



# Mandan Park and Recreation District Maintenance Management Plan

June 2023





# Table of Contents

- CHAPTER ONE - EXECUTIVE SUMMARY ..... 1
  - 1.1 PURPOSE OF THE MAINTENANCE MANAGEMENT PLAN ..... 1
  - 1.2 DATA COLLECTION AND SYSTEM REVIEW ..... 1
  - 1.3 KEY RECOMMENDATIONS ..... 2
- CHAPTER TWO - REGULAR MAINTENANCE REQUIREMENTS ..... 4
  - 2.1 OBJECTIVES OF DISTRICT MAINTENANCE ..... 4
  - 2.2 PARKS AND RECREATION SYSTEM INVENTORY ..... 5
  - 2.3 PARKS AND RECREATION FACILITY MAINTENANCE LINES OF SERVICE ..... 7
  - 2.4 CURRENT PARKS AND FACILITY MAINTENANCE ORGANIZATIONAL CHART ..... 8
  - 2.5 GENERAL PARKS MAINTENANCE KEY FINDINGS ..... 8
  - 2.6 STAFFING AND FUNDING REQUIREMENTS KEY FINDINGS ..... 9
  - 2.7 PRIORITIZATION OF STAFFING NEEDS ..... 12
  - 2.8 STRATEGIC IMPLEMENTATION OF STAFFING NEEDS ..... 13
  - 2.9 GENERAL FACILITY PREVENTATIVE MAINTENANCE RECOMMENDATIONS ..... 14
  - 2.10 PARKS AND GROUNDS MAINTENANCE STANDARD RECOMMENDATIONS ..... 18
  - 2.11 OTHER RECOMMENDATIONS ..... 19
- CHAPTER THREE - CONCLUSION ..... 22



## CHAPTER ONE - EXECUTIVE SUMMARY

This *Maintenance Management Plan* has been prepared for the Mandan Parks and Recreation District and contains recommendations that were developed following intensive review of the current system and asset maintenance responsibilities of the District. These existing circumstances were coupled with industry best practices provided by PROS Consulting as derived from our experience locally, regionally, and nationally. The resulting recommendations were generated in order to support the strategic decisions of the District for maintaining high quality parks, open space, trails, and recreation assets into the future.

### 1.1 PURPOSE OF THE MAINTENANCE MANAGEMENT PLAN

The purpose of the *Maintenance Management Plan* is to clearly define the requirements and actions of the Mandan Parks and Recreation District (“District”) for maintaining high quality parks, open spaces, trails, and recreation sites and assets over the next 10 years. This includes consideration of existing conditions of the current inventory, as well as additional sites and assets that are being considered within the next five years.

The *Maintenance Management Plan* is intended to enable the District and the District to improve the identification, justification, and prioritization of maintenance requirements for park and recreation sites and assets. This is achieved by establishing a clear quantification of resources necessary to maintain the current system as high-quality, accounting for new and aging parks and facilities that continually need reinvestment, as well as providing planning tools for future additions to the Mandan Parks and Recreation System (“System”) in future years.

### 1.2 DATA COLLECTION AND SYSTEM REVIEW

The Consulting Team performed an assessment of the sites and facilities within the Mandan Parks and Recreation District System (“System”) including, but not limited to parks, trails, grounds, structures, and facilities. These assessments, in combination with an evaluation of operational work plans/standards and budgetary resources, establish an accurate understanding and ‘snapshot’ of the existing conditions of sites and facilities within the System, and support the foundation, or reference point, from which specific strategies and recommendations are framed within this report.

There were eight (8) key findings that PROS deduced from performing the site and facility assessments and data evaluation:

1. Golf course maintenance operations are industry leading.
2. Parks and facilities are generally well maintained
3. Labor and budget resources are adequate
4. Recreation facility growth has outpaced park and trail expansion in recent years
5. Recreation facility maintenance management is under-resourced.
6. In some cases, usage demands outpace available supply

7. The trail system is excellent
8. The District has best practice partnership agreements in place

These findings are central to the maintenance efforts of the District and have strongly influenced the recommendations contained within this report. Specifically, the key recommendations that follow were developed from the context that parks and facilities are currently maintained well, but insufficient labor and budget resources will inhibit achieving consistent maintenance management across all functions of the District.

### 1.3 KEY RECOMMENDATIONS

The key recommendations detailed below were derived from the analysis and research contained within this report.

#### **Address Facility Maintenance Management**

There are several unique recreation facilities within the System each featuring unique amenities that increase the associated maintenance requirements. From ice arenas to an air supported indoor tennis center to a fieldhouse located on school district property, these facilities each require specialized maintenance management approaches that, in turn, require direct management oversight. The hiring of a Facility Manager focused on the maintenance and operation of the District's recreation facilities is critical to properly scoping and executing a preventative maintenance work to improve the efficiency of regular maintenance requirements.

#### **Standardize Regular Park Maintenance Requirements**

Over the years, the regular maintenance requirements of the System have become normalized and can be quantified in order to estimate additional maintenance requirements of new acquisition or development. Developing maintenance resource requirement standards that align with core goals of the District for maintaining sites and grounds of the System should strengthen the capability of the District to obtain necessary resources to perform these functions. It will also support accurate projections of resources required for future park and ground sites under consideration for acquisition and/or development. While not all standardized projections for regular maintenance requirements of sites and facilities are provided in this executive summary, examples of the types of functions recommended to standardize include:

- Established standards for maintenance of different types of sites and facilities
- Labor requirements per type of site including seasonal fluctuations and contracted services

### Continue to Plan for Capital Repair and Replacement

An area that many public park and recreation agencies fail to plan adequately for is capital repair and replacement requirements of their major assets. As a result, many entities struggle with large accumulations of deferred maintenance and facility deterioration that threatens the integrity of the services they provide.

