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CENTRAL ARIZONA CONSERVATION ALLIANCE



A Primer on Building and Making the Case for Protecting Open Space in Central Arizona

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A PRIMER ON BUILDING AND MAKING THE CASE FOR PROTECTING OPEN SPACE IN CENTRAL ARIZONA

Prepared for CAZCA by Amanda Smith of the Sonoran Institute

This primer is designed to assist communities and open space advocates in crafting a compelling case for open space protection, find funding and start meaningful dialogue and assessment on this topic. The primer focuses on activities, information sources, talking points about the benefits of open space, successful local case studies, and key messaging strategies that can be incorporated in a case statement.

The resources described in this primer are meant to be a starting point for making a case for funding. As you prepare to draft your case statement, you may find new information, either updates to existing reports cited here or in recently published studies. The research and literature on open space benefits is wide ranging and constantly evolving. There are national and regional studies, as well as local data to draw on.

Three organizations are worth referencing as they regularly publish information that is critical to make your case statement: National Recreation and Parks Association (nrpa.org) and their state chapters, American Planning Association (planning.org), and Trust for Public Land (tpl.org). You may also reach out to CAZCA, which endeavors to remain current on such information locally and can connect you to additional local partners. To find out what we know or to share what you have learned, email CAZCA at cazca@dbg.org.

Primer Context

Maricopa County in Central Arizona has an impressive conservation legacy that encompasses our county and regional parks, preserves, and trails, as well as other protected and undeveloped open spaces. This legacy is threatened by overuse, underinvestment and the absence of a long-term vision to ensure our open space resources will be sustainably managed and accessible to all residents.

The Central Arizona Conservation Alliance (CAZCA) supports a comprehensive regional approach to open space protection to preserve our conservation legacy. We believe this approach requires the development of a diverse set of funding mechanisms that will maintain our existing parks, preserves and trails, but also allow for the acquisition of additional open space critical to meet the increasing popularity of our parks and open space's growing value to homeowners, visitors and businesses alike. While a county-wide funding mechanism is a strategy worth pursuing, it is more likely that in the near-term, funding mechanisms will emerge at the local level.

Identifying and Refining Your Community's Open Space Priorities and Strategies

Conservation planning is a systematic process that is primarily focused on identifying, developing, and implementing strategies to conserve specific features of biodiversity.

Identifying the places on the ground where conservation actions can be most appropriately implemented is a strategic planning activity.¹ Actions will range from land acquisition and direct management measures (see appendix) to partnership opportunities with both public and private entities, including non-governmental organizations.

Identifying priorities involves an analysis of scientific data and an assessment of the social, economic, and political context for developing conservation areas and priorities. Establishing priorities will justify your actions and assist in ensuring adequate support for the various strategies and in quantifying funding opportunities and need.

Many communities have previously identified priorities through comprehensive and open space plans, but it is worth revisiting the analysis to make sure it is current and encompasses a full range of scientific and social, economic and political factors.

Open space advocates can look to the following resources and agencies for additional information and recommended steps: Local comprehensive plans, local parks and open space plans, Arizona Game and Fish Department, Maricopa Association of Governments, Maricopa Regional Flood Control district, and many other relevant state, county, and local departments.

Often, partners and research institutions like CAZCA itself, White Tank Mountain Conservancy, McDowell Sonoran Conservancy, Sonoran Institute, Arizona State University, and others will also have non-regulatory evaluations of open space resources, like the CAZCA Greenprint and the Regional Open Space Strategy.

A thorough and comprehensive analysis will help identify obstacles to success, assist in effective messaging, build strong support and momentum, and ensure strategies are adequately vetted by a representative cross-section of the community and special interest groups.

Quantifying Your Community's Open Space Funding Needs

In 2020, CAZCA published a report² identifying the greatest funding gaps and critical unmet needs of our parks. Three funding priorities emerged from the report:

1) Stabilize funding sources for ongoing operation and maintenance, and restoration

Stable funding sources are needed to end the ebb and flow of financial support. Without this we may see a deterioration in the facilities, programs, and level of service we have come to expect from our local parks, preserves, and trails.

2) Invest in new parks and protect open space

Preserving the ecological integrity of parks, preserves, and trails requires that we minimize the threats resulting from encroaching land development and increased visitation. There is a need to acquire and protect additional open space, with an emphasis on wildlife corridors that connect existing protected areas and establishing buffers to minimize impacts from activities outside these areas.

