MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION
8787 Georgia Avenue • Silver Spring, Maryland 20910-3760

MCPB Item # 1
1/17/02

MEMORANDUM

TO: Montgomery County Planning Board

FROM: Gordon Rosenthal, Northern Regional Chief
Mark Pfefferle, Planning Coordinator
Tina Schneider, Natural Resources

DATE: January 11, 2002

SUBJECT: M-NCPPC Recycling: Options and Recommendations

PLANNING BOARD REVIEW: January 17, 2002

COUNTY COUNCIL COMMITTEE HEARING: February 4, 2002

STAFF RECOMMENDATION: APPROVAL to transmit document to County Council PHED Committee.

PURPOSE OF THE REPORT

This report provides an assessment of the current recycling operations within M-NCPPC. The report outlines the known recycling rates, operational difficulties, and areas for improving efficiencies. Multiple options for improvements are outlined including recycling rates at various park facilities. Other key components to increasing the Commissions recycling rates are identified.

BACKGROUND

In May 2001, the Montgomery County Council requested the Maryland-National Capital Park & Planning Commission (M-NCPPC) to assess its recycling operations and to identify means to improve recycling efforts throughout the Department of Park and Planning. Two factors are responsible for this request. First, the County Council desires that solid waste generated in the County be recycled to the greatest extent possible. The second is to improve efficiency and potentially reduce refuse disposal costs.

REGULATORY REQUIREMENTS AND COUNTY WIDE GOALS

In Montgomery County, Executive Regulation 109-92, "Solid Waste and Recycling", requires households and businesses to recycle mixed paper, containers, and yard waste. M-NCPPC is classified as a business establishment. Therefore, M-NCPPC must comply with the regulatory requirements for businesses.

In general, the regulation requires M-NCPPC to:

- Develop a recycling program.
- Describe waste reduction and recycling methods.
- Submit an annual recycling and waste reduction report to the county.

M-NCPPC is in compliance with the requirements of the recycling regulation, but there has been little or no improvement in the percentage of material recycled over time.

EXISTING CONDITIONS

All M-NCPPC facilities generate materials that can be recycled, however the day-to-day collection of waste does not always provide the resources needed to simultaneously collect the recyclable waste. Recycling rates within the Commission are under par with the County requirements for numerous reasons; lack of adequate transportation and separate recycling collection vehicles; lack of Commission recycling policy; no employee and public education; and lack of employee incentive.

RECOMMENDATIONS

Within this report, there are general recommendations that should be implemented to initiate a recycling program throughout the Commission. Specific recommendations for various types of facilities such as regional parks, local parks, office buildings, and enterprise facilities are outlined.

M-NCPPC RECYCLING: FINDINGS AND OPTIONS

Department of Park & Planning

Montgomery County, Maryland

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January 11, 2002

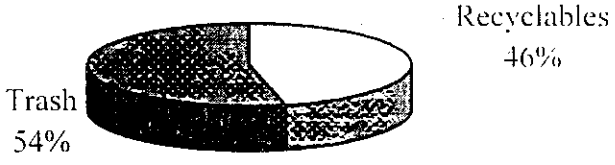
EXECUTIVE SUMMARY

In May 2001, the Montgomery County Council requested the Maryland-National Capital Park & Planning Commission (M-NCPPC) to assess its recycling operations and to identify means to improve recycling efforts throughout the Department of Park and Planning. Two factors are responsible for this request. First, the County Council desires that solid waste generated in the county be recycled to the greatest extent possible. The second is to improve efficiency and potentially reduce solid waste disposal costs.

In Montgomery County, the *Comprehensive Solid Waste Management Plan for the Years 1988 through 2007* establishes a **countywide** goal to achieve and maintain a 50 percent recycling rate by December 2004.[1] This goal does not apply to any specific type of facility, company, organization, or sector. It is a countywide goal.

Based on an assessment of operations conducted in fall of 2001, it is estimated that approximately 46 percent of the solid waste generated within M-NCPPC facilities was recycled. However, composting and reuse of woody material comprises 36 percent of the material recycled and only 10 percent is paper, and plastics, aluminum and metal.

Percent of Solid Waste Recycled and Disposed as Trash



[1] Department of Public Works and Transportation, Division of Solid Waste Services. *Comprehensive Solid Waste Management Plan for the Years 1998 through 2007*, as amended 2001.

Reasons why the paper, glass, plastic and aluminum recycling rate is low includes but not limited to the following:

- Senior management has not mandated recycling as a top priority for all M-NPPC activities and employees.
- Lack of opportunities for employees and patrons to recycle.
- Lack of education and training for employees on how to recycle and the need to keep the materials segregated from regular trash.
- Lack of equipment, space, containers and separate transportation to ensure segregation of the materials.
- Lack of staff, or a designated recycling coordinator to assist and direct staff in recycling activities.
- Lack of adequate record keeping.

Program deficiencies can be overcome by changes and approaches to the current M-NCPPC recycling efforts. Possible changes include, but are not limited to:

- Senior management should mandate all employees to recycle and direct staff to support and expand recycling efforts.
- M-NCPPC should develop a policy to *Recycle, Reduce & Reuse* materials. The Planning Board should adopt this Policy.
- Establish a budget to expand recycling program to enable suggestion implementation.
- Retain a recycling coordinator, above SAG, to implement and improve on the recycling program, and to:
    - Work with available resources from the United States Environmental Protection Agency's Waste Wise Program and the Maryland Department of the Environment's Commercial Recycling Assistance Program.
    - Investigate other collection programs to identify efficient means of collection, routing, needed equipment, and changes necessary.

- Recommend practical recycling options based on existing conditions, budget constraints and sound research and experience.
- Develop an efficient collection system
  - Work to design a program tailored to the needs of each building and facility.
  - Size recycling containers according to maximum need.
  - All recycling containers must be a uniform color with the international recycling symbol and bilingual.
  - Design or select uniform colors and style recycling containers.
  - Design symbols and text to be placed on all recycling containers.
- Design and implement a recycling education program for employees and patrons.
- Design or obtain educational brochures, literature, and signage to be used for training staff and informing patrons.
- Establish, coordinate and direct a new recycling committee.
- Develop a tracking system to record recyclables that are currently overlooked.
- Install additional recycling containers according to the needs of each site.
- Determine additional pick-up locations for the expansion of recyclable collection points serviced by Waste Management Incorporated (WMI).
- Work with PG-M-NCPPC to coordinate their recycling efforts with MC-M-NCPPC.
- Complete M-NCPPC's analysis of the refuse collection process.
- Monitor and report annual successes and failures, and progress toward achieving a 50 percent recycling goal.

- Maintenance managers must find ways for staff to transport recycling material to storage areas until ready for pick-up by WMI or delivery to recycling centers.
- Begin a "Recycling Improvement & Policy Changes" column in the Update.

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In May 2001, the Montgomery County Council requested the Maryland-National Capital Park & Planning Commission (M-NCPPC) to assess its recycling operations and to identify means to improve recycling efforts throughout the Department of Park and Planning. Two factors are responsible for this request. First, the County Council desires that solid waste generated in the County be recycled to the greatest extent possible. The second is to improve efficiency and potentially reduce solid waste disposal costs.

Assessing the recycling operations throughout the 30,000-acre M-NCPPC system is complex. The system includes numerous office buildings, nature centers, gardens, passive and active recreational areas, picnic areas, campgrounds, recreational buildings, golf courses, tennis centers, equestrian centers, skating rinks, vehicle maintenance yards, and miles of bicycle, equestrian, and foot paths. If each building or activity were separate businesses, it would have to conduct individual assessments, develop options, and recommend/make improvements for each business. Because of the complexity of M-NCPPC, an assessment of each facility was not possible; however, because of the similar nature of the operations for many facilities it was not necessary. **The purpose of this report is to assess current operations and develop recommendations.**

II. REGULATORY REQUIREMENTS & COUNTY WIDE GOALS

The 1988 Maryland Recycling Act mandates local governments in Maryland to recycle a minimum of 20 percent of the solid waste generated within each county.[2] In Montgomery County, Executive Regulation 109-92, "Solid Waste and Recycling", requires households and businesses to recycle mixed paper, containers, and yard waste. The regulation classifies the M-NCPPC as a business establishment. Therefore, M-NCPPC must comply with the regulatory requirements for businesses.

[2] See Annotated Code of Maryland, Environment Article, Section 9-1703.

In general, the regulation requires M-NCPPC to:

- Develop a recycling program.
- Describe waste reduction and recycling methods.
- Submit an annual recycling and waste reduction report to the county.

M-NCPPC has complied with the requirements of the recycling regulation, but little or no improvement in the percentage of material recycled has occurred.

