

General Maintenance and Management Plan

Summary of Findings



January 16, 2023

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Note: The General Maintenance and Management Plan includes two documents: the Summary of Findings and Annual Work Plan Template. The Summary of Findings includes an executive summary and recommendations, as well as a series of appendices. The Annual Work Plan Template is currently being used by Parks Superintendent Abby McNeal to develop an approach to tracking tasks and functions of Parks. The Annual Work Plan Template also includes as appendices a series of tools to assist in the inventory of all assets and in monitoring targeted levels of service for each asset.

Executive Summary and Key Recommendations

The City of Louisville parks system is continually cited by local residents as one of the most cherished assets of the city. The system includes a complex range of amenities available to Louisville residents, including over 300 acres of dedicated park land, playgrounds, athletic fields, recreation amenities including an outdoor swimming pool and splash pad, the cemetery, the 18-hole municipal golf course, and civic facilities. Each of these amenities contributes to the quality of life of Louisville residents. The City of Louisville initiated the 2022 General Maintenance and Management Plan to ensure that Parks assets are thoughtfully maintained and managed, and that funding allocations and annual budgets meet the needs of the department.

Guiding each decision is the City of Louisville Vision Statement:

Established in 1878, the City of Louisville is an inclusive, family-friendly community that manages its continued growth by blending a forward-thinking outlook with a small-town atmosphere which engages its citizenry and provides a walkable community form that enables social interaction. The City strives to preserve and enhance the high quality of life it offers to those who live, work, and spend time in the community. Louisville retains connections to the City's modest mining and agricultural beginnings while continuing to transform into one of the most livable, innovative, and economically diverse communities in the United States. The structure and operation of the City will ensure an open and responsive government which integrates regional cooperation and citizen volunteerism with a broad range of high-quality and cost-effective services.

The City has adopted the following **Core Community Values** that serve as the foundation for all decisions and actions, including the maintenance and management of the City's park system:

A Sense of Community . . . where residents, property owners, business owners, and visitors feel a connection to Louisville and to each other, and where the City's character, physical form and accessible government contribute to a citizenry that is actively involved in the decision-making process to meet their individual and collective needs.

Our Livable Small Town Feel . . . where the City's size, scale, and land-use mixture, and the government's high-quality customer service encourage personal and commercial interactions.

A Healthy, Vibrant, and Sustainable Economy . . . where the City understands and appreciates the trust our residents, property owners, and business owners place in it when they invest in Louisville, and where the City is committed to a strong and

supportive business climate, which fosters a healthy and vibrant local and regional economy for today and for the future.

A Connection to the City's Heritage . . . where the City recognizes, values, and encourages the promotion and preservation of our history and cultural heritage, particularly our mining and agricultural past.

Sustainable Practices for the Economy, Community, and the Environment . . . where we challenge our government, residents, property owners, and our business owners to be innovative with sustainable practices so the needs of today are met without compromising the needs of future generations.

Unique Commercial Areas and Distinctive Neighborhoods . . . where the City is committed to recognizing the diversity of Louisville's commercial areas and neighborhoods by establishing customized policies and tools to ensure that each maintains its individual character, economic vitality, and livable structure.

A Balanced Transportation System . . . where the City desires to make motorists, transit customers, bicyclists, and pedestrians of all ages and abilities partners in mobility, and where the City intends to create and maintain a multimodal transportation system to ensure that each user can move in ways that contribute to the economic prosperity, public health, and exceptional quality of life in the City.

Families and Individuals . . . where the City accommodates the needs of all individuals in all stages of life through our parks, trails, and roadway design, our City services, and City regulations to ensure they provide an environment which accommodates individual mobility needs, quality of life goals, and housing options.

Integrated Open Space and Trail Networks . . . where the City appreciates, manages, and preserves the natural environment for community benefit, including its ecological diversity, its outstanding views, clear-cut boundaries, and the interconnected, integrated trail network which makes all parts of the City accessible.

Safe Neighborhoods . . . where the City ensures our policies and actions maintain safe, thriving, and livable neighborhoods so residents of all ages experience a strong sense of community and personal security.

Ecological Diversity . . . where the City, through its management of parks and open space and its development and landscape regulations, promotes biodiversity by ensuring a healthy and resilient natural environment, robust plant life, and diverse habitats.

Excellence in Education and Lifelong Learning . . . where the City allocates the appropriate resources to our library services and cultural assets and where the City actively participates with our regional partners to foster the region's educational excellence and create a culture of lifelong learning within the City and Boulder County.

Civic Participation and Volunteerism . . . where the City engages, empowers, and encourages its citizens to think creatively, to volunteer, and to participate in community discussions and decisions through open dialogue, respectful discussions, and responsive action.

Open, Efficient, and Fiscally Responsible Government . . . where the City government is approachable, transparent, and ethical, and our management of fiscal resources is accountable, trustworthy, and prudent.

The City of Louisville parks system includes several components that are unique to Louisville and not features or assets that are traditionally maintained by parks departments. The following items summarize several unique attributes that have a direct impact on departmental budgets and staffing needs:

- Parks is responsible for the day-to-day maintenance of grounds adjacent to civic facilities, including irrigation systems, turf lawns, and ornamental planting beds.
- Parks assumes responsibility for the day-to-day maintenance of sections of public right-of-way, including medians, which are labor intensive and require significant traffic control measures to ensure the safety and well-being of maintenance staff.
- Parks assumes responsibility for the day-to-day maintenance of entry features, open lands, and passive-use areas that are typically maintained by individual Homeowners Associations (HOAs).
- Parks assumes responsibility for the day-to-day operations of the City of Louisville cemetery. Parks maintenance staff is responsible for burials, for the clean-up of debris/food left after family gatherings, and for maintenance of items that the bereaved have installed at individual grave sites such as benches, paving, trees, etc. Currently, there are regulations regarding permissible and non-permissible items and improvements; however, there are several items in the cemetery that were installed prior to the adoption of current regulations, which require additional time and maintenance. Over 50% of the rows in the cemetery contain obstacles that prevent use of standard mowers and require more involved, detail-oriented care. The cemetery also contains an abundance of mature trees that require ongoing maintenance by the arborist and, if not regularly maintained, also impede mowing regimens.
- Parks maintenance staff is responsible for the day-to-day maintenance of the irrigation system, planting beds, and all trees at the Coal Creek Golf Course.
- The City has made the Forester available to residents and property owners for consultations of trees located on private property. This is not typically a service that local municipalities provide and is deemed the responsibility of the homeowner/property owner to hire an arborist for private consultations.
- There is significant pressure from residents to initiate and incorporate sustainability into parks operations and maintenance. Parks supports the sustainability initiatives. A few of the programs such as composting, dog waste composting, pollinator gardens, and integrated pest/weed management are labor intensive to fully implement. While these items are often integrated into urban/suburban parks and infrastructure systems, each new program requires a unique maintenance and management regime that impacts maintenance and operations budgets. The City has been open to expanding services based on requests from residents, but it should be noted that these programs are often offshoots of services typically provided by municipalities with significantly larger populations and resources.

Recognizing that the integrity of the City’s parks system relies on the ability of the City to manage and maintain each component of this cherished system, the City embarked on the development of the General Maintenance and Management Plan to identify strategies and tools to identify assets and maintenance needs of each asset. The General Maintenance and Management Plan is organized into three deliverables:

1. **Summary of Findings:** Includes an overview of initial research, including staff interviews that were used to inform the targeted Levels of Service in response to expectations of City residents and elected/appointed officials.
2. **Annual Work Plan:** Includes specific steps and tasks necessary to inventory and manage existing assets and maintenance tasks.
3. **Appendices:** Supporting documentation, including interim tools, to document and expand the City’s inventory in preparation for the transition to utilizing management software.

The General Maintenance and Management Plan will assist Parks in tracking specific assets and the maintenance required to care for those assets in preparation for annual budget requests and capital improvement plans.

