer	NR			
Joel Marcuson, Traffic Engineer	NR			
Andrew McGarvie, Engineering	NR			
Kayla Franklin, Fire – Prevention	NR			
Randal Crist, DCD – Building Safety	NR			
Jeremy McCall, Utilities	NR			
Joel Olea, Public Works	NR			
NR=None Received	NR			

Neighborhood Meeting	***Comments Available***
None Required	N/A
Prop. 207 Waiver Given to Applicant on:	***Delivered by:***
None Required	N/A

ATTACHMENT B
2020 TREE & SHADE MASTER PLAN



TREE & SHADE

MASTER PLAN

2020

CITY OF Yuma

ACKNOWLEDGMENTS

City Council

Douglas J. Nicholls, *Mayor*
Gary Knight, *Deputy Mayor*
Leslie McClendon
Chris Morris
Michael Shelton
Ema Lea Shoop
Karen Watts

Parks, Arts & Recreation Commission

Christopher Bedinger, *Chair*
Judy Phillips, *Vice-Chair*
Rose Anne Forte
John Jackson II
John McDonald
John Stratton
Virgil Tapispisan

Clean & Beautiful Commission

Donald Strickland, *Vice-Chair*
Theresa Francesco
Estela Marin
JoAnne Mowczko

Planning & Zoning Commission

Chris Hamel, *Chair*
Fred Dammeyer, *Vice-Chair*
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WHY?

The intent of the City of Yuma Tree & Shade Master Plan 2020, the first of its kind in the region, is to develop a vision for a healthier, more livable, and prosperous Yuma by investing in the care and maintenance of the urban forest and shade structures. Three goals set at the beginning of the planning process were to accomplish the following:

#1 *Communicate a vision for the urban forest that focuses on the benefits of trees and sustainability.*

#2 *Establish comprehensive policies, procedures, and incentives for tree preservation, planting, and maintenance based on the vision.*

#3 *Establish partnerships and outreach programs to raise awareness about the benefits of the urban forest and the vision to increase the tree canopy.*

WHO?

Public input was critical to plan development. A public survey was conducted to gauge public opinion and a Task Force of community stakeholders was formed to guide the process. The plan was developed as a joint effort between three City departments: Parks & Recreation, Public Works, and Community Development.

445
SURVEY RESPONDENTS

26
ACTIVE TASK FORCE MEMBERS

3
CITY DEPARTMENTS

HOW?

Community involvement in implementation is imperative. The City is committed to planting trees, but a majority of the 100,000 trees will be planted on private property at the discretion of private property owners. The City sets and enforces policies that encourage tree planting and protect our existing tree canopy. A community tree consortium, led by the City, will spearhead ongoing outreach efforts to encourage trees.

STRONG POLICIES

- Landscape Regulations & Guidelines
- Tree Ordinance
- 5-Yr Tree Care & Maintenance Plan
- Complete Streets Policy

20
COMMUNITY TREE PROJECTS

1
COMMUNITY TREE CONSORTIUM

EXECUTIVE SUMMARY

WHAT?

The plan envisions Yuma as a *desert oasis*; an oasis to be enjoyed by residents, visitors, and wildlife. We must wisely prioritize where trees are planted to provide the most benefits and to create shade oases equitably throughout the city. The plan challenges Yuma to effectively double the number of existing trees to increase the canopy from the existing 3.5% to a 7% canopy. This goal can be achieved by planting trees along streets, paths, and rights-of-way; in parks and open spaces; and on private property in neighborhoods and parking lots.

VISION: DESERT OASIS

+100,000

new trees

TO DOUBLE THE CANOPY COVERAGE

3.5% ↗ 7%

MEASURES OF IMPACT

1. Walkability
2. Safety
3. Equity
4. Aesthetics

TREE PLANTING OPPORTUNITY AREAS

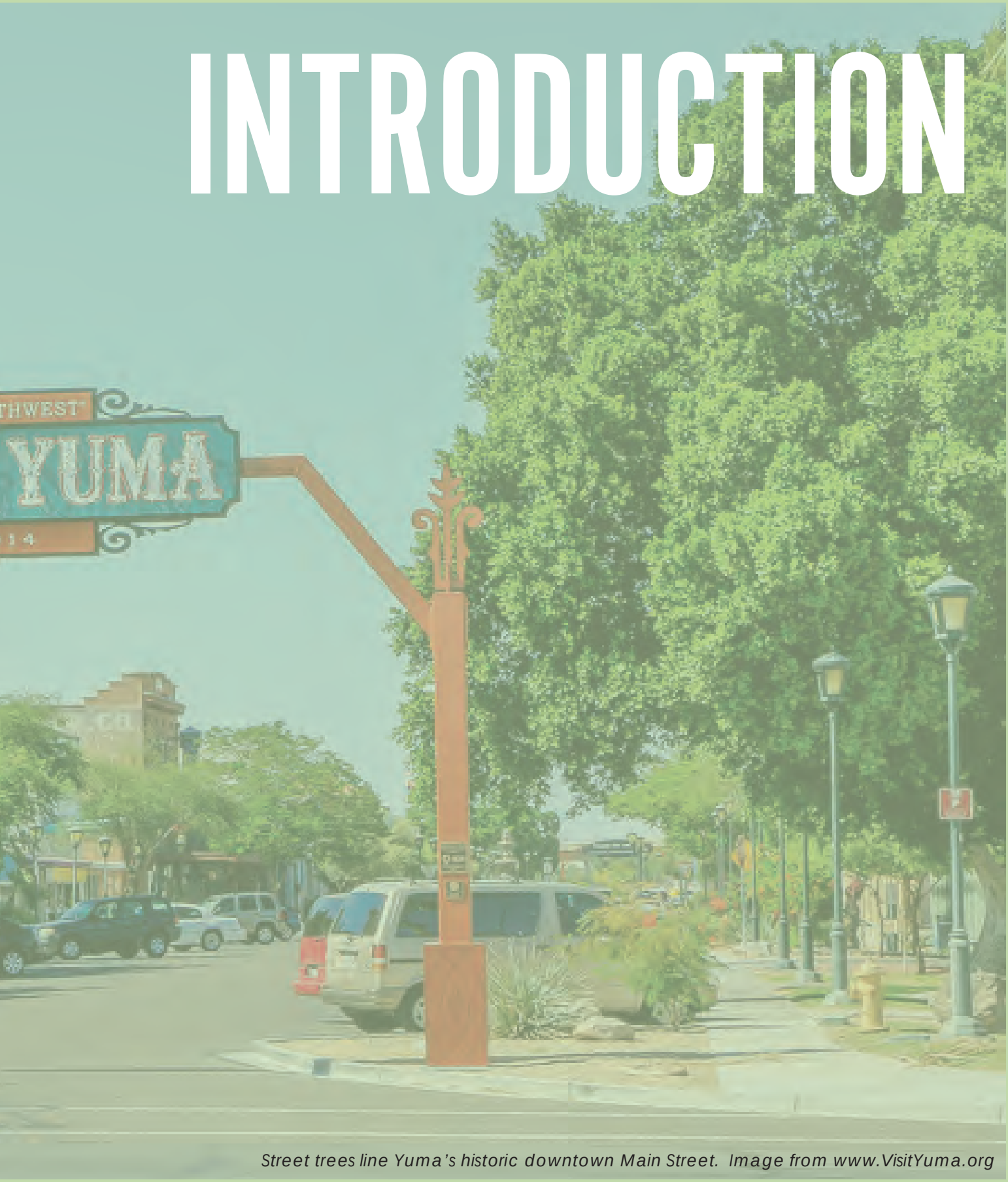
STREETS & RIGHTS-OF-WAY

PARKS & OPEN SPACE

PRIVATE PROPERTY

LEE HOTE
"GATEWAY OF THE GREAT SOUT
DOWNTOWN
INCORPORATED 19

INTRODUCTION



Street trees line Yuma's historic downtown Main Street. Image from www.VisitYuma.org

INTRODUCTION

The best time to plant a tree is twenty years ago.
The second best time is now. ~ Ancient Chinese Proverb

The time is now to start *planning* and *planting* for Yuma's future. This Tree & Shade Master Plan aims to develop a vision for a healthier, more livable, and prosperous Yuma by investing in the care and maintenance of the urban forest and shade structures. Trees in the urban environment offer many benefits that impact the environment, the health and safety of the community, and even the economy. Trees and shade increase the walkability and quality of life of our community, which is important year-round and especially in the heat of the Yuma summer.

The term urban forest encompasses all the trees within the urban area; those planted on both public and private lands. This plan aims to create a vision to expand the entire urban forest, with a particular focus on the portion of the urban forest located in the public rights-of-way and managed by the City. City-managed trees include those lining streets, in parks, retention basins, and on other public properties. To implement the vision, the plan takes a close look at existing policies, procedures, and regulations to ensure the City has a unified approach to encouraging tree plantings and maintaining them following best practices. The final goal is to raise awareness of the importance of trees and form partnerships with community organizations to implement the vision for a sustainable city of trees.

Why do we need this plan?

Guidance for this plan can be found in the City of Yuma's 2012 General Plan, in the State of Arizona's commitment to mitigating drought, and in the federal Surgeon General's Call to Action issued in 2015.

Yuma's General Plan is the primary document guiding decision making in the City. Both the Conservation, Environment, & Energy Element and the Parks, Recreation & Open Space Element explicitly express the need for a Street Tree and Shade Master Plan or an Urban Forestry Master Plan to "guide the overall management and preservation of tree canopy throughout the city" as well as "to promote walkability and mitigate heat islands". The Conservation element stresses the importance of the city to use low water use desert landscaping to increase natural and man-made shading for parking lots, streets, and pedestrian areas. The Transportation Element confirms this goal by advocating for "landscaping guidelines for streets, medians, and parkways that address maintenance, design review, water conservation, and safety factors". The Transportation Element also mentions the importance of traffic calming to provide safe and convenient access for all users. Throughout the General Plan, each element seeks to elevate the quality of life of the community -- a proven benefit of street trees.

In 2019, Arizona's state legislature voted to join six other states in passing the Drought Contingency Plan in response to drought conditions caused by climate change. At

first glance, it seems counter-intuitive to plant trees during drought conditions. But trees, particularly native species, actually serve to mitigate negative conditions caused by drought. Native trees send deep, water-seeking roots into the soil to tap into local groundwater, drawing it to the surface and redistributing it vertically through the root structure thereby making it available for other plants to use. Tree cover slows evaporation of water from soils and nearby bodies of water, mitigating the severity of the drought. Additionally, the process of transpiration by which the water used in photosynthesis is released from the leaves into the air cools the surrounding air. This process, in addition to the shade cast by trees, serves to reduce the urban heat island effect that makes cities hotter.

In 2015, the Surgeon General issued a Call to Action to the nation to promote walking and walkable communities. The Call to Action recognizes the importance of physical activity for all ages as an important way to reduce risk for chronic diseases and related risk factors. One of the strategic goals is to "design communities that make it safe and easy to walk for people of all ages and abilities". Safety concerns posed by traffic create a barrier to walking and the Surgeon General recommends using street design policies to encourage physical activity and walking. Street lighting and landscape, such as street trees, when designed properly can be used to reduce traffic speeds and improve the pedestrian experience. Street trees are an integral part of the pedestrian experience because they provide shade, street enclosure, and aesthetic benefits.

Related City Documents

2012 City of Yuma General Plan

2016 Parks & Recreation Master Plan

Tree Ordinance

Landscape Regulations

Recommended Plants List

5-Year Tree Care & Maintenance Plan

City Landscape Guidelines

City Engineering Standards

Street trees provide shade to the sidewalk, street, and bus stop along Castle Dome Avenue in Yuma.

What have other cities done?

Nationwide, communities are making trees and shade a priority. Some of the biggest cities in the country – including New York City, Los Angeles, Chicago, Houston, and Phoenix – have adopted tree initiatives to promote sustainability and combat climate change. The plans promoted by these cities propose public-private efforts to increase the number of trees. The plans view the urban forest as a critical asset and essential to continued success as leading 21st Century sustainable cities.

Shade and the environmental benefits provided by trees are especially important in arid desert cities. Among Arizona cities, Phoenix, Tucson, Avondale, Gilbert, and Goodyear have adopted plans to guide tree plantings. The City of Phoenix Tree & Shade Master Plan of 2010 emphasizes the benefits of urban trees as a keystone to becoming a 21st century sustainable city. Phoenix's plan also addresses the entire lifecycle of the trees – planting, maintenance, and irrigation techniques – to ensure the maximum return on investment.

Tucson adopted the Downtown Comprehensive Street Tree Plan in 1998 which serves as an urban design guide for street tree plantings in the central business district. The City has followed up on that effort with a city-wide Street Tree Inventory conducted largely by volunteers. According to their website, Tucson Clean & Beautiful Inc. sponsors the Trees for Tucson program to provide "low-cost shade tree planting for homes; street tree planting for neighborhoods; trees available for community sites; and educational presentations and tours. They also started the Trees for Tucson Tree Bank which allows donors to make tax-deductible contributions to help provide "shade trees for community planting projects".

Avondale's Street Tree Master Plan, adopted in 2014, focuses specifically on street trees and their impact on the quality of life and sense of community. The document aims to "help guide the City and provide a strategy for future tree replacement, growth, and … best practices." Other cities, such as Gilbert and Goodyear have defined specific tree species to be planted along certain corridors to create distinct character areas. The plans mentioned, among others, serve as precedents to guide Yuma's plan and valuable lessons can be learned from each.

Who will use this plan?

The plan is intended for use by City staff to guide management of the urban forest within the City's public domain. The planning effort and associated documents encourage consistent maintenance practices for City staff across departments and for landscape contractors who manage public and private portions of the urban forest. It will assist landowners and developers in the selection of tree species appropriate for different locations and purposes. Recommendations will guide future policy and incentive programs to encourage growth of the urban forest. Plans of this nature are a requirement for certain federal and state funding opportunities, so the plan also serves to make Yuma more competitive when seeking funding.

The plan and associated outreach also serve to help the general public develop a better understanding of the importance of the urban forest. The partnerships established during the planning process will hopefully continue to grow stronger and more robust in the future.

How was this plan developed?

Encouraging practices to support and grow Yuma's urban forest has been a topic of discussion in the City for years. The 2012 General Plan officially states the need for such a plan, and staff began research for the project in 2016. In 2017, the City's Landscape Regulations were updated to encourage trees over shrubs, groundcover, or turf. This change was in response to comments from local landscape experts, City maintenance staff, and developers who recognize the benefits trees offer over other types of landscape. In late 2018, a grant application to the Department of Forestry & Fire Man-

agement (DFFM) highlighted the need for a Tree & Shade Master Plan to guide development of the urban forest, and thus the planning process began.

The plan was developed as a joint effort between the public, Parks & Recreation, Community Development, and Public Works Departments. An extensive public outreach effort was conducted to assess public support and input throughout the planning process. In early 2019, a Planning Task Force of residents representing a variety of local organizations was formed. The Task Force met monthly on nine occasions throughout the planning process to provide guidance and input on implementation. Task Force members were challenged to commit to assisting in implementing the goals of the plan by planting trees, volunteering, or educating the broader public.

A public survey designed to gauge public opinion and solicit input was conducted from May to September 2019. The survey was available in print and online formats, in both English and Spanish. The survey received 445 responses and provided critical insight to inform the recommendations of this plan. More information on the survey and public outreach efforts can be found in the Chapter 2 and appendices.

As a joint effort between three departments, this plan has also been reviewed and approved by each departments' associated resident commissions: the Parks, Arts, & Recreation Commission; the Planning & Zoning Commission, and the Clean & Beautiful Commission. In conjunction with this master planning effort, the tree ordinance was reviewed and updated and a 5-Year Tree Care & Maintenance Plan was developed to provide more technical guidance for City maintenance procedures.

KEY TERMS

DFFM Arizona Department of Forestry & Fire Management

landscape regulations Adopted by the City to govern new development by providing minimum standards for the selection, location, maintenance, and installation of landscape materials (including trees) in order to maximize the benefit to the community and property owner.

parkway The area located between the edge of pavement or back or curb and the property line within the public street right of way for which the adjacent property owner is responsible for maintenance.

shade tree A tree that grows to an average mature height of thirty feet or more, an average spread of thirty feet or more, and a dense canopy that provides shade.

street tree A tree planted along the street to provide shade to pedestrians and enclosure to the street; characteristics include an average mature height of 30 feet or more, high branching pattern, and upright or rounded crown form.

tree belt The area between the back of curb or edge of pavement and the sidewalk or trail, typically within the public street right-of-way, where street trees should be located to provide the maximum safety and walkability benefits.

tree canopy The extent of the outer layer of leaves and branches of an individual tree or group of trees; the higher the tree canopy density, the higher the benefits from trees.

tree ordinance Adopted by the City to regulates tree care and maintenance on municipal property.

urban forest All the trees within the urban area, including those planted on public and private property, and actively cared for by people.

xeriscape A water-conserving landscape design technique that takes into account soil and drainage factors, microclimates, groupings of plants with similar water requirements, efficient irrigation systems, native vegetation, paving permeability, and low-water-using and drought tolerant vegetation.

CHAPTER 1

BENEFITS *of the* URBAN FOREST

Stately trees provide shade and beauty to the residential neighborhood along 8th Avenue.

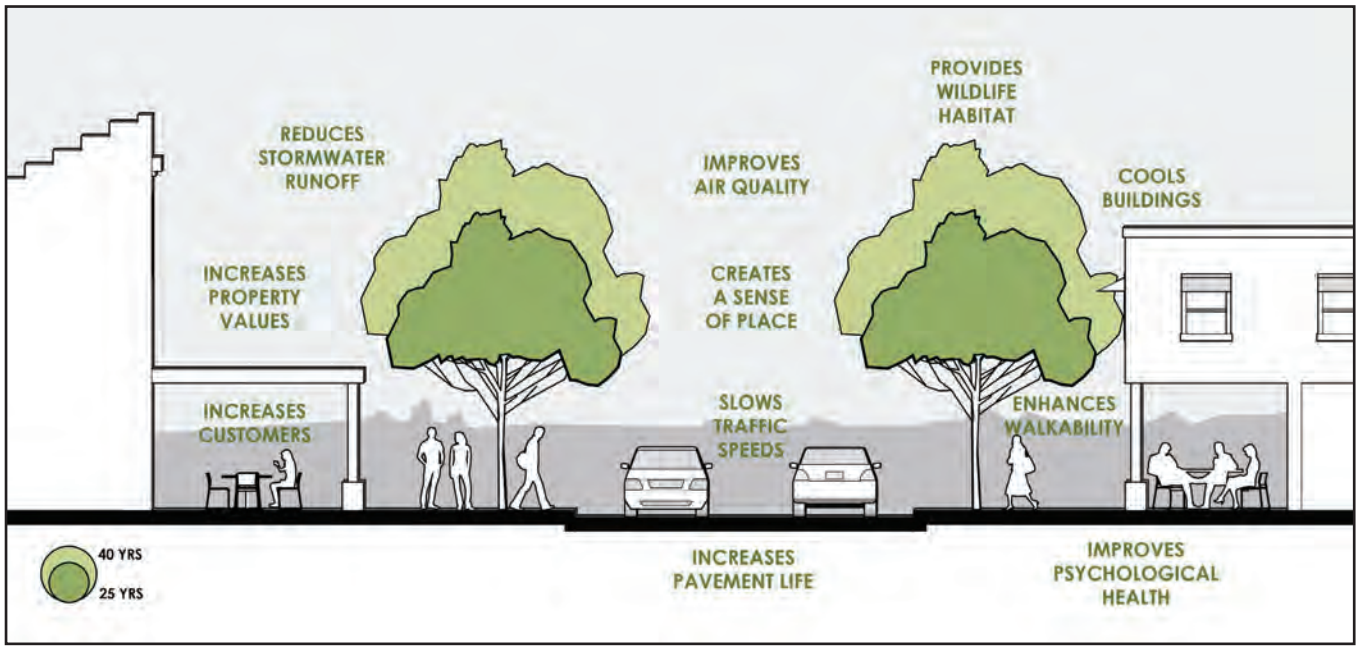
BENEFITS *of the* URBAN FOREST

Trees and shade in the urban environment offer health, safety, environmental, and economic benefits.

Trees play a vital role in making our community more livable and enjoyable. Trees in the urban environment offer a host of benefits for the health and safety of the community, for the environment, and for the economy. Trees and shade increase the walkability and quality of life in our community, which is especially important in the heat of Yuma summers. Tree-lined streets have been shown to calm traffic speeds, increase property values, absorb pollutants, intercept stormwater, lower ambient temperatures, and increase pavement life. Trees that provide shade to buildings lower energy consumption and views of trees improve psychological health.

The benefits provided by trees outweigh their maintenance and associated costs. From a financial perspective, the urban forest is one of the few public infrastructure investments that actually increases in value over time. Planted for a relatively small upfront cost, as the tree ages and grows, the benefits offered increase. A larger tree casts more shade, its leaves sequester more CO_2, and its canopy and roots intercept more stormwater runoff. As with other infrastructure elements (roads, pipes, street lights, etc.), trees require regular maintenance to function properly and provide maximum benefits to the community. Also like other infrastructure elements, trees offer so many benefits that they are considered an essential part of every street.

The improvements in walkability, bikeability, and overall safety provided by trees



Trees offer environmental, health, safety, and economic benefits to the urban environment.

creates secondary benefits by promoting a healthy community. A healthier population equates to less money spent on health-care costs, less time off work, and a happier community overall.

As stated in the previous section, trees also serve to mitigate negative conditions caused by drought. Native tree species send deep, water-seeking roots into the soil to tap into local groundwater, drawing it to the surface and redistributing it vertically through the root structure making it available for other plants to use. Tree cover slows evaporation of water from soils and nearby bodies of water, mitigating the severity of the drought. Additionally, the process of transpiration by which the water used in photosynthesis is released from the leaves into the air cools the surrounding air. This process, in addition to the shade cast by trees, serves to reduce the urban heat island effect that makes our cities hotter.

Common concerns about street trees can be overcome with thoughtful planting, species selection, and maintenance by trained designers and arborists. Careful positioning allows for adequate sight triangles at intersections and driveways, reduces impacts on utilities above or below ground, and reduces interference between trees and street lights. Species with low litter, hardy branch structure, and low water needs are encouraged to be selected to minimize maintenance concerns.

Health & Safety

- #1 **Increases walkability, pedestrian activity, and social interaction.**
- #2 **Calms traffic speeds and improves pedestrian safety.**
- #3 **Provides buffers for unpleasant land uses, deflects traffic noise, and provides privacy.**
- #4 **Improves psychological health.**
- #5 **Improves aesthetics and sense of place.**
- #6 **Lowers residential crime rates.**

Environmental

- #7 **Absorbs CO_2, ozone, and other airborne pollutants and provides oxygen.**
- #8 **Reduces the urban heat island effect by providing shade, which in turn conserves energy.**
- #9 **Reduces stormwater runoff and prevents erosion.**
- #10 **Provides habitat for wildlife.**

Economic

- #11 **Increases property values.**
- #12 **Increases customer traffic to businesses.**
- #13 **Contributes to longer pavement life.**

Health & Safety Benefits

#1 Increases walkability, pedestrian activity, and social interaction.

Trees provide shelter from the elements and create a protective sense of enclosure. Perhaps most important in Yuma's desert climate is the protection from the hot sun that street trees offer pedestrians on the sidewalk. This shade makes walking more pleasant year-round, but it can absolutely make the difference between choosing to walk or not in the summer months. A 2009 study published in the American Journal of Public Health[1] reported that "aside from living close to school, the presence of street trees and living in a mixed land-use neighborhood were the only other physical environmental features that significantly correlated with more children walking and biking to school."

#2 Calms traffic speeds and improves pedestrian safety.

Several studies have shown that tree-lined urban streets are associated with reduced crash rates.[2] The presence of street trees provides an "edge effect" or psychological cue to drivers to slow down. Studies have linked the visual complexity of the surrounding environment to the driver's attentiveness and alertness. When "on alert", drivers tend to proceed more carefully.[3] Fewer crash incidents and less severe injuries are associated with slower vehicle speeds. A 2006 study showed that tree-lined streets brought down average speeds by up to eight miles per hour.[3]

Cars moving at slower speeds equate to a safer environment for pedestrians, but street trees provide yet another benefit to pedestrians. When placed between moving traffic and the sidewalk, trees provide a barrier to protect pedestrians from potential accidents. Pedestrian's perception of safety also increases, which increases the walkability in the city.[4]

A tree never hits an automobile except in self-defense.

American Proverb

#3 Provides buffers for unpleasant land uses, deflects traffic noise, and provides privacy.

Trees and vegetation effectively soften and screen the visually unappealing, albeit necessary, elements of the urban environment such as utility poles, light poles, and parking lots. Trees can also be used between incompatible land uses to reduce light pollution, noise, and provide privacy.

#4 Improves psychological and physical health.

Numerous studies have shown the link between nature and improved health outcomes. Patient views of trees speed healing in hospitals.[5] Greater canopy cover near a mother's home is positively correlated with her baby's birth weight, thus improving lifelong health.[6] Vegetated roadways reduce stress among drivers and diminish the perceived travel time.[3] A 2015 study conducted in Toronto indicated that street trees had a more beneficial effect on overall health than trees located on private property. Street trees are more accessible to all residents and therefore have a greater impact for the public.[7] The City's investment in trees in the public realm can influence secondary cost savings through improved public health.

#5 Improves aesthetics and sense of place.

Trees contribute significantly to aesthetics and sense of place. A sense of place is defined by those elements that make one

Street trees improve safety.

Street trees make roads safer for drivers and pedestrians. Tree-lined streets are more pleasant to walk along and drivers tend to travel slower.

place different from another, and it's what makes our community worth caring about. Studies have shown that trees are an important element that contributes to a sense of pride in our neighborhoods and the built environment.

#6 Lowers crime rates.

Street trees that provide canopy cover are correlated with lower crime rates, particularly in residential neighborhoods. The key is to have well maintained vegetation; dense overgrown shrubbery can actually encourage crime by providing concealment.[8] Tall, mature street trees provide a pleasant setting for folks to congregate while not blocking the views of houses, allowing "eyes on the street" for visual surveillance.

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[2] Wolf, Kathleen. "Safe Streets", University of Washington, Green Cities: Good Health Urban Forestry Research, 2010. *<http://depts.washington.edu/hhwb/Thm_SafeStreets>*
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Environmental Benefits

#7 Absorbs CO_2, ozone and other airborne pollutants and provides oxygen.

Trees reduce carbon dioxide directly via sequestration, which helps mitigate global warming. More specifically, trees located within close proximity to streets absorb nine times more pollutants than trees located further away. They convert harmful gases, such as ozone and nitrogen dioxide, back into oxygen and other useful natural gases.[9] Trees also intercept particulate matter such as dust, smoke, and pollen which improves overall air quality.[10] The more mature the tree, the more environmental benefits it provides. Additionally, different species provide varying levels of carbon sequestration and pollutant absorption depending on the density of leaves, root structure, and other biological factors.

#8 Reduces the urban heat island effect and conserves energy.

Urban environments are covered with impervious surfaces – asphalt and concrete streets and parking lots – that increase temperatures by three to seven degrees.[9] This temperature rise, known as the urban heat island effect, increases energy costs to homeowners and consumers. Trees provide shade to combat the urban heat island effect and thereby reduce energy costs. This temperature reduction is increasingly important as climate change brings hotter temperatures worldwide.

#9 Reduces stormwater runoff and prevents erosion.

Trees in the urban environment play an important role in stormwater management by reducing runoff, encouraging stormwater to infiltrate into the soil, and reducing pollutants found in the stormwater. Trees capture the first 30% of precipitation through their leaf structure, intercepting the stormwater before it ever hits the ground.[10] Another 20-30% is absorbed by the trees root system and then transpired back into the air.[9] Urban trees, particularly street trees, reduce the risk of flooding to adjacent properties. Although not often recognized as such, trees are an essential part of the overall stormwater management system.

#10 Provides habitat for wildlife.

Trees provide habitat for vital wildlife such as birds, butterflies, bees, and pollinators within the urban environment. Parks and natural areas provide primary habitat sanctuaries. To promote an overall healthy ecosystem in urban areas, trees should be strategically located between these open spaces to provide corridors and stepping stones to link these habitats.[11]

ANNUAL BENEFITS OF TREES IN YUMA'S *Smucker Park*

+$12,127 PER YEAR

Each year, the 198 trees found in Smucker Park alone offer over twelve thousand dollars of benefits to the city. These benefits come from energy savings, CO_2 sequestration, improvement of air quality, stormwater runoff intercepted, and aesthetics. The five most populous species found in Smucker Park are shown to the right, along with their annual value per tree. The benefits of each species differ based on its leaf, trunk, and root structure, and benefits increase each year as the tree grows.

FICUS

Inventory and analysis of the trees in Smucker Park conducted by the Department of Forestry & Fire Management (DFFM)'s Arizona Urban Tree Map initiative.

Economic Benefits

#11 Increases property values.

Homes and businesses with trees in close proximity consistently have more value. Real estate professionals estimate that tree-lined streets offer a $15,000 to $20,000 increase in property value.[9] A study of houses in Portland, Oregon found that, on average, street trees add 3% to the sales price and reduce time-on-market by 1.7 days.[12] The increase in property value results in an increased tax base for the local government.

#12 Increases consumer traffic to businesses.

Trees increase profitability of business districts. Studies found that tree-lined shopping street increase shoppers willingness to pay for goods by 12 percent.[13] Restaurants benefit from outdoor seating with trees that provide shade and visual relief from the urban environment. Even workers report higher productivity when they have a view of trees from their office space.[13] Street trees improve the shopping experience to offer local business districts a much-needed competitive advantage to win out over internet sales or discount stores.

#13 Contributes to longer pavement life.

Shade cast by street trees helps the underlying roadway last longer. A study conducted in Modesto, California found that asphalt on streets shaded by large canopy trees lasts longer than asphalt on unshaded streets, reducing maintenance costs by 60% over 30 years.[14] Shade reduces daily heating and cooling (expansion and contraction) of the asphalt thereby reducing pavement fatigue such as cracking, rutting, shoving, and other distress. Not only is this significant for our municipal streets, but also for privately owned parking lots.

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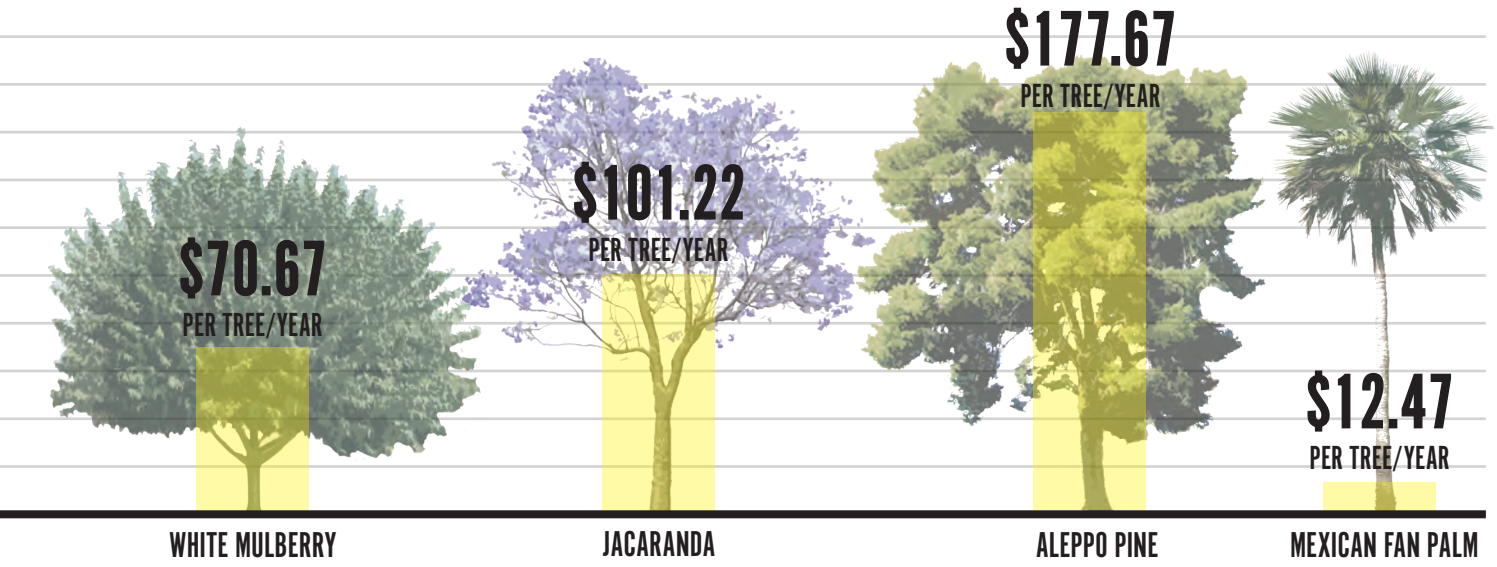
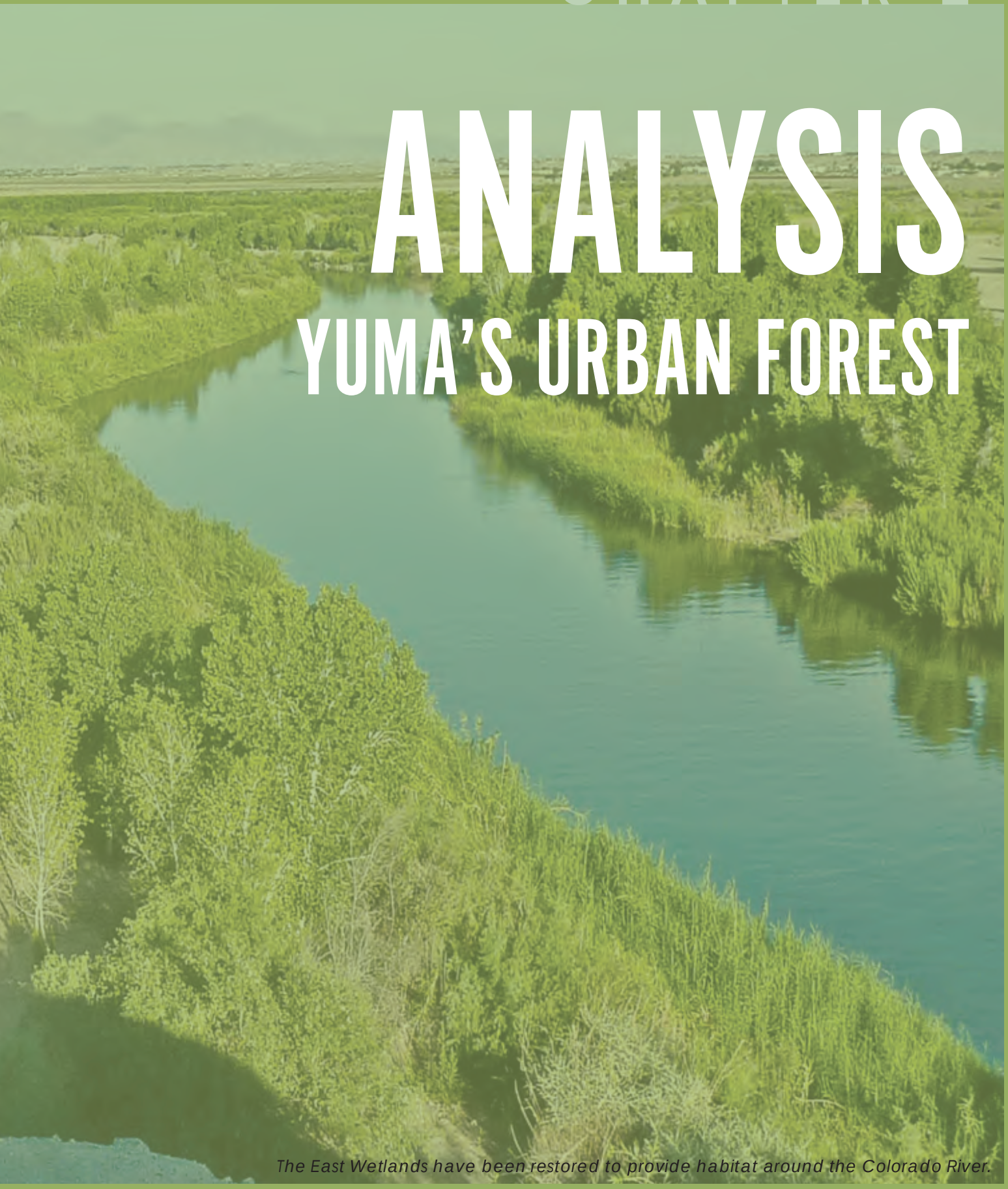


CHAPTER 2

ANALYSIS

YUMA'S URBAN FOREST



The East Wetlands have been restored to provide habitat around the Colorado River.

ANALYSIS *of* YUMA'S URBAN FOREST

To be without trees would, in the most literal way, to be without our roots.

Richard Mabey, *Beechcombings: The narratives of trees*

In order to plan for the future of Yuma's urban forest, we must first understand the important role trees have played in Yuma's history and the current condition of our urban forest. Tree canopy coverage is measured and mapped to compare how the urban forest has changed over the years. Analysis of Yuma's climate and soils gives insight when selecting species that will thrive in Yuma. A well-rounded evaluation of the urban forest also takes into consideration that, despite their many benefits, trees also present some concerns. Common concerns and ways to mitigate each is also addressed. Yuma has many areas where trees are thriving in the urban, desert environment; these examples serve as inspiration when planning for a successful urban forest.

Historical Context

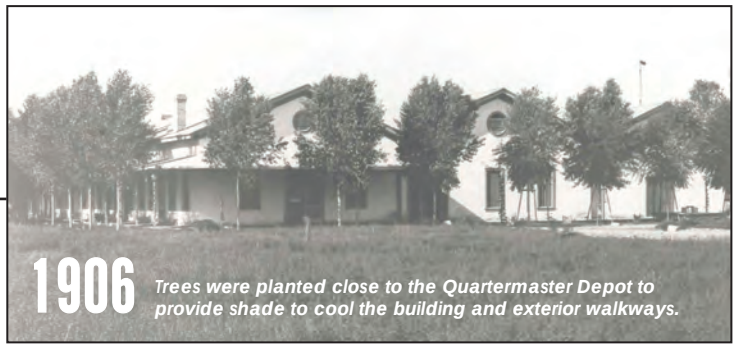
Trees have a long history in Yuma. Before central air conditioning, trees were planted near buildings to provide shade. Trees lined the streets to provide refuge for pedestrians. Date and citrus trees were, and remain, a key component of Yuma's booming agriculture industry.

Date Palms. Yuma has been known for its date farms since 1944 when the first date palms were brought to Yuma County from the Coachella Valley in eastern California. The U.S. Department of Agriculture played a supportive role in bringing dates to Arizona in their efforts to site crops along the Lower Colorado River. The area is now one of the world's largest date producers with over 250,000 acres of date palms. Date production has grown to a $35 million business annually and plays an important role in Yuma's economy.[15] Most farmers in Yuma grow Medjool dates, which are known for their premium quality. As of 2015, there were an estimated 7,500 acres in Yuma County dedicated to date trees.[16]

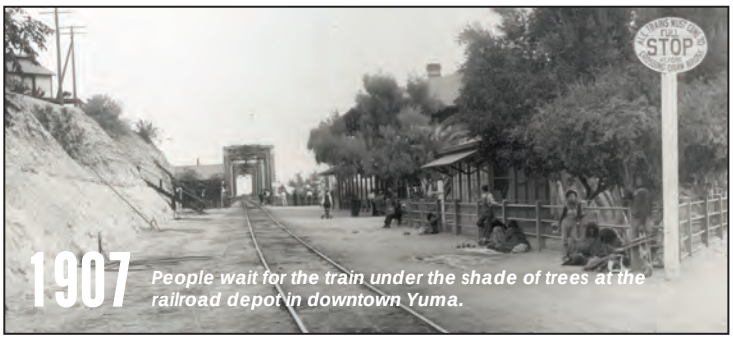
Citrus Trees. Yuma County ranks number one in Arizona for lemon, tangelo, and tangerine production.[17] Lemons are by far the largest citrus crop in Yuma County with over 7,000 acres dedicated to lemon production in 2007. Mature lemon trees may produce between 1,000 and 2,000 lemons each year. Tangelos, particularly the minneola variety, are also grown in Yuma with over 2,500 acres dedicated to their production in 2005. There is minimal grapefruit production in Yuma, totaling about 150 acres in 2005.[18] The height of the citrus industry in the Yuma area was in the 1970s, and although citrus production has declined since then, it is still a key part of Yuma's agriculture industry. Citrus trees are easy to grow at home and require minimal maintenance. Citrus

trees can be found in many Yuma yards and even along City streets, such as the orange trees that line Orange Avenue near City Hall.

Tree City USA. Since 2008, Yuma has earned the prestigious designation as a Tree City USA, awarded by the Arbor Day Foundation. To be recognized as a Tree City USA, a community must have an urban forestry program and proactively plant and care for trees. Other requirements include having a tree board or department, having an adopted tree care ordinance, spending at least $2 per capita on community forestry activities, and holding an annual Arbor Day celebration.[19] In 2007, Yuma adopted its first tree care ordinance and formed a Community Tree Board (Ordinance No. O2007-69). The Community Tree Board was disbanded in 2018 (O2018-040) and its duties were consolidated into the existing and active Parks, Arts, and Recreation Commission (PARC). Based on recommendations stemming from this planning effort, the tree ordinance has been updated with a more robust ordinance providing increased protections for municipal trees (see Chapter 4 for more information). Parks & Recreation staff from the Urban Forestry Division host an Arbor Day celebration each year in conjunction with a local school. Typically, the celebration involves planting trees.