3) Ensure that everyone has equal access and enjoyment of parks and protected open space

Open space is an amenity not everyone has equal access to. There is a need for equity in access and equal level of service in urban and ex-urban areas. Your community's open space funding needs will likely involve one or more of these three priorities. While one can undertake studies that specifically cost out expenses for individual parks or park systems, these are expensive and time consuming. For the purposes of an initial case statement, rough estimates or ranges are effective at defining

need and action. Below we describe a number of approaches to estimating costs for these three priorities using various resources.

COST ESTIMATES FOR OPERATIONS AND MAINTENANCE (O&M)

Operations and Maintenance (O&M) refers to the day-to-day activities, functions, and labor associated with the routine tasks and necessary repairs in order to provide appropriate services. There are many approaches to estimating the costs to maintain public facilities³ and staff salaries.⁴ More difficult element of park O&M to estimate is open space maintenance, how to adapt to new trends in how we use our parks and emerging best practices for open space management.

Open space monitoring costs are traditionally underestimated. The Nature Conservancy “Stewardship Calculator”⁵ can be used to create and justify detailed cost estimates, including expenses such as site visits, staff time, reporting, and types of maintenance including mitigating invasive species, repairing damage from wildfire and erosion, clearing

trash, and closing social trails. Referencing studies within Maricopa County is an appropriate way to estimate maintenance needs, as these will be generally consistent across the region and will likely apply to your community. Some of these studies seek to capture a wide range of O&M costs, while others focus on a specific set of activities.

After a new park is established, described in the following section, there will be additional personnel and increased operations and maintenance costs. In their Parks Master Plan, the Town of Buckeye estimates that additional staff and operations for 402 new park acres would require additional \$2,040,923 on an annual basis.⁶ For example, if all 1,550 acres in the CAZCA conservation opportunity areas study were secured (see next section), jurisdictions involved would require \$900,000 annually and 25 new park staff, which assuming an average \$53,000 salary means \$1,350,000.00 annually for personnel.⁷ See Figure 1 and 2.

These numbers do not include recreation facilities, libraries, and other park department services, but do represent both active city parks and open space preserves. Most government departments

FIGURE 1

STUDY	COST CATEGORY	PRICE PER	UNIT
City of Buckeye Parks Master Plan (2016)	Annual O&M	\$ 1000.00	per acre
CAZCA Park Profiles ⁸	Annual O&M	\$ 530.00	per acre

FIGURE 2

STUDY	COST CATEGORY	FTE PER PARK ACRE	NEW FTE NEEDED?	TOTAL ADDITIONAL SALARY*
City of Buckeye Parks Master Plan (2016)	Additional Personnel	1/13	31	\$ 1,638,923.00
CAZCA Park Profiles	Additional Personnel	1/64	25	\$ 1,348,631.18

*Assumes a \$53,000 annual salary per staff person

do not distinguish between the two in their public records, but they are managed in different ways with different types of O&M requirements. A special survey of management strategies for 8 desert preserves in 6 different cities in central Arizona found an average of 2,615 preserve acres per paid staff FTE and 12.57 miles of trails per paid staff FTE (not including volunteers).⁹ In addition to standard O&M costs, targeted restoration work is often necessary to bring the state of degraded lands to a point where a routine level of maintenance is effective.

The McDowell Sonoran Conservancy provides a methodology for remotely scoping some restoration needs. For example, they estimate there are 43 disturbed areas totaling approximately 8.74 acres (35,000 square meters) of degraded lands and 52 unauthorized trails and roads totaling 30,500 feet (9,300 meters) of trail maintenance needs in Maricopa County's White Tank Mountain Regional Park.¹⁰

The location of the restoration site or trail, the type of equipment, the experience of the crew, slope of the land and the scope of the damage are all factors in cost. One restoration project in Arizona cost approximately \$550 per acre for seeding and regrading social trails.¹¹ One recent estimate for trail "deconstruction" in Scottsdale included a cost of \$0.80 per linear foot to rip and scatter debris (branches, sticks, dead cacti, etc.) on a single track trail, and \$1.40 per linear foot to do the same thing to an old jeep road.¹²

Staff and volunteer development is an often neglected but cost-effective O&M expense critical to the quality of programs and level of service. Annual training and development costs per staff person are hard to come by. However, membership with the National Recreation and Parks Association, \$1,150 a year for 20-50 full time staff gives staff access to their written materials, discussion boards and other resources staff need to stay up to date with current expectations of their visitors and to develop new programs and services to meet demands of changing demographics and new tastes.¹³ Formal training and conferences would add to this expense.