Overall Assessment of Park Maintenance Operations

The goal of this project is to improve maintenance planning and operations and guide Parks toward higher performance. To achieve that, the consultant team performed a review of maintenance planning processes and Parks operations. The result of data and document reviews, interviews, and analyses indicate that there is a consistent approach to park operation and maintenance within Parks, but the process is not formal or documented. Overall, Parks maintenance organization is functioning at a maturity level between “Initial/Ad Hoc” (Level 1) where processes are minimally controlled and mostly reactive and “Repeatable (Level 2),” where processes are generally understood but not always documented. Some areas are functioning at a higher level, such as snow removal, where there is a strong emphasis on providing access to the park assets during inclement weather. In addition, the sense of teamwork and pride in making the City a better place to work and live was evident. Amongst department leadership, there is a strong recognition of the need and a desire to think strategically about park maintenance.

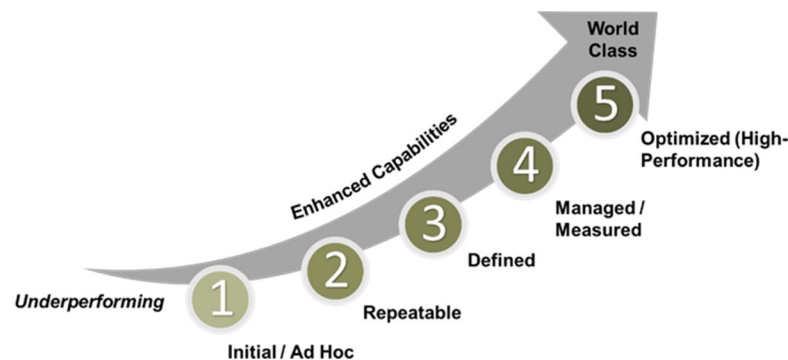


Figure 1. Capability Maturity Model Levels

Parks maintenance organization currently has 23.5 FTEs that have primary responsibility for grounds maintenance. Parks is supplemented by contractors, but the FTE equivalent of the contractors is not able to be determined using current contract data. As shown in Table 1, a comparison of the APPA (Association of Physical Plant Administrators, now more commonly referred to as Leadership in Educational Facilities) maintenance staffing benchmarks indicates that with current in-house staffing, it would be feasible for Parks to consistently deliver grounds maintenance services between APPA.

level 4 (Moderately Low-level) and level 3 (Moderate level) across its roughly 356-acre portfolio. With additional data to evaluate the outsourcing influence on the staffing levels, the level of service could be closer to APPA level 2 (High-level). Using this benchmark as guideposts, a strategic staffing plan and measurement and monitoring of outcomes can make future staffing adjustments to staffing levels more consistent, defensible, and directly linked to service level and stakeholder needs. For more discussion of APPA and the levels of service, refer to the benchmarking section later in this report.

	State-of-the-Art Maintenance Level 1	High-Level Maintenance Level 2	Moderate Level Maintenance Level 3	Moderately Low-Level Level 4	Minimum-Level Maintenance Level 5
Total Recommended Grounds FTEs	62	40	29	14	7
Square Feet per Grounds FTE	250,914	387,899	538,656	1,078,899	2,095,486
Acres per Grounds FTE	5.76	8.90	12.37	24.77	48.11

Table 1. APPA's service level model for maintenance staffing

In addition, the consultant team reviewed Parks data against National Recreation and Parks Association (NRPA) 2022 benchmarks, as shown in Figure 2. Using the NRPA benchmarking data, Parks is in line with their peers on staffing levels based on population. However, Parks maintains significantly more acreage of parkland than its peers that reported data to NRPA, which must be taken into account when considering staffing levels. Another notable item from the NRPA benchmarks is that the City provides more park acreage per resident than its peers and has a smaller residents per park and playground ratio.



Figure 2. City of Louisville Comparison to NRPA Benchmarks

Based on our assessment of Parks maintenance functions as they are currently configured, a priority recommendation of this report is the development of a maintenance program that includes strategic planning, process improvement, and continual measurement and monitoring. Alignment to a standard, such as the NRPA's Commission for Accreditation of Park and Recreation Agencies (CAPRA) standard, will enable Parks to build a program that is rooted in strategic alignment, repeatable and defensible processes, and a focus on continual improvement. The CAPRA standard provides an authoritative assessment tool for park and recreation agencies to demonstrate they have the operational capacity to deliver programs, facilities, and services at a high level of quality. Using the CAPRA standard as a guiding framework enables the City to build and sustain the long-term change Parks is seeking.

Further, a structured maintenance program that includes maintenance and capital planning functions facilitates several positive outcomes:

- Reduction in life cycle cost
- Reduced risk of failure of critical systems
- Increased customer satisfaction, both internal and external
- Improved asset reliability and performance
- More effective preventative and corrective maintenance programs
- Decrease in emergency repairs, outages, and response requirements

The advantages of a well-documented maintenance function will be alignment of Parks Department maintenance function with the City's strategic objectives, more streamlined operations, consistent application of maintenance practices to optimize asset life cycle, effective use of in-house and outsourced resources, a work and career development environment for Parks employees, and long-term reduction in the cost of the maintenance and capital renewal.

Key Findings and Recommendations: The primary objective of the General Maintenance and Management Plan is to provide guidance and feedback to both management and staff involved in the daily maintenance of parks and Parks assets. The plan includes detailed inventory data and analysis to better understand the costs associated with specific tasks and identifies targeted Levels of Service that identifies specific maintenance regiments for each asset. The following recommendations identify specific areas of concern that would improve efficiency and allow for more accurate cost assessments related to maintenance and management.

1. Implement and document consistent maintenance processes, levels of service, and customer expectations.
2. Develop a preventative maintenance plan and a documented inspection process.
3. Adopt Lucity software to manage maintenance workflow.
4. Implement a staffing plan consistent with the benchmarking data. This plan should include a more detailed labor needs analysis to determine specific staff types and ratios based on the desired levels of service.
5. Develop a system to document and track actual staff task time. Use this data to inform an Annual Work Plan for routine maintenance and contingency plans for corrective maintenance.
6. Complete inventory of assets, refine accuracy of data, and add the data to Lucity.
7. Conduct Parks-specific resilience planning that includes security, emergency preparedness, and continuity of operations.
8. Implement a performance management system with consistent asset facilities-related key performance indicators (KPIs) that accurately measure the effectiveness of asset maintenance.

Scope of Work

The process for the development of the General Maintenance and Management Plan for Parks consisted of the following tasks:

- A. **Review of Organization Data:** Extensive data was provided to the consultant team by the City, which included the following information:
 - 1. City of Louisville Values, PROST Goals, Key Performance Indicators
 - 2. City Council Input: Survey
 - 3. Management and Parks staff interviews
 - 4. Inventory of Parks assets
 - 5. Financial Information: Parks budgets
 - 6. Operational Information: Organization chart, outsourcing

- B. **Analysis of Data:** Parks and their levels of service and operations were evaluated and assessed using available data. The analysis focused on existing levels of service, staffing, city council and community expectations, current management practices and organizational structure as well as internal communication and task distribution methodology. Additionally, there are other factors both quantifiable and qualitative that informed the analysis:
 - 1. City Values and Expectations
 - 2. Levels of Staff: Full Time and Seasonal
 - 3. Operations: Task Distribution, Communication, and Prioritization
 - 4. Outsourced Contracts: Frequency of Services and Term of Contract
 - 5. Maintenance Standards
 - 6. Costs: Staffing, Equipment (Fleet and Facilities were excluded from the analysis)

The development of Parks General Maintenance and Management Plan included several tasks as identified in the contracted Scope of Services, including:

Internal Surveys and Staff Interviews

In conjunction with City staff, the consultant team prepared and distributed a survey to City Council and the Parks & Public Landscaping Advisory Board (PPLAB) to gauge understanding of parks maintenance roles, responsibilities, and satisfaction with current maintenance levels of service and activities. The consultant team also facilitated a series of staff interviews to ascertain current understanding of roles, responsibilities, communication procedures, efficiencies/inefficiencies, and day-to-day decision making.

