

making space:

AN EQUITY STUDY FOR PARKS AND
RECREATION

Level of Service Analysis Report



July, 2023

Prepared by: **DESIGNWORKSHOP**

LEVEL OF SERVICE ANALYSIS REPORT

Introduction

Public agencies use Level of Service (LOS) standards to measure, plan and monitor the quality of parks and recreation service. There are no nationally accepted standards for determining ideal levels of service for parks, indoor recreation centers, athletic fields, trails, and other recreation facilities. The National Recreation and Park Association (NRPA) encourages communities to develop their own LOS standards rather than rely on any universal or national standards.

Level of service (LOS) metrics can help identify if there is a deficiency or inequality in park space allocation by considering the population served within every defined area. The level of service analysis can be used as a tool to ensure that future park space provision is located in neighborhoods with fewer park resources to limit pressures on the current park system and more equitably meet community needs. This can help the city in setting long-term goals to meet the projected population growth within its limits.

Recommended Methods Summary

Most parks and recreation organizations use multiple metrics to determine needs because each metric is not sufficient to evaluate quality of service by itself. Design Workshop recommends utilizing two metrics - acres per capita and park and recreation distribution with walking access evaluations. These two metrics are relatively common for long-range planning of recreation facility and park space provision to determine gaps. Park assessments, conditional ratings, public input regarding needs and desires, visitation rates, and equity analysis also inform an assessment of overall quality. See the Equity Analysis Report, including chapter three, for more information regarding park space distribution and access. Those additional factors should also be considered for how they might become metrics for ongoing measurement of quality of service.

These two metrics help answer the following questions:

- 1. Park Acres and Facilities Per Capita:** How much park space is available to the population? How might that ratio change over time with anticipated population growth? How many recreation facilities are provided per population? How does this metric apply to differing built environment conditions and potentials for park expansion?

City of Tempe Total Park Acres Per 1,000 Population (2021) = 7.17

- 2. Park and Recreation Facility Distribution for Access:** are the parks and recreation facilities distributed to locations that provide access within a 10-minute walk (1/2 mile distance).

Households located within a 1/2 mile walkshed of City of Tempe Parks and Recreation Spaces = 70%

* See Equity Analysis Report Chapter 3 for walkshed and accessibility analysis and findings.

Methodology

Tempe's Parks and Recreation Master Plan notes that in 2020 the City provided almost 79 acres of public park per 10,000 people. While this number is useful to understand how the City rates in park acre provision compared to other comparable cities, the 2023 Equity Study provides a recommendation of utilizing a similar metric to compare park acres per geographic areas of the city. This can then be used to establish LOS goals that better fit with the differing built environment conditions and potentials for park space provision.

The Park Acres Per Capita Level of Service Analysis for the Tempe Parks and Recreation Equity Study was performed at the Character Area level to compare park space distribution relative to population density. The two variables used in the level of service calculation are population estimates and park acreage, both aggregated to one of Tempe's seven Character Areas. The population estimates are based on the 2021 American Community Survey

(ACS), 5-year survey, using the block group geography.¹ The park acreage is derived from the 2021 publicly accessible city park space boundaries and grouped by Character Area, then separated by classification.² To determine the level of service, the total park acreage per classification is divided by the total population in the Character Area and multiplied by 1,000. The level of service calculation is performed for each park classification to get a more detailed understanding of the diversity of park provision (Table 2).

Table 1 summarizes level of service analysis per Character Area and presents the total number of parks, publicly accessible acres across all park classifications, the total population within every Character Area and the resulting ratio of park acres per 1,000 people. The Character Areas are ordered from most to least populated based on the census data. The column on the left lists the Character Area number as referenced on the City of Tempe webpage.³

Table 1 Parks and Acreage per Population per Character Area

Character Area Number	Character Area Name	Number of Properties (2021)	Publicly Accessible Property Acres	Total Population (2021)	Acres / 1,000 Population (2021)
5	Alameda	12	57.71	37,810	1.53
3	DT Tempe/ Rio Salado / ASU/NW Neighborhoods	14	483.42	36,556	13.22
6	Southwest Tempe	4	92.73	27,329	3.39
7	Kiwanis/The Lakes	12	319.32	25,999	6.37
8	Corona/South Tempe	7	66.55	18,351	3.63
4	Apache	6	23.76	17,162	1.38
1	Papago/North Tempe	8	340.00	10,145	33.52
2	Double Butte/ Northwest Tempe	3	69.00	7,855	8.83
	City of Tempe Total	65	1299.17	181,207	7.17

* Note: City properties include school shared use recreation fields, natural areas, special use parks, recreation/community centers, and regional, community, neighborhood, and urban parks. Excludes city golf courses.