COST ESTIMATES TO INVEST IN NEW PARKS AND PROTECT OPEN SPACE

These costs will vary widely depending on whether you are acquiring land, which will apply to private and state trust lands, acquiring conservation easements, or using other methods such as those that apply to Bureau of Land Management for recreation leases and patents. Costs estimates to protect these areas can be estimated by applying known per-acre costs of comparable land protection projects.

The types of expenses will vary with the original ownership, and would require at least the following expense areas:

- Value of the land (for direct purchase)
- Park Master planning such as design and engineering
- Capital Improvements, park development
- Initial Application Plans and Environmental Impact Studies (for leasing federal lands)
- Staff time (varies widely with the complexity of the process and staff experience)

As an example, CAZCA estimated the costs to protect hypothetical land areas that are representative of the opportunities found in the Western Maricopa County. We identified approximately 600 acres of Bureau of Land Management land and 950 acres of private property that include corridors and buffers around existing protected preserves across multiple jurisdictions.¹⁴

The Bureau of Land Management allows local governments to lease their lands for 25-year increments under a Recreation and Public Purpose (R&PP) lease, which we estimate would cost at least \$960,000.00 for the relevant studies and designs, which is \$1,600 per acre.¹⁵ Annual costs for the actual lease are considered negligible in interviews by local jurisdictions.¹⁶

We used fee-simple acquisition to estimate the maximum cost anticipated to protect the private land. Factors impacting the value of land include location relative to infrastructure, availability of

water, terrain and other site characteristics, plus the economy of the region and the desire for new residential housing. Estimates range considerably given the impact of these and more factors on each appraised parcel.

One confidential assessment estimated the price per acre of the value of residential land on the outskirts of Phoenix Metro Area would range from approximately \$4,000 to \$23,000 per acre, with an average \$13,000 per acre. Applying this figure to the CAZCA study, we can estimate a total cost of \$13,000,000 to protect the 950 private acres, plus the costs of environmental studies if federal funding is involved, and the park designs and construction costs.¹⁷ Another estimate for one parcel of land in another part of the Phoenix Metro Area was approximately \$48,000 per acre. See Figure 3. Additional methods are explained in the footnotes.

The Town of Buckeye used figures from the National Recreation and Parks Association (NRPA) and

surrounding communities to identify a service goal level of 4 acres of parkland per 1000 residents, and based on Maricopa Association of Governments population projections,¹⁸ predicted an additional 402 acres of parkland will be needed by year 2030 within their service area. They estimated the cost to meet this level of service would be \$112,560,000 total, or \$280,000 per acre.¹⁹ See Figure 4.

While adding additional protected lands will increase the operations and maintenance needs described, strategic land protection will support the long-term environmental health of the land, potentially reducing costs of maintenance and restoration over time. Additional parklands may also support equitable access thereby reducing the scope of the needs described in the following section.

The next step for those seeking to move forward with land acquisition would be to get a formal appraisal of the parcels of interest. This involves working with a third-party consultant to evaluate all of the factors

FIGURE 3

STUDY	COST CATEGORY	PRICE PER	UNIT
Confidential Appraisal (FY2016)	Land Acquisition Costs	\$13,000.00	per acre
Park Director Interview	Land Acquisition Costs	\$ 48,000.00	per acre
Maricopa County Capital Improvement Plan	Initial Application Plans and Studies	\$ 920.00	per acre
Maricopa County Capital Improvement Plan	Design/Engineering	\$ 360.00	per acre
Maricopa County Capital Improvement Plan	Capital Improvements at park development	\$ 330.00	per acre

FIGURE 4

STUDY	COST CATEGORY	PRICE PER	UNIT
City of Buckeye Parks Master Plan (2016)	Land Acquisition Costs	\$ 80,000.00	per acre
City of Buckeye Parks Master Plan (2016)	Construction Costs	\$ 200,000.00	per acre

that impact land value.

COST ESTIMATES TO ENSURE EQUAL ACCESS AND ENJOYMENT

Here, your approach to estimating costs will depend on whether you are ensuring equal access and enjoyment to existing parks, preserves, and trails, or looking to provide open space opportunities closer to communities that currently have little or no access. If it is the former, it is possible this can be addressed through transportation funding and underwriting outreach and education opportunities for underserved communities. If the latter, then funding for land acquisition (if developer dedications are non-existent or inadequate) and initial capital expenses (for buildings and other facilities, trails, and interpretive signage) will likely be necessary.