Fortunately, the Mandan Parks and Recreation District utilizes best practices to standardize the calculation of capital repair and replacement necessary to maintain the integrity of facilities and assets. The District routinely updates its asset replacement schedule and takes a phased approach to raising funds to support major capital needs. This approach does fluctuate based upon the financial conditions at the time, but is used as a tool to determine a responsible annual investment into maintaining high quality sites and facilities within the System while maximizing the efficiency of operating maintenance resources.



## CHAPTER TWO - REGULAR MAINTENANCE REQUIREMENTS

The regular maintenance requirements of the District are vast, and extend beyond the sites and assets they directly manage. This section of the *Maintenance Management Plan* addresses the scope of the regular maintenance responsibilities of the District, reviews the current resource requirements to meet these expectations, calculates unit-based quantification for most major resource requirements, and provides the method through which projections for future resource needs can be developed. Issues not addressed in the section are major capital repair and replacement actions that are beyond the preventative and responsive nature of regular maintenance.

### 2.1 OBJECTIVES OF DISTRICT MAINTENANCE

The objectives of District's maintenance efforts are expansive and organized into the four large categories detailed below. These objectives are not presented in any order of importance:

- Maintain and improve the sites, grounds, facilities, and structures of the District to provide optimal and enjoyable use.
- Provide snow removal for District trails, sidewalks, and parking lots in a timely manner, respectful of the needs of citizens.
- Provide landscaping and general maintenance for a multitude of District amenities, including but not limited to landscaping beds/signage areas, medians/right of ways, urban "pocket" open spaces, and buildings and structures.
- Be responsive to maintenance needs of District open space tracts including, but not limited to access points, trail repair, erosion control and trash removal.

Many of these objectives for the District's maintenance team go beyond the traditional responsibilities of parks and recreation employees, but provide an invaluable service to the community. The assessment performed by the Consulting Team reviewing the sites and facilities of the System yielded findings that the maintenance staff are extremely productive given their vast responsibilities.

It is important for members of the community, District management, and the Board of Directors to project future resource requirements of additional sites and facilities across each of these objectives. These objectives represent the full scope of expectations the community has for the outcome of parks and recreation maintenance efforts.

**PLEASE NOTE: An in-depth evaluation of golf course maintenance is NOT provided in this report. A high-level assessment and evaluation of this division by the Consulting Team determined that golf course maintenance is currently being provided in-line with best practices. Additionally, staff is continually incorporating leading edge evaluation methods to refine the efficiency and effectiveness of golf course maintenance operations.**



## 2.2 PARKS AND RECREATION SYSTEM INVENTORY

Parks, facilities, and amenities that are clean and functioning efficiently are a critical element to delivering high quality programs and services. The below illustrates the current inventory of the parks and recreation system that is ***actively managed*** by the District.

### Parks and Grounds

Park Classification		Inventory
<b>PARKS</b>		
Developed Parks	Acre(s)	32.50
Natural Area Parks	Acre(s)	62.00
Special Use Parks	Acre(s)	55.70
<b>SPECIAL USE OUTDOOR FACILITIES / GROUNDS</b>		
Dacotah Centennial Park Parking Lot/Grounds	Acre(s)	60.00
Dale Pahlke Rodeo Arena	Acre(s)	6.00
Dacotah Speedway	Acre(s)	22.00
Raging Rivers Parking Lot/Grounds	Acre(s)	6.00
Mandan Tennis Center Parking Lot/Grounds	Acre(s)	22.00
Starion Sports Complex Parking Lot/Grounds	Acre(s)	23.00
<b>TRAILS</b>		
Trails	Miles	17.00

**Outdoor Amenities**

Outdoor Amenities		Inventory
<b>AMENITIES</b>		
Golf	Hole(s)	27.00
Disc Golf	Hole(s)	18.00
Archery Range	Range	1.00
Picnic Shelters	Shelter	6.00
Warming House/MP Building	Field	2.00
Soccer Fields	Field	15.00
Football Fields	Field	1.00
Indoor Ice Rink	Sheet	2.00
Water Park	Aquatic Facility	1.00
Campsites	Campsites	30.00

**Indoor Recreation Facilities**

Indoor Recreation Facilities		Inventory
All Seasons Arena Facility	Square Feet	36,500.00
Mandan Tennis Center Facility	Square Feet	41,600.00
Starion Sports Complex	Square Feet	83,000.00
<b>Total</b>	<b>Square Feet</b>	<b>161,100.00</b>