In Montgomery County, the *Comprehensive Solid Waste Management Plan for the Years 1988 through 2007* establishes a **countywide** goal to achieve and maintain a 50 percent recycling rate by December 2004.[3] This goal does not apply to any specific type of facility, company, organization, or sector. It is a countywide goal.

III. EXISTING CONDITIONS

Virtually, all M-NCPPC facilities generate refuse and recyclable materials. The materials are generated, purchased, or brought into a M-NCPPC facility for use or consumption. The collection and disposal of these materials at the various facilities differs. In order to understand the existing conditions at various facilities, Park Managers completed a survey (see Appendix D, Recycling Survey) that identified the types of materials recycled at their facilities. The survey identified transportation, staff, containers, and financial impediments to recycling. The survey also identified strengths and weakness within the Commission's existing recycling program.

In order to estimate the percentage of material recycled, the amount of solid waste material generated must be known. This is necessary because the percentage of material recycled is dependent on the total amount of solid waste material generated. Solid waste includes all waste materials and debris, dead and felled trees, tree limbs, bush, plant, leaves, grass, garden trimmings, street refuse, bottles, cans, waste paper, cardboard, and any other waste materials. Solid waste also includes vehicles, containers, tires, appliances, furniture, or recreational

[3] Department of Public Works and Transportation, Division of Solid Waste Services, *Comprehensive Solid Waste Management Plan for the Years 1998 through 2007*, as amended 2001.

equipment that is in a state of disrepair. The following sections discuss trash/refuse collection, recyclable material collection and reuse, what some facilities are recycling, and the current rate of recycling.

a. Refuse/Trash Collection

All M-NCPPC facilities generate trash or refuse. Trash is generated through the day-to-day activities of M-NCPPC employees, by customers utilizing M-NCPPC facilities, or by illegal dumping.[4] Trash is collected and disposed by either M-NCPPC staff or by Waste Management Incorporated (WMI), a private vendor. WMI collects and disposes of trash from 17 facilities at designated sites. M-NCPPC staff collects the trash from all the remaining facilities and disposes it at the Montgomery County transfer station.

M-NCPPC utilizes five trash compactor trucks in the Southern region and five trash compactor trucks in the Northern region. Trash is collected from numerous facilities, or trash locations, before the truck is driven to the transfer station for disposal, making it nearly impossible to determine the amount of trash collected at a specific facility. Trash is loaded onto the trash truck by staff dumping the containers directly into the back of the truck. In some locations, the truck can drive next to the trash containers for emptying. In other locations, staff must walk to remote trash containers and carry the trash to the truck for disposal. The need or desire to place trashcans in remote areas of parks makes it impossible for staff to utilize heavy equipment for the removal of all refuse.

From November 1, 2000 to October 31, 2001, M-NCPPC disposed approximately 940 tons of trash at the Shady Grove transfer station. M-NCPPC is charged $44 for each ton of trash dumped on the transfer station floor. Meanwhile WMI collected and disposed approximately 396 tons of trash from 17 facilities. Therefore, the total amount of trash collected and disposed is approximately 1,336 tons per year. Exhibit 1 indicates the amount of trash collected at all M-NCPPC facilities.

[4] In some parks, Park Managers estimate that 50 percent of the trash collected is illegally dumped household trash.

EXHIBIT 1. TRASH COLLECTION AT M-NCPPC FACILITIES CALENDAR YEAR 2001

Collection Organization	Tons
M-NCPPC	940
WMI Refuse Collection	396
Total	1,336

b. Recyclable Material Collection and Reuse

Recycling efforts and activities in M-NCPPC facilities can be broken into four distinct segments. Each has its own successes and failures. These segments include employee generated, customer generated, composting and reuse, and vehicle maintenance activities.

1. Employee Generated

In numerous office buildings and other facilities, mixed paper and commingled materials[5] are recycled. However, not every office building has both mixed paper and commingled recycling programs. Inside the office environment, individual employees are responsible for separating recyclable materials from refuse and placing the material into the appropriate recycling containers. Maintenance staff is then responsible for transporting recyclable material to containers outside the office building to storage areas. Under a contract separate from the trash collection contract, WMI collects the recycled material and transports it to a recycling facility. WMI collects recyclable materials from 18 collection/consolidation points within the Park and Planning Department. Exhibit 2 identifies the locations where WMI collects recyclable material and the tons generated at each facility. It is important to note that the weight of material collected is not based on actual totals, but on the size of the container and the type of material collected in each container. This method is accepted by the County's Office of Solid Waste Services in determining recyclable material generation, but can over estimate recycling, particularly if the container is not filled.

[5] Commingle material includes plastic bottles and cans.

EXHIBIT 2. M-NCPPC RECYCLING LOCATIONS SERVICED BY WMI RECYCLING CONTRACT AND AMOUNT OF MATERIAL GENERATED PER YEAR

Facility Name	Mixed Paper Collection[1]	Commingled Collection[2]	Tons
Agricultural Farm Park	√	√	9.9
Black Hills Regional Park	√	√	13.8
Brookside Gardens	√	√	12.2
Cabin John Regional Park	√	√	27.8
Little Bennett Golf Course	√		15.6
Little Bennett Regional Park	√	√	16.6
Meadowbrook Maintenance Yard	√	√	21.8
MRO – Planning	√	√	17.9
Needwood Golf Course	√	√	9.2
Northwest Branch Golf Course	√		11.7
Parkside Headquarters	√		7.8
Pope Farm Nursery	√	√	6.0
Rockwood Manor	√	√	9.9
Saddlebrook Headquarters	√	√	19.8
Seneca Lodge	√	√	6.1
Shady Grove Maintenance Facility	√	√	23.9
South Germantown Recreational Center	√	√	16.2
Wheaton Ice Rink	√		7.8
TOTAL			265.6

1Mixed paper includes office paper, newspaper, and cardboard.
2Commingled includes plastic bottles, metal and aluminum cans, and glass containers

For facilities where recyclable materials are separated and WMI does not collect the recyclable material, it becomes M-NCPPC's responsibility to collect the materials and transport it to one of the collection/consolidation facilities. In most instances, the collection of recyclable materials and transportation of the recyclable material is sporadic. If the materials are not transported to a collection/consolidation facility, it becomes trash.[6] Employees may separate recyclable materials and trash in their day-to-day activities, but in some instances, this separation is not

[6] There are some exceptions where M-NCPPC staff collects the recyclable material and deliver it to a recycling facility not serviced or operated by WMI. The amount of recycled material going this route is unknown.

continued and the material is disposed as trash and taken to the transfer station as refuse. There are many reasons for this to occur including:

- Inadequate training or supervision of staff
- Inadequate resources to maintain separation of the material when collected by maintenance staff
- Insufficient onsite storage space to store recyclable materials separate from refuse
- Inadequate resources to transport the recyclable material to a WMI collection point, and
- Improperly equipped vehicles to maintain separation of the recyclable and refuse materials.

2. Customer Generated

There are five regional parks with approximately 30,000 acres of land containing picnic areas, playing fields, playgrounds, amphitheaters, trails, and other public facilities. At present minimal recycling takes place within the parks due to difficulties inherent in a large park system. Without a vehicle that keeps recyclables and refuse separate, collection of recyclables and transportation to a collection point becomes nearly impossible. The lack of a truck and staff needed for collection has resulted in most managers opting to avoid recycling altogether since budgets do not allow for equipment and staff to maintain such a program.

Parks, picnic areas, recreational buildings, enterprise facilities, and conference centers do not provide adequate opportunities for customers to recycle. Either Parks are void of recycling containers or, if they are present, they are inappropriate in size, location, and easily contaminated. Experts in the recycling industry and county staff agree that a successful recycling program requires an appropriate number of containers, container features to limit contamination, and the co-location of recycling containers with refuse containers. Information is not available to estimate the amount of recyclable material generated by M-NCPPC customers.

3. Composting and Reuse

Wood and organic material are composted at Brookside Gardens, Pope Farm Nursery, and at M-NCPPC golf courses. Brookside Garden, the largest M-NCPPC composting facility composts

approximately 200 cubic yards of organic waste each year. If it were not composted, this material would be transported to the Shady Grove transfer station for disposal. The composted material includes seasonal plants and leaves generated onsite or collected from office buildings and other public locations, and wood chips. Pope Farm nursery also has a composting operation, but it relies on material generated by the county or by private companies. M-NCPPC golf courses compost grass clippings. This is a common practice for all golf courses and is not included in the solid waste stream. In addition, downed trees are chipped to a size useable for tree mulching, ground cover and trail maintenance or made available as free firewood to county residents. M-NCPPC staff estimates that approximately 2,600 cubic yards of wood chips were generated in the past year and either composted or reused. This translates into approximately 650 tons of material.