Staffing Assessment

Using NRPA benchmarks, the team reviewed staffing levels to understand staffing as a percentage of the overall operational budget and to identify potential gaps based on desired Level of Service.

Asset Inventory

Data assembly is a critical component to understanding the extent of existing asset inventory information, including the number of parks, playgrounds, recreation amenities, rights-of-way, medians, etc. A detailed asset inventory is included in the Annual Work Plan template and Appendix D. After assembling and reviewing existing data, including inventory and budget line items, the consultant team

identified existing data gaps and made recommendations for expanding categories that could be linked to future task order assembly and distribution.

Performance Standards and Measures

To evaluate the current state of parks from a broad perspective, the consultant team used a framework for high-performance that is based on the Malcolm Baldrige quality management framework and the NRPA national accreditation standards. The use of the NRPA standards allows us to analyze Parks overall park management practices and provide qualitative performance measures.

Service Contracts and Partnership Agreements

The consultant team reviewed budget information related to existing year-round and seasonal service contracts and identified impacts on current staffing levels and performance standards. Data from partnership agreements between Parks and HOAs was not currently available, but the consultant team discussed the need to better understand and track partnership agreements that impact maintenance operations.

Recommendations and Implementation: Annual Work Plan

Using the assessments and findings generated to date, the consultant team developed an Annual Work Plan (AWP) template and identified opportunities for outsourcing. The Annual Work Plan is set up as a plan from Parks perspective that summarizes strategy, key maintenance processes, and metrics. The plan will serve as a tool for Parks to determine staffing needs and projections related to specific tasks. The template will need to be completed by City staff as more information is collected and gaps are eliminated.

The Annual Work Plan is supplemented by an inventory of data that was assembled previously as part of the PROST Atlas and supplemented by an expanded inventory which is detailed in AWP Appendix B. These appendices include information regarding methodology and how to apply the data to inform the Annual Work Plan.

Maintenance, Management, and Labor Needs for New Amenities

The Annual Work Plan is a tool for anticipating how Parks will accommodate and service landscape and infrastructure capital improvement projects. As data from Parks daily operations is expanded to collect detailed task data, Parks will have an increasingly accurate understanding of costs of routine maintenance for a given asset and level of service. Parks can use this information to accurately predict how capital improvements will impact routine maintenance programs, and proactively adjust their departmental FTEs to accommodate new and/or improved assets.

Summary of Existing Data

Existing Data

At the kickoff of the project, the consultant team presented the City with an extensive list of a wide range of data and information about Parks operations. Through March and April of 2022, Parks provided information ranging from GIS data and park inventories to master plans, biennial budgets, and codes, to whiteboard snapshots and screen captures of irrigation maintenance software. Additionally, members of Parks staff were made available for interviews. The team was provided with an in-depth perspective of the processes and procedures that allow Parks to supply the services that the community so greatly values. In the initial review of existing data, it was determined that to quantify the staffing needs of the Maintenance Department more fully, additional data in the form of an expanded inventory would be necessary. Existing data and additional data collected during this effort is identified and detailed in Appendix D Asset Classification. It should be noted that there will continue to be a need for Parks staff to both maintain and add to the inventory database to ensure that all assets and tasks are accounted for. The list of data provided by the City is listed under Appendix C Data Sources.

Known Data Gaps

When generating an Annual Work Plan, it is important to note that many tasks are dependent on the availability of existing data. This report recommends more comprehensive data collection regarding specific tasks that are unique to maintenance operations, and the time it takes to complete each task. Parks staff is aware that they currently do not collect all pertinent data necessary to establish a systems-based approach to operations management. The following list of missing data was generated in-house by Parks staff to supplement the data provided to the consultant team in the initial data assembly tasks.

1. **Plant Material Data.** Parks estimates that there are 10,000 trees that are publicly maintained, and it does not currently track data on the quantity of shrub bed area. It should be noted that Parks maintains a significant number of medians in the right-of-way, but total square footage maintained by Parks staff has not been tabulated and should be a priority moving forward in the expansion of the existing data inventory.
 - a. **Forestry** is a city-wide operation where much of the work occurs at sites not considered to be parks, such as private property, open space, in ditches, rights-of-ways, etc.
 - b. **Planted Beds** (annual, perennial, pollinator, shrubs) are the most expensive square-footage to maintain; additionally, the City's policy to control weeds without the use of herbicides using manual methods has a significant impact on horticulture services.
2. **Athletic Permitted Use Support.** Parks staff supports the permitted uses at the athletic fields, including ballfield lining and dragging, and soccer field line painting. The actual task time and resources are not tracked, including tasks and events that require Parks staff to work overtime and/or outside of normal work schedules.
3. **Permits.** Special Use Permits, shelter rentals, City special events, Access Permits, Rights-of-Way Permits, etc. all require staff time to review and process. Cemetery staff often perform reviews and processing, as there is no dedicated staff for these administrative tasks. Additionally, Parks staff have responsibilities surrounding these events, including preparing the site and marking utilities, staffing and access during the event, and site cleanup and waste removal services afterwards. The labor and resources required for this work is not tracked.

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4. **Parks Board.** The time required to prepare packets of information to assist the PPLAB review and decision-making process is not currently tracked and requires the input of the Parks maintenance staff, as well as supervisors. Time allocation for administrative tasks should be tracked and should be construed as a critical task necessary to keep PPLAB apprised of ongoing maintenance activities.
 5. **Code Enforcement / Private Issues.** There is ambiguity in Parks regarding the maintenance of rights-of-way, HOA entries and pocket parks, Special Districts, etc. While there is significant time spent discussing, researching, and potentially performing work that is typically the responsibility of the HOA based on the original development agreement, there is little available documentation to confirm HOA roles and responsibilities of common areas. Additionally, Parks irrigation staff is often the first call made by concerned residents and other departments and often responds to leaks in irrigation systems on private property. Parks often assumes responsibility for shutting the water off and notifying the property owner. However, during the busiest maintenance season, this work goes undocumented and impacts the on-going maintenance workflow.
 6. **Maintenance Responsibility / GIS Definition.** Parks currently does not leverage the City's existing GIS database, which could assist in both establishing and documenting limits of responsibility. This can benefit staff by reducing the time spent discussing various interpretations or recollections of outdated agreements, as well as establishing parameters for on-going maintenance.
 7. **Cemetery Administration.** The time spent between the key staff members involved in the administration and unique maintenance needs of the cemetery is not well-documented or tracked, and results in a gap that impacts staffing needs for this unique asset.
 8. **"Other Duties as Assigned" / In-House Projects.** Due to the size of the work group, Parks is asked to assist with city-wide projects and duties that are not typically associated with parks. This ranges from overseeing construction projects, to staffing City events, and to waste removal at City facilities. The Department is responsive to these requests, but the time spent is not specifically tracked, nor built into on-going maintenance plans.

Asset Inventory/Categorization

The most current GIS data was collected during the 2012 master plan process. The data includes boundary data for all areas that Parks currently maintains, as well as point data for a variety of components. However, the data has not been updated, as Parks has added assets in the past decade. Refer to Appendix B in the Annual Work Plan for asset inventory data including additional assets added since 2011. Refer to Appendix D for a detailed list of parks.

The components tracked in GIS provide the greatest window into the on-going maintenance tasks for which Parks is responsible. However, the GIS data provides no sense of quantity of the tracked component: Bluegrass turf is a component, but overall acreage is not captured; trailheads are tracked as a component, but trail length is not captured; waste receptacles are not captured. Each of these components require on-going maintenance, and the extent of the maintenance (i.e., assigned task-hours) is determined by the quantity of the component.