1906 *Trees were planted close to the Quartermaster Depot to provide shade to cool the building and exterior walkways.*



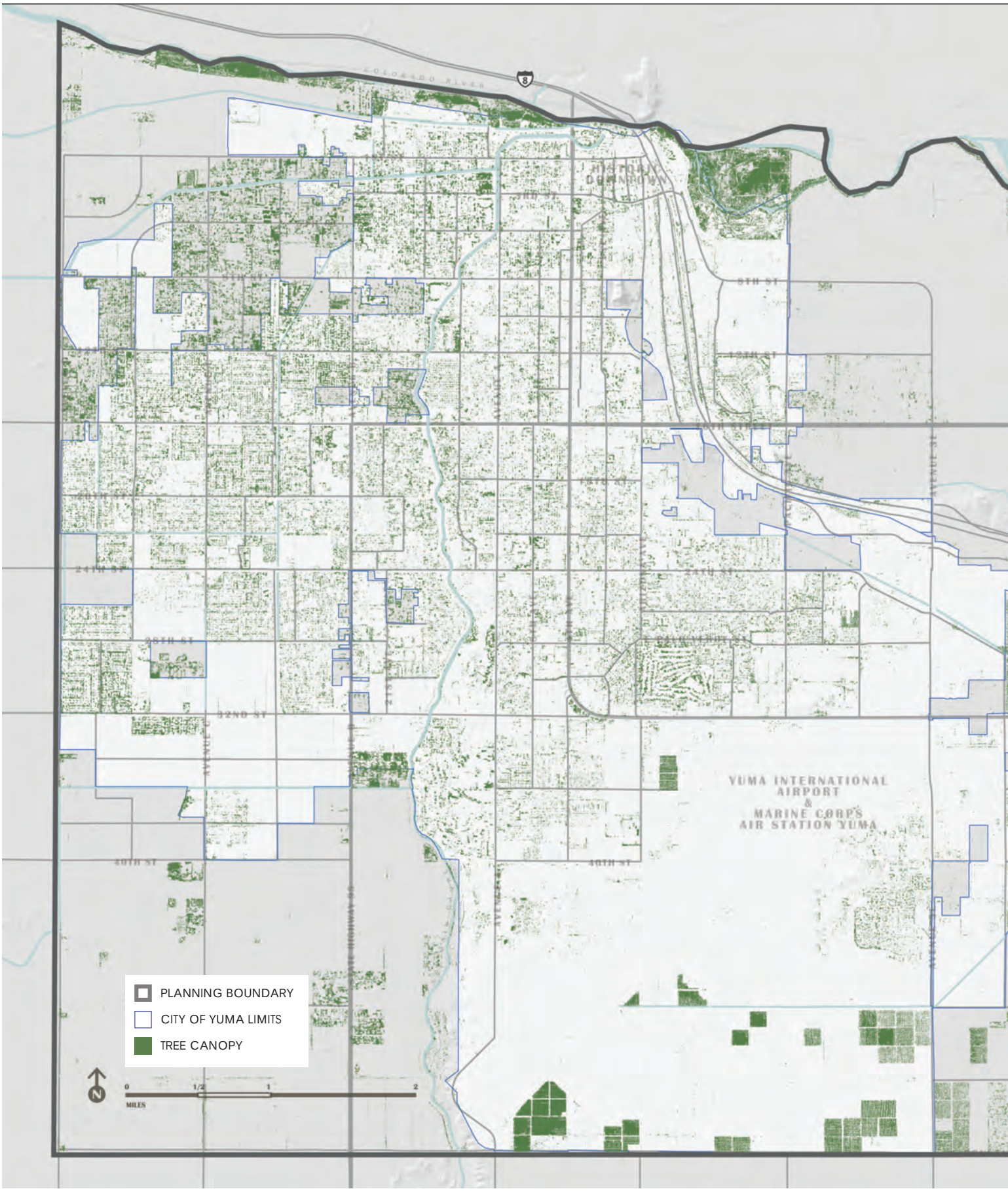
1907 *People wait for the train under the shade of trees at the railroad depot in downtown Yuma.*

1912 *Trees line 1st Street near Avenue A.*

1930 *Palm line 4th Avenue looking south from 16th Street.*

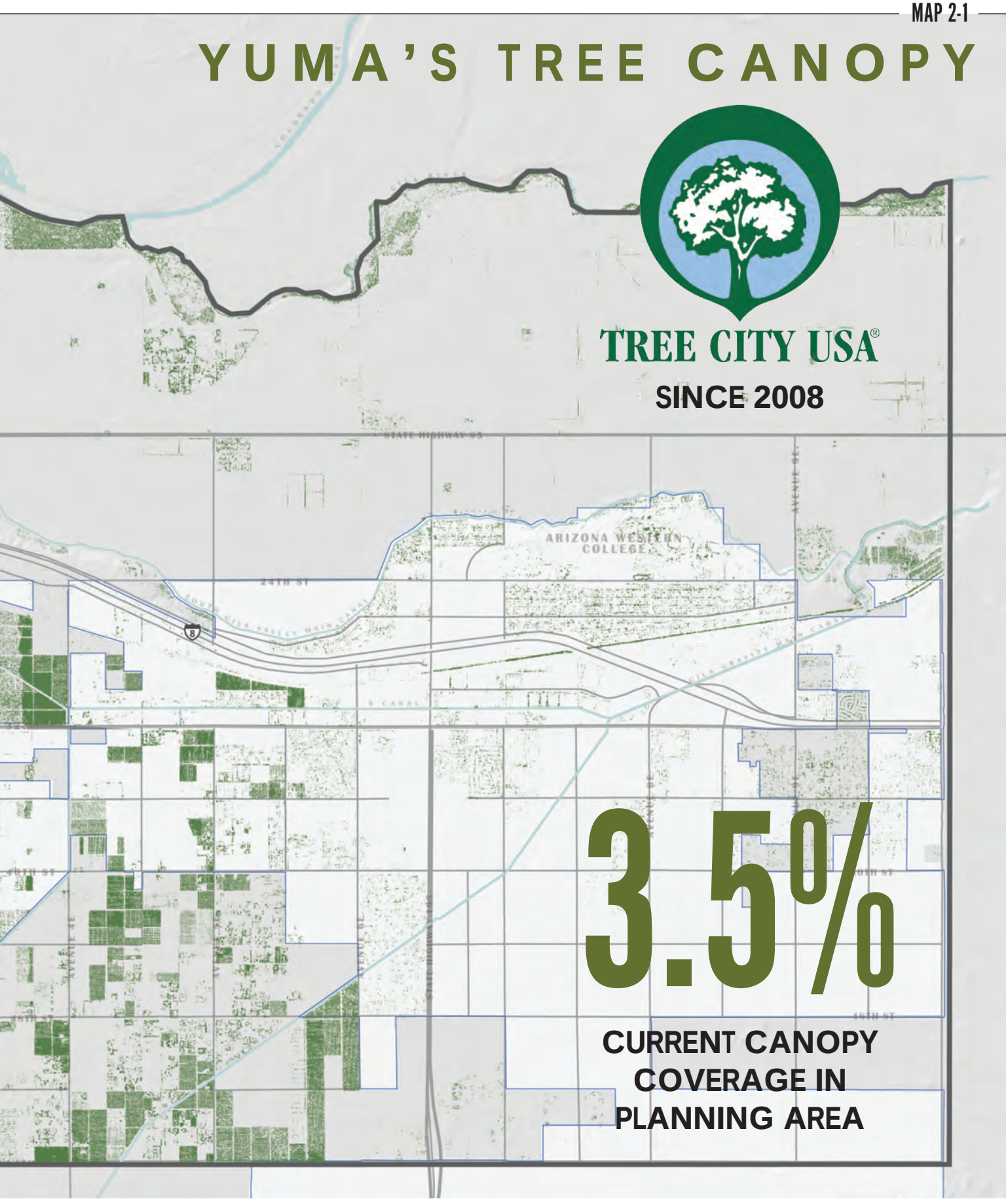
2015 *Local children, assisted by City staff, plant a tree during an Arbor Day celebration.*

[15] Arizona Experience Website. <*arizonaexperience.org/specialty-crops/blogs/dates*>
[16] Agriculture Marketing Resource Center. "Dates". Revised 2018. <*www.agmrc.org/commodities-products/fruits/dates*>
[17] Visit Yuma Website. "Agriculture in the Desert". <*www.visityuma.com/agritourism.html*>
[18] Nolte, Kurt. Yuma Area Agricultural Council Website. May 2015. <*yaac.org/*>
[19] Arbor Day Foundation Website. <*www.arborday.org/programs/treecityusa/about.cfm*>


COLORADO RIVER
8
HISTORIC DOWNTOWN
8TH ST
12TH ST
24TH ST
28TH ST
32ND ST
40TH ST
48TH ST
AVENUE C
AVENUE E
AVENUE G
AVENUE I
AVENUE J
AVENUE K
AVENUE L
AVENUE M
AVENUE N
AVENUE O
YUMA INTERNATIONAL AIRPORT & MARINE CORPS AIR STATION YUMA
PLANNING BOUNDARY
CITY OF YUMA LIMITS
TREE CANOPY
N
0
1/2
1
2
MILES

MAP 2-1

YUMA'S TREE CANOPY



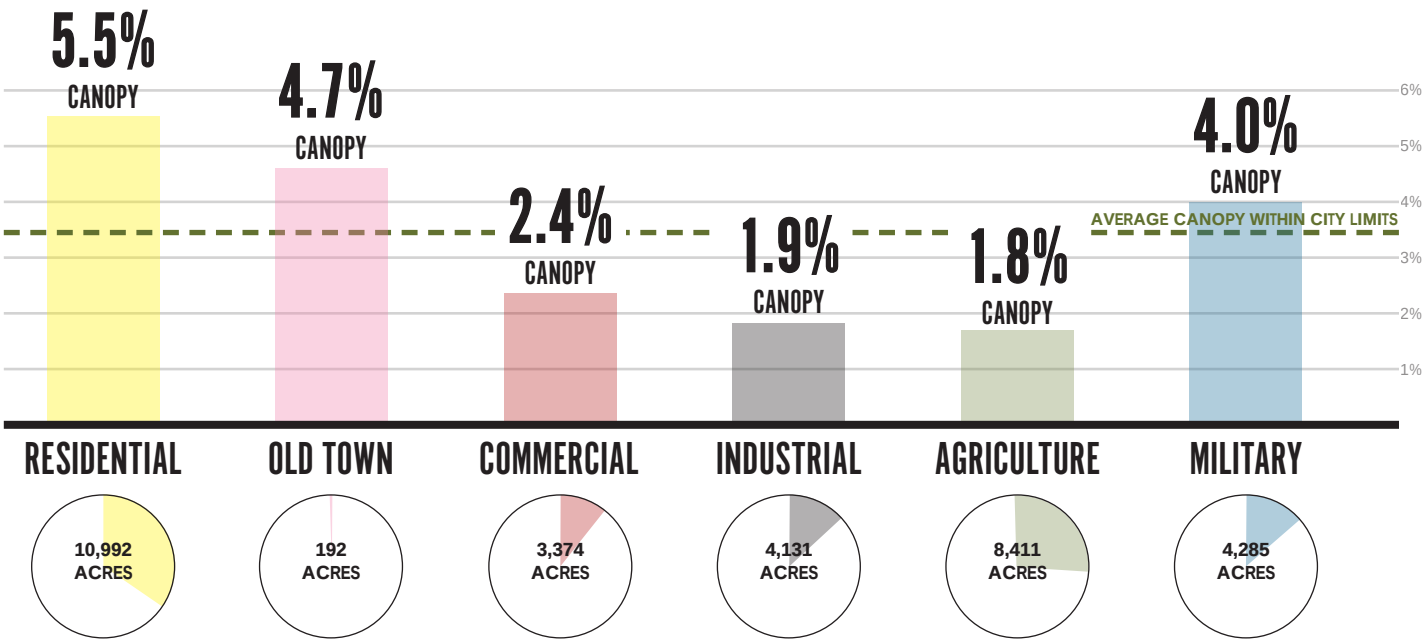
Existing Conditions

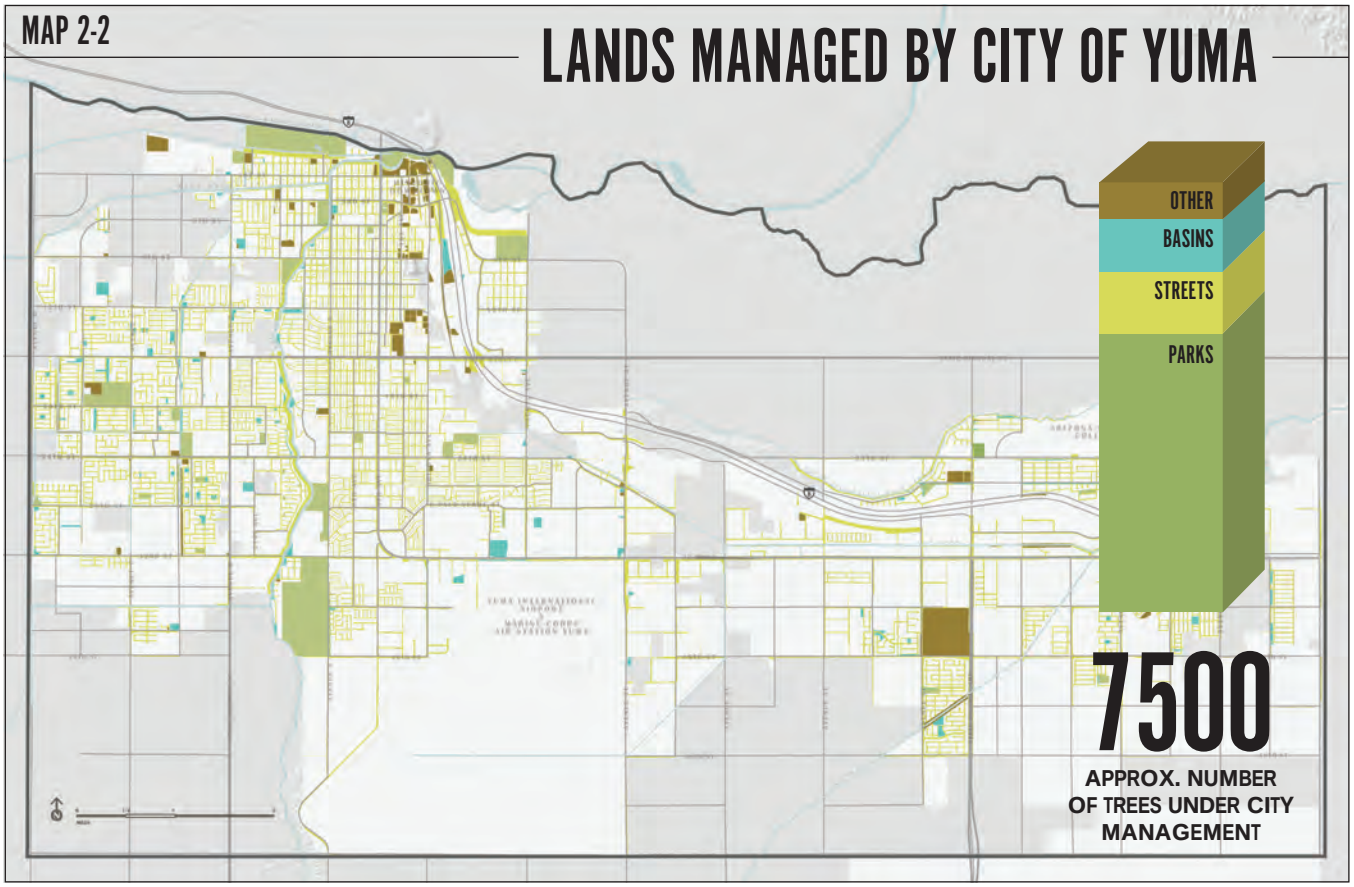
Tree Canopy. The tree canopy map shown on the previous pages illustrates Yuma's existing urban forest. Tree canopy is measured as the extent of the outer layer of leaves and branches of an individual tree or group of trees. The higher the density of the tree canopy, the greater the benefits trees can provide such as cleaning the air, cooling buildings through shading, and providing habitat for wildlife. Monitoring tree canopy distribution over time is one way to measure the health of our urban forest and to plan for equitable distribution of future plantings.

Based on analysis of 2018 aerial images, the overall tree canopy coverage for the portion of the planning area within City of Yuma limits (excluding the Estancia annexation to the south), was 3.5%. In 2015, the Arizona Department of Forestry and Fire Management (DFFM) used the i-Tree Canopy method to estimate the tree canopy at 3.75% for the incorporated places in the Yuma region. In addition to parts of the City of Yuma, the DFFM estimate also included parts of Yuma County, the Foothills, and Somerton. Analysis of canopy coverage on different land uses within the City (based on zoning district and illustrated below) shows that residential areas have the highest canopy density at 5.5%. Canopy coverage in commercial, industrial, and agricultural land uses is less dense than the overall City average. Canopy analysis is one factor used to determine where tree planting efforts should be targeted to ensure equitable distribution of their benefits across the City.

City of Yuma Trees. While this plan aims to encourage trees throughout the city limits on both publicly and privately-owned lands, the property owned and maintained by the City of Yuma represents the largest portion of the urban forest under single ownership. The City of Yuma does not currently have a formal record or detailed inventory of existing trees, but during this planning process, an estimated inventory of City-managed trees was created through a series of site visits and analysis of aerial maps. Estimates show that the City of Yuma manages and maintains approximately 7,500 trees. These trees are found in parks, along streets, in retention basins, and around other facilities maintained by the City (fire stations, City Hall, etc.). This estimate is merely a head count of trees, not a full inventory of their health, exact location, size, and species. Full inventories including such detailed information have been conducted by the

TREE CANOPY BY LAND USE WITHIN CITY LIMITS





An allée of mesquite trees provides shade to a residential street in Texas.

Arizona DFFM for two locations in Yuma: Smucker Park (2015) and the upper bench of the West Wetlands Park (2018). See Appendix A for both inventories. A full inventory including detailed information for the entire City would allow City departments to better manage the urban forest. For more information on the proposed tree inventory, see Chapter 5.

Structure of Tree Care within the City. Tree maintenance is split between the Parks & Recreation Department's Urban Forestry Division and the Public Works Department's Street Maintenance and Basin Maintenance crews. Parks and Recreation has three certified arborists on staff. Their crews maintain all the parks, the historic downtown, and some facilities, totaling about 5,500 trees. Public Works' Streets Maintenance crews maintain about 900 tress found along streets and in medians, while their Basin Maintenance crews are responsible for another 1,000 in the retention basins. Public Works does not have any certified arborists on staff and hires local contractors for intermittent tree pruning and care. When immediate attention is needed for a tree, Public Works staff contacts the Parks and Recreation Urban Forestry Division to conduct a tree hazard analysis to address the problem. To keep maintenance costs as low as possible, both departments use volunteer and inmate labor to assist with landscape maintenance such as clearing debris, but only City employees or local contractors deal directly with tree maintenance such as pruning and planting. Appendix B, the City's 5-Year Tree Maintenance Plan provides more information on the City of Yuma's tree care practices.

Regulation of tree planting in conjunction with new development is under the purview of the Community Development Department. Landscape regulations in the City of Yuma Code specify where new development plants trees and other landscape. Under a 2017 update, the regulations emphasize the importance of trees along streets, in parking lots, retention basins, and in residential areas.

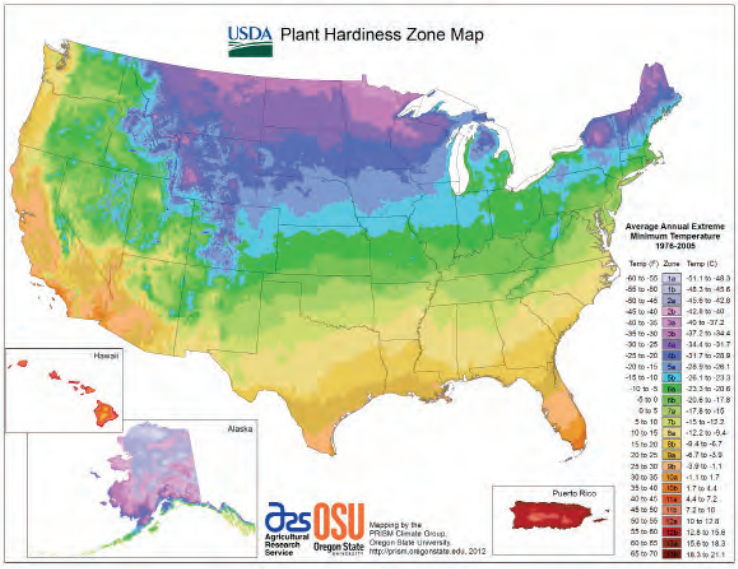
Yuma's Climate & Environment

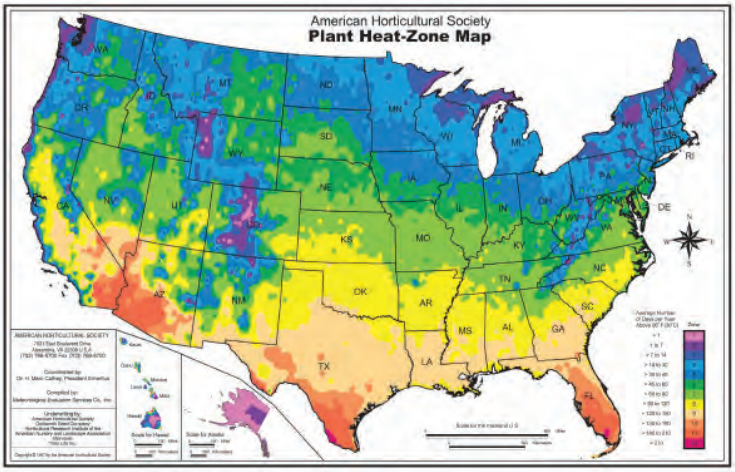
In order to make recommendations about trees that will thrive in Yuma, we must first understand the region's unique desert climate. Choosing trees that can withstand the heat and minimal rainfall is the first consideration; the second is to ensure that the plants are well adapted to the specific soil types found in Yuma. Local experts helped City staff compile a list of recommended plants that flourish in Yuma's unique environmental conditions, which can be found in Appendix C.

Plant Hardiness Zone. The United States Department of Agriculture (USDA) issues the plant hardiness zone map as a guide for landscaping. Yuma is located in Zone 10a with average annual extreme minimum temperatures of between 30 and 35 degrees F. The 2012 Plant Hardiness Zone Map, shown at left, is the standard by which gardeners and growers can determine which plants are most likely to thrive in a particular location.[20] Yuma's plant hardiness is similar to that found in southern California, southern Florida, and the Mediterranean.

It's hot. It's dry. It's salty.

Phill James, local landscape expert, on Yuma's unique environment





Plant Heat Zone. Similar to plant hardiness zones, the American Horticultural Society publishes the Plant Heat Zone Map, shown at left, to classify plants by heat tolerance. Yuma is classified in Zone 11, indicating that there are, on average, 180 to 210 days per year with temperatures above 86 degrees F.[21] By this measure, Yuma is most similar to southern Texas and southern Florida.

Soils. An ecological divide exists in Yuma between the mesa and the valley, which is evident in the types of soils found in each environment. Map 2-3 shows the difference between the predominately sandy soils found on the mesa (shown in tan color tones) and the richer clay and silt soils (shown in green color tones) found in the valley.[22] Soil types are an important consideration when selecting tree species that will thrive. Sandy soils are loose and hold less nutrients and water than clay and silt soils. On the mesa in sandy soils, native desert plants are most hardy, while more species are able to thrive in the richer soils found in the valley. Additionally, Yuma's soils have a high salt content. Plants struggle to grow in salty soils; salinity increases plants' susceptibility to drought and harms the soil structure and microbiology. In Yuma's heat, irrigation water evaporates quickly, leaving salt

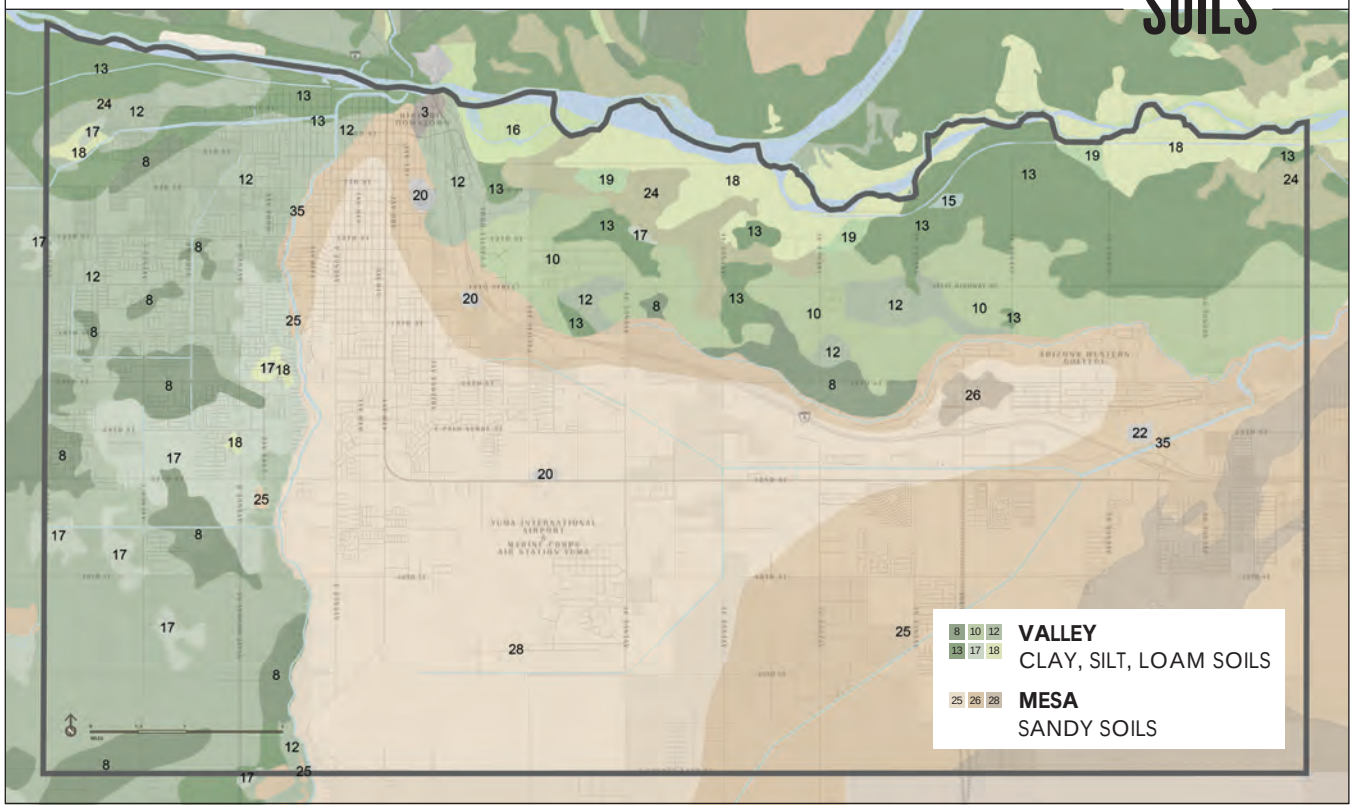
[20] 2012 USDA Plant Hardiness Zone Map. USDA Agricultural Research Service. <*planthardiness.ars.usda.gov/PHZMWeb/DownloadsPublic.aspx*>

[21] American Horticultural Society Plant Heat Zone Map. <*www.ahsgardening.org/gardening-resources/gardening-maps/heat-zone-map*>

[22] Web Soil Survey. USDA Natural Resources Conservation Service Website. <*websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx*>

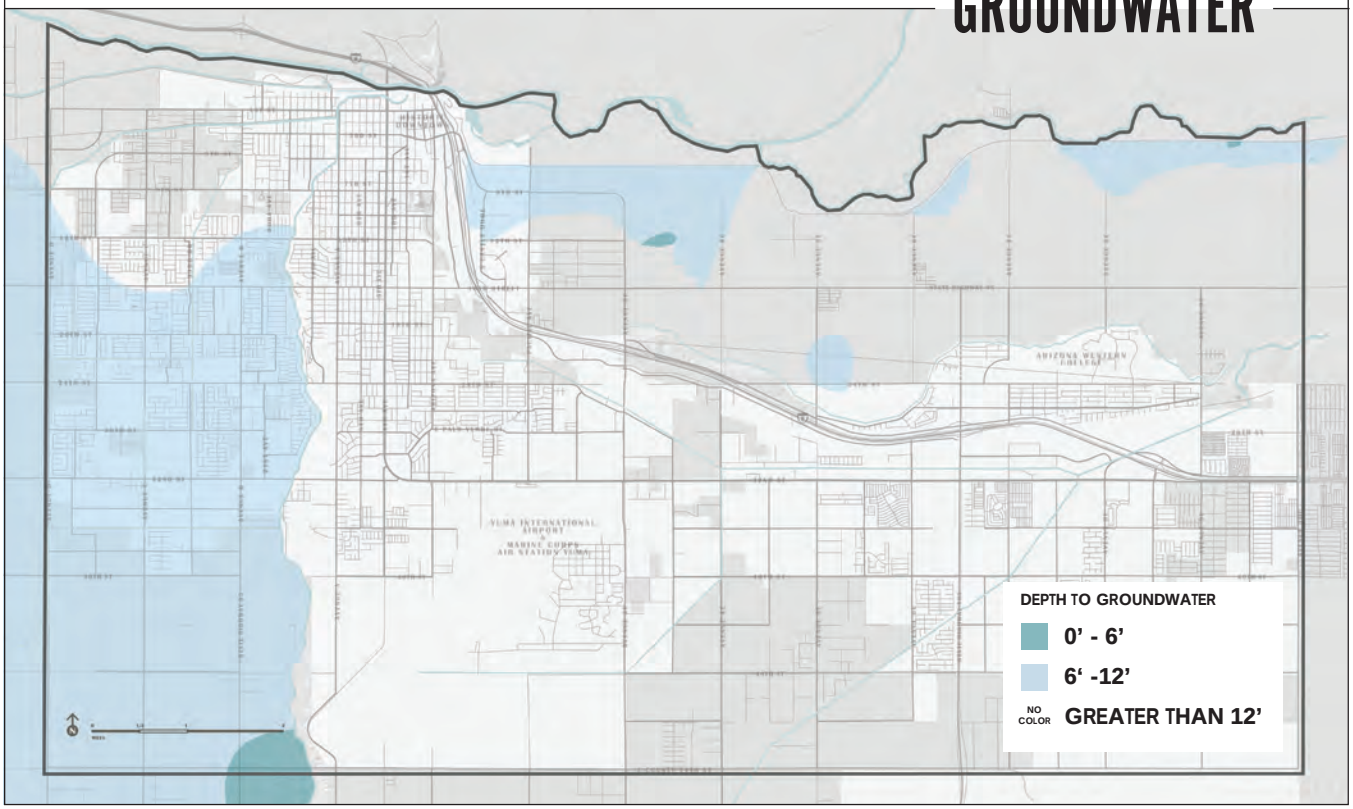
MAP 2-3

SOILS



MAP 2-4

GROUNDWATER



deposits near the surface.[23] Soils can be particularly salty in areas formerly used for agriculture. See Appendix D for detailed descriptions of soil types.

Groundwater. Groundwater is found in the saturated zone of the soil below the unsaturated soil that lies on near the surface. In Yuma, the groundwater is recharged from "downward percolating irrigation water, as seepage from a losing reach of the Colorado River, or from one of the many unlined irrigation canals".[24] Map 2-4 shows groundwater depths throughout Yuma, highlighting areas where the depth to groundwater is 6 to 12-feet and areas where it is less than 6-feet.[24] Trees in areas with high water table tend to grow larger than those in areas with a low water table because their roots can tap into this source of water. Groundwater depths change over time, so the most recent groundwater maps should be consulted when making specific decisions on tree plantings.

Anticipated Impacts of Climate Change. Over the coming decades, climate change is expected to impact Yuma. Climate change refers to the negative effects of the build-up of certain gases in our atmosphere, carbon dioxide being the most abundant of these gases. According to a report by the United States Environmental Protection Agency issued in August 2016, Arizona's climate has warmed about two degrees in the last century. Rising temperatures increase the rate at which water evaporates into the air from soils, plants, and surface waters. Therefore, soils are likely to be drier, and periods without rain are likely to be longer, making droughts more severe.[6] Hot days can be dangerous to people, especially those who live in urban environments. High air temperatures can cause heat stroke and dehydration, and affect people's cardiovascular, respiratory, and nervous systems. Rising temperatures can increase the formation of ground-level ozone, a key component of smog.[25]

Urban forests combat the effects of climate change in several ways. Trees, and some large shrubs, are unique among plants in that they have a woody stem and roots that is made from carbon that the plant converts from carbon dioxide in the air via photosynthesis. Trees remove this carbon dioxide from the atmosphere and store it for decades or even centuries in their trunk, branches, and roots. When planted to shade buildings, trees help reduce greenhouse gas emissions by reducing energy needs. When planted near streets, trees reduce the formation of ground-level pollution and help cool the air via transpiration to make the environment more comfortable and safe for humans.[26]

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[23] "Home Grown: Studying soil salinity." KYMA. Sept 30, 2019. *<https://www.kyma.com/news/home-grown-studying-soil-salinity/112707030 7>*

[24] United States Bureau of Reclamation Website & Groundwater Map, April 2018. *<www.usbr.gov/lc/yuma/programs/YAWMS/GROUNDWATER.html>*

[25] *What Climate Change Means for Arizona*. United State Environmental Protection Agency. EPA 430-F-16-005. August 2016.

[26] Kuhns, Michael. "Landscape Trees and Climate Change." Utah State University Forestry Extension. *<forestry.usu.edu/trees-cities-towns/urban-forestry/landscape-trees-climate>*

Stately trees create a shady environment for residences along 8th Avenue in Yuma.

Mitigating Concerns

Trees offer a myriad of benefits, but we also must recognize that they present some concerns, costs, and risks. Most, if not all, concerns can be mitigated through best planning, planting, and management practices. The table below gives examples of some common concerns and best practices to address each. It is important to note that trees in the urban environment need continual maintenance and will eventually need removal and replacement. An aging or hazardous tree cannot be left until it completely falls, as in natural forests.

CONCERNS	MITIGATION MEASURES
Cracking or lifting pavement	Damage to surrounding pavement or sidewalks is often caused by the tree growing too large for the planting space. Selection of the proper species for the growspace is imperative. New roads can be designed with curb extensions to allow more growspace.
Interference with infrastructure	Interference with underground and overhead infrastructure can be limited by selecting the proper species for the space. Some species have invasive and aggressive root structures, such as ficus, that should be avoided near underground infrastructure. Arizona Public Service (APS) has published a list of small trees that will not interfere with overhead power lines.
Obstruction of views or signage	Proper site selection, species selection, and adequate pruning prevents trees from growing too large and blocking views. Trees along the streets should be trimmed up to allow clear sight lines and should not be placed in visibility triangles.
Shedding debris or branches	Frequent street sweeping can mitigate leaf and flower debris. Species with low litter should be selected for locations near streets and sidewalks. Likewise, species that are known to have a weak branching structure and therefore likely to shed branches on a semi-regular basis should be avoided.
Allergies	Yuma's adopted Landscape Regulations prohibit new development from installing common allergenic plants such as the female mulberry and fruiting olive trees. Generally, species that rely on wind pollination create more pollen, which can be an irritant.
Attracting pests that leave a mess	Some species attract birds that leave droppings. This is typically a seasonal annoyance and the benefits the tree provides generally outweigh any annoyance. Proper placement away from eating areas will mitigate the worst case scenarios.
Irrigation	Due to the low amount of rainfall Yuma gets, most trees will need irrigation during the summer months. Yuma's Landscape Regulations require all new development to provide a permanent, water-efficient, underground irrigation system controlled by automatic valves. Deep and infrequent watering helps promote strong, deep roots, rather than shallow roots that might interfere with infrastructure.

Public Input

Extensive public outreach efforts and public input form the foundation of this plan. Public input is critical to every planning process, and the public was invited to engage on this project in a number of ways throughout the planning process, via the following methods: a public survey, a Planning Task Force, community meetings, and opportunities to review the plan at various stages online.

Public involvement allows citizens to voice ideas, discuss information, and ask questions about City policy and investment. A rigorous public input process was especially important for this Tree & Shade Master Plan for two reasons: 1) the City had never had a plan of this nature in the past, and 2) this plan relies heavily on community support to achieve the vision.

Planning Task Force. To provide specific guidance on the plan, staff reached out to stakeholder groups, subject matter experts, and local organizations to form a Planning Task Force. The Task Force had 26 active members who represented various community groups such as local arborists, landscape professionals, garden clubs, community service organizations, health professionals, education professionals, development professionals, and City-appointed commissions. Each group brought a unique perspective about how and where trees could be planted; recommendations that are reflected in the plan. The Task Force met monthly for a total of nine meetings over the course of the year. At the meetings, the plan's purpose, vision, priority areas, and implementation strategies were discussed. Based on the Task Force's recommendations, 20 implementation projects were developed, as described in Chapter 4. Task Force members were challenged to help with implementing the plan by committing to one or more of these projects that aligned with their personal or organizational interests and expertise. A complete list of Task Force members and activities is available in Appendix E.

Community Meetings. The public was also invited to attend community meetings to voice their opinions and learn more about Yuma's urban forest. A plan kickoff meeting was held June 6, 2019 at the Yuma Art Center and drew about 50 attendees. Community Development staff presented

Members of the Task Force gathered to plant a tree at Parks & Recreation's annual Spruce Up Your Park Day.

an overview of the plan and then opened the floor to an informative discussion about the urban forest. Attendees emphasized the importance of planting the right tree for the location, choosing native and well-adapted tree species, and properly maintaining trees and xeriscape to maintain aesthetic benefits. The importance of educating the public on various tree care and maintenance topics such as pruning, irrigation, and planting techniques was also mentioned.

In conjunction with the June 6 Community Meeting, a display targeted at children was included in the Yuma Children's Museum, which was held at the Yuma Art Center during the summer months. The display included an exhibit demonstrating the cooling effects of a tree's shade, an introduction to native plant species, and the benefits of trees in the urban environment. Plan brochures and surveys were available for adults.

Public involvement continued throughout the planning process and the public was invited to comment on the plan at the Planning & Zoning Commission and City Council meetings held in January and February of 2020. Due to the inter-departmental nature of the plan, before the plan was introduced to City Council, each department's respective citizen commission was given the opportunity to review the plan: the Parks & Recreation Department's Parks, Arts, & Recreation Commission (PARC); the Public Works Department's Clean & Beautiful Commission; and the Department of Community Development's partner commission, the Planning & Zoning Commission.

Online Information. Draft versions of the plan were available to the general public on the City's website throughout the planning process. Also available on the webpage dedicated to the Tree & Shade Master Plan (*www.yumaaz.gov/community-development/tree-shade-master-plan/tree-and-shade-master-plan*) was a schedule of all meetings and events, a summary of the project, access to the online survey, and links to other supporting materials.

Community Meeting, June 6, 2019

Public Survey. From mid-May through mid-September of 2019, a survey open to the general population was conducted for a period of four months. The survey, presented in both online and paper versions and in both English and Spanish, had a total of 445 respondents. Print versions of the survey were available at the Community Meeting on June 6, at the main desk in the City Hall lobby, at the Parks & Recreation Department's front desk, and at the Department of Community Development's front desk. Surveys were distributed at several events sponsored by Parks & Recreation: Back to School Rodeo, Come Out and Play Day, and by their Parks, Arts, & Recreation Commission. Additionally, approximately 450 copies were distributed to local fifth grade students at the following schools (one from

each district): Desert Mesa Elementary, Gary A. Knox Elementary, G.W. Carver Elementary, Jame B. Rolle Elementary, and Palmcroft Elementary. Because of the long-term impacts and benefits of trees, it was especially important to get input and involvement from Yuma's youth. Students were encouraged to take the survey home and fill it out with their parents. Students who returned the completed survey were rewarded with a free pool pass to one of the City's pools managed by the Parks & Recreation Department.

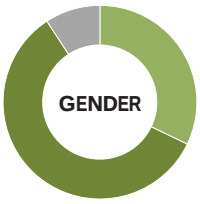
The survey assessed four topics: preferences and values about trees; opinions and knowledge of trees in the public realm; opinions of trees on private property; and demographics. Approximately 59% of respondents were female, 32% male, and 9% chose not to answer. Almost half (46%) of respondents were between the ages of 21 and 40 years old. Approximately 69% owned their homes. Survey results are summarized below and a full report of results can be found in Appendix F.

Seventy percent of respondents answered that there were too few trees in their neighborhoods. When given a choice between images of streets with varying levels of tree canopy, respondents consistently preferred streets with more trees. They also responded that they felt safer walking along streets with more trees. Bus stops with shade, provided either by tree canopy or by a shade structure, were preferred over bus stops without shade.

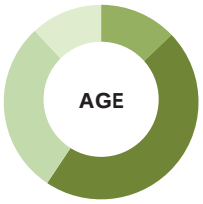
Sixty-six percent of respondents stated they

SUMMARY OF PUBLIC SURVEY RESULTS

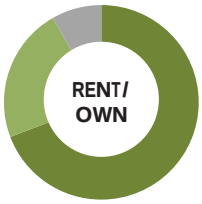
RESPONDENT DEMOGRAPHICS



59% Female
32% Male
9% No answer

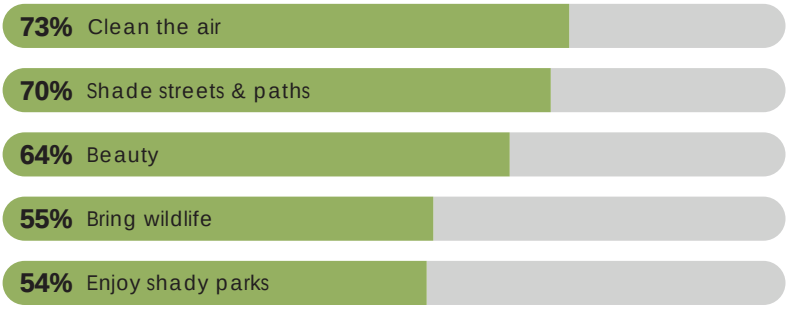


13% <20
46% 21-40
29% 41-60
12% 61+

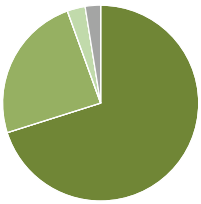


69% Own
23% Rent
8% No answer

TOP 5 REASONS PEOPLE VALUE TREES



WHICH BEST DESCRIBES THE NUMBER OF TREES IN YOUR NEIGHBORHOOD?



70% Too few trees
24% Enough trees
3% Too many trees
3% I don't know

TOP 5 TOPICS FOR PUBLIC EDUCATION

58% Free trees

46% Planting trees

45% Caring for trees on my property

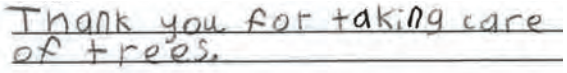
44% Properly watering during drought

41% Different kinds of trees

were unaware of the City's program for planting and caring for public trees and only eight percent were aware of the City's Tree Ordinance. This indicates the need for the City to provide more information to the public regarding trees, tree programs, and efforts to preserve and increase the tree canopy.

When asked what would inspire them to plant more trees on their property, respondents overwhelmingly pointed to free or low-cost trees as the best incentive. Nearly three-quarters of respondents indicated they were willing to pay to have trees in their neighborhood's common areas, which could be funded through a maintenance improvement district (MID), a type of special taxing district described in further detail in Chapter 5. Thirty-six percent were willing to pay $5 to $10 per month and 8% were willing to pay $10 or more each month. When asked what topics they would like to learn more about, the top five answers included: free trees; planting trees; caring for trees on my property; properly watering trees during drought; and different kinds of trees.

Respondents were also invited to comment on Yuma's urban forest and many expressed their support for trees in Yuma, like this comment from a 5th grade student.


Thank you for taking care of trees.

While a majority of the comments expressed support for planting more trees, some also mentioned the need for increased maintenance and expressed concerns over the cost of adding trees. All comments can be viewed in Appendix F.

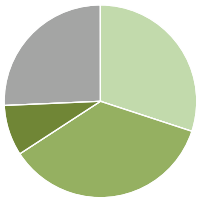
INCENTIVES TO INSPIRE PEOPLE TO PLANT TREES ON THEIR PROPERTY

69% Favored free or low cost trees as the best incentive to inspire them to plant more trees on their property.

42% Rebate

42% Free classes

WILLINGNESS TO PAY FOR TREES IN NEIGHBORHOOD COMMON AREAS



30% <$5/month

36% $5-$10/month

8% $10+/month

26% None

74% Willing to pay for trees in their neighborhood's common areas, which could be funded through a maintenance improvement district (MID).

VISUAL PREFERENCE

When asked to rate a series of images by preference, respondents preferred streets lined with trees and bus stops with shade structures or tree canopy over those without trees.

LEAST PREFERRED RESIDENTIAL STREETS

MOST PREFERRED RESIDENTIAL STREETS

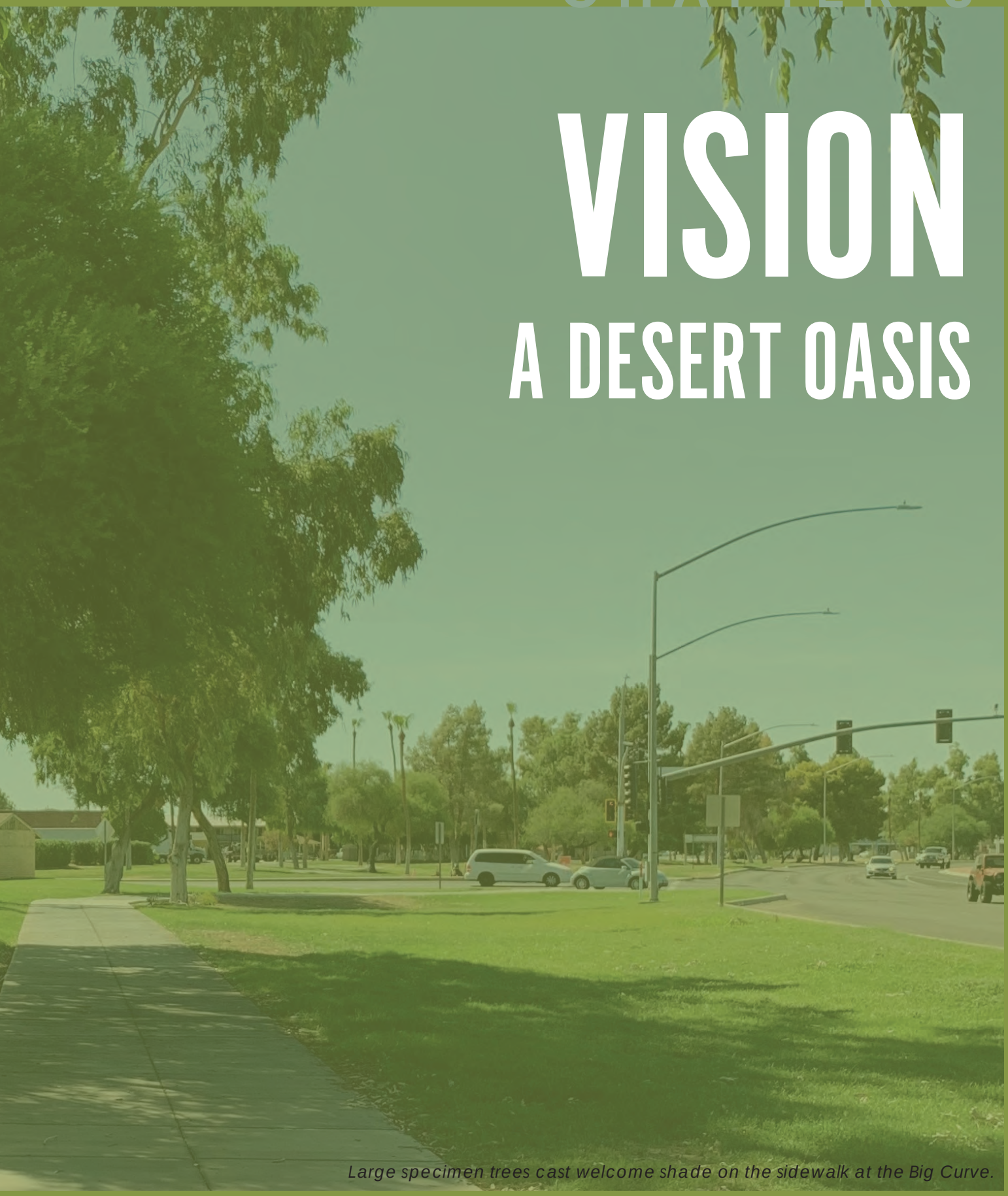
LEAST PREFERRED BUS STOP

MOST PREFERRED BUS STOPS

CHAPTER 3

VISION

A DESERT OASIS



Large specimen trees cast welcome shade on the sidewalk at the Big Curve.

VISION *for* A DESERT OASIS

A society grows great when old men plant trees whose shade they know they shall never sit in. Greek Proverb

In the heat of the Sonoran Desert, there is hardly a more welcome respite than a shady oasis of trees. This plan envisions Yuma as a *desert oasis*; an oasis to be enjoyed by residents, visitors, and wildlife. The metaphor of a *desert oasis* is fitting because it recognizes that our intense desert climate and limited resources would not support a continuous forest canopy, despite even our best efforts. It is simply not feasible to plant trees everywhere, so we must wisely prioritize where trees should be planted to provide the most benefits and to create these oases equitably throughout the city. Native, drought-tolerant trees and shrubs provide a shade oasis not only for people, but also a habitat oasis for wildlife to flourish. The plan challenges Yuma to effectively double the number of existing trees to reach a seven percent canopy. This goal can be achieved by planting trees along streets, paths, and rights-of-way; in parks and open spaces; and on private property such as neighborhoods and parking lots.

Increasing Yuma's Tree Canopy

As outlined in the previous chapter of this plan, the existing tree canopy in Yuma is approximately 3.5%. The goal set by this plan, through a rigorous public input effort, aims to increase the canopy to 7% by 2030; effectively doubling the existing urban forest. For desert cities, American Forests recommends that a 15% canopy coverage as an attainable target, with "higher percentages possible through greater investment and prioritization".[27] Considering Yuma's uniquely hot and dry climate -- unlike most other cities in the nation -- and the currently low canopy coverage, Yuma's goal of 7% aims to be both reasonable for the climate limitations and achievable. Other cities in Arizona have set canopy targets higher than Yuma's target, but their baseline canopy coverage is also higher than Yuma's starting point. Progress toward the canopy goal will be reassessed in 2030 and new canopy targets set as Yuma's tree canopy continues to increase.

In order to achieve a 7% canopy by 2030, the Yuma community as a whole (public and private entities) must plant approximately 10,000 trees each year for a total of 100,000 trees over the next ten years.[28] Based on data from i-Tree Tools, at maturity the average desert-adapted shade or street tree will provide approximately $125 in annual benefits to the Yuma community. Costs of initial tree installation and ongoing maintenance vary widely based on species, location, and other factors. More information on the impacts of the vision for 100,000 trees can be found in Chapter 4 and Appendix G.

[27] American Forests Blog, January 12, 2017 <*www.americanforests.org/blog/no-longer-recommend-40-percent-urban-tree-canopy-goal/*>

[28] Based on an average canopy cover per tree of 531 square feet, which is based on the average mature size of trees found on Yuma's Recommended Plants List, published by the City of Yuma.

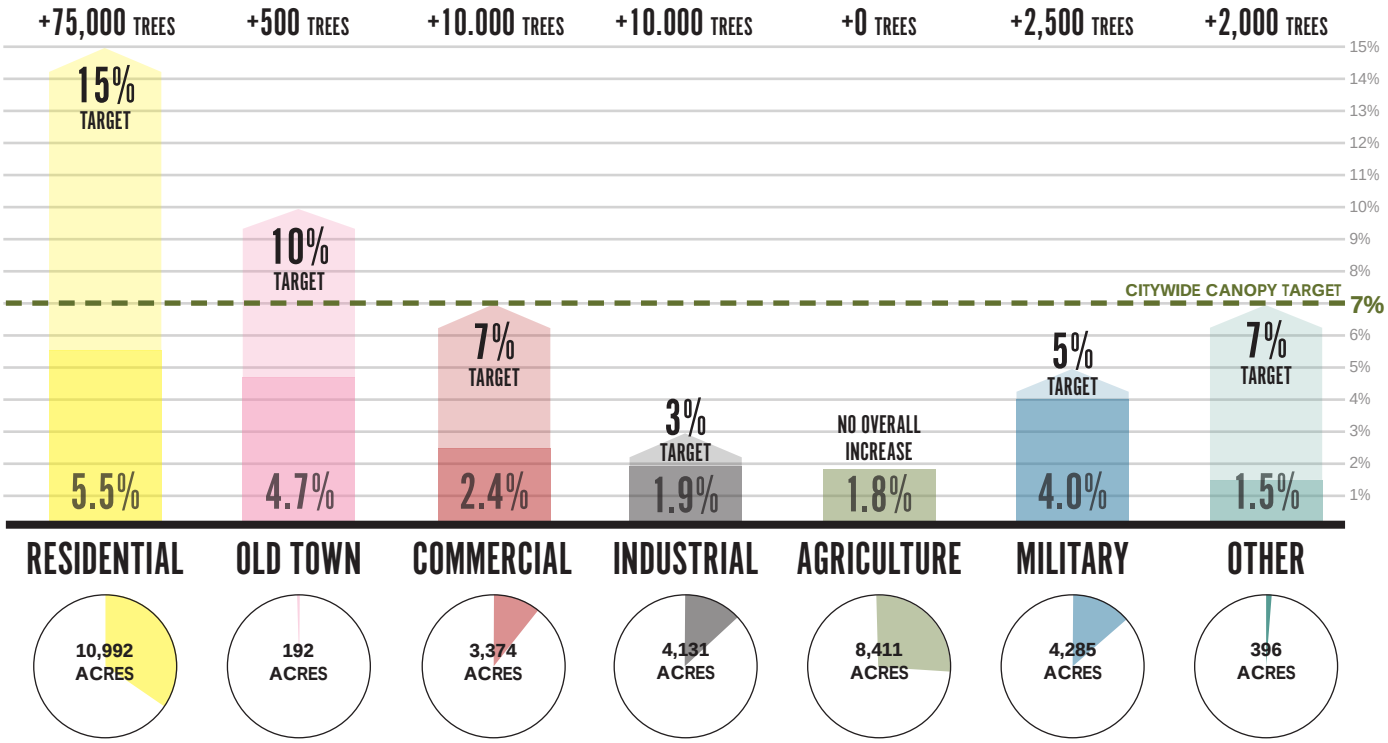
2030 GOAL:

+100,000 *new trees*

TO DOUBLE THE CANOPY COVERAGE TO 7%

Tree Canopy Targets by Land Use. As mentioned in the previous section, the tree canopy varies based on land use, which is evaluated using the current zoning district. Some land uses, like residential, offer more potential for adding tree canopy than others, like agricultural lands. Yuma values agricultural lands and seeks to preserve use for agriculture, so no overall increase in tree canopy is recommended for agricultural zones. Residential zones offer great potential to increase tree canopy coverage, largely because the ratio of pervious to impervious surface is high. The more pervious surface (areas that allow water to infiltrate into the ground) the more potential for adding trees. Commercial and industrial zones,

2030 TREE CANOPY TARGETS BY LAND USE



by nature of their land uses and need for a higher percentage of impervious surfaces such as large building footprints, parking lots, and loading zones, have a lower potential for adding trees and therefore a lower target tree canopy. Despite the different overall canopy targets between residential and commercial lands; both land uses are challenged to triple their existing canopy coverage. Defining different canopy targets for each land use helps identify and quantify different strategies for different land use types.