Organic material that is not composted or reused is transported to the Shady Grove transfer station and dumped in the organic waste collection section of the transfer station. It costs M-NCPPC $29 per ton to dispose of this material at the transfer station. From November 1, 2000 to October 31, 2001, M-NCPPC disposed of approximately 48 tons of organic material at the Shady Grove transfer station. Exhibit 3 indicates the amount of organic material composted, chipped, or delivered to the county transfer station for disposal in the past year.

EXHIBIT 3.
M-NCPPC COMPOSTING AND REUSE (Nov 2000 to October 2001)

Location	Tons
Brookside Garden Composting	185
Woody Material Chipped, Reused, or Composted	650
Material Delivered to Transfer Station	48
Total	883

4. Vehicle Maintenance Activities

Federal and State regulations require the capture and recycling of certain fluids and wastes from vehicle maintenance activities. For example, the collection and recycling of used oil is mandatory under Federal regulations. In Maryland, the Scrap Tire Law prohibits the disposal of tires in landfills and the State has developed a system for the collection and recycling of scrap tires. In addition, the National Pollutant Discharge Elimination System (NPDES) storm water

management regulations require best management practices at equipment and vehicle maintenance yards. This regulation encourages the recycling of vehicle maintenance wastes. Exhibit 4 indicates number and kinds of materials recycled through M-NCPPC vehicle and equipment maintenance activities.

EXHIBIT 4.
VEHICLE MAINTENANCE RECYCLING
MATERIALS AND AMOUNTS

Location	Quantity
Converters	10
Starters	40
Alternators	60
Freon	40 pounds
Used Oil	900 gallons
Anti Freeze	220 gallons
Batteries	180
Tires	2000

The total amount of material recycled through equipment and vehicle maintenance activities equals approximately 27 tons.[7] All mechanics are required to recycle materials such as batteries, tires, anti-freeze, used oil, filters, and other vehicle maintenance parts. The Commission documents the collection and disposal of these materials disposed and recycled from the equipment and vehicle maintenance shops. This program is quite efficient and has been working successfully for many years. Records have been made available for the evaluation of this recycling improvement process.

c. Materials Recycled at Various Facilities

Exhibit 5 indicates the type of materials collected for recycling at some of the M-NCPPC facilities based on the survey responses. Managers have indicated the collection of these materials at their facilities but the participation is sporadic. It is important to note that much of the recycling material gets disposed of as trash due to the poor collection methods and the lack of recycling truck transportation.

[7] This amount is not included in the total amount of solid waste generated or in the percentage of material recycled.

EXHIBIT 5.
M-NCPPC RECYCLING SURVEY RESULTS [1,2]

Facility Name	Paper	Cardboard	Glass	Plastic	Aluminum	Vehicle Maintenance
Agricultural Farm Park	√	√	√	√	√	
Black Hills Regional Park	√	√	√	√	√	
Brookside Gardens	√	√	√	√	√	√
Cabin John Ice Rink	√	√	√	√	√	
Cabin John Maintenance Facility	√	√	√	√	√	√
Cabin John Regional Headquarters	√	√	√	√	√	
Little Bennett Golf Course	√	√				√
Little Bennett Regional Park	√	√	√	√	√	
Meadowbrook Maintenance Facility	√	√	√	√	√	√
Meadowside Nature Center	√	√	√	√	√	
MRO – Planning	√	√	√	√	√	
Needwood Golf Course	√	√	√	√	√	√
Northwest Branch Golf Course	√	√				√
Parkside Headquarters	√	√				
Pope Farm Nursery	√	√	√	√	√	
Olney Manor Park	√	√	√	√	√	
Rock Creek Regional Park	√	√			√	
Rockwood Manor	√	√	√	√	√	
Saddlebrook Headquarters	√	√	√	√	√	
Seneca Lodge	√	√	√	√	√	
Shady Grove Maintenance Facility	√	√	√	√	√	√
Sligo Creek Golf Course	√	√		√	√	√
South Germantown Recreational Area	√	√	√	√	√	
Wheaton Ice Rink/Carousel	√	√				
Wheaton Regional Park	√	√	√	√	√	√

1. There are inconsistencies with the results of this survey and what is actually being recycled at many of these facilities.
2. Additional facilities throughout the Commission may be recycling materials however they have not completed the survey.

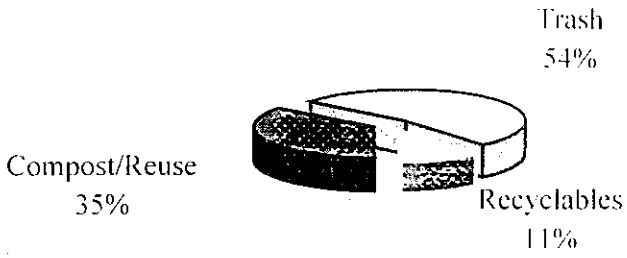
Other facilities may recycle material generated on site, however, the frequency and consistency is based on a number of factors including distance to WMI recyclable material collection points,

manpower, and type of materials collected. The amount of recyclable material collected and transported by M-NCPPC staff to a collection/consolidation point is unknown.

d. Current Rate Of Recycling

M-NCPPC generates a large amount of material for disposal. From November 1, 2000 to October 31, 2001 approximately 2,490 tons of solid waste was generated by Park and Planning. During this period, 1,154 tons of material were separated and recycled or composted. This equals 46 percent[8] of the total amount of solid waste generated. The remaining 54 percent of the solid waste generated is trash and disposed at approved and permitted solid waste disposal facilities. Exhibit 6 indicates the percentage of material recycled, composted, or reused by M-NCPPC.

Exhibit 6.
Percent of Solid Waste Generated by M-NCPPC Recycled, Composted/Reused, and Trash



In comparison, in October 2001, Montgomery County Public Schools recycled 15 percent of the solid waste generated and the county as a whole achieved a 36.5 percent recycling rate. In fiscal year 2001, approximately 10 percent of the solid waste delivered to the Shady Grove transfer station was organic material.

e. Recycling Committee

The current Recycling Committee is made up of seven volunteers from a few divisions within the Commission. The Committee has been in existence for a number of years but has been

[8] This number will change as better information becomes available from WMI.

unable to mount a comprehensive, system wide recycling program. There are many reasons for this including: lack of adequate time since all Committee members have full time employment in other areas, lack of mission statement and standards, inconsistent attendance, lack of funding, limited authority with no clear direction.

IV. SUGGESTED IMPROVEMENTS FOR M-NCPPC FACILITIES

Assessing the recycling operations throughout the 30,000-acre M-NCPPC system is complex. The system includes numerous office buildings, nature centers, gardens, passive and active recreational areas, picnic areas, campgrounds, recreational buildings, golf courses, tennis centers, equestrian centers, skating rinks, vehicle maintenance yards, and miles of bicycle, equestrian, and foot paths. If each building or activity were separate businesses, it would have to conduct individual assessments, develop options, and recommend/make improvements for each business. Because of the complexity of M-NCPPC, an assessment of each facility was not possible; however, because of the similar nature of the operations for many facilities it was not necessary. The recommendations must consider staffing, proximity to recycling collection/consolidation points, peak seasons, and the nature of the activity that occurs in each facility.

A few general recycling principles should be applied to all M-NCPPC facilities:

1. Senior management must mandate all employees to recycle and direct staff to support and expand recycling efforts.
2. M-NCPPC must develop a policy to *Reduce, Reuse, and Recycle* materials. The Planning Board should adopt the policy.
3. All recycling containers must be color-coded and have the universal recycling symbol on all sides of the container. Bold letters and signage is needed on containers.
4. An education program must be developed to educate all staff members and Park patrons on the merits and need for recycling.
5. Patrons and staff should be afforded the opportunity to recycle.

The following sections identify specific recommendations for various sectors within M-NCPPC.

a. Commission Office Buildings

Participation in office recycling throughout the Commission varies greatly from location to location and there is room for improvement. Increasing office-recycling rates can be achieved when one looks at the criteria needed to make a program successful. The Montgomery Regional Office (MRO) building at 8787 Georgia Avenue is achieving a high recycling rate, and we must ask how?

At every desk, in all meeting rooms, near all copy machines, and the vending machines, there are recycling containers that are routinely picked up in a separate bin and wheeled to the dumpster which is located in the parking lot of the building. There is an on-site holding area for the ease of the custodial staff. No transportation is needed to haul the recyclable materials to the nearest dumpster, which in many park locations may be miles away. This appears to be the key element, for there are no separate trucks within the system specifically for hauling recyclable materials to a central collection point. MRO is one of 18 locations where WMI collects recyclable material. This approach does not put unreasonable expectations on custodians who do not have a means to transport recyclables.

From observation, speaking to staff, and obtaining suggestions from Maryland Department of the Environment (MDE) recycling staff it appears that the following will improve our recycling rates for office complexes.