A cost-effective way to address equal access and enjoyment is to work with school districts serving those communities that are underserved. These districts may have transportation fleets but little or no funding to cover the cost of field trips and other youth programs, which may include fuel, insurance, and sometimes maintenance expenses. Fuel costs roughly \$150-200 dollars per bus which can fit approximately 45-50 persons total.²⁰ Insurance is estimated at \$3,000 annually, based on a rural nonprofit with a youth outdoor education program.²¹ Printing hand outs and name tags is usually \$20 per trip.²² Logistical challenges may not have costs associated with them, but they can impact the design of a trip which may result in decisions that impact costs. Logistical factors can include timing the trip with school classes and allowing time for the students to organize pre/post trip, bus schedules, lunches, space at the field trip site for school buses, staging the kids into groups and bathroom availability.²²

Potential partners, including non-profits, service agencies and community foundations, may be able to provide matching funds that could reduce these expenses. The Living River of Words program from Pima County Parks and Natural Resources is a model partnership with a local school district that couples in-school natural resources education with on-site creative projects.²³

Communities that wish to address open space equity within urban residential areas might also consider tailoring the costs of land acquisition in their target area. A more complex urban makeup will add factors that impact the price of land acquisition and park development.²⁴ The Trust for Public Land ParkServe program helps visualize the park service areas in the Phoenix-metro area to identify communities without access to neighborhood parks.²⁵ CAZCA's Greenprint data viewer can be used to explore ParkServe data and many other datasets related to park and open space planning.²⁶

Sharing about Past Successes

In making the case to protect open space, it helps to point to prior examples that demonstrate the feasibility and lessons learned in doing so. Fortunately, Central Arizona's impressive conservation legacy means there are many successes to draw from. Here some examples:

- **Vulture Mountain Recreation Area** is currently in development by Maricopa County Parks and Recreation Department. This required additional preliminary discussion and planning by the Bureau of Land Management (BLM) since these lands were not pre-identified by the BLM as eligible for an R&PP lease. Though the negotiations and construction are on-going, the lease for the BLM lands was successfully signed in 2019, showing perseverance and commitment to the professional partnership over the more than 13-year process.²⁷
- **Skyline Regional Park** is Buckeye's largest park and is managed by the City under a Recreation and Public Purposes (R&PP) lease. The R&PP lease is a common approach for local governments and federal lands. The process is straightforward but can take several years. The major challenge in the 8-year process came when a developer expressed interest in acquiring some of the BLM land in the City's application. The lease for Skyline was signed in 2010 without those additional lands. The park opened to the public in 2016 after trails and other capital improvements were completed.²⁸

- **Phoenix Parks and Preserves Initiative** is a voter-approved sales tax that routes one cent from every \$10 spent to support City of Phoenix open space. Initiated in 1999, this fund has led to 9 new regional parks, 40 major park renovations and over 600 improvements in 15 years. Voters agreed to extend the sales tax until 2030, indicating the importance of parks and open spaces to residents.²⁹
- **WestWing Mountain** in Peoria was donated to the city around 2002. These lands were originally state trust land purchased by Pivotal Development in the 1990s. At the time, the prevailing development trend designed with consideration for natural resources by incorporating large open spaces, trails and pocket parks.³⁰ The undeveloped land can be donated for a tax write-off. Pivotal donated the 300-acre mountain preserve to the city, sold approximately 30% of the property to Pulte Homes, and retained the rest for mixed-use development.³¹
- **Sunrise Mountain** was a strategic acquisition that connected other open spaces and protected historic mining sites. Peoria's Mayor and Council approved the purchase of 85 acres in 2016, and the remaining 124 acres of Sunrise Mountain was purchased for \$7 million. Sunrise Mountain

was the last land purchase under the Sonoran Preservation Program, a 2015 plan to protect desert lands throughout Peoria. Initially there were no remaining funds for building trails and no other revenue streams existed.³²

- **Adero Canyon Trailhead** in Fountain Hills added 8.5 miles of trail to access the Fountain Hills McDowell Mountain Preserve.³³ The land was purchased using funds from a 1997 voter-approved bond and sales tax revenue. Development fees raised the \$1.8 million necessary to pay for trailhead construction.³⁴ The Adero Canyon is approximately 1,000 acres in size, which is a considerable portion of the Town's total land area.
- **McDowell Sonoran Preserve** is another example, where the entire 30,580 acre McDowell Sonoran Preserve in Scottsdale was acquired using two sales tax increments passed in 1995 and 2004, which also funded development of the trails and trailheads.