### 2.3 PARKS AND RECREATION FACILITY MAINTENANCE LINES OF SERVICE

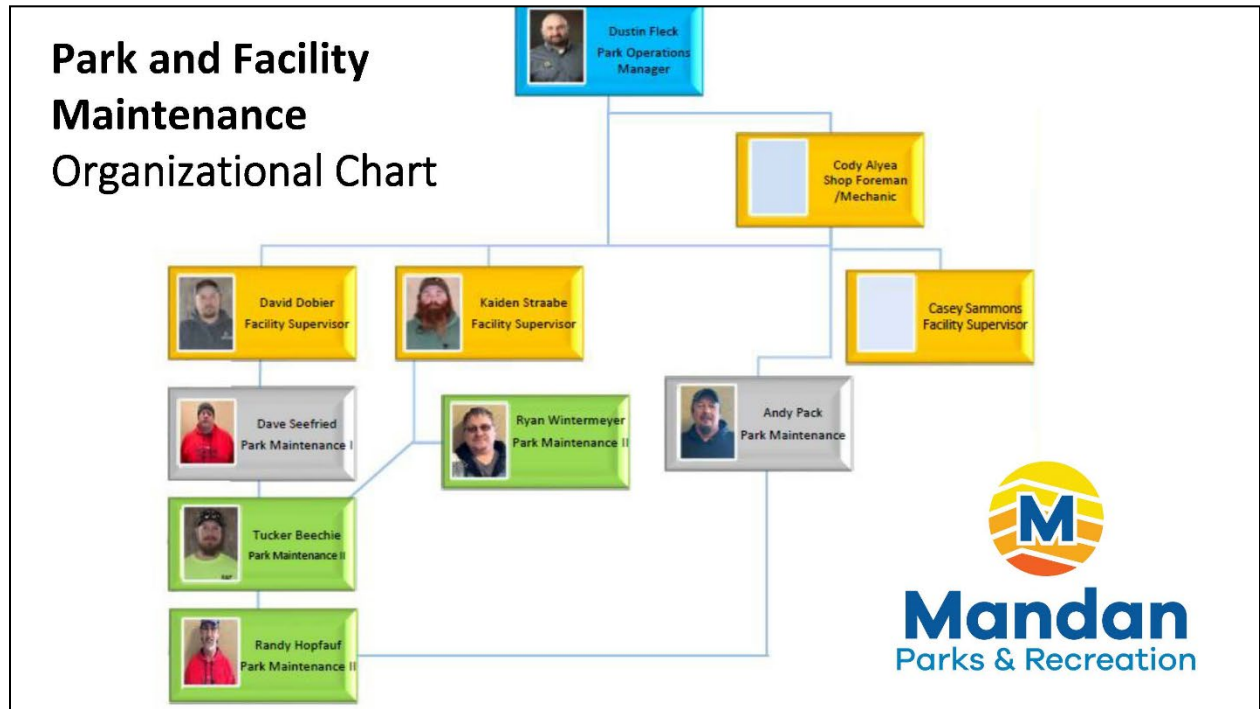
The core lines of service (functions) performed by the District are numerous. The lines of service are subdivided into three functional areas (aquatics, parks, and facilities) and are as follows:

Aquatic Maintenance Lines of Service	Park Maintenance Lines of Service	Facility Maintenance Lines of Service
Ancillary Structures	Archery Range Maintenance	Ancillary Structures
Chemical Balance/Water Quality Systems	Athletic Field - Maintenance (Diamond and Multi-Purpose Fields)	Electrical
Concession Stand	Bridge Maintenance	Elevators
Electrical	Citizen Inquiries	Façade
Elevators	Community Garden Maintenance	Fire Alarm
Façade	Department Special Event Support	Fire Suppression
Fire Alarm	Disc Golf Course Maintenance	Furniture, Fixtures
Fire Suppression	Dog Park Maintenance	General Facility Grounds and Landscaping
Flow Rider Equipment	Equipment Maintenance	HVAC
Furniture, Fixtures	Facility Grounds Maintenance	Ice Maintenance
General Facility Grounds and Landscaping	Furniture, Fixtures, Systems (lighting, etc.) Maintenance and Repair	Inflation system for Tennis Center
Gutter Maintenance	Ice Rink Maintenance (Outdoor)	Interiors (walls, doors, windows, ceiling, floors)
HVAC	Integrated Pest Management	Plumbing
Interiors (walls, doors, windows, ceiling, floors)	Irrigation Systems	Restroom/Custodial Services
Play Structure Maintenance	Landscape Beautification	Roof
Plumbing	Maintenance Yard Management	Scoreboards
Restroom/Bathhouse Custodial Services	Natural Resource/Open Space	Site Lighting
Site Lighting	Park Building Maintenance	Site Pavement (walkways, parking lots)
Site Pavement (walkways, parking lots)	Parking Lot Maintenance	Specialized Equipment
Utilities	Park Permit/Special Event Facilitation	Structure
Water Slide Maintenance	Picnic Shelter Maintenance (indoor and outdoor)	Utilities
Wave Generating Equipment	Restroom Custodial Services	
	Skate Park Maintenance	
	Sport Courts (Basketball, Tennis, Sand Volleyball, Pickleball Courts)	
	Snow and Ice Removal	
	Synthetic Turf Management	
	Trail Maintenance	
	Trash Removal	
	Turf Management	
	Traffic Safety Management	
	Trail Clearing	
	Tree Inspections and Protection	
	Tree Planting	
	Tree Pruning and Maintenance	
	Tree Removal	



## 2.4 CURRENT PARKS AND FACILITY MAINTENANCE ORGANIZATIONAL CHART

The below is an excerpt of the District’s organizational chart that shows the parks and recreation facility maintenance division. As depicted below, parks/grounds as well as recreation facility maintenance is currently organized as one division.



## 2.5 GENERAL PARKS MAINTENANCE KEY FINDINGS

### Maintenance Modes and Standards

Regular maintenance requires unit-based quantification for most major resource requirements and provides the methods for projecting future resource needs. The District’s maintenance efforts as detailed are expansive and address diverse aspects of maintaining high-quality parks, amenities, and infrastructure to preserve the integrity of public assets and their meaningful use.

It is recommended that all park maintenance agencies adopt a system of grounds maintenance levels wherein functions are organized into a tiered structure with three different levels of service. These levels are referred to as maintenance modes, and each has a unique standard that dictates routine maintenance tasks and their frequency. The appropriate maintenance mode is assigned to each park or site, which creates a framework for organizing and scheduling tasks and responsibilities at each location. A description of each of the maintenance modes is provided below:

### Maintenance Mode / Level 1

Maintenance Mode/Level 1 (Mode/Level 1) applies to parks or sites that require the greatest level of maintenance standard in the system. These parks or sites are often revenue producing facilities where

the quality and level of maintenance has a direct impact on the park and/or facility's ability to maximize revenue generation.

### **Maintenance Mode / Level 2**

Maintenance Mode/Level 2 (Mode/Level 2) applies to parks or sites that require a moderate level of effort and maintenance standards in the system. These include developed and undeveloped parks with amenities that are heavily used such as trails, community and pocket parks, and special-use facilities found in the District's parks system.

### **Maintenance Mode / Level 3**

Maintenance Mode/Level 3 (Mode/Level 3) applies to parks or sites that require a nominal level of effort and maintenance standards in the system. These generally include undeveloped parks with minimal amenities.