Currently the PROS department categorizes the parks and open spaces within the master plan into one of nine Ownership Categories:

1. Louisville: 118 sites, 1,157.33 acres
2. Joint Ownership: 11 sites, 1,060.2 acres
3. Other: 13 sites, 1,298.5 acres
 - a. Boulder County Parks & Open Space: 1 site
 - b. Boulder County: 2 sites
 - c. Boulder Valley School District: 1 site
 - d. City of Boulder: 3 sites
 - e. City of Lafayette: 3 sites
 - f. PSCOC: 1 site
 - g. CDOT: 2 sites

While these categories serve to illustrate the areas owned by different entities, they are not helpful in determining on-going maintenance needs or anticipated levels of care for individual sites, especially as it relates to Parks services, which occur across all facility ownerships and types.

The second level of categorization provided in the Master Plan is by Class, of which there are five categories.

1. Golf Course: 1 site, 154 acres
2. Open Space: 47 sites, 2,871.75 acres
3. Open Space, Other: 2 sites, 3.0 acres
4. Parks: 66 sites, 406.28 acres
5. Parks, Other: 26 sites, 81.0 acres.

Again, these categories are sufficient to provide a secondary summary of the ownership of the assets, however they fall short of grouping sites or summarizing areas of varying maintenance needs. For example, the “Parks” and “Parks, Other” assets vary from a regional athletic complex to an undeveloped neighborhood pocket park, or a highway right-of-way to a destination playground.

The current asset inventory does not reflect day-to-day operations of Parks. Parks with playgrounds do not have the same maintenance requirements as undeveloped pocket parks; back-of-lot trail corridors do not have the same maintenance requirements as CDOT rights-of-way. Parks should track how those assets and components drive the Annual Work Plan. To this end, the Annual Work Plan template submitted along with the Summary of Findings builds upon the inventory of 2011 and expands the number of inventoried components in the overall asset database. Data sheets have been developed that compile and organize this new data for improved labor and task tracking in preparation of the Annual Work Plan.

Service Contracts

Currently, Parks contracts out several on-going maintenance tasks. These tasks include turf maintenance, downtown flower planting, downtown tree lighting, and horticultural bed care. Parks has spent an average of \$342,000 annually on contracted maintenance services in the past three years.

no	DEPT / FUND	CONTRACT	2019 CONTRACT VALUE	2020 CONTRACT VALUE	2021 CONTRACT VALUE
1	STREETSCAPE	Prof Serv - Other	\$720.26	\$1,980.00	\$2,194.83
2	STREETSCAPE	Prof Serv - Mowing	\$43,708.39	\$44,440.73	\$42,246.54
3	STREETSCAPE	Prof Serv - Pest Control	\$1,290.24	\$1,410.57	\$1,441.26
4	STREETSCAPE	Prof Serv - Weed Control	\$0.00	\$0.00	\$0.00
5	STREETSCAPE	Prof Serv - Landscape Maintenance	\$7,214.46	\$3,284.00	\$1,160.75
6	STREETSCAPE	Prof Serv - Tree / Hort Maintenance	\$20,527.50	\$16,167.00	\$22,760.00
7	STREETSCAPE	Prof Serv - Conc / Sidewalk / Trail	\$1,777.04	\$1,777.04	\$1,777.04
1	PARKS	Prof Serv - Custodial	\$15,031.60	\$22,823.31	\$42,900.00
2	PARKS	Prof Serv - Branch Site Grinding	\$21,161.25	\$12,500.00	\$12,500.00
3	PARKS	Prof Serv - Other	\$3,881.00	\$1,686.00	\$4,950.01
4	PARKS	Prof Serv - Mowing	\$97,710.76	\$93,252.22	\$88,478.19
5	PARKS	Prof Serv - Pest Control	\$3,010.56	\$3,291.33	\$3,362.95
6	PARKS	Prof Serv - Weed Control	\$0.00	\$0.00	\$0.00
7	PARKS	Prof Serv - Landscape Maintenance	\$9,433.18	\$8,520.70	\$72,589.08
8	PARKS	Prof Serv - Tree / Hort Maintenance	\$15,900.00	\$13,387.50	\$16,689.52
9	PARKS	Prof Serv - Conc / Sidewalk / Trail	\$12,235.88	\$17,999.99	\$15,000.00
10	PARKS	Prof Serv - Tennis Court Repairs	\$52,802.00	\$0.00	\$0.00
1	CEMETERY	Prof Serv - Investment Fee	\$21.46	\$9.39	\$22.40
2	CEMETERY	Prof Serv - Bank Charges	\$2,478.81	\$3,008.50	\$4,431.28
3	CEMETERY	Prof Serv - Other	\$2,420.00	\$2,420.00	\$2,650.00
4	CEMETERY	Prof Serv - Mowing	\$24,241.37	\$32,327.45	\$30,731.32
5	CEMETERY	Prof Serv - Landscape Maintenance	\$928.34	\$0.00	\$0.00
6	CEMETERY	Prof Serv - Tree / Hort Maintenance	\$900.00	\$0.00	\$0.00
1	ATHLETICS	Prof Serv - Custodial	\$400.00	\$0.00	\$0.00
2	ATHLETICS	Prof Serv - Other	\$6,587.70	\$12,620.00	\$17,641.88
3	ATHLETICS	Prof Serv - Landscape Maintenance	\$1,992.98	\$1,644.40	\$1,553.97
1	TOTAL	Sum: Mowing	\$165,660.52	\$170,020.40	\$161,456.05
2	TOTAL	Sum: Pest Control	\$4,300.80	\$4,701.90	\$4,804.21
3	TOTAL	Sum: Land. Maint.	\$19,568.96	\$13,449.10	\$75,303.80
4	TOTAL	Sum: Tree / Hort Maint.	\$37,327.50	\$29,554.50	\$39,449.52
5	TOTAL	Sum: Conc / Sidewalk / Trail	\$14,012.92	\$19,777.03	\$16,777.04

Table 2. Existing Outsourced Contract Data

Parks does not maintain records of contract performance for the tasks that are outsourced, which creates a gap in understanding what efficiencies are gained with the City's current service contracts.

Service contracts are valuable to an organization like Parks in two ways. Specialized skills and resources that are not available within the organization can be found in the private sector. A current example in Louisville is the downtown flower planting program. Urban annual flowers add color and celebration in a downtown setting but require watering and care multiple times per week. Rather than delegate a single, specialized staff person to this task, Parks could provide oversight requiring a fraction of the time and outsource this task to a private individual or business.

Conversely, the turf maintenance program requires significant labor, but the tasks require little specialized skills. In these instances, Parks can lean on the labor pool of the private sector, which is able to handle the ebb and flow of seasonal labor more efficiently than the public sector. Turf maintenance is an example of Parks focusing the staff's time on oversight and review, while allowing private companies to collect the person-power necessary to maintain bluegrass on a weekly basis.

Based on 2022 data from the City of Louisville Human Resources Department, the median total compensation value (salary plus retirement and benefits) for Parks employees was approximately

\$84,000. If \$84,000 is used as an estimate for the cost of a new Parks employee (FTE), based on the average annual contract amount of \$342,000, Parks could hire four additional employees for approximately the same cost. Parks would need to determine if those four new employees could accomplish everything done under the existing contracts.

The Inter-Government Agreements (IGAs) that govern the maintenance of the Open Space assets under varying ownerships were not provided and, by nature of being under the authority of Open Space, were excluded from the scope of this report. However, the tasks that Parks performs at these locations (flower bed maintenance, snow removal, pest management, etc.) impact the overall staff and resource needs of Parks. Tracking the tasks specifically required through these IGAs will allow Parks to capture some of the labor and data that currently is unrecorded.

Software

The City's Public Works department has adopted the Lucity city management software platform as a means of gaining departmental operational efficiencies. The department uses it to prepare on-going maintenance schedules, track asset lifecycles, record work performed, track performance measures, and create reports.

The Parks irrigation team currently utilizes GIS-based software to maintain an inventory of irrigation system data throughout the City. Independent of the rest of Parks, the irrigation team members have catalogued the irrigation system at every site they maintain, including capturing lifecycle information, preventative maintenance schedules, and labor requirements.

