

Chapter 1: Maintenance Principles

In the United States, we tend to think that the organized park and recreation movement is quite young. Viewing it historically, the development of park and recreation facilities is actually quite old. Descriptions of the early Babylonian, Assyrian, Persian, and Indian gardens antedate the birth of Christ by many centuries. Historical records indicate that many of these early parks and gardens were quite elaborate, with floral displays and fountains. Many provided sanctuaries for wild animals and were established as private hunting grounds for the nobility.

The most famous of these ancient gardens are the Hanging Gardens of Babylon, one of the Seven Wonders of the World. The gardens which in all probability were not really hanging but rather a series of terraces, were built by King Nebuchadnezzar to cheer up his homesick wife, Amyitis. Historians believe the gardens were built around 600 B.C.

During the Greco-Roman era, gardens, parks, and recreation facility development became considerably more elaborate. In and around Rome, villas were developed with elaborate gardens, courts for ball games, and

baths. Most of these were privately owned and used; however, some were opened for public use at a later date.

In 1500 to 1700 many of the great parks and gardens in Europe were developed. Between 1660 and 1670, Le Notre, gardener of King Louis the 14th, developed two parks in Paris—Tuileries near the center of the city and Versailles behind the palace of the same name. In London, Henry VIII acquired Hyde Park from the monks of Westminster Abbey in 1536. The adjacent Kensington Gardens were developed a bit later. The oldest park in Berlin is Volkspark Friedrichshain and it was opened in 1848.

In the United States Boston Common is generally considered to be the first park although some historians make a case for the plaza in St. Augustine, the first permanent settlement in the U.S. Boston Common was established in 1634 when it was designated a common pasture. In addition to grazing, it was used for military drills and public hangings. Not until 1830 was the grazing of cattle prohibited. The first landscaped park was Central Park in New York. Central Park

was established in 1853 when the state legislature authorized the city of New York to acquire 700 acres in the center of Manhattan by the use of the power of eminent domain. Subsequently, a contest won by Frederick Law Olmsted and Calvert Vaux provided the plan for this 843-acre park.

With few exceptions, early parks and gardens were developed for aesthetic reasons. Roads, trails, and benches provided access to these areas so people could stroll leisurely, ride, or sit quietly, enjoying the beauty. Keep off the grass signs were prevalent and patrons were expected to enjoy the scenic beauty of the park and not to harm it in any way. As late as 1997, people were prohibited from walking on the grass in parks in Paris, France. The development of facilities in parks for intensive recreation use is, for the most part, a recent phenomenon. Historical records reveal little insight into the maintenance practices carried out in these early parks and gardens. There are occasional references to groundsmen and gardeners, and it must be assumed that maintenance was performed by people we would call horticultural and urban forestry specialists. At any rate, the tools and equipment used by park maintenance personnel were primitive. It is safe to assume that much hand labor was employed in maintaining the grass, trees, shrubs, and flowers grown in these parks and gardens. When we compare the maintenance tasks needed to maintain early gardens and parks used for recreation with maintenance requirements for modern park and recreation facilities, the differences are astounding.

Today's park and recreation maintenance manager must be concerned with maintaining indoor recreation facilities—gymnasiums, bowling alleys, community centers, museums, art galleries, auditoriums, theaters, dance pavilions, and arenas. Outdoor recreation facilities, such as tennis courts, athletic fields, picnic areas, family campgrounds, ice

skating rinks, multiple-use game courts, swimming pools, public beaches, archery ranges, shooting ranges, stadiums, toboggan slides, ski slopes, golf courses, zoos, amphitheaters, and marinas, must also be maintained. When one considers the tremendous variety of facilities to be maintained, with the inherent maintenance problems associated with each, the maintenance manager's job becomes seemingly impossible. Indeed, park and recreation maintenance management is a complex job, and as new types of facilities and new equipment are developed, the job becomes even more complicated.

This chapter will examine the principles of park and recreation maintenance management. Maintaining a particular type of facility, a family campground, for example, will be dealt with only in general terms. When the principles related to establishing maintenance objectives and standards, planning and organization, personnel, general outdoor maintenance, grounds maintenance, computer applications, maintenance of vehicles and equipment, building maintenance, and public relations are understood, application of these principles to specific park and recreation facilities can be made by the professional manager.