Through the review of data and workshops with staff, the PROS Consulting team determined that the maintenance division does generally try to operate within the maintenance modes identified above. Staff also intuitively follows a set of routine parks, grounds and facility maintenance standards with task, frequency, and season of year for each of the functional work areas, however, a formalized, documented, detailed maintenance management plan does not exist. A formalized maintenance management plan includes not only maintenance modes and standards for each park but also tracks the performance of the work against a set of defined outcomes as well as the costs expended to achieve each outcome. A maintenance management plan is typically memorialized within an asset-based work order management system.

### **Work Order Management System**

Parks maintenance does not currently utilize a work order management system and should consider the implementation of such a system to document maintenance and asset replacement schedules as well as the track the time and resources required to perform work in the field. A work order management system can also determine the level of unproductive time expended by staff (i.e., travel time to parks).

### **Equipment**

Staff does not lack the necessary equipment or resources to perform tasks.

## **2.6 STAFFING AND FUNDING REQUIREMENTS KEY FINDINGS**

The labor resource requirements of the District's maintenance division are calculated based upon the following assumptions:

1. The current sites, facilities, and infrastructure are generally in good condition and reflect high quality parks and recreation assets.
2. The current staffing resources are sufficient for maintaining existing sites, facilities, and infrastructure within the System.

3. Additional sites, facilities, and infrastructure would require additional labor given the current work load of the existing staff.
4. Overtime worked by full time equivalent (FTE) employees is an indication of the magnitude of work load beyond the *regular*, current staffing levels to manage the division’s responsibilities.
5. Annual labor hours of contracted services to support park and/or facility maintenance requirements are not included in this analysis.

### Park and Facility Maintenance Staffing Levels

The Consulting Team, in conjunction with District staff, assessed the current staffing levels through two analytical lenses:

1. Annual Allocation of Labor Hours
2. Allocation of Annual Operating Budget

### Annual Allocation of Labor Hours

**District Staffing:** As shown in the chart below, the Parks and Recreation Facility Maintenance Division is comprised of approximately 14.7 full-time equivalents (FTES) – 10 full-time employees and 4.7 part-time FTEs - dedicated to maintaining the parks and recreation facility system.

LOCATION OF WORK	TOTAL HOURS BY FUNCTIONAL AREA	CURRENT STAFF FTE COUNT (1,920 Annual Hours = 1 FTE)
Maintenance Shop/Yard	2,400	1.3
Parks and Trails	4,685	2.4
All Seasons Arena Facility	384	0.2
Dacotah Centennial Park	666	0.3
Sports Complexes	5,901	3.1
Raging Rivers	2,760	1.4
Mandan Tennis Center	624	0.3
Starion Sports Complex	9,091	4.7
Administration/Management	1,920	1.0
<b>TOTALS</b>	<b>28,430</b>	<b>14.8</b>

**Third Party Contracting Contribution:** Additionally, the District contracts with the private sector to provide supplemental maintenance for the system. As shown in the chart below, an additional 1.4 FTEs are provided through these contracts.

LOCATION OF WORK	CURRENT STAFF FTE COUNT (1,920 Annual Hours = 1 FTE)	CURRENT THIRD PARTY CONTRACTOR CONTRIBUTED FTE COUNT	CURRENT TOTAL FTE COUNT
Maintenance Shop/Yard	1.3	0.0	1.3
Parks and Trails	2.4	0.1	2.5
All Seasons Arena Facility	0.2	0.2	0.4
Dacotah Centennial Park	0.3	0.3	0.6
Sports Complexes	3.1	0.3	3.3
Raging Rivers	1.4	0.1	1.5
Mandan Tennis Center	0.3	0.3	0.6
Starion Sports Complex	4.7	0.2	4.9
Administration/Management	1.0	0.0	1.0
<b>TOTALS</b>	<b>14.8</b>	<b>1.4</b>	<b>16.2</b>

**Best Practice Staffing Level:** The chart below identifies by park/facility the current FTE count, the best practice FTE standard and the additional FTEs needed.

LOCATION OF WORK	CURRENT TOTAL FTE COUNT	BEST PRACTICE FTE COUNT (1,920 Annual Hours = 1 FTE)	ADDITIONAL FTES NEEDED
Maintenance Shop/Yard	1.3	1.3	0.0
Parks and Trails	2.5	3.5	1.0
All Seasons Arena Facility	0.4	1.5	1.0
Dacotah Centennial Park	0.6	0.6	0.0
Sports Complexes	3.3	3.9	0.6
Raging Rivers	1.5	1.5	0.0
Mandan Tennis Center	0.6	0.6	0.0
Starion Sports Complex	4.9	5.4	0.5
Administration/Management	1.0	2.0	1.0
<b>TOTALS</b>	<b>16.2</b>	<b>20.3</b>	<b>4.1</b>

With the responsibility of actively managing the expansive park and recreation facility system, the maintenance division DOES NOT HAVE the staffing capacity needed. **The maintenance division is currently understaffed by 4.1 FTES.**

### Annual Allocation of Operating Budget

Based on analysis conducted by the project team as summarized in the table below, unit costs for parks and recreation facility maintenance are not in alignment with best practice unit costs. The maintenance of parks and recreation facilities is currently underfunded by nearly \$360,000 annually.