Benchmarking Analysis

Benchmarking can be an effective tool to identify costly or inefficient practices within the organization. The consultant team utilized the following industry benchmark reports to provide Parks with industry standards on maintenance costs and staffing levels:

- Association of Higher Education Facilities Officers (APPA) Operational Guidelines for Educational Facilities, Maintenance (2nd edition), and Custodial (third edition)
- National Recreation and Park Association (NRPA) Agency Performance Review, Park Facilities, Programming, Responsibilities and Staff, 2022

For the benchmark analysis, the following data was provided by the City:

Data Description	Quantity
Number of Parks	37
Overall acreage/square footage	355.83 AC / 15,549,955 SF
Number of Residents living in Louisville (US Census 2020)	21,226
Maintenance budgeted amount of expenses (2022)	\$2,837,320
Revenue	\$1,311,680
Maintenance Staff (Filled and Vacant Positions)	23.5
Number of playgrounds	16
Deferred Maintenance	Not provided
Number of Basketball Courts	7
Number of athletic fields	14

Table 3. Summary of Benchmarking Data

Grounds Staffing and Level of Service

A detailed labor-needs analysis was not within the scope of this project and would require a consolidated staff assignment matrix and work order analysis that is currently not available. However, we made a high-level comparison of current staffing to industry benchmarks to gain a general sense of Parks staffing levels. Benchmarking is useful for making relative comparisons but should not be considered definitive for developing staffing levels.

Data provided by Parks showed that there were 23.5 FTE (22.31 Parks and 1.19 cemetery) staff members that are currently identified as having primary responsibility for grounds maintenance. Although the function of the dedicated grounds maintenance personnel varied, and included some unique responsibilities, these individuals were responsible for carrying out the grounds functions. In addition, Parks staff are supported by contractors. Contracts currently do not mandate the number of employees or the amount of time a contractor is required to perform the tasks associated with grounds maintenance.

Table 4 represents a comparison of Parks staffing levels (not including contractors) against APPA's service level model for grounds staffing.

	State-of-the-Art Level 1	High-Level Level 2	Moderate Level Level 3	Moderately Low-Level Level 4	Minimum-Level Level 5
Total Recommended Grounds FTEs:	62	40	29	14	7
Square Feet per Grounds FTE:	250,914	387,899	538,656	1,078,899	2,095,486
Acres per Grounds FTE:	5.76	8.90	12.37	24.77	48.11

Table 4. APPA's service level model for grounds staffing

The advantage of looking at staffing through the lens of the APPA staffing model is that service level is considered, and staffing levels are linked to service level desired and/or provided.

A comparison of the APPA grounds staffing benchmarks indicates that with current in-house staffing, it would be feasible for Parks to consistently deliver grounds maintenance services between APPA level 4 (Moderately Low-level) and level 3 (Moderate level) across its roughly 356-acre portfolio. With additional data to evaluate the outsourcing influence on the staffing levels, the level of service could be

closer to APPA level 2 (High-level). Using this benchmark as guideposts, a strategic staffing plan and measurement and monitoring of outcomes can make future staffing adjustments to staffing levels more consistent, defensible, and directly linked to service level and stakeholder needs. Based on our discussions with staff, there are additional maintenance duties performed by Parks employees for the open space areas of the City, but the areas and amount of time associated with this effort is not included in the analysis.

NRPA Agency Performance Review Benchmarks

This high-level analysis provides an indication of where Parks metrics as compared to other agencies who report data to the NRPA agency performance review database. This analysis does not account for any overlapping community population or shared resources within Parks. Data associated with Open Space has not been included with any of the analysis.

Cost of Parks grounds maintenance was calculated using the 2021 budget in select categories of maintenance and operations using the NRPA agency review performance indicators. Table 5 summarizes our analysis of NRPA Park Metrics Review based on the budgeted expenditure data provided by Parks and shows for one of the metrics that, on a per capita basis, the average annual spending on Parks maintenance function fell above NRPA all agency average and the reporting agencies with less than 20,000 residents.

NRPA Benchmark	City of Louisville	NRPA 2022			
		Population Less than 20,000	Population 20,000 to 49,999	All Agencies (median)	Colorado reported (median)
Residents Per Playground	1415	1986	3111	3750	2809
FTE's per 10,000 residents	11	11.3	11.1	8.9	69
Operating Capital Per Capita	\$134.00	\$117.00	\$110.00	\$93.00	\$249.00
Acres of parkland per 1,000 residents	17	12.9	10.6	10.4	24.8
Residents per park	574	1233	1941	2323	1798
Revenue to Operating Expenditures	46.23%	25.00%	25.00%	24.00%	26.90%
Annual Operating Expenditures	\$ 2,837,320	\$ 1,200,000	\$ 3,500,000	\$ 5,079,256	Not Available

Table 5. NRPA Benchmarks Review

Using the NRPA benchmarking data, Parks is in line with their peers on staffing levels and has a higher operating budget per capita. However, the City maintains significantly more acreage of parkland than its peers that submitted to the NRPA database. Utilizing peer data for benchmarking is informative at a high level, but reporting peers could be understaffed, skewing the data. Using the APPA analysis, which includes a level of service, is a standard to compare versus looking at peer reporting. However, there is a large difference with the APPA analysis, showing the Department is significantly understaffed for the levels of service Parks is providing. If data can be provided to the consultant team on the FTE equivalent for contractors and ensure that we have accounted for all seasonal employees, we can provide a better comparison to APPA standards.

Other notable items from the NRPA benchmarks, Parks provides more parkland per resident than its peers and has a smaller residents-per-park-and-playground ratio. The included Colorado benchmarks include two entities that reported information to NRPA. However, the size of those entities is not known.

Performance Standards Analysis

To evaluate the current state of parks from a broad perspective, the consultant team used a framework for high-performance that is based on the Malcolm Baldrige quality management framework and the National Recreation and Parks Association (NRPA) national accreditation standards. The use of the NRPA standards allows us to analyze Parks overall park management practices and provide qualitative performance measures. The evaluation includes a review through the lens of a high-performance organization which assesses maturity from several perspectives and emphasizes long term planning and alignment with industry best practices. High performance organizations are those that are skilled at developing a strategy, implementing a plan to follow that strategy, operating with an effective performance management system, and continuously reassessing and adjusting their plan to meet a changing environment and maintain continual improvement.

Using this approach provides a multi-faceted understanding of Parks current maintenance and management planning and establishes a roadmap to move forward. The framework considers these dimensions, as shown in Figure 3. However, this scope of work was limited to maintenance and management planning which is primarily from the process management perspective. As we aligned the framework with NRPA standards, we also included some areas of the performance categories of workforce development, and measurement and analysis.



Figure 3. High-Performance Categories

The consultant team utilizes this framework to develop a roadmap for continuous improvement. Using this high-performance framework allows for continuous monitoring of performance to achieve the operational results that Parks is looking to achieve. We assess the performance of the organization and make recommendations for improvement by:

- Evaluating key characteristics of how the organization functions
- Evaluating the quantitative and qualitative measures currently in place
- Comparing existing processes and practices to industry best practices
- Identifying strengths and weaknesses
- Outlining a process for continuous improvement

Through this framework, we evaluated the current Parks maintenance and management planning. We are providing recommendations that detail specific and realistic ways Parks maintenance planning can incorporate strategic planning, align the strategy with the City's strategic initiatives, improve business processes, optimize its maintenance structure, become more effective and efficient with its resources, and deliver on its organizational objectives. We also developed an Annual Work Plan that is provided as

a separate deliverable that serves as the template for which Parks leadership can integrate the goals and strategies within NRPA into their own maintenance management plan.

Strategic Planning & Alignment to Standards

The development of a maintenance program that includes strategic planning, process improvement, and continual measurement and monitoring is crucial to effective Parks operations. Alignment to a standard such as the CAPRA standard will enable Parks to build a program and not just a plan. A program is a system rooted in strategic alignment, repeatable and defensible processes, and a focus on continual improvement. Using the CAPRA standard as a guiding framework enables Parks to build and sustain the long-term change the City is seeking.

