

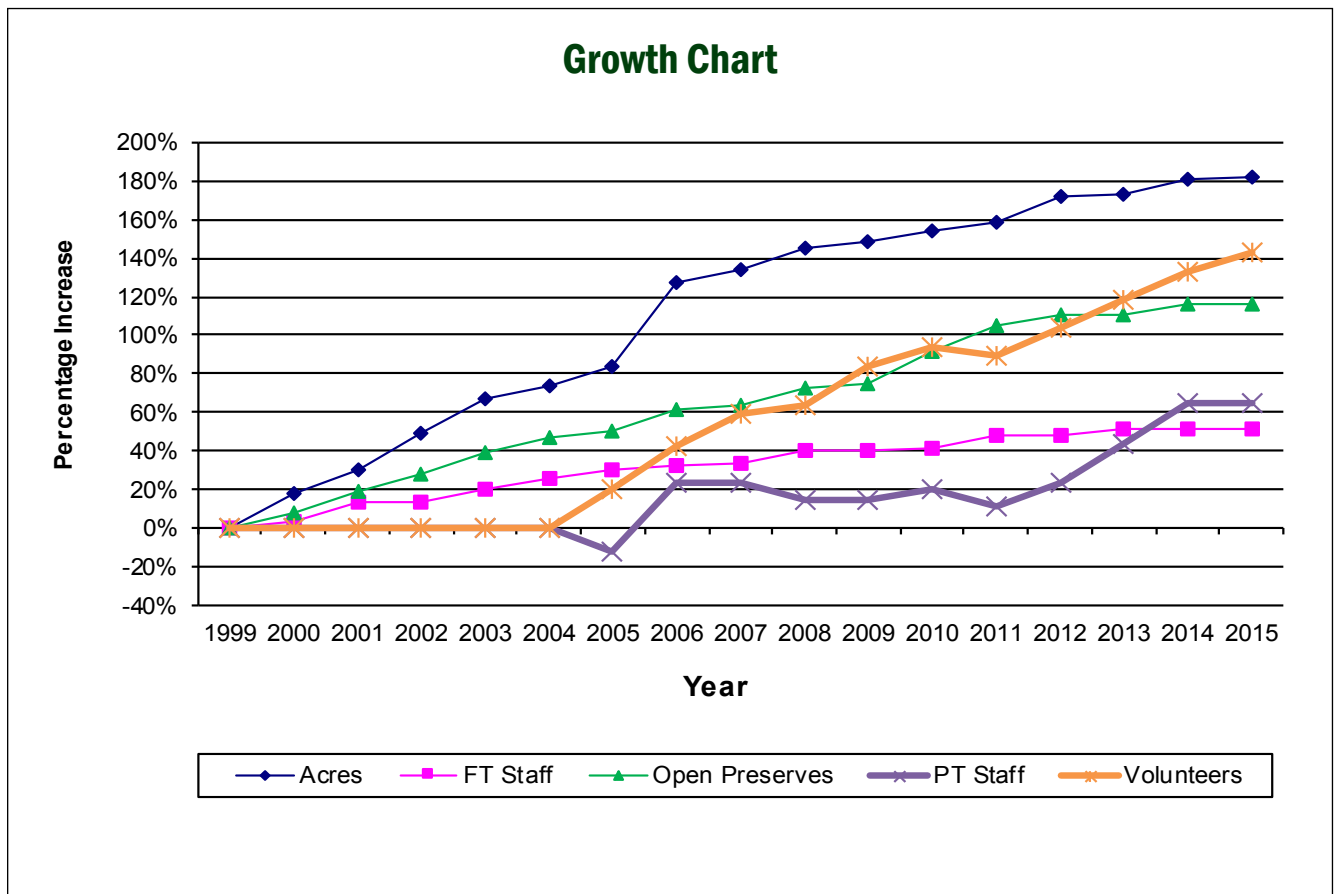


CHAPTER 4 – MAINTAINING THE SYSTEM

Predicting Needs and Planning for Growth

Managing a high-performing, efficient forest preserve system is more than just action plans and capital projects. Continual land acquisition and capital improvement projects need to be met with the necessary resources to manage and maintain the new infrastructure, lands and programs.