PARK TYPE/LOCATION	PARKS AND GROUNDS BUDGET ALLOCATION	ALL SEASONS ARENA BUDGET ALLOCATION	RAGING RIVERS AQUATIC FACILITY BUDGET ALLOCATION	STARION SPORTS COMPLEX BUDGET ALLOCATION	UNIT COST	BEST PRACTICE UNIT COST	ADDITIONAL FUNDING NEEDED	ADDITIONAL PERSONNEL FUNDING NEEDED (67% of budget)	ADDITIONAL FTE NEEDED
	\$ 812,500	\$ 56,700	\$ 772,700	\$ 515,200					
Shop/Maintenance Yard	\$ 130,064	\$ -	\$ -	\$ -	\$ 2,098	\$ 2,100	\$ -	\$ -	
Developed Parks	\$ 81,290	\$ -	\$ -	\$ -	\$ 2,501	\$ 5,000	\$ 81,210	\$ 54,411	1.0
Special Use Parks	\$ 81,290	\$ -	\$ -	\$ -	\$ 1,311	\$ 1,300	\$ -	\$ -	
Natural Area Parks	\$ 8,129	\$ -	\$ -	\$ -	\$ 146	\$ 150	\$ 226	\$ 151	
Trails	\$ 40,645	\$ -	\$ -	\$ -	\$ 2,391	\$ 2,500	\$ 1,855	\$ 1,243	
All Seasons Arena	\$ -	\$ 56,700			\$ 1.55	\$ 2.25	\$ 82,125	\$ 55,024	1.0
Dacotah Centennial Park Parking	\$ 40,645	\$ -	\$ -	\$ -	\$ 677	\$ 675	\$ -	\$ -	
Dacotah Centennial Park Campsites	\$ 8,129	\$ -	\$ -	\$ -	\$ 271	\$ 275	\$ -	\$ -	
Dale Pahlke Rodeo Arena	\$ 8,129	\$ -	\$ -	\$ -	\$ 1,355	\$ 1,350	\$ -	\$ -	
Dacotah Speedway	\$ 8,129	\$ -	\$ -	\$ -	\$ 370	\$ 375	\$ -	\$ -	
Dacotah Centennial Soccer Complex	\$ 56,903	\$ -	\$ -	\$ -	\$ 3,794	\$ 6,500	\$ 40,597	\$ 27,200	0.6
Mandan Memorial Ballpark/Baseball Complex	\$ 65,032	\$ -	\$ -	\$ -	\$ 13,006	\$ 13,000	\$ -	\$ -	
Mandan Softball Complex	\$ 162,580	\$ -	\$ -	\$ -	\$ 20,323	\$ 20,000	\$ -	\$ -	
Raging Rivers Aquatic Facility	\$ -	\$ -	\$ 772,700		\$ 220,771	\$ 220,000	\$ -	\$ -	
Mandan Tennis Center	\$ 16,258	\$ -	\$ -	\$ -	\$ 0.39	\$ 0.40	\$ -	\$ -	
Starion Sports Complex Facility	\$ -	\$ -	\$ -	\$ 463,680	\$ 5.59	\$ 6.00	\$ 34,320	\$ 22,994	0.5
Starion Sports Complex Field and Grounds	\$ -	\$ -	\$ -	\$ 51,520	\$ 2,240	\$ 2,200	\$ -	\$ -	
Administration/Management	\$ 105,277	\$ -	\$ -		NA	\$ 225,000	\$ 119,723	\$ 119,723	1.0
<b>Totals</b>	<b>\$ 812,500</b>	<b>\$ 56,700</b>	<b>\$ 772,700</b>	<b>\$ 515,200</b>			<b>\$ 360,056</b>	<b>\$ 280,746</b>	<b>4.1</b>

It is recommended that if the division were allocated an additional \$360,000 in annual operational funding, approximately 67% would be dedicated to fulfilling the additional staffing requirements needed – 4.1 FTEs.

### 2.7 PRIORITIZATION OF STAFFING NEEDS

The prioritization of filling the necessary maintenance division staffing needs is as follows:

STAFF POSITION	Number	CLASSIFICATION	STATUS	TIMELINE
Facility Maintenance Manager	1	Full-time	REALLOCATION OF EXISTING POSITION	IMMEDIATE
All Seasons Arena - Facility Maintenance II	1	Full-time	NEW	FY 24
Parks Maintenance II (Starion and Parks)	1	Full-time	NEW	FY 24
Facility Maintenance	0.5	Part-time	NEW	FY 25
Parks Maintenance	0.6	Part-time	NEW	FY 26