There's no question that a majority of trees will be planted on sites that are already developed. In the vast majority of instances, trees can be added in existing impervious areas for a relatively low investment. In some cases, however, planting trees may require removing impervious surfaces (asphalt, concrete, etc.). It is also important to ensure newly developed sites contribute to increasing the tree canopy by designing spaces for trees from the initial development phase. Chapter 4 addresses City policies, such as the Landscape Regulations, that regulate how new development adds to the tree canopy.

City of Yuma's Tree Planting Goal. The goal of planting 100,000 trees is shared between private land owners and the City of Yuma. Currently, the City maintains about 8% of Yuma's overall urban forest, with a large portion of those trees found in parks. Doubling the number of trees on City property would mean planting an additional 7500 trees over the next ten years, or 750 each year.

Tree Planting Opportunities

There are many places within the city that offer opportunities to plant trees. Opportunity areas can be categorized in three groups: streets and rights-of-way; parks and open spaces; and private property. Each of the areas offers different benefits to the community. The twelve opportunity areas identified in the chart on the facing page represent where we can plant trees and was developed in response to the comments from the public survey and input from the Task Force. The following section on prioritization offers ways to gauge the impact each tree planting project has on the community. Overlapping tree planting opportunity areas and areas with the greatest need for trees will help the community identify and execute the most impactful projects.

Members of the Clean & Beautiful Commission plant a street tree to celebrate Arbor Day 2019.

Streets & Rights-of-Way. Trees planted along streets and rights-of-way offer walkability, safety, and aesthetic benefits. Street trees are planted within four to eight feet of the sidewalk and aim to provide protection and shade to pedestrians. In some cases, these trees will be maintained by the City, but in many cases, street trees can be planted on private property and maintained by private owners. Street trees near schools and commercial businesses are especially encouraged. Many of the bus stops in Yuma do not have any shade; planting trees and installing shade structures at these stops will provide shade and comfort to those waiting for their bus. Trees can also be planted along pathways, such as the East Main Canal, to provide shade for recreational users. Residents also identified the desire to have

TREE PLANTING OPPORTUNITY AREAS

STREETS & RIGHTS-OF-WAY

PARKS & OPEN SPACE

PRIVATE PROPERTY

more trees and landscape at the interstate interchanges to improve the aesthetic appeal of the city.

Parks & Open Space. Planting trees in parks and open space is one of the easiest places to add trees because there is plenty of pervious surface. It is particularly important to plant trees near playgrounds to provide shade. Elementary students from the Gowan Achievement Program highlighted the need for shade near playgrounds in their April 2019 presentation to City Council. Trees can also be planted in retention basins to beautify the basins and help uptake stormwater. Trees in parks and open space are most likely to provide habitat areas for wildlife, although trees in your own backyard can serve that purpose as well.

Private Property. Private property offers the greatest opportunity for planting trees. Residential yards in particular offer great potential. If each household added one more tree in their yard, we'd have over 40,000 more trees. On commercial and industrial properties, trees can be added in parking lots to provide shade. School property also offers an opportunity: trees can be planted along sidewalks to encourage walkability or near playgrounds to provide shade.

Map 3-1 on the following pages identifies opportunity areas within each land use type to help focus tree planting efforts to reach the tree canopy targets set in this plan.

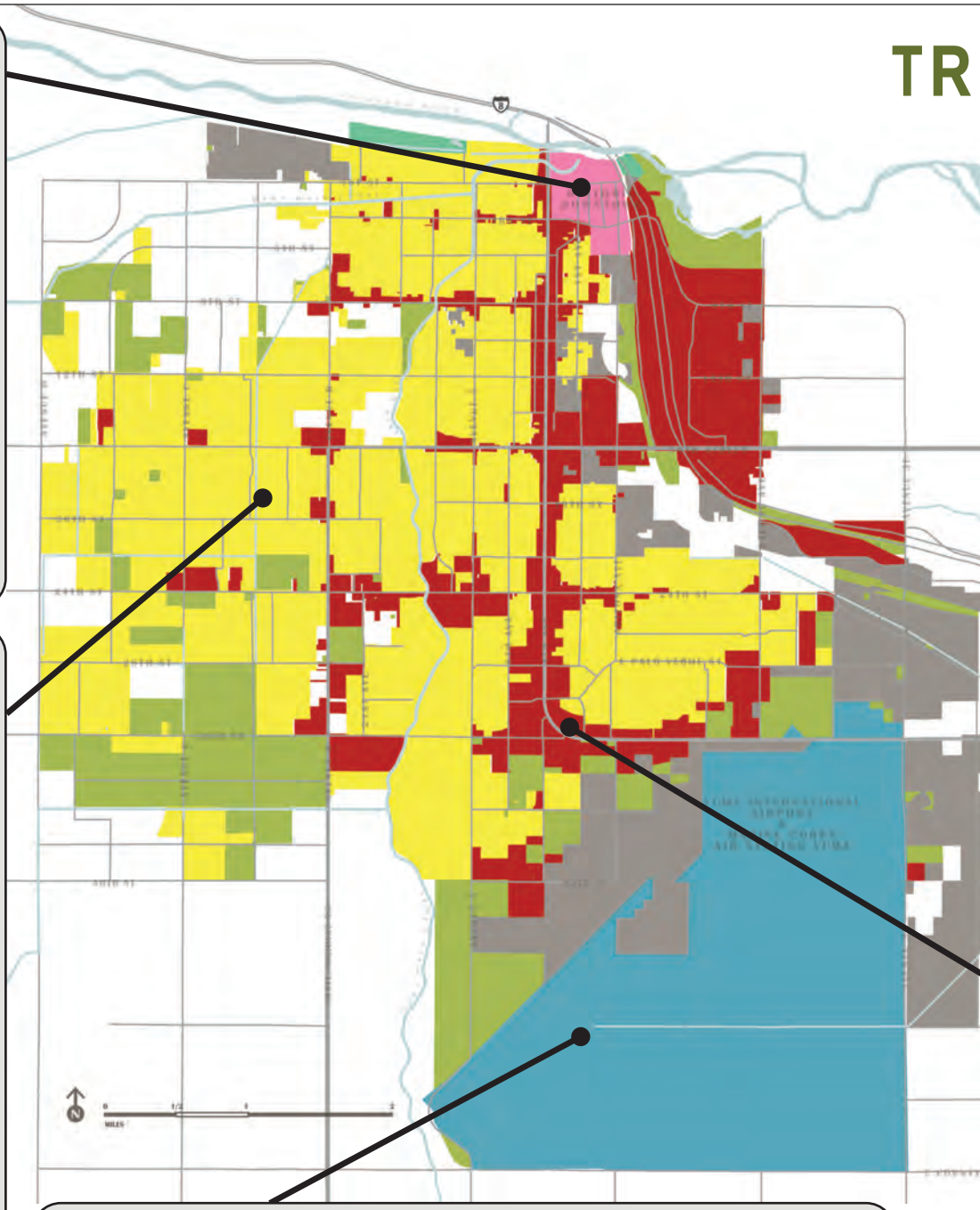
TR

OLD TOWN

The Old Town district is a mixed-use zone characterized by a walkable urban form of smaller lots. The zoning code allows 100% lot coverage in this district. While nearly all of this area is developed, opportunities include:

RESIDENTIAL

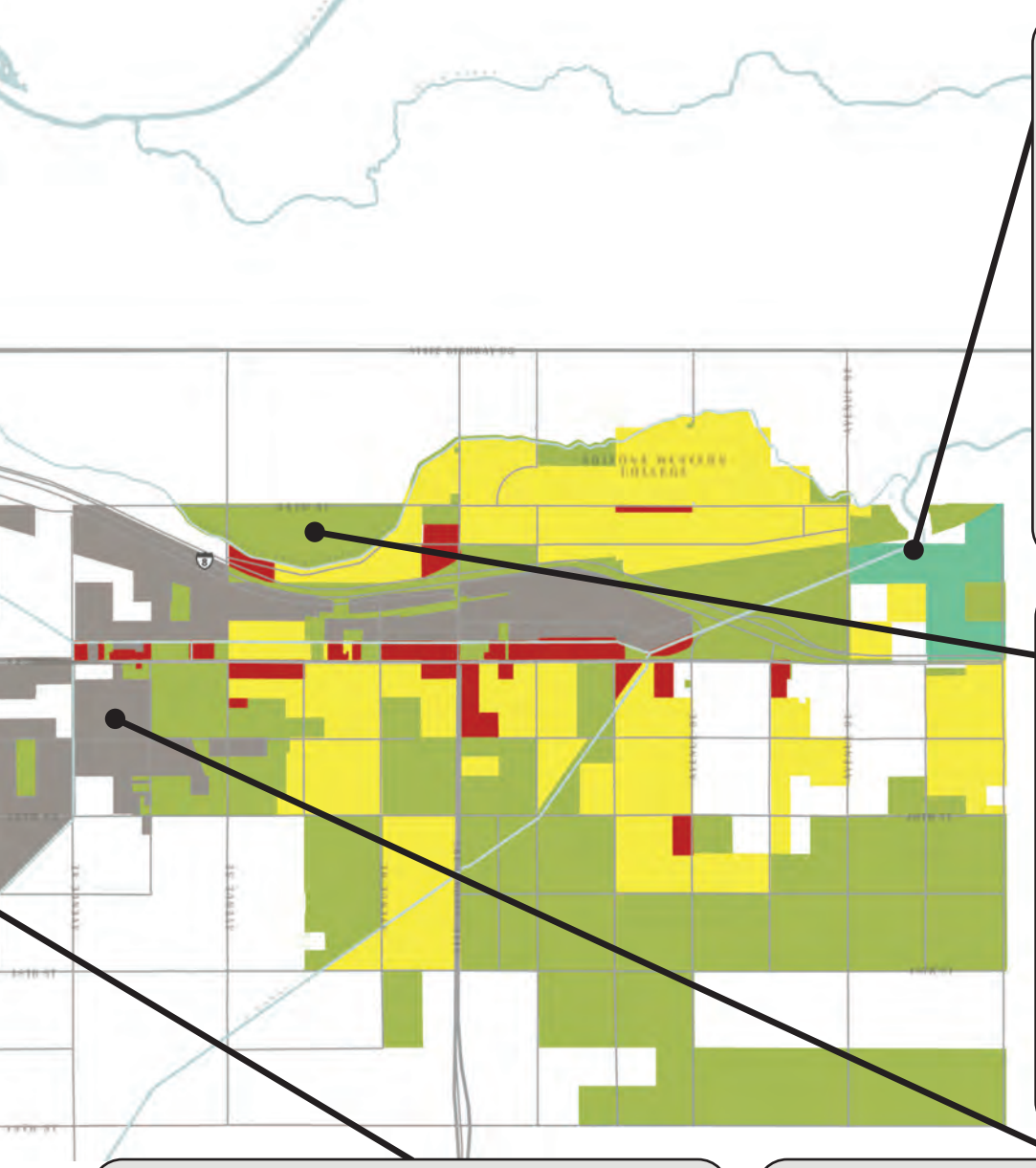
Residential districts (High Density, Medium Density, Low Density, Manufactured Housing, and Recreational Vehicle zones) offer the most potential for tree planting because it is the largest land use and has the highest amount of pervious surface. Most neighborhood parks, schools, and retention basins are located in residential zones.



MILITARY

The Military Reservation (MR) zoning district is reserved for federally owned lands used for military purposes. Due to the nature of activities on the air station, the need for impervious paved surfaces and height restrictions apply, which limits the area available to plant trees. Regardless, opportunities exist to plant trees in the commercial and residential areas of the base. Approximately a third of the land zoned MR is currently being used for agriculture, 330 acres of which is citrus groves.

EE PLANTING OPPORTUNITY AREAS



OTHER

A small portion of the City is zoned as Recreation & Open Space (RO) and Historic Park (HP). The RO district is intended to conserve and protect lands that encompass natural resources. The HP district is intended for parks with historic value. Some of the West Wetlands Park is zoned RO and Yuma Territorial Prison State Historic Park is zoned HP, although the Colorado River State Historic Park is not zoned as such but is rather part of the Old Town district. On the east side of town, a 300-acre parcel zoned RO is owned by Arizona Game & Fish. Opportunities exist to add trees, particularly in the West Wetlands Park.

AGRICULTURAL

No net increase in tree canopy is anticipated for lands being used for agriculture, although existing trees should be preserved whenever possible. Citrus groves contribute to Yuma's overall tree canopy. The East Wetlands Park, currently zoned as Agriculture although it is used as a park, contains nearly 200,000 trees. A majority of the land located southeast of Araby Rd (SR 195) and zoned for agriculture is currently not being farmed and much of it is natural desert that transitions into a military range. Based on the land use designations in the General Plan, some of the agricultural lands are anticipated to be rezoned for residential use in the future. After transitioning to residential, opportunities for planting trees increase.

COMMERCIAL

There are several opportunities to plan trees in commercial districts (General Commercial, Limited Commercial, Business Park, Transitional, Planned Shopping Center) despite the fact that commercial areas are typically allowed a higher lot coverage.

INDUSTRIAL

Similar to commercial districts, industrial districts (Heavy Industrial, Industrial Park, Light Industrial) are allowed a higher percentage of impervious surface, which limits the area where trees can be added. New sites can be designed to accommodate more trees.

NOTE: This map depicts zoning districts which, in some cases, do not match the current or future land use.

Tree Planting Prioritization

The benefits of trees are well understood and the community-wide goal of planting 100,000 trees is established. Now the question is how does the community decide where to plant these trees where they will have the most impact? Tree planting projects can be assessed using four measures of their impact on the community: walkability, safety, equity, and aesthetics. Each of these impact measures correlates with a map on the following pages; each map shows that tree planting projects in certain areas of town will have a greater impact than a similar project would in other areas.

FOUR MEASURES OF IMPACT

Every tree planted helps reach our goal of 100,000 trees. But how do we plant trees to maximize their benefits in order to have the greatest impact on the community? Focus on the following:

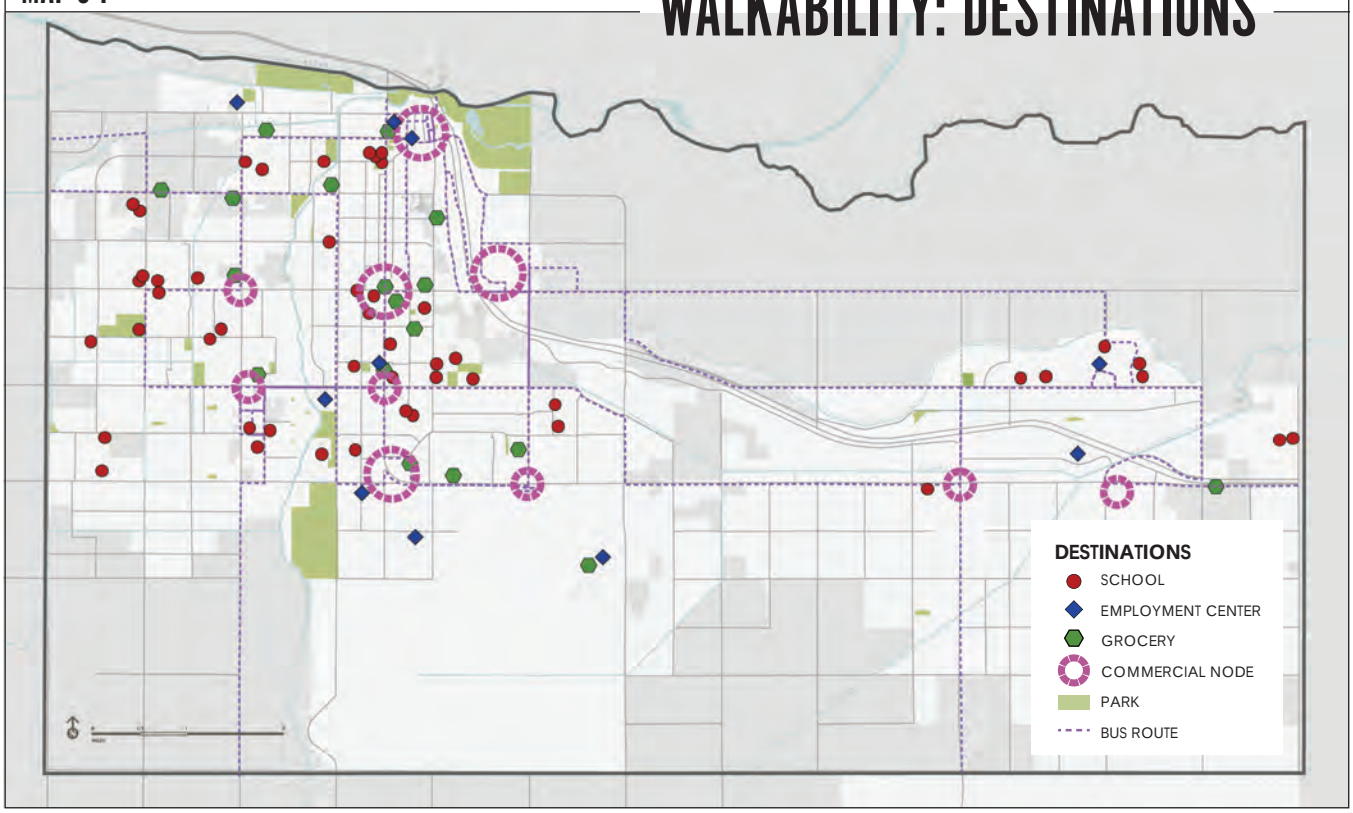
1. **Walkability**
2. **Safety**
3. **Equity**
4. **Aesthetics**

Walkability. Tree-lined streets and sidewalks create a more pedestrian friendly city. Temperatures are 5 to 15 degrees cooler under the shade of a tree.[31] When planted between the street and sidewalk, trees create a buffer to protect pedestrians. Tree-lined streets create a sense of enclosure that makes drivers travel slower.[3] Map 3-1 shows destinations where people are likely to be walking: schools, employment centers, groceries, commercial areas, and parks. It also shows the local bus routes; the last leg of most bus trips is usually a walk. Planting trees along streets and pathways where people are walking improves Yuma's quality of life and creates a healthier city for all.

Safety. Trees improve pedestrian safety by improving walkability and neighborhoods with tree-lined streets have been linked to lower crime rates.[8] The impact trees have on safety are measured in through two data sets: location of pedestrian accidents and incidence of crime.

MAP 3-1

WALKABILITY: DESTINATIONS



Map 3-2 shows where collisions involving pedestrian(s) and car(s) occurred in the five-year period from 2013 through 2017.[29] The map indicates the most dangerous road segments and intersections for pedestrians. Red triangles indicate where collisions resulted in fatality for the pedestrian. During this five-year timeframe, there were a total of 120 accidents involving pedestrians, or about 24 each year. There were 13 fatal accidents; 10% of the overall accidents which is a much higher risk factor than a collision with two vehicles. 95% of accidents resulted in possible injury or worse to the pedestrian. Clearly, pedestrians are vulnerable and more likely to be injured or killed in an accident involving a vehicle. It is imperative to make our streets safer for all users, not just the cars. Map 3-2 indicates the most dangerous roads for pedestrians are 24th Street, 4th Avenue, segments of 16th Street, 3rd Street, 8th Street, 32nd Street near the Big Curve, 20th Street, and segments of Avenue C and A. Street trees alone cannot solve the dangerous conditions of these streets, but they are an essential element to improve safety.

The second part of measuring the safety impacts of trees is the correlation between neighborhoods with trees and lower crime rates. Tall, mature street trees provide a pleasant setting for residents to congregate while not blocking the views of houses, allowing for visual surveillance.[8] Map 3-3 shows the density of incidences of crime over the past year (2018-19), as reported by the Yuma Police Department and mapped on the LexisNexis Community Crime Map.[30] The areas shown in red/orange have the most crime; areas shown in blue have the least. Street trees have been shown to have a greater association with crime reduction than trees in private yards.[8]

Equity. Trees, particularly street trees and shade in parks, are a civic resource and an essential part of the infrastructure that mitigates extreme heat. Extreme heat is not a equal opportunity hazard; vulnerable populations like the elderly, children, low-income, and homeless people are most at risk.[31] These vulnerable populations often have the least access to shade. For example, two Phoenix neighborhoods just a few miles apart have measured temperature differentials of up to 13 degrees F. For every $10,000 increase in the average income of the neighborhood, the average outdoor temperature drops half a degree, making the equity implications all too clear.[?]

To measure and map equity impacts, this plan borrows analysis from the 2017 Shade Tree Planting Prioritization analysis of the Urban and Community Forestry Program (UCF) at Arizona DFFM.[32] Their analysis identifies shade tree planting needs based on seven criteria: population density, lack of canopy cover, low income, traffic proximity, sustainability, air quality, and urban heat effect. The seven sub-indices were combined into the Shade Tree Planting Priority Index; Yuma's prioritization index is shown in Map 3-4, where the darker the shade of red indicating a greater need for canopy cover.

Aesthetics. Trees and shrubs make our environment more beautiful and contribute to the sense of place. Trees contribute to a sense of pride in our neighborhoods and city. The beauty they provide adds real value; realtors estimate that tree-lined streets increase property values by $15,000 to $20,000.[9] The aesthetic impact of trees is measured in two ways: Gateway and Scenic/History Routes designated in the General Plan and traffic volumes (Map 3-5). The Gateway Routes designated in the General Plan are Yuma's "front door" and are the first thing visitors and residents see of our City. Beautifying these areas makes a good first impression and engenders community pride among residents. The second measure of aesthetics is the most traveled streets, based on traffic counts.[33] Planting trees in these areas will reach the largest audience and therefore have the greatest impact. Map 3-5 highlights streets with over 10,000 vehicles per day.

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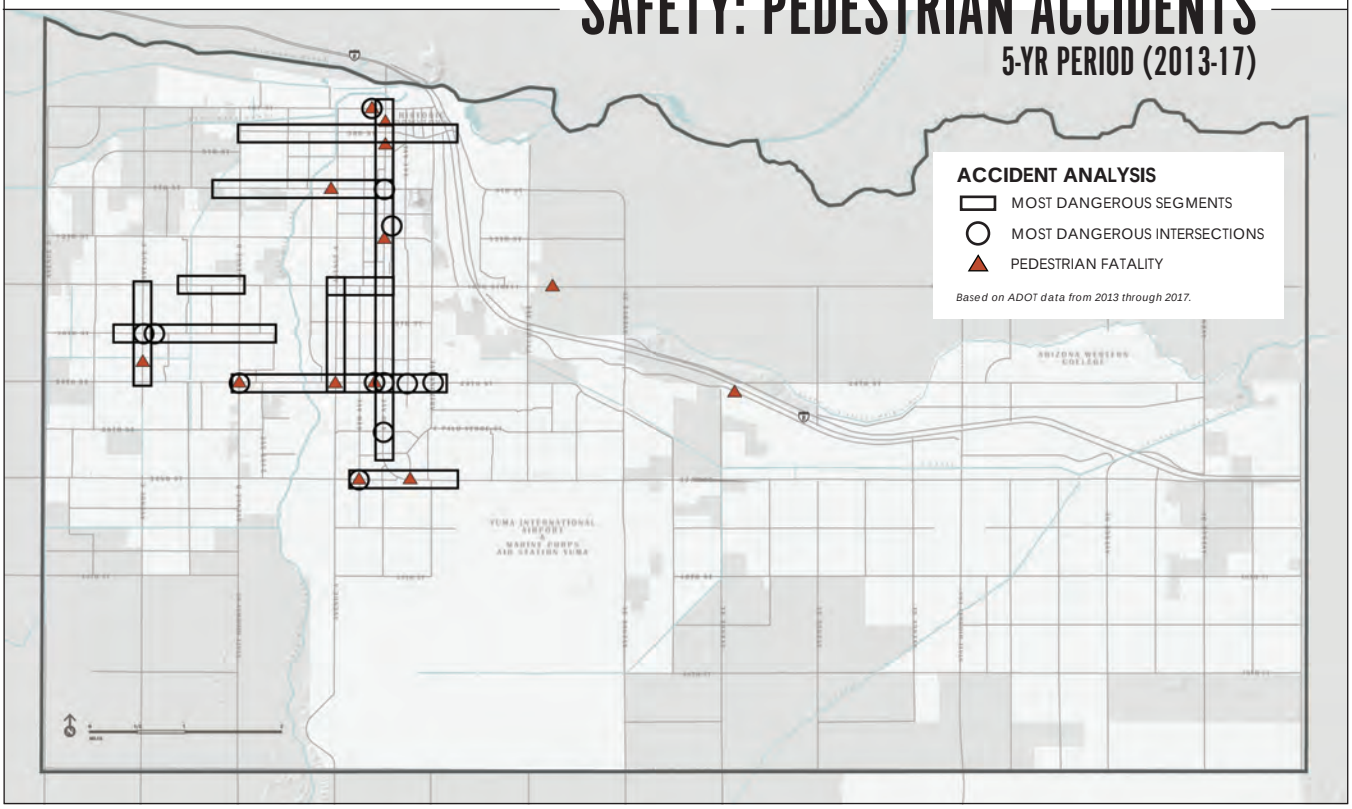
[29] Arizona Department of Transportation, 2013-2017 accident data.
[30] LexisNexis Community Crime Map. *<communitycrimemap.com>*
[31] O'Brien, Casey. "Extreme Heat Poses Urban Equity Issues." Planning Magazine, May 2019.
[32] 2017 Shade Tree Planting Prioritization Report (STPP). Updated 9/24/2018. Arizona Dept of Forestry & Fire Management. *<dffm.az.gov/2017-shade-tree-planting-prioritization>*
[33] 2014 Traffic Count Map, Yuma Metropolitan Planning Organization (YMPO) *<ympo.org/maps-more/trafficcounts/>*

MAP 3-2

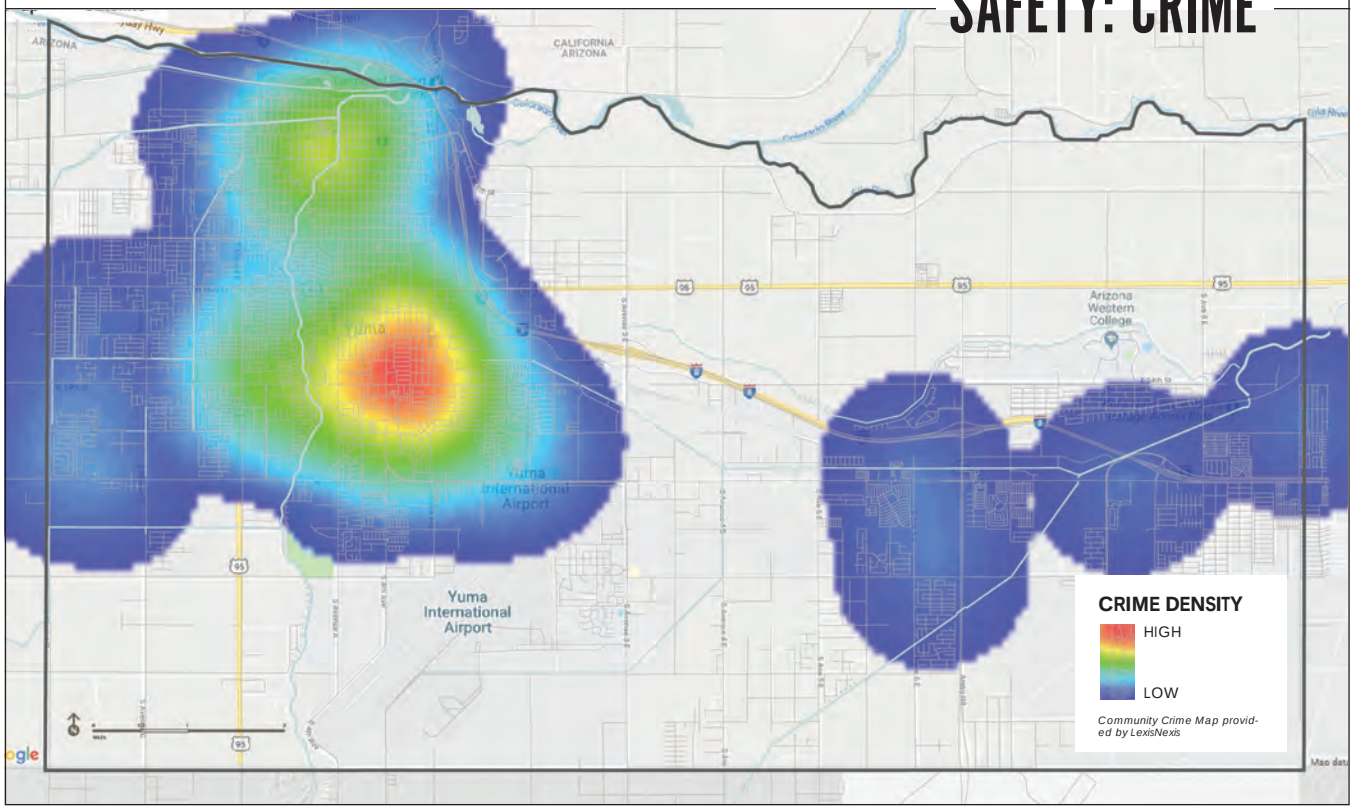
SAFETY: PEDESTRIAN ACCIDENTS

5-YR PERIOD (2013-17)



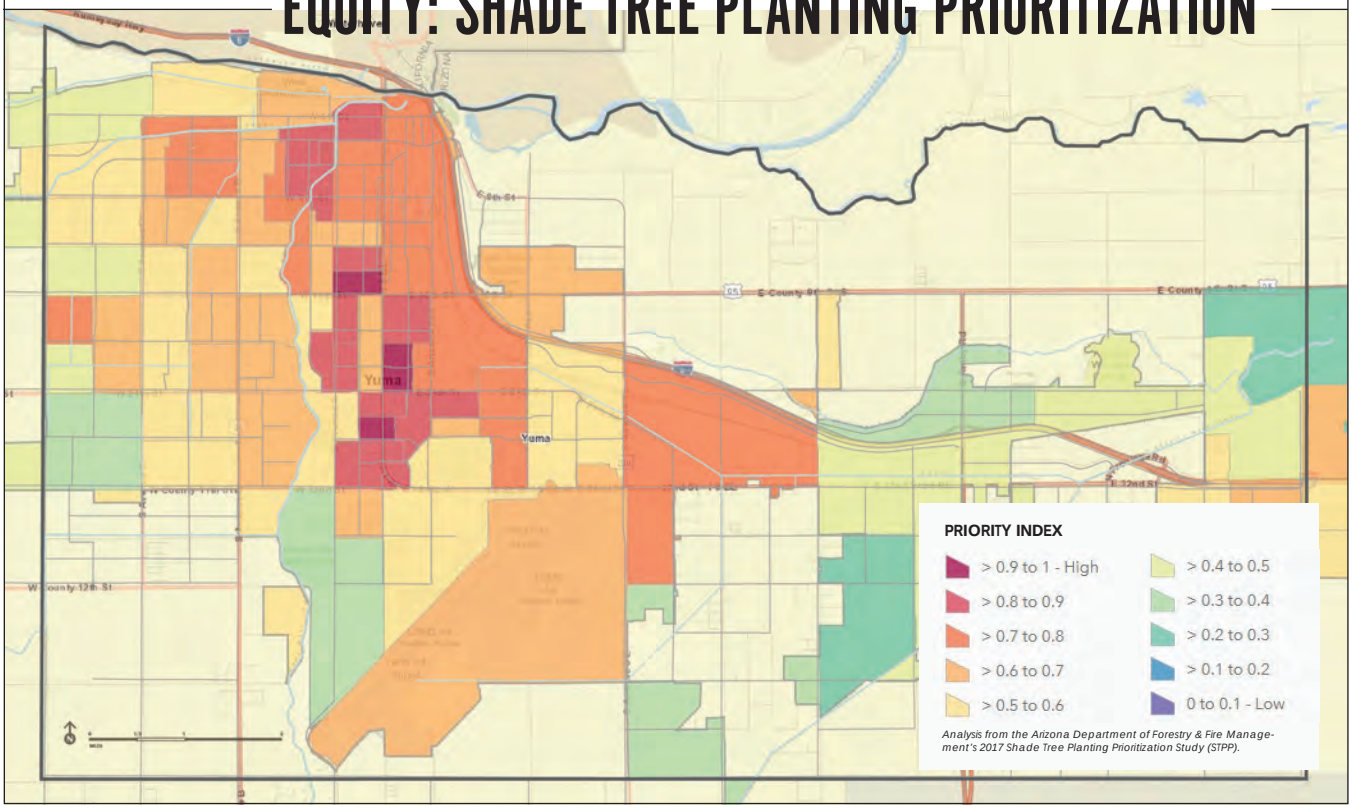
MAP 3-3

SAFETY: CRIME



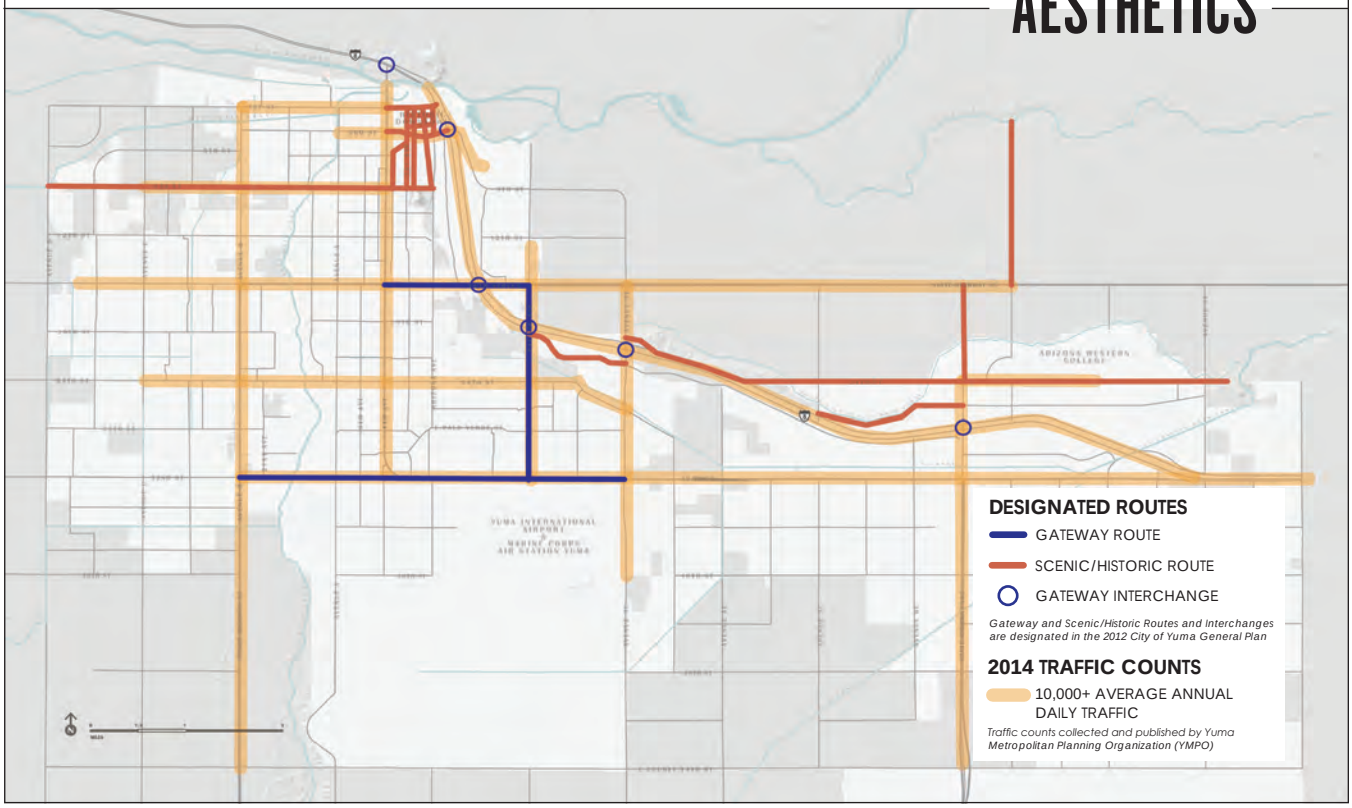
MAP 3-4

EQUITY: SHADE TREE PLANTING PRIORITIZATION

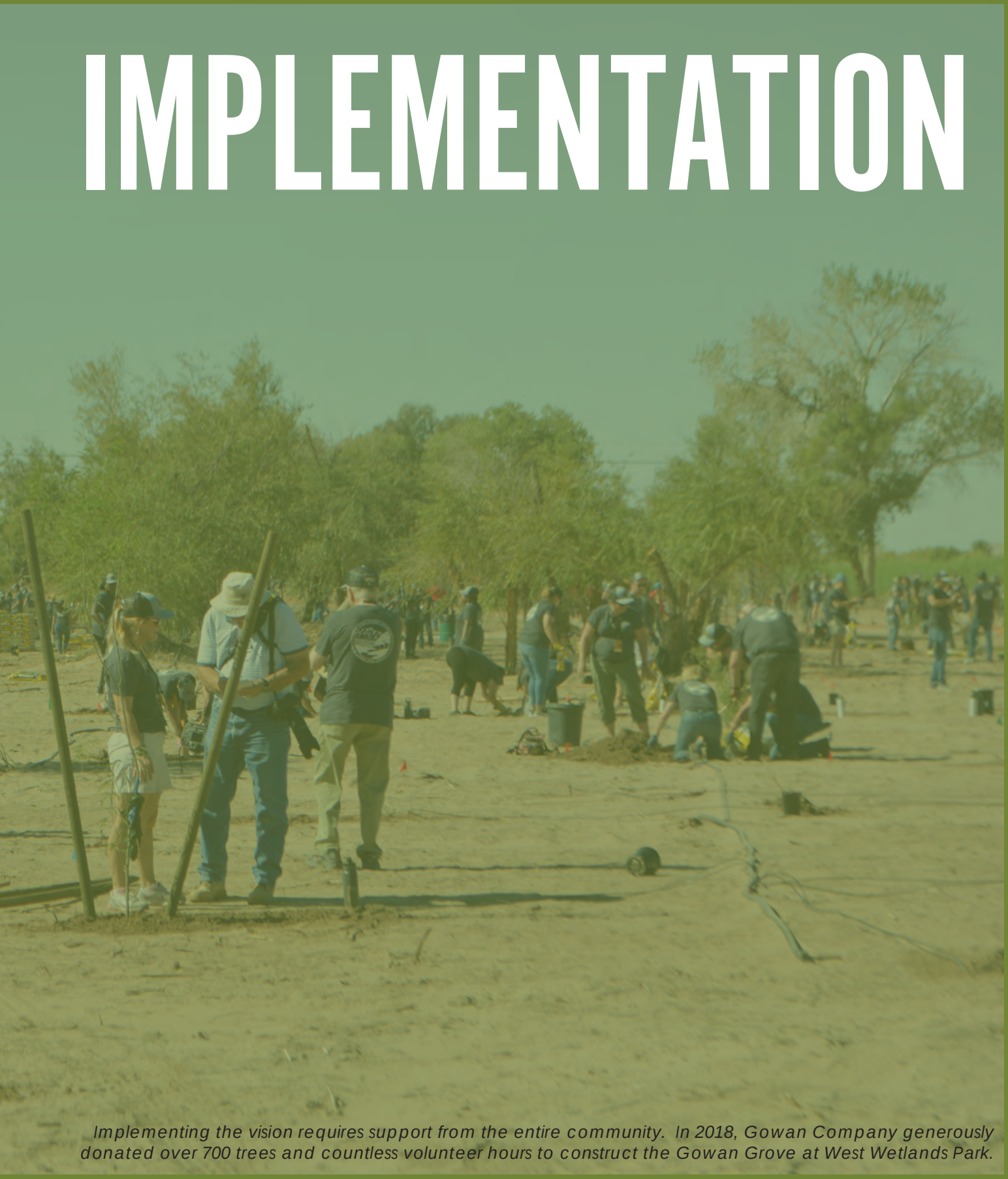


MAP 3-5

AESTHETICS



IMPLEMENTATION



Implementing the vision requires support from the entire community. In 2018, Gowan Company generously donated over 700 trees and countless volunteer hours to construct the Gowan Grove at West Wetlands Park.

IMPLEMENTING *the* VISION

If a tree dies, plant another in its place.

Linnaeus

To reach the goal of planting 100,000 trees, community involvement in implementation is imperative. The City is committed to planting trees, but a majority of the 100,000 trees will be planted on private property at the discretion of private property owners. In addition to leading by example, the City plays an important role in setting and enforcing policies that encourage trees and protect our existing tree canopy. There are many funding sources available to support tree planting projects: donations, grants, City funds, and special taxing districts, to name a few. Planting an additional 100,000 trees does not come without impacts, and the short and long-term impacts of increasing Yuma's tree canopy need to be well understood.

Community Tree Projects

One of the most important assignments of the Task Force was to advise staff on projects to implement the plan. Based on recommendations from the Task Force, twenty unique tree planting and outreach projects were developed. Each project is outlined on the following pages.

The twenty tree projects reflect the priority and impact areas mentioned in the previous chapter. Each project is intended to be a partnership between a City department (Parks & Recreation, Public Works, and Community Development) and a community partner. City-initiated projects are made stronger with public input and vice versa. Most of the twenty projects are intended to be multi-phase and ongoing for the next decade. For example, the Safe & Shady School project can address many different schools over the coming years. It is certainly not an exhaustive list of tree projects, but is intended as a starting place to inspire the community.

Members of the Task Force, many of whom were representatives of community organizations, were challenged to commit to assisting with implementation of at least one project that aligned with their interests and expertise. Many residents and organizations offered up their help, and some of those projects that have committed partners and are currently being implemented are highlighted in further detail throughout this chapter. The City will continue to seek partners for projects that don't already have a committed community partner.

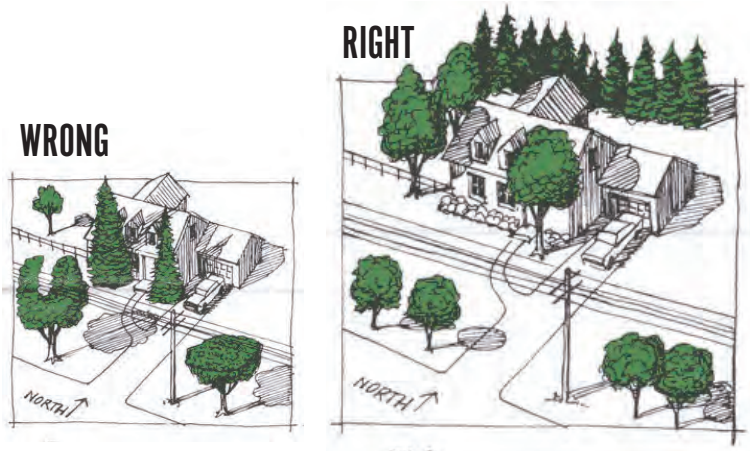
Trees for Yuma Consortium. In order to continue the efforts to implement this plan, a consortium of local organizations and residents interested in trees will be formed. The consortium, known as *Trees for Yuma,* will be open to any organization, business, utility, resident, and City department that "takes the pledge" to plant or protect trees in Yuma.

The *Trees for Yuma* website serves as the repository for all tree-related projects and information in the community. Information about the tree projects from this plan will be displayed and updates published as trees are planted and ideas implemented. Consortium members can reach out to other members to find volunteers, funding, or expertise.

Trees for Yuma accepts donations to be used specifically for supporting Yuma's urban forest. Donors and consortium members are recognized for their efforts and donations on the website and through occasional press releases. Information on tree care and maintenance is available on the website as well as a community calendar of tree-related events.

Policy

Increasing Yuma's tree canopy will require more than just planting trees; City policies that support trees and encourage proper maintenance will also help grow the canopy. The City has established comprehensive policies and regulations for tree preservation, planting, and maintenance; all guided by the overarching "Right Tree, Right Place" principle. The Landscape Regulations guide new development; the Tree Ordinance protects existing municipal trees; and the *5-Year Tree Care & Maintenance Plan* guides the City's management of municipal trees.



Examples of the "Right Tree, Right Place" principle from the Arbor Day Foundation.

Right Tree, Right Place. The City of Yuma's guiding arboriculture principle is "right tree, right place." It is the strategic foundation of all forestation, care, maintenance, and sustainability efforts in the City. According to the Arbor Day Foundation, the "right tree, right place" philosophy is a clear directive to plan all forestation activities, by considering the long-range implications of a tree's mature height, canopy spread, nature (deciduous or evergreen), shape/form, growth rate, natural elements (soil, sun, and moisture) requirements, fruit, and hardiness zone and how those elements relate to the tree's location and intended purpose. Commitment to this principle is reflected in the City's Landscape Regulations, in the Recommended Plants List, in the Tree Ordinance, and in the 5-Year Tree Care & Maintenance Plan.

1 Shady Pathways

Plant trees along pathways, like the East Main Canal, to provide shade for the cyclists, joggers, and pedestrians who use the path. Trees could be concentrated near benches to provide shady places to rest.

PUBLIC WORKS — LOCAL ORGANIZATIONS

2 Walkable Streets

Plant trees along roadways to make streets more walkable and safer for pedestrians. Street trees can be planted in public rights-of-way or on private property. Target areas with a high density of destinations and areas that are currently the least safe for pedestrians.

COMMUNITY DEVELOPMENT — LOCAL ORGANIZATIONS

3 Shady Bus Stops

Identify frequently used bus stops with no shade and plant trees or erect shade structures to protect riders waiting for buses. Organizations, businesses, or residents could sponsor improvements at a specific bus stop.

COMMUNITY DEVELOPMENT — LOCAL ORGANIZATIONS

4 Tree-Lined Neighborhoods

Encourage trees to be planted in Yuma's neighborhoods with wide (>8-ft) tree belts. Tree-lined streets are safer, more beautiful, and increase property values for adjacent properties.

COMMUNITY DEVELOPMENT — LOCAL ORGANIZATIONS

5 Attractive Interchanges

Work with Arizona Department of Transportation (ADOT) to plant trees at Interstate 8 interchanges. Explore potential for local organizations to volunteer to plant trees and provide donations to fund ongoing maintenance.