These examples explore some of the more common land protection strategies and funding sources. The Appendix lists other tools at our disposal which could reduce costs and might be more appropriate in different scenarios.



Photo credit: Annia Quiroz

Crafting Your Message

In the modern media, with constant bombardment of advertising, shares, and retweets, a compelling message that reflects highly upon the sharer is more likely to get attention. In their Growing Water Smart program, Sonoran Institute teaches how to create a resonating message that prompts action.³⁵

Audiences respond well to stories that connect a tangible problem to an actionable solution that aligns with personal values. Start by understanding the problem by isolating the core issue at hand, the situation that caused the issue, the solution and the consequence of inaction. This will be the beginning, middle, and end of your “story.” Then identify a specific target audience that you need to take action for your solution to be successful: whomever has the most influence and interest in the problem as described. You can add focus by specifying which geographies, leadership level, department, et cetera. Then brainstorm the values that connect your target audience to the problem. Lastly, craft a succinct message using the “[value] and [value], but [problem], therefore [solution]” format.

The following is an example of implementing this messaging process:

Understanding the problem: Our issue is that our parks have unmet needs. A lack of funding over the last decade, coupled with increased demand and population pressure is responsible for these unmet needs. The solution is additional funding sources. The consequences of not solving this issue could include a loss of parks and a lower quality of life.

Target Audience: Elected Officials

Common Values: economic development and community well-being

Succinct Message: “Our beautiful preserves protect our desert heritage and we cherish our family days in the park. But our community is growing while park budgets have not recovered since the 2008 recession and Covid-19 has added more pressure. We must work together to find additional funding to support our parks. If we don’t act now, our parks will not keep up with population growth and we could lose

what makes our Valley such a special place.”

Contrary to popular belief, your succinct message does not need to include data. They can be effective for some audiences, but they do not resonate with all readers. Once you identify your target audience and engage them with your story, you can elaborate on the data that justifies why protecting open spaces are beneficial. Numbers are helpful for furthering your case and underscoring your argument.

COMMUNICATING THE BENEFITS OF OPEN SPACE

The example above touched on some benefits of open space, but your target audiences may have a wide range of interests. We list a few compelling arguments for open space protection and funding that might resonate with your community.

- Open spaces contributed to more than \$93.36 million in regional economic activity and generated 948 jobs (full/part-time) in a single year of activity in Maricopa County’s Regional Parks. In addition, concessionaires for the parks created \$51.57 million in output and 557 jobs (full/part-time) that same year.³⁶
- Growth and open space protection complement each other. Residents who relocate for open space create the political will to preserve the attributes that attracted them in the first place.³⁷
- Preferences to relocate near accessible open space has been amplified by the recent pandemic as low-density living is a desirable alternative to the urban experience.³⁸
- Regionally, parks and recreation departments provide four acres of parkland per 1000 residents,³⁹ nationally that standard rises to 10 acres, and our community does not meet this standard.⁴⁰
- Open spaces are places for making memories for people of all ages, backgrounds, and abilities who rely on parks for their emotional and physical well-being.⁴¹
- Open spaces reduce water pollution, capture storm water, prevent flooding, reduce urban

temperatures and support wildlife and biodiversity, while providing a place for families to connect with nature and explore the outdoors together.⁴²

- In 2020, park visitation doubled in the wake of COVID-19⁴³ when our communities turned to our open spaces for the physical and emotional support that we desperately needed.
- Our open spaces are suffering, having routinely borne the brunt of financial hardship as leaders tend to cut park budgets before other departments.⁴⁴
- The public votes for open spaces 75% of the time,⁴⁵ and Arizona residents continually rank open space as one of the state's "greatest assets"⁴⁶ and what they "love most"⁴⁷ about where they live.

HAVING A CALL TO ACTION

An effective case statement has to have a call for action. At the outset, the first step is not to request a commitment to funding but to initiate a meaningful community dialogue to explore funding options. Securing funds for the future is complex and involves diverse scenarios. It will require leadership and time to change the political will of the leaders and the public.