1. Recycling containers must be in each office, central areas, meeting rooms, computer areas, printing stations, or other facility rooms not mentioned. These containers must be sized according to the needs of that area. All containers must be routinely picked up to avoid overflow and contamination.
2. There must be space available at the facility for the custodians to store accumulated recyclable material. Separate containers must be provided for mixed paper and commingled material.
3. If space is unavailable at the office facility, a vehicle must be available to transport all recyclable materials to a central collection point. If a separate truck is not available, it is highly likely that the recycled materials will be combined with the regular trash and disposed as refuse.

4. The location could become a WMI collection point.

b. Enterprise Facilities

Enterprise sites typically have one main facility such as ice-rinks, golf courses, tennis courts, etc. This makes collection of recyclable material easier since it is generated within the confines of a single building. However, public use of these facilities adds an additional level of difficulty. Problems such as contamination, public acceptance, bin identification and durability are obstacles to overcome. Education, persistence and a desire to routinely evaluate and modify the recycling program are imperative for recycling success.

Recycling improvements can be achieved through the implementation of the same principles as outlined in Section IV, other suggestions include:

1. Recycling containers must be in all public areas, offices, locker rooms, or other facility rooms, at concession stands and vending machines. These containers must be sized according to the needs of that area. All containers must be routinely picked up to avoid overflow and contamination.
2. There must be space available at the facility for the custodial staff to store accumulated recyclable material. Separate containers must be provided for mixed paper and commingled materials.
3. If space is unavailable at the enterprise facility, a vehicle must be available to transport all recyclable materials to a central collection point. If a separate truck is not available, it is highly likely that the recycled materials will be combined with the regular trash and disposed as refuse.
4. The facility should become a WMI collection point.
5. Evaluate, assess, and when needed, redesign recycling strategies after 6 months.

c. Maintenance Facilities

Maintenance yard recycling rates vary with the worst case being zero participation. Some facilities with a higher participation rate have dumpsters located within the maintenance yard complexes; others just have a collection of extra large trash bags full of cans and bottles waiting

delivery to a recycler. Throughout our investigation, it became clear that recycling begins with the insistence and encouragement of the park managers. The maintenance facilities that recycle correlate with the manager's direction. Therefore, it is important that all managers and regional chiefs encourage staff to participate in the recycling program.

Suggested improvements for improving recycling in the maintenance facilities include:

1. Implement a mandatory employee recycling training program.
2. Post signs and fliers in staff mailboxes.
3. Implement incentive programs for staff participation.
4. Recycling containers must be in all offices, work areas, kitchens and lounge areas. These containers must be sized according to the needs of that area. All containers must be routinely picked up to avoid overflow and contamination.
5. There must be space available in the maintenance yard for the custodial staff to store accumulated recyclable material. Separate containers must be provided for mixed paper and commingled materials.
6. If space is unavailable at the maintenance facility, a vehicle must be available to transport all recyclable materials to a central collection point. If a separate truck is not available, it is highly likely that the recycled materials will be combined with the regular trash and disposed as refuse.
7. Evaluate, assess, and when needed, redesign recycling strategies after 6 months.

d. Local Parks

There are hundreds of M-NCPPC small local parks with ball fields, playgrounds, tennis courts, and multi-use courts. They are scattered throughout 30,000 acres of parkland in the county. Each park has multiple trashcans but no recycling cans.

At present, if the Park Managers chose to recycle in the local parks, they would dispose of recyclable material in a central location, which is off-site, at one of the 18 WMI collection points. Assuming the public would not contaminate the recyclables with regular trash, the difficulty becomes the collection and transport of the recyclables to the collection point. The trash trucks the Commission own do not contain separate compartments for recyclable materials.

Ball fields attract large crowds throughout the week with team sport activities and plastic bottles and aluminum cans dominate the trashcans. To improve recycling rates within the local parks there are five approaches:

1. Install recycling containers next to every garbage can and collect recyclables in a separate truck. Then take the material to a central collection point for storage until collected by WMI. If possible, staff could take it to the recycling center from the collection points.
2. Install one and only one recycling container at the entrance/exit of a few local parks as a pilot program. The Commission could expand the WMI contract to include picking up the recycling material at the local park entrance/exit locations.
3. Commission will need to educate the public on the new park policies through signage, brochures, and publicity.
4. Retain all trashcans and do not install recycling containers. Instead, provide the park user with plastic bags (at entrance) to be used for the off-site transport of recyclables. In this approach, the recycling is up to the individual person. The Commission will need to educate the public on the new park policies through signage, brochures, and publicity.
5. Eliminate all trash & recycling cans from the local parks (i.e. Trash Free Parks). The Commission will need to educate the public on the new park policies through signage, brochures, and publicity.

Suggestions for Improvement:

1. Implement an employee recycling training program.
2. Begin a "Recycling Improvement & policy changes" column in the Update.
3. Implement incentive programs for staff participation in the recycling program.
4. If we choose to recycle in the local parks, a separate truck or the addition of a recycling compartment must be installed on existing trash trucks. We would need to add the compartment to only one trash truck for a trial experiment to assure maneuverability and efficiency.

5. All actions taken will require public outreach and education.
6. If recycling containers are installed, they must be highly visible, color-coded, clearly marked on all sides and have the universal recycling symbols on all sides of the container. Bold letters and signage is critical to achieving a higher rate of success.
7. Evaluate, assess, and when needed, redesign recycling strategies after 6 months.

e. Regional Parks

Suggesting recycling improvements in the Regional Parks will mean adding a new program to a budget that is already over-extended. There are numerous options to take which may include but not be limited to the following:

1. A recycling budget must be available for the start-up of an expanded recycling program. The budget could be used for some or all of the following: recycling containers, a trash collection vehicle or improvements to an existing vehicle, public signs, and fliers, additional staff.
2. If recycling is desired within the Regional Parks, there are a few ways to implement the program:
   a. Install recycling containers next to every garbage can and collect recyclables in a separate truck. Then take the material to a central collection point for storage until collected by WMI. If preferred staff could take it to the recycling center directly. This would result in a $0 tippage fee for commingled material, but another location would need to be found for mixed paper.
   b. Install a recycling container at the entrance/exit of the Regional Park. The Commission could expand the WMI contract to include picking up the trash at the Regional Park entrance/exit locations. The Commission will need to educate the public on the new park policies through signage, brochures, and publicity.
   c. Retain all trashcans and do not install recycling containers. Instead, provide the park user with plastic bags (at entrance) to be used for the off-site transport of recyclables. In this approach, the recycling is up to the individual

citizen. The Commission will need to educate the public on the new park policies through signage, brochures, and publicity.

d. Eliminate all trashcans from the Regional Parks. The Commission will need to educate the public on the new park policies through signage, brochures, and publicity.

V. SUGGESTIONS FOR AN EDUCATIONAL PROGRAM

M-NCPPC must create or obtain educational brochures, conduct training programs, and create a recycling policy. A promotional campaign will be necessary to educate staff and create public awareness.

a. Employee Education

Full time and part time staff needs recycling training to establish a successful waste reduction program. The following educational tools will help guarantee employee cooperation:

- Conduct a brief training program at the outset to introduce employees to the program and encourage participation.
- Provide posters, flyers, and other training materials to remind employees of the need to reduce waste and recycle.
- Encourage employees to provide suggestions on waste reduction techniques. Consider providing cash prizes for waste reduction contests or initiate other incentive programs. Let employees know their efforts are helping.
- Provide annual reports on M-NCPPC recycling progress.

b. Public Education

Many parks have implemented recycling programs but contamination of the recycling containers discourages recycling. This may be due to a lack of public education on recycling, bin identification and confusion, the regular trashcans may have been full, signage was not multi-lingual, or a resistance to recycling.

Many residents in Montgomery County have diverse multi-ethnic backgrounds and English may not be their first language. Montgomery County also has a transient population (students, tourists, and conference goers), who may not be familiar with the local recycling program. The Commission can increase recycling participation if awareness and outreach programs were designed with the community's diversity in mind using multi-lingual signage.
The new recycling program should include public relations such as:

- Advance publicity to inform residents that there will be a new policy implemented within the Park system
- Press coverage in local newspapers, television, and radio
- A "kick off" event, which may include public officials to draw attention to the startup of the program
- Implement ongoing outreach program to report on the success of the program and encourage continuing participation
- Create or obtain bilingual county brochures, educational material, posters, and public service announcements
- KEEP THE PROGRAM SIMPLE: The more complex a recycling program, the greater the possibility of confusion and system failure. This means the material needs to be clear and concise outreach materials explaining the Park systems strategy.