The Growth Chart below compares the increase in acreage and open preserves to the number of full-time as well as part-time staff since 1999, the year of our first land acquisition and capital improvement referendum. It's evident that the District experienced rapid growth between 2004 and 2006, with a 50 percent increase in land holdings (3,901 acres) and a 14 percent increase in open preserves (5 new preserves). From 2006 through 2014, the District acquired just as much land (3,947 acres) but at a slower, steadier pace. At the same time, the desire to open recently acquired properties to the public moved to the forefront, and a 47 percent spike in preserve openings (17 new preserves) occurred between 2007 and 2012. Throughout these periods of growth, the District



added minimal staff, however, we've successfully maintained the system (infrastructure and services) at a high level. It is necessary to analyze each department to determine the current service level being provided and the needed resources to continue operations at that current service level, and what resources would be needed to manage additional lands, amenities, programs and /or services, if expansion is planned.

Determining Appropriate Levels of Service

Each department has a level of service that they support, and understand the resources needed to maintain that level. However, recent growth has caused some departments to reevaluate the level of service. For years, staff has been changing and modifying work programs to meet the demands of tripling preserve acreage without similarly increasing resources. The expansion of District lands and amenities ultimately affects every department within the organization. First impacted are the staff charged with maintaining, preserving and protecting the forest preserves on a daily basis — Operations & Maintenance, Natural Resources, and the Public Safety. Secondly, the remaining departments — Administration, Community Affairs & Environmental Education, Finance, Human Resources and Planning & Development are impacted. **The District must have a plan in place, so that as workloads increase, departments can meet the additional demands placed upon them.**

To do this, a current level-of-service standard must first be identified. Determining a current level-of-service standard is difficult because there are innate problems in devising a system comprehensive enough to apply to all situations in every preserve or administrative function.

Let's begin with Operations & Maintenance and Natural Resources. The District has a variety of preserve types and amenities. Some preserves are more actively used. The improvements within each preserve reflect the type of use it receives. The kind of amenities and activity at each preserve should determine how labor-intensive the preserve staffing must be. Because amenities between preserves differ, the amount of work required to maintain service at each preserve varies. **This variable is what the District needs to fine-tune, to provide reliable information to determine operational costs.**

Tracking the type of work and the number of hours spent in each preserve will take time and patience because of the unique settings within each preserve. Some preserves have improvements that may require daily attention or seasonal attention. Other preserves might have improvements that only require annual inspection or attention. Until staff has tracked this data adequately to determine actual costs, analyzing a "typical" preserve will help determine the staff hours required to maintain all of our preserves. The system is intended to determine the *average* amount of work hours that go into the maintenance of each preserve.

The improvements in a preserve require effort to preserve and maintain their usability. Several variables go into determining the level of maintenance required for each amenity within a preserve. As an example, we will create a typical forest preserve and include the typical maintenance activities associated with the designated improvements. This will be used as an example to determine resource needs. The tasks may not reflect all possible functions, but will be relative and used to determine the average work load for a typical forest preserve. This will not be the final determining document on costs to maintain the preserve system. **Staff will continually track and review costs to better-forecast budget requirements.** Evaluating service levels and determining resource needs is a key objective of this *Comprehensive Master Plan*.

Typical Forest Preserve Example

Our "typical" forest preserve is a 300-acre preserve with a combination of both natural and public-use areas.

For this exercise, we will follow a goal of 90/10, that is, 90 percent preserved land with minimal or passive recreational use (primarily managed by the Natural Resources department) and 10 percent developed or improved areas for active recreational use (primarily managed by the Operations & Maintenance department). With the active portion of the goal being 10 percent, then for a 300-acre preserve, we should account for 30 acres of developed/public-use areas, and 270 acres of natural, passive-use areas.