PUBLIC WORKS — LOCAL ORGANIZATIONS

6 Welcoming Gateway Routes

Plant trees along the Gateway Routes identified in the General Plan: 16th Street, 32nd Street, and Pacific Avenue. Gateway Routes are the "front door" of our community. City-developed landscape plans can be supported by partnerships

COMMUNITY DEVELOPMENT — LOCAL ORGANIZATIONS

7 Planting a Warm Welcome

Trees would further enhance the unique and artistic welcome signs that were recently installed through a partnership between e Public Works, the Clean & Beautiful Commission, and local schools. Local organizations could provide funding for irrigation and trees.

PUBLIC WORKS — LOCAL ORGANIZATIONS

8 Memorial Tree Program

Offer residents the opportunity to plant memorial trees. Develop a brochure and conduct outreach to inform the community of this program. Each memorial tree will be denoted in City asset management software.

PARKS & RECREATION — LOCAL ORGANIZATIONS & RESIDENTS

9 Attractive Xeriscape Basins

To reduce costs and increase levels of service, Public Works is transitioning basins with grass to xeriscape landscape with desert-friendly, low-water use plants. Trees are an important component of xeriscape and converted basins will include trees.

PUBLIC WORKS — LOCAL ORGANIZATIONS

10 Improving Subdivision Entrances

Improve the aesthetics of subdivision entrances by planting trees and xeriscape. Trees will be added to sites maintained by Public Works that currently have irrigation. Local organizations provide support by donating trees or funds for irrigation.

PUBLIC WORKS — LOCAL ORGANIZATIONS

11 Promote MIDs

Subdivision residents can petition the City to form a maintenance improvement district (MID), a special taxing district that can fund tree and landscape maintenance in their neighborhood. The City will disseminate information to residents about the option to form a MID.

PUBLIC WORKS + COMMUNITY DEVELOPMENT — RESIDENTS

12 Shady Playgrounds

Plant trees or shade structures near playgrounds to provide shade. The Parks & Recreation Department will determine in which parks the playgrounds need shade. Local organizations could donate trees, volunteers, or work with students to host fundraisers.

PARKS & RECREATION — LOCAL ORGANIZATIONS

13 Tree Incentives

Incentivize the private property owners to plant more trees on their property. Responses from the public survey indicate that the most effective incentive would be to give away free trees. Partner with local businesses and organizations to provide free trees.

COMMUNITY DEVELOPMENT — LOCAL ORGANIZATIONS

14 Planting Wildlife Habitats

Inform the public about the benefits of planting trees to provide wildlife habitat. Encourage utilization of educational materials on the types of trees and landscape that provides the most habitat and what types of animals it attracts.

PARKS & RECREATION — MASTER GARDENERS + YCNHA

15 A Shady Place to Park

Trees in parking lots combat the urban heat island effect and provide people a shady place to park. Target tree plantings in large parking lots where people frequently walk, like grocery stores. Partner with property owners to design landscape plans to plant trees.

COMMUNITY DEVELOPMENT — LOCAL BUSINESSES

16 Trees Combating Crime

Residential neighborhoods with trees are shown to have lower crime rates. Sponsor tree planting events in high-crime neighborhoods as a way to combat crime and increase equity. City-designated Revitalization Areas could be the subject for pilot projects.

COMMUNITY DEVELOPMENT — LOCAL ORGANIZATIONS

17 Safe & Shady Schools

Plant trees on and near school property to improve walkability and provide shade. Use the planting effort to teach students about the importance of trees. Partner with local organizations and schools for funding.

PARKS & RECREATION — PECAN GROVE GARDEN CLUB, APS, YUMA COUNTY PUBLIC HEALTH

18 Tree Care Classes

Offer a variety of free and paid classes on tree care topics. Target different demographic groups to reach a wide audience, particularly people who might not otherwise self-select to learn about trees. Tree giveaways or other incentives could be offered to attendees.

PARKS & RECREATION — LOCAL ARBORISTS

19 Information Campaign

Provide information on tree topics to the general public via social media, print/online brochures, and public service announcements (PSA) on radio & television.

COMMUNITY DEVELOPMENT — LOCAL ORGANIZATIONS

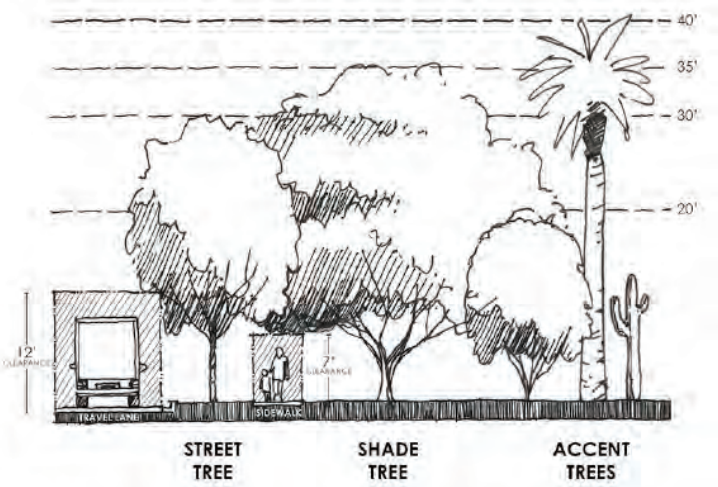
20 Ask the Arborist Radio Show

Host a recurring radio show on tree care topics such as planting, pruning, and irrigation. Listeners could call in or post questions to Facebook in advance of the show to guide discussion topics.

PARKS & RECREATION — LOCAL ARBORISTS

Landscape Regulations & Guidelines. In 2017, the Mayor & City Council adopted an update to the Landscape Regulations (Chapter 154 Article 20) that determine what types of landscape is installed in conjunction with new development or redevelopment. The purpose of the code amendment was to emphasize the importance of trees to provide shade, reduce energy consumption, absorb stormwater runoff, and improve air quality; to encourage xeriscape, low-water use landscape design; and to improve aesthetics throughout the community. Landscape is an integral part of the community's infrastructure. Overall, the goal of the changes adopted in the amendment was to reduce the cost of landscape while increasing the benefits to the community, which was largely accomplished by focusing planting efforts on trees over other types of landscape such as groundcover. The update also enhanced the section on landscape design to distinguish between types of trees (street, shade, and accent), to include more detailed descriptions of xeriscape and hydrozones, and to clearly define the purpose of each type of landscape.

Landscape Regulations require landscape in four areas of the site: around the perimeter, in off-street parking lots, in retention basins, and in other areas. The amendment introduced the streetscape zone, which emphasizes street trees along the street to provide shade for pedestrians and visual enclosure to the street which calms traffic speeds. Many of Yuma's neighborhoods established in the pre-WWII era have large "tree belts", the space between the back of the curb and the sidewalk where trees were historically planted. In these areas, new development requires trees be planted and irrigation provided within this tree belt.



The Landscape Regulations define three different classes of trees.

Another important addition was the inclusion of regulations for single-family residential lots, which were previously not addressed in the code. In accordance with many other municipalities, these residential requirements, which apply to lots over 5000 square feet, require one tree to be planted on each lot within the front yard setback. This requirement ensures that all new residential lots within the City add to the canopy coverage.

For off-street parking lots, the updated increased the number of required trees from 1 per 15 spaces to 1 per 8 spaces. This is in line with other municipalities' requirements and aims to achieve 30% shade coverage at maturity for the parking lot. The focus of landscaping within parking lots is trees to provide shade, while shrubs and vegetative groundcover are less important. Each tree will also be required to provide adequate uncompacted soil to ensure the health of the tree in the long term.

In conjunction with the amendment to the Landscape Regulations, the City published a Recommended Plants List (available in Appendix C) to identify and encourage appropriate, low-water use plants for Yuma's desert climate. This list, created by Community Planning staff in conjunction with the Public Works Department, Yuma County Water Users' Association, and APS, is available to the public at City Hall and online. It is provided to designers and landowners as they develop their landscape plans, typically during the pre-development meeting process.

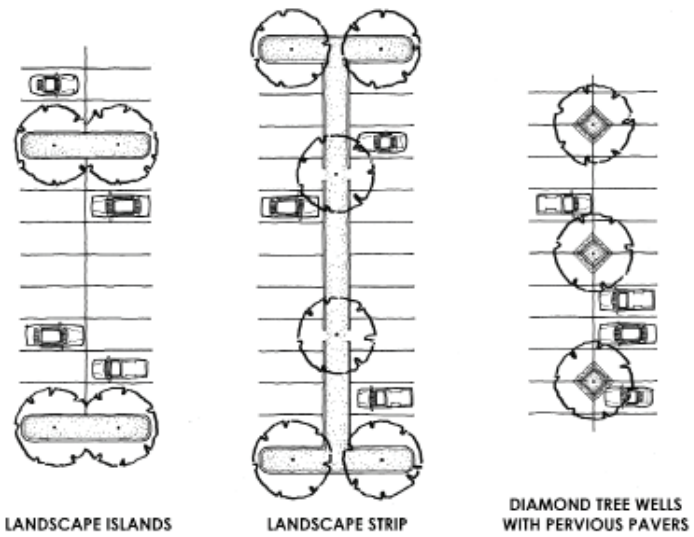
The Recommended Plants List is the first in a series of documents that make up the City of Yuma Landscape Guidelines (Appendix C). The Landscape Guidelines will be developed further as part of the outreach section of this plan and will serve to help the entire community better care for trees

and landscape in our desert environment. In addition to the Recommended Plants List and Residential Tree Requirement documents that have been published, the Landscape Guidelines will include the following: Xeriscape Principles, Recommended Plant Palettes, Landscape Plans Submittal Checklist, Pruning Guidelines, and Irrigation Guidelines.

Tree Ordinance. The purpose of the City's tree ordinance is to provide protections for Yuma's existing tree canopy. The City first adopted a tree ordinance on November 20, 2007 to recognize the value of trees in our community, to instate maintenance standards for trees owned or maintained by the City, and to form a Community Tree Board. Adoption of the Tree Ordinance was a critical step toward the City being recognized by the Arbor Day Foundation as a Tree City USA, a designation the City continues to maintain.

During this comprehensive planning process, City staff from an interdepartmental team (Parks & Recreation, Public Works, and Community Development) reviewed and edited the tree ordinance to provide further protections for Yuma's municipal trees, to clarify the applicability of the ordinance to municipal trees, and to add requirements for removal and replacement of municipal trees. Municipal trees are those owned or maintained by the City of Yuma, including those growing in City rights-of-way, parks, retention basins, and other facilities. The ordinance does not regulate trees on private property, although it does impact municipal trees located in rights-of-way maintained by private residents. See Appendix G for the full text of the Tree Ordinance.

As in the 2007 Tree Ordinance, the updated ordinance, adopted in December 2019, sets out maintenance standards to be followed for all municipal trees and prohibits anyone from causing damage to municipal trees. Tree-topping noted as a banned practice for municipal trees. Revisions to the code add requirements for tree removal, replacement, and penalties for not following the requirements. Yuma City Streets & Traffic Code § 210-20 requires any person doing work within the City right-of-way, including



The Landscape Regulations provide examples of how to achieve 1 tree per 8 spaces in parking lots.

work to trees, to obtain an encroachment permit. The revisions to the Tree Ordinance clarify and reiterate the need for a permit when removing a municipal tree. When a permit is submitted, the City Arborist will be notified to conduct an assessment of the tree in question. If a permit is granted for tree removal, the property owner is responsible for replacing the tree. The replacement factor is based on the value the tree is bringing to the community; the larger the tree and it's canopy, the more benefits it provides. Therefore, a small tree needs to be replaced with one tree; a medium size tree with two trees; and a large specimen tree replaced with three trees. The size of the tree and therefore it's replacement value, is determined by the diameter at breast height (DBH). Replacement trees must be species listed on the City of Yuma Recommended Plants List that was developed in conjunction with local experts and City staff.

If the City Arborist deems the replacement trees cannot be accommodated on the site, he or she may require in-lieu fees to be paid into a Municipal Tree Fund. In-lieu fees shall be determined by the City Arborist based on the estimated replacement value of the tree to be removed. The revisions to the Tree Ordinance also seek to create the Municipal Tree Fund in which fees would be deposited and funds used for care and maintenance of municipal trees and to off-

set the loss of municipal trees due to removal, destruction, or natural death.

5-Year Tree Care & Maintenance Plan. The *Tree Care & Maintenance Plan*, developed in conjunction with this master planning process, is used by City staff to prioritize, schedule, and financially plan for municipal trees as well as maintain the health of municipal trees. Although the City has been practicing urban forestry stewardship for many years, this type of comprehensive document summarizing the strategies and budgetary requirements had yet to be codified in written format. The *Tree Care & Maintenance Plan* primarily serves the Parks and Recreation and Public Works Departments' staff, as it describes current practices and outlines current and future strategies for municipal tree care and maintenance. See Appendix B for the complete *5-Year Tree Care & Maintenance Plan*.

The *Tree Care & Maintenance Plan* stresses the need for a complete inventory for all municipal trees. A complete inventory will aid in the implementation of the recommended Tree Replacement Program. The Public Works and Parks & Recreation Departments have recently adopted use of GIS-based asset management software, *Lucity*. With all departments using this software, *Lucity* has the potential to greatly enhance the ability of City staff to monitor and understand the health of the urban forest.

Xeriscape Conversion Program. In 2017, the Public Works Department instituted a program for converting grass retention basins to xeriscape plantings that use native and low-water use plants, including trees. Trees are an integral part of xeriscape landscape design and are included in the converted designs at the rate specified in the City's adopted Landscape Regulations. To date, fourteen basins have been converted.

Complete Streets Policy. In 2014, the City adopted a Complete Streets Policy, as outlined in the Transportation Master Plan. The objective of Complete Streets is to "develop integrated, connected networks of streets that are safe and accessible for all people". It requires a "focus on making it possible for motorists, pedestrians, bicyclists, and transit riders to travel together safely" and "incorporates attention to safety, mobility, accessibility, quality of life, and sustainability as street design is conceived and streets operations are evaluated". Trees, particularly used in a tree belt to separate sidewalks from moving traffic, and transit shelters are integral elements of building Complete Streets. As part of the City's commitment to Complete Streets, trees are viewed as an essential element of infrastructure and should be installed during road construction.

Shade Structures. The City has yet to adopt a policy on engineered shade structures. Engineered shade is appropriate in certain instances, such as at playgrounds and bus stops, but preference is given to trees over engineered shade because of all the benefits trees offer in addition to just shade.

9 Attractive Xeriscape Basins

To reduce costs and increase levels of service, Public Works is transitioning grassy retention basins to xeriscape landscape using desert-friendly, low-water use plants. Trees are an important component of xeriscape and converted basins will include trees at the rate required by the Landscape Regulations.

The conversion of the Rancho Viejo II basin, the pilot project for this program completed in 2017 and shown to the left, added 12 street trees along 16th Street.

PUBLIC WORKS **LOCAL ORGANIZATIONS**

Impacts of 100,000 Trees

Planting an additional 100,000 trees will provide considerable benefits to the community, but those benefits don't come without costs and impacts. In addition to the initial investment to plant the trees and ensure care to establish them, there are the ongoing maintenance costs to keep them healthy and safe. Overall, the benefits of trees outweigh the maintenance costs, and as the trees grow, so too do their benefits.

Installation. The initial investment of planting a tree can be divided into three factors: the cost to purchase the tree, the cost to install irrigation, and the labor costs of installing the tree. It is difficult to estimate the exact cost of installing a tree because each of these factors will vary based on the site and circumstances of the tree planting. Installation costs for a tree could be as low as $0 (free tree, irrigation in place, volunteer labor) or as high as a few hundred dollars if an expensive species is selected or more extensive irrigation installation is needed.

Irrigation. Irrigation is a critical component of tree planting; most trees in Yuma's urban environment would not survive without irrigation. High-efficiency irrigation systems, such as drip irrigation systems on an automated timer are preferred, although other methods of irrigation, such as hand watering, sprinklers, flood irrigation, or water trucks are also options. Regardless of the method, deep and infrequent watering is preferred over frequent and shallow watering and will produce healthier, hardier trees.

Based on water use recommendations from Landscape Watering by the Numbers[34], an irrigation guide designed for the Arizona desert, the average mature desert-adapted tree with a canopy of 20 feet in diameter needs approximately 4,500 gallons of water each year. The average resident or commercial property owner in City limits would pay approximately $10 annually to irrigate this tree. Adding 100,000 trees would equate to approximately an additional 450 million gallons of water needed annually for irrigation, which is approximately 1.6% of the City's total water supply allocation. See Appendix H for additional information on irrigation and water use.

Maintenance. To ensure long-term health and growth of the trees planted, adequate maintenance must also be considered. While the trees are young and becoming established, they will need to be pruned to correct branch structures that could lead to potential problems. For example, lower limbs on street trees should be pruned to create the desired upright form. Once established, trees should be kept on a regular pruning cycle, when they will be assessed and pruned if needed. Different species of trees will require different levels of pruning. Occasional repairs to the irrigation system should also be considered. As the City-managed tree canopy increases, additional staff and maintenance will be required. Both the Public Works and Parks & Recreation Departments' budgets will need to grow accordingly.

Green Waste. As the tree canopy increases, pruning increases, thereby creating additional green waste that will need disposal. Branches and landscape trimmings are typically too large to fit in the standard trash container for regular pickup. Public Works sponsors a Neighborhood Cleanup program once each year to collect oversize waste, including green waste. Each neighborhood is designated a four-day period each year when Public Works will pick up large trash items at no cost. The green waste is then taken to the landfill, as is most of the community's green waste not collected as part of this program. A more sustainable alternative to sending green waste to the landfill is to compost or mulch it. Yuma County's North Gila Solid Waste site currently offers a grinder to mulch green waste. Other cities in Arizona have been investing in large-scale composting facilities to accept green waste and prevent it from entering the landfill. Recent changes in California's recycling laws offer opportunities for Yuma to support a composting facility.

[34] "Landscape Watering by the Numbers, A Guide for the Arizona Desert". *<https://wateruseitwisely.com/100-ways-to-conserve/landscape-watering-guide/plant/>*

Funding

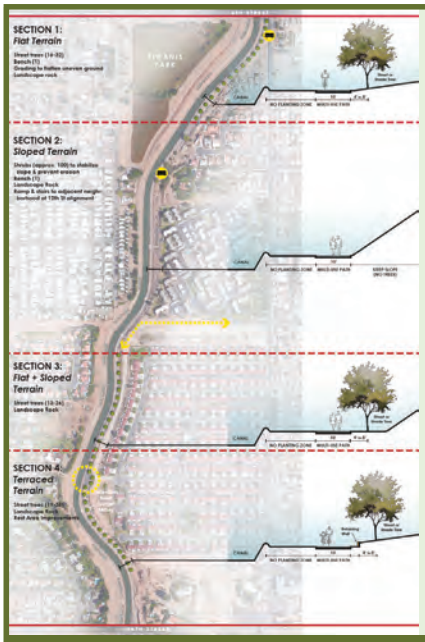
Implementation would not be possible without adequate funding; funding to plant trees and funding to maintain those trees in the long term. Yuma residents value trees. According to the public survey, seventy-five percent of respondents are willing to pay to have more trees in their neighborhood's common areas. Forty-one percent are willing to pay $5 or more each month for these trees. Voluntary community support is essential to funding the trees and maintenance needed to achieve the goal of 100,000 trees. Generally speaking, the goal equates to one tree per person in Yuma. Community support and donations for tree projects will be supplemented by grant funding, incentives, city funding, and special taxing districts.

Community Sponsorship & Support. To reiterate a key point, the goals of this plan will not be accomplished without the help of the entire community. Local organizations, companies, and residents will have the greatest impact on increasing the tree canopy. The *Trees for Yuma* consortium outlined previously will serve as the primary avenue to accept donations, find volunteers, and organize fundraisers.

Incentives. The public survey also indicated that incentives such as free trees, rebates, and free tree care classes would incentivize residents to plant trees on their property. Community Development will take the lead on developing and implementing community-wide incentive programs. Examples proven successful in other communities and currently being explored by City staff include: partnerships with utility companies to provide free or reduced price trees for customers; a program for new homebuyers to get free or reduced price trees; and rebates for irrigation water for native trees planted in conjunction with this plan.

Grants. Grant funding will be sought to kick-start projects. Grants are most likely to fund tree planting efforts, while grants that will allow use of funds for irrigation installation and ongoing maintenance will be more difficult to secure. Many grants will require matching funds, provided by the City or by donations collected from the community.

In general, there are two types of grantors: state or federal agencies and foundations or nonprofits. The following agencies are anticipated to provide grant-funding for ur-



1 Shady Pathways

The goal of this project is to plant trees along pathways, like the East Main Canal, in order to provide shade for the cyclists, joggers, and pedestrians who use the path. Trees could be concentrated near benches to provide shady places to rest.

In April of 2018, a local resident and business owner, Juli Jessen, signed a Memorandum of Understanding (MOU) with the City to improve the landscape along a portion of the East Main Canal between 8th Street and 16th Street. Following private installation of the landscape and irrigation, the City agreed to maintain the landscape.

Other local organizations and companies are welcome to sponsor trees along other sections of the East Main Canal (from the Colorado River Levee Path south to 8th Street and from 16th Street south to 40th Street) or along other paths such as the West Main Canal and the Colorado River Levee. Public Works maintains the pathways and landscape as part of an agreement with the landowner, Yuma County Water Users' Association.

PUBLIC WORKS **GOWAN & LOCAL ORGANIZATIONS**

2 Walkable Streets

2019 SUCCESS
$1500
+20 TREES
FUNDED BY DFFM

The Walkable Streets project aims to make streets safer and more comfortable for pedestrians. Two successful projects were implemented in 2019.

With funds provided by DFFM and a match from Public Works, they were able to plant 20 trees along Redondo Center Drive in September 2019. Public Works anticipates planting more trees along Redondo Center Drive.

As of the time of writing, Lowe's is partnering with a local Girl Scout chapter to plant trees along a collector roadway to improve walkability for our community. Public Works will accept long-term maintenance of these trees. The preliminary goal of this project is to plant approximately 35 trees.

PARKS & RECREATION **LOCAL ARBORISTS & ORGANIZATIONS**

ban forestry initiatives in the coming years: Arizona Department of Forestry & Fire Management (DFFM), Arizona State Parks and Trails (ASP), Arizona Game and Fish Department (AGFD), Arizona Land and Water Conservation Fund (AZ LWCF), U.S. Department of Interior/National Park Service/Land and Water Conservation Fund (US LWCF), and U.S. Department of Housing and Urban Development (HUD). Several foundations and nonprofit organizations offer grants that could be used for tree-related efforts, including: the Alliance for Community Trees, One Tree Planted, the Arbor Day Foundation, the National Recreation & Park Association, the TREE Fund, the Fruit Tree Planting Foundation, the Lowe's Charitable & Educational Foundation, and the Home Depot Community Impact Grants Program. The list of potential grantors is not meant to be exhaustive; rather it is a starting point for future reference and serves as an example of the breadth of funds available.

Tree planting projects impact diverse groups and address a myriad of issues (walkability, safety, health, etc.), so other funders focused on particular demographics and issues may also be available. For example, the Community Change grant offered by America Walks seeks to award projects focused on improving walkability, which could include some of the tree planting projects proposed in this plan.

Although grant funding can vary widely year to year, the City has already had success securing funding for tree planting projects since this planning effort began in 2019. One Tree Planted, a nonprofit focused on global reforestation, awarded $1,000 to the Parks & Recreation Department to plant twelve trees at the West Wetlands Park as part of the annual Spruce Up Your Park Day on October 19, 2019. Public Works was awarded a $1,500 TREE (Tree Resource Enhancement & Engagement) Grant by DFFM. Public Works, by providing a match to the grant and was able to plant 20 trees and make irrigation improvements along Redondo Center Drive in September 2019. A third success, anticipated to be completed in early 2020, was the result of public outreach efforts and involvement of the Task Force. Lowe's is working on a partnership with the Girl Scout chapter to provide a $3,500 grant and volunteers to plant trees along a collector roadway to improve walkability. Public Works will accept long-term maintenance of the trees.

Municipal Tree Fund. Revisions to the Tree Ordinance created the Municipal Tree Fund in which fees collected from tree removal permits would be deposited. Funds are restricted for care and maintenance of

municipal trees and to offset the loss of municipal trees due to removal, destruction, or natural death. Individuals are welcome to donate to the Municipal Tree Fund.

Maintenance Improvement Districts (MID). Under provisions of the City Code, all developers are responsible for landscaping their development projects and subdivisions, to include trees. In particular, subdivisions are required to provide landscaping along certain streets and in other locations as provided in the zoning requirements, approval stipulations, engineering requests or subdivision requirements. Pursuant to Arizona Statute, a Municipal Improvement District (MID) can be created to provide a dedicated funding stream for maintenance, repair, and improvements of these landscaped areas. Since 2017, newly formed subdivision

12 Shady Playgrounds

2019 SUCCESS
$1000
+12 TREES
FUNDED BY ONE TREE PLANTED

With funding from One Tree Planted, 12 trees were planted by Parks & Recreation staff and volunteers at the West Wetlands Park near the Stewart Vincent Wolfe Creative Playground in October 2019.

The children have spoken and they want shady playgrounds (Yuma Sun, April 29, 2019, "Kids: Parks need shade, drinking fountains")! This project focuses on planting trees or constructing shade structures around playgrounds. The Parks & Recreation Department will determine the parks in which playgrounds need shade. Local organizations can work with students and volunteers to conduct fundraisers for improvements at playgrounds.

PARKS & RECREATION **LOCAL ORGANIZATIONS & VOLUNTEERS**

17 Safe & Shady Schools

The goal of this project is to plant trees on and near school property to improve walkability and provide shade. To date, the Pecan Grove Garden Club, Arizona Public Service (APS), and the Yuma County Public Health Services District have committed to helping implement this project.

The Pecan Grove Garden Club plans to plant trees and teach a class called "Our Amazing Trees" at several schools in low-income area of the City. Schools identified in the City's Revitalization Areas include: McGraw Elementary, Gila Vista Jr. High, Harvest Prep, Amerischools, Yuma High, Fourth Avenue Jr. High, Roosevelt Elementary, and G.W. Carver Elementary Schools. They anticipate the project to be ongoing for several years and will seek grant funding to help cover the cost of the trees.

Several groups (APS, Yuma County Public Health, Vertical Church, Bose Corporation, and Sunset Nursery) have partnered to implement a tree planting project at Gila Vista Jr. High and McGraw Elementary. The group plans to plant approximately 40-50 trees on school grounds to provide shade and citrus trees in conjunction with Gila Vista's student-led community garden. The City's Parks & Recreation Department has offered to provide an educational component for students.

PARKS & RECREATION **PECAN GROVE GARDEN CLUB, APS, YUMA CO. HEALTH**

In the City of Yuma have formed MIDs to fund landscape maintenance and provide local control over landscape maintenance. Residents within the MID pay a special assessment on their property tax bill and, in turn, they gain a direct decision-making role in the level of landscape maintenance within their community. The City outsources maintenance to local landscape maintenance contracting companies and the amount of the assessment directly reflects the cost of maintenance. Resident input on the level of maintenance and proposed improvements, which could include trees, is reviewed and approved on an annual basis.

Per statute, the Mayor and Council can initiate the formation of a MID or property owners can petition to form a MID. With a majority of neighbors' signatures on the petition, a neighborhood could form a MID to fund landscape maintenance and improvements. MIDs are a specialized form of funding that could support the planting and maintenance of additional trees.

Departmental Funding & Capital Improvement Projects. Some funding for trees and maintenance will come from the City, primarily through the funds budgeted to the Parks & Recreation Department and the Public Works Department. In order to plant more municipal trees and to maintain those trees in the long-term, departmental funding is anticipated to increase. The *5-Year Tree Care & Maintenance Plan* outlines specific funding needs.

Some tree planting projects, particularly along gateway routes or those done in conjunction with roadway reconfigurations, will be funded through the Capital Improvements Program (CIP). New roads built by the CIP program should always have adequate budget to include street trees, as required in the Engineering Standards and by the City's Complete Streets policy.

Urban Forestry Asset Management. With the City's recent departmental-wide adoption of the asset management software called Lucity, the City has the ability to better manage all its assets, including its urban forest. Across the country, many municipalities have begun to recognize the value of the urban forests they manage by adding it to their balance sheets as a separate asset class, much like other capital investments such as roads, sewer, water, and other types of infrastructure. Trees provide real value and naming it as an asset class recognizes the value in a tangible way, as with other infrastructure systems. It will also ensure that the urban forest is properly analyzed and budgeted for each year.

A complete inventory of municipal trees is a prerequisite to including the urban forest as an asset class. The inventory and asset management approach will allow the City to shift from reactive to proactive management of trees. Chula Vista, CA's urban forestry management system and asset management plan provides an excellent example in how to measure the value of the urban forest and how to estimate life cycle costs into the future.

Outreach & Education

The work of the plan does not end at adoption. For implementation to be successful, the City and community need to continue efforts to spread the word about the importance of trees. One of the goals of this planning process was to establish partnerships and outreach programs to raise awareness about the benefits of the urban forest and the vision for the future and to increase the canopy. Involvement of the Task Force from the beginning stages of the plan laid the groundwork for the *Trees for Yuma* consortium that will be the focus of many of the ongoing outreach efforts. City staff will take the lead in organizing and administrating *Trees for Yuma* to ensure its success. The consortium and its members will form the foundation for donations, volunteers, and activism to guide tree planting and awareness efforts in the future.

Survey Information. The public survey was the first outreach tool. It introduced basic tree topics and raised awareness of the importance of the urban forest. Survey results indicated that the public values trees and is interested in learning more about tree care and maintenance. The most frequently cited topics of interest were free trees, planting trees, caring for trees, properly watering trees during a drought, different kinds of trees, and how to recycle or dispose of green waste. The survey also indicated that a majority of people were unaware of the City's urban forestry activities and policies. More outreach will be done to inform the public about the City's role in caring for the urban forest.

Tree Outreach & Education Projects. Three of the projects identified by the Task Force (outlined previously in this chapter) focus on outreach and education: conducting an information campaign, providing classes on tree care; and hosting a regular radio show on tree topics.

Community Development staff will lead the effort to provide information on tree topics to the general public via social media, print and online brochures, and public service announcements on radio & television. Part of this effort will include expanding the City Landscape Guidelines to include information on pruning and irrigation best practices. Targeted outreach will also be conducted to inform residents about the updated Tree Ordinance and how it impacts municipal trees. Arborists and local tree care professionals will assist in creating these materials. Additionally, the City will seek partners to create a public service announcement about tree care and maintenance which can be aired on City television and radio.

Parks & Recreation Department will take the lead on producing a recurring radio show called "Ask the Arborist" during which a local arborist will be interviewed and can answer questions about trees and tree care. Listeners can pose their questions in advance of the show on social media to guide specific discussion topics. The Parks & Recreation Department, in partnership with local arborists and organizations, will coordinate classes on tree care and maintenance. The first class was held on October 19, 2019 and more are being planned.

18 Tree Care Classes

2019 SUCCESS
+1 TREE
CLASS HOSTED BY PARKS & RECREATION TAUGHT BY FRANK SALDANA

The first tree care class, hosted by Parks & Recreation and taught by local arborist Frank Saldana (pictured at left), was held on October 19, 2019. The topic was "Right Tree, Right Place" and eight people attended. To demonstrate best practices, Mr. Saldana led the group in planting a tree near Riverside Cottage.

The Pecan Grove Garden Club, who has committed their group to working on the Safe & Shady Schools project, is also planning to conduct tree classes for students when they plant trees at local schools.

Parks & Recreation will continue to offer a variety of classes on tree care topics. One goal will be to target different demographic groups to reach a wide audience, particularly those who might not otherwise self-select to learn about tree care and maintenance.

PARKS & RECREATION **LOCAL ARBORISTS & ORGANIZATIONS**

14 Planting Wildlife Habitats

All planting efforts can take into consideration creating habitat oases for wildlife. According to the National Wildlife Federation, "wildlife need our help. Human activity has changed and eliminated habitat.. and birds, butterflies, and other wildlife are pushed into ever shrinking wilderness areas." Wildlife habitats can be created by planting an appropriate mix of native trees, shrubs, and groundcovers. Trees and shrubs provide a diversity of wildlife with food, cover, and nesting sites. When planted in clusters, trees and shrubs provide a more vibrant and vigorous habitat than trees alone. The National Wildlife Federation has a program, Certified Wildlife Habitat, to guide individuals in creating and certifying their yard or garden as a wildlife habitat.

It is important to choose native plants, particularly when creating wildlife habitats. Native plants provide more benefits for the local environment, more habitat opportunities for local fauna, and they typically require less maintenance than exotic plants. Exotic plants can become invasive species that can take over the environment and become difficult to eradicate.

This project, which is being spearheaded by the Master Gardeners, the Yuma Crossing National Heritage Area (YCNHA) and other local partners, will focus on informing the public about the benefits of native plants and wildlife habitats and encouraging them to choose natives. Existing educational materials on the topics will be further disseminated to the public.

PARKS & RECREATION **MASTER GARDENERS + YCNHA**

Measuring & Tracking Success

Tracking, measuring, and publishing progress toward the goals of this plan is essential to its long-term success. City staff and *Trees for Yuma* consortium representatives will provide the City Council an annual update on plan implementation efforts. An annual report of key metrics will be published on the City website and *Trees for Yuma* website for the public to view.

Key metrics for the annual report include: the number of trees planted, funds raised, outreach efforts, and community tree project progress. The number of trees planted will be the sum of trees planted in conjunction with community projects spearheaded by *Trees for Yuma* consortium members, by citizens self-reporting trees planted on private property, trees planted in conjunction with new development as required by the Landscape Regulations, and trees planted by City departments on City-managed property. The *Trees for Yuma* consortium website will include a form for residents to self-report trees planted on private property, similar to a system currently being used in Tucson. Funds raised will be measured as a sum of donations, grants, City investment, and any other sources of funding for tree projects.

As with most facility master plans developed by the City, an thorough update to the plan will be completed in 10 years. The 10-year update will include a full analysis of the tree canopy map to measure change over time as well as a complete update and analysis of the impact maps (walkability, safety, equity, and aesthetics). At this time, progress toward the 7% canopy goal will be reassessed. New targets and implementation methods will be proposed.

ATTACHMENT C
2020 TREE & SHADE MASTER PLAN APPENDICES

APPENDICES

A Tree Inventories (Smucker Park & West Wetlands Park)

B 5-Yr Tree Care & Maintenance Plan

C Landscape Guidelines

D Yuma Soil Maps

E Planning Task Force

F Public Survey & Results

G Tree Ordinance (2019)

H Water Use of Trees

Appendices are available for download on the City of Yuma website at
www.yumaaz.gov/community-development/tree-shade-master-plan/tree-and-shade-master-plan

Appendix A

TREE INVENTORIES

Smucker Park & West Wetlands Park

These tree inventories of Smucker Park and the Upper Bench of the West Wetlands Park were conducted by the Department o Forestry & Fire Management (DFFM)'s Arizona Urban Tree Map initiative with assistance from City of Yuma Parks & Recreation staff. The Smucker Park inventory was completed in 2015 and the West Wetlands inventory was completed in 2018.

Yuma Smucker Park
Population Summary of Public Trees
12/11/2015

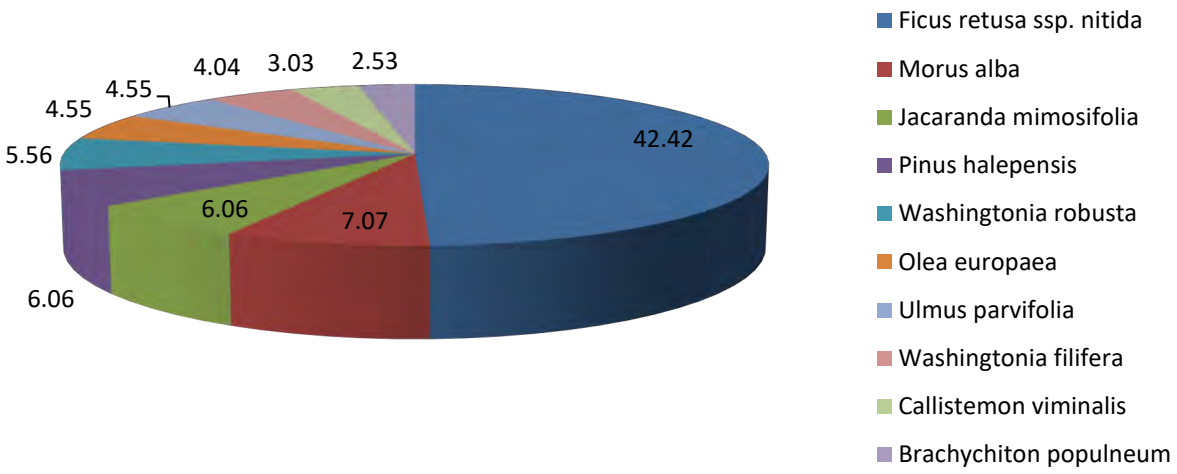
	DBH Class (in)										
Species	0-3	3-6	6-12	12-18	18-24	24-30	30-36	36-42	> 42	Total	SE
Broadleaf Deciduous Large (BDL)											
Fraxinus uhdei		2	0	1	1	0	0	0	0	0	4 (±0)
Gleditsia triacanthos		1	0	0	0	0	0	0	0	0	1 (±0)
Total		**3**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**5 (±0)**
Broadleaf Deciduous Medium (BDM)											
Morus alba		0	0	1	4	5	4	0	0	0	14 (±0)
Jacaranda mimosifolia		1	0	6	4	1	0	0	0	0	12 (±0)
Ulmus parvifolia		1	0	6	2	0	0	0	0	0	9 (±0)
Total		**2**	**0**	**13**	**10**	**6**	**4**	**0**	**0**	**0**	**35 (±0)**
Broadleaf Deciduous Small (BDS)											
Acacia farnesiana		0	0	1	1	0	0	0	0	0	2 (±0)
Bauhinia variegata		1	1	0	0	0	0	0	0	0	2 (±0)
Total		**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**4 (±0)**
Broadleaf Evergreen Large (BEL)											
Eucalyptus camaldulensis		0	0	0	0	0	0	1	0	0	1 (±0)
Eucalyptus species		0	0	0	0	1	0	0	0	0	1 (±0)
Eucalyptus polyanthemos		0	0	0	0	1	0	0	0	0	1 (±0)
Eucalyptus leucoxylon		0	0	0	1	0	0	0	0	0	1 (±0)
Grevillea robusta		0	0	1	0	0	0	0	0	0	1 (±0)
Total		**0**	**0**	**1**	**1**	**2**	**0**	**1**	**0**	**0**	**5 (±0)**
Broadleaf Evergreen Medium (BEM)											
Ficus retusa ssp. nitida		0	0	6	31	41	5	0	0	1	84 (±0)
Brachychiton populneum		0	0	4	1	0	0	0	0	0	5 (±0)
Ceiba pentandra		1	0	0	0	0	0	0	0	0	1 (±0)
Eucalyptus torquata		0	0	0	1	0	0	0	0	0	1 (±0)
Total		**1**	**0**	**10**	**33**	**41**	**5**	**0**	**0**	**1**	**91 (±0)**
Broadleaf Evergreen Small (BES)											
Olea europaea		0	0	2	7	0	0	0	0	0	9 (±0)
Callistemon viminalis		0	0	2	4	0	0	0	0	0	6 (±0)
Rhus lancea		0	0	3	1	0	0	0	0	0	4 (±0)
Schinus terebinthifolius		0	0	2	1	0	0	0	0	0	3 (±0)
Ligustrum lucidum		1	0	0	1	0	1	0	0	0	3 (±0)
Ficus microcarpa		0	0	1	0	0	0	0	0	0	1 (±0)
Total		**1**	**0**	**10**	**14**	**0**	**1**	**0**	**0**	**0**	**26 (±0)**
Conifer Evergreen Large (CEL)											
Pinus halepensis		0	0	0	0	3	6	2	0	1	12 (±0)
Cupressus sempervirens		0	0	0	1	0	0	0	0	0	1 (±0)
Total		**0**	**0**	**0**	**1**	**3**	**6**	**2**	**0**	**1**	**13 (±0)**
Palm Evergreen Small (PES)											
Washingtonia robusta		0	0	0	10	1	0	0	0	0	11 (±0)
Washingtonia filifera		0	0	0	0	1	6	1	0	0	8 (±0)
Total		**0**	**0**	**0**	**10**	**2**	**6**	**1**	**0**	**0**	**19 (±0)**
Grand Total		**8**	**1**	**36**	**71**	**54**	**22**	**4**	**0**	**2**	**198 (±0)**

Yuma

Species Distribution of Public Trees for Ray Smucker Park

12/11/2015

Species	Percent
Ficus retusa ssp. nitida	42.42
Morus alba	7.07
Jacaranda mimosifolia	6.06
Pinus halepensis	6.06
Washingtonia robusta	5.56
Olea europaea	4.55
Ulmus parvifolia	4.55
Washingtonia filifera	4.04
Callistemon viminalis	3.03
Brachychiton populneum	2.53
Other Species	14.14



Tree Inventory Summary

YWW Park, Yuma

Last inventory date 02/12/2018

community benefits of our urban trees

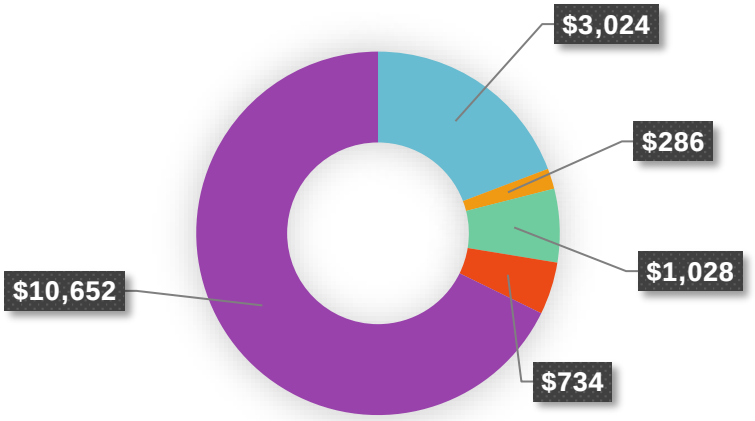
economic
- energy savings
- stormwater runoff reduction
- noise reduction
- separation of incompatible uses

health
- increased walkability
- decreased mental fatigue and blood pressure
- reduce UV exposure

environmental
- clean air
- clean water
- shade
- beauty

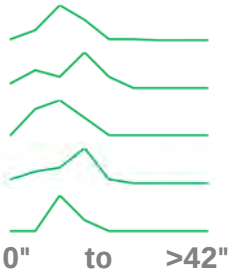
total annual benefits of 219 inventoried trees

$15,723



top 5 tree species

	count	diameter (DBH)	approximate canopy cover (sq ft)
Prosopis spp.	74		52,592
Dalbergia sissoo	36		13,755
Acacia spp.	18		10,383
Parkinsonia spp.	18		14,541
Olneya tesota	17		7,398



estimates calculated with i-Tree Streets
- energy = the contribution of the urban forest toward conserving energy by reducing natural gas use in winter and electricity use in summer
- CO2 = the amount of CO2 actually removed from the atmosphere annually
- air quality = air pollutants (O3, NO2, SO2, PM10) deposited on tree surfaces and reduced emissions from power plants (NO2, PM10, VOCs, SO2) due to reduced electricity use
- stormwater = the amount of water not entering the storm water system, saving money with reduced flow due to infiltration of water and interception of rain by trees
- property value / other = tangible and intangible benefits of trees reflected in increases in property values

Major funding provided by the USDA Forest Service's State and Private Forestry Program

Appendix B

5-YR TREE CARE & MAINTENANCE PLAN

This 5-Year Tree Care & Maintenance Plan, developed in conjunction with the Tree & Shade Master Plan, is used by City staff to prioritize, schedule, and financially plan for municipal trees and maintain the health of municipal trees. Although the City has been practicing urban forestry stewardship for many years, this type of comprehensive document summarizing the strategies and budgetary requirements had yet to be codified in written format. This Tree Maintenance Plan primarily serves the Parks and Recreation and Public Works Departments' staff, as it describes current practices and outlines current and future strategies for municipal tree care and maintenance.

TREE CARE & MAINTENANCE PLAN

City of Yuma, AZ

6 NOVEMBER 2019

Acknowledgements

This plan would not be possible without the knowledge and expertise of Joel Hubbard, Espy Matlock, and Michael Flowers, derived from years of professional practice and continuing education.

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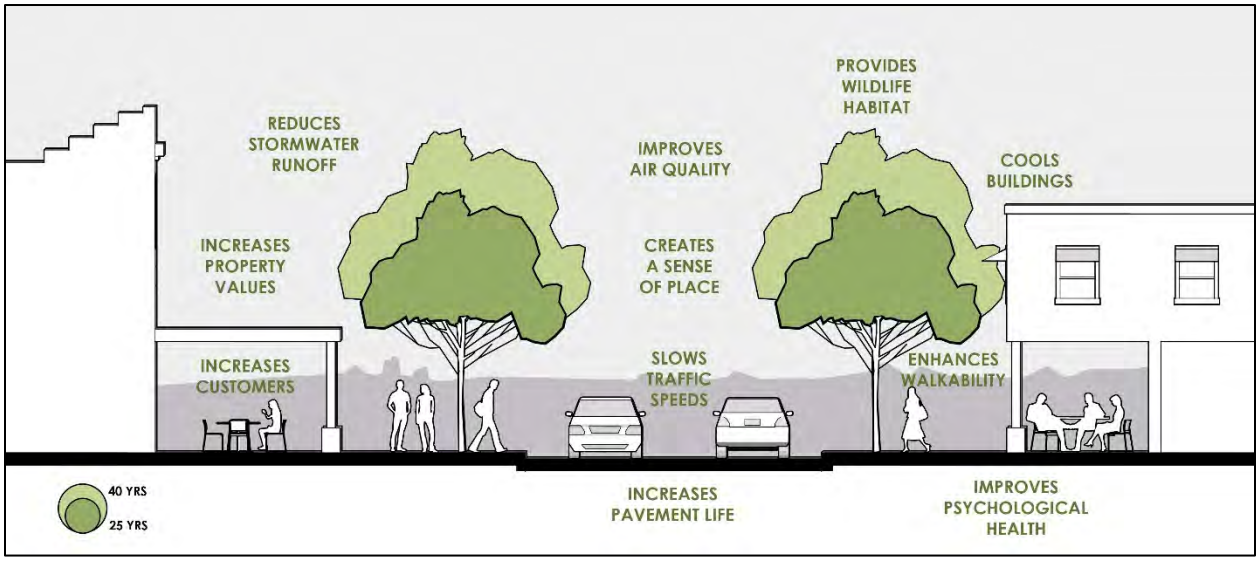
Introduction

Benefits of Trees. Trees play a vital role in making our community more livable and enjoyable. Trees in the urban environment offer a host of benefits for the health and safety of the community, for the environment, and for the economy. Trees and shade increase the walkability and quality of life in our community, which is especially important in the heat of Yuma's summers. Tree-lined streets have been shown to calm traffic speeds, increase property values, absorb pollutants, intercept stormwater, and increase pavement life. Trees that provide shade to buildings lower energy consumption and views of trees improve psychological health.

The benefits provided by trees outweigh their maintenance and associated costs. From a financial perspective, the urban forest is one of the few public infrastructure investments that *increases* in value over time. Planted for a relatively small upfront cost, as the tree ages and grows, the benefits offered increase. A larger tree casts more shade, sequesters more CO2, and its canopy and roots intercept more stormwater runoff. As with other infrastructure elements (roads, pipes, street lights, etc.), trees require regular maintenance to function properly and provide maximum benefits to the community. It is imperative that we document our plan to care for, maintain, and sustain this important natural resource.