VI. SUGGESTIONS FOR HIRING A RECYCLING COORDINATOR

The implementation of a recycling program in a complex organization such as the Commission requires background knowledge of recycling programs that have been implemented successfully. Although there are many suggestions within this document, they are not based on experience. It is not wise to waste time and money on programs that have met with failure in other park systems. Therefore, it is important to hire a recycling coordinator who has knowledge of successful recycling programs and has the skill to work with staff to tailor a program to the needs

of the Commission. As it stands, we cannot do this without guidance from experts. Some of the tasks a Recycling Coordinator can assist in have been mentioned throughout this document but are briefly outlined below:

- Work with available Federal and State Assistance Programs
- Investigate other collection programs and building on successful programs
- Design or obtain educational brochures, literature, and signage to be used for training staff and informing patrons
- Recommend practical recycling options based on existing conditions, budget constraints and sound research and experience
- Design and implement the education program for employees and the public.
- Design or select uniform colors and style recycling containers. Design symbols and text to be placed on all recycling containers.
- Implement program for each park according to the needs.
- Develop a cost effective recycling program.
- Work with PG-M-NCPPC to coordinate their recycling efforts with MC-M-NCPPC
- Develop a tracking system for organic materials recycled.
- Conduct and implement ongoing evaluations of the recycling program.
- Conduct a trash audit to determine the recycling potential.
- Evaluate the efficiency and effectiveness of current trash removal practices, routing, and equipment.

VII. SUGGESTIONS FOR IMPROVING THE RECYCLING COMMITTEE

As mentioned in Section III, the existing recycling Committee has been unable for a variety of reasons to implement an efficient recycling program. If M-NCPPC is committed to creating a sustainable recycling program that is suitable for the staff and the patrons, it will be necessary to reconstruct the Recycling Committee. The Committee should be made up of a cross section of staff within M-NCPPC including but not limited to: upper management, park managers, regional chiefs, maintenance staff, office personnel, custodians, environmental staff, etc.

This newly formed Committee should then work closely with the recycling coordinator to assist,

influence and support the goals of the recycling program. The Committee should partake in the writing of a commission policy, mission statements and mandates since all stratification levels will be affected by the newly developed policy.

Due to the complexity of the Commission, the Recycling Coordinator will need to work with the Committee in the various tasks outlined in the Executive Summary and Section VIII: General Recommendations: Step 4. It is only when consensus is met that the program can be implemented successfully.

VIII. RECOMMENDATIONS

a. General Recommendations

M-NCPPC needs a formal waste reduction and recycling program that will take the Commission into the 21st Century. Emphasis should be on a commitment to *recycle* all recyclables, *reduce* waste through responsible, sustainable resource management, and purchase *reused/recycled* materials in all areas of the Commission. At a minimum, the Commission should implement the following:

Step 1- Senior management must mandate all employees to recycle and direct staff to support and expand recycling efforts.

Step 2- M-NCPPC must develop a policy to Recycle, Reduce & Reuse materials. The Planning Board should adopt this Policy.

Step 3 – Establish a budget to expand recycling program to enable implementation.

Step 4- Hire a Recycling Coordinator who is experienced in recycling programs throughout the country who can advise, research, plan, implement and monitor a Commission wide recycling program. This person will:

- Work with available resources from EPA's Waste Wise Program, MDE's Commercial Recycling Assistance Program.
- Complete M-NCPPC's analysis of the refuse.
- Investigate other collection programs to identify efficient means of collection, routing, needed equipment, and changes necessary.

- Design or obtain educational brochures, literature, and signage to be used for training staff and informing patrons.
- Design and implement the education program for employees and the public. The recycling program will succeed only if every employee understands the importance of recycling and is motivated to participate. A well-publicized kick-off meeting, with a training session (including program needs, goals, collection methods, and acceptable and unacceptable items) will help. Training must continue after the program begins, with frequent reminders to employees. New employees should be trained as part of regular orientation programs. A "kick-off" memo to all employees is an effective way to begin internal communication about the program. The public should be informed through local newspapers, bulletin boards, kiosks, fliers, handouts, etc.
- Develop an efficient collection system
  - Work to design a program tailored to the needs of each building and facility.
  - Size recycling containers according to maximum need.
  - All recycling containers must be a uniform color with the international recycling symbol and bilingual.
- Establish, coordinate and direct a new recycling committee
- Design or select uniform colors and style recycling containers. Design symbols and text to be placed on all recycling containers.
- Install additional recycling containers according to the needs of site.
- Expand the number of Waste Management Inc., pick-up locations.
- Work with PG-M-NCPPC to coordinate their recycling efforts with MC-M-NCPPC.
- Develop a tracking system for organic materials recycled.
- Decide efficient pick-up and collection points
- Begin writing articles on recycling within the park system for the Update and local newspapers.

- Conduct Ongoing Evaluations of the Program. Ongoing periodic evaluations are critical to the success of the program to reinforce the Commissions commitment to recycling, and make improvements where needed.

Step 5 - Implement an Employee Incentive Program.
To achieve a successful recycling and waste reduction program, all employees must be willing to participate. Incentive programs may help overcome reluctance. Savings generated from an effective program should be redirected to the program creating the savings as a motivator to continue or do more.

Step 6 - Publicize the Success of the Program
This will encourage increased participation and enthusiasm.

Step 7 – Begin a "Recycling Improvement & Policy Changes" column in the Update.

Step 8 – Park and facilities managers must find ways for staff to transport recycling material to storage areas until ready for pick-up by WMI or delivery to recycling centers.

Step 9 – Increase the number of recycling containers in all office and enterprise buildings.

b. Phasing and Timeline

The goal of the recycling program is to achieve a minimum of 50 percent recycling by December 2004. In order to do this, the program should be strategically introduced through phases and monitored to ensure successes. Exhibit 7 below indicates the various recommendations and years in which the activities should be implemented.

Exhibit 7: Phasing Schedule for Recommendations

Phasing for Year 1	
Segment	**Tasks**
Senior Management	• Issue recycling mandate throughout MC-M-NCPPC • Develop a *Recycling, Reduce, and Reuse* policy • Obtain a Recycling Coordinator via consultant or temporary contract employee • Re-establish new multi-division recycling committee
Education	• Develop education program for staff & patrons • Develop brochures, signs and public relations program
Supplies and Equipment	• Expand WMI recycling contract in locations where maximum use & efficiency is achievable • Place recycling containers in all office buildings, and enterprise facilities. Size according to need
Regional Parks • Black Hills • Cabin John • Little Bennett • Rock Creek • Wheaton	 • Continue current program • Pilot program for main entrance pick-up for recyclables • Continue current program • Additional recycling containers • Additional recycling containers
Local Parks	• No changes in first year • Begin comprehensive assessment and identify feasible solutions
Enterprise Facilities	• Immediate placement of recycling containers for customers to use • Expansion of WMI contract to include commingle collection
Vehicle Maintenance Shops	• Continue current program
Maintenance Areas	• Provide additional recycling containers
Recycling Coordinator	• Assess recycling program to determine additional needs and improvements • Work with staff to develop an efficient recycling program • Establish & implement the recycling program • Establish, coordinate & direct new recycling committee • Monitor and report annual success and failures, adjust program as needed • Recommend improvements based on research, pilot programs, funding and equipment limitations • Begin writing articles for Update and local newspapers • Utilize free MDE and EPA assistance programs • Begin comprehensive recycling assessment • Coordinate Commission wide recycling efforts • Design & implement educational programs • Design brochures, signage, and select containers, etc. • Develop and implement recycling tracking system • Conduct trash audit

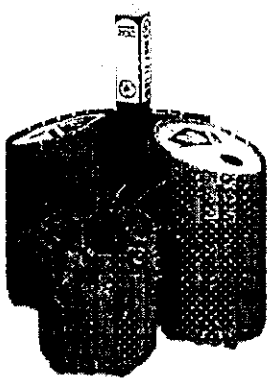
Exhibit 7: Phasing Schedule for Recommendations (continued)

Phasing for Year 2	
Segment	**Tasks**
Regional Parks	• Make changes based on Year 1 assessment
Local Parks	• Begin to implement program based on Year 1 analysis and rely on assistance provided by MDE and EPA.
Education	• Introduce education programs for staff and public • Introduce publications to staff and pubic
Supplies and Equipment	• Purchase additional containers and equipment where needed
Recycling Coordinator	• Continue Year 1 activities • Identify funding needs for recycling program • Identify potential funding and sources for recycling vehicle
Phasing for Year 3	
Segment	**Tasks**
Regional Parks	• Make changes based on Year 2 assessment
Local Parks	• Continue program implementation & assessment
Education	• Continue education programs for staff and public
Supplies and Equipment	• Purchase recycling vehicle and hire staff • Cease WMI recycling contract
Recycling Coordinator	• Continue annual assessments of all operations • Report recycling progress • Coordinate recycling committee • Identify funding resources for additional equipment

IX. Supply Costs

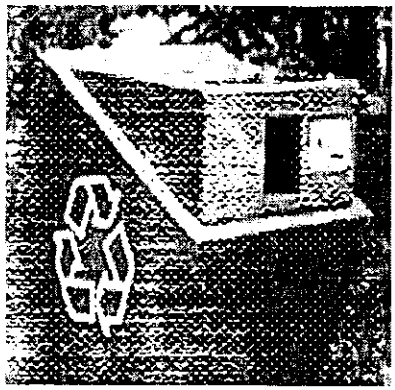
In order to improve M-NCPPC's recycling efforts, additional recycling containers are necessary. Additional recycling containers are needed for many building offices, enterprise facilities, parks, and other public and employee locations. The type, shape and size of the recycling containers may vary depending on use. For example, a recycling container in an office building does not need the same durability and means to prevent contamination, as does one in a park facility. This section only addresses the unit costs for recycling containers and a recycling vehicle. It should be used for cost estimation purposes only. The costs do not include labor costs associated with installing a recycling container, collecting the material from the recycling container, or labor associate with a recycling vehicle.