Operations & Maintenance Department Workload

Our typical forest preserve contains the following amenities within the 30 acres of developed/active-use areas:

- 2 Picnic shelters
- 2 Restrooms
- Parking and associated driveways
- Entrance gates
- Benches
- Picnic tables
- Signage
- Trails (1 mile per 100 acres): asphalt trail, limestone screening trail, and mowed foot trail

The daily workload for the Operations & Maintenance department would typically include:

- **Open and close preserve (includes travel time and vehicle)**
Time required: ½ hour per day or 182 hours per year
- **Clean 2 restrooms**
Time required: 1 hour per day or 365 hours per year
- **Empty 6 garbage cans**
Time required: ½ hour per day or 182 hours per year
- **Clean 30 acres of litter**
Time required: 1 hour per day or 365 hours per year
- **Clean picnic areas including shelter and picnic tables**
Time required: 1 hour per day or 365 hours per year
- **Permit group check-in**
Time required: 1/2 hour per day or 182 hours per year
- **Maintain 1 vehicle, including pre-start inspection, fueling and shutdown inspection/cleaning**
Time required: 1/4 hours per day or 91 hours per year
- **Clean and groom trails**
Time required: 2 hours per week or 104 hours per year
- **Grill cleaning and inspection**
Time required: 1/2 hour per week or 26 hours per year
- **Turf mowing (10 acres)**
Time required: 10 hours per week or 240 hours per year

- **Sign inspection and repair**
Time required: 1/2 hour per week or 26 hours per year
- **Carpentry repair work (buildings/structures)**
Time required: 1 hour per week or 52 hours per year
- **Inspect grounds and structures for safety and repair**
Time required: 1 hour per week or 52 hours per year
- **Maintain/repair mowing equipment**
Time required: 1 1/2 hours per week or 36 hours per year
- **Conduct monthly safety inspection and repair**
Time required: 1 hour per month or 12 hours per year
- **Make preserve repairs**
Time required: 3 hours per month or 36 hours per year
- **Maintain roadways**
Time required: 2 hours per month or 24 hours per year
- **Maintain/repair 2 tractors**
Time required: 1 1/4 hours per month or 30 hours per year
- **Maintain two medium-duty trucks**
Time required: 1 hour per month or 12 hours per year
- **Conduct prescribed burns of 200 acres of prairie**
Time required: 80 hours every three years or 27 hours annually
- **Conduct prescribed burns of 70 acres of woodland**
Time required: 80 hours every three years or 27 hours annually
- **Remove invasive species**
Time required: 7 hours annually
- **Winter maintenance/snow removal (10 events)**
Time required: 20 hours annually

Total hours required to maintain 30 acres of improved area in a 300 acre preserve: 2,463 hours

Taking the total number of staff hours that it takes to manage our typical preserve's active areas — 2,463 hours — and dividing it by the number of acres managed in that preserve — 30 — equals the number of Operations' staff hours per acre, per year. (2,463 divided by 30 = 82.1) Therefore, for our typical preserve, the Operations staff spends approximately 82 hours per acre, per year, to maintain an area that is active/improved. Note: This exercise does not take into account unpredictable seasonal work, such as storm damage or damage to amenities by users or graffiti. This can account for another significant portion of staff time.

Total staff hours for 30 acres of improved preserve = 82 staff hours/acre/year

Managing Growth is a key principle of this *Comprehensive Master Plan*. One of our main objectives is to evaluate service levels and determine resource needs to develop a plan for expansion or modified service levels.

Natural Resources Department Workload

Using the same basic principles of a typical preserve and the standard that 90 percent of the land will be preserved for the restoration of plant and wildlife habitat, the Natural Resources department would typically be responsible for management and maintenance of these areas.

Our typical 300-acre preserve example contains 270 acres that are preserved for the restoration of plant and wildlife habitat. The layout for this model preserve will be 70 acres of woodland and 200 acres of wetland or prairie. Note: It is important to understand that it takes *more* than five years to convert an area previously used for agriculture, back to something resembling a natural plant community. This process will take considerably longer if historic wetlands were drained or if woodlands were removed. With that understanding, the following is a base list of duties, and the time it takes to convert natural areas back to pre-settlement conditions.