¹ Block group boundaries were used rather than census tracts to minimize overlap between multiple Character Areas. The population totals for block groups that overlap two different Character Areas were counted just once, and aggregated to the Character Area that has the largest overlapping area.

² See Appendix A for the detailed breakdown of the LOS calculations by Character Area.

³ [Character Areas | City of Tempe, AZ](#)

LEVEL OF SERVICE ANALYSIS REPORT

Analysis

According to NRPA’s most recent agency performance review, the benchmark for park and recreation agencies for cities of 100,000 to 250,000 residents is to offer one park per 3,240 residents⁴ and 8.9 acres of park space per 1,000 residents. The City of Tempe is close to meeting the NRPA standard, currently offering one park per 2,788 residents and a total of 7.17 acres of park space per 1,000 residents. There is significant variation amongst the Character Areas with the LOS ratios ranging from 33.52 acres per 1,000 residents in Papago/North Tempe to 1.38 acres per 1,000 residents in Apache. The following takeaways capture salient findings:

- Papago/North Tempe has the highest LOS ratio at 33.52, due to it being the second to least populated Character Area and having 311 acres of natural areas, two community parks, and a multi-generational center.
- The DT Tempe/Rio Salado/ASU/NW Neighborhoods is the second most populated Character Area with the highest number of parks and total park acreage. It is important to note that the level of service analysis does not factor in park accessibility, and the ratio does not reflect the distance between residential addresses and park spaces.⁵ This is important for the Rio Salado/DT/ASU/ NW Neighborhoods Character Area as it includes around 325 acres of Rio Salado Park, capturing park spaces north of Tempe Town Lake which are not easily accessible by residents on the southern end of the Character Area. If the level of service analysis were to remove the Rio

Salado Park from the Character Area, the level of service would be 4.34. If the boundary were to move south of Tempe Town Lake to account for access to this park more accurately, the Rio Salado Park would be captured in the Papago / North Tempe Character Area, bringing that level of service estimate to 74.94.

- Double Butte/ Northwest Tempe has an average overall LOS score of 8.83. However, around 59 acres out of 69 total park acres are classified as special use for the stadium. Without the Stadium Complex, the LOS for Diablo/Double Butte would decrease from 8.83 to 1.32 acres per 1,000 residents.
- Kiwanis/The Lakes has an average LOS score of 6.37 park acres per 1,000 residents, featuring 38 acres of neighborhood parks and the Kiwanis Regional Park which is around 127 acres.
- Apache has the lowest scoring LOS with less than 1.38 acres of park space per 1,000 residents. It has six parks, but all are smaller in size (all less than 10 acres and an average size of less than 4 acres). This is the most densely populated area of the city with limited potential for acquiring large properties for parks. Strategies should aim to invest in existing smaller parks in ways that facilitate greater levels of use even with limited space and seeking opportunities to use non-conventional public park space. This area should be prioritized in future park and programming investments.

Analysis

- Southwest Tempe has a LOS of 3.39 acres per 1,000 residents, which is a relatively low ratio. However, Southwest Tempe features two sports complexes covering around 80 acres; these include athletic and recreational facilities that support a high intensity of use. The only other types of parks are two neighborhood parks. Therefore, while residents may not have access to ample park space, the available fields and recreational infrastructure could be sufficient in meeting the community’s needs.
- Corona/South similarly scores low with an LOS ratio of 3.63 acres per 1,000 residents. However, the LOS ratio does not distinguish between types of residential development. While Corona/ South Tempe has a low ratio, the majority of residences in that area are single-family units that likely have access to private open spaces and larger private yards. With seven parks and an average size of

10 acres, there is a fair number of parks per population.