THE ROLE OF PARK AND RECREATION SERVICE

Any park and recreation maintenance department that does not have a sound understanding of the purpose, aims, and objectives of the park and recreation agency of which it is a part cannot operate at peak efficiency. Maintenance is a service function and must be geared to help meet agency goals. The maintenance department that functions as a separate and independent entity, unresponsive to the agency's needs, is not performing its assigned function within the agency. In

the past, many maintenance units have assumed this independent role, creating havoc as the maintenance and program functions tug in opposite directions. For this reason, it is important to consider the role of park and recreation service today.

To understand the role of park and recreation service, we must first consider the concept of leisure and recreation. Recreation is defined as an experience that takes place during leisure (discretionary time) and is self-gratifying to the individual who participates. A great many of an individual's recreation experiences occur at a facility especially provided for that purpose—a golf course, a gymnasium, a community center, a hiking trail, a ski slope. Unless the facility is constructed, maintained, and operated in the best possible manner, the individual's chances of experiencing self-gratification are significantly reduced. The desire to provide the highest quality experience for each individual who participates in park and recreation programs should be the basic, underlying goal of every park and recreation agency and each employee within that agency from the director to the building custodian.

Next, we must examine some of the changes taking place in the use of leisure in American society. This examination in turn will give us some indication of the trends expected in the park and recreation movement in the future.

The most important change affecting park and recreation service is the increase in U.S. population. The total population has increased from 76 million in 1900 to 300 million in 2006. (U.S. Census). In addition to gross growth in population, distributional and compositional changes must be considered. Some sections of the United States are growing rapidly (e.g., the Sun Belt), while other sections of the country (e.g., the Northeast and Midwest) are experiencing

slower growth. According to the 2000 census data only two states, North Dakota and West Virginia showed population declines. One of the most significant compositional changes is the growth of older persons in the population. The elderly population over 65 accounted for 12.4% or 35 million people in 2006. An aging population can be expected to increase the demand for facilities for picnicking, golf, walking trails, social activities, travel, and other less strenuous forms of recreation. Another rapidly growing segment of the population is small children, indicating a need for playground equipment and child care facilities in the near future. The growth of minority groups should also be monitored because cultural factors may play a major role in an individual's selection of recreation pursuits. The Bureau of Census projections indicate a population growth between 2000 and 2020 of 55 million people in the United States (more than the 2000 population of California). With this growth in population, the need for additional park and recreation facilities in the future is self-evident.

The United States has become an increasingly urbanized nation. According to 2000 census data, 79% of the population lives in urban areas compared with 40% in 1900 (U.S. Census). Population densities are rising annually; a majority of the states east of the Mississippi River have population densities of more than 100 people per square mile.

Our large cities present serious problems concerning the delivery of leisure services. The pressures of urban living present problems that have only recently been recognized and are still being studied by sociologists and psychologists. Most cities, large and small, have not met (or are just beginning to meet) the challenge to provide and preserve open space. Park and recreation facilities remain far behind the demands and needs of the people. Previously, recreation has been provided primarily by public agencies. Now

a much broader leisure service system is in force, whereby many agencies—public, private nonprofit, and private for profit—combine to provide leisure services on the local level.

Changes in energy and transportation may have a profound effect on the way Americans use their leisure. The automobile has typically been used to gain access to recreation sites. Mass transportation, particularly air travel, will become more important. Many current forms of recreation consume energy. Boating, use of ATVs, golf carts, and water skiing are examples of recreation that consume, when aggregated, significant amounts of energy. In the future, these and other forms of recreation may be curtailed or drastically modified.

Affluence is a factor that directly affects the recreation movement. Although estimates vary according to what is included, Americans spend over \$565 billion annually for leisure. Americans spend one dollar out of eight for sports equipment, vacation travel, golf and tennis outings, admission to movies and spectator sports events, and a variety of other recreational pursuits. Present indicators demonstrate that Americans place a high priority on recreation spending. In spite of great affluence in the United States, millions of Americans live at poverty or near-poverty levels, causing a difficult dilemma for agencies seeking to provide recreation service's for everyone.

Social change has major implications for park and recreation agencies. Increased crime and delinquency, changing sexual mores, changing family patterns, religious influence, and the loss of primary group contacts must be considered by any agency seeking to provide park and recreation services. The emergence of new values and life styles will influence future recreation demand.

The changing nature of work, both in quali-

tative and quantitative terms, is a vital issue. With industrialization, automation, cybernation, and the rapid growth of service-related jobs, millions of men and women in recent decades have been forced into dull, monotonous jobs that provide little challenge and even less satisfaction. The growth of health, fitness, and wellness programs may reflect an escape from monotony. Traditional patterns of park and recreation services reflect the five-day, forty-hour work week with heavy use of facilities on weekends and during summer vacation periods. With the advent of changing work patterns, such as the four-day work week, flex time, job sharing, early retirement, longer vacations, dual-spouse wage-earning families, and sabbaticals, these traditional patterns are changing.