Jurisdictions may wish to address these challenges through collaboration convened by one or more jurisdictions or a regional authority. Passing a resolution that the region will support and prioritize the evaluation of funding sources could be a first step.

Resolutions from regional authorities and associations of governments usually involve approximately 45 hours of staff time over several months.⁴⁸ It will cost approximately \$4,500 to cover of staff time and benefits at a typical managerial salary.⁴⁹

Future phases of this work could include partnering with the Trust for Public Land, which has ample experience in assisting local governments to design, pass, and implement legislation and ballot measures

that lead to new financial support for parks and land conservation.⁵⁰

Conclusion

Open spaces are tools for community revitalization, community engagement, economic development, improving neighborhood safety, stormwater management, education, public health, arts and cultural programs, tourism, smart growth, and climate change management.⁵¹

Open spaces are our parks; they are not idle vacant lots or distant mountain tops. Our open space assets need our support more than ever.⁵²

Critical grants and other state-level funding sources were eliminated in recent years, development impact fees have been restricted, and pressure from powerful interest groups have swayed local ballot initiatives away from parks.⁵³ And park departments tend to have their budgets cut before any other department during economic recessions.⁵⁴

The good news for all of us, there are abundant opportunities to support our open spaces. The bad news is that our window of opportunity is closing. We need to act quickly and unite around a resolution to address these issues and give our parks a lifeline.

For more information on how to be involved visit www.cazca.org or contact cazca@dbg.org.

APPENDIX: TOOLS FOR OPEN SPACES

Land Exchanges: Private and State Trust Lands can be exchanged for other public lands in cases where they would be better suited for conservation purposes. Though widely supported, Proposition 119 requirements for state trust land exchanges created a time intensive and costly process, used only if both parties have significant interest in the outcome.⁵⁵

Construct Wildlife Crossings: Wildlife corridors or

linkages are sometimes blocked by infrastructure like roads and canals. In these areas, crossings can be constructed that ensure safe passage for wildlife above or below the infrastructure. In addition to local support, there are often federal and state funding sources for wildlife crossings. The Oracle Road wildlife crossings in the Catalina Mountains north of Tucson provides a successful example.⁵⁶

Mitigation: Where human activity harms conservation values, mitigation actions can limit the impact of these projects on ecological, social, and recreational assets. Some examples of mitigation include the Gillespie Solar Energy Zone⁵⁷ and developer in-lieu fees that support the Gila River restoration area.⁵⁸

Planning and Development Policy: Urban planners have several tools to guide development that is consistent with conservation goals including large lot zoning, hillside and riparian overlays, transfer of development rights, and design and development standards and incentives. Municipalities can work closely with large land owners to create a land use strategy that protects essential areas of conservation value. City of Scottsdale used their general plans in concert with high-density rezoning and the State Trust Land Preserve Initiative to make large portions of their Preserve affordable for purchase.⁵⁹

Co-location of amenities: Placing trails and other types of linear infrastructure along washes can help ensure those floodways and wildlife corridors stay continuous. The City of Surprise and the Town of Goodyear both use this method.

Land and Resource Management Strategy: In many cases, ecologically friendly management actions can occur without the need for a significant change in the designation of conservation lands. County and municipal parks can draft and update their management plans appropriately to effectively protect their open space resiliency through carefully designed policies and tracking implementation. Many communities have outstanding plans in this regard though there is room for improvement.

Footnotes

¹Groves, Craig, and Edward T. Game. Conservation planning: informed

decisions for a healthier planet. Roberts Publishers, 2016.

² Sonoran Institute research and interviews with directors of six Central Arizona park departments. Results to be summarized in report to be released Fall 2020.

³ Sieglinde Fuller 2016. Life-Cycle Cost Analysis. Whole Building Design Guide. www.wbdg.org/resources/life-cycle-cost-analysis-lcca

⁴ AZ Data Central. 2018 Arizona government salary database. June 12, 2019. www.azcentral.com/pages/interactives/news/local/arizona-data/arizona-government-salary-database

⁵ The Nature Conservancy. Long-term Stewardship Calculator. 2016. www.conservationgateway.org/ConservationPlanning/ToolsData/Pages/stewardshipcalculator.aspx

⁶ City of Buckeye. Parks and Recreation Master Plan. 2016

⁷ O&M and FTE rates were calculated using the average number of Park Full Time Employees (recreation staff were not included) per acre and the average \$O&M/per acre for West Valley communities as reported in the NRPA Park Metric Database FY2018 (for Maricopa County and Buckeye) and Peoria's FY 2018 Budget. Personnel salaries were calculated using the \$53,000 annual salary, as used in the Buckeye Parks and Recreation Master Plan.