In addition to the specific items in our scope of work, high-level planning items from the CAPRA standard are important to consider as Parks continues to mature the maintenance program. This includes utilizing a performance management system that enables Parks to collect the right data, formulate that data into business information, and consider that business information in determining the efficiency and effectiveness of Parks operations and maintenance.

An effective maintenance program will:

1. Include an organizational structure that is tailored to the needs and requirements of the organization
2. Contain goals and objectives that align with City goals
3. Use time, personnel, equipment, and materials effectively
4. Include work schedules based on established policies and priorities
5. Emphasize preventive maintenance
6. Ensure adequate resources
7. Incorporate environmental stewardship
8. Assume responsibility for visitor and employee safety
9. Ensure compliance with federal, state, and local laws and regulations
10. Make maintenance a primary consideration during design and construction

Organizational Structure

The current organization chart is organized by asset type, similar to the PROST Atlas: cemetery, athletic fields, natural areas. This is beneficial for cataloging areas and prioritizing departmental specialties, but this method is limiting given that many of Parks' tasks are performed at sites all across the City, not specific or limited to parks, or even open space sites. The services provided throughout the City by Forestry, Horticulture, Irrigation, Turf Maintenance, and Snow & Ice Removal inform public perception of Parks and have safety and welfare implications.

We recommend the organization of Parks establish service departments (forestry, irrigation, etc.) at the same leadership level as the site departments (cemetery, parks, etc.). Organizing Parks with service departments represented at the leadership level will provide those departments with the opportunity to contribute to overall Parks resource and maintenance planning, as well as establish their own strategic plans, and their own measuring and monitoring standards, specific to their service departments. Each of these service departments works across the City to maintain the overall civic campus of the City of

Louisville, in order to prioritize needs and requests from throughout the City, and to balance Parks overall FTE's against the growing needs of the site departments.

Another opportunity to improve the function of Parks through organization is to collect the administrative functions of Marketing, Volunteer Coordination, Information Technology, and Administrative Tasks directly under the Director. Marketing and volunteer coordination responsibilities occur in most other City departments, and in each of the sub-departments within Parks. These efforts can then be better coordinated with city-wide resources and prevent the duplication of efforts by multiple departments within Parks.

Finally, the organization structure should reflect the full staff build-out of each sub-department under Parks, based on the Annual Work Plan. As sites are assigned levels of service, and areas totaled, labor hours required for routine maintenance will determine the requisite number of staff. The organization chart should show the number of staff necessary to maintain the desired level of service at all sites throughout the City.

Organizing Parks with an emphasis on service departments will help Parks prepare accurate and executable strategic plans, with the ability to develop productive measures and standards, while monitoring their process improvement.

Maintenance Process Management

Operations and maintenance of parks ensures Parks assets are maintained appropriately and Parks operations provide a satisfactory environment to meet the community's needs. In this assessment we focused on maintenance processes, asset management processes, grounds, sustainability, and business resilience. Effective maintenance operations lead to enhanced recreational experiences, increased efficiency, reduced liability, and improved public image.

The following sections of the NRPA CAPRA standard (Sixth Edition 2019) were reviewed as part of this scope of work:

- 7.5 Maintenance and Operations Management Standards
 - 7.5.1 – Facility Legal Requirements
 - 7.5.2 – Preventative Maintenance Plan
- 7.10 – Maintenance Personnel Assignment Procedures
- 4.2 Staff Qualifications
- 4.3 Job Analyses for Job Descriptions

Current State

Operations and maintenance duties and responsibilities are known well within Parks due to the longevity of the employees, and the overall operation is consistent. Documented processes are typically a whiteboard with monthly/daily tasks with no computerized tracking system. Maintenance tasks are assigned and completed regularly, but the processes for assignment, completion, and when to utilize contractors are not consistent or documented. Contracts do exist for contractors, but the documentation of maintenance performance is not standardized.

Based on our discussions, Parks staff indicated that they currently operate at the following APPA levels of service:

Area	Score	Existing Level of Service
Turf care –	2.5	Grass cut between 5 and 10 days
Fertilizer –	2/4	2 for Turf: Healthy and growing vigorously; 4 for Shrubs: Not fertilized
Irrigation -	1	Automatically controlled
Litter -	3	Two to three times a week on average, depends on park use.
Pruning -	4	At least once per season
Disease -	4	When noticeable damage observed, and sustainability requirements dictate control
Snow	2	Removed by noon the next day
Surfaces -	3	Repaired when appearance have noticeably deteriorated
Repairs -	2	Done whenever safety is a concern
Inspections -	4	About once per month
Flowering -	3	Only perennials
Scoring: (1) – Showpiece facility; (2) - Comprehensive stewardship; (3) – Managed Care; (4) – Reactive Management; (5) Crisis Response.		

Table 6. Estimate of Levels of Service Based on Data Collected and APPA Scores

Asset Data

Currently, the City holds some asset information in GIS-based point data about parks, open spaces, civic facilities, and rights-of-way. The primary data collected was the location of each area within the City where Parks has ownership and/or work requirements, and the overall acreage. Within this data, available components are listed, such as athletic fields, picnic shelters, or trailheads. Based on field review and staff accounts, the data is accurate but lacks assets that the City added in the past ten years. The asset data also lacks information about components that drive maintenance tasks. However, this existing asset data provides a framework to incorporate additional component data, and this report provides recommendations on how Parks completes the physical asset inventory.

To determine the appropriate inventory level or groups of assets, the following elements should be considered:

1. Maintenance requirements
2. Portable vs. fixed systems
3. Financial cost of the asset
4. Criticality (impact to mission if it fails)
5. Preventative maintenance labor required
6. Life safety/regulatory requirements with record-keeping and inspection
7. Commonality of preventative maintenance tasks
8. Similar schedules of preventative maintenance

The consultant team recommends a new asset classification system based on landscape management type (listed in Appendix D) that includes additional classification layers beyond the “ownership” and “class” categories originally assigned in the Atlas. The asset data should be organized to align with Lucity’s data management and organizational structure capabilities. These new landscape management type classifications are necessary because maintaining one acre of right-of-way is not the same as maintaining one acre of park. The acres of “parks” does not reflect the breadth of scope that Parks is

required to maintain; and sites that are not really “parks” require Parks maintenance and time (flower beds at the police department site; or tree pruning at the library). Each landscape management type classification has a set of tasks associated; based on the frequency and detail of those tasks, a level of service will be achieved (or: assigning a Level of Service will dictate the frequency / detail of the tasks). Cumulating all the sites that Parks has task-responsibilities and understanding the level of service desired at each site, will provide Parks with a framework for the necessary funding to achieve the community’s goals.

To better understand the maintenance needs (tasks) for each site, the sites were divided into seven landscape management type classes, which consider similarities of components, on-going maintenance tasks, preventative maintenance tasks, and use. The division of sites by landscape management type classification will help Parks assign levels of service to each site. For example, Parks may determine that they would like the Louisville Sports Complex to be a Level of Service 1 and the athletic fields at Miner’s Park may be a Level of Service 3. This will translate not only into greater frequency of fertilization, mowing, or turf care at the Sports Complex, but also greater frequency of waste removal, urgency of irrigation repairs, and more frequent maintenance of the shrub and perennial beds at these parks.

The categorization of assets into the landscape management type classification categories reveals Parks tasks across other non-park areas of the City such as the police facility, rights-of-way, and developed neighborhood entries. Especially revelatory is the Forestry, Irrigation, Horticulture, Turf Maintenance, and Snow & Ice tasks across all landscape management type classification categories. By assigning the Level of Service to sites in the Annual Work Plan, a more complete picture of required maintenance will be captured. Additional task time can be summarized in reports to City Council requesting resources. See Table 7 below for an example of task lists provided in the AWP, Appendix C.