Scientific and technological change has provided the opportunity for additional leisure through such labor-saving devices as microwave ovens, dishwashers, snow blowers, and prepared food. Medical advances have produced healthier individuals who live longer and are physically more active. Science and technology have also provided the knowledge to produce facilities and equipment that improve our recreation. Examples of these changes include artificial ice rinks, snow-making machines, lightweight materials for hang gliding and backpacking, and home entertainment equipment, such as the VCR and compact disc. The aerospace industry has produced materials that have been adapted for use in tennis racquets, golf clubs, fishing rods, and sailboat masts. Sports clothing is lighter weight and offers improved warmth, better durability, and better freedom of movement.

Changes in education have the potential to produce profound changes in leisure use patterns. The need to educate for leisure-centered living is now gaining acceptance and is translated into programs at all educa-

tional levels. The adult education movement is gaining momentum in terms of professional and personal opportunities. Modern communications technology makes home study a reality, and television and Internet delivery systems provide an avenue all park and recreation agencies must explore for new programming concepts.

The environmental movement, born in the 1960s, continues to gather public attention. The American public has developed a land ethic, and park and recreation agencies as primary landholding agents of the people will be expected to exhibit responsible stewardship for land under their jurisdictions. This is particularly important in urban areas where natural areas are quickly disappearing. The continuing demand for more and better outdoor recreation opportunities indicates the need for educational programs that will stress intelligent and responsible use of our natural resources.

Many of the changes discussed suggest an increase of leisure available to masses of people and the need to use this leisure wisely. Indicators such as increased population spending and the increased use of a great variety of recreation facilities show that increased leisure is indeed a reality. Leisure is neither good nor bad. Unwisely used, leisure is dehumanizing and leads to boredom and anxiety. Conversely, the individual who learns to use leisure in a wholesome manner can add a new dimension to his or her life. The wise use of leisure can add an exciting, dynamic quality to life, transforming the human mind and spirit.

The challenge to the park and recreation professional is to provide an opportunity for individuals to experience the positive rather than the negative side of leisure. Although the park and recreation professional cannot ensure a positive leisure experience (the individual's freedom of choice predicates this

assumption), he or she has the responsibility of leading the public to these experiences by providing facilities and programs in which such experiences may occur. The recreation specialist has the further responsibility of making the facility and program opportunities as attractive and appealing as possible. This overview of recreation service simply emphasizes the importance of park and recreation maintenance management. A high standard of maintenance may indeed make a significant difference in the quality of a person's life.

MAINTENANCE AND OPERATIONS DEFINED

For the purposes of this book, park and recreation maintenance is defined as keeping park and recreation areas and facilities in their original state or as nearly so as possible. In this definition, maintenance includes routine, recurring work; repair work (both major and minor); and minor construction work. Areas and facilities where maintenance is performed include properties owned or under the jurisdiction of a park and recreation agency.

Park and recreation operations deal with park and recreation programs and with the organization and/or regulation that allows optimum public use of areas and facilities. Park and recreation agencies deal with two types of program opportunities for people: directed and self-directed programs. In the case of directed programs, park and recreation agencies plan and organize programs and may provide direct leadership. Examples of directed recreation programs include day camps, playground programs, Little League and other youth baseball programs, and arts and crafts instruction. With self-directed programs, an area or facility is provided by a park and recreation agency and use is un-

planned and unorganized. Custodial leadership may be provided, but the participant need not have any direct contact with an agency employee. Examples of self-directed recreation programs include picnicking, hiking, free play in a gymnasium or game room, and golf.

Park and recreation agencies need to provide opportunities for both directed and self-directed recreation. If, however, the agency is to provide for the mass recreation needs of the community, state, or nation, efforts must be aimed more and more toward self-direction. For example, swimming instruction classes are offered so the individual who participates can enjoy swimming at a pool or beach on his or her own.

More is involved in operating a self-directed recreation facility than just constructing the facility and opening it to public use. An agency must follow three basic steps: (1) establish operating principles—for example, determine who may use the facility, hours of operation, and under what conditions; (2) provide supervision to ensure that the established policies are carried out; and (3) maintain the facility according to established maintenance standards. Fortunately, the era of keep off the grass signs in our public parks is largely over. Parks should be aesthetically pleasing, but they are also provided for people to use. The maxim Parks are for people accurately reflects the thinking of today's park and recreation professional. Maintenance and operating policies must be geared to provide optimum use, and the professional should be concerned both with the quantity and quality of the recreation experience. Quantity of use is ensured by providing an adequate number of areas and facilities for public use. Quality is provided through good management, that is, by operating and maintaining areas and facilities according to the highest possible standards.

