

VI. Integrated Solid Waste Management System

As noted earlier, Chemung County has been involved in a comprehensive approach to solid waste management since 1971 when a county-wide district was established to manage all solid waste generated in the county. The CCSWMD has, over the years, kept abreast of changing technologies and issues in the solid waste management arena. The district has operated an effective, environmentally and financially sound solid waste management system in the county. It has the authority and expertise to implement the integrated solid waste management approach outlined in this Plan. In fact, the CCSWMD has begun implementation of many aspects of this integrated system even as the Plan is being developed.

The Chemung County Integrated Solid Waste Management System as outlined in this Plan is designed to address all of the solid waste issues that the county will face for the next twenty years. These issues are foreseen to include, increasing quantities of solid waste generation, changing solid waste stream composition, increasing costs of management/disposal, dwindling disposal options, increasing competition for recyclable markets, and dynamic technology advancements related to solid waste management and processing recyclables. The integrated system as outlined responds to these solid waste management issues in a comprehensive fashion, including coordination and consideration of both public and private sector factors. It's clear policy guidance remains as stated in 1988 when expansion plans for the landfill were being finalized:

TO ACHIEVE A SOLID WASTE MANAGEMENT SYSTEM TO MEET THE NEEDS OF THE COUNTY THAT IS TECHNICALLY, ENVIRONMENTALLY AND FINANCIALLY SOUND.

The integrated management system outlined here in sets forth cost-effective management options for handling the county's solid waste stream, through public and private sector cooperation in its implementation. The integrated system optimizes existing facilities, while being flexible to allow incorporation of new private sector solutions where they will realistically meet program needs. While the system's primary focus is on meeting the county's solid waste needs, it also provides flexibility in accommodating future opportunities for regional efforts. The Plan encourages and supports practices that will reduce solid waste from all sources; it mandates recycling of

all economically feasible segments of the waste stream and provides for environmentally sound disposal of residuals. It also incorporates a self-analysis component that will allow the CCSWMD to effectively assess the success of the plan's implementation and redirect efforts where and when appropriate. Finally, the Plan recognizes that to truly be successful, a strong public education and participation element is essential.

The Integrated Solid Waste Management System for Chemung County involves a number of components, all of which are necessary for its successful implementation.

A. Solid Waste Management Facilities

- CONTINUATION OF IMPLEMENTATION OF THE PLANNED AND PERMITTED 4-CELL LANDFILL EXPANSION IN LOWMAN, NEW YORK

The county recognizes that in spite of all other solid waste management techniques that it may institute, it will still be necessary to dispose of some residual wastes. In the mid-to-late 1980's, the county undertook an extensive evaluation and environmental review process to site the expansion of the existing landfill. This facility incorporates state-of-the-art design technology to ensure an environmentally sound operation including closure and post-closure plans for the facility. The first two cells at this facility consist of a dual-liner system which includes the following:

- a 12-inch groundwater drainage bed
- a 24-inch soil liner
- a 12-inch granular drainage bed for secondary leachate collection
- a 60-mil HDPE geomembrane liner
- a 24-inch granular primary leachate drainage bed

The leachate collection system incorporates a double-lined (60-mil geomembrane liners with leak detection) leachate storage pond. The pond is designed to allow gravity filling via outlet pipes of transfer trailers which convey the leachate to the county-operated Milton Street sewage treatment plant.

The county will continue to operate this existing facility to the extent of its

permit/site life as one necessary component in its integrated solid waste management system. Efforts focused at waste reduction, recycling and reuse will be emphasized to expand the potential site life of this facility beyond the 15-year estimated site life. If the county's 40% solid waste recycling goal is reached by 1997, this facility's site life will increase to approximately 25 years or through the year 2015. If future adjoining lands become available, the CCSWMD will evaluate purchase of such lands for long-term landfill expansion potential and/or increase in the separation distance to existing facilities.

□ COMPLETION AND OPERATION OF THE MRF

As previously noted, the MRF structure has been completed. Processing equipment is currently being installed, with initial operation scheduled for June of this year. In its first full year of operation, 1992, the MRF is anticipated to process 15,000 tons of recyclables. This figure is projected to increase to 18,000+ tons by the design year 2010, which will represent an 80% participation rate in the county. The design year processing rate is the equivalent of 75 tons per day (TPD) based on an eight hour day, five day work week. This design readily provides for expansion of the processing capacity at the facility by simply adding a second work shift. This expansion potential can easily accommodate adjoining counties in a regional recycling approach.