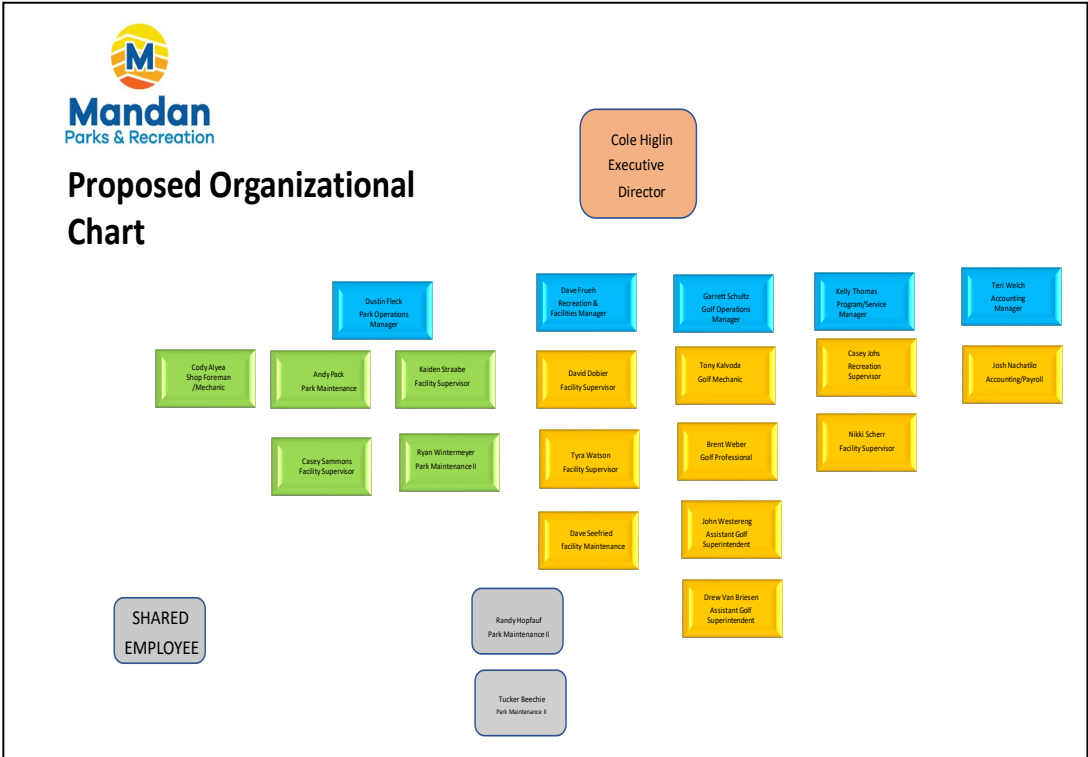


2.8 STRATEGIC IMPLEMENTATION OF STAFFING NEEDS

In consultation with PROS Consulting, the Mandan Park and Recreation District is proposing the following functional organization changes to reduce the number of new employees hired to meet the recommended staffing needs.

1. The current Recreation and Facilities Manager will assume all responsibility for the maintenance of recreation facilities as well as the day to day oversight of contracted facility use and operational agreements.
2. The Parks and Grounds Manager will assume all responsibility for the maintenance of parks, trails, grounds, and open space.
3. Two Full-time Maintenance Staff will be shared employees between the Parks and Grounds Division and the Facility Management Division based on season.
4. The current Marketing and Foundation Manager will retain current responsibilities but also assume responsibility for recreation programs directly administrated by the District.
5. No functional organizational changes will be made to the Golf and Accounting Divisions.

The following depicts the proposed organizational chart (not including new employees)



## 2.9 GENERAL FACILITY PREVENTATIVE MAINTENANCE RECOMMENDATIONS

In order to minimize the accumulation of deferred maintenance of major capital assets, these preventative maintenance guidelines for each major type of asset by category have been prepared. These guidelines should be followed by staff to remain more proactive in slowing down degradation of facilities and infrastructure from age, impacts from heavy usage, and impacts from environmental exposure. Included within these guidelines are also recommended frequencies for performing preventative maintenance.

### Building Envelope

- **Roof, skylights, flashings, gutters, and downspouts** – flat roofs should be inspected every other year by a roofing contractor that is certified with roofing membrane manufacture to ensure the manufacturer’s warranty is maintained in good standing. Ideally it is recommended to use the installing roofing contractor, but not required. Once the warranty has expired, the District can contract with any qualified roofing contractor to inspect the roof and complete their recommended repairs to prevent any leaks from occurring and extract the most life from the roofing membrane. Pitched shingled roofs, as well as flat roofs, should be reviewed after any major storm event and looked at more closely as it ages. Use binoculars to inspect sloped roofs and call a contractor to inspect the roof. Remember to inspect roof drains, gutters, and downspouts spring and fall, and remove debris to ensure free flowing drainage.
- **Window trim, siding, and caulking** should be reviewed annually looking for deficiencies such as cracking or peeling paint, damaged trim and siding, missing caulk (around windows, doors, and openings), etc. Cracked stucco or missing mortar between bricks or cement block can lead to moisture infiltration damaging insulation and deteriorating wood framing. Missing caulk allows for moisture and air infiltration and will lead to premature failure of window and door frames. Older buildings with original wood window frames and individual glass panes should be inspected to ensure the caulking is intact to prevent moisture penetrating the non-painted wood framing resulting in dry rot. Addressing small issues as they arise extends the life of the materials and will be most cost effective.
- **On-building awnings, signs and lighting** should be inspected periodically to ensure proper operation. It is recommended that awnings are reviewed annually, taking a close look under the canvass or ridged overhangs to ensure the structural elements are in good condition and secure as well as the canvas material is not torn or frayed. Lighting should be reviewed monthly, especially security and pedestrian lighting to avoid liability concerns.
- **Foundations** are typically out of sight and out of mind, which can lead to surprises down the road with moisture issues and pests. Annual inspect the foundations and seal or repair cracks when they become a concern. Also be sure to inspect the area where the base of the building structure joins the foundation to seal any areas as this is a common entry point for mice.

## Exterior & Site

- **Asphalt Parking lots** need to be inspected by a qualified contractor within five years after initial installation and every couple of years thereafter to stay on top of crack sealing to minimize moisture penetration below the asphalt. In colder climates, the freeze/thaw cycle combined with moisture below the surface results in heaving and cracking pavement. Not addressing cracks in a timely manner results in failed surface area that must be removed and patched at a much great expense. After ten years and approximately every five to seven years thereafter (more frequently with an aging lot) it is recommended to chip seal the lot following cracking sealing, which provides for a new uniform wear surface and adds life to the asphalt. Chip sealing is not the same as a liquid sealer, which is more akin to a paint job. Chipping sealing is a bit more expensive but is good for up to five years where a liquid sealer is only good for a couple of years and then looks worse than the original asphalt. It is also recommended to stripe the parking lot every other year, as this provides for a uniform and professional appearance.
- **Concrete sidewalks, steps and railings** should be inspected annually for cracking, chipping, and hazardous conditions. This is not only an issue of good preventative maintenance to ensure the longest life of the surface but is also a liability concern. Repairing a heaving sidewalk section is less expensive than having to respond to a trip and fall liability claim through the District's insurance provider. Steel railings inset in concrete steps will result in the concrete cracking and chipping in later years due to the rusting of the railings. Caulking around the steel pipe at the surface of the concrete will add life the concrete and steel railing and prevent premature failure of the concrete and loosening of the railing.