The park and recreation professional has a dual responsibility: (1) to provide an opportunity for the finest possible recreation experience for people, and (2) to protect the resource, natural or man-made. Both of these obligations are vitally important, and to some, they seem diametrically opposed. This, however, is not the case—they go hand in hand. Unless both goals are achieved, the park and recreation professional has not done a good job.



Figure 1.1: Good maintenance helps to ensure a safe playground.

GUIDELINES FOR ESTABLISHING A MAINTENANCE PROGRAM

Each recreation agency has problems and needs that are unique. The maintenance operation of every agency is different because of geography, facilities to be maintained, recreation programs provided, whether the agency is public or private, budget, and the characteristics of the public being served. Despite these differences, certain principles are basic to any effective maintenance operation. A principle is defined as a fundamental truth based on fact or philosophic judgment. The following principles are designed as general guidelines for establishing

a maintenance program. These principles provide a basis upon which the entire maintenance operation of a department should be developed. These principles can also be used as standards to measure the effectiveness of an existing maintenance program. A breach of any one principle can cause a serious disruption in providing high quality recreation service by a park and recreation agency.



Figure 1.2 Good design minimizes maintenance problems.

1. Maintenance objectives and standards must be established.

The first step in establishing a maintenance program is to form general objectives, which are statements of the purposes and goals of a park and recreation maintenance department. Although maintenance standards may vary from one department to another, the general objectives of park and recreation maintenance have very little variation. The general objectives of park and recreation maintenance may be stated as:

1. Park and recreation areas and facilities

should have a clean, orderly appearance at all times.

2. Areas and facilities that are aesthetically pleasing should be developed and maintained or identified and protected.
3. Areas and facilities should be maintained to create a healthful environment.
4. Areas and facilities should be maintained to create a safe environment.
5. Maintenance should promote good public relations by providing areas and facilities where people have an opportunity for an enjoyable leisure experience.

A standard is a yardstick or criterion by which particular maintenance practices may be gauged. Maintenance standards are the stepping-stones used to accomplish the general maintenance objectives. Obviously, these standards can be established only after the general objectives for the department have been formulated.

Factors that affect how maintenance standards are achieved include intensity of use, weather, topography, quality and quantity of supervision, types of programs, and vandalism.

Although objectives are general in nature, maintenance standards must be established for specific areas and facilities contingent on the criteria previously listed. Maintenance standards describe the conditions that exist when maintenance tasks have been successfully completed. They provide a means to compare conditions, found by inspection or observation, to the accepted standards for the particular area or facility. Maintenance standards should be established for all areas and facilities, including grounds, signs, fences, buildings and other structures, roads, parking lots, trails, utilities, and specific facilities, such as picnic areas, campgrounds, and ball fields. The quality of the maintenance program is established as stan-

dards are determined. A standard establishes guides for the development and implementation of a maintenance plan for the park and recreation department. Examples of maintenance standards are given in the appendix to Chapter 5.

2. Maintenance should be performed with economy of time, personnel, equipment, and materials.

Economy of time. All maintenance tasks should be done as quickly as possible. Every effort should be made to accomplish maintenance work as soon as possible after a legitimate request has been made. Month-old requests for repairs and service are irksome to the staff member making such requests, and they lead to conflicts between maintenance and program personnel. It is also important that maintenance work not interfere with a program function. For example, grass cutting or building maintenance at a facility where a day camp program is held should be performed when the camp program is not in session. That is, the maintenance on such a facility should be performed early in the morning before the campers arrive or late in the afternoon when they have departed for the day.

Economy of personnel. An optimum number of workers should be assigned to perform various maintenance functions. There is an optimum for each maintenance task, whether it be mowing a golf green, winterizing a swimming pool filter system, or maintaining a baseball diamond, and a conscious effort should be made to determine the most efficient number of workers required to perform the task. Economy of personnel also implies using workers trained to do a particular job. Assigning workers to a job they cannot efficiently perform because of lack of skill or training is wasteful.