There is a wide variety of recycling containers available in market. Some types of containers depend on manual labor to be emptied and others rely upon mechanical means for emptying. The features on a recycling container is also important in reducing contamination from trash, susceptibility to vandalism, and nuisance animals. It is important that all containers be properly labeled and provide accessibility for customers.



The container system on the left is manufactured by the Windsor Barrel Works. This two-sided cluster system retails for $930. The system includes cast aluminum locking lids and two 35-gallon containers, a 3-sided post and signs.

The 70-gallon hide-a-bay system on the right is made of 100% steel and manufactured by Haul-All. The system retails for $741 and is permanently affixed to concrete base.



The 30-gallon containers on the left are galvanized steel containers manufactured by Windsor Barrel Works. The recycling containers sell for $182. This price includes lids and decals.

In the M-NCPPC Park system, the trash containers are brown drums on two wooden stakes. The stakes prevent patrons from moving the cans and but provide a swinging movement, allowing staff to empty the containers. Park Managers estimate that the cost to place additional containers, similar to the brown trash containers, in parks at $82 each. This includes the acquisition of the containers, panting of the containers blue, lids, and two stakes to hold the container. It does not include labor costs to install the cans in the parks.

Research was also conducting on identifying the unit cost for a recycling vehicle that could be used within the Park system. It was estimated that an 18-yard side loading, rear-dumping compactor recycling configuration on a 2020 Ford Super Duty F550 Chassis would cost approximately $60,000.

X. APPENDICES

A. DATA COLLECTION
B. OTHER PARK RECYCLING PROGRAMS
C. PURCHASING A RECYCLING TRUCK
D. SURVEY
E. SURVEY RESULTS
F. EPA'S WASTE WISE PROGRAM

APPENDIX A. DATA COLLECTION

Data collection and research of M-NCPPC's existing recycling program began September 2001. The first task was to determine the current recycling rates throughout the Commission. All records were gathered that were available for the disposal of trash, rubble and solid waste deposits to the Shady Grove transfer station.

Additional data was gathered for the recycling service collected by Waste Management, Incorporated (WMI). WMI provides recycling pick up at 18 M-NCPPC facility sites throughout Montgomery County. The size of the containers at each site as well as the frequency of collection determines the costs. The recycling rates are discussed in Section III, Existing Conditions.

Information was gathered from Brookside Gardens and Pope Farm Nursery on the amount of organic matter recycled. Composting is an integral part of waste disposal at Brookside Gardens with over 200 cubic yards of yard waste recycled annually. Little Bennett Golf Course is also known for recycling organic matter such as leaves; however, no data was collected pertaining to quantity.

As a part of the data collection, each Park Manager completed a survey (see Appendix D, Recycling Survey); this was used to identify strengths and weakness within the Commission recycling program. The survey identified bottlenecks such as transportation, staff, containers, finance, etc. On October 29, 2001, the Park Managers brought their completed survey to the Shady Grove Training Center to discuss the survey results, and provide recommendations on how to improve our recycling efforts. Many good ideas resulted from the meeting with the Park Managers. Many managers stated that they composted organic material but there is no way to track the quantities for their records.

In November 2001, Mark Pfefferle and Tina Schneider attended the Third Annual Recycling Expo sponsored by Prince George's County Park & Planning Commission. The Expo featured a

variety of exhibitors/vendors displaying environmentally conscious products & demonstrations that are being utilized by PG-MNCPPC. Many vendors were there to educate the public and the staff about new products available.

Laura Connelly is a member of the PG-MNCPPC recycling committee, which has one member from each department within the Commission. The Committee developed a "Mission Statement" for implementation PG-MNCPPC. Their mission is to "create a sustainable program for their employees and patrons to actively seek ways to reduce, reuse, and recycle waste". They will be incorporating educational tools, promoting the use of recycled materials and apply energy efficient and environmentally sound practices in every area of operations.

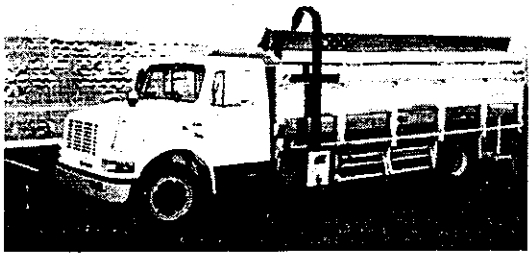
Staff contacted Allen Pultyniewicz of the county's Office of Solid Waste Services. Allan is the Business Recycling Coordinator for Montgomery County and a valuable information resource. He provided guidance on the county's recycling regulations, recycling techniques, and effective programs. He was also instrumental in providing material tonnage at the Shady Grove transfer station.

Contact was made with Cliff Dowling of the Maryland Department of the Environment, Recycling Specialist who runs a free State program that assists business and county agencies to develop ways to improve waste reduction and recycling programs. The specialist will visit sites and perform a waste assessment to determine the type and amount of waste generated. Using this information, he makes recommendations for establishing or improving the efficiency of the recycling program.

Neither of the two co-writers of this report have experience in developing recycling programs throughout the United States so a WEB search was done to see how other park systems recycle their waste. With over 78,000 entries, it became a daunting task given the short amount of time available to produce this report. However, it appeared that many State Parks and the National Park system has implemented a "Carry Out" trash policy in their parks.

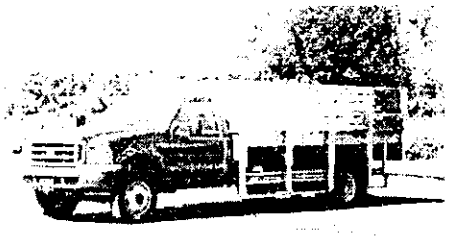
APPENDIX B. PURCHASING A RECYCING TRUCK

The Commission should consider the staffing and purchase of a Recycling Truck that can be driven from location to location to pick-up recyclables. This option would eliminate the need for an annual $15,559.00 contract with Waste Management, Inc., and enable the Commission to recycle at all facilities without a separate contract or the need for existing staff to transport recyclables to a collection point.



- It should be noted that our research made it clear that we must pick up recyclables at many more facilities if we are to improve our recycling rates. If we double the recycling pick-up points to 34 locations, the cost becomes approximately $32,000 annually. If we choose not to increase our existing contract and to staff and purchase a recycling truck, the $32,000 is approximately 53 percent of the cost toward the purchase of a recycling truck. Recycling trucks vary in cost but an 18-yard side loading, rear-dumping compactor recycling configuration on a 2020 Ford Super Duty F550 Chassis was estimated to cost $60,000. This would enable the Commission to pick up many more sites then with our current contract. A new truck would have the capability to accommodate dumpster pick-ups, and 3-5 separate compartments for paper, plastic, glass or any desired combination.

Although the dollars to own and operate a recycling vehicle is a lot of money, it may be worth the expense to the Commission when all the factors are considered.



- A standard high quality recycling truck should last up to 15 to 20 years. If the recycling fees don't increase over the next 15 years, M-NCPCP will have spent $466,770 in pick-up fees for the pick up of recycling materials for only 34 locations. Which would not greatly improve our recycling rates

- If the Commission owned its own recycling truck, much more then 34 locations could have their recyclables picked up, which would improve our recycling rates,

eliminate the difficulty in trying to transport recyclables to a few central locations, and be a model to other park systems.

- If Montgomery County does not want to take on the additional expense, it may be possible to share the cost of the truck with Prince George's County Parks and Recreation Department.

- If there is not enough money in the budget for a new truck, other options may include writing a grant as the University of Illinois did in 1993 where they received $50,000 grant for a multi-compartment, rear-load compaction vehicle for the simultaneous, but separate collection of cardboard and paper products from all buildings on campus. Recycling rates went from below 20% to above 40% with rates still rising.

- The Commission could hold a fundraiser event to raise money for a recycling truck to gain public support, publicity and awareness. The event could include a walk, arts, crafts, music, a mobile climbing unit, environmental education, park program tables, etc.