## Interior Finishes

- **Lighting** is necessary to maintain on a routine basis for both safety and a professional appearance. Carry a complete inventory of each light bulb at the facility to ensure burned out bulbs are replaced with a like kind bulb. Pay close attention to fluorescent tubes matching the existing bulbs for consistent light output color (warm between 2700K & 3500K or cool white between 3700K and 4500K). Replace all the fluorescent tubes in each fixture when only one bulb burns out as the others will burn out in short order requiring multiple return trips up the ladder. Also, for high bay lighting that requires a contractor with a lift consider replacing the like kind bulbs in an entire room at one time which will be more cost efficient than multiple trips and avoid the unsightly appearance of periodic burned-out bulbs.
- **Ceilings tiles** should be reviewed periodically and replaced as they become stained or sagging from moisture and age. Discolored and or damp tiles resulting from roof or HVAC water leaks must be replaced immediately as they will likely become moldy creating an environmental hazardous issue for staff and the public. To avoid the unsightly appearance of mixing new ceiling tiles with older, discolored ones, consider changing out a small room with new tiles, keeping the older tiles in good condition to replace in larger open areas.
- **Carpeted flooring** should be professionally cleaned periodically to not only extend the useful life but to also provide for a professional appearance. However, carpet does not last forever, and

excessive wear results in torn or thread bare material and leads to hazardous conditions potentially resulting in a trip and fall and a liability claim, not to mention its unprofessional appearance. Anticipate replacing carpet when traffic wear patterns become obvious. Consider replacing broadloom carpet with carpet squares that can be individually replaces in the event of damage or wear from an inventory of product (carry and inventory from the original install as manufacturers carpet die lots, patterns and colors change frequently).

- **Hard surface flooring** maintenance varies widely. Vinyl flooring (tile or sheet goods) needs to be cleaned regularly and some require sealers to protect surfaces and provide for improved appearances. Sealed wood flooring should be refinished in a timely manner to avoid excessive wear and extend its life. Addressing missing or damage grout and cracked and chipped tile flooring as it appears will extend the life of the flooring surface rather than waiting to replace the entire area with new material. Active and regular maintenance is the key to a long life for any flooring material.
- **Wood doors, window frames, and trim** should be wiped down with a wood cleaner periodically to retain the finish in good condition. Should the finish become weathered or worn, touch up the stain and refinish the wood before it become too unsightly and as it is more economical to stay up with maintenance than having to refinish or replace the material.
- **Painting and wall coverings** is an appearance issue and having to repaint or replace wall covering is more about aesthetics than function. Wall coverings should never be used in moist environments or on exterior walls as it traps the moisture within the wall and inhibits mold growth. Should mold be present, the wall board will need to be removed and replaced immediately, treating any affected area within the wall cavity with a bleach solution. Painting over mold is not advisable as the mold typically is growing from the back side of the surface.
- **Window coverings** should be cleaned periodically, depending on the dust and dirt within the environment. Excessive dust in an interior space is due to poor cleaning standards or not changing the filters in the furnace/air conditioning units in regular intervals.

## Furniture & Appliances

**Furniture and appliances** should be maintained much like we all experience in our home living environments. A regular and consistent cleaning schedule is important to maximizing the life and appearance of an asset. Addressing problems as they arise is more cost effective than ignoring it until it must be replaced.

## Mechanical, Electrical & Plumbing

- **Heating and air conditioning equipment** needs preventative maintenance to ensure not only a long life, but to avoid premature and untimely failure. Annual maintenance inspections, filter changes and belt replacement are critical for peak operation and efficiency. HVAC controls are typically sophisticated time clocks that need attention and should be reviewed regularly, especially as the season changes. It is strongly recommended to enter an annual contract with a qualified vendor for this service to review all the building equipment.
- **Electrical fixtures** and components typically do not need maintenance and only require repairs in the event of a malfunction. Lighting control systems should be reviewed periodically to ensure the scheduling for the various zones are set up and working properly to maximize the cost savings they are designed to provide. If unfamiliar with the system, reach out to the local manufacturer's rep for training and inspection. Emergency lighting also needs to be checked periodically to ensure it operates properly in the event of a loss of electricity. Each fixture contains a battery that should be tested monthly and replaced as needed.
- **Plumbing** like electrical, it either works or it does not, and not much preventative maintenance is required. However, sump pumps which are only used in emergencies, should be tested periodically to ensure they operate when needed.

## Specialized Building Systems

Building systems such as the Starion Sports Complex ice rink chillers and the Tennis Center inflatable dome should be maintained by vendors that specialize in the maintenance of these systems in accordance with the manufacturer's recommended guidelines.

## Other Building Systems

Other building systems identified below all require annual inspections per local building codes. Annual contracts with certified and licensed vendors are required.

- Elevators
- Fire life safety (smoke detectors, fire suppression sprinkler systems, and associated monitoring panels). Many of buildings likely will not have monitoring systems but should have stand alone residential style smoke detectors and carbon dioxide detectors. These devices should be tested monthly, and the batteries replaced annually.
- Security & fire life safety monitoring systems are typically interconnected through a phone line (typically two lines are required) or a cell tower service to a UL approved 24/7 central monitoring service. This service checks in with the on-site panel every day to verify its connection is in good standing. However, it does not check each of the devices being monitored, requiring an annual contract with a certified vendor.

## 2.10 PARKS AND GROUNDS MAINTENANCE STANDARD RECOMMENDATIONS

The Consulting Team has developed maintenance standards for each park and amenity that make up the current and planned park system and has provided these standards to the District as a stand-alone EXCEL document. A summary of current and recommended maintenance standards for amenities within the District’s system is provided below. Recommended increases in level of service are highlighted in yellow.