Economy of equipment. It is important to have the proper equipment necessary to do the job. In attempting to do the maintenance job in the most economical manner possible, the use of mechanized equipment plays a vital role. Historically, many maintenance tasks have been performed with hand tools and backbreaking labor. Considering its high cost, hand labor should be reduced to a minimum. Switching from hand labor to power equipment is not the total solution to the problem. Modern maintenance operation implies having the right power equipment to do the job.

Economy of materials. Along with adequate equipment to do a job, proper materials are also necessary. Workmen must be provided with appropriate cleaning materials and chemicals to accomplish their tasks. Economy of materials is particularly applicable to all types of repair work. Communication between the person requesting work and the maintenance department supervisor assigning the tasks is essential. If proper assessment of the job is made initially, the work crew can take all tools and materials needed to accomplish the task rather than have to return to the shop or storeroom for additional supplies once they see what has to be done.

Maintenance costs continue to rise each year as the cost of personnel, equipment, and materials increases. One way the maintenance department can combat these rising costs is to do the job more economically and more efficiently.

3. Maintenance operations should be based on a sound, written maintenance plan.

Every maintenance department should have a detailed, comprehensive maintenance plan. The value of a maintenance plan is (1)

to provide a systematic approach in accomplishing the work of the department, (2) to provide a sound method of justifying budget requests, and (3) to serve as a communication device for persons higher or lower in the organization.

The maintenance plan should never be the work of one individual (although one individual can best coordinate the actual writing of the plan). It should be a cooperative, coordinated effort encompassing the entire maintenance staff. The plan must be dynamic, that is, subject to constant revision as conditions change and/or better ways are found to accomplish certain tasks. Above all, the maintenance plan should allow no substitute for quality. If compromises must be made because of a lack of personnel or equipment, these should be made after the plan has been completed and not incorporated into the plan. A detailed discussion of how the maintenance plan is formulated is presented in Chapter 2.

4. Scheduling maintenance work must be based on sound policies and priorities.

The decision of when to do what, is vital in a well-managed maintenance department. When assigning work priorities, value judgments are constantly being made by administrative and supervisory personnel. For example, someone must make the decision whether first to fix a leak in a golf course irrigation system or at a drinking fountain in a picnic area. While the elimination of these value judgments might at times seem desirable, pragmatically it is impossible to eliminate this responsibility. Part of a maintenance supervisor's job is to make these decisions. Although these value judgments cannot be eliminated, guidelines can be established, which will be helpful in the decision-making process. Every maintenance

department should carefully consider the criteria upon which maintenance scheduling decisions are to be made. Once criteria have been established, work scheduling gains consistency, and judgments can be evaluated in terms of their conformity to the criteria. For a more complete discussion of this topic see Chapter 2.

5. All maintenance departments should place high emphasis on preventive maintenance.

All maintenance departments should stress preventive maintenance. Preventive maintenance is defined as continuous attention and care to prevent damaging wear and costly repairs. The purpose of a program of preventive maintenance is to get optimum life from facilities and equipment used by a park and recreation agency. A maintenance department can get into the rut of constantly trying to catch up with needed maintenance and repair, while little attention is given to preventive maintenance. Careful planning and scheduling is necessary to prevent such a situation.

Preventive maintenance is an important consideration in all aspects of maintenance work. In relation to all types of equipment, it means daily, weekly, and seasonal attention to lubricating, changing oil, and replacing worn parts before they fail rather than when the machine breaks down. In relation to buildings, the concerns must be for care of mechanical systems, care of floor coverings, and painting. Preventive maintenance applies to maintaining all recreation surfaces in top notch condition, for example, tennis court resurfacing or maintaining adequate ground cover in a picnic area to prevent costly and unsightly erosion. It may involve a spray program to prevent insect and disease damage to turf or shrubbery. In short, preventive

maintenance is good maintenance management to prevent damage before it occurs. The advantage of such a system is being able to schedule maintenance conveniently rather than responding to breakdowns in the system that are likely to occur at times when the maintenance department is understaffed or extremely busy.

6. The maintenance department must be well organized.

The purpose of departmental organization is to see that the maintenance function is carried out in the most efficient manner possible. Basically, good organization involves making the most efficient and effective use of personnel, equipment, materials, and time. There are no easy solutions to the problem of effective organization. Organizational structure must be tailored to the needs and particular requirements of each park and recreation agency. The problems of organizational structure are discussed in detail in Chapter 2.