The facility occupies a 30,000 sq. ft. area. The main portion of this area, some 21,500 sq. ft. is devoted to tipping areas, sorting areas, processing equipment and storage. The facility will be able to accept and process co-mingled recyclables, including aluminum and metal cans, up to three types of plastics, and three glass sorts by color. The paper processing section of the MRF will handle corrugated, newsprint, magazines and office paper. Although not directly attached to the MRF, a second building at the site will be used to store and bale white goods for recycling and reuse.

It is the county's intent, through the construction and operation of the MRF, to facilitate recycling allowing for minimal source separation required of residents through the use of co-mingled recycling containers. This approach is anticipated to gain the maximum potential participation of county residents. Additionally, the processing that occurs at the MRF will guarantee a certain quality and quantity of recyclables that, will in

turn, provide the county with the ability to enhance its market revenue potential.

□ CLOSURE OF THE EXISTING C&D LANDFILL SITE

The county will, in accordance with NYSDEC closure regulations, close the existing C&D landfill site at the county landfill complex located in the Town of Chemung. This is a relatively old fill area that predates the more stringent Part 360 regulations. The district will close this facility in favor of a new facility that will meet all of the more stringent liner and leachate collection requirements in the regulations. Closure plans are currently being completed. Plans call for closure of this C & D fill to commence in 1992 in accordance with NYSDEC regulations including post-closure monitoring.

□ REMEDIATION OF LANDFILL AREA 3 IN CONJUNCTION WITH DEVELOPMENT OF A NEW PERMITTED C&D LANDFILL SITE (ON TOP OF AREA 3)

The CCSWMD is also in the process of completing engineering/permitting plans to provide a new C&D landfill operation as part of a remediation measure over the currently closed Area 3 section of the landfill site. Area 3 was the original landfill cell that commenced operation in 1973 and was finally closed in 1983. Of the 25 acres encompassing Area 3, half are side slopes that have been plagued by leachate breakouts since its closure. These breakouts typically occur during wet periods with leachate flowing along roadside ditches to the existing sediment pond to the east.

The plans for remediation of Area 3 involve the construction of a perimeter leachate collection drain to handle existing leachate breakouts and upgrading of side slopes with a new final soil cap/cover system in accordance with NYSDEC regulations. The perimeter drains will convey leachate by gravity to a new pump station. A dual lined force main will be utilized to pump this leachate to the existing leachate collection pond serving the landfill expansion cells. Additionally to restrict the potential for future leachate breakouts, a geomembrane liner will be constructed on the top 12 acre plateau. A leachate collection system will be constructed

on top of this liner (draining to the perimeter drains) and the area will be filled with C&D prior to placement of a final cover system to create a better draining top. This entire fill and final cover system will be designed to minimize the long term leachate production potential at the site.

□ CONSTRUCTION AND PERMITTING OF A YARD WASTE COMPOSTING FACILITY

Current improvements at the Chemung County Solid Waste Management Complex on Lake Street include the construction of a yard waste transfer area. This facility, located to the east of the milling station, consists of a recessed concrete walled structure which will house three 40 cubic yard roll off containers below grade. Trucks will be able to back up to this facility and discharge yard wastes to the pavement. From there wastes will be pushed into the roll offs via a small bobcat loader.

The location of the yard waste composting site has not been finalized. The optimum location is at the old sludge drying beds at the Chemung County Sewer District # 1 plant site adjoining the solid waste complex. At this time, there is a concern that this area may not feasibly be floodproofed due to its location within the Newtown Creek floodway. The limits of the floodway are currently under study by the USDA Soil Conservation Service, in light of a new flood storage impoundment (Sullivanville Dam) located upstream. Should this study indicate that the preferred site is not appropriate, the next preferred site would be located at the county's landfill site complex in the Town of Chemung.

The exact capacity needs for a county yard waste composting facility are unknown at this time. Much depends on future NYSDEC regulations regarding the disposal of this material. Currently, many communities simply "store" these wastes (leaves) on sites that they own. Such facilities are currently exempt from 6NYCRR Part 360 regulations. Thus, the district facilities do not currently receive a large amount of leaf materials from municipal fall pickup programs. However, should the NYSDEC regulations change, the county can expect a much larger portion of these wastes. In light of this, the county will design a municipal yard waste composting facility with adequate operational flexibility to meet a wide range of yard waste quantities.