- With the purchase of a recycling truck with a hydraulic system, the amount of personal job injuries may be reduced.

APPENDIX C. OTHER PARK RECYCLING PROGRAMS

1. "Penn Roosevelt State Park in Pennsylvania implemented a carry-in/carry-out trash disposal program for all small parks. There are no trash collection or recycling facilities. Visitors are asked to limit the amount of disposable items brought to the park and to take all trash, garbage, and recyclables home." [1]

2. Maroochy Shire Waste Services in Queensland, Australia, has seven caravan parks in prime beachfront locations on the Sunshine Coast. Until now, there were no recycling facilities in public places such as parks in Maroochy Shire. A trial program was implemented to collect recyclables such as glass, aluminum, and plastic, which will be linked with the residential curbside residential recycling pick-up, which is highly successful. Maroochy Shire began a ten-month trial to "establish a system for recycling which encourages source separation of waste in public places and to determine the most effective and successful system for collecting recyclables from public places." [2] Maroochy Shire is "aiming to provide public place recycling receptacles which are attractive, readily identified, simple to use and easy to service. The ten-month trial will assess the viability of collecting recyclables from parks and public areas, and acceptance of public place recycling and the suitability of different recycling receptacles for public places." [3]

3. Brandywine Creek State Parks in Greenville, Delaware, have drop off recycling bins in their parks. They are stationed at key locations for citizens to use.

4. Montgomery County, Maryland created a new position within the School Board to assist and create a recycling program.

5. Prince George's County Park & Planning Commission took one year to develop a sustainable program for employees and patrons by actively seeking ways to reduce, reuse and recycle within the Commission. Their goal is to reduce waste, incorporate educational opportunities, promote

[1] Penn Roosevelt State Park: http://www.parec.com/state_parks/statepks.htm

the use of recycled materials, and apply more energy efficient & environmentally sound practices in every area of operation. They created a new Commission wide vision and mission statement along with an Executive Summary and Commission Policy that would support the recycling efforts outlined in their vision and mission statement.

6. The City of Alexandria, Virginia, Parks and Recreation Department does not recycle in any parks.

7. In 1998, the U.S. National Parks Service implemented a recycling program in seven parks, including Acadia, Great Smoky Mountains, Grand Canyon, Yosemite, Mount Rainier, the Everglades, and the National Mall in Washington, D.C. The program features recycling bins near the visitors centers, concession stands, and provides special recycling bags for hikers and campers, and kiosks made from recycled materials. "In the first two years of the program, visitors recycled over 616,000 pounds of plastic, glass, and aluminum." [4] Since then, many more National Parks have been added to the above list of participants.

8. The State University of Illinois purchased a recycling vehicle through a grant "which enables the University to expand its collection capabilities and increase the opportunities to achieve a higher recycling rate". [5]

9. The Maryland State Park Service implemented a Trash-Free park system in which the claims are one of success. "In order to promote and encourage recycling, reduction of waste and reuse of our resources, all trash barrels, receptacles and dumpsters have been removed from picnic and beach areas. Visitors to day-use areas are provided with bags when they enter parks and are asked to take home their own refuse. Please pack your picnic in reusable containers and help us keep our parks clean"[9]

[3] Ibid
[4] The Rotten Truth (About Garbage): U.S. National Park Service, http://www.astc.org/exhibitions/rotten/park.htm
[5] Recycling Newsletter: March 1997: University Recycling Receives Grant, Plans to Buy New Truck. http://www.ppo.ilstu.edu/fm/campserv/recyling/ newsletters/april97.htm
[9] About the Forest and Park Service: http://www.dnr.state.md.us/publiclands/about.html

APPENDIX D. MANAGERS RECYCLING MATERIALS SURVEY

This survey is part of a comprehensive study within the Commission to evaluate the strengths and weakness within our recycling program: We know the Commission is recycling but we want to improve our rates and identify how it can be achieved with minimum inconvenience to you and your staff. In order to do this we need your assistance to help us understand the difficulties of collection, transport and pick-up. Without your impute we wont be able to address the needs of staff and improve the Commissions recycling program. Please complete the following survey to the best of your ability & *Bring it to the Meeting at Shady Grove Training, October 29th, @ 9:00-12:00pm.*

☞ Please be comprehensive in your descriptions and include additional paper if necessary.

Thank you for your assistance and time!

Name: _____

Person In Charge of Recycling: _____

Location: _____

1. Do your *Offices* (maintenance facilities, park offices, trailers, etc..) recycle all aluminum, glass and paper?

_____

_____

_____

2. Are the *Parks* (regional & local) currently recycling all aluminum, glass and paper? If not, what needs to be done to improve your rates?

_____

_____

3. Are the *Enterprises* (golf courses, concessions, ice-skating, etc.) currently recycling all aluminum, glass and paper? If not, what needs to be done to improve your rates?

_____

_____

4. Would you say that your recycling program is working at maximum efficiency?

_____

If not, how can it be improved?

☐ More Bins ☐ Additional Dumpsters at Collection Points ☐ Better Signage
☐ Increased Training ☐ Separate Trucks for Collection of Recycling Material

5. Is there a centrally located collection point (a large dumpster) for staff to bring collected glass, paper, cardboard and plastic?

☐ Yes ☐ No

6. Are the dumpsters large enough if we increase the amount of our recycling?

☐ Yes ☐ No

7. Do you have a collection truck for recycled materials that enables staff to bring recycled material to a centrally located dumpster?

☐ Yes ☐ No

8. How often are the recycling containers (not dumpsters) located throughout the buildings and parks being collected ?

_____

9. Is it often enough? ☐ Yes ☐ No

10. Is your recycling material being picked up by an outside vendor or does staff dispose of it?

☐ Yes ☐ No

11. If you use an outside vendor who is it and does that work for you?

_____

_____

12. Do you recycle tires, batteries, oil, lumber? Please indicate all materials your site recycles.

_____

_____

13. If you were in charge of improving and developing a Commission recycling program, what would you do to increase our rate of recycling in the parks, offices and enterprise areas? Please be specific and provide suggestions and details.

_____

_____

14. Would you be willing to work with us to develop a better Commission Recycling Program?

☐ Yes ☐ No

_____

APPENDIX E. SURVEY RESULTS

1. **Do your *Offices* (maintenance facilities, park offices, trailers, etc.) recycle all aluminum, glass and paper?**

   Yes: 1, 2, 5, 6 paper and cardboard, 7, 8, 9, 10, 11 we have proper containers but most people do not utilize them, 12, 13, 14, 15, 16 yes for facilities, 17, 18

   NO: 3

2. **Are the *Parks* (regional & local) currently recycling all aluminum, glass and paper? If not, what needs to be done to improve your rates?**

   YES: 7, 10 only at select locations, 12

   NO: 6, 11, 13 we only have time and manpower to pickup the normal trash, 16 aluminum only

   1 Need more education

   14 Currently being looked at. There are recycling containers for aluminum at most of the local parks.

3. **Are the *Enterprises* (golf courses, concessions, ice-skating, etc.)? currently recycling all aluminum, glass and paper? If not, what needs to be done to improve your rates?**

   YES: 1, 2, 3, 10 only at select location, 16 for boat shop, 18

   NO: 4, 17 need site dumpsters

   Unsure: 6, 13

4. **Would you say that your recycling program is working at maximum efficiency?**

   YES: 2 for staff. No for public, 7, 10, 13 only at the Olney Manor (I requested small blue bins for the office months ago and still have not received them), 15

   NO: 1, 3, 4, 8, 11, 12, 16 too much trash, 17, 18

   If not, how can it be improved?