7. Park and recreation agencies must provide adequate fiscal resources to support the maintenance program.

Although there is a great variation among park and recreation agencies, maintenance costs are a major expenditure for all. In a typical state or national park with a heavy emphasis on outdoor facilities, maintenance costs may represent 60-80% of the annual operating budget. Municipal park and recreation departments may easily spend 50-60 % of their operating budget on facilities and maintenance. If ways can be found to do the maintenance job more efficiently and more economically, more fiscal resources can be made available for new programs

and facilities. Unfortunately, too often the maintenance section of the park and recreation budget has become the whipping boy for uninformed boards, city councils, public administrators, and CEO's of private agencies. As a result there are inadequate fiscal resources provided to accomplish the needed maintenance. One of the prime responsibilities of the head of any maintenance program must be to sell budget needs to superiors. This can best be accomplished by well documented evidence of previous years' expenditures and projected needs for the coming year(s).

One of the most important and often neglected aspects of the maintenance budget is equipment replacement. A separate, adequate fund, which can be drawn upon as needed, should be established for this purpose. The merit of this system is that equipment can be replaced at the optimum time rather than after the money has already been budgeted for that fiscal year, or waiting two years beyond optimum replacement because funds for replacement are not available. In order for an agency to have the equipment needed to get the job done, some workable system of equipment replacement is essential. A more complete discussion of this topic is found in Chapter 9.

One essential policy for all recreation agencies should be "If you can't maintain it, don't build it." Too often funds for capital improvements are secured and facilities constructed with no regard for the funds needed to operate and maintain them. Operating facilities with inadequate programs, supervisory staff, and funds for maintaining the facilities may seem to be beneficial when considering short-term needs, but ultimately it is costly and poor management practice.

8. Park and recreation agencies must provide adequate personnel to carry out the maintenance function.

Because of low wages, park and recreation agencies have traditionally hired unskilled laborers for maintenance work. While the unskilled nature of the work may provide a legitimate reason for low wages, today, the conditions have changed. Personnel used in maintenance work should be skilled technicians rather than laborers. This change has come about primarily because of the use of sophisticated mechanical equipment.

When maintenance labor is approached positively with the idea of providing work that is important, meaningful, and essential to the success of a park and recreation agency, a successful maintenance operation is likely to result. When maintenance labor is viewed as demeaning work that must be accomplished despite its unpleasantness, failure will be the probable result

The positive approach to maintenance labor is predicated upon (1) hiring quality personnel (the implication here for adequate wages is obvious), (2) a good orientation program to sell an individual on the importance of his or her job and the overall importance of what the agency is seeking to accomplish, (3) adequate initial and in-service training to do the job for which the employee has been hired, (4) good supervision that is responsive to the needs of the employee, and (5) good communication at the upper administrative levels to articulate the importance of the job the maintenance staff is doing.

9. The maintenance program must be designed to protect the natural environment.

Park and recreation professionals must ac-

cept responsibility as stewards of the natural environment for the public. Park and recreation agencies, particularly in urban communities, often have under their jurisdiction a high percentage of the open space and natural areas remaining in a community. Stewardship of this land must be viewed as a serious responsibility. This stewardship responsibility extends to private landholders as well as to public holdings. Private agencies, for example, country clubs, family campgrounds, and resorts, manage valuable natural landholdings. If we expect the general public to take seriously the environmental crisis confronting our nation and the world, the park and recreation profession must accept a leadership position through good environmental management of lands under their jurisdiction. This is particularly applicable to the way in which we develop and maintain land for recreation use. The impact on the environment should be carefully considered in all aspects of park and recreation management.



Figure 1.3 Good stewardship means preserving natural beauty.

Park and recreation professionals should act in a number of ways to protect the natural environment. First, they are preservers. Park managers must preserve all park resources

from encroachments and seek to acquire more open space to ensure parkland for the future. They must act as preservers of natural beauty in those areas now controlled and acquire land to preserve areas that are perceived as beautiful for present and future generations. The aesthetic value of park and recreation areas cannot be overstated. Developing areas where people observe beauty in a spirit of contemplation may indeed be one of the highest forms of recreation. Beauty is inherent in an environment where people can breathe clean air, swim, or fish in clean, unpolluted lakes and streams. Beauty is also inherent where urban populations can enjoy greenery and open space. This beauty should be available and accessible to people as long as access does not destroy the natural resource.