Tree & Shade Master Plan. This *Tree Care & Maintenance Plan* is being developed in conjunction with a larger planning effort, the *Tree & Shade Master Plan (TSMP)*. The *TSMP* aims to develop a vision for a healthier, more livable, and prosperous Yuma by investing in the care and maintenance of the urban forest and shade structures, on both public and private property. Through an extensive community outreach and consensus building process, the *TSMP* sets a target of achieving 7% tree canopy coverage, effectively doubling the existing canopy coverage, in city limits by 2030. The *TSMP* proposes strategies for achieving this canopy goal; strategies for both public and private entities. This *Tree Care & Maintenance Plan* explains in further detail the strategies and practices of the City of Yuma that ensure proper and consistent care for trees on municipal lands pursuant to the goals set in the *TSMP*.

Purpose of this Document. This *Tree Care & Maintenance Plan* is used by City staff to prioritize, schedule, and financially plan for municipal trees as well as maintain the health of municipal trees. Although the City has been practicing urban forestry stewardship for many years, this type of comprehensive document summarizing the strategies and budgetary requirements had yet to be codified in written format. This *Tree Care & Maintenance Plan* primarily serves the Parks and Recreation and Public Works Departments' staff, as it describes current practices and outlines current and future strategies for municipal tree care and maintenance. Operations which include planting, removal, pruning, trimming and other associated tasks required to further develop and maintain a thriving urban forest will be delineated herein. The City of Yuma recommends that the *Tree Care & Maintenance Plan* be reviewed and updated as necessary every five years, with the first review occurring in 2025.

MISSION STATEMENT

To create a healthier, more livable, and prosperous Yuma by investing in the care and maintenance of the urban forest.

Overview of the Municipal Urban Forest. Yuma's municipal urban forest, inclusive of all trees found on City-owned lands (parks, street rights-of-way, retention basins, and municipal facilities), is maintained primarily by the Parks & Recreation and the Public Works Departments. In certain instances, trees found in the right-of-way are maintained by adjacent property owners but are still owned by the City and are regulated as such. The Yuma Crossing National Heritage Area (YCNHA) is one of the City's strategic partners in the development of the historic district, particularly the Yuma Riverfront Regional Park which includes a large habitat restoration component. The Departments of Community Development and Engineering are responsible for the strategic placement of trees as a part of the City's urban planning designs. They develop and set policies that help to preserve the aesthetics, environmental, economic, and quality of life values of natural plants to the community, namely through the Landscape Regulations and Engineering Standards. The Information Technology Services Department (ITS) assists the aforementioned departments with important GIS mapping and assets management tools and technology. Their contributions help urban foresters monitor the health and life of the tree inventory and monetize a tree's value to the City.

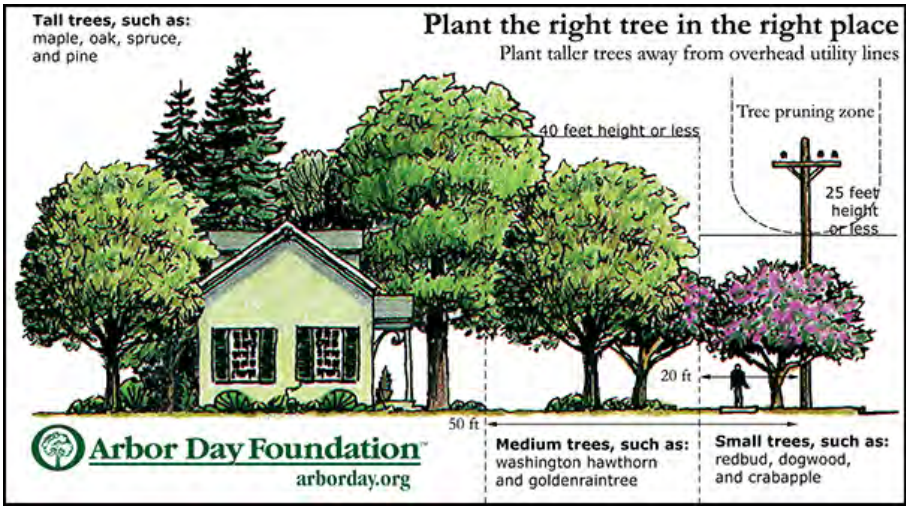
Tree City U.S.A. The City has a long history with the Arbor Day Foundation. The Foundation is a non-profit organization aimed at planting and conserving our trees and educating the world on their importance. Its mission is simply to "inspire people to plant, nurture, and celebrate trees." The Foundation is the developer of the Tree City USA, a management framework that informs how nearly 3,500 municipalities operate their urban forests. Since 2007, the City of Yuma has proudly and consecutively received the designation of Tree City USA.

TREE CITY USA®

Municipal Tree Maintenance

Arboricultural Guiding Principle

The City of Yuma's guiding arboriculture principle is "right tree, right place." It is the strategic foundation of all forestation, care, maintenance, and sustainability efforts in the City. According to the Arbor Day Foundation, the "right tree, right place" philosophy is a clear directive to plan all forestation activities, by considering the long-range implications of a tree's mature height, canopy spread, nature (deciduous or evergreen), shape/form, growth rate, natural elements (soil, sun, and moisture) requirements, fruit, and hardiness zone and how those elements relate to the tree's location and intended purpose.



Adoption of this principle is reflected in the City's Landscape Regulations (updated 2017), in the Recommended Plants List (published 2017), in the currently proposed updates to the Tree Ordinance, and in the ongoing Tree & Shade Master Plan.

Tree Ordinance

History. On November 20, 2007, the City of Yuma Mayor and Council passed into municipal law the tree ordinance (O2007-69), to conserve, preserve, protect, and increase Yuma's urban forest. The Tree Ordinance is applicable to trees on municipal property and it accomplished five primary goals:

1. Defined the standards (American National Standards Institute A300 Standards for Tree Care Operations) by which the tree and shrub inventory would be regulated and maintained on municipal property;
2. Delineated restrictions regarding what could be done to a tree on municipal property;
3. Declared by law the responsibility of the Director of the Parks and Recreation Department for the care and management of trees owned or maintained by the City of Yuma;
4. Met the requirements established by the Arbor Day Foundation to qualify for the Tree City USA designation; and
5. Established a Community Tree Board.

In 2018, due to lack of committed participation on the Tree Board, Mayor and Council voted to abolish the Tree Board and to allow its duties to be absorbed by the Parks and Recreation

Commission (PARC). The amended ordinance eliminated all language about the Tree Board and retained all other language.

Recent updates. During the 2019 comprehensive tree planning process, City staff from an interdepartmental team (Parks & Recreation, Public Works, and Community Development) reviewed and edited the tree ordinance to provide further protections for Yuma's municipal trees, to clarify the applicability of the ordinance to municipal trees, and to add requirements for removal and replacement of municipal trees. Municipal trees are those owned or maintained by the City of Yuma, including those growing in City rights-of-way, parks, retention basins, and other facilities. The ordinance does not regulate trees on private property, although it does impact municipal trees located in rights-of-way maintained by private residents. The previous Tree Ordinance was repealed and replaced by the updated version on December 4, 2019.

Tree Inventory

Overall Inventory Estimate. At the time of writing, the City does not have a full inventory of trees maintained by the City. A 2018 estimate indicated the City currently manages approximately 7,500 trees in parks, rights-of-way, retention basins, and other facilities. The Parks and Recreation Department (P&R) is responsible for approximately 5,500 trees in parks and facilities and the Public Works Department (PW) maintains approximately 900 trees in street rights-of-way and 1000 trees in retention basins. Species and health information has not been documented for the entire inventory of Yuma's municipal trees.

Detailed Inventories for Specific Parks. With assistance from DFFM, the City has completed detailed inventories for two areas: Smucker Park (2015) and the upper bench of the West Wetlands Park (2018). Complete copies of these inventories are found in Appendix A.

Lucity Asset Management Software. The City has recently implemented use of a GIS-based asset management software called *Lucity*. With all departments using this software, *Lucity* has the potential to greatly enhance the ability of City staff to monitor and understand the health of the urban forest.

With the help of Arizona's DFFM and the City's ITS staff, the P&R Department has started a tree inventory in *Lucity*. For all trees in public parks and on P&R managed lands, the following data about each tree is recorded: location, species, diameter at breast height. In *Lucity*, trees are grouped into sections based on the park they're located in. As the Department's use of *Lucity* increases, tree maintenance will also be tracked in the program.

Data entry into a centralized, city-wide electronic tree inventory is important for proper tree care and maintenance because this data:

- Aids urban foresters in prioritizing and scheduling tree care and maintenance;
- Enables urban foresters to replace dying, dead, and fallen trees in a timely manner;
- Identifies areas of needed canopy;
- Informs future forestation initiatives, inclusive of associated annual and long-range capital improvement budgets;
- Depicts where the most and least mature (both vulnerable) trees are;
- Helps urban foresters determine if each existing tree is indeed the right tree in the right place and informs future tree plantings;

- Assists the City is quantifying the financial value of the tree inventory; and
- Provides the measurable basis of the City's calculation of tree canopy impacts.

Parties Responsible for Municipal Tree Maintenance

Care and maintenance of municipal trees is shared between two departments, the Parks and Recreation Department (P&R) and the Public Works Department (PW). Both departments are governed by the regulations adopted in the Tree Ordinance, which reference American National Standards Institute (ANSI) standards for tree care. Both departments engage in visual inspections, tree trimming and pruning, irrigation, tree planting, and reviewing the performance of contractors.

TREES MAINTAINED BY CITY OF YUMA

In general, P&R and PW perform the following set of urban forestry activities to maintain City-owned properties in a condition which protects the health, safety, and welfare of the public:

- Pruning or removing trees which pose a safety threat to residents (pedestrians and motorists on trails, pathways, sidewalks, streets, intersections, and other frequently accessed areas);
- Removing trees which are decaying, diseased, dying, or dead and replacing them in accordance to statutes, to include the Landscape Ordinance;
- Assessing, reviewing, and responding accordingly to trees which are identified, either internally or by the public, as potentially having issues; and
- Increasing the tree canopy by planting trees;
- Coordinating and collaborating on city-wide events which give residents and visitors opportunities to serve as volunteer urban foresters.

Parks & Recreation Department. Of the approximately 7,500 trees cared for by the City, P&R is responsible for nearly seventy-five percent of those trees. P&R maintains trees in the parks, in the City's downtown district, and at some public facilities (fire stations, City Hall, police stations, etc.). A complete list of properties maintained by P&R is provided in Appendix B. Within these locations, there are approximately 5,500 trees under active City management. Trees growing in a natural state along the banks of the Colorado River in the East Wetlands Park and along the lower bank of the West Wetlands are not counted toward this total because they are not routinely maintained but are allowed to grow in their natural state.

Yuma West Wetlands

P&R tree care and landscape operations are guided by the *Parks Maintenance Standard Operating Procedures Manual*. It serves primarily as a prescription of

tasks that must be performed to meet the Department's budgetary and aesthetic expectations for City-owned, live plants.

P&R is assisted with its strategic direction by the Parks, Arts, and Recreation Commission (PARC). Commission members inform the decisions that the P&R leadership makes about facilities, programs, and events of P&R during the planning phase. In turn, P&R benefits from the active participation of the PARC because its members provide: a venue for bi-lateral communications between the municipality's decision-makers and the general public; advocacy for vulnerable populations; professional expertise; meaningful and diverse perspectives; valuable input and feedback; and volunteer services at events and on projects. Recently, the Parks, Arts, and Recreation Commission was given (by ordinance) the responsibilities formerly assigned to the now-dissolved Tree Board. These responsibilities expressly are: review and advise in matters affecting the planning, development, and management of the community's trees; be a supportive liaison between the city government and the residents on subjects including the establishment, management, and protection of community trees; recommend rules and regulations for the development, protection, and management of community trees; and to assist in the planning and coordination of an annual Arbor Day event.

Tree maintenance duties fall to the staff of P&R's Urban Forestry Division. The Urban Forestry Division has 5 staff members including: the Division Manager, a crew leader, and three Grounds Maintenance Supervisors. The Urban Forestry Division Manager is designated as the City Arborist and maintains certification as an arborist as a requirement for the position. The Urban Forestry Division is trained and equipped to provide tree care such as pruning, large debris removal, health assessments, and tree removal. It is the only Division within the City organization that has the equipment needed to perform aerial operations. The Parks Maintenance Division has approximately 90 staff members and provides basic tree maintenance from the ground – trimming trees for clearance, cleaning debris. Parks Maintenance Division has one certified arborist on staff, although primary arborist duties fall to the Urban Forestry Division.

Staff shortages, which grew during the last recession, has negatively impacted the frequency with which tree care and maintenance occurs. To illustrate this point, in 2007, there were seven Parks Maintenance Supervisors; now there are three. The Urban Forestry Division also needs more staff in order to increase efficiency and provide a higher level of service. If the Division had one more crew leader and one more Grounds Maintenance Worker, they would be capable of running two teams simultaneously instead of only one team they currently have staff for. For safety's sake, equipment operation must be done in teams of a minimum of two people. This additional staff would improve efficiency, reduce clean-up response times after storm events, and allow the division to provide more proactive maintenance.

Public Works. The Public Works Department (PW) is responsible for the care and maintenance of approximately 2,000 trees, or about twenty-five percent of the trees under City care. Trees maintained by PW are found in some rights-of-way and in retention basins across the City. A complete list of right-of-way segments and retention basins with trees maintained by the City of Yuma can be found in Appendix C. Typical maintenance activities include weed removal, shrub trimming, ground-level tree trimming, irrigation system checks and repairs, curbing repairs, raking, and mowing. A relatively small portion of PW's overall duties relate directly to tree maintenance.

In an effort to reduce water consumption and costs associated with maintaining grass, PW has begun to implement a plan to remove grass and convert those areas to xeriscape plantings that use native and low-water use plants, including trees. This meets the Department's goal of conserving water and stretching dollars to address more publicly-owned land. Trees are an integral part of xeriscape landscape design and are included in these conversion designs at the rate specified in the City's adopted Landscape Regulations.

PW is assisted by the Clean and Beautiful Commission. The Commission's purpose is to educate, assist, and involve the community in achieving visible improvements in the way the City's environment is preserved, protected, beautified, and maintained. In celebration of Arbor Day, the Commission plants a tree each year.

Within PW, tree care responsibility falls to two crews within the Streets Division: the Right-of-Way Crew and the Basin Crew. The Right-of-Way Crew has 23 staff members who maintain the medians and parkways along the streets, which include about 900 trees. This crew is responsible for maintenance of the rights-of-way adjacent to 409 centerline miles of roadway; trees are along approximately 75 centerline miles. Therefore, tree maintenance is not a major focus of their duties. The Right-of-Way Crew is also responsible for maintenance of the East Main Canal Linear Park/Bike Path, which is 5 miles in length and currently has trees along limited sections. The Basin Crew is budgeted for 10 staff, although two positions are currently vacant. The Basin Crew is responsible for over 1,000 trees found in some of the 166 retention basins across the City. Both crews employ private contractors to maintain some landscape areas, particularly when it comes to tree pruning, proactive tree maintenance, and tree removal.

Like P&R, PW also struggles with staff shortages. As of summer 2019, PW is seeking to fill one Grounds Maintenance Supervisor and one Grounds Maintenance Worker vacancies in order to be fully staffed; but these additions will not result in an adequate number of employees to increase the Department's level of tree care and maintenance. PW does not currently have a certified arborist on staff, nor does PW have equipment such as lift trucks necessary to prune large trees.

To alleviate the burden of inadequate staffing and equipment to care for trees, PW has contracted services with external maintenance companies via a competitive procurement process. PW relies on contracted tree maintenance companies for both proactive and reactive tree care and maintenance. For example, if PW receives a complaint about a tree

encroaching into private property, the contractor will be deployed to address the problem. On an intermittent basis when funds are available, contractors will be hired to perform proactive pruning and maintenance to ensure tree health. PW does not currently have funding to implement a long-term plan for such proactive maintenance citywide. PW's staff is also supplemented by incarcerated inmates on work assignments, who are paid nominally to help clean and maintain rights-of-way as a part of their retribution for criminal violations. Inmates are not responsible for any maintenance directly related to trees.

Levels of Service

Due to ongoing staff shortages, both P&R and PW have established graduated levels of service to provide adequate maintenance to their various properties. It is important to note that service levels do not imply "quality", rather they imply "frequency". Generally, each level corresponds to the frequency of service and maintenance visits and each departments' approaches are summarized in the following tables.

Parks & Recreation Department's Levels of Service. In order to maintain minimum acceptable levels of service, P&R developed a systematic approach to maintenance and established five levels of tree care and maintenance, as described in the table below. Currently, two facilities receive Level 1 service: Pacific Avenue Athletic Complex (PAAC) and Ray Kroc Baseball Complex. Most properties under P&R's stewardship are receiving Level 3 service. The Downtown area and government buildings vacillate between a Level 2 and Level 3 service, depending on the conditions of those high-traffic areas. Several sites are receiving a lower level of service due to budget restrictions.

PARKS & RECREATION DEPARTMENT'S LEVELS OF SERVICE		
SERVICE LEVEL	**AREA**	**MAINTENANCE ACTIVITIES**
LEVEL 1	High traffic, high visibility areas • Pacific Avenue Athletic Complex (PAAC) • Ray Kroc Baseball Complex	Turf care, fertilize, prune trees & shrubs, disease & insect control, grounds cleaning & weeding, irrigation upkeep, repairs, inspections, litter control
LEVEL 2	Well-developed public areas • City Hall, government complexes • Some parks	Maintain grass, fertilize, prune trees and shrubs, disease & insect control, grounds cleaning, repairs, inspections, irrigation upkeep, litter control
LEVEL 3	Areas with moderate levels of development or visitation	Maintain grass, fertilize, prune trees and shrubs, disease & insect control, grounds cleaning, repairs, inspections, irrigation upkeep, litter control

Public Works Department's Levels of Service. There are four driving factors that determine the frequency with which care and maintenance occurs by Public Works Department staff: safety of the public and employees; high visibility locations that shape public opinion of the community; public input; and the Retention Basins Conversion Strategy Prioritization.

PW's levels of service, outlined in the table below, correspond to the visit frequency. For example, Level 2 indicates the site is visited every two weeks, Level 3 every three weeks, and so on. Currently, PW does not have any properties receiving care every week, so Level 1 is not included. High visibility areas receive Level 2 service, while sites with very little vegetation receive Level 6 service.

PUBLIC WORKS DEPARTMENT'S LEVELS OF SERVICE

SERVICE LEVEL	AREA	MAINTENANCE ACTIVITIES	VISIT FREQUENCY
LEVEL 2	High visibility areas • Big Curve • Winsor Basin • I-8 & 16th St Intersection • East Main Canal Linear Park	Maintain grass 1" to 3" high, apply fertilizer, trim trees & shrubs, grounds cleaning & weeding, irrigation upkeep	Every 2 weeks
LEVEL 3	Residential basins and parkways	Maintain grass at every visit, trim trees and shrubs 4 times/year, grounds cleaning & weeding, irrigation up-keep	Every 3 weeks
LEVEL 4	Xeriscape basins and parkways	No grass, trim trees and shrubs 4 times/year, grounds cleaning & weeding, irrigation reviewed at each visit and actions taken based upon review	Every 4 weeks
LEVEL 5	Xeriscape basins and parkways	No grass, trim trees and shrubs 4 times/year, grounds cleaning & weeding, irrigation reviewed at each visit and actions taken based upon review	Every 5 weeks
LEVEL 6	Non-vegetated basins & parkways	Grounds cleaning, weeding	Every 6 weeks

Strategic Partners

Volunteers plant trees at Gowan Grove in the West Wetlands Park

The ***Yuma Crossing National Heritage Area (YCNHA)*** partners with the City to manage development of the historic district and heritage area, particularly the Yuma Riverfront Regional Park. In conjunction with the ***Arizona Department of Forestry and Fire Management (DFFM)***, YCNHA is developing a *10-Year Forest Stewardship Plan* for trees located in the West Wetlands Park. This type of cooperation is strongly encouraged and supported by the DFFM. The DFFM is an Arizona State agency dedicated to "manag[ing] and reduc[ing] fire risks to protect Arizona's people, communities, and wildland areas and [championing] the health of Arizona's natural resources." Through grant funding and generous technical assistance from credentialed science and engineering professionals, the organization is currently supporting programs initiated by the City of Yuma like the TREE Program and the YNCHA's Forest Stewardship Plan, which will promote better stewardship and sustainability of Yuma's urban forest.

In April 2019, DFFM in close alliance with the Arbor Day Foundation bestowed upon the City of Yuma, YCNHA, Arizona State Parks & Trails (ASPT), Arizona Game & Fish Department (AZGFD), United State Bureau of Reclamation, and Gowan Company jointly the Arizona State Ponderosa Pine Award for Community Forestry, in recognition of the outstanding urban forestry partnership that implemented the Gowan Grove project in which 700 trees were planted at West Wetlands Park.

Potential Threats

Insects, diseases, and invasive species pose serious threats to tree health. Awareness and early diagnosis are crucial to ensuring the health of the urban forest. Some of the pests that affect trees in Yuma are detailed below.

Asian Citrus Psyllid. According to the United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS), the Asian Citrus Psyllid (*Diaphorina citri Kuwayama* or ACP) causes serious damage to citrus plants and citrus plant relatives. Burned tips and twisted leaves result from an infestation on new growth. Psyllids are also carriers of the bacterium that causes Huanglongbing (HLB) disease, also known as citrus greening disease, spreading the disease to healthy citrus plants. Citrus greening is one of the most serious citrus plant diseases in the world. Once a tree is infected, there is no cure. In Yuma, trees affected by ACP have been removed along Giss Parkway, from the water plant, and along Orange Avenue. According to the Arizona Department of Agriculture, Yuma County is under a partial quarantine for the Asian citrus psyllid. Residents are encouraged not to bring citrus fruits in from out of the county, unless it is certified from a commercial packer. Home-grown citrus can be consumed locally, but not transported out of the area.

Palo Verde Root Borer. The palo verde root borer (*Derobrachus geminatus*) can cause severe diseases that infect palo verde trees. The root borers, also known as grubs, are the larval stage of the palo verde beetle and they use the palo verde tree's roots for nutrients. The grubs can be controlled, but once they have attacked a tree, there is no easy method to remove them. Borers can gradually kill a tree within 7 to 10 years. (*https://www.azpest.com/bug-blog/insect-threats-palo-verde-trees/*)

Mediterranean Pine Engraver (MPE). Urban forestry specialists in Arizona are currently monitoring a non-native bark beetle that was found in eldarica pines in the Phoenix metro area in 2018. The Mediterranean pine engraver beetle (MPE) (*Orthotomicus erosus*) is native to Europe, the Middle East, northern Africa, and China and is only about 3 – 3.5 millimeters long and reddish-brown in color. MPE beetles typically attack distressed trees (although if MPE high populations of the beetles are present even healthy trees can be at risk) by boring holes in the bark and chewing on the layer just under the bark. These bored tunnels block the tree's ability to transport water and nutrients, effectively killing the tree. Common external signs of MPE infestation are yellowing needles, especially at the top of the tree, and the presence of red boring dust on the bark. The telltale sign of a MPE beetle infestation is the presence of galleries, tunnels carved by the beetles as they reproduce and feed, under the bark. If a tree is suspected to be infested, contact an arborist to conduct an assessment. In some cases, the best method to stop the infestation from spreading might be to remove the tree. Removed material should be removed from the site, chipped, buried, or burned. To date, the MPE beetle has not been spotted in Yuma, but if infestation is suspected, contact DFFM with specific tree location details to help monitor where MPE beetles are spreading. (*https://dffm.az.gov/sites/default/files/media/MPE%20Alert_8-19-19.pdf*)

Shot Hole Borer. The Polyphagous Shot Hole Borer (PSHB) (*Euwallacea sp.*) is an invasive beetle that attacks several native tree species. The beetle bores into trees and spreads Fusarium Dieback (FD), a disease that disrupts the transport of water and nutrients in the tree. The PSHB has been found in several counties in California, but there have, as of yet, been no documented cases in Arizona.

Tree Maintenance Program Goals

After thorough evaluation of current tree maintenance practices, the following goals are set to improve practices and uphold Yuma's comprehensive vision for preserving and increasing its urban forest. Specific action items to implement these goals are included in the following section of this document, the 5-Year Action Plan. Implementation of this tree maintenance program is an ongoing process; tree work necessary to reduce public safety risks must always be prioritized.

Goal #1: Standardize Maintenance Practices

With municipal tree maintenance shared between two departments, it is critical that both departments follow the same, mutually agreed upon best practices. The Tree Ordinance references that both departments will follow ANSI A300 Standards for Tree Care Operations standard practices, but more can be done to ensure these standards are being followed by all staff and contractors.

- All maintenance staff should receive regular, recurring education on proper tree maintenance techniques. Arthur Plotnik's *The Urban Tree Book* will serve as the basis for this education and an adequate number of copies will be made available to staff. Other educational resources include online resources from the International Society of Arboriculture and webinars provided by various universities.
- Any contractor hired by the City for tree care shall agree to follow the same ANSI A300 standards referenced in the City's Tree Ordinance.
- Prior to any substantive change to a municipal tree such as pruning or removal, a certified arborist shall perform an assessment using the City's Tree Hazard Evaluation Form, provided in Appendix D.

Goal #2: Complete a Comprehensive Municipal Tree Inventory

A comprehensive inventory of all municipal trees under City care is essential to effective management of the urban forest. This inventory will be completed by P&R and PW staff over the next five years (2020-2025) using the *Lucity* asset management software. It should include the following detailed information: location, species, diameter at breast height, and maintenance performed. P&R, PW, and ITS GIS staff will work together to establish standard procedures to ensure uniformity in the manner in which the data is collected and analyzed. Proactive and reactive maintenance to each tree will be tracked as it performed over to each tree. Over time, this data will help urban forestry professionals improve efficiency of tree maintenance, identify the most vulnerable trees, inform budget needs for improving tree care, and identify areas for tree planting.

The tree inventory will also identify sites that currently don't have a tree but could accommodate one. These sites will form the baseline data for the fourth goal set by this plan, implementing a Tree Replacement Program. Vacant sites to be identified in the inventory include:

- Sites where a tree was once planted but died or was removed and has not yet been replaced.

- Medians a minimum of 15-feet wide (as measured from back of curb to back of curb and as referenced in the Landscape Regulations)
- Basins being converted to xeriscape (the number of required trees as determined by the Landscape Regulations).
- The streetscape zone (as defined in the Landscape Regulations).

When the inventory is complete, the City will have a basis from which to calculate the value of the urban trees and will share this data with the community through education and outreach events. Trees are an asset to the City, and it is important to quantify their value in financial terms, as with any other asset class.

Goal #3: Strategically Improve Levels of Service

The current levels of staffing and budgets of both P&R and PW allow both departments to complete priority tree maintenance – maintenance in response to immediate needs. Budget and staffing do not currently allow for proactive maintenance that includes a routine checkup cycle and young tree training. Research has shown that a proactive program that includes a routine checkup cycle will improve the overall health of a tree population (Miller and Sylvester 1981). During the checkup, the tree will be assessed as to whether or not it needs to be pruned.

As the municipal tree inventory is completed, this inventory can be used to implement a proactive maintenance cycle and to better assess trees that need priority maintenance to prevent safety situations before they occur. It is recommended that both departments implement a three-year young tree training cycle and a five-year routine checkup cycle. Young tree training can prevent branch structure problems that can lead to potential problems as the tree ages. It can also ensure that street trees grow in a proper upright form to avoid impeding the right-of-way as they grow. Proactive pruning, on a five-year cycle, corrects defects in trees before they worsen, which avoids costly problems in the future.

In order for P&R and PW to improve their levels of tree care maintenance and maintain additional trees (Goal #5), both departments will need more staff to meet the demand. P&R's Urban Forestry Division needs one more Grounds Maintenance Crew Leader and one more Groundskeeper in order to run two tree maintenance teams simultaneously instead of only one team they currently have staff for. For safety's sake, equipment operation must be done in teams of a minimum of two people, each with a crew leader. This additional staff would improve efficiency, reduce clean-up response times after storm events, and allow the division to provide more proactive maintenance.

PW would require additional staff to improve tree care. The additional trees being planted through PW's Xeriscape Conversion Program warrants an additional PW Maintenance Worker for the Retention Basin Crew. The additional street trees to be added in the rights-of-way warrants an additional Street Maintenance Worker for the Streets Maintenance Crew.

Goal #4: Implement a Tree Replacement Program

Over time, trees are lost to natural mortality or other threats (storms, wind, drought, pests, and construction) and need to be replaced. The estimated mortality rate is estimated to be one to three percent of the total inventory each year.

Tree replacement poses challenges. First, the dead tree and stump must be removed. If the tree was killed by a disease or pathogen, it is possible that the pathogen is still in the soil. The sawdust left by removing the stump can alter the composition of the soil. When looking to replace a tree immediately, a fresh site at least eight feet from the previous site is best. In relatively unconstrained areas like parks, this is the recommended strategy.

However, in some instances such as is the case with street trees, the original site of the tree is the best for the various benefits it provides (shade to the sidewalk, enclosure to the street, shade to the pavement, etc). Once sufficient time has passed following tree removal, the same site can be adequate for a replacement tree.

The tree inventory will make tracking tree replacement much easier. When a tree is removed, it should be flagged in *Lucity* as needing replacement. If a nearby site is deemed appropriate, it will be replaced immediately. If the same site is deemed best, it can be scheduled for replacement in the future. The asset management software, *Lucity*, will allow tree replacement to become a seamless part of the maintenance process.

Goal #5: Implement a Tree Planting Program

In accordance with the goals set in the *Tree & Shade Master Plan* to increase the overall canopy coverage within the community from 3.5% to 7% over the next ten years, the City will need to plant more trees on City-managed lands as well. To meet current targets, P&R would need to plant an additional 550 trees per year and PW would need to plant an additional 200 trees per year during the five-year timeframe this plan deals with (2020-2025).

The initial cost to plant a new tree includes: the purchase of the tree, installation of irrigation, and staff time to plant. It is estimated that each new tree costs approximately $350 to plant. The ongoing maintenance costs associated with each tree include water, pruning, cleaning debris, and potential replacement. It is estimated that each tree costs approximately $225 per year to maintain. Over time, as trees mature, it is expected that both P&R and PW will need to increase staff in order to maintain the additional trees.

ESTIMATED COST PER TREE

	PER TREE	ESTIMATED COST	TOTAL COST
INITIAL COSTS	Tree (15-gal) Irrigation Staff (1 hr)	$100 $150 $50	**$300**
ONGOING ANNUAL MAINTENANCE	Water for irrigation Pruning Check (1/yr) Debris cleaning (4/yr) Replacement factor (10%)	$10 $50 $50 $15	**$125**

An important part of PW's tree planting program includes the Xeriscape Conversion Program currently being implemented in retention basins and rights-of-way with grass. Conversion of these areas aims to reduce maintenance by removing grass which requires frequent mowing,

watering, and fertilizing, and replacing it with low-maintenance xeriscape that includes desert-adapted and low-water use trees, shrubs, and succulents. Inert groundcover such as decorative landscape rock and boulders are used instead of living groundcover like grass. Trees are integral to xeriscape design principles and will be included in xeriscape conversions wherever possible and according to the City's Landscape Regulations.

With the adoption of updates to the Tree Ordinance, the Municipal Tree Fund recommended therein could be used to partially fund costs associated with new tree planting. The *Tree & Shade Master Plan* prioritizes sites for new tree plantings, including sites identified in the tree inventory as vacant tree sites.

Funding

Sources

Municipal Funding/Annual Operating Budget. With tree care responsibilities split between two departments and different divisions within those departments, it is difficult to determine exactly how much each department is funded for specific tree maintenance activities. In 2018-19, P&R's Urban Forestry Division had an overall budget of $257,669.44. This included tree planting, removals, maintenance, and staff.

PW's tree maintenance is split between different accounts, but the majority of tree care is funded in conjunction with facilities maintenance, which in 2018-19 was allotted $71,000 total; $60,000 for mowing operations and $11,000 for technical services, which includes contracted tree maintenance companies.

Grant Funding. The following agencies and organizations are anticipated to provide grant-funding for urban forestry initiatives in the next one to five years:

- Arizona State Parks and Trails (ASPT)
- Arizona Department of Forestry & Fire Management (DFFM)
- Arizona Game and Fish Department (AGFD)
- Arizona Land and Water Conservation Fund (AZ LWCF)
- U.S. Department of Interior/National Park Service/Land and Water Conservation Fund (US LWCF)
- U.S. Department of Housing and Urban Development (HUD)
- Foundations & nonprofits

Municipal Tree Fund. Although the Municipal Tree Fund has not yet been implemented, proposed changes to the Tree Ordinance and updates to the *Tree & Shade Master Plan*, recommend creation of a restricted fund to support expansion and care of the urban forest. The fund would be formed from donations and municipal tree removal/replacement fees.

Uses

One of the four standards established by the Arbor Day Foundation to qualify as a Tree City USA community, cities must have an annual budget for urban forestry of at least $2 per capita. For Yuma's 2018 population of 94,906, this means the City's annual budget for trees should be at least $189,812. As the population grows, so too should the annual budget for trees.

Based on the tree care and maintenance activities defined in the Tree City USA application, the following table shows past and recommended funding allocations for annual tree related activities.

BUDGET ALLOCATIONS			
TREE CARE & MAINTENANCE ACTIVITY	ANNUAL BUDGET (2017-18)	ANNUAL BUDGET (2018-19)	ANNUAL BUDGET (2019-20)
Tree Planting & Initial Care	15%		
Tree Removals	15%		
Tree Maintenance	30%		
Community Forestry Management	40%		
TOTAL	**$257,669.44**		
PER CAPITA	**$2.71**		

5-Yr Action Plan (2020-2025)

FISCAL YEAR	DEPT	ACTION ITEM	ESTIMATED COST
2020-21	P&R	• Complete priority maintenance for all parks on an as needed basis and proactive maintenance when possible • Inventory trees in 25% of parks & facilities • Plant 200 to 550 trees as part of the Tree Planting Program • Replace trees as needed • Partner with PW to provide two training classes for existing staff • Purchase 2 copies of *The Urban Tree Book*	• Existing staff • Existing staff • $60,000 - 165,000 • $10,000 • $500 • $50
	PW	• Complete priority maintenance for the basins & ROWs inventoried and on an as needed basis • Inventory trees in 25% of basins and street rights-of-way • Plant 60-200 trees as part of the Tree Planting Program & the Xeriscape Conversion Program • Replace trees as needed • Partner with P&R to provide 2 training classes for existing staff • Contract with Parks & Recreation staff or contractor for arborist expertise • Purchase 2 copies of *The Urban Tree Book*	• Existing staff • Existing staff • $18,000 - 60,000 • $4,500 • $500 • $300 • $50
2021-22	P&R	• Complete priority maintenance for all parks on an as needed basis and proactive maintenance when possible • Inventory trees in 25% of parks & facilities • Hire one (1) Grounds Maintenance Crew Leader for the Urban Forestry Division's second tree crew • Plant 200 to 550 trees as part of the Tree Planting Program • Replace trees as needed • Partner with PW to provide two training classes for existing staff	• Existing staff • Existing staff • $41,000 • $60,000 - 165,000 • $10,000 • $500
	PW	• Complete priority maintenance for the basins & ROWs inventoried and on an as needed basis • Inventory trees in 25% of basins and street rights-of-way • Hire one (1) PW Maintenance Worker for the Retention Basin Crew • Plant 60-200 trees as part of the Tree Planting Program & the Xeriscape Conversion Program • Replace trees as needed • Partner with P&R to provide 2 training classes for existing staff • Contract with Parks & Recreation staff or contractor for arborist expertise	• Existing staff • Existing staff • $27,000 • $18,000 - 60,000 • $4,500 • $500 • $300

FISCAL YEAR	DEPT	ACTION ITEM	ESTIMATED COST
2022-23	P&R	• Complete priority maintenance for all parks on an as needed basis and proactive maintenance when possible • Inventory trees in 25% of parks & facilities • Plant 200 to 550 trees as part of the Tree Planting Program • Replace trees as needed • Partner with PW to provide two training classes for existing staff	• Existing staff • Existing staff • $60,000 - 165,000 • $10,000 • $500
	PW	• Complete priority maintenance for the basins & ROWs inventoried and on an as needed basis • Inventory trees in 25% of basins and street rights-of-way • Plant 60-200 trees as part of the Tree Planting Program & the Xeriscape Conversion Program • Replace trees as needed • Partner with P&R to provide 2 training classes for existing staff • Contract with Parks & Recreation staff or contractor for arborist expertise	• Existing staff • Existing staff • $18,000 - 60,000 • $4,500 • $500 • $300
2023-24	P&R	• Complete priority maintenance for all parks on an as needed basis and proactive maintenance when possible • Inventory trees in 25% of parks & facilities • Hire one (1) Groundskeeper for the Urban Forestry Division's second tree crew • Plant 200 to 550 trees as part of the Tree Planting Program • Replace trees as needed • Partner with PW to provide two training classes for existing staff	• Existing staff • Existing staff • $27,000 • $60,000 - 165,000 • $10,000 • $500
	PW	• Complete priority maintenance for the basins & ROWs inventoried and on an as needed basis • Inventory trees in 25% of basins and street rights-of-way • Plant 60-200 trees as part of the Tree Planting Program & the Xeriscape Conversion Program • Replace trees as needed • Partner with P&R to provide 2 training classes for existing staff • Contract with Parks & Recreation staff or contractor for arborist expertise	• Existing staff • Existing staff • $18,000 - 60,000 • $4,500 • $500 • $300

FISCAL YEAR	DEPT	ACTION ITEM	ESTIMATED COST
2024-25	P&R	• Complete priority maintenance for all parks on an as needed basis and proactive maintenance when possible • Complete inventory of trees in parks & facilities • Plant 200 to 550 trees as part of the Tree Planting Program • Replace trees as needed • Partner with PW to provide two training classes for existing staff • Partner with PW to update this *Tree Care & Maintenance Plan*	• Existing staff • Existing staff • $60,000 - 165,000 • $10,000 • $500
	PW	• Complete priority maintenance for the basins & ROWs inventoried and on an as needed basis • Complete inventory of trees in basins and street rights-of-way • Plant 60-200 trees as part of the Tree Planting Program & the Xeriscape Conversion Program • Replace trees as needed • Partner with P&R to provide 2 training classes for existing staff • Contract with Parks & Recreation staff or contractor for arborist expertise • Partner with P&R to update this *Tree Care & Maintenance Plan*	• Existing staff • Existing staff • $18,000 - 60,000 • $4,500 • $500 • $300 • $500

Appendix C

LANDSCAPE GUIDELINES

Recommended Plants List

For long term success, it is critical to choose the right tree for the right place. In 2017, local experts helped City staff compile this list of recommended plants that flourish in Yuma's unique environmental conditions.

Residential Tree Requirement

The Landscape Regulations require one tree to be planted for each single-family residential lot over 5,000 square feet to be installed as part of new construction or remodel. General requirements for the tree are outlined in the attached document.

Department of Community Development
One City Plaza
Yuma, AZ 85364
(928) 373-5175

RECOMMENDED PLANTS

This list provides guidance when selecting plants for your landscape design project. The City's Landscape Regulations state: "Landscaping materials are intended to contribute to the community-wide goals of beautification, energy conservation, and the conservation of the community's water resources through the use of drought tolerant plants, efficient irrigation, reduced turf areas, and proper maintenance and the fundamentals of xeriscape landscaping." Listed species are particularly well-adapted to Yuma's desert climate and have low to moderate water use needs. In addition to low water use, the information provided in the tables describes the basic growth characteristics and maintenance requirements of each plant, including the following:

Water Use: All plants included in this list are low-water-use species, but the Water Use column identifies the most water-conscious varieties. Each plant is classified as Low (L), Low to Moderate (L-M), or Moderate (M). Trees classified as Moderate water use will thrive in grassy areas with sprinkler irrigation.

Litter: All plants produce litter when flowers, seedpods, or leaves drop, but some plants produce more than others. Each species is classified as producing minimal (MIN), moderate (MOD), or high (HI) litter. Carefully consider the placement of high-litter plants as they do require more maintenance.

Pruning Season: Most plants need to be pruned only once a year. The best season to prune each species differs based on when it flowers, goes dormant, and other factors. Some species, particularly succulents and cactus, do not need to be pruned.

Hardiness: The number shown indicates the lowest temperature the plant is known to tolerate.

Evergreen: Evergreen plants (Y) leaf throughout the year, while deciduous plants (N) drop their leaves in the winter months. Semi-evergreen plants (SEMI) drop their leaves for a short period with sufficiently cold temperatures.

What is xeriscape?

Xeriscape is a style of landscape design requiring low irrigation and minimal maintenance. It is an important water conservation technique, particularly in desert climates. Xeriscape landscape design utilizes many water conscious strategies including low-water plants, efficient irrigation, and limiting the use of turf. The plants listed here are adapted to and, with proper care, will thrive in Yuma's local climate.

What is the difference between a shade, street, and accent tree?

This list categories trees into three types: street trees, shade trees, and accent trees. *Street trees* are those that grow to an average height of 30 feet or more, generally have a high branching pattern, and have an upright or rounded form. Street trees are planted within 5 to 8 feet of the sidewalk or street to provide shade to pedestrians and cars. The best species for street trees are low litter and low maintenance. *Shade trees* also grow to an average mature height of 30 feet or more and typically have a dense canopy that provides shade. Branching structure can be more spreading, vase-shaped, or layered than street trees. *Accent trees* are small, ornamental trees that typically grow to a mature height of 15 to 20 feet.

Can I plant something at my house not shown on this list?

This list provides guidance, but does not restrict private residents from planting any particular species. Lots used exclusively for one-family dwelling units, when not otherwise required as part of an approval process to provide landscaping, are exempt from the requirements of the Landscape Regulations. The regulations advise against the following species due to their pollen or seeds which aggravate allergies and other health problems: common Bermuda grass, mulberry, and olive (except the male or fruitless varieties).