⁸ Central Arizona Conservation Alliance. State of the Parks, Park System Profiles. FY2018. – Data compiled from various sources related to parks in central Arizona.

⁹ Town of Buckeye. Skyline Regional Park Operational Model presentation. July 17, 2019.

¹⁰ McDowell Sonoran Conservancy. White Tank Mountain Regional Park Degraded Lands Mapping Summary and Results, Phase 1. 2020

¹¹ Pima County, Desert Willow Open Space Restoration webcms.pima.gov/cms/One.aspx?portalId=169&pageId=430068

¹² Personal Communication with City of Scottsdale Preserve Staff, 2020

¹³ National Recreation and Parks Association. Premier Membership Package. www.nrpa.org/membership/premier

¹⁴ Confidential interviews with parks and recreation leaders throughout the West Valley, both local government and other regional experts.

¹⁵ Costs to establish a Recreation and Public Purpose lease were estimated by reviewing Maricopa County capital improvement program budgets from FY2006 to FY2021 and identifying expenses related to recreation and public purpose leases. Those expenses were divided by the total acre of developed land included in the lease, and then summed to estimate the total price per acre of leased BLM land. The majority of the expenses are in environmental and archeological studies required in the application, and the design and construction of park infrastructure.

¹⁶ One on One Interviews with several Park and Recreation Department staff, 2019-2020

¹⁷ Costs to acquire private lands were estimated using the price of land per acre, which was calculated by averaging county tax assessor data, quotes and estimates from interviews and confidential appraisals. The price for planning, design and construction were estimated using publicly available capital improvement program budgets from FY 2006 to FY2021.

¹⁸ MAG Population Projections to 2030. Maricopa Association of Governments. Scott Wilken, Regional Planner III. Data based on 2013 Socioeconomic Projections.

¹⁹ City of Buckeye. Parks and Recreation Master Plan. 2016

²⁰ Tucson Unified School District school bus invoices from FY2017

²¹ Interview with Friends of the Santa Cruz River, Corridor Keepers

²² Personal communication with staff at McDowell Sonoran Conservancy.

²³ Pima County Parks and Natural Resources. Living River of Words webcms.pima.gov/cms/one.aspx?portalId=169&pageId=32772

²⁴ Mallach, Alan. The Vacant House Next Door. Lincoln Institute of Land Policy. 2018. <https://www.lincolninst.edu/sites/default/files/pubfiles/empty-house-next-door-full.pdf>