When recreation areas and facilities are developed, some damage to the natural environment is bound to take place. Vandalism, littering, solid waste disposal, compaction, destruction of vegetation, overcrowding, water pollution, and soil erosion are all issues that must be addressed. Good management can mitigate most of these concerns. Elements of good management related to environmental protection include:

- *Good land use planning.* Careful allocation of resource for most appropriate use based on the ability of the resource to absorb that use must be considered.
- *Controlling level of development.* How much use a site can absorb can be controlled by limiting the amount of development on a site. That may entail limiting the number of picnic tables, the number of campsites or parking spaces. Park managers must ensure the protection of the natural resource during the design and construction phase, when areas for intensive recreation use are developed. Picnic areas, campgrounds, ath-

letic fields, and any other facility, which because of poor design and/or construction destroy the environment, are a disgrace to the profession.

- *Consider appropriateness of development.* Appropriateness of development is a value judgment which may be the most difficult of all management decisions. Any facility which is an abomination to the natural environment violates the principle of appropriateness of development. For example, in most natural areas amusement rides are not a good choice.
- *Consider the quality of development.* The use of good design and appropriate materials can help any facility blend into the natural landscape.
- *Take measures to minimize environmental damage.* The use of rip rap on shorelines, trail bars on walking and hiking trails, porous parking lots to absorb water, are good examples. Carrying capacities for each facility should be established so that fragile resources can be protected from overuse.
- *Create natural beauty.* The park and recreation professional should help create natural beauty where none now exists. Unfortunately, in many urban neighborhoods little, if any, natural beauty remains. Formal gardens, attractively kept parkland, well-landscaped and maintained roads and streets, and aesthetically designed play areas provide an opportunity to increase the quality of life for everyone. Opportunities must also be provided for the urban dweller to experience the natural environment by maintaining access to large natural areas.
- *Good facility maintenance.* When a park and recreation agency develops and adheres to high standards of maintenance, it has taken an important step toward

preservation of the natural environment. The steward's role extends to providing litter-free picnic areas, well-maintained restrooms, and vandal-resistant facilities. A well-maintained facility is essential if individuals are to achieve the full potential from their recreation experience.



Figure 1.4 Well-designed and maintained parkways provide vistas of scenic beauty.

The maintenance manager must be concerned with ecological processes and the impact of the park and recreation visitor on those processes. A conscious effort must be made to plan for and carry out the management of natural and cultural resources in a manner suited to protect them now and preserve them for future generations. These considerations must be included in the maintenance management plan (discussed in detail in Chapter 2).

People need places to go to escape from the stresses of modern life. Park and recreation professionals should provide parks and greenways for adolescents to escape from their parents and to contemplate what life is all about, for senior citizens to enjoy the beauty of spring wildflowers, for anyone who needs quiet, and for couples to walk beside clear streams while they plan their lives together. The opportunity for meaningful contact

with the natural world is disappearing for many people today, especially the urban dweller.

Of course, the park and recreation professional cannot be expected to solve all environmental problems, but he or she can and should make a positive contribution in many areas. Outstanding federal, state and local parks could be the greatest legacy we leave for future generations.



Figure 1.5 Park buildings and structures should be designed to blend into the natural environment.

10. The maintenance department must assume the responsibility for public and employee safety.

The maintenance department has a primary responsibility for public safety, which should, of course, be shared by the entire park and recreation agency. The responsibility for the conduct of participants in the recreation program is largely a matter for the program staff; however, providing areas and facilities that are safe for recreation use must be carried out by the maintenance department.

Public safety is a relative matter. It is not possible to restrict the public's activities to

the point of making an area or facility totally safe. When children and adults play, accidents will happen, and some will be hurt. Realizing the inherent dangers associated with many types of recreation activities, the park and recreation professional must make sure that facilities are as safe as possible so that the equipment and facilities provided are not the cause of accidents.

With the emphasis on liability in current society, public safety is a more important consideration than ever before.

A program designed to reduce accidents must begin with accurate accident reports and periodic review of these records. Accident records may be required by law or by the agency's insurance company. But, lacking either of these mandates, the agency should nonetheless keep good records for internal use.

When accidents occur and agency facilities or equipment are at fault, action should be taken immediately to prevent additional accidents. This may involve immediate repair of the equipment or facilities at fault, or it may mean closing an area or facility until repairs can be made. An analysis of accident reports on a periodic basis will reveal accident-causing areas, and action can be taken to prevent future occurrences.

The maintenance staff should be trained to routinely observe and report any conditions that they feel may endanger public safety. Many times, an individual performing a maintenance function may be the only staff person to come into contact with remotely located facilities for a long period of time. In addition to routine observation by staff, periodic inspection tours should be conducted by individuals trained to look for hazardous conditions. When possible, a safety engineer should be hired to carry out periodic inspections.