- Different classifications, such as neighborhood parks and natural areas, require different understandings about the number of people that establish carrying capacity or over/under use. Below, Table 2 and Appendix A, provide a breakdown of the property/park types. For example, Papago/North Tempe features around 311 acres of natural areas, including the Papago Preserve, which, although providing more park acreage, supports limited uses in comparison to a neighborhood park. It is helpful to pair access to natural areas with more traditional park uses and consider how all residents have access to experiences in nature. This area is fortunate to have two community parks, making it the Character Area with the highest level of service and with access to a diversity of park types.

Table 2 City of Tempe Parks and Acreage per Population by Park Classification- Population Projections

Parks	Number of Properties (2021)	Publicly Accessible Property Acres	Acres / 1,000 Population 2021 Population 181,207	Acres / 1,000 Population 2030 Projected Population 217,100	Acres / 1,000 Population 2040 Projected Population 247,000	Acres Needed to Meet Current LOS in 2030	Acres Needed to Meet Current LOS in 2040
Neighborhood Park	23	102.45	0.57	0.47	0.41	20	37
Community Park	14	147.81	0.82	0.68	0.60	29	54
Urban	3	5.13	0.03	0.02	0.02	1	2
Regional Park	7	521.46	2.88	2.40	2.11	103	189
SURF	6	19.25	0.11	0.09	0.08	4	7
Special Use	5	144.05	0.79	0.66	0.58	29	52
Natural Area	5	353.49	1.95	1.63	1.43	70	128
Other	2	5.61	0.03	0.03	0.02	1	2
Total	65	1299.25	7.17	5.98	5.26	257	472

⁴ 2023 NRPA Agency Performance Review [2023-agency-performance-review.pdf \(nrpa.org\)](#)
⁵ The Accessibility Analysis and Walkshed evaluation conducted as part of the Parks & Recreation Equity Study can be referenced to understand the distance between residential addresses and publicly accessible park.

LEVEL OF SERVICE ANALYSIS REPORT

Findings

Table 3 compares the Level of Service ratio for every Character Area with the average LOS for the City of Tempe. The results show that DT Tempe/ Rio Salado /ASU/NW Neighborhoods, Papago/North Tempe, and Double Butte/ Northwest Tempe exceed Tempe's average LOS. Kiwanis/The Lakes comes close to meeting the average. The remaining Character Areas will need more dedicated efforts to address their park and recreation needs moving forward, as the areas fall short of meeting Tempe's LOS average. As demonstrated in the analysis, the Level of Service ratio can be skewed significantly due to several factors including the area boundaries adopted, types of residential developments, park classifications, uses, and existing park or recreational opportunities.

Therefore, the Level of Service ratio per Character Area cannot be considered an absolute standard, but rather a guide for improving park and recreation provision per area. It is nevertheless useful as a general metric to guide future park space allocation and curb overcrowding. This

study recommends using the LOS analysis in tandem with the analyses conducted for the Parks & Recreation Equity Study and the Parks and Recreation Master Plan to make informed decisions that adequately serve the residents within every Character Area.

Recommendations

Every Character Area has different conditions of existing provision of parks, needs, and opportunities to expand parks and recreation provision. Therefore, it is recommended to establish different tailored goals for LOS park acres per population for each Character Area. The City of Tempe staff informed by the baseline existing conditions, Equity Study and Master Plan identified needs, anticipate areas of population growth, and understanding of opportunities/potentials can establish LOS goals for park acres per 1,000 population per Character Area. Based on the goals determined for every area, different strategies can be adopted in order to expand the available park space per population or facilitate greater levels of use when space is limited.

Table 3 Parks and Acreage per Population per Character Area Relative to Tempe's Average

Character Area Number	Character Area Name	Number of Properties (2021)	Acres / 1,000 Population (2021)	Acres needed to meet Tempe's Park Acres / 1,000 Population (2021)
5	Alameda	12	1.53	5.64
3	DT Tempe/ Rio Salado/ ASU/NW Neighborhoods	14	13.22	0.00
6	Southwest Tempe	4	3.39	3.78
7	Kiwanis/The Lakes	12	6.37	0.80
8	Corona/South Tempe	7	3.63	3.54
4	Apache	6	1.38	5.79
1	Papago/North Tempe	8	33.52	0.00
2	Double Butte/ Northwest Tempe	3	8.83	0.00
	City of Tempe Total	65	7.17	0.00