Maintenance Activity	Current Maintenance Standard	Recommended Maintenance Standard
ARBORICULTURE/TREES	Level 3	Level 2
ARCHERY RANGE	Level 2	Level 2
ATHLETIC FIELDS (NOT TURF)	Level 1	Level 1
CAMPGROUNDS	Level 3	Level 3
COMMUNITY GARDENS	Level 2	Level 2
DISC GOLF COURSE	Level 1	Level 1
DOG PARK	Level 1/Level 2	Level 1/Level 2
FACILITY GROUNDS	Level 2	Level 2
HARD SURFACES	Level 1	Level 1
HORSESHOE PIT	Level 1	Level 1
IRRIGATION - ATHLETIC COMPLEXES	Level 1	Level 1
IRRIGATION - GENERAL	Level 3	Level 2
LIGHTING	Level 3	Level 3
LITTER - ATHLETIC COMPLEXES and SIGNATURE PARKS	Level 1	Level 1
LITTER - GENERAL	Level 2/Level 3	Level 2
OUTDOOR ICE SKATING RINKS	Level 2/Level 3	Level 2
PARK BUILDINGS	Level 2/Level 3	Level 2
PICNIC SHELTERS	Level 1/Level 2	Level 1/Level 2
PLAYGROUNDS	Level 3	Level 2
RESTROOMS	Level 1/Level 2	Level 1/Level 2
SAND VOLLEYBALL COURTS	Level 1	Level 1
SKATE PARK	Level 1	Level 1
SNOW REMOVAL	Level 1	Level 1
SPLASHPAD	Level 1	Level 1
SPORT COURTS	Level 3	Level 2
TRAILS	Level 1	Level 1
TURF - ATHLETIC COMPLEXES	Level 1	Level 1
TURF - DEVELOPED PARKS	Level 2	Level 2
TURF - OPEN SPACE	Level 3	Level 3
TURF - SIGNATURE PARKS	Level 1	Level 1
VANDALISM/GRAFFITI	Level 1	Level 1

## 2.11 OTHER RECOMMENDATIONS

### Maintenance Management Guiding Principles

In the process of completing over 1,000 projects throughout the United States and abroad, the Consulting Team has developed a set of maintenance management guiding principles for park and recreation agencies. These six recommended guiding principles are provided below for consideration by the District.

1. Park and facility maintenance personnel in best management systems maintain a ratio of acres/square footage per person of managed park and recreation facility space, dependent upon the park/facility classification. This can be a combination of public employees and contract employees.
  - a. PLEASE NOTE: Best practice agencies outsource their maintenance operations at no less than 20% of their total labor with the remaining resources dedicated to continuity in case a contract is discontinued the agency can step in and continue operations with limited impact on the users.
2. Best practice agencies have an equipment replacement program established and funded to keep equipment tied to employee productivity and supporting the efficiency goals of the agency.
3. Best management agencies update their maintenance management plans every three to five years in place to keep control of maintenance costs and efficiency.
4. Best practice agencies have established design standards for parks and recreation facilities based on the outcomes that they want to achieve and based on the dollars to develop and the return on investment from users to support operational costs if any. These standards typically apply to all developed parks and art and culture/recreational facilities an agency has under its management and control.
5. Best practice agencies seek out bond funds to support capital costs every five to ten years to keep the bond issue low with the high value of return to taxpayers based on the time-value of money. As parks and recreation facilities are developed and succeed, the community will support these bond issues if presented correctly and the improvements have wide-age segment appeal.
6. Best practice agencies have multiple funding sources including earned revenues that they use to support operational and capital costs to keep the agency as sustainable as possible.

### Implement a GIS-based asset management Work Order System

A work order system should be used to track lifecycle maintenance requirements that are tied to weekly and monthly work orders. This will help the staff to stay ahead of preventative maintenance and limit breakdowns. Further, utilizing the system will provide staff the necessary “actual cost” data for work being performed. The typical components of a work order management system are as follows:

- Schedule Work Activities
  - Detailed framework for asset management by incorporating GIS into the asset repository. Allows for grouping of assets by location, type, age, or other key parameters. These groupings can then be used to create maintenance activities such as preventive work, reactive work, tests, or inspections.
- Mapping Tools
  - ArcGIS maps are an integral part of the work management process. This allows for the creation of map visualizations of database queries including open work orders, service requests, or work orders of a specific type and assignment. These tools empower both management and staff to interact with asset data.
- Data Mobility
  - A variety of tools to help maintenance staff access and update valuable information while in the field.
- Asset Management
  - Track work performed on any asset at any given time throughout its lifecycle. Users can easily search for active work orders and view them dynamically on the GIS map. Track overdue work orders and monitor work associated with a specific task, contractor, or project.
- Track Unproductive Time
  - A key component of creating an efficient parks maintenance operation is to minimize unproductive time, such as travel time between parks. Travel time on average should not exceed the maximum threshold of 2.2 hours for every 8-hour day.

### **Cost of Service/Systematic Approach to Contracting Services**

Through the development of management processes, the Maintenance Division must begin to track cost of service at a unit activity level through the implementation of a work order management system. This, in turn, would internally analyze the unit cost to perform work internally against the unit cost to perform work by a third-party vendor, in particular right-of-way, median and public facility grounds landscape maintenance.

### **Cost Avoidance**

Maintenance operations are typically spent in divisions that do not have direct revenue sources that can offset expenditures. There are opportunities, however, to reduce expenditures through the following strategies.



- **Adopt-a-Trail Programs:** These programs are like the popular “adopt-a-mile” highway programs most states utilize. Adopt-a-trail programs can also take the form of cash contributions in the range of \$12,000 to \$16,000 per mile to cover operational costs.
- **Adopt-a-Park Programs:** These are small-grant programs that fund new construction and provide maintenance support. Adopt-A-Park programs can also take the form of cash contributions in the range of \$1,000 to \$5,000 per acre to cover operational costs.



## CHAPTER THREE - CONCLUSION

The summary of these recommendations is that regular maintenance resource requirements have been quantified into parameters that meet the current standard for site and facility conditions. These parameters can serve the District to sufficiently plan for the budget and resources necessary to maintain the current quality of sites and facilities with a growing and evolving inventory. It is critical that assets be sufficiently maintained throughout their lifecycle to avoid problematic issues including, but not limited to asset failure, premature capital replacement, and the build-up of significant deferred maintenance.