NOTE: The Landscape Regulations can be found in Article 20 of the City of Yuma's Code of Ordinances, Title 15, Chapter 154. This information is provided as a general guide to the public. It is not intended to be a reproduction of all code requirements or text. If you need additional information contact Community Development at (928) 373-5175 or visit our office at One City Plaza, Yuma, AZ 85364. **(v.5 8/24/2017)**

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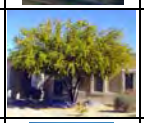
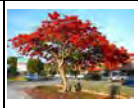
Trees

		GROWTH INFORMATION						RECOMMENDED AREA					
		WATER USE	LITTER	HARDINESS (degrees F)	EVERGREEN	MATURE SIZE (HxW)	TREE TYPE	PARKWAYS	MEDIANS	SUBDIVISION WALLS	RETENTION BASINS	GATEWAY ROUTES	PARKING LOTS
Acacia aneura [1] Mulga Acacia		L	MIN	15º	Y	15'X15'	ACCENT						
Acacia farnesiana [2] Sweet Acacia		L	MIN-MOD	15º	SEMI	20'X20'	ACCENT						
Acacia salicina Willow Acacia		L	MIN	20º	Y	30'x15'	STREET						
Acacia stenophylla Shoestring Acacia		L	MIN	15º	Y	30'x20'	STREET						
Brachychiton populneus Bottle Tree		L-M	MIN	15º	Y	30x20'	STREET						
Callistemon spp. Bottlebrush		M	MIN	20º	Y	10-30x6-15'	ACCENT						
Celtis reticulata Western Hackberry		L-M	MIN	-20º	N	30x30'	SHADE						
Ceratonia siliqua Carob (female only)		L	MOD	20º	Y	40'x40'	SHADE						
Chilopsis linearis [1 2] Desert Navajo Willow		M	MOD	0º	N	20x20'	ACCENT						
Delomix regia Royal Ponsiana Tabachin		M	MOD	0º	SEMI	30'x60'	SHADE						
Ebenopsis ebano [2] Texas Ebony		L	MOD	20º	Y	40'x30'	SHADE						
Eucalyptus citriodora Lemon-scented Eucalyptus		L	MIN	25º	Y	50'x30'	STREET						
Eucalyptus spathulata Narrow Leaf Gimlet		L-M	MIN	15º	Y	30'x20'	STREET						
Fraxinus velutina Arizona Ash, "Fan-Tex"		L-M	MIN	-10º	N	40x30'	STREET						

NOTES:

[1] Approved for use in some Yuma County Water Users' Association rights-of-way
[2] Approved for use near APS overhead lines, not within 15 feet
[3] Not allowed within City ROW

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Trees

		GROWTH INFORMATION						RECOMMENDED AREA					
		WATER USE	LITTER	HARDINESS (degrees F)	EVERGREEN	MATURE SIZE (HxW)	TREE TYPE	PARKWAYS	MEDIANS	SUBDIVISION WALLS	RETENTION BASINS	GATEWAY ROUTES	PARKING LOTS
Geijera parviflora Australian willow		M	MIN	15º	Y	30x20'	SHADE						
Gleditsia triacanthos Honey Locust		L-M	HI	15º	N	40x50'	SHADE						
Jacaranda mimosifolia Jacaranda		M	MOD	25º	N	30x30'	SHADE/ STREET						
Lysiloma spp. [1] Desert fern, featherbush		L-M	MIN	25º	N	15x15'	ACCENT						
Nerium oleander Oleander Tree		L	MIN	15º	Y	15'x15'	ACCENT						
Olea europaea [1] Fruitless varieties only such as Swan Hill and Wilsonii		L-M	HI	15º	Y	25'x25'	ACCENT						
Olneya tesota Ironwood		L	MIN	20º	N	30x30'	SHADE/ STREET						
Parkinsonia spp. (Cercidium spp.) [1 2] Blue Palo Verde and Foothills Palo Verde[2] species are preferred		L	MOD	20º	N	10-30x10-30'	ACCENT						
Phoenix canariensis [3] Canary Island Date Palm		L-M	MOD-HI	25º	Y	50x30'	ACCENT						
Phoenix dactylifera [3] Date Palm		L-M	MOD	15º	Y	40x20'	ACCENT						
Pistacia chinensis [1] Chinese Pistache		MOD	MIN	10º	N	40'x35'	SHADE/ STREET						
Pistacia lentiformis [1] Mastic Tree		L-M	MIN	20º	Y	15'x20'	ACCENT						
Pittosporum phillyraeoides [1] Willow Pittosporum		L-M	MOD	15º	Y	15x15'	ACCENT						
Prosopis ssp. Hybrid Mesquite		L-M	MOD	0º	N	30x30'	SHADE/ STREET						

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		GROWTH INFORMATION						RECOMMENDED AREA					
		WATER USE	LITTER	HARDINESS (degrees F)	EVERGREEN	MATURE SIZE (HxW)	TREE TYPE	PARKWAYS	MEDIANS	SUBDIVISION WALLS	RETENTION BASINS	GATEWAY ROUTES	PARKING LOTS
Quercus virginiana Southern Live Oak		M	MIN	0º	SEMI	40'x50'	SHADE/ STREET						
Sophora secundiflora [1 2] Texas Mountain Laurel, Mescal Bean		L-M	MIN	10º	Y	15x15'	ACCENT						
Ulmus parvifolia cv. 'Sempervirens' Chinese Evergreen Elm		MOD	MOD	25º	N	30x30'	SHADE/ STREET						
Vitex agnus-castus [1 2] Chaste Tree		L-M	HI	-10º	N	20x20'	ACCENT						

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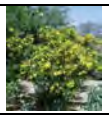
Shrubs

		GROWTH INFORMATION						RECOMMENDED AREA					
		WATER USE	LITTER	PRUNING SEASON	HARDINESS (degrees F)	EVERGREEN	MATURE SIZE (HxW)	PARKWAYS	MEDIANS	SUBDIVISION WALLS	RETENTION BASINS	GATEWAY ROUTES	PARKING LOTS
Acacia spp. [1] Acacia		L-M	MIN	SPRING	20º	Y	5x5'						
Aloysia spp. [1] Bee Brush		L-M	MIN	WINTER	15º	N	6x6'						
Buddleia marrubifolia Woolly Butterfly Bush		L	MIN	WINTER	10º	Y	5x5'						
Caesalpinia gilliesii [1] Yellow Bird of Paradise		L-M	MIN	WINTER	5º	SEMI	6x5'						
Caesalpinia pulcherrima Bird of Paradise		L-M	MOD	WINTER	18-30º	N	4-10'x4-6'						
Caesalpinia mexicana Mexican Bird of Paradise		M	MOD	WINTER	18-30º	Y	12x10'						
Calliandra californica Baja Fairy Duster		L-M	MIN	SPRING	25º	SEMI	4x4'						
Calliandra eriophylla [1] Fairy Duster		L-M	MIN	LATE SPRING	0-10º	N	2x3'						
Callistemon spp. Bottlebrush		M	MIN	LATE SUMMER	20º	Y	6-10'x 6-10'						
Callistemon citrinus 'Little John' [1] Dwarf Bottlebrush 'Little John'		M	MIN	LATE SUMMER	20º	Y	3x3'						
Chamaerops humilis Mediterranean Fan Palm		M	MIN	WINTER	10º	Y	10x15'						
Convolvulus cneorum Bush Morning Glory		L	MIN	NONE	20º	Y	2-4'x2-4'						
Cordia boissieri [1] Texas Olive		M	MOD	WINTER	20º	Y	10x10'						
Cordia parvifolia Little Leaf Cordia		L-M	MIN	LATE WINTER	18º	SEMI	3x4'						

NOTES:
[1] Plants approved for use in Yuma County Water Users' Association rights-of-way

Department of Community Development
One City Plaza
Yuma, AZ 85364
(928) 373-5175

Shrubs

		GROWTH INFORMATION						RECOMMENDED AREA					
		WATER USE	LITTER	PRUNING SEASON	HARDINESS (degrees F)	EVERGREEN	MATURE SIZE (HxW)	PARKWAYS	MEDIANS	SUBDIVISION WALLS	RETENTION BASINS	GATEWAY ROUTES	PARKING LOTS
Encelia farinosa Brittlebush		L-M	MIN	SPRING & FALL	25º	N	3x4'						
Eremophila spp. Emu Bush		L-M	MIN	LATE SPRING	20º	Y	4x5'						
Euphorbia rigida [1] Gopher Plant		L-M	MIN	LATE SPRING	5º	Y	2x3'						
Gossypium harknessii San Marcos Hibiscus		L-M	MIN	WINTER	25º	Y	3x4'						
Justicia californica [1] Hummingbird bush or chuparosa		L-M	MIN	FALL	25º	SEMI	4x4'						
Lantana camara [1] Bush Lantana		L-M	MIN	WINTER	30º	N	3x3'						
Leucophyllum spp. Texas Ranger, Texas Sage, etc.		L-M	MIN	SPRING& FALL	0-5º	Y	8x8'						
Myrtus communis Myrtle		M	MIN	WINTER	20º	Y	5x4'						
Rosmarinus officinalis [1] Rosemary		L-M	MIN	SPRING	10º	Y	2-3'x4-8'						
Ruellia brittoniana [1] Mexican Petunia		L-M	MIN	WINTER	35º	Y	5x5'						
Ruellia peninsularis [1] Desert Ruellia		L-M	MIN	WINTER	28º	Y	3X4'						
Russelia equisetiformis [1] Coral Fountain Grass		L	MOD	WINTER	25º	Y	5X3'						
Tecoma spp. Tecoma, Yellow Bells		L-M	MOD	SPRING	28º	SEMI	6X6'						
Tecomaria capensis Cape Honeysuckle		M	MIN	SPRING	28º	Y	6X5'						

NOTES:
[1] Plants approved for use in Yuma County Water Users' Association rights-of-way

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One City Plaza
Yuma, AZ 85364
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Cactus & Succulents

		GROWTH INFORMATION						RECOMMENDED AREA					
		WATER USE	LITTER	PRUNING SEASON	HARDINESS (degrees F)	EVERGREEN	MATURE SIZE (HxW)	PARKWAYS	MEDIANS	SUBDIVISION WALLS	RETENTION BASINS	GATEWAY ROUTES	PARKING LOTS
Agave spp. [1] Agave species, Century Plant		L	MIN	NONE	0-20º	Y	VARIES 2-3x2-3'						
Aloe spp. [1] Aloe species		L	MIN	NONE	25º	Y	2x5'						
Bulbine frutescens [1] Shrubby Bulbine, Yellow bulbine		L-M	MIN	NONE	15º	Y	1x2'						
Carnegiea spp. [1] Saguaro Cactus		L	MIN	NONE	18º	Y	20x10'						
Dasylirion spp. [1] Desert spoon, Toothless desert spoon		L-M	MIN	NONE	0º	Y	4x4'						
Echinocactus spp. [1] Barrel Cactus		L	MIN	NONE	18º	Y	2x2'						
Echinocereus engelmannii [1] Hedgehog Cactus		L	MIN	NONE	10º	Y	1x2'						
Euphorbia antisyphilitica [1] Candelilla		L	MIN	NONE	15º	Y	1x2'						
Ferocactus spp. [1] Barrel Cactus		L	MIN	NONE	0-20º	Y	VARIES						
Fouquieria splendens [1] Ocottilo		L-M	MIN	NONE	0-5º	N	12x10'						
Hesperaloe parviflora [1] Red Yucca, Hesperaloe species		L	MIN	NONE	10º	Y	3x5'						
Nolina spp. [1] Beargrass		L	MIN	SPRING	0º	Y	3x4'						
Pedilanthus macrocarpus [1] Slipper Plant		L	MIN	NONE	25º	Y	3x3'						
Stenocereus thurberi [1] Organ pipe cactus		L	MIN	NONE	22º	Y	10x10'						
Yucca baccata [1] Narrow-leaved Yucca, Banana Yucca		L	MIN	NONE	0º	Y	3x5'						

NOTES:
[1] Plants approved for use in Yuma County Water Users' Association rights-of-way

Department of Community Development
One City Plaza
Yuma, AZ 85364
(928) 373-5175

Groundcover

		GROWTH INFORMATION						RECOMMENDED AREA					
		WATER USE	LITTER	PRUNING SEASON	HARDINESS (degrees F)	EVERGREEN	MATURE SIZE (HxW)	PARKWAYS	MEDIANS	SUBDIVISION WALLS	RETENTION BASINS	GATEWAY ROUTES	PARKING LOTS
Acacia spp. [1] Trailing Acacia		L-M	MIN	FALL	15º	Y	1x10'						
Asparagus densiflorus cv. 'Sprengeri' [1] Sprenger Asparagus		L-M	MIN	NONE	25º	Y	1x4'						
Atriplex spp. [1] Saltbush		L-M	MIN	NONE	25º	Y	1-4'						
Baccharis pilularis [1] Coyote Bush, trailing desert broom		L-M	MIN	SUMMER	5º	Y	2x4'						
Baileya multiradiata [1] Desert Marigold		M	MIN	NONE	10º	Y	1'-6"x2'						
Chrysactinia mexicana [1] Damianita		L	MIN	NONE	10º	Y	2x4'						
Convolvulus mauritanicus [1] Ground Morning Glory		L	MIN	WINTER	15º	Y	2x3'						
Dalea spp. [1] Trailing Dalea, Dalea Bush		L-M	MIN	FALL	15º	Y	2x6'						
Eschscholzia mexicana [1] Mexican Gold Poppy		L	MIN	NONE	35º	Y	1'-6"x 1'-6"						
Gazania rigens [1] Clumping Gazania		L	MIN	FALL	25º	Y	1x6'						
Glandularia peruviana [1] Verbena Peruviana		M	MIN	WINTER	25º	Y	1x4'						
Lantana spp. [1] Trailing Lantana		M	MIN	WINTER	25º	Y	1x4'						
Rosmarinus officinalis cv. 'Prostratus' [1] Prostrate Rosemary		L-M	MIN	FALL	15º	Y	2x4'						
Wedelia trilobata [1] Yellow Dot		L-M	MIN	WINTER	30º	Y	1'-6"x6'						

NOTES:
[1] Plants approved for use in Yuma County Water Users' Association rights-of-way

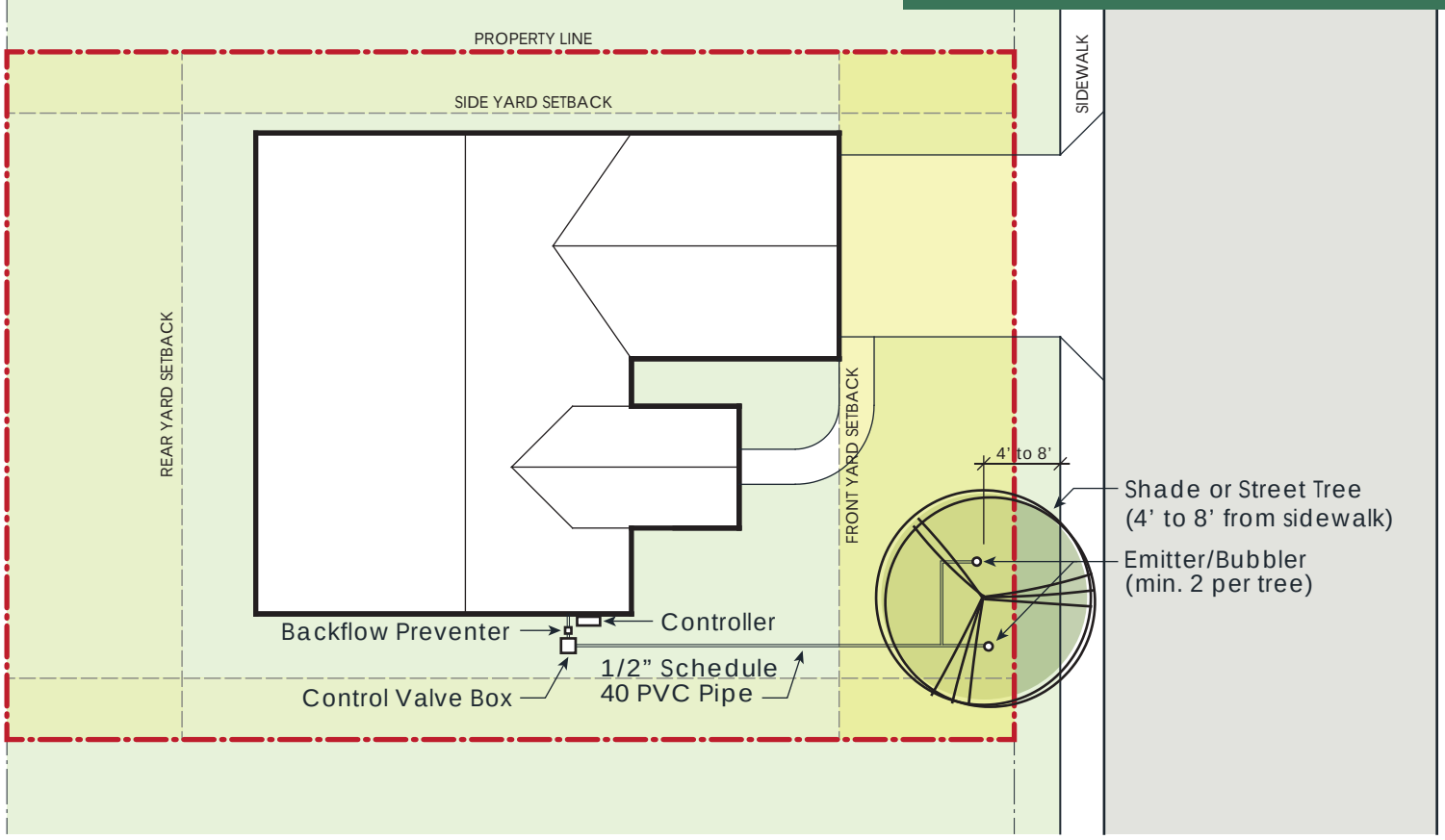
RESIDENTIAL SITE PLAN FOR STREET TREE

The Yuma City Code, Title 15, Chapter 154, Article 20 Landscape Regulations requires one tree to be planted for each single-family residential lot over 5,000 square feet to be installed as part of new construction or remodel. General requirements for this tree are summarized on this page, but please reference the full code language in Article 20, Section 4 (A) for complete details.

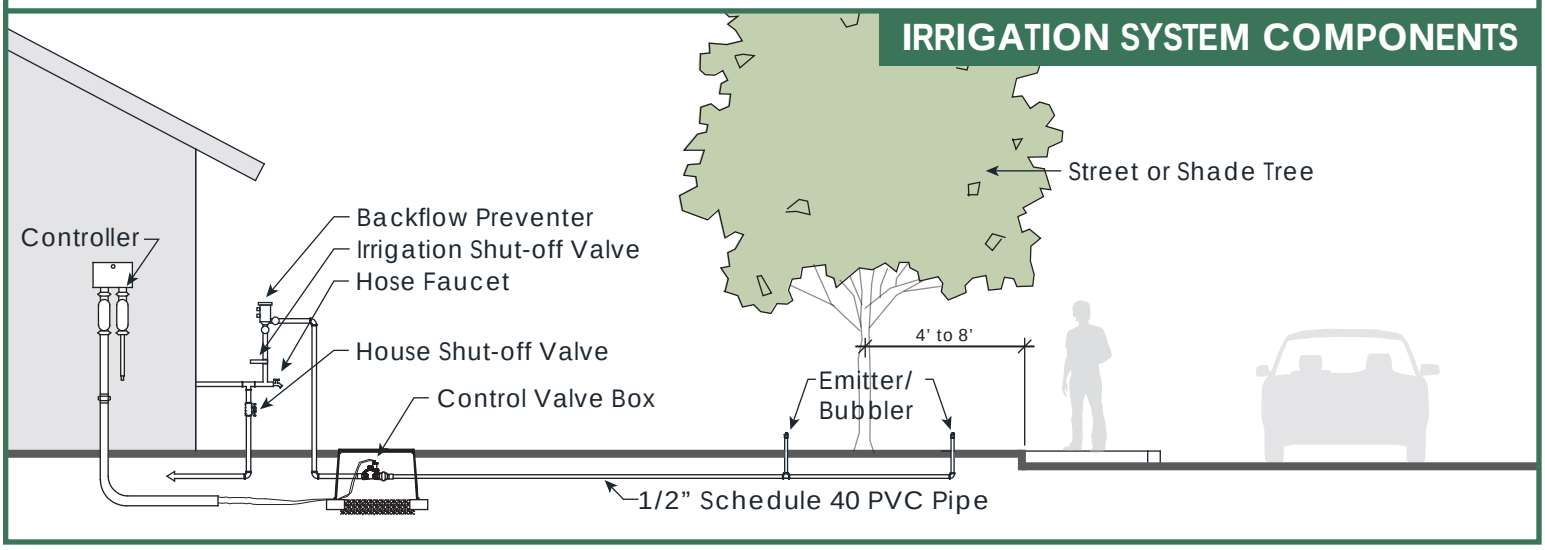
OVERVIEW OF REQUIREMENTS

- One tree required for single-family residential lots with an area of 5,000 sq. ft. or greater.
- One (15-gal) Shade or Street tree chosen from the Recommended Plants List must be planted in the front yard setback.
- Tree must have a permanent irrigation system.
- Tree requirement must be fulfilled before the final Certificate of Occupancy is issued.
- If the lot has an adjacent tree belt, the tree shall be located in the tree belt.

TREE & IRRIGATION LOCATION



IRRIGATION SYSTEM COMPONENTS



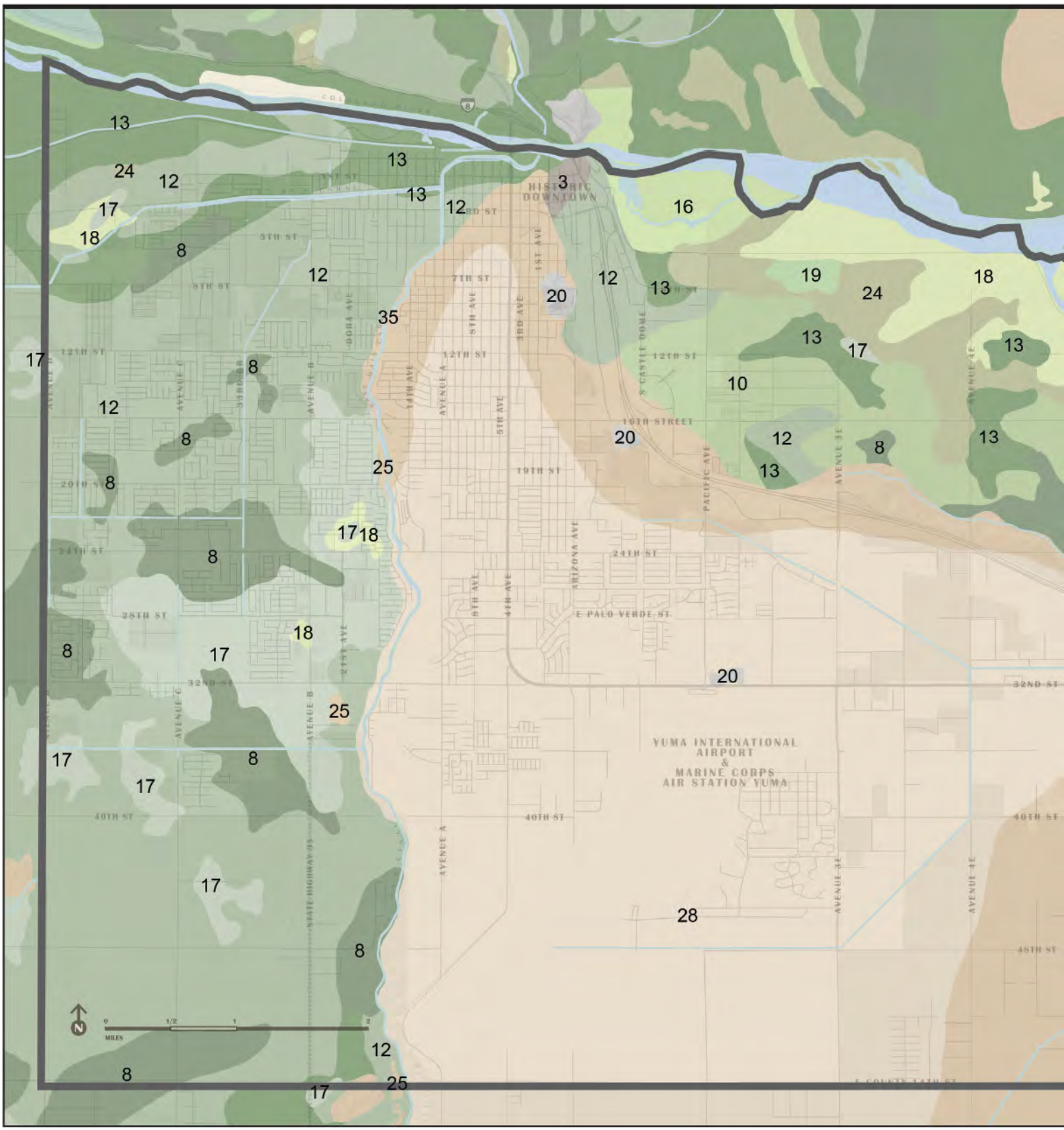
Appendix D

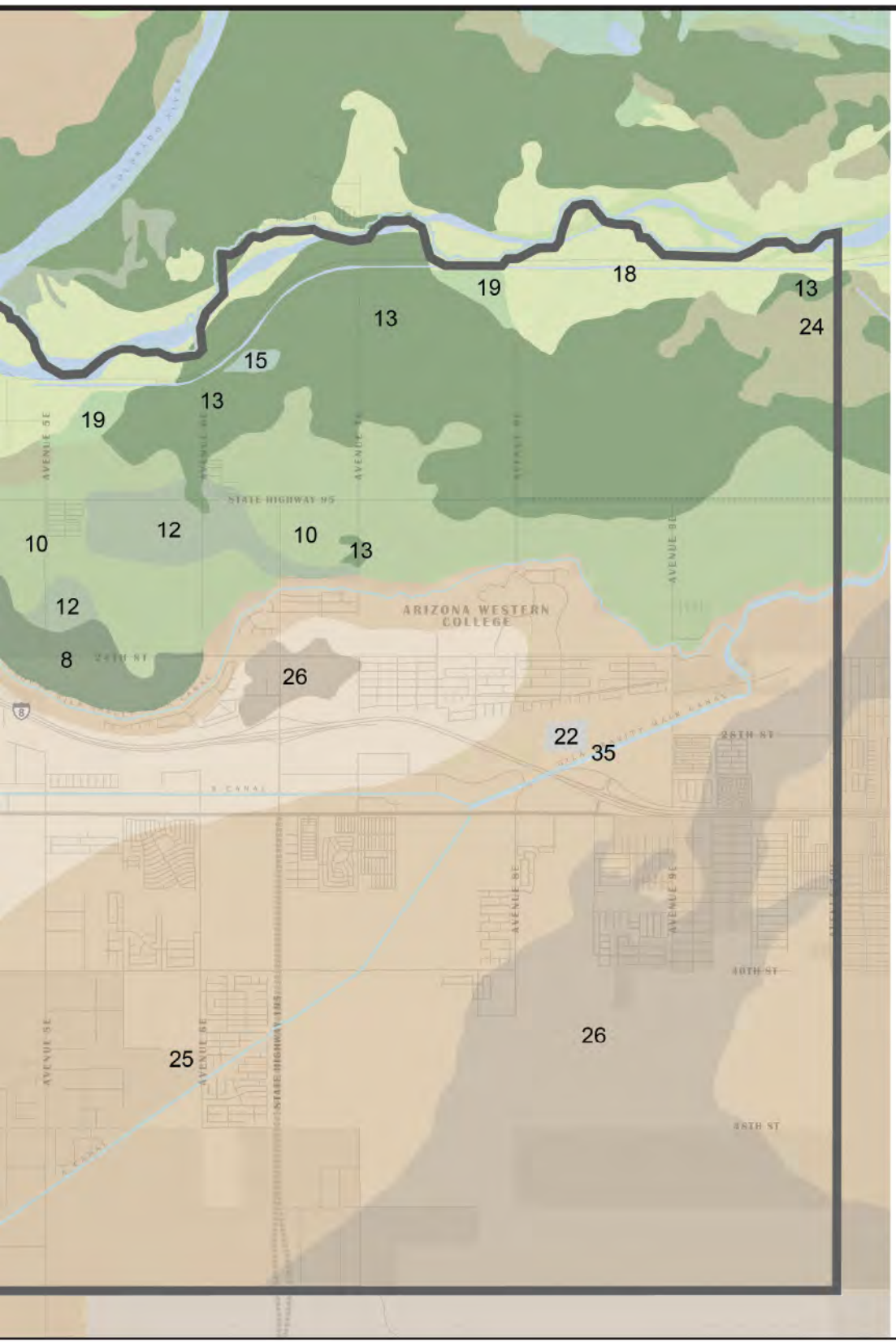
YUMA SOIL TYPES

The map shows the soil types found in Yuma, according to the USDA Natural Resources Conservation Service's Web Soil Survey. A description of the most predominate soil types, including information pertinent to growing conditions, is provided. The complete survey, along with descriptions of each soil type, can be accessed on the USDA website at *websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey*.

SOILS

USDA Web Soil Survey | February 2019





SOIL CLASSIFICATIONS

3	Carrizo very gravelly sand
8	Gadsden clay
10	Glenbar silty clay loam
12	Holtville clay
13	Indio silt loam, 0-1% slopes
15	Indio silt loam, strongly saline
16	Indio-Lagunita-Ripley complex
17	Kofa clay
18	Lagunita loamy sand
19	Lagunita silt loam
20	Laposa-Rock outcrop complex, 15-75% slopes
22	Pits, borrow
24	Ripley silt loam
25	Rositas sand
26	Rositas-Ligurta complex
28	Superstition sand
35	Water

PLANNING BOUNDARY

Selected soil type descriptions copied from the USDA's Soil Series website (https://soilseries.sc.egov.usda.gov/osdname.aspx)

GADSDEN SERIES

The Gadsden series consists of very deep, well drained soils formed in stratified stream alluvium. Gadsden soils are on flood plains and have slopes of 0 to 3 percent.

RANGE IN CHARACTERISTICS:
Clay content - Averages 35 to 60 percent in the control section
Salinity- Nonsaline to strongly saline

DRAINAGE AND PERMEABILITY:
Well drained; slow runoff; slow permeability.

USE AND VEGETATION: These soils are used for irrigated crops and for livestock grazing. Irrigated crops are cotton, alfalfa, sorghums, sugar beets, small grains and truck crops. Vegetation is creosotebush, desert saltbush, salt cedar, inkweed, and annual weeds and grasses.

GLENBAR SERIES

The Glenbar series consists of very deep, well drained soils that formed in stratified stream alluvium. Glenbar soils are on flood plains and alluvial fans and have slopes of 0 to 3 percent.

RANGE IN CHARACTERISTICS:
Salinity- Nonsaline to strongly saline

DRAINAGE AND PERMEABILITY:
Well drained; medium to slow runoff; moderately slow permeability.

USE AND VEGETATION: Used for livestock grazing and where irrigated, for cultivated crops and pastures. Alfalfa, cotton, grain and vegetables are common irrigated crops. Vegetation is creosotebush, mesquite, paloverde, ironwood, salt cedar, cacti, annual weeds and grasses.

HOLTVILLE SERIES

The Holtville Series consists of very deep, well drained soils formed in mixed and stratified alluvium. Holtville soils are on flood plains and basins and have slopes of 0 to 3 percent.

RANGE IN CHARACTERISTICS:

The upper 20 to 36 inches are silty clay, clay or silty clay loam (see remarks). Vertical tongues 1/2 to 2 inches wide of sandy or coarser soil fill old cracks to depths greater than 20 inches. Unfilled soil cracks range from 1 mm to greater than 1 cm wide at a depth of 20 inches or more. The material below the clay or silty clay is dominantly loamy very fine sand, but some thick strata are silt loam to loamy fine sand. Strata as much as 1 inch thick of contrasting texture are in both the fine-textured upper layers and the coarse-textured lower layers.

DRAINAGE AND PERMEABILITY:

Well drained; low runoff; slow permeability.

USE AND VEGETATION:

Irrigated areas are used for production of cotton, sugar beets, alfalfa, barley, carrots, and lettuce. Uncultivated areas have a sparse cover of desert shrubs and weeds.

INDIO SERIES

The Indio series consists of very deep, well or moderately well drained soils formed in alluvium derived from mixed rock sources. Indio soils are on alluvial fans, lacustrine basins and flood plains and have slopes of 0 to 3 percent.

RANGE IN CHARACTERISTICS:

Soil moisture - Intermittently moist in some part of the soil moisture control section during December - February and July - September. Driest during May and June. Typic aridic soil moisture regime.
Salinity: 0 to 51 dS/m
Sodium Adsorption Ratio: 0 to 523

DRAINAGE AND PERMEABILITY:

Indio soils are well or moderately well drained. Some irrigated areas with a water table have tile drains to maintain water below depths of 3 to 5 feet and to remove soluble salts. Runoff is slow. Permeability is moderate.

USE AND VEGETATION:

Used for irrigated cropland and livestock grazing. Common crops are cotton, barley, grapes, citrus, dates, and other crops. In other areas, the present vegetation is shadscale, bursage, arrowweed, and other plants. Such areas provide ephemeral grazing in unusually wet years.

KOFA SERIES

The Kofa series consists of very deep, well drained soils that formed in stratified alluvium from mixed sources. Kofa soils are on flood plains and have slopes 0 to 3 percent, but are generally less than 1 percent.

RANGE IN CHARACTERISTICS:
Soil Moisture - Intermittently moist in some part of the soil moisture control section during July - August and December - February. Driest during May and June. Typic aridic soil moisture regime.
Salinity- Usually has EC of 1 to 8 dS/m, but ranges to as much as 30

DRAINAGE AND PERMEABILITY:
Well drained; low runoff; slow permeability.

USE AND VEGETATION:
These soils are used mainly for irrigated cropland, but some areas are still used for livestock grazing. Crops grown are cotton, sugar beets, small grains, vegetables, bermudagrass for seed, and citrus. Native areas have sparse cover of bursage, paloverde and annuals.

LIGURTA SERIES

The Ligurta series consists of very deep, well drained, strongly saline soils that formed in fan alluvium weathered from a wide variety of rocks. Ligurta soils are on fan terraces with slopes of 0 to 6 percent.

RANGE IN CHARACTERISTICS:
Soil moisture: Intermittently moist in the soil moisture control section during July - September and December - February. Driest during May and June. Typic aridic soil moisture regime.

DRAINAGE AND PERMEABILITY:
Well drained; rapid runoff; moderately slow permeability.

USE AND VEGETATION:
Used for livestock grazing and wildlife habitat. The soil is nearly barren of vegetation except in the small drainages. Vegetation in the drainages is creosotebush, plantain, fiddleneck, filaree, turkshead, pencil cholla and saguaro.

ROSITAS SERIES

The Rositas series consists of very deep, somewhat excessively drained soils formed in sandy eolian material. Rositas soils are on dunes and sand sheets. Slope ranges from 0 to 30 percent with hummocky or dune micro relief.

RANGE IN CHARACTERISTICS:

Soil moisture: The soil is usually dry and is not moist for as long as 60 consecutive days. Driest during May and June. Typic aridic soil moisture regime.
Organic matter: less than 0.5 percent and decreases regularly with depth
Clay content: 0 to 10 percent.
Salinity: 0 to 8 decisiemens/meter

DRAINAGE AND PERMEABILITY:

Somewhat excessively drained; negligible to low runoff; rapid permeability.

USE AND VEGETATION:

Rositas soils are used for rangeland and wildlife habitat, and growing citrus fruits, grapes, alfalfa, and truck crops. Present vegetation is creosotebush, white bursage, desert buckwheat and mesquite.

SUPERSTITION SERIES

The Superstition series consists of very deep, somewhat excessively drained soils that formed in sandy eolian deposits. Superstition soils are on dunes and have slopes of 0 to 10 percent.

RANGE IN CHARACTERISTICS:

Soil Moisture: Usually dry but may be intermittently moist in some part of the soil moisture control section during July-September and December-February. Driest during May and June. Typic aridic soil moisture regime.

DRAINAGE AND PERMEABILITY:

Somewhat excessively drained; very low and low runoff; rapid permeability.

USE AND VEGETATION:

Superstition soils are used for livestock grazing and irrigated cropland. The present vegetation is creosotebush and bursage.

Appendix E

PLANNING TASK FORCE

To provide specific guidance on the plan, staff reached out to stakeholder groups, subject matter experts, and local organizations to form a Planning Task Force. The Task Force had 26 active members who represented various community groups such as local arborists, landscape professionals, garden clubs, community service organizations, health professionals, education professionals, development professionals, and City-appointed commissions. Each group brought a unique perspective about how and where trees could be planted; recommendations that are reflected in the plan. The Task Force met monthly for a total of nine meetings over the course of the year.

ACTIVE PARTICIPATING MEMBERS

	NAME	AFFILIATION/EXPERTISE	3/26	4/23	5/30	6/27	7/25	8/22	9/26	10/24	12/5
1	John Jackson	PARC, former Tree Board member, MCAS Project Manager	Y	N	N	Y	N	N	N	N	N
2	Bill Mowczko	Biologist, full-time Yuma resident	Y	N	Y	N	Y	Y	Y	Y	Y
3	JoAnne Mowczko	Clean & Beautiful Commission, Biologist	N	N	Y	N	N	Y	Y	Y	Y
4	Frank Saldana	Arborist, ArborTech Tree Service, Sunrise Rotary Club	Y	N	N	Y	Y	Y	N	Y	Y
5	Benjamin Pendleton	Arborist, Pendleton Tree Service	Y	Y	Y	Y	Y	N	N	Y	Y
6	Mark Headington	APS Forestry Pre-Inspector	Y	Y	Y	Y	N	N	Y	Y	Y
7	Janine Lane	Master Gardeners Program Coordinator, UofA Ag Extension	Y	N	N	N	N	N	N	N	N
8	Lois Weinstein	President of Pecan Grove Garden Club	Y	Y	N	Y	Y	Y	Y	N	Y
9	Suzanne Cooper	Program Coordinator of Arizona Health Zone	Y	Y	Y	Y	N	Y	Y	Y	Y
10	Gwenyth Stewart	Girl Scout	N	Y	Y	N	N	N	N	Y	Y
11	Garvey Blackwell	Girl Scout	Y	N	N	Y	N	N	N	N	N
12	Erica Stewart	BLM	N	Y	Y	N	N	N	N	Y	Y
13	Deirdre MacDonald	Master Gardener, Moody Gardens, UofA Ag Extension	Y	N	Y	N	N	Y	Y	Y	Y
14	Jeanne Elnadry	Palliative Care Physician, YRMC	Y	Y	N	N	Y	N	Y	N	Y
15	Karen Reichhardt	Retired US BLM Manager, Botanist	Y	?	N	N	Y	N	Y	N	N
16	Susan Reamer	Retired Software Developer, part-time Yuma resident	Y	Y	N	N	N	N	Y	N	N
17	Andrea Sinks	G.W. Carver Elementary School Eco Schools Program	Y	N	N	N	N	N	Y	N	N
18	Chris Hamel	Planning & Zoning Commission	Y	Y	Y	Y	N	N	N	N	N
19	Vianey Avila	YCNHA Environmental Program Coordinator	N	Y	N	N	N	N	Y	Y	N
20	Cathy Douglas	YCNHA, Management Analyst	Y	N	Y	Y	N	Y	N	N	Y
21	Phill James	JSA Company	X	N	Y	Y	Y	N	Y	Y	N
22	Glen Vandervoort	Retired member of date farming community	X	X	X	Y	Y	N	Y	N	N
23	Val Morrill	AZ Wildlife Federation, Native Plant Society	X	X	Y	Y	N	N	Y	N	Y
24	Janet Wheeler	Lowes SM	X	X	Y	N	N	N	N	N	N
25	Doris Weissman	Yuma Garden Club	X	X	Y	Y	Y	Y	Y	Y	N
26	Greg LaVann	Sr. Vice President, GYEDC	N	N	N	N	N	N	N	N	N
			18	**11**	**15**	**14**	**9**	**9**	**14**	**12**	**13**

INVITED OR OCCASIONALLY ATTENDING MEMBERS

	NAME	AFFILIATION/EXPERTISE	3/26	4/23	5/30	6/27	7/25	8/22	9/26	10/24	12/5
27	Ron Contreras	Sunrise Rotary President, Penn Signs	Y	N	N	N	N	N	N	N	N
28	Mary White	Sunrise Rotary Club, (Deputy County Attorney)	N	Y	N	N	N	N	N	N	N
29	Kevin Dahl	Dahl Robins Engineering	Y	N	N	N	N	N	N	N	N
30	Charles Gutierrez	YMPO	X	X	Y	N	N	N	N	N	N
31	MaryAnn Easterday	Clean & Beautiful Commission	X	X	X	Y	N	N	N	N	N
32	Allison Norris	High school student	X	N	N	N	N	N	N	N	N
33	Jerry Lococo	Development community	N	N	N	N	N	N	N	N	N
34	Chris Morris	Development, Building Advisory Board, Calculated Designs	X	X	X	N	N	N	N	N	N
35	Cody Beeson		N	N	N	N	N	N	N	N	N
36	Doug Sullins	JSA Landscape Company	N	N	N	N	N	N	N	N	N
37	Pat Fox	Yuma Nursery	N	N	N	N	N	N	N	N	N
38	Jeannie Wah-Gorman	Arborist, All Star Tree Service	N	N	N	N	N	N	N	N	N
39	Christina King	Girl Scout Leader	N	N	N	N	N	N	N	N	N
40	Matthew Buckley	G.W. Carver Elementary School Principal	N	N	N	N	N	N	N	N	N
41	Michelle Hetu-Norris	Local nurse	X	N	N	N	N	N	N	N	N

MEETING ATTENDANCE LEGEND
Y = Attended meeting
N = Absent
X = Not yet invited

TASK FORCE INVOLVEMENT

MEETING DATES & TOPICS

Over the course of the year, the Task Force met monthly at City Hall for a total of 9 meetings.

March 26	Introduction to the Tree & Shade Master Plan
April 23	Understanding the tree canopy and how to add to the canopy
May 30	Summary of the public survey (to date) and setting the tree canopy target
June 27	Round table discussions on how to increase canopy coverage through specific projects and outreach
July 25	Round table discussions on developing impactful projects and how to measure success
August 22	Discussion and development of specific tree projects
September 26	Further discussion and commitments to specific tree projects
October 24	Discussion about tree consortium and finalizing details of tree projects
December 5	Final discussion and review of final draft of Tree & Shade Master Plan

EVENTS

The Task Force was invited to attend the following events:

April 18	Arbor Day Celebrations (hosted by Parks & Recreation and Public Works)	Tree planting celebrations
June 1	Come Out & Play Day	Distributed surveys
June 6	Tree & Shade Master Plan Community Meeting	Attended to show support & answer questions
July 20	Back to School Rodeo	Distributed surveys
October 12	Spruce Up Your Park Day	Tree planting and park clean-up

Appendix F

PUBLIC SURVEY & RESULTS

From mid-May through mid-September of 2019, a survey open to the general public was conducted to gauge public opinion and preferences on the urban forest. The survey, presented in both online and paper versions and in both English and Spanish, had a total of 445 respondents. The survey and a summary of all responses are provided.

SURVEY RESULTS

Purpose

The City of Yuma's urban forest includes all the trees in the parks, along streets, and on private property throughout the city. Urban forests provide many environmental and health benefits, but unlike natural forests most trees in the urban forest are planted and cared for by people. The City is developing the Tree & Shade Master Plan to establish goals and actions necessary to ensure that future generations continue to enjoy the benefits of a healthy urban forest in Yuma. Responses to this survey are used to create the plan and guide the City in decision making. The survey was made available to the public in both English and Spanish and in print and online formats.

Total # of Responses

445

Distribution Dates

May 15 to September 8, 2019 (approx. four months)

Distribution Methods

Online version (via Google Forms)

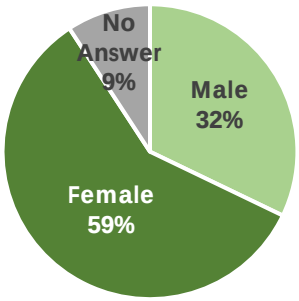
- Shared on City's social media (Facebook, Twitter, Instagram, and homepage) three times
- Shared by Parks & Recreation's in their monthly newsletter to nearly 12,000 subscribers in June, July, August, & September
- Shared on Parks & Recreation's Facebook account in May, June, and July with a reach of approximately 2,000 people and 15 clicks per post.
- Available on Department of Community Development's webpage

Print copies were distributed or made available at the following locations and events:

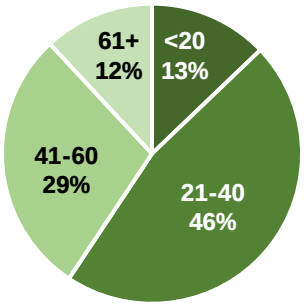
- Approximately 450 copies were distributed to local 5th Grade students at the following schools (one school from each district):
  - Desert Mesa Elementary School
  - Gary A. Knox Elementary School
  - G.W. Carver Elementary School
  - James B. Rolle Elementary School
  - Palmcroft Elementary School
- June 6 Community Meeting at Yuma Art Center
- City Hall
  - Lobby (in conjunction with the display)
  - Parks & Recreation Front Desk & hallway display
  - Department of Community Development Front Desk
- Shared by Task Force members
- Parks & Recreation's Events
  - Back to School Rodeo
  - Come Out & Play Day
  - Parks, Arts, & Recreation Commission

DEMOGRAPHICS

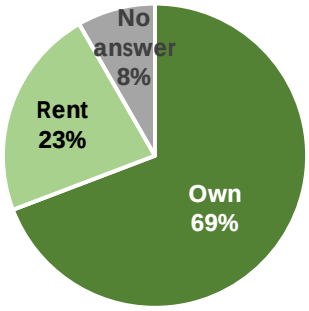
Gender



Age

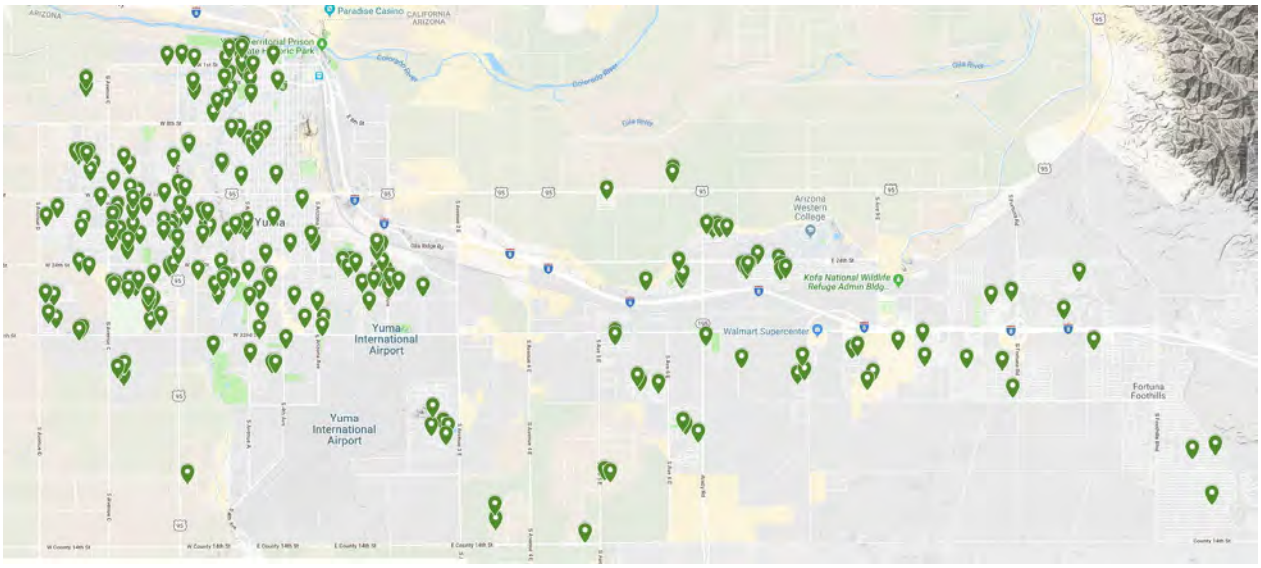


Rent/Own?



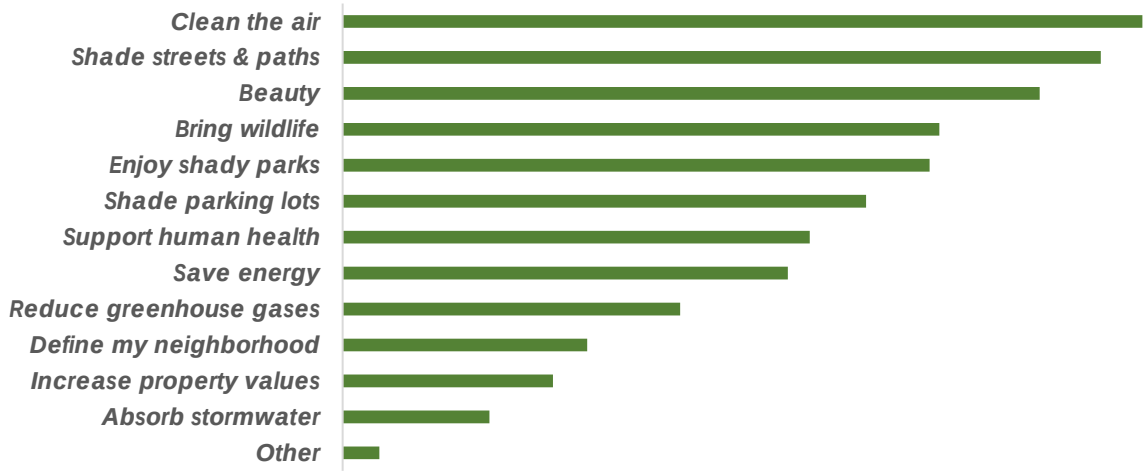
Neighborhood Map

The pins on the map below represent approximately where 237 of the respondents reside. Respondents were not required to identify their neighborhood or address, but those who chose to answer the question are mapped below.