Appendix A : Inventory of City parks and recreation properties per Character Areas

Table 4 Alameda (Total Population: 37,810)

Parks	Number of Properties	Publicly Accessible Property Acres	Acres / 1,000 Population 2021
Neighborhood Park	5	23.66	0.63
Community Park	3	18.20	0.48
Urban	0	0.00	0.00
Regional Park	0	0.00	0.00
SURF	3	13.60	0.36
Special Use	0	0.00	0.00
Natural Area	0	0.00	0.00
Other	1	2.25	0.06
Total	12	58	1.53

Table 5 DT Tempe/Rio Salado/ASU/NW Neighborhoods (Total Population: 36,556)

Parks	Number of Properties	Publicly Accessible Property Acres	Acres / 1,000 Population 2021
Neighborhood Park	1	0.00	0.00
Community Park	4	42.56	1.16
Urban	2	1.92	0.05
Regional Park	5	394.88	10.80
SURF	1	1.77	0.05
Special Use	0	0.00	0.00
Natural Area	1	42.29	1.16
Other	0	0.00	0.00
Total	14	483	13.22

Table 6 Southwest Tempe (Total Population: 27,329)

Parks	Number of Properties	Publicly Accessible Property Acres	Acres / 1,000 Population 2021
Neighborhood Park	2	12.24	0.45
Community Park	0	0.00	0.00
Urban	0	0.00	0.00
Regional Park	0	0.00	0.00
SURF	0	0.00	0.00
Special Use	2	80.49	2.95
Natural Area	0	0.00	0.00
Other	0	0.00	0.00
Total	4	93	3.39

LEVEL OF SERVICE ANALYSIS REPORT

Appendix A : Inventory of City parks and recreation properties per Character Areas

Table 7 Kiwanis/The Lakes (Total Population: 25,999)

Parks	Number of Properties	Publicly Accessible Property Acres	Acres / 1,000 Population 2021
Neighborhood Park	8	37.73	1.45
Community Park	0	0.00	0.00
Urban	0	0.00	0.00
Regional Park	2	126.58	4.87
SURF	1	1.40	0.05
Special Use	0	0.00	0.00
Natural Area	0	0.00	0.00
Other	0	0.00	0.00
Total	11	166	6.37

Table 8 Corona/ South Tempe (Total Population: 18,351)

Parks	Number of Properties	Publicly Accessible Property Acres	Acres / 1,000 Population 2021
Neighborhood Park	4	15.26	0.83
Community Park	2	48.81	2.66
Urban	0	0.00	0.00
Regional Park	0	0.00	0.00
SURF	1	2.48	0.14
Special Use	0	0.00	0.00
Natural Area	0	0.00	0.00
Other	0	0.00	0.00
Total	7	67	3.63

Table 9 Apache (Total Population: 17,162)

Parks	Number of Properties	Publicly Accessible Property Acres	Acres / 1,000 Population 2021
Neighborhood Park	1	3.17	0.18
Community Park	3	17.27	1.01
Urban	1	3.21	0.19
Regional Park	0	0.00	0.00
SURF	0	0.00	0.00
Special Use	1	0.11	0.01
Natural Area	0	0.00	0.00
Other	0	0.00	0.00
Total	6	24	1.38

Appendix A : Inventory of City parks and recreation properties per Character Areas

Table 10 Papago/North Tempe (Total Population: 10,145)

Parks	Number of Properties	Publicly Accessible Property Acres	Acres / 1,000 Population 2021
Neighborhood Park	0	0.00	0.00
Community Park	2	20.97	2.07
Urban	0	0.00	0.00
Regional Park	0	0.00	0.00
SURF	0	0.00	0.00
Special Use	1	4.51	0.44
Natural Area	4	311.20	30.68
Other	1	3.36	0.33
Total	8	340	33.52

Table 11 Double Butte/ Northwest Tempe

Parks	Number of Properties	Publicly Accessible Property Acres	Acres / 1,000 Population 2021
Neighborhood Park	2	10.39	1.32
Community Park	0	0.00	0.00
Urban	0	0.00	0.00
Regional Park	0	0.00	0.00
SURF	0	0.00	0.00
Special Use	1	58.94	7.50
Natural Area	0	0.00	0.00
Other	0	0.00	0.00
Total	3	69	8.83