B. Program Efforts - Waste Reduction, Reuse and Recycling

□ IMPLEMENTATION OF A COUNTY-WIDE YARD WASTE RECYCLING/COMPOSTING PROGRAM

Municipal yard waste composting will result in net overall costs to the CCSWMD; that is the operational expenses will exceed revenues from potential end products. Therefore, in addition to the yard waste composting facility that will be constructed either near the Solid Waste Management Complex on Lake Street or at the landfill site in the Town of Chemung, the county will initiate a yard waste recycling and composting education program. County efforts will focus on an educational outreach program aimed at minimizing the amount of waste being generated and/or requiring disposal. Such efforts will address the benefits of "mulching" grass clippings on the lawn and will provide educational materials, such as those offered by Cornell Cooperative Extension, on individual "backyard" composting techniques.

□ IMPLEMENTATION OF WOOD RECYCLING AND VOLUME REDUCTION PROGRAMS FOR C&D WASTES AT THE LANDFILL

Approximately 75% of the total C&D waste stream generated in the county is comprised of wood and yard waste materials. Much of this material is bulky material (i.e. stumps, wood pallets, brush, house demolition debris, etc.) that takes up valuable landfill space. In response to the nationwide solid waste management crisis, technology advances have provided new heavy duty waste reduction equipment that is capable of processing C&D wastes. The shredding process can, at the very least, result in a 25 to 40% reduction in landfill volume requirements. This process can also result in by-products that have valuable uses outside the landfill, such as woodchips. These woodchips have numerous potential uses including, facilitation of composting operations and mulch for final cover seeding at the landfill and other potential commercial landscape applications.

CCSWMD will acquire processing machinery to reduce the volume of C&D waste materials in conjunction with obtaining a permit for a new long term C&D landfill on top of Area 3 of the old landfill site. The equipment will

be located and operated at the county landfill site in Chemung. The CCSWMD will effectively use these recycled materials in the landfill operation while evaluating the potential commercial revenue generation potential.

□ CONTINUATION OF PUBLIC EDUCATION PROGRAMMING EFFORTS WITH RESPECT TO WASTE REDUCTION, AND PROPER SOURCE SEPARATION AND RECYCLING PROCEDURES

In the past two years, the CCSWMD has undertaken a broad public education effort focused on making county residents aware of the benefits of recycling and the county's soon to be implemented curbside commingled recycling program. With the kick-off of a voluntary/pilot recycling program and startup of the MRF operation this year, a \$60,000 budget has been established by the CCSWMD for public education including radio and TV announcements and informational brochures. Program efforts are focusing on educating the public as to the listing of recyclable items and proper source separation techniques. Efforts are also underway to inform the private haulers, business and institutional operations as to their responsibilities under the recycling programs.

These educational efforts are a cornerstone of the district's integrated solid waste management system. They are specifically expressed as part of the duties and responsibilities of the Recycling Manager's position which was established in the county's 1989 Solid Waste Management Law. The efforts will extend beyond specific training associated with county programs and include consumer education on waste reduction and reuse techniques.

The CCSWMD is committed to achieving the long range goals of 40% recycling and 10% waste reduction by the year 1997. Much of this success will depend on sound and expansive public education efforts. The district has already committed staff time and budget resources to this important task, and will continue and even expand these efforts as recycling needs warrant.

- COORDINATION WITH CHEMUNG COUNTY SEWER DISTRICTS AND NYSDEC TO IMPROVE SLUDGE QUALITY FOR RE-UTILIZATION AS FINAL COVER - TOPSOIL SUBSTITUTE AT THE LANDFILL.

Chemung County operates two regional sewage treatment plants. These two plants generate approximately 10,000 tons of sewage sludge on an annual basis. In the past, the CCSWMD has utilized this sludge as a topsoil substitute for final cover placed on completed portions of the landfill. However, for the past few years, sludge analyses for both treatment plants have indicated unacceptably high concentrations of heavy metals. Based on these analyses, NYSDEC has denied sludge landspreading permits for use of this sludge as part of the district's final cover operations. This denial resulted in the need to landfill the sludges. The CCSWMD prepared a research and demonstration project request to use this high "heavy metal" sludge in final cover test plots on Area 5 at the landfill. NYSDEC also denied this request.