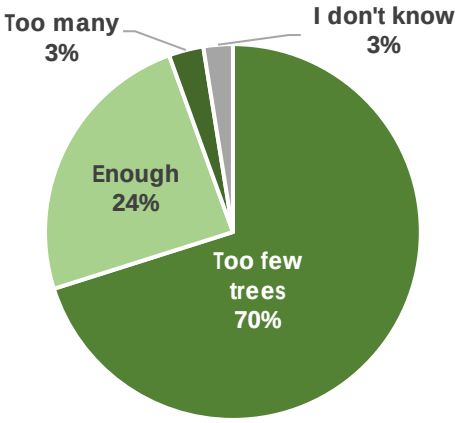
PREFERENCES & VALUES

#1: *I value trees for the following reasons:*

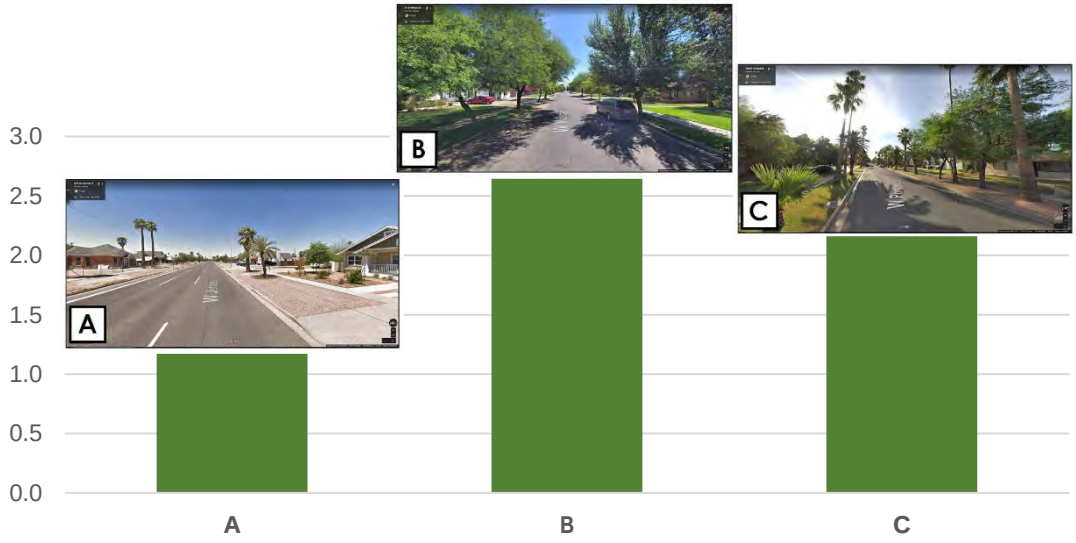


- *Unrealized Psychological effects of something living healthier*
- *Save the earth*
- *Decrease heat*

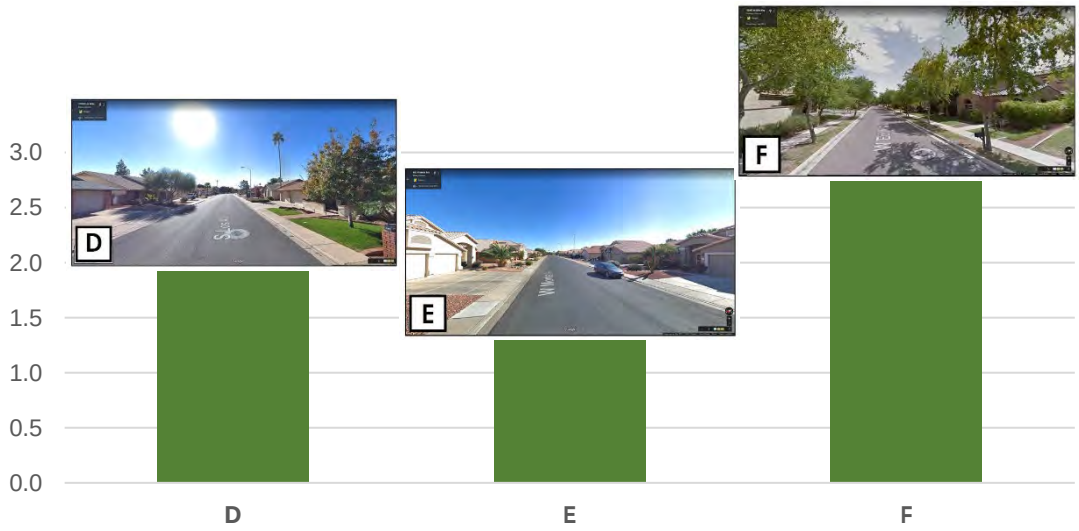
#2: *In your opinion, which best describes the number of trees in your neighborhood?*



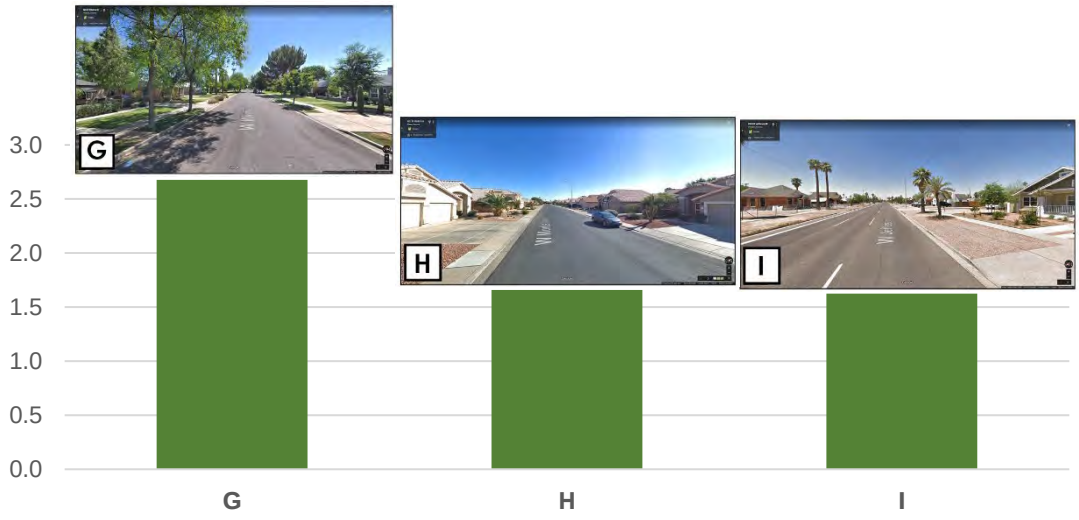
#3: *Which residential street shown below do you prefer?*



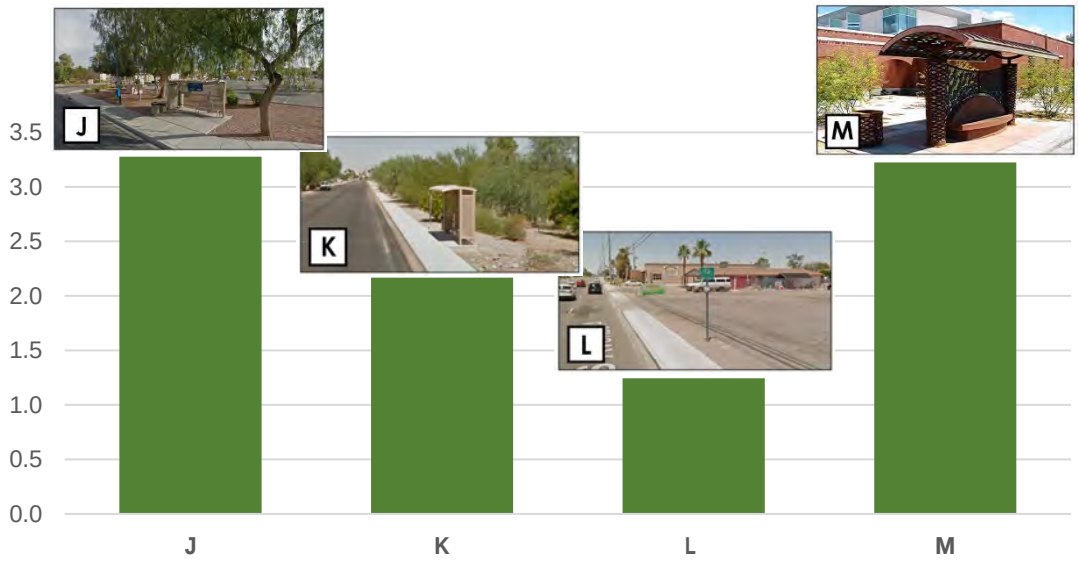
#4: ***Which residential street shown below do you prefer?***



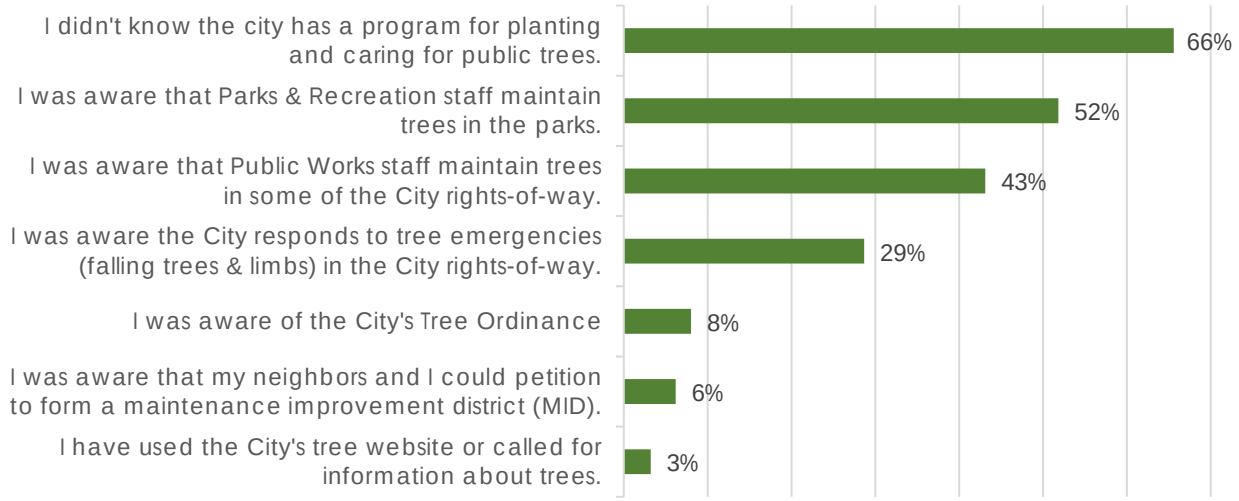
#5: ***Along which street would you feel most safe walking?***



#6: ***Which bus stop shown below would you rather wait at?***

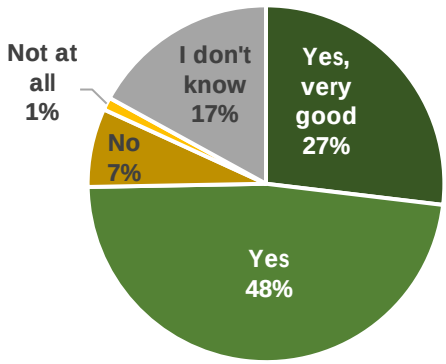


#7: *Did you know that the City has programs for planting and taking care of public trees?*



#8: *Do you think the trees in Yuma's parks are getting good care from the City?*

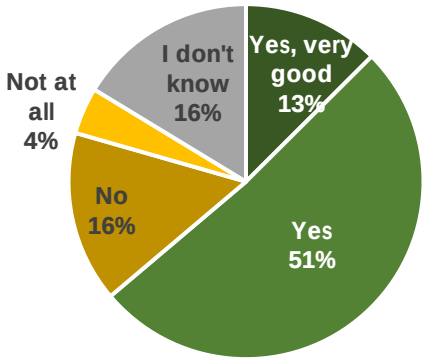
Parks & Recreation



Favorable View: 75%
Unfavorable View: 8%

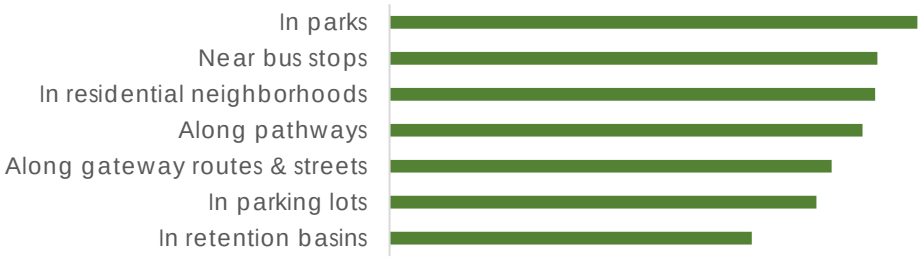
#9: *Do you think the trees in Yuma's streets, medians, and retention basins are getting good care from the City?*

Public Works

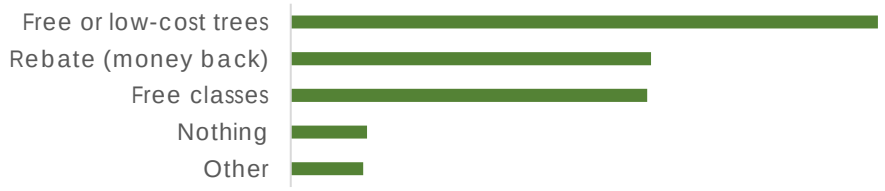


Favorable View: 64%
Unfavorable View: 20%

#10: *Where do you think the City should be encouraging tree planting?*

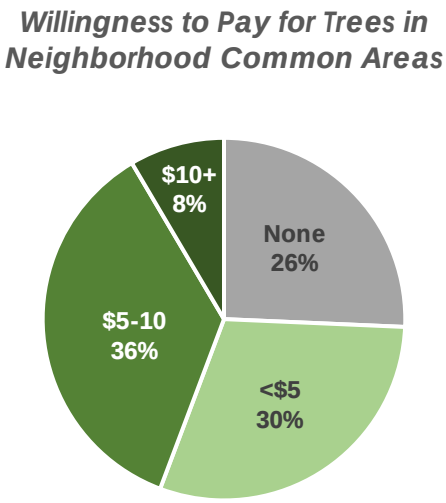


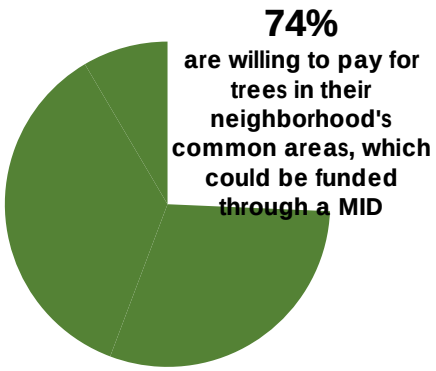
#11: *What would inspire you to plant more trees on your property?*



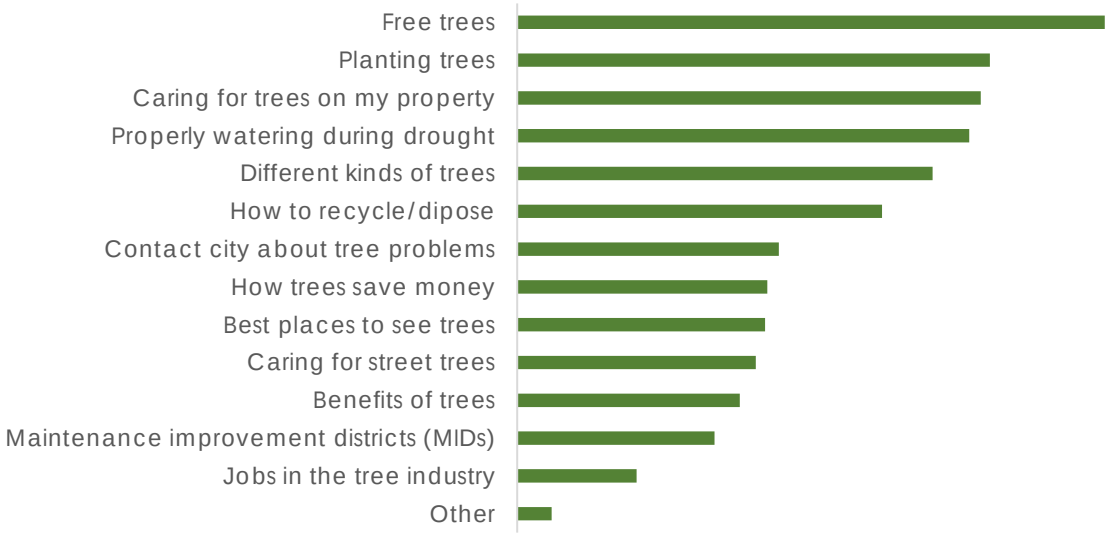
- *Maintenance rebate*
- *Vouchers or subsidy for landscape design*
- *Incentive to install drip system*
- *Reduced water rates*
- *If water cost would not be so high to maintain the trees*
- *Desert environment-water rates are too high. We live in a DESERT not a forest.*
- *Park owners agreeing to pay for water of trees.*
- *We live in a desert and we aren't using enough low water required plant and trees for here*
- *Knowing things like: growth rate or will it outgrow my house, cause problems, maintenance, best areas to plant*
- *We already have a tree in our front yard, however I've had issued with roots in our sewer lines in the past since they are so close to the house.*
- *Need some way to get rid of tree debris, used to throw it in the residential dumpster until it went to once a week pickup, hauling to the dump is difficult because of the new tarp ordinance*
- *To know about trees native to our region and resilient to our weather*
- *Maintenance is the hardest part for a lot of people, so anything educational in that aspect would help.*
- *Teaching the importance of trees and plants in the environment.*
- *Live in an HOA that regulates the trees.*
- *I rent an apartment. I will need permission from the property management company.*
- *I live in an HOA condo*
- *I live in a mobile home park. We are limited in the trees/shrubs we plant.*
- *Reduced prices, or a free tree trimming service offered every few years for residential areas.*
- *I'm getting to old to maintain trees myself and it is too expensive to pay someone.*
- *Having a bigger lot to fit more trees*
- *I need nothing to inspire me. I would plant as many as I desire.*

#12: *How much would you be willing to pay to have more trees in your neighborhood's common areas? Property owners can petition to form a maintenance improvement district (MID), which is a type of special taxing district formed to maintain landscape and trees in common areas, typically by a private contractor.*





#13: ***What topics would you like to learn more about?***



- *Public tree planting group/event*
- *The best trees to plant for Yuma and the care plan for such trees.*
- *Learning a tactful way to get neighbors to take care lawns and trees on their property.*
- *Landscape design that saves water & has a lush canopy*
- *How much water tree lined streets would require in a desert community in an area with constant draught concerns. How much damage to streets and sidewalks from roots?*
- *How to get Southwest Management to plant trees at La Fiesta Apartments.*
- *How can I control lead trees?*
- *Nothing, we live in a desert not a forest. Trees soak up the water.*
- *I want to be sure that private enterprise will not have to bear high costs for mandated tree numbers on their property, existing or newly developed.*
- *How to stop the City from TELLING ME WHAT TO DO WITH MY PROPERTY*
- *This survey is to long and set up to answer the way you want to hear it*
- *I already know about trees*
- *Nothing really. I know about tree care.*

General Support

- *WE NEED MORE TREES!!!*
- *More Trees!*
- *I'm very excited to see this master plan moving forward. Yuma needs a lot more trees.*
- *Let's Beautify this City!!!*
- *Good idea, great for the city and citizens, thank you*
- *I really like the idea of the City of Yuma wanting to plant more trees. Not only is good for Yuma, but make it a more appealing and livable community.*
- *Beautifying Yuma with more trees is one aspect in a larger movement to attract a greater number of higher paid specialists to our community. Most people, especially high earning professionals, want to live where it feels comfortable, looks appealing and where they can interact with nature easily. The more we can do to retain and attract these people to Yuma, the better our local economy will perform.*
- *I am very excited to see this topic being discussed and I hope it brings more beautiful trees to this barren, sunny city.*

- *Please consider adding more trees to our COY. The beautification and benefits of planting trees should be of importance. Thank you for considering this.*
- *I will be looking forward to seeing our city become green with trees, and possibly use rain water collection areas to form "desert oasis'"*
- *I LOVE THE IDEA OF MAKING OUR DESERT AREA LOOK GREEN :)*
- *I would hope this would help out here in the Foothills.*
- *I support more trees and good information about sustainable trees for our climate. If I had a larger home lot, I would plant more trees. I have 6 trees on my property (Sisoo; Grapefruit; Ornamental Plum; Bottle Brush; Hong Kong Orchid)*
- *Would like to see it grow*
- *I like to see towns, such as parts of Phoenix, with greens. I do not like concrete jungles as they are too hot, example, Phoenix downtown.*
- *Love this idea and brings the community together by protecting our world and makes Yuma look more welcoming not so boring and dull*
- *Finally this is happening! Very exciting for Yuma!*
- *Yuma is lacking tree coverage which presents a poor image of the community.*
- *I would love to see more natural shade for the future of my family and others.*
- *Livability and shade would be greatly improved with trees.*
- *Not enough trees. We love trees (plus people damage trees)*
- *I love Yuma's urban forest*
- *Save the forest or trees for shade*
- *The more trees the better in Yuma*
- *I'm strongly in favor of expanding Yuma's urban forest.*
- *Increasing the urban forest is an essential move and should move forward as quickly as possible.*
- *I think this is great and I look forward to being involved. I only heard about it through the children's art museum and a flyer they had. I just bought a home and it has a lot of plants and trees and I really want to take care of them but I don't fully know how.*
- *I support it*
- *Plant away! We have planted numerous trees on our property*
- *Good job*
- *Yuma needs more trees*
- *More trees & more shade which I think will have more kids outside in warmer months*
- *It is so hot and sunny we should shade the entire city*
- *We need more shade and greenery in Yuma.*
- *Love my street's tree canopy and fell in love with the city even more because of the well cared for city parks and trees.*
- *There are not enough trees and here we need more because of the type of weather*
- *We must plant many more trees, taking care that they provide shade, do not need so much water and maintenance (Hay que plantar muchos mas arboles, cuidando que den sombra, no necesiten tanta agua y mantenimiento)*
- *I would like to see more trees planted (Me gustaria ver mas Ã¡rboles plantados)*

Priority Areas

PATHWAYS

- *More shade trees are critically needed along the East Main Canal bike path.*

STREETS/PEDESTRIAN ZONES

- *Would lie to see shady trees along pedestrian zones downtown*

- *We need gathering spaces, current shopping centers and parks to have a better tree canopy. Subdivisions need to allow space along sidewalks or in between properties to plant native or drought resistant shade trees.*
- *We definitely need more trees in the poorer neighborhoods*
- *Trees belong in Parks, not along streets (too much $$$'s for maintenance). Palms would be a better chose for streets.*

PARKS

- *Joe Henry Park needs new trees or re- planting*
- *Only In parks.*

PARKING LOTS

- *We need more trees in parking areas and not be so dependent on solar panels to provide shade*
- *Parking lots trees or solar shade structures.*
- *Parking lot trees would be great.*
- *More trees in parking lots!*
- *Main library (I know county) cut all parking lot trees! hot cars and wasted money for planting. I and others would avoid going to and parking at places where no shade.*

SCHOOLS/PLAYGROUNDS

- *I also think the school playgrounds should have trees and our mobile park as well or something that would give children shade*

Recommendations

APPROPRIATE TREE SPECIES SELECTION

- *I'd like that any incentives focus on native or well-adapted trees that don't require additional water. Concerned about introduction of non-native trees.*
- *Plant trees that are root stable here and those that help more than average clean the air. Our climate must be of utmost concern in choosing trees.*
- *I think large trees like pecan trees need to be planted. Palo verde trees do not give much shade or help cool.*
- *I would like to see more green trees, than desert trees.*
- *City should plant trees require little to no maintenance*
- *While being mindful of the need to not sound too 'Big Brother' about it, I think the City should consider something along the lines of declaring the Salt Cedar/Tamarisk to be an 'invasive species' and find a way to encourage ("strongly motivate") their removal completely. Too much work has been put into removing these toxic, water wasting eyesores along the river, and now they are showing up more and more in landscaping (somehow) and in areas where weeds/brush are being allowed to grow. They waste what little groundwater is available and make the soil too toxic for other plants and trees to survive for years after they're gone, not to mention creating far worse fire hazards when they're not maintained compared to other 'wild' greenery.*
- *I would like there to be an emphasis on planting diverse groups of trees rather than large clusters of one type. Pests and infections can more easily wipe out the city's hard work if there isn't variety. Also, all of the reasons for wanting more trees in the beginning of the survey were good. I love trees, so it was extremely difficult to pick just five because I value all those things that trees provide. Thank you for asking for public comment and for creating a plan to plant more trees in Yuma.*
- *It would be amazing if they were trees that provide fruit*
- *Fruit trees and flower trees do more*

GREEN WASTE

- *When the city discontinued trash pickup 2 times a week and went to one trash pickup and one recycling pickup they made a huge mistake by not considering the amount of green waste hardship they placed on the homeowner.*

TREE CARE & MAINTENANCE

- *Trees do better with mulch. Get rid of all the gravel. All it does is radiate heat.*
- *Parks in Yuma are very well kept but some home residential owners do not care for trees or are unable to do it. There should be more guidance in appropriate care if trees.*
- *Good idea. Proper care of existing trees will help. A program to help people fix, save, repair their trees will help.*

Maintenance

- *The urban forest looks good on 20th St. between Ave B & C.*
- *Love the orange trees downtown*
- *The city has a history of cutting down trees in public areas and then not replacing them. Downtown, Big Curve, our grass belts at the front of our streets.*
- *Why do work men come and trim all the leaves and green off of existing trees?? It's stupid*
- *Beautiful trees cut down. Replaced by ugly xeriscaping which is not maintained.*
- *Trees that are cut down in retention basins are not replaced in my neighborhood.*
- *Xeriscaping is nice, when well maintained*
- *We need better weed control in our retention basin*
- *The City needs to replace shade trees along the roads that died as a result of poor city crew maintenance and pruning.*
- *We're sad so many trees got cut down at Main Library parking lot*
- *Main library (I know county) cut all parking lot trees! hot cars and wasted money for planting. I and others would avoid going to and parking at places where no shade.*
- *Trees that are cut down in retention basins are not replaced in my neighborhood.*
- *Trees are nice but who will take care of them once the subdivision is built? I believe it is the Street department. With flat budgets, it is hard to cover these expenses. We need our roads repaired. Time for the city to look at the big picture and not each department have their own agenda that affects other departments budget. Maybe they should go out on a crew and trim them to see the amount of work there is in requiring trees.*
- *Go to any median or common area in Yuma. You find watering, but no plants or trees, missing trees or plants. City doesn't either have a maintenance schedule or doesn't follow it.*
- *This city could be beautiful like Phoenix area but our city doesn't invest in the city scape.*
- *What about the drought & low levels of water required to water these trees. What about maintenance costs for irrigation? This is a terrible idea.*

Other Comments

- *Urban forests in Yuma should take into consideration plant benefiting out local wildlife and climate.*
- *1) Is the 5.5% canopy coverage good? I didn't see a definition for that percentage 2) Our private businesses are the worst for trees, e.g., Walmart on Pacific, Yuma Palms; 3) Our neighborhoods need new trees, but not ficus which definitely interfere with infrastructure; 4) Our schools need more trees, but certainly don't expect the state to*

give money towards that project; 5) Our parks are looking better, but parks there are only a few parks.

- *I have a huge problem with the City of Yuma telling me what I HAVE to do with my property. I don't like that fact that i will be FORCED to do it at all. It is unfair and ridiculous. Whoever came up with this plan, obviously thought that it is okay to impose on our private property. Not everyone is happy with the City telling us what to do!*
- *Why do we have an urban forest? The city needs to reconstruct neighborhood roads.*
- *Trees are nice! But so are roads that we can drive on without pot holes.*
- *We need more development and promotion.*
- *I plan on attending the open house on June 6th.*
- *There's an urban forest?*

Appendix G

TREE ORDINANCE (2019)

Adopted on December 4, 2019, the updated tree ordinance replaces Yuma's original tree ordinance that was adopted in 2007.

ORDINANCE NO. O2019-038

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF YUMA, ARIZONA, REPEALING AND REPLACING YUMA CITY CODE TITLE 13, CHAPTER 137: TREES, TO PROMOTE AND PROTECT THE PUBLIC HEALTH, SAFETY, AND GENERAL WELFARE BY PROVIDING FOR THE REGULATION OF THE PLANTING, MAINTENANCE, AND REMOVAL OF MUNICIPAL TREES, SHRUBS, AND CACTI AND PROVIDING A PENALTY FOR VIOLATIONS THEREOF

WHEREAS, Arizona Revised Statutes (A.R.S.) § 9-240(B)(9) authorizes the City of Yuma (City) to adopt and maintain regulations governing the planting, protection and maintenance of trees within the City's public grounds and rights-of-way; and,

WHEREAS, to protect, enhance and promote the health, safety and welfare of the City, City residents and City trees, on November 20, 2007, the Yuma City Council adopted Ordinance No. O2007-69, creating City Code Chapter 137: Trees, governing the maintenance of City owned trees, vines and other woody plants; and,

WHEREAS, the City of Yuma recognizes that trees are a valuable part of our community infrastructure and that well-maintained trees enhance the comfort of our community by providing shade, preventing erosion, moderating temperatures, reducing storm water runoff, absorbing air pollution and dust, and reducing energy needs; and,

WHEREAS, the City of Yuma recognizes that well-maintained trees increase property values, enhance the economic vitality of business areas, beautify our community wherever they are planted, and are a source of joy and spiritual renewal; and,

WHEREAS, the City of Yuma recognizes that accepted industry standards exist for the maintenance and care of urban trees, and that promoting these standards significantly increases overall tree health and reduces liability and risk, ensuring that our community forest will increase in value and benefits provided; and

WHEREAS, the City of Yuma recognizes that this ordinance is critical to continue to earn recognition as a "Tree City, USA," as bestowed by the National Arbor Day Foundation, a designation that will increase the opportunity for the City to pursue and successfully obtain grant funding specific to the establishment, promotion, and management of our community forest; and,

WHEREAS, the City's adoption of this Ordinance will repeal and replace Chapter 137: Trees, to further protect and maintain the City's trees, shrubs and cacti.

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Yuma as follows:

SECTION 1: Yuma City Code Title 13, Chapter 137, Trees, is hereby repealed in its entirety and replaced with a new Chapter 137: Trees, three (3) copies of which are on file as public record in the office of the City Clerk of the City of Yuma, that was declared a public record through Resolution R2019-048, and is hereby adopted by reference and made a part hereof.

SECTION 2: If any section, subsection, sentence, clause, phrase or portion of this Ordinance is for any reason held to be invalid or unconstitutional by the decision of a court of competent jurisdiction, such decision shall not affect the validity of the remaining portions thereof.

SECTION 3: Violations of this ordinance are subject to the following penalties:

(A) Unless otherwise specifically provided for in this ordinance, any person or corporation who shall violate any provision of this ordinance shall be deemed guilty of a class 3 misdemeanor, and shall be punished as provided in § 10-99 of the Yuma City Code.

(B) Any and all amounts paid or collected pursuant to this ordinance, with the exception of enforcement and administrative costs, shall be deposited into the Municipal Tree Fund.

ADOPTED this 4th day of December, 2019

APPROVED:

Douglas J. Nicholls
Mayor

ATTESTED:

Lynda L. Bushong
City Clerk

APPROVED AS TO FORM:

Richard W. Files
City Attorney

October 2019

CHAPTER 137: TREES

Section 137-01 Purpose.

(A) This Chapter is enacted to further the following public purposes:

(1) To plant and maintain Municipal Trees in support of the citywide tree canopy goal of 7%, pursuant to the City's most current Tree & Shade Master Plan;

(2) To promote efficient and cost-effective management of the City's urban forest;

(3) To foster community support for the City's urban forestry programs and encourage good tree management on privately-owned properties by conducting an ongoing program of public outreach and education in order to promote public understanding of the City's urban forest;

(4) To maintain status as a "Tree City, USA", by the National Arbor Day Foundation, a designation that will increase opportunities for the City to pursue and successfully obtain grant funding specific to the establishment, promotion, and management of our urban forest.

Section 137-02 Definitions.

(A) "Municipal Tree" shall mean any tree owned or maintained by the City of Yuma, including those growing in City rights-of-way, parks, retention basins, and other facilities.

(B) "Street Tree" shall refer to, for the purpose of this article, any tree that grows to an average mature height of 30 feet or more, generally has a high branching pattern, and upright or rounded crown form. Street trees are planted near the sidewalk or street to provide shade to pedestrians and visual enclosure to the street. The best species for street trees are low maintenance and produce low litter. Street trees shall be pruned and maintained to allow for minimum of 12 feet of clearance over any roadway and seven feet of clearance over any sidewalk.

(C) "Removal" shall mean any intentional or negligent moving, carrying away, elimination or taking away of part or all of a tree.

Section 137-03 Applicability.

(A) This Chapter is applicable to all Municipal Trees, shrubs, and cacti on property owned or maintained by the City of Yuma, including public rights-of-way, parks, retention basins, and other facilities.

(B) Responsibility for the care and management of Municipal Trees is shared between the following: the Urban Forestry Subdivision of the Parks Maintenance Division of the Parks and Recreation Department; the Streets Maintenance Division and Basin Maintenance Division of the Public Works Department; and the adjacent property owners who are responsible for perpetual maintenance of all landscaped areas in the public right-of-way adjacent to their lot in accordance with Section 154-20.05 of this Code. All officers and investigators of the City Police and Fire Departments, the City building official, code enforcement officers, building inspectors, code enforcement specialists, and the City arborist are authorized to issue notices to comply and citations for violations of this Chapter within City jurisdiction.

(C) The responsible entities shall use their best efforts to ensure their activities are guided by the Tree & Shade Master Plan, or any superseding management plans. The City shall update and improve this Plan as necessary.

(D) The City may authorize an exception or partial exception to the restrictions in this Chapter under any one of the following conditions:

(1) A verifiable emergency exists that endangers life or property;

(2) There is an interruption of essential Public service;

(3) Public or other service for transportation is required where no other feasible means of providing such service exists;

(4) Public Works or maintenance work performed by or on behalf of the City; or

(5) Work is required by City, County, State or Federal regulation.

Section 137-04 Maintenance.

(A) All Municipal Trees, shrubs, and cacti shall be planted, managed, and cared for through adherence to the American National Standards Institute (ANSI), ANSI A300 Standards for Tree Care Operations - Tree, Shrub, and Other Woody Plant Management (most current revisions).

(B) With the exception of required maintenance, no person shall damage, cut, carve, attach any rope, wire, nails, advertising posters, or other contrivance to any Municipal Tree; allow any gaseous, liquid, chemical, or solid substance that is harmful to Municipal Trees to come in contact with them; or set fire or permit fire to burn when such fire or the heat will injure any portion of any Municipal Trees.

(C) Tree-topping shall not be allowed on any Municipal Trees.

Section 137-05 Tree Removal & Replacement.

(A) Municipal Trees shall not be removed without a permit issued by the City and

assessment by a certified arborist.

(B) Permit Required. It shall be unlawful for any person or corporation to remove any Municipal Tree without a valid encroachment permit for such work issued by the City Engineer, pursuant to Title 21: Streets and Traffic Code, Chapter 210 of this code.

(C) An abutting property owner who desires to remove a Municipal Tree shall apply to the City Engineer for an encroachment permit on forms provided for such purpose by the City. The City Engineer, or his or her designated representative, may grant or deny the permit in accordance with the following procedures and requirements.

(1) Replacement. If a permit to allow tree removal is issued, it shall require a tree or trees be planted on the site and within the right-of-way to replace the removed tree or the permit shall impose an in-lieu fee unless it makes written findings detailing the basis for waiving or modifying this requirement.

(a) Replacement tree(s) shall be chosen from the City of Yuma Recommended Plants List.

(b) If the tree to be removed has a diameter at breast height (DBH) of less than 6 inches or it is a non-desirable species as determined by the City Arborist, it shall be replaced with one (1) 15-gallon or larger tree.

(c) If the tree to be removed has a diameter at breast height (DBH) of 6 inches to 12 inches, it shall be replaced with two (2) 15-gallon or larger trees.

(d) If the tree to be removed has a diameter at breast height (DBH) greater than 12 inches, it shall be replaced with (3) 15-gallon or larger trees.

(2) In-Lieu Fees. If an encroachment permit is granted for tree removal and an in-lieu fee required, the in-lieu fee shall be determined by the City Arborist based on the estimated replacement value of the tree to be removed. In-lieu fees may be required if the lot in question is inadequate in size to accommodate the required replacement tree.

(3) Municipal Tree Fund. Monies collected from in-lieu fees shall be credited to the Municipal Tree Fund to be used for care and maintenance of Municipal Trees and to offset the loss of Municipal Trees due to removal, destruction, or death. Persons may donate money for the purpose of tree planting and maintenance and said donations shall be credited to the Municipal Tree Fund.

Section 137-06 Providing for Repeal of Conflicting Ordinances.

All ordinances and parts of ordinances in conflict with the provisions of this Chapter or any part of the Code adopted herein by reference are hereby repealed.

Section 137-07 Severability.

If any section, subsection, sentence, clause, phrase, or portion of this Chapter is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions thereof.

Section 137-99 Penalty.

(A) Unless otherwise specifically provided for in this Chapter, any person or corporation who shall violate any provision of this Chapter shall be deemed guilty of a class 3 misdemeanor, and shall be punished as provided in § 10-99 of this Code.

(B) Any and all amounts paid or collected pursuant to this subsection, with the exception of enforcement and administrative costs, shall be deposited into the Municipal Tree Fund.

Appendix H

WATER USE OF TREES

Using water use recommendations from *Landscape Watering by the Numbers*, an irrigation guide designed for the Arizona desert, the average water use of a mature desert-adapted tree with a canopy of 20 feet in diameter was calculated to be approximately 4,500 gallons of water each year. The average annual cost of $10 for that water was calculated based on current City of Yuma water rates for residential and commercial properties. Adding 100,000 trees would equate to approximately an additional 450 million gallons of irrigation water annually, which is about 1.5% of the City's total water supply allocation. The following pages show the assumptions and calculations used to produce these estimates.

DESERT-ADAPTED TREES

WATER USE ESTIMATE

Based on Landscape Watering by the Numbers from Water Use for Arizona Desert (wateruseitwisely.com)

		FREQUENCY (DAYS BETWEEN WATERING)						WATER AMOUNT		
		DAYS BETWEEN WATERING			WATERING DAYS/MONTH			20' CANOPY TREE	235 GAL/WATERING	
		LOW	AVERAGE	HIGH	LOW	AVERAGE	HIGH	LOW	AVERAGE	HIGH
JAN	31	60	45	30	0.5	0.7	1.0	121	162	243
FEB	28	60	45	30	0.5	0.6	0.9	110	146	219
MAR	31	30	22	14	1.0	1.4	2.2	243	331	520
APR	30	30	22	14	1.0	1.4	2.1	235	320	504
MAY	31	30	22	14	1.0	1.4	2.2	243	331	520
JUN	30	21	14	7	1.4	2.1	4.3	336	504	1007
JUL	31	21	14	7	1.5	2.2	4.4	347	520	1041
AUG	31	21	14	7	1.5	2.2	4.4	347	520	1041
SEP	30	21	14	7	1.4	2.1	4.3	336	504	1007
OCT	31	21	14	7	1.5	2.2	4.4	347	520	1041
NOV	30	30	22	14	1.0	1.4	2.1	235	320	504
DEC	31	30	22	14	1.0	1.4	2.2	243	331	520
							ESTIMATED ANNUAL WATER USE/TREE (GALLONS)	**3142**	**4511**	**8167**

HIGH WATER USE TREES

WATER USE ESTIMATE

Based on Landscape Watering by the Numbers from Water Use for Arizona Desert (wateruseitwisely.com)

		FREQUENCY (DAYS BETWEEN WATERING)						WATER AMOUNT		
		DAYS BETWEEN WATERING			WATERING DAYS/MONTH			20' DIAMETER TREE	235 GAL/WATERING	
		LOW	AVERAGE	HIGH	LOW	AVERAGE	HIGH	LOW	AVERAGE	HIGH
JAN	31	30	22	14	1.0	1.4	2.2	243	331	520
FEB	28	30	22	14	0.9	1.3	2.0	219	299	470
MAR	31	12	9.5	7	2.6	3.3	4.4	607	767	1041
APR	30	12	9.5	7	2.5	3.2	4.3	588	742	1007
MAY	31	12	9.5	7	2.6	3.3	4.4	607	767	1041
JUN	30	10	8.5	7	3.0	3.5	4.3	705	829	1007
JUL	31	10	8.5	7	3.1	3.6	4.4	729	857	1041
AUG	31	10	8.5	7	3.1	3.6	4.4	729	857	1041
SEP	30	10	8.5	7	3.0	3.5	4.3	705	829	1007
OCT	31	10	8.5	7	3.1	3.6	4.4	729	857	1041
NOV	30	12	9.5	7	2.5	3.2	4.3	588	742	1007
DEC	31	12	9.5	7	2.6	3.3	4.4	607	767	1041
							ESTIMATED ANNUAL WATER USE/TREE (GALLONS)	**7054**	**8645**	**11263**

WATER USE IN CITY OF YUMA

Data from City of Yuma Utilities Department Water Conservation Plan

1 AC-FT (acre-foot)	=	325,851	GAL
1 HCF (hundred cubic feet)	=	748	GAL

WATER SUPPLY ALLOCATIONS

Colorado River Water	50,000	AC-FT	16,292,550,000	GAL
Converted Water (YCWUA) Estimated	25,000	AC-FT	8,146,275,000	GAL
Returned Water	8,793	AC-FT	2,865,207,843	GAL
Ground Water	2,788	AC-FT	908,472,588	GAL
	86,581	AC-FT	28,212,505,431	GAL

WATER DEMAND

2014 DEMAND	8,000,000,000	GAL/YR
PERCENT OF TOTAL ANNUAL WATER SUPPLY AVAILABLE TO CITY:	33%	
PER CAPITA DAILY	192	GAL/DAY
PER CAPITA ANNUAL	69,912	GAL/YR

WATER USAGE CHARGE

	RESIDENTIAL		COMMERCIAL & IRRIGATION	
	INSIDE CITY	OUTSIDE CITY	INSIDE CITY	OUTSIDE CITY
0-10 hcf	$1.56	$2.07	$1.75	$2.29
11-30 hcf	$1.83	$2.43	$1.75	$2.29
31+ hcf	$2.10	$2.79	$1.75	$2.29

COST OF ADDING TREES

Each year, one desert-adapted tree needs

4,500 GAL/YR

The water needed to support one tree costs the average resident:

$9.38 PER YR

The water needed to support one tree costs the average commercial property owner:

$10.53 PER YR

The goal set by the plan is to reach 7% canopy coverage by planting approximately:

100,000 ADDITIONAL TREES IN 10 YRS

If 100,000 trees are added over the next 10 years, the total water use will be:

450,000,000 GAL/YR
1,381 AC-FT/YR
1.6% OF TOTAL WATER ALLOCATION
$938,437 ADDITIONAL COMMUNITY-WIDE WATER COST/YR

The City maintains approximately 8.2% of the overall canopy within city limits. Therefore, the additional water cost of trees (at maturity) to be maintained by the City is estimated to be:

$76,952 ADDITIONAL CITY WATER COST/YR

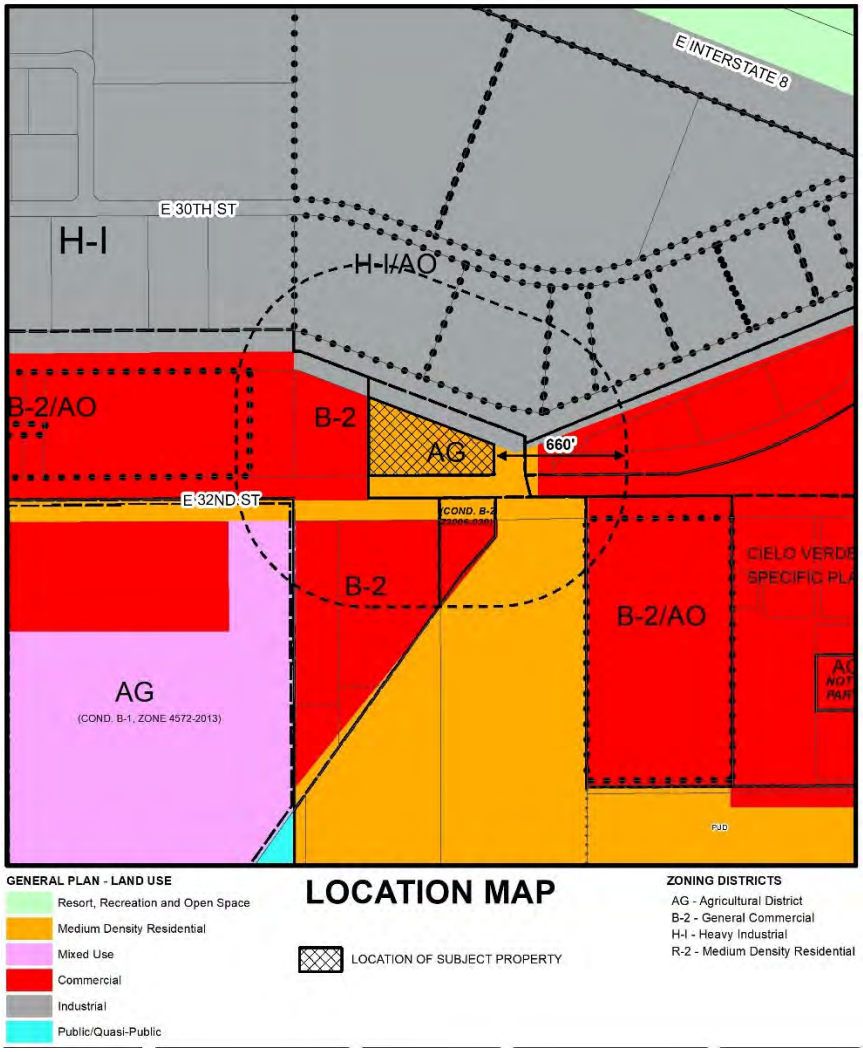
STAFF REPORT TO THE PLANNING AND ZONING COMMISSION
DEPARTMENT OF COMMUNITY DEVELOPMENT
COMMUNITY PLANNING DIVISION
CASE TYPE – GENERAL PLAN AMENDMENT
Case Planner: Jennifer L. Albers

Hearing Date: **January 27, 2020** **Case Number**: **GP-27420-2019**

Project Description/ Location: This is a General Plan Amendment request by Core Engineering Group on behalf of the Susan Lee Battaile Trust, to change the land use designation from Medium Density Residential to Commercial for approximately 2.82 acres for property located at 7600 E. 32nd Street.

	Existing Zoning	Use(s) on-site	General Plan Designation
Site	Agriculture (AG)	Mobile Home Sales	Medium Density Residential
North	Heavy Industrial (HI)	"B" Canal/Industrial Development	Industrial
South	General Commercial (B-2)	Mobile Home Sales	Commercial
East	General Commercial (B-2)	"A" Canal/Undeveloped	Commercial
West	General Commercial (B-2)	Furniture store	Commercial

Location Map



Prior site actions: Annexation O99-29 – 7/3/99

Staff Recommendation: Staff recommends the Planning and Zoning Commission APPROVE the request to change the land use designation for 2.82 acres from Medium Density Residential to Commercial.

Suggested Motion: Move to APPROVE the request to change the land use designation for 2.82 acres from Medium Density Residential to Commercial located 7600 E. 32nd Street.

Staff Analysis: This is a General Plan Amendment request by Core Engineering Group on behalf of the Susan Lee Battaile Trust, to change the land use designation from Medium Density Residential to Commercial for approximately 2.82 acres for property located at 7600 E. 32nd Street.

The existing *Medium Density Residential* land use designation supports the following types of zoning: Medium Density Residential (R-2 and R-2-5), Recreation Vehicle Subdivision (RVS), Manufactured Home Subdivision (MHS) and Manufactured Home Park (MHP).

The proposed *Commercial* land use designation supports the following types of zoning: Transitional (TR), Limited Commercial (B-1), General Commercial (B-2), Business Park (BP), and Planned Shopping Center (PSC).

The applicant's intent in changing the land use designation is to support the continued use of the property for commercial activities under a future request for General Commercial (B-2) zoning.

Density

The current land use designation of Medium Density Residential would allow from 14 to 36 dwelling units to be constructed on the subject 2.82 acres. The requested Commercial land use designation is not expected to contain any residential dwellings.

Population

Information from the 2013-2017 American Community Survey provides data on population by housing unit type. The information shows an average household size of 2.8 persons per single-family dwelling in the City of Yuma. Comparing the densities allowed within the General Plan, the potential persons expected are:

- Medium Density Residential:
  - Minimum 14 homes – Expected population: 39
  - Maximum 36 homes – Expected population: 101
- Commercial: Zero homes - Expected population: 0

The 2010 Census identified that 20% of the population within the City of Yuma was between 5 and 17 years of age. Therefore, the expected school-age population is estimated at:

- Medium Density Residential:
  - Minimum expected population: 17 – School Age: 3
  - Maximum expected population: 101 – School Age: 20
- Commercial:
  - Expected population: 0 – School Age: 0

Transportation

The property is located at 7600 E. 32nd Street. According to the City of Yuma Transportation Master Plan 32nd Street operates at a Level of Service (LOS) of C or

above, meaning that there are stable conditions with movements somewhat restricted due to higher volumes but not objectionable to motorists. The Yuma Metropolitan Planning Organization identifies average annual daily traffic counts for 2018 as 18,222 vehicles on 32nd Street west of the property.

Housing

The Housing Element of the City of Yuma 2012 General Plan addresses the need to provide safe, decent, sanitary, and affordable housing for all residents. And specifically Objective 1.3 notes providing a variety of housing types:

> *Objective 1.3:* Encourage a variety of housing types to meet all socioeconomic segments of the population, considering both full time and seasonal residents.

The land use designation change requested reduces the amount of land for Medium Density Residential but reducing the amount of Medium Density Residential by 2.82 acres will not have a significant impact on the elements of the plan.

1. Does the proposed amendment impact any elements of the General Plan?

No The elements of the General Plan will not be impacted by the proposed amendment.

Transportation Element:

FACILITY PLANS

Transportation Master Plan	Planned	Existing	Gateway	Scenic	Hazard	Truck
32nd Street – Principal Arterial	62FT HW	100FT HW				X

2. Does the proposed amendment impact any of the facility plans?

No The change in land use will not significantly impact any of the facilities plans.

3. Is the proposed amendment in conflict with Council's prior actions?

Yes This area has been designated with the Medium Density Residential land use designation since the adoption of the City of Yuma/Yuma County Joint Land Use Plan on September 12, 1996 (Resolution No. 96-38).

Scheduled Public Hearings:

X	City of Yuma Planning and Zoning Commission: December 9, 2019
X	City of Yuma Planning and Zoning Commission: January 13, 2020
	City of Yuma City Council: February 5, 2020

Public Comments Received: None Received
Agency Comments: See Attachment A
Neighborhood Meeting Comments: N/A

Final staff report delivered to applicant on: 12/10/19

X	Applicant agreed with staff's recommendation:
	Applicant did not agree with staff's recommendation:
	If the Planner is unable to make contact with the applicant – describe the situation and attempts to contact.