Public safety should be carefully considered during planning and construction stages. Errors made with regard to public safety are much easier to correct at this stage than after the facility has been constructed.

The maintenance program must also emphasize employee safety. Comprehensive accident prevention and safety programs should be developed.

One of the most constructive steps toward improving employee safety was taken with the passage of the Williams-Steiger Occupational Safety and Health Act of 1970 (OSHA). The OSHA program has had, and will continue to have, far-reaching effects on the improvement of employee safety, including the establishment of safety standards for many maintenance activities directly related to park and recreation work. In addition, states have established employee safety standards for governmental employees. The recognition of safety problems by agency administrative personnel and the desire to correct them are basic requisites for a workable safety program. Putting up a few posters is not enough; the department must be dedicated to preventing accidents. Expert help, essential for establishing a worthwhile safety program, is available in most communities through a variety of sources, including insurance company safety engineers, industrial safety engineers, local safety councils, the National Safety Council, or the Occupational Safety and Health Administration. It is irresponsible not to take advantage of these sources of assistance. The details of how to establish an employee safety program are discussed in Chapter 5.

11. In the design and construction of park and recreation facilities, maintenance should be a primary consideration.

There is no truer maxim for the park and recreation professional than “Build it right from the start.” In these days of high construction costs, it is easy to rationalize cutting corners to make a construction project economically feasible. Compromising the principle of good design and construction from the beginning is, in the end, more costly than doing it right from the beginning.

One of the most important factors in good construction is the use of appropriate building materials. Materials used in park and recreation facility construction should be (1) durable, (2) easy to maintain, (3) easy to repair and (4) easy to replace. Good planning and choice of materials can ease the task of replacement when necessary. These factors are critical from the standpoint of maintenance and should be carefully evaluated along with other considerations such as aesthetics, safety, cost, and function.

Using rustic materials in parks or materials that blend with rather than protrude from the environment is not incompatible with high quality, easy-to-maintain materials. Careful design and selection can accomplish both objectives.

The importance of maintenance input into the planning process should not be overlooked. The time to prevent costly mistakes in terms of maintenance time and effort is during the planning process. When maintenance department employees have an opportunity to review plans for new buildings and facilities, potential problems can be averted by adopting alternatives that are acceptable to the designer, program staff, and maintenance staff. One way to ensure maintenance input is to have a maintenance

engineer on the planning staff. In addition, there should be consultation with the operational maintenance staff when planning new facilities, particularly those with which the maintenance staff has had some experience. Designing facilities that are functional as well as aesthetically pleasing, should be the goal of every park and recreation agency.

There is no such thing as a maintenance-free facility, but some types of facilities are easier to maintain than others. Attention to minor details of the plan can ease the maintenance burden. For example, adequate numbers and placement of electrical outlets and water faucets can avoid the need for long extension cords and hoses when maintaining the facility.

The use of temporary structures should be discouraged and avoided whenever possible. Temporary structures have a way of becoming permanent and they usually represent high overhead maintenance headaches.

12. Maintenance employees are responsible for the public image of the park and recreation agency.

Every maintenance employee is responsible for maintaining the public image of the park and recreation agency. Many park and recreation professionals do not think that maintenance employees have a role in public relations for the department; however, the maintenance staff can be a fine public relations emissary. As the public uses the park and recreation facilities, the only contact they may have with an agency staff person is with a maintenance employee—for example, a building janitor, a crew picking up trash in a picnic area or campground, or an individual raking a sand trap on a golf course. When this happens, it is important that the image presented to the public be a positive one.

Good public relations begins simply with

the maintenance department doing a good job in its routine work. Clean, well-kept facilities create a good public image. Public relations extends to the clean, neat personal appearance of all employees, including maintenance workers. Uniforms, although not essential, are very helpful in conveying the desired impression.

Good public relations on the part of maintenance employees does not just happen because the responsibility appears in the individual's job description. It is the result of a concerted effort on the part of the department. It begins with an orientation program designed to instill pride in working for the agency and is continued with in-service training opportunities designed to help the employee meet people while on the job. Employees should be able to answer questions, even foolish ones, commonly asked by the public, and when they do not know the answers, they should make the proper referral.

Conscious efforts by program staff should be made to involve some of the maintenance staff with the public when appropriate. For example, a gardener with a knowledge of plant propagation and care would make a welcome addition to a garden club tour. Not only would the gardener be a valuable asset to the group by virtue of the information he or she could provide, but also the experience would provide an invaluable boost to the individual's morale by letting him or her know that the job is worthwhile.

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