²⁵ Trust for Public Land. ParkServe. www.tpl.org/parkserve

- ²⁶ Central Arizona Conservation Alliance. Greenprint. web.tplgis.org/cazca_plan
- ²⁷ Interview with Buckeye staff
- ²⁸ Interview with Maricopa County Staff
- ²⁹ Inger Erickson. Phoenix Parks opportunities flourish with initiative money. Arizona Central. February 29, 2016. www.azcentral.com/story/news/local/phoenix/contributor/2016/02/24/phoenix-parks-opportunities-flourish-initiative-money/80794720
- ³⁰ These development trend and considerations can be supported through local planning zoning, development code and plans. Some popular examples include hillslope overlay zones, setbacks, and co-locating trails with floodways.
- ³¹ Interview with Peoria staff
- ³² AZ Central. Peoria purchases Sunrise Mountain speeches. 2018. www.youtube.com/watch?v=qLaz0Jz6gBc
- ³³ Town of Fountain Hills trailhead dedication speeches. 2018. www.youtube.com/watch?v=qLaz0Jz6gBc&feature=youtu.be
- ³⁴ Bill Myers. My Opinion. Fountain Hills Times. February 28, 2018. fhcoalition.org/wp-content/uploads/2018/09/TAT-in-Our-Viewpoint.pdf
- ³⁵ Sonoran Institute. Growing Water Smart Workshop Curriculum. 2020. www.growingwatersmart.org
- ³⁶ Maricopa County Parks and Recreation. 2019. Maricopa County Parks and Recreation System Report: Economic Impact of the Maricopa County Parks and Recreation System. <https://www.maricopacountyparks.net/about-us/department-studies/>
- ³⁷ Manzo, Lynne C., and Patrick Devine-Wright, eds. Place attachment: Advances in theory, methods and applications. Routledge, 2013.
- ³⁸ Rico, Gabriela. Tucson-area homebuilders hustling to keep up with demand during COVID-19 pandemic. 2020. https://www.tucson.com/business/tucson-area-homebuilders-hustling-to-keep-up-with-demand-during-covid-19-pandemic/article_73b951ec-e912-520b-9d80-37df59b28fb4.html
- ³⁹ Carlisle, M. A lot of parks, not a lot of funding. Your Valley - Daily Independent. June 15, 2020. <https://www.yourvalley.net/stories/a-lot-of-parks-not-a-lot-of-funding,165217>
- ⁴⁰ National Recreation and Parks Association. Park Performance Metrics Report. 2019
- ⁴¹ Centers for Disease Control and Prevention. Strategies to Prevent Obesity and Other Chronic Diseases: The CDC Guide to Strategies to Increase Physical Activity in the Community. Atlanta: U.S. Department of Health and Human Services; 2011. www.cdc.gov/obesity/downloads/PA_2011_WEB.pdf
- ⁴² American Planning Association. 2003. How Cities Use Parks series of briefing papers. American Planning Association. www.planning.org/cityparks
- ⁴³ City of Phoenix Parks Department Trail Camera Data, raw data shared via personal email, analyzed by Sonoran Institute.
- ⁴⁴ Sklar, Stephanie, Ken Schutz, Aireona Raschke. We're using Arizona parks more than ever, without the revenue to keep them open. Arizona Daily Star. August 13, 2020. www.azcentral.com/story/opinion/op-ed/2020/08/13/local-parks-trails-relying-less-tax-dollars-they-need-our-help/3340797001
- ⁴⁵ Trust for Public Land. Voters approve billions for local parks and natural areas. November 10, 2016. Accessed on July 2020 www.tpl.org/media-room/voters-approve-billions-local-parks-and-natural-areas
- ⁴⁶ Center for the Future of Arizona. 2013. The Arizona We Want. Phoenix, AZ: Center for the Future of Arizona. Print.
- ⁴⁷ Bednarek, Joshua. 2017. PlanPHX Interim Report and Community Update. Phoenix, Arizona: City of Phoenix Planning and Development Department. PDF. www.phoenix.gov/pddsites/Documents/planphx_present_131206.pdf
- ⁴⁸ Interview with Pima Association of Governments
- ⁴⁹ AZ Data Central. 2018 Arizona government salary database. June 12, 2019. www.azcentral.com/pages/interactives/news/local/arizona-data/arizona-government-salary-database
- ⁵⁰ Trust for Public Land. Conservation Finance. <https://www.tpl.org/how-we-work/fund>
- ⁵¹ Levitz, Dana. 2014. The Role of Parks in Shaping Successful Cities. American Planning Association. www.planning.org/publications/document/9148662
- ⁵² Arizona Forward, Why Parks and Open Space Matter: The economics of Arizona's natural assets, 2011 page, azheritage.org/wp-content/uploads/2011/09/PARKS-OPEN-SPACE-PRIMER-FINAL.pdf
- ⁵³ City of Buckeye. Parks and Recreation Master Plan. 2016
- ⁵⁴ National Recreation and Park Association, 2017, Local Government Officials' Perceptions of Parks and Recreation. www.nrpa.org/
- ⁵⁵ Arizona's General Election Guide. Proposition 119. 2012. apps.azsos.gov/election/2012/info/PubPamphlet/english/Prop119.htm
- ⁵⁶ Coalition for Sonoran Desert Protection. Oracle Road Wildlife Crossings. www.sonorandesert.org/learning-more/wildlife-linkages-2/oracle-road-wildlife-crossings-2
- ⁵⁷ Bureau of Land Management. Regional Mitigation Strategy for the Arizona Solar energy Zones. March 2016. blmsolar.anl.gov/documents/docs/Final_AZ_SRMS_Mar_2016.pdf
- ⁵⁸ Angela Stingelin, Shawn Lowery, Justin Ladd, and Charles Hofer.. Arizona Game and Fish Department In-Lieu Fee Compensatory Mitigation Program: Arlington Wildlife Area In-Lieu Fee Mitigation Project. riversedgewest.org/resource-center/documents/arizona-game-and-fish-department-lieu-fee-compensatory-mitigation-program
- ⁵⁹ City of Scottsdale. City Council Report. September 23, 2014.

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