   - More Bins 1, 3, 4, 6, 10, 13, 16, 17, 18
   - Additional Dumpsters at Collection Points 1, 2, 3, 4, 6, 10, 11, 17, 18
   - Better Signage 1, 2, 4, 8, 10, 11, 12, 16, 17, 18
   - Increased Training 1, 8, 11, 12, 17, 18
   - Separate Trucks for Collection of Recycling Material 3, 4, 10, 11, 14, 16, 17

5. **Is there a centrally located collection point (a large dumpster) for staff to bring collected glass, paper, cardboard and plastic?**

   YES: 1, 2 only for paper, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 paper only, 18

   NO: 4

6. **Are the dumpsters large enough if we increase the amount of our recycling?**

   YES: 1, 5, 7, 8, 9, 12, 13, 15, 17, and 18

   NO: 2, 3, 4, 6, 10, 14, and 16

7. **Do you have a collection truck for recycled materials that enables staff to bring recycled material to a centrally located dumpster?**
   YES: 5, 7, 8, 9, 12, and 15
   NO: 1, 2, 3, 4, 6, 11, 13, 14, 16, 17, and 18

8. **How often are the recycling containers (not dumpsters) located throughout the buildings and parks being collected?**
   Daily 7
   Weekly 1, 6, 8, 17, 18
   Biweekly
   Service as needed: 2
   Don't Know: 3
   3x a week: 12
   NA: 4
   On call: 5
   Twice a month: 14

9. **Is it often enough?**
   YES: 1, 2, 7, 8, 9, 10, 12, 15, 16, 17, and 18
   NO: 4, 5, 6, and 14
   NA: 3

10. **Is your recycling material being picked up by an outside vendor or does staff dispose of it?**
    YES: 1, 2, 3, 7, 8, 9, 10 staff, 12, 15, 17, 18
    NO: 4, 11, 13 staff does, 14 staff, 16 staff

11. **If you use an outside vendor who is it and does that work for you?**
    Waste Management 1, 2, 6, 8 need commingled, 12, 15, 17, 18

12. **Do you recycle tires, batteries, oil, lumber? Please indicate all materials your site recycles.**
    1: Tires, batteries, tin, heavy metals, aluminum, mixed paper
    2: Paper/cardboard pickup by outside vendor. Aluminum/plastic taken to Saddlebrook, Tires and batteries are taken to Shady Grove. Oil is picked by outside vendor.
    3, 4, 5: No response
    6: Oil, concrete, auto shop material, asphalt
    7: Tire, chemicals, batteries, oil, scrap metal, firewood, paper, cans, bottles, cardboard, landscape waste - over 200 cubic yards of landscape waste is composted on site.
    8: All auto shop waste.
    9: Paper, electric shop, batteries, lamp ballasts
    10: No
    11: Oil and batteries
    12: Yes, take to transfer station

13: Yes
14: Batteries
15: Yes, all of the above and scrape metal, wood chips and leaves.
16: Vehicle stuff is taken to shady grove. Reuse salvageable building materials.
17: No response
18: Tire, batteries, oil and office paper, plastics and bottles.

12. If you were in charge of improving and developing a Commission recycling program, what would you do to increase our rate of recycling in the parks, offices and enterprise areas? Please be specific and provide suggestions and details.

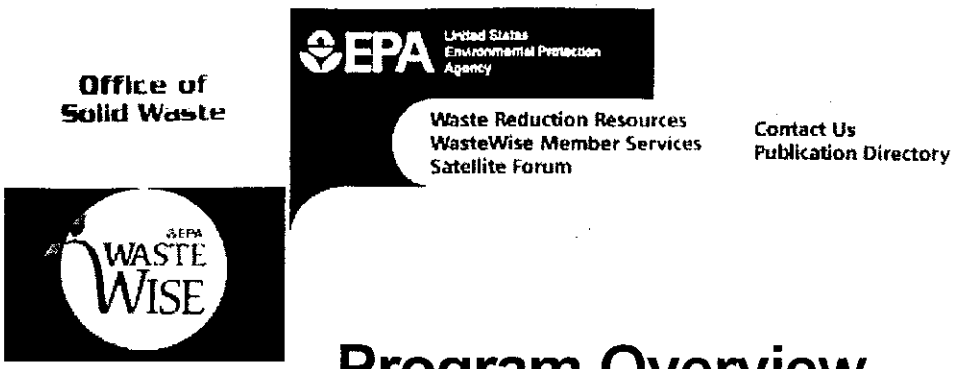
1. Awareness on what can and cannot be recycled.
2. Provide on-site containers for each recyclable. Provide a service to remove materials. Provide more resources for staff and supplies.
3. Paper, aluminum, not glass
4. No response.
5. Currently recycling all materials that are recyclable. It needs to be pickup on a regular basis. Bins are usually overflowing.
6. To be realistic we would need a separate truck to collect the recycling bins. Would need two FTEs to operate the trucks.
7. Recycling mandates must come from the top and be considered part of the work program. Designate parks as "trash free". Remove cans from all parks.
8. Additional training
9. Mandatory recycling for all facilities.
10. More bins, more coordination for pickups.
11. Add recycling program to the commission budget, more training that is site specific. Add additional personnel for recycling. Add a separate truck to collect recycled material
12. Educate and train in-house employees and the public about the importance in recycling and increase signage throughout the parks. Additional staff to sort and pick-up recyclables throughout the local parks, or contract this work to an outside vendor.
13. Do a better job in recycling
14. Increased recycling flow in-house and a trash-free park system externally
15. Recycling committee should survey all facilities to make sure they are doing all the basics and have what is needed to accomplish the goal.
16. Designate additional staff. Make this their job. Designate and specialized trucks.
17. Make all recyclable bins blue. We were given brown ones and they attract trash. Create a form for recording recyclable items.
18. Provide better signage, educate patrons and employees and offer rewards for persons who continue to participate with program. Also, designate a representative for each site to ensure program development.

Key:

1. Steve Moxley - Little Bennett Regional Park
2. Joe Vargo – Northwest Park Golf Course
3. Mary Welter – Sligo Golf Course
4. John Metzer – Needwood Golf Course
5. John Baines – BHRP Interpretation

6. William Gillette – Cabin John Maintenance facility
7. David Vismara – Brookside Gardens
8. Jamie Christianson – Shady Grove
9. Ed Arnold – Shady Grove/CM
10. Karl Hayes – CJ/Region HQ
11. Stacy Parsons – Wheaton Regional
12. Pete Boettinger – Meadowbrook Maintenance Facility
13. John Boyd – Olney Manor Park
14. Melanie Marshall – Meadowside Nature Center
15. Bill Rush – Pope Farm Nursery
16. Doug Ludwig – Rock Creek Regional Park
17. Cathy Law – Wheaton Ice Rink, Wheaton Train and Carousel, Wheaton In-line
18. Dean Turnbull – Cabin John Ice Rink

APPENDIX F. EPA'S WASTE WISE PROGRAM



Program Overview

Joining the WasteWise Program

WasteWise is a free, voluntary, EPA program through which organizations eliminate costly municipal solid waste, benefiting their bottom line and the environment. WasteWise is a flexible program that allows partners to design their own solid waste reduction programs tailored to their needs.
All organizations within the United States may join the program. Large and small businesses from any industry sector are welcome to participate. Institutions, such as hospitals and universities, non-profits, and other organizations, as well as state, local, and tribal governments, are also eligible to participate in WasteWise.

Waste reduction makes good business sense because it can save your organization money through reduced purchasing and waste disposal costs. WasteWise provides free technical assistance to help you develop, implement, and measure your waste reduction activities. WasteWise offers publicity to organizations that are successful in reducing waste through EPA publications, case studies, and national and regional events. These events also provide networking opportunities for organizations to share waste reduction ideas and success stories.

There is no fee for membership in WasteWise. EPA designed WasteWise to be a free, voluntary, flexible program. The amount of time and money you invest is up to you! You are free to set goals that are the most feasible and cost-effective for your organization. In the long run, waste reduction can save your organization money.

The corporate headquarters and/or facilities of a parent company or holding company can join WasteWise regardless of whether its subsidiaries join. Any of the subsidiaries may choose to join at a later date either on their own or as a part

of the parent company's membership.

Complete the registration form, which you may fill out online, download, or obtain by calling the WasteWise Helpline at 800 EPA-WISE.

Setting Up a WasteWise Program

The WasteWise program targets the reduction of municipal solid waste: waste that would otherwise end up in an organization's (or its customers') trash, such as corrugated containers, office paper, yard trimmings, packaging, and wood pallets. Participants, ranging from small local governments and nonprofit organizations to large, multinational corporations, sign on to the program for a 3-year period. Key aspects of successful WasteWise programs include:

Management support

After you have obtained management support and involvement and have joined the WasteWise program, we suggest that you establish a waste reduction team and select a team leader. Garnering the support of a group of individuals will facilitate the design and implementation of your program and ensure the success of achieving your goals.

Waste assessments

To help identify measures you can take to reduce the amount of waste you generate, we encourage you to conduct a waste assessment prior to establishing goals. An assessment can help you identify waste reduction opportunities and establish a baseline for measuring progress. Your Goals Identification Form is due 6 months after you receive your New Partner Packet, which will contain the form and information to assist you in completing it. If you need additional information or technical assistance to complete the form, feel free to contact your WasteWise representative or call the Helpline. You must establish goals in the areas of Waste Prevention, Recycling, and Buying or Manufacturing Recycled Products.

Employee education

Once EPA approves your goals, you will receive the WasteWise logo for internal and external use, with some restrictions. In addition, WasteWise has developed a sample press release and newsletter to assist you in announcing your commitment to WasteWise.

Measurement and reporting

Track your progress and report your results to WasteWise.

Program maintenance

Keep up the momentum by continuously looking for ways to enhance your waste reduction program. Encourage management to make your waste reduction program a priority and maintain employee involvement.