Facilities

Sheet Last Updated _____

The Facilities Landscape Type applies to sites that Parks performs tasks and services, but are otherwise owned and managed by another City department. From the public perspective, these sites represent the City and reflect civic pride.

Grounds Categories



		QTY	LOS 1 (Best)	LOS 2	LOS 3
1	TURF	SF	Bluegrass mowed every 3 to 5 working days; Aeration 4 times per year; Reseed/sod as necessary; Less than 1% of turf area has weeds present.	Bluegrass mowed once every five working days. Aeration carried out not less than two times per year. Reseeding or sodding done when bare spots are present. Weed control when there is a visible problem or when weeds represent 5 percent of the turf surface.	Bluegrass mowed every ten working days; no aeration, or only when fertilizing; Reseed/sod when bare spots appear; Weed control measures when 50% of small areas, or 15% of turf area has weeds present.
	Bluegrass Turf				
2	FERTILIZATION	SF	Adequate fertilization according to optimum species requirements. NPK ratios to follow local guidance; application rates and frequency should ensure an even supply of nutrient for the entire year.	Adequate fertilizer level to ensure all plant materials are healthy and growing vigorously. Rates should correspond lowest recommended rates. Nitrogen, phosphorus, and potassium percentages follow local recommendations. Trees, shrubs, and flowers receive fertilizer to ensure optimum growth.	Applied only when turf vigor is low; application once per year at one-half recommended amount.
	Bluegrass Turf				
	Flower & Perennial Beds				

Table 7. Sample Portion of a Task List by Landscape Management Type

The core of this revelation is that Parks serves as the grounds maintenance team for the entire City of Louisville. A part of this is a reflection on the magnificent performance of Parks: their reliability and professional execution have made them the go-to department for many “outside” challenges the City

encounters. Irrigation and forestry both have obligations to private residents; Parks has played a strong role in snow removal throughout the City and has taken a lead with the Fire Recovery response.

However, a combination of asset areas and community expectations has left Parks staff under-resourced to cover the day-to-day maintenance of assets. Once Parks is able to track the actual time spent within these different landscape type categories, on specific components, there will be a realization of the real costs to Parks for assets beyond the listed acreage of “parks.” As Parks develops a system of tracking this data, Parks will be able to produce accurate, timely, and straightforward reports.

Maintenance and Operations Recommendations:

Maintenance

1. Develop a preventative maintenance plan to provide periodic, scheduled inspections, assessment and repair, and replacement of infrastructure, systems, and assets. This includes certifying, checking, or testing for optimum operation based on applicable industry standards, local guidelines, City requirements and/or manufacturer’s recommendation for maintenance and replacement of parks, with the intent to ensure that park assets are maintained for optimum use and safety and have the ability to reach or extend its full life cycle and expected return on investment.
 - a. Establish specific maintenance goals and objectives to focus maintenance planning. Recommended goals are included in the Annual Work Plan.
 - b. Develop work schedules based on established policies and priorities.
 - c. Workflow and prioritization of the work needs be established for each classified task. Tasks within the workflow for each work order can include automatic scheduling (backflow preventer certification), who gets the work assignment, equipment and material needed to complete the work, lock out/tag out procedures, and the buildings’ point of contact.
2. Establish and implement a workflow process that recognizes needs, responsibilities, and response time requirements for daily maintenance tasks, capital renewal, preventative maintenance (PM), and corrective maintenance. Provide operational responsibilities that aligns with the staffing structure.
3. Develop service level agreements (SLA) for maintenance functions between departments and outside agencies (such as HOAs, CDOT, etc.) that clearly delineate what maintenance functions are completed by each organization, timeframes, and other expectations. Formalizing service level agreements between departments and outside agencies would clarify expectations and start eliminating confusion. These can be updated once core maintenance functions are clearly defined for Parks.
4. Develop and implement a documented inspection process to inspect work performed by in-house and contracted staff. A quality assurance plan should be developed to define the required quality of work, the process used to evaluate the quality of work performed, and the process that should be followed when the quality of work does not meet the requirements. When developing the plan, first determine reasons why quality assurance problems may occur or have occurred in the past. Some reasons may include worker productivity, lack of necessary resources, lack of supervision, project is not appropriately

-
- staffed, or the project duration was not accurately estimated. After the reasons have been identified, document a process to resolve each within the quality assurance plan. While writing the plan, determine which reasons will likely have the largest impacts on the organization and determine a strategy to prioritize them.
5. Consolidate maintenance and capital renewal planning under the Lucy platform for major assets across Parks. For specific operational needs, continue to support and integrate workforce skills/training between major maintenance functions and operational functions.
 6. Update the asset inventory within Lucy to include the integration of the water systems, park assets, park infrastructure, and recurring maintenance plan. As the inventory information develops, refinement of the data will occur. For example, area calculations of the overall park area include the baseball/softball fields as they are generated through GIS. A double counting exists of the square footage /acreage of the fields. These should be subtracted from the overall park area. Additional park assets will require the cleaning of the data to ensure accurate data.
 7. Create a plan to improve the effectiveness of updating asset and equipment records and implement it. Be sure to track the process during implementation to help reach the goal of developing a more effective process.

Grounds

8. Identify desired service levels for grounds functions across Parks. Determine the level of service expected for each park space type. This will ensure that visitors experience a similar level of service across all City parks and will allow you to further refine your staffing needs.

Sustainability

9. Establish a sustainability policy on environmental sustainability that is aligned with the Louisville Sustainability Action Plan. The policy should address sustainable product purchasing, reduction and handling of waste, wise use and protection of land, air, water, and wildlife, and sustainable design/construction of buildings. Include Parks natural resource management plans and other areas of sustainability already implemented. Note: CAPRA strives for a zero-waste plan.
10. Develop an implementation plan based on the sustainability policy.
11. Review Parks Integrated Pest Management (IPM) strategy and on-going IPM operations, balancing the labor-intensive work against community expectations. Continue to support and revise Parks IPM program based on industry best practices.
12. Develop water conservation strategies based on CAPRA best management practices, regional successful low impact development strategies, and appropriate planting palettes.

Resilience

13. Conduct Parks specific resilience planning that includes security, emergency preparedness and continuity of operations. Once this planning process is in place and plans are developed, there will be tactical operational items to consider such as routinely reviewing these plans, conducting after action reports, and continual improvement in these areas. Specific short-term recommendations that could be implemented prior to the planning process include:

-
- a. Conduct physical security assessments of all parks. This assessment will provide a means of understanding risks and vulnerabilities, prioritizing needs and solutions, and creating a long-term, sustainable safety and security plan.
 - b. Develop Parks specific emergency preparedness plans and ensure staff receives the required training.
 - c. Communicate and educate personnel on existing procedures through drills, tabletop exercises, and other engagement activities.

Regulatory Compliance

- 14. Conduct a regular review of legal requirements related to facilities, such as licenses, sanitary regulations, fire laws, and safety measures, and inspections of adherence thereto.
- 15. Continue to work towards ADA compliance. It is our understanding recommendations are in place and the City is working towards compliance.
- 16. See security, emergency preparedness, and continuity of operations recommendations above.

Measurement and Analysis

- 17. Develop a consistent performance management process. A high-performance organization will transform data into metrics to help make proactive decisions. Performance metrics are a measure of an organization's activities and performance. It is essential for organizations to identify their strategic plans, translate their strategy into operational targets, and develop a metrics program to measure and manage their performance. Metrics are among the most valuable tools available for prioritizing work and demonstrating value to the overall organization.
 - a. Review current metrics and ensure the key performance indicators (KPIs) are effective for decision-making. The KPIs should be a small number of the most valuable metrics that will help Parks leadership measure the overall effectiveness and efficiency of the delivery of services. Focus Parks KPIs on outcomes, not activities. Strive for Parks KPIs to not include any check-the-box type of metrics. A 2020 KPI refinement report for the City identified the average number of metrics reported by peer communities to be sixty-six and at the time, the City had 547 metrics; too many metrics will result in overburdening Parks, rather than creating understanding. The December 2020 KPI list provided to our team included 13 KPIs that seemed directly related to Parks and three KPIs related to maintenance and management of parks. Note, the Annual Work Plan includes a suggested list of KPIs for Parks maintenance.