Attachments

A	B	C
Agency Comments	Staff Worksheet	Aerial Photo

Prepared By: _____ **Date:** 1/14/20
Jennifer L. Albers, AICP,
Principal Planner Jennifer.Albers@YumaAZ.gov (928) 373-5180

Reviewed By: _____ **Date:** 01/14/20
Alyssa Linville,
Assistant Director Community Development

ATTACHMENT A
AGENCY COMMENTS

DATE:	9/9/19	NAME:	Mary Ellen Finch	TITLE:	Community Liaison Specialist
AGENCY:	MCAS Yuma			PHONE:	928-269-2103
Enter comments below:					
The subject property is located beneath a flight path. It is requested that an avigation easement be recorded that recognizes the noise, interference or vibrations due to aviation operations that may occur at the nearby Marine Corps Air Station Yuma/Yuma International Airport Aviation Complex and its associated flight paths. These easements should be issued to each lot as sold for the subdivision when approved. Please send a copy of the recorded easement(s) to MCASYUMA_CPLO@usmc.mil. Thank you for the opportunity to comment					

DATE:	9/5/19	NAME:	Javier Barraza	TITLE:	Senior Planner
AGENCY:	Yuma County Development Services			PHONE:	928-817-5000
Enter comments below:					
The proposed land use change, seems to address and oversight, the subject property is surrounded by commercial and industrial uses, furthermore, the property is currently used for manufactured homes sales. The proposed commercial land use and rezoning change will promote commercial nodes, which will minimize traffic congestions on other locations.					

ATTACHMENT B
STAFF WORKSHEET

CITY OF Yuma	**STAFF RESEARCH – GENERAL PLAN AMENDMENT** **CASE #: GP-27420-2019** **CASE PLANNER: JENNIFER L. ALBERS**

I. PROJECT DATA

Project Location:	7600 E. 32nd Street														
Parcel Number(s):	698-31-005														
Parcel Size(s):	2.82 acres														
Total Acreage:	2.82														
Proposed Dwelling Units:	Maximum:	0			Minimum:	0									
Address:	7600 E. 32nd Street														
Applicant:	Susan Lee Battaile Trust														
Applicant's Agent:	Core Engineering Group														
Land Use Conformity Matrix:	Current Zoning District Conforms:	Yes		No	X										
Zoning Overlay:	Public		AO		Auto		B&B		Historic		Infill		None		
Airport		Noise Contours	65-70		70-75		75+		APZ1		APZ2		CLEAR ZONE		

	Existing Zoning	Current Use	General Plan Designation
Site	Agriculture (AG)	Mobile Home Sales	Medium Density Residential
North	Heavy Industrial (HI)	"B" Canal/Industrial Development	Industrial
South	General Commercial (B-2)	Mobile Home Sales	Commercial
East	General Commercial (B-2)	"A" Canal/Undeveloped	Commercial
West	General Commercial (B-2)	Furniture store	Commercial

Prior Cases or Related Actions:					
Type	Conforms				Cases, Actions or Agreements
Pre-Annexation Agreement	Yes		No		N/A
Annexation	Yes		No		N/A – Annexation O99-29 7/3/1999
General Plan Amendment	Yes		No		N/A
Development Agreement	Yes		No		N/A
Rezone	Yes		No		N/A
Subdivision	Yes		No		N/A
Conditional Use Permit	Yes		No		N/A
Pre-Development Meeting	Yes	X	No		Date: 3/25/19
Enforcement Actions	Yes		No		N/A

Land Division Status:	Legal Lot of Record				
Irrigation District:	YMIDD				
Adjacent Irrigation Canals & Drains:	B Canal				
Water Conversion: *(5.83 ac ft/acre)*	16.44 Acre Feet a Year				
Water Conversion Agreement Required	Yes		No	X	

II. CITY OF YUMA GENERAL PLAN

Land Use Element:	
Land Use Designation:	Medium Density Residential
Issues:	None

Historic District:	Brinley Avenue		Century Heights		Main Street		None	X	
Historic Buildings on Site:	Yes		No	X					

Transportation Element:

FACILITY PLANS

Transportation Master Plan	Planned	Existing	Gateway	Scenic	Hazard	Truck
32nd Street – Principal Arterial	62FT HW	100FT HW				X

Bicycle Facilities Master Plan	Future Bike Path
YCAT Transit System	None
Issues:	

Parks, Recreation and Open Space Element:

Parks and Recreation Facility Plan		
Neighborhood Park:	Existing: Desert Ridge Park	Future: Desert Ridge Park
Community Park:	Existing: Kennedy Park	Future: North Mesa Community Park
Linear Park:	Existing: East Main Canal Linear Park	Future: "B" Canal Linear Park
Issues:	None	

Housing Element:

Special Need Household:	N/A
Issues:	None

Redevelopment Element:

Planned Redevelopment Area:	None						
Adopted Redevelopment Plan:	North End:		Carver Park:		None:	X	
Conforms:	Yes		No				

Conservation, Energy & Environmental Element:

Impact on Air or Water Resources	Yes		No	X	
Renewable Energy Source	Yes		No	X	
Issues:					

Public Services Element:

Population Impacts
Population projection per 2013-2017 American Community Survey
Police Impact Standard: 1 officer for every 530 citizens;
Water Consumption: 300 gallons per day per person;
Wastewater generation: 100 gallons per day per person

Dwellings & Type *Non-residential*		Projected Population	Police Impact	Water Consumption		Wastewater Generation
Maximum	Per Unit		Officers	GPD	AF	GPD
0	0	0	0.00	0	0.0	0
Minimum						
0	0	0	0.00	0	0.0	0

Fire Facilities Plan:	Existing: Fire Station No. 5					Future: Future Fire Station No. 7		
Water Facility Plan:	Source:	City	X	Private		Connection:	32nd Street 10" PVC with extension	
Sewer Facility Plan:	Treatment:	City		Septic	X	Private		Connection:
Issues:	None							

Safety Element:

Flood Plain Designation:	500 Year Flood	Liquefaction Hazard Area:	Yes		No	X	
Issues:	None						

Growth Area Element:

Growth Area:	Araby Rd & Interstate 8		Arizona Ave & 16th St				Avenue B & 32nd St.	X	
	North End		Pacific Ave & 8th St		Estancia		None		
Issues:	None								

NOTIFICATION

- **Legal Ad Published: The Sun** 11/9/19 & 12/21/19
- **Display Ad Published:** 11/9/19 & 12/21/19
- **660' Vicinity Mailing:** 10/28/19
- **54 Commenting/Reviewing Agencies noticed:** 9/3/19
- **Site Posted**: 11/4/19
- **Neighborhood Meeting:** N/A
- **Hearing Dates:** 12/9/19 & 1/13/20
- **Comments Due:** 11/4/19

External List	*Response Received*	*Date Received*	*"No Comment"*	*Written Comments*
Yuma Metropolitan Planning Organization (ARS)	NR			
Yuma County Engineering	NR			
Yuma County Flood Control District	NR			
Yuma County Planning & Zoning (ARS)	Yes	9/5/19		X
Yuma County Public Works	NR			
Yuma County Airport Authority	Yes	9/4/19	X	
Yuma County Chamber of Commerce	NR			
Greater Yuma Econ. Development Corp.	NR			
Yuma County School Superintendent	NR			
YUHS District #70 (ARS)	NR			
Yuma Elementary School District #1 (ARS)	NR			
Crane School District #13 (ARS)	NR			
City of San Luis (ARS)	NR			
City of Somerton (ARS)	NR			
Imperial County, California (ARS)	NR			
Qwest Communications (ARS)	NR			
Arizona Public Service (ARS)	NR			
Time Warner Cable (ARS)	NR			
Southwest Gas (ARS)	NR			
Arizona Department of Transportation	Yes	9/3/19	X	
Arizona Game & Fish Dept.	Yes	9/5/19	X	
Arizona Department of Commerce (ARS)	NR			
Arizona State Attorney General (ARS)	NR			
Arizona Dept. of Water Resources (ARS)	NR			
Arizona State Land Department (ARS)	NR			
MCAS / C P & L Office (ARS)	Yes	9/9/19		X
Bureau of Land Management (ARS)	NR			
US Border Patrol	NR			
US Postal Service	NR			
Quechan Tribal Office	NR			
Cocopah Indian Tribe	NR			
Yuma County Water Users' Association	Yes	9/4/19	X	
Yuma Irrigation District	NR			
Yuma Mesa Irrigation Drainage District	NR			
Unit B Irrigation District	NR			
Yuma County Association of Realtor's	NR			
Yuma County Contractor's Association	NR			
AZ Society of Military Engineers (ASME)	NR			
AZ Society of Civil Engineers (ASCE)	NR			
AZ Society of Professional Engineers (ASPE)	NR			
El Paso Natural Gas Co.	NR			
Western Area Power Administration	Yes	9/4/19	X	

City of Yuma Internal List	***Response Received***	***Date Received***	***"No Comment"***	***Written Comments***
Susan Smith, Police	NR			
Rod Hamilton, Police	NR			
Damon Chango, Parks and Rec – Admin	NR			
Ron Ramirez, Parks and Rec – Grounds	NR			
Jeff Kramer, City Engineer	NR			
Joel Marcuson, Traffic Engineer	NR			
Andrew McGarvie, Engineering	NR			
Kayla Franklin, Fire – Prevention	Yes	9/12/19	X	
Alan Kircher, DCD – Building Safety	Yes	9/18/19	X	
Jeremy McCall, Utilities	NR			
Joel Olea, Public Works	NR			
NR=None Received	NR			

Neighborhood Meeting	***Comments Available***
None Required	N/A
Prop. 207 Waiver	
Received by Owner's signature on the application for this land use action request.	

ATTACHMENT C
AERIAL PHOTO

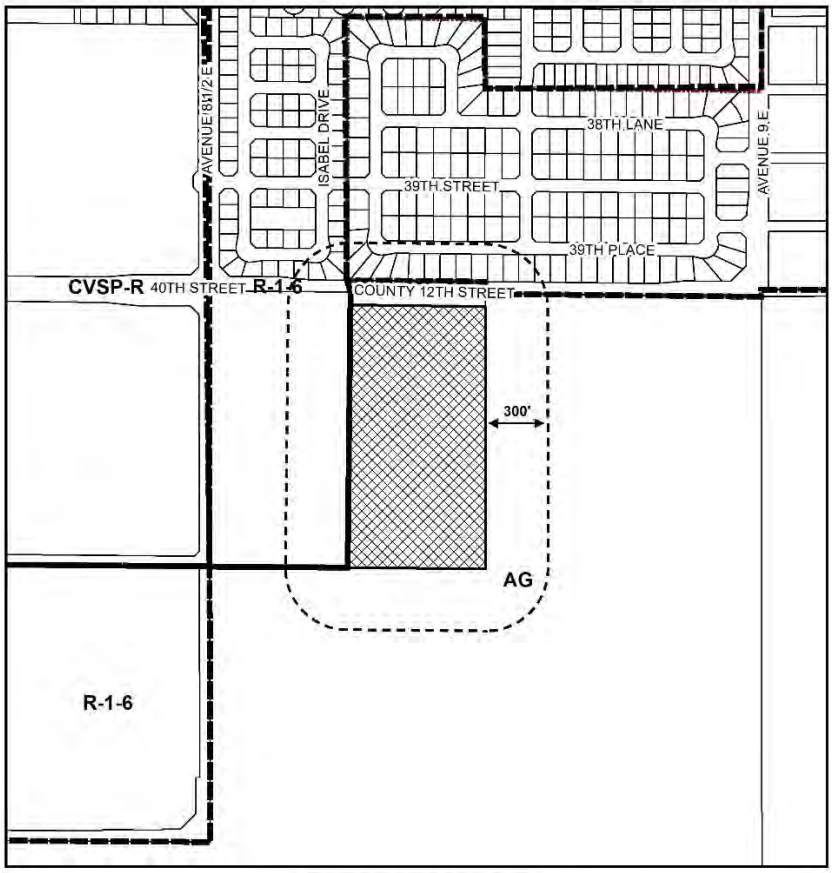
STAFF REPORT TO THE PLANNING AND ZONING COMMISSION
DEPARTMENT OF COMMUNITY DEVELOPMENT
COMMUNITY PLANNING DIVISION
CASE TYPE – REZONE
CASE PLANNER: BOB BLEVINS

Hearing Date: January 27, 2020 **Case Number:** ZONE-28098-2019

Project Description/Location: This is a request by Edais Engineering, Inc., on behalf of Riedel Construction Company, LLC, to rezone a 19.3 acre parcel from Agriculture (AG) to Low Density Residential (R-1-6), for the property located east of the southeast corner of Avenue 8½E and 40th Street.

	Existing Zoning	Use(s) on-site	General Plan Designation
Site	Agriculture (AG)	Undeveloped	Low Density Residential
North	County Manufactured Home Subdivision (MHS-10)	Trail Estates Single Family Homes	Suburban Density Residential
South	Agriculture (AG)	Undeveloped	Low Density Residential
East	Agriculture (AG)	Undeveloped	Low Density Residential
West	Low Density Residential (R-1-6)	Undeveloped	Low Density Residential

Location Map



Prior site actions: Annexation: ANEX-24913-2019 (O2019-21); General Plan: GP-26140-2019 (R2019-039).

Staff Recommendation: Staff recommends **APPROVAL** of the rezoning from the Agriculture (AG) District to the Low Density Residential (R-1-6) District, subject to the conditions shown in Attachment A.

Suggested Motion: Move to **APPROVE** ZONE-28098-2019 as presented, subject to the staff report, information provided during this hearing, and the conditions in Attachment A.

Effect of the Approval: By approving the rezone, the Planning and Zoning Commission is recommending approval to the City Council for the request to rezone a 19.3 acre parcel from Agriculture (AG) to Low Density Residential (R-1-6) for the property located east of the southeast corner of Avenue 8½E and 40th Street, subject to the conditions outlined in Attachment A, and affirmatively finds that the request is in conformance with the City of Yuma General Plan.

Staff Analysis: The developer intends to create a residential subdivision with lots of 6,000 square feet or larger. The current land use designation in the General Plan of Low Density Residential would allow from 19 to 94 dwelling units to be constructed in a single-family development on this property, based on a range of 1 to 4.9 dwelling units per acre.

The subject property is vacant desert land south of the existing Trail Estates Subdivisions, and it will be accessed via 40th Street upon improvement and paving of the roadway.

1. Does the proposed zoning district conform to the Land Use Element?

Yes A recent General Plan Amendment changed the designation from Rural Density to Low Density Residential.

2. Are there any dedications or property easements identified by the Transportation Element?

Yes

Transportation Element	Planned	Existing	Difference	Requested
40th Street – Minor Arterial	50 FT H/W	62 FT H/W	-12 FT	0 FT

3. Does the proposed rezoning of the property conform to the remaining elements of the general plan?

Yes

4. Does the proposed rezoning conform to the adopted facilities plan?

Yes This rezoning request is not in conflict with other Elements of the General Plan.

5. Does the proposed rezoning conform to Council's prior approval of rezonings, development agreements or subdivisions for this site?

Yes The recent General Plan Amendment to Low Density Residential was approved to accommodate residential development on this property.

Public Comments Received: None Received

External Agency Comments: None Received.

Neighborhood Meeting Comments: Held 07/10/19. No neighbors attended.

Proposed conditions delivered to applicant on: 12/10/19

Final staff report delivered to applicant on: 12/31/19

X	Applicant agreed with all of the conditions of approval on: 12/10/19
	Applicant did not agree with the following conditions of approval: (list #'s)
	If the Planner is unable to make contact with the applicant – describe the situation and attempts to contact.

Attachments

A	B	C
Conditions of Approval	Aerial Photo	Staff Research

Prepared By: Robert M. Blevins **Date:** 12/20/19
Principal Planner Robert.Blevins@yumaaz.gov (928)373-5189

Approved By: Alyssa Linville **Date:** 12/20/19
Alyssa Linville
Assistant Director Community Development

Approved By: Laurie L. Lineberry **Date:** 12-20-19
Laurie L. Lineberry, AICP,
Community Development Director

ATTACHMENT A
CONDITIONS OF APPROVAL

The following conditions have been found to have a reasonable nexus and are roughly proportionate to the impact of the proposed rezone for the site:

Department Of Community Development Comments: Laurie Lineberry, Community Development Director (928) 373-5175:

1. The conditions listed below are in addition to City codes, rules, fees and regulations that are applicable to this action.

2. The Owner shall submit to the City of Yuma, for recordation, a signed and notarized "Waiver of Claims under the Private Property Rights Protection Act." The Waiver shall be submitted prior to the issuance of any building permit, Certificate of Occupancy, or City of Yuma Business License for this property.

3. The Owner shall submit to the City of Yuma, for recordation, a signed and notarized Avigation Easement on the property acknowledging potential noise and overflight of aircraft from both daily and special operations of the Marine Corps Air Station and the Yuma International Airport.

Engineering Comments: Agustin Cruz, Senior Civil Engineer (928)373-5182:

4. Owner/Developer shall design and construct the south half of 40th Street per City of Yuma Construction Standard 2-015 at the time of development. 40th Street is transportation development fee eligible.

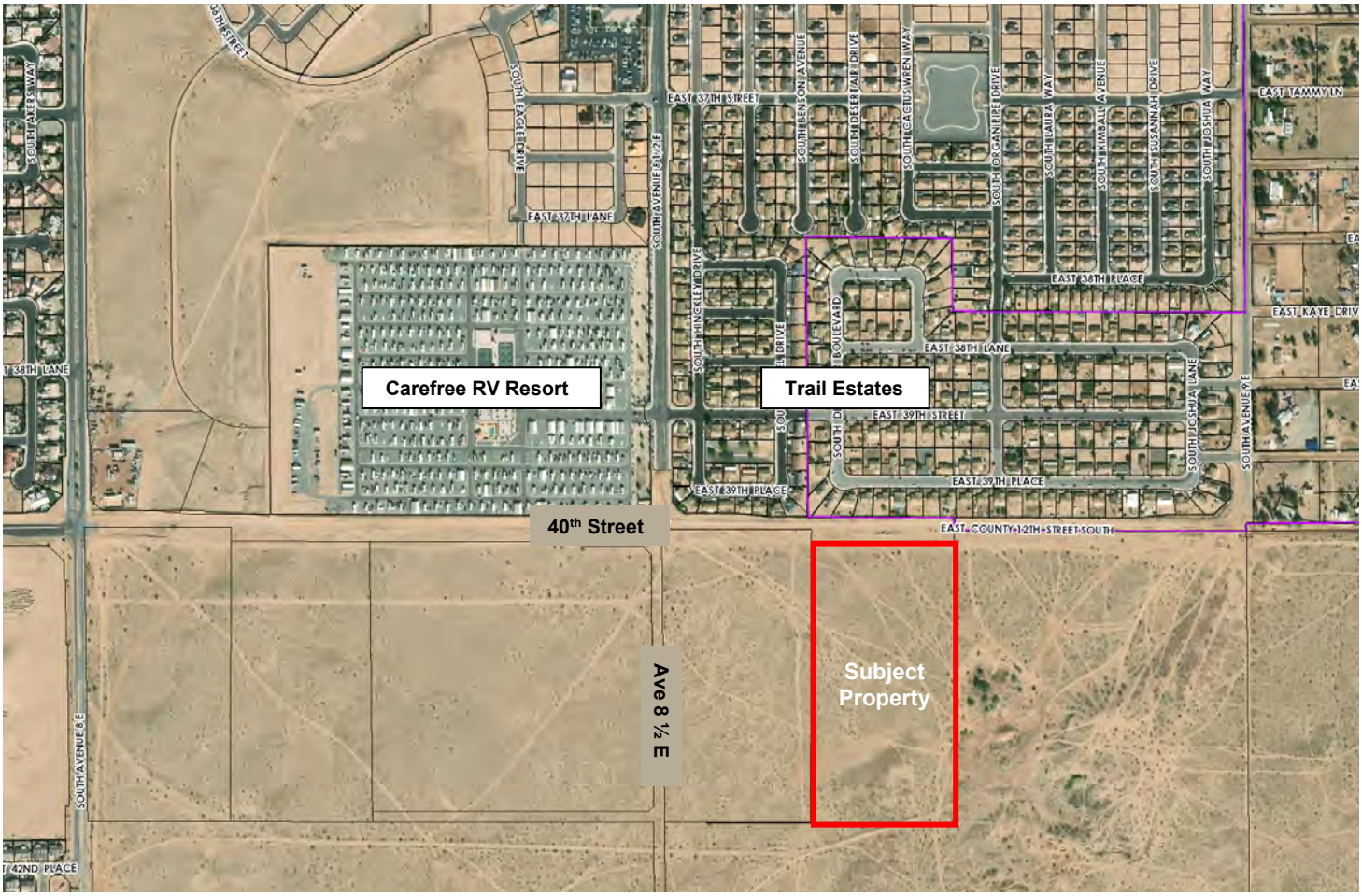
5. Owner/Developer shall dedicate (in fee title) the south half of 40th Street as a minor arterial street with 50 foot half width.

Community Planning, Robert M. Blevins, Principal Planner (928) 373-5189:

6. Each of the conditions listed above shall be completed within one (1) year of the effective date of the rezoning ordinance or prior to the issuance of a Building Permit, Certificate of Occupancy or City of Yuma Business License for this site, whichever occurs first. If the conditions of approval are not completed within the above timeframe then the rezone shall be subject to ARS § 9-462.01.

Any questions or comments regarding the Conditions of Approval as stated above should be directed to the staff member who provided the comment. Name and phone numbers are provided.

ATTACHMENT B
AERIAL PHOTO



ATTACHMENT C
STAFF RESEARCH

CITY OF Yuma	**STAFF RESEARCH – REZONE** **CASE #: ZONE-28098-2019** **CASE PLANNER: BOB BLEVINS**

I. PROJECT DATA

Project Location:	East of the SEC of Avenue 8½E and 40th Street.														
Parcel Number(s):	726-03-002														
Parcel Size(s):	840,708 sq. ft.														
Total Acreage:	19.3														
Proposed Dwelling Units:	Up to 94														
Address:	Not yet assigned														
Applicant:	Riedel Construction Company, LLC														
Applicant's Agent:	Edais Engineering, Inc.														
Land Use Conformity Matrix:	Conforms:	Yes	X	No											
Zoning Overlay:	Public		AO		Auto		B&B		Historic		Infill		None	X	
Airport		Noise Contours	65-70		70-75		75+		APZ1		APZ2		Clear Zone		

	Existing Zoning	Use(s) on-site	General Plan Designation
Site	Agriculture (AG)	Undeveloped	Low Density Residential
North	County Manufactured Home Subdivision (MHS-10)	Single Family Homes	Suburban Density Residential
South	Agriculture (AG)	Undeveloped	Low Density Residential
East	Agriculture (AG)	Undeveloped	Low Density Residential
West	Low Density Residential (R-1-6)	Undeveloped	Low Density Residential

Prior Cases or Related Actions:					
Type	Conforms				Cases, Actions or Agreements
Pre-Annexation Agreement	Yes		No		N/A
Annexation	Yes	X	No		ANEX-24913-2019 (O2019-21)
General Plan Amendment	Yes	X	No		GP-26140-2019 (R2019-039)
Development Agreement	Yes		No		N/A
Rezone	Yes		No		N/A
Subdivision	Yes		No		N/A
Conditional Use Permit	Yes		No		N/A
Pre-Development Meeting	Yes	X	No		PDM-24649-2019 (01/18/2019)
Design Review Commission	Yes		No		N/A
Enforcement Actions	Yes		No		N/A
Avigation Easement Recorded	Yes		No	X	Fee #

Land Division Status:	Parcel is a legal lot of record.			
Irrigation District:	N/A			
Adjacent Irrigation Canals & Drains:	None			
Water Conversion: *(5.83 ac ft/acre)*	N/A			
Water Conversion Agreement Required	Yes		No	X

II. CITY OF YUMA GENERAL PLAN

Land Use Element:	
Land Use Designation:	Low Density Residential
Issues:	None

Historic District:	Brinley Avenue		Century Heights		Main Street		None	X	
Historic Buildings on Site:	Yes		No	X					

Transportation Element:

FACILITY PLANS

Transportation Master Plan	Planned	Existing	Gateway	Scenic	Hazard	Truck
40th Street – Minor Arterial	50 FT H/W	62 FT H/W				X

Bicycle Facilities Master Plan	40th Street Proposed Bike Lane
YCAT Transit System	None
Issues:	None

Parks, Recreation and Open Space Element:

Parks and Recreation Facility Plan		
Neighborhood Park:	Existing: Saguaro Park	Future: Saguaro Park
Community Park:	Existing: Kennedy Park	Future: Aqua Viva Park
Linear Park:	Existing: East Main Canal Linear Park	Future: Gila Gravity Main Canal Linear Park
Issues:	None	

Housing Element:

Special Need Household:	N/A
Issues:	None

Redevelopment Element:

Planned Redevelopment Area:	N/A						
Adopted Redevelopment Plan:	North End:		Carver Park:		None:	X	
Conforms:	Yes		No		N/A		

Conservation, Energy & Environmental Element:

Impact on Air or Water Resources	Yes		No	X	
Renewable Energy Source	Yes		No	X	
Issues:	None				

Public Services Element:

Population Impacts

Population projection per 2013-2017 American Community Survey

Police Impact Standard: 1 officer for every 530 citizens;

Water Consumption: 300 gallons per day per person;

Wastewater generation: 100 gallons per day per person

Dwellings & Type		Projected	Police	Water		Wastewater
Single Family		Population	Impact	Consumption		Generation
Maximum	Per Unit		Officers	GPD	AF	GPD
94	2.8	263	0.50	78,960	88.5	26,320
Minimum						
19	2.8	53	0.10	15,960	17.9	5,320

Fire Facilities Plan:	Existing: Fire Station No. 5				Future: Fire Station No. 7			
Water Facility Plan:	Source:	City	X	Private		Connection:	30" PVC Line on 40th Street	
Sewer Facility Plan:	Treatment:	City	X	Septic		Private		Connection: 24" PVC Line on 40th Street
Issues:	None							

Safety Element:

Flood Plain Designation:	Zone X	Liquefaction Hazard Area:	Yes		No	X
Issues:	None					

Growth Area Element:

Growth Area:	Araby Rd & Interstate 8		Arizona Ave & 16th St		Avenue B & 32nd St.			
	North End		Pacific Ave & 8th St		Estancia		None	X
Issues:	None							

NOTIFICATION

- **Legal Ad Published: The Sun** 12/20/19
- **300' Vicinity Mailing:** 11/25/19
- **34 Commenting/Reviewing Agencies noticed:** 11/28/19
- **Neighborhood Meeting:** 07/10/19
- **Hearing Dates:** 01/27/20
- **Comments Due:** 12/09/19

External List (Comments)	**Response Received**	**Date Received**	**"No Comment"**	**Written Comments**	**Comments Attached**
Yuma County Airport Authority	YES	12/02/19	X		
Yuma County Engineering	NR				
Yuma County Public Works	NR				
Yuma County Water Users' Assoc.	YES	11/27/19	X		
Yuma County Planning & Zoning	NR				
Yuma County Assessor	YES	12/02/19	X		
Arizona Public Service	NR				
Time Warner Cable	NR				
Southwest Gas	NR				
Qwest Communications	NR				
Bureau of Land Management	NR				
YUHS District #70	NR				
Yuma Elem. School District #1	NR				
Crane School District #13	NR				
A.D.O.T.	YES	12/02/19	X		
Yuma Mesa Irrigation District	YES	11/27/19	X		
Arizona Game and Fish	NR				
United States Postal Service	NR				
Yuma Metropolitan Planning Org.	NR				
El Paso Natural Gas Company	NR				
Western Area Power Admin.	YES	12/02/19	X		
City of Yuma Internal List (Conditions)	**Response Received**	**Date Received**	**"No Conditions"**	**Written Conditions**	**Comments Attached**
Rod Hamilton, Police	NR				
Ron Ramirez, Parks	NR				
Damon Chango, Parks	NR				
Agustin Cruz, Engineering	YES	12/09/19		X	
Kayla Holiman, Fire	YES	12/03/19	X		
Alan Kircher, Building Safety	YES	12/02/19	X		
City Engineer	NR				
Traffic Engineer	NR				
MCAS / C P & L Office	YES	12/04/19		X	
Jeremy McCall, Utilities	NR				
Joel Olea, Public Works	NR				
Joel Olea, Streets	NR				

Neighborhood Meeting	***Comments Available***
07/10/19	No one in attendance.
Prop. 207 Waiver	
Given to Applicant on 10/23/19 by U.S. Mail.	

PUBLIC COMMENTS RECEIVED: NONE

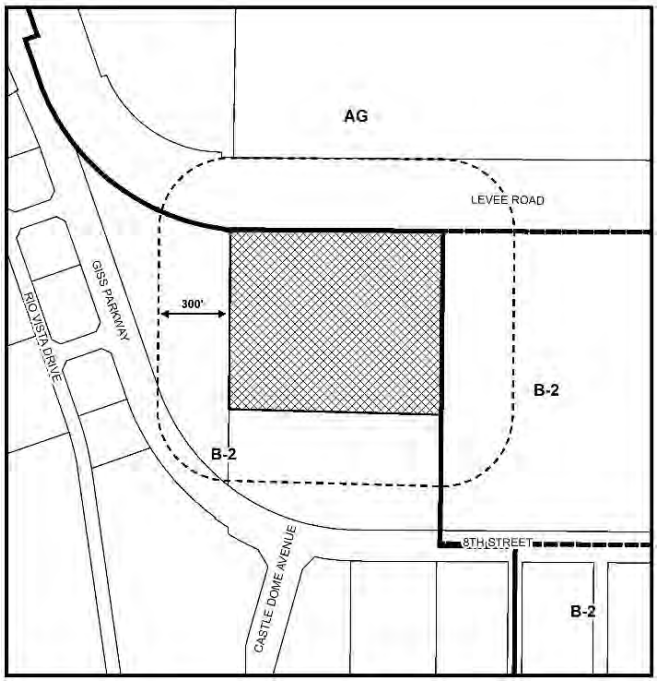
STAFF REPORT TO THE PLANNING AND ZONING COMMISSION
DEPARTMENT OF COMMUNITY DEVELOPMENT
COMMUNITY PLANNING DIVISION
CASE TYPE – REZONE
CASE PLANNER: ALYSSA LINVILLE

Hearing Date: January 27, 2020 **Case Number**: ZONE-28275-2019

Project Description/Location: This is a request by Kerry A. Schimpf, on behalf of The Nelson Family Trust, 4/13/95 and Kerry & Gail Schimpf Trust, 11-19-03, and Kyle P. Nelson, to rezone approximately 14.9 acres from the General Commercial (B-2) District to the High Density Residential (R-3) District, while maintaining the existing Aesthetic Overlay (AO) District, for the properties located north of the intersection of E. 8th Street and S. Castle Dome Avenue, Yuma, AZ.

	Existing Zoning	Use(s) on-site	General Plan Designation
Site	General Commercial/Aesthetic Overlay (B-2/AO)	Vacant	High Density Residential
North	Agriculture (AG)	Levee Road	Resort/Recreation/Open Space
South	General Commercial/Aesthetic Overlay (B-2/AO)	Vacant	Business Park
East	General Commercial/Aesthetic Overlay (B-2/AO)	Pacific Avenue Athletic Complex (PAAC)	Resort/Recreation/Open Space
West	General Commercial/Aesthetic Overlay (B-2/AO)	Vacant	Resort/Recreation/Open Space

Location Map



Prior site actions: Pre-Annexation: Res. R2005-72 (September 2, 2005); Annexation: Ord. O2005-92 (November 19, 2005); General Plan Amendment: Res. R2013-41 (November 20, 2013); Development Agreement: Res. R2019-012 (May 1, 2019); Rezone: Ord. O2015-027 (May 20, 2015; AG to B-2/AO); Subdivision: The Fields at Castle Dome (SUBD-24366-2018)

Staff Recommendation: Staff recommends **APPROVAL** of the rezoning from the General Commercial (B-2) District to the High Density Residential (R-3) District, while maintaining the existing Aesthetic Overlay (AO) District, subject to the conditions shown in Attachment A.

Suggested Motion: Move to **APPROVE** Rezone ZONE-28257-2019 as presented, subject to the staff report, information provided during this hearing, and the conditions in Attachment A.

Effect of the Approval: By approving the rezone, the Planning and Zoning Commission is recommending approval to City Council for the request rezone the property from the General Commercial (B-2) District to the High Density Residential (R-3) District, while maintaining the existing Aesthetic Overlay (AO) District for the property located at for the properties located north of the intersection of E. 8th Street and S. Castle Dome Avenue, subject to the conditions outlined in Attachment A, and affirmatively finds that the request is in conformance with the City of Yuma General Plan.

Staff Analysis: The subject properties are located north of the intersection of E. 8th Street and S. Castle Dome Avenue. Historically the property was utilized for agricultural purposes. While currently undeveloped, the intended development for the subject area is multi-family housing. The subject area will be part of a larger development plan within the Fields of Castle Dome Subdivision; this subdivision was approved by City Council on May 1, 2019 and is expected to record in April 2020.

Further specified in §154-07.03, the following are some of the development standards required of a development with the High Density Residential (R-3) District:

1. The maximum lot coverage in the High Density Residential (R-3) District shall not exceed 35% of the lot area;
2. A minimum front yard setback of 20 feet;
3. A minimum side yard setback of 7 feet;
4. A minimum rear yard setback of 10 feet; and
5. A maximum building height of 40 feet;

The potential residential development could contain between 193 and 268 residential units based on the density limitation outlined in the General Plan. The request to rezone the property from the General Commercial (B-2) District to the High Density Residential (R-3) District, while maintaining the existing Aesthetic Overlay (AO) District is in conformance with the Land Use Element of the General Plan.

1. Does the proposed zoning district conform to the Land Use Element?

Yes.

2. Are there any dedications or property easements identified by the Transportation Element?

Yes.

Transportation Element	Planned	Existing	Difference	Requested
E. 8th Street – 2 Lane Minor Arterial	40 FT H/W ROW	65 FT H/W ROW	20 FT	0 FT

3. Does the proposed rezoning of the property conform to the remaining elements of the general plan?

Yes.

4. Does the proposed rezoning conform to the adopted facilities plan?

Yes.

5. Does the proposed rezoning conform to Council's prior approval of rezonings, development agreements or subdivisions for this site?

Yes.

Public Comments Received: None Received.

External Agency Comments: None Received.

Neighborhood Meeting Comments: No Meeting Required.

Proposed conditions delivered to applicant on: December 3, 2019

Final staff report delivered to applicant on: December 26, 2019

X	Applicant agreed with all of the conditions of approval on: December 3, 2019
	Applicant did not agree with the following conditions of approval: (list #'s)
	If the Planner is unable to make contact with the applicant – describe the situation and attempts to contact.

Attachments

A	B	C
Conditions of Approval	Aerial Photo	Staff Research

Prepared By: Alyssa Linville **Date:** 12.20.19

Alyssa Linville
Assistant Director
DCD/Zoning Administrator
Alyssa.Linville@yumaaz.gov (928)373-5000, x3037

Approved By: Laurie L. Lineberry **Date:** 12-20-19

Laurie L. Lineberry, AICP,
Community Development Director

ATTACHMENT A
CONDITIONS OF APPROVAL

The following conditions have been found to have a reasonable nexus and are roughly proportionate to the impact of the proposed rezone for the site:

Department of Community Development Comments: Laurie Lineberry, Community Development Director (928) 373-5175:

1. The conditions listed below are in addition to City codes, rules, fees and regulations that are applicable to this action.

2. The Owner shall submit to the City of Yuma, for recordation, a signed and notarized "Waiver of Claims under the Private Property Rights Protection Act." The Waiver shall be submitted prior to the issuance of any building permit, Certificate of Occupancy, or City of Yuma Business License for this property.

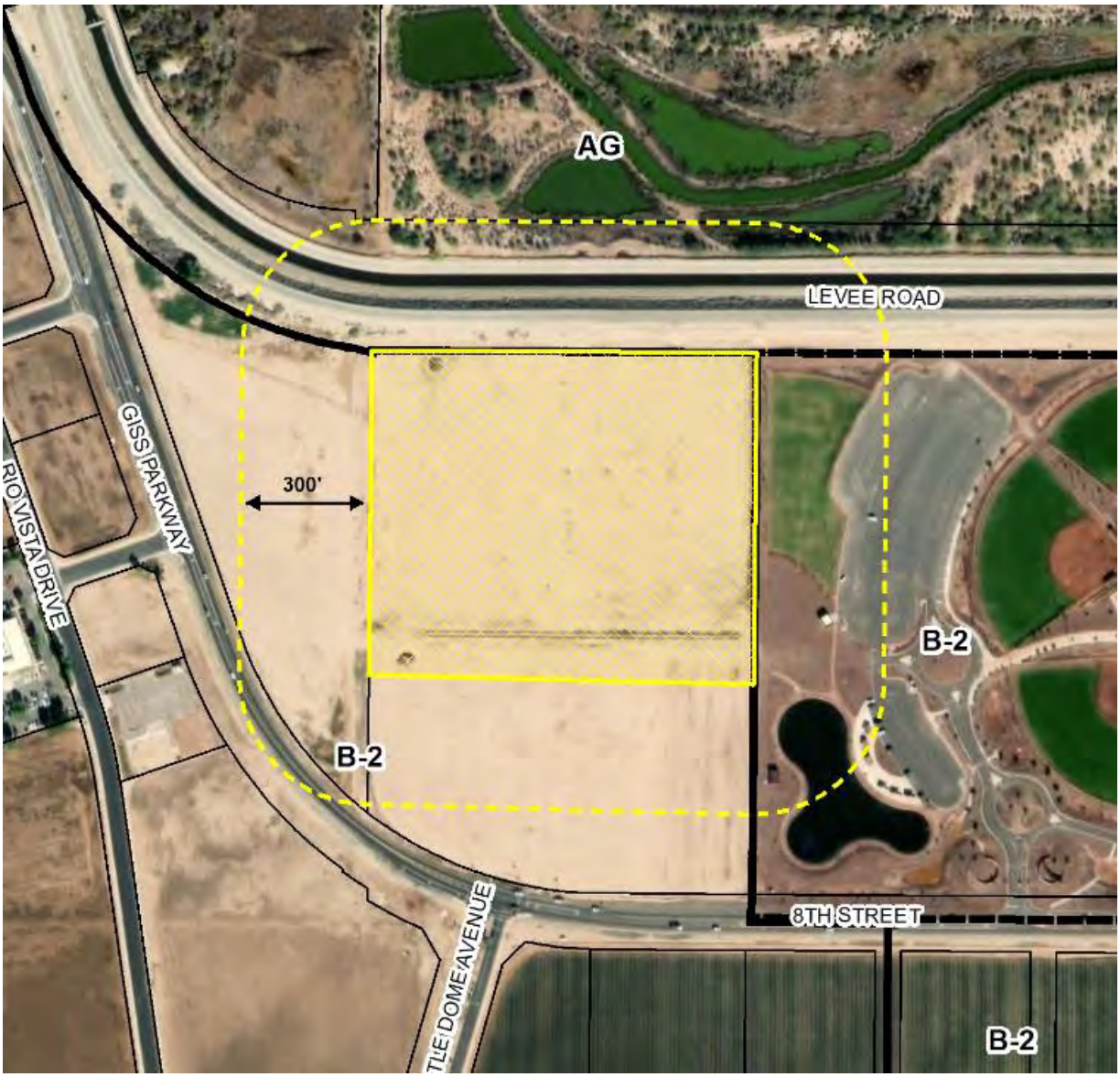
Community Planning, Alyssa Linville, Assistant Director of Community Development, (928) 373-5000, ext. 3037

3. The mylars for the Fields at Castle Dome Subdivision are to be recorded prior to the vesting of the zoning.

4. Each of the conditions listed above shall be completed within two (2) years of the effective date of the rezoning ordinance or prior to the issuance of a Building Permit, Certificate of Occupancy or City of Yuma Business License for this site, whichever occurs first. If the conditions of approval are not completed within the above timeframe then the rezone shall be subject to ARS § 9-462.01.

Any questions or comments regarding the Conditions of Approval as stated above should be directed to the staff member who provided the comment. Name and phone numbers are provided.

ATTACHMENT B
AERIAL PHOTO



ATTACHMENT C
STAFF RESEARCH

CITY OF Yuma	**STAFF RESEARCH – REZONE** **CASE #: ZONE-28275-2019** **CASE PLANNER: ALYSSA LINVILLE**

I. PROJECT DATA

Project Location:	North of the intersection of E. 8th Street and S. Castle Dome Avenue	
Parcel Number(s):	180-22-016	
Parcel Size(s):	649,044 square feet	
Total Acreage:	14.9 acres	
Proposed Dwelling Units:	193-268	Permitted based on General Plan designation
Address:	N/A	
Applicant:	The Nelson Family Trust, 4/13/95 and Kerry & Gail Schimpf Trust, 11-19-03, and Kyle P. Nelson	
Applicant's Agent:	Kerry A. Schimpf	
Land Use Conformity Matrix:	Conforms:	Yes X No

Zoning Overlay:	Public		AO	X	Auto		B&B		Historic		Infill		None					
Airport		Noise Contours	65-70		70-75		75+		APZ1		APZ2		Clear Zone					

	Existing Zoning	Use(s) on-site	General Plan Designation
Site	General Commercial/Aesthetic Overlay (B-2/AO)	Vacant	High Density Residential
North	Agriculture (AG)	Levee Road	Resort/Recreation/Open Space
South	General Commercial/Aesthetic Overlay (B-2/AO)	Vacant	Business Park
East	General Commercial/Aesthetic Overlay (B-2/AO)	Pacific Avenue Athletic Complex (PAAC)	Resort/Recreation/Open Space
West	General Commercial/Aesthetic Overlay (B-2/AO)	Vacant	Resort/Recreation/Open Space

Prior Cases or Related Actions:					
Type	Conforms				Cases, Actions or Agreements
Pre-Annexation Agreement	Yes	X	No		Res. R2005-72 (September 2, 2005)
Annexation	Yes	X	No		Ord. O2005-92 (November 19, 2005)
General Plan Amendment	Yes	X	No		Res. R2013-41 (November 20, 2013)
Development Agreement	Yes	X	No		Res. R2019-012 (May 1, 2019)
Rezone	Yes	X	No		Ord. O2015-027 (May 20, 2015; AG to B-2/AO)
Subdivision	Yes	X	No		The Fields at Castle Dome (SUBD-24366-2018)
Conditional Use Permit	Yes		No		N/A
Pre-Development Meeting	Yes	X	No		July 23, 2019
Design Review Commission	Yes		No		N/A
Enforcement Actions	Yes		No		N/A
Avigation Easement Recorded	Yes	X	No		Fee # 2019-13544

Land Division Status:	Subdivision plat to be recorded prior to the approval of this rezoning.
Irrigation District:	None
Adjacent Irrigation Canals & Drains:	Main Outlet Drain
Water Conversion: *(5.83 ac ft/acre)*	86.87 Acre Feet a Year

Water Conversion Agreement Required	Yes		No	X	

II. City of Yuma General Plan

Land Use Element:

Land Use Designation:	High Density Residential								
Issues:	None								
Historic District:	Brinley Avenue		Century Heights		Main Street		None	X	
Historic Buildings on Site:	Yes		No	X					

Transportation Element:

Facility Plans

Transportation Master Plan	Planned	Existing	Gateway	Scenic	Hazard	Truck
E. 8th Street – 2-Lane Minor Arterial	40 FT H/W ROW	65 FT H/W ROW				X

Bicycle Facilities Master Plan	8th Street – Proposed Bike Lane
YCAT Transit System	Orange Route 2
Issues:	None

Parks, Recreation and Open Space Element:

Parks and Recreation Facility Plan		
Neighborhood Park:	Existing: None	Future: None
Community Park:	Existing: None	Future: None
Linear Park:	Existing: Colorado River Levee Linear Park	Future: Colorado River Levee Linear Park
Issues:	Limited access to neighborhood and community parks.	

Housing Element:

Special Need Household:	N/A
Issues:	None

Redevelopment Element:

Planned Redevelopment Area:	N/A							
Adopted Redevelopment Plan:	North End:		Carver Park:		None:	X		
Conforms:	Yes		No		N/A			

Conservation, Energy & Environmental Element:

Impact on Air or Water Resources	Yes		No	X	
Renewable Energy Source	Yes		No	X	
Issues:	None				

Public Services Element:

Population Impacts

Population projection per 2013-2017 American Community Survey

Police Impact Standard: 1 officer for every 530 citizens;

Water Consumption: 300 gallons per day per person;

Wastewater generation: 100 gallons per day per person

Dwellings & Type *Multi-Family*		Projected Population	Police Impact	Water Consumption		Wastewater Generation
Maximum	Per Unit		Officers	GPD	AF	GPD
268	1.7	456	0.86	136,680	153.1	45,560
Minimum						
193	1.7	328	0.62	98,430	110.3	32,810

Fire Facilities Plan:	Existing: Fire Station No. 1					Future: Fire Station No.1		
Water Facility Plan:	Source:	City	X	Private		Connection:	12” PVC	
Sewer Facility Plan:	Treatment:	City	X	Septic		Private		Connection: 12” PVC
Issues:	Line extension required for sewer connection.							

Safety Element:

Flood Plain Designation:	Flood Zone X	Liquefaction Hazard Area:	Yes	X	No		
Issues:	None						

Growth Area Element:

Growth Area:	Araby Rd & Interstate 8		Arizona Ave & 16th St		Avenue B & 32nd St.		
	North End		Pacific Ave & 8th St	X	Estancia		None
Issues:	None						

NOTIFICATION

- **Legal Ad Published: The Sun** (12/20/19)
- **300' Vicinity Mailing:** (11/25/19)
- **34 Commenting/Reviewing Agencies noticed:** (11/27/19)
- **Neighborhood Meeting:** (N/A)
- **Hearing Dates:** (01/27/20)
- **Comments Due:** (12/09/19)

External List (Comments)	**Response Received**	**Date Received**	**"No Comment"**	**Written Comments**	**Comments Attached**
Yuma County Airport Authority	Yes	12/02/19	X		
Yuma County Engineering	NR				
Yuma County Public Works	NR				
Yuma County Water Users' Assoc.	Yes	12/02/19	X		
Yuma County Planning & Zoning	NR				
Yuma County Assessor	Yes	12/02/19	X		
Arizona Public Service	NR				
Time Warner Cable	NR				
Southwest Gas	NR				
Qwest Communications	NR				
Bureau of Land Management	NR				
YUHS District #70	NR				
Yuma Elem. School District #1	NR				
Crane School District #13	NR				
A.D.O.T.	NR				
Yuma Irrigation District	NR				
Arizona Game and Fish	NR				
United States Postal Service	NR				
Yuma Metropolitan Planning Org.	NR				
El Paso Natural Gas Company	NR				
Western Area Power Admin.	NR				
City of Yuma Internal List (Conditions)	**Response Received**	**Date Received**	**"No Conditions"**	**Written Conditions**	**Comments Attached**
Rod Hamilton, Police	NR				
Ron Ramirez, Parks	NR				
Damon Chango, Parks	NR				
Andrew McGarvie, Engineering	NR				
Kayla Franklin, Fire	Yes	12/03/19	X		
Randy Crist, Building Safety	NR				
City Engineer	NR				
Traffic Engineer	NR				
MCAS / C P & L Office	Yes	12/04/19	X		
Jeremy McCall, Utilities	NR				
Joel Olea, Public Works	NR				
Joel Olea, Streets	NR				

Neighborhood Meeting	***Comments Available***
NONE REQUIRED	See Staff Report Attachment
Prop. 207 Waiver	
Given to Applicant in person on January 13, 2020.	

PUBLIC COMMENTS RECEIVED: NONE RECEIVED