Natural areas here would be preserved and managed to enhance local and regional biodiversity. Old field areas and row-crop fields would be converted to more natural conditions, such as 70 acres of woods and 200 acres of prairie. Figures provided here are based on completed and ongoing department projects.

Assumptions made with a 70-acre woodland:

- It is a typical oak-hickory complex degraded by heavy honeysuckle and buckthorn growth
- Operations staff provides support for land-management efforts, for example, 50 percent of the prescribed burn crew
- Tree thinning occurs in three phases with one phase each year
- All brush removed in one phase
- All seed needed was purchased, not hand-harvested

Assumptions made with 200-acre prairie planting:

- Area has just been taken out of row-crop production
- Site has flat to gently rolling topography
- All work to be completed by Natural Resources staff
- Necessary seed is a combination of machine-harvested and local hand-harvested
- Field contains typical rich weed seed bank
- Operations department staff provides support for land-management efforts, for example, 50 percent of the prescribed burn crew

The Natural Resources workload is not calculated daily for this exercise, as land-management tasks are more seasonal in nature as well as weather-dependent. The workload for the Natural Resources department would typically include:

- **Conduct annual brush control by machine and chainsaw for woodland**
Time required: 40 hours per year
- **Conduct follow-up stump resprout treatments**
Time required: 25 hours per year

- **Conduct prescribed burn of woodland**
Time required: 80 hours per year
- **Cut fire breaks at 2 hours per mile**
Time required: 6 hours per year
- **Re-seeding**
Time required: 64 hours per year
- **Weed control/mowing of 100 acres**
Time required: 100 hours per year
- **Bird monitoring**
Time required: 40 hours per year
- **Conduct prescribed burn of prairie**
Time required: 80 hours per year
- **Monitor spring flora in woodland**
Time required: 6 hours per year
- **Monitoring vegetation in prairie**
Time required: 24 hours per year
- **Weed control herbicide**
Time required: 20 hours per year
- **Maintain 1 vehicle, including pre-start inspection, fueling and shutdown inspection/cleaning**
Time required: 1/4 hours per day or 91 hours per year

Total hours to manage 270 acres in a natural area/preservation plan = 485 staff hours per year

When one divides those 485 hours by the 270 acres in our typical preserve example, we find the Natural Resources department spends 1.8 staff hours per acre for basic land management. **Total staff hours per acre = 1.8**
Managing Growth is a key principle of this *Comprehensive Master Plan*. One of our main objectives is to evaluate service levels and determine resource needs to develop a plan for expansion or modified service levels.

Public Safety Department Workload

The safety of our preserves is of utmost importance. The level of service projected by the Public Safety department is instrumental in adequately protecting the District's preserves. The first concern for a property, after we acquire it, is its safety. Whether or not it is open to the public, our Public Safety department is responsible for monitoring each preserve. Our current ratio provides one officer for every 39 open preserves, per shift. The District currently has 78 open preserves. Using that formula, the District staffs two officers per shift. In an eight-hour shift, this would allow an officer to drive to and monitor preserves for 12.3 minutes each. As we acquire more land, make improvements and open new preserves, the basic calculation remains the same. The above is a service-level goal of the department but varies based on crime patterns, calls for service and administrative details.

Remaining Departments' Workload

Growth not only affects the Operations & Maintenance, Natural Resources and Public Safety departments, but also affects the administrative departments that provide support for these departments, including Administration (overall oversight of the District), Community Affairs & Environmental Education (marketing all District amenities, grand openings and special events, providing nature programs across the County), Human Resources (hiring staff for all departments, safety training and volunteer resources), Finance (overall fiscal management, payroll and bid letting) and Planning & Development (creating trail connections, adding preserve amenities, and making the preserves accessible for all). Regardless of the function — all department workloads are impacted by a District that's tripled in size. Each of these departments will continue to work at current staffing levels and seek ways to increase efficiencies where possible. Again, each department may need to determine an appropriate level of service, to ensure needs are being met.