Information Management and the Use of Work Management Technology

- 18. Integrate the use of work management technology, such as the Lucity software currently utilized by the City. Use of technology is an important tool in managing maintenance workflow. A major factor in maintenance workforce efficiency is clearly defining the workflow and the use of technology to guide the organization and staffing of the ground's maintenance function. Although different technologies were in use to guide the maintenance function across the department, it is our understanding that Lucity is an available software application. Lucity, when used to its

fullest potential, as identified in our recommendations below, should meet the needs of Parks. Work order development can include preventative maintenance, corrective maintenance, capital improvements, and Parks own customized work types. As Parks implements the recommendations and moves toward consistency, service level agreements, and documented maintenance processes, the full value of the Lucity software will be recognized. With Lucity's existing use by the City, the implementation process will have resources available, and Parks staff will have a network of people to learn from.

- a. Incorporate the role of Lucity Administrator. At least one employee should be responsible for administration of the Lucity program that involves primary job duties of management of data, workflow processes, work order processes, KPI reports, and continuous improvement of the system. This position should also be given the full administration of the software application with the goal of the position to include improving Parks management communication between all customers and the department. However, the cybersecurity requirements should be kept in the IT department. Note, the City has a contract with a third party that is currently performing Lucity administrator functions.
- b. Develop and utilize a consistent work order process. This includes developing and utilizing consistent configuration codes, such as work type, priority, and status codes and definitions and how data is entered into and reported from Lucity. Attention should be paid to the priority and status codes from the customer standpoint. As an example, work is created (new), assigned, in progress, on hold (various potential reasons including waiting for parts, access, approval, customer, etc.), completed, and closed. Well defined codes can provide a means of communicating expectations and tracking the timely performance of work.
 - i. **Work Type Categories** - The work type and category codes are important to organize the data in Lucity to enable consistent reporting of metrics. The recommended work type and category codes provide an organized accounting of work performed if it is recorded and entered in Lucity.
 - ii. **Priority Codes** - Well defined priority codes can provide a means of communicating expectations and tracking the timely performance of work. Each priority code should have a description of the work, target response times, and relevant examples.
 - iii. **Work Order Status Codes** - A variety of work order status codes should be implemented to allow for better tracking and communication with customers.

Workforce

Effective workforce development planning includes understanding the knowledge, skills, and competencies required to accomplish the work and developing a training plan that will fill or enhance those competencies. This will help ensure that staff are qualified to perform their job duties and operate programs and services in the furtherance of goals and objectives.

Current State

Parks has a start to creating comprehensive job descriptions for all positions available in the Department. It can be challenging to align the proper requirements, skill sets, and compensation into each job description, but this is a critical step to maintaining qualified employees to produce the level of quality that customers have come to expect.

- Parks should maintain a current job description for each unique position and for each “tier” of employment below the management level.
- Job descriptions should be specific to the unique position or tier level on the organization chart. Vague language can be beneficial for the City to allow unforeseen tasks to be assigned to the most available employee; but consideration should be taken regarding job expectations, labor time, and employee skill sets when assigning tasks extraneous to the positions scope.

Deploying an effective workforce starts with a clear understanding of the knowledge, skills and competencies required to accomplish the work and meet stakeholder needs. Workforce development tools such as labor needs analysis and competency development plans can lead to a highly skilled workforce and workforce strategies that balance in-house capabilities with outsourced services that are aligned and optimized to deliver the service levels needed. An effective process to optimize workforce development includes these key steps: alignment, assessment, and development of a roadmap.

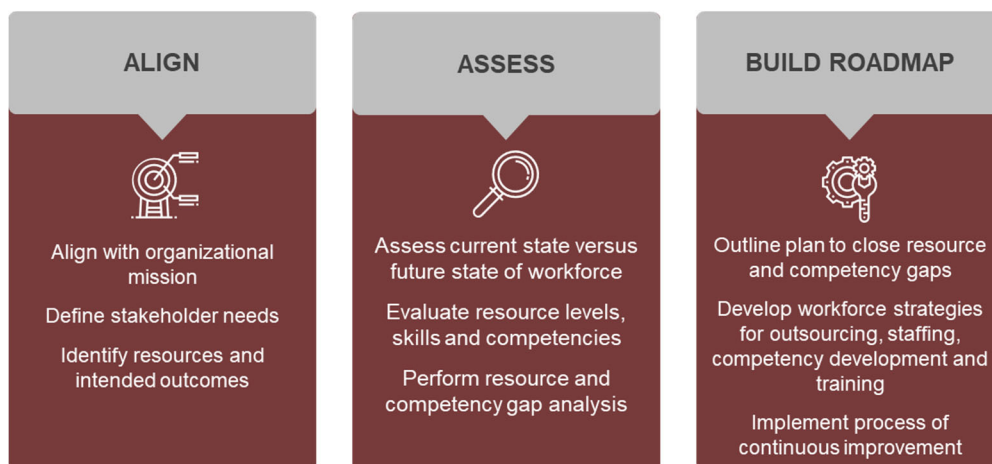


Figure 4. Steps in the development of a workforce development plan

Workforce Recommendations:

1. Develop and implement a workforce development program using the process described above. This process focuses on identifying what knowledge and skills are needed for each position (job analysis), assessing the skill level of personnel, and identifying training that will best fill any competency gaps.
 - a. Based on the Asset Management Classification Task List, Parks can create a list of skills required to keep up with routine maintenance, as well as specialized skill sets that are necessary to plan and manage the technical aspects of Parks operations.
2. Implement a staffing plan consistent with the benchmarking recommendations. This plan should include a more detailed labor needs analysis to determine specific staff types and ratios based on the desired levels of service.
3. Ensure job descriptions are based on job needs and include:
 - a. Duties of each position
 - b. Responsibilities of each position
 - c. Tasks of each position; and
 - d. Minimum level of proficiency necessary in the job-related skills, knowledge, abilities, and behaviors (See recommendation below)

While understanding the complete maintenance needs of Parks is critical to on-going success, to begin completing the job descriptions, Parks could start with the least-skilled job descriptions for each sub-area (Forestry, Irrigation, Horticulture, etc.), then develop job descriptions for the positions requiring the most technical skill sets (the Forester, Playground Inspectors, Department Heads, etc.). As the department matures, there will be a need to create job descriptions for additional layers of labor and management.

4. Implement a succession planning process that builds off Parks workforce development plan. This process can help develop and sustain a workforce that embodies the knowledge, skills, and organizational capabilities required to effectively manage Parks in the future. The succession plan should utilize the workforce development plan to build your workforce for the future. Succession plans should start with the end in mind when considering training plans.

Appendix A: Survey Summary

To kick-start the planning process, City staff and the consultant team developed a survey that was electronically distributed to City Council and the Parks and Public Landscapes Advisory Board (PPLAB). Although not all members completed the survey, the answers to the survey provided the consultant team with a snapshot of existing perceptions and expectations. The following information contains a consolidated summary of survey findings:

1. The number of parks and amount of space is the most compelling attribute of the City's park system.
2. Lack of systematic maintenance is a concern, as well as some concern about ensuring that trained people are engaged in specific maintenance tasks.
3. Mowing is a concern: some residents would like to see more, and some residents would like to see less.
4. There is a desire/need to address and implement water conservation measures by reducing need for irrigation (xeriscaping).
5. The need for a management and maintenance plan is apparent and desired.
6. PPLAB would like more information regarding budgets allocated to parks maintenance.
7. There are differing views regarding current maintenance of parks, which range from "great" and "fantastic" to "not meeting expectations."
8. There is a desire/need for reporting of standardized Key Performance Indicators (KPIs).