Currently, the sewer districts are aggressively enforcing their industrial pretreatment regulations in an effort to reduce the influent heavy metal concentrations and thereby produce a landspreadable product. The CCSWMD will continue to work with the sewer districts to effect a sludge quality that can be reused at the landfill site rather than committing valuable disposal space in the landfill for such material.

- EVALUATION OF SPECIAL WASTE STREAMS TO DEVELOP REUSE OPTIONS AND REDUCE LANDFILL VOLUME REQUIREMENTS

The CCSWMD also receives annually, approximately 21,000 tons of foundry sand from the Kennedy Valve foundry in Elmira. This material contains phenols and as such is not considered to be acceptable for most potential re-use applications such as spreading sand on roads in the winter. As a means of recycling this essentially inert material and reducing that volume of waste entering the landfill, CCSWMD requested approval to use this material as daily cover at the landfill. This request was approved by NYSDEC and currently 70% (15,000 tons) is being used annually for daily cover operations.

As part of its on-going efforts toward waste reduction, reuse and recycling, the CCSWMD will continue to identify special waste streams such as the foundry sand and analyze alternative potential uses.

C. Coordination/Education Efforts

- COORDINATION WITH THE PRIVATE SECTOR TO EVALUATE THE EFFECTIVENESS OF EXISTING RECYCLING EFFORTS

Currently commercial establishments in the county recycle approximately 15,000 tons of material annually. These materials include, plastic, cardboard/paper, glass and metals. The largest component of this recycled stream is corrugated cardboard and paper, with food markets and other retailers being primarily responsible for the recycling of these materials.

These private recycling efforts are an important component of the county's integrated system. The CCSWMD will coordinate with the business sector to reinforce their continued existing recycling efforts and encourage expansion in the quantity and variety of materials recycled. The CCSWMD Recycling Manager will provide educational materials, technical assistance and coordination efforts to the private sector in finding markets for recyclable materials not currently accepted by the county. These efforts will be aimed at furthering the county's goal of recycling 40% of the waste stream by the year 1997.

- COORDINATION WITH PRIVATE SECTOR SOLID WASTE HAULERS, RECYCLERS AND END USERS TO IDENTIFY OPPORTUNITIES TO IMPROVE COUNTY RECYCLING SYSTEMS

In its role in implementing an integrated solid waste management system, the district will coordinate with collection services, existing recycling processing facilities and area markets to ensure that the recycling goals are met and maintained in the most cost-effective manner. The CCSWMD has already been working with the Central Recycling Co-op redemption operation and Anchor Glass to accommodate the MRF operation within their structure. Additionally, the district will continue to monitor for new markets associated with recycling other components of the solid waste stream. A recent example of this effort resulted in a change order to the MRF processing equipment to allow up to three plastic sorts (HDPE, PET and mixed plastics) in response to increased markets for separated HDPE and PET plastic materials.

A further example of this district role is the office paper recycling program. This is currently a voluntary program that has been established and is being expanded through the assistance of the Recycling Manager. It was established in part because the district, in its waste stream characteristics analysis, identified a waste stream that was capable of being recycled within/by the private sector. This type of waste stream analysis is an integral component of the district's solid waste management approach. The district will continue to identify waste streams/materials and/or processes, and implement approaches that will improve the county's overall system.

□ COORDINATION WITH SURROUNDING COUNTIES TO IDENTIFY OPPORTUNITIES TO PROVIDE REGIONAL PROGRAMMING AND MANAGEMENT SERVICES

In the spring of 1990, the CCSWMD petitioned five of the adjoining counties to offer a regional contractual arrangement through the operation of the MRF and to ascertain their interest in this recycling approach. The MRF, as designed, is capable of expanding operations to accommodate recyclables from these communities by simply adding a second work shift. Including the additional recycling material stream from these communities would have the benefit of reducing operational costs, through economies of scale, and perhaps, expanding potential markets and market prices based on greater recycled quantities.

To date, none of these counties has responded favorably to this offer. As they are just initiating recycling efforts, they do not have a sound basis to evaluate the benefits/costs associated with use of the MRF. Many are requiring source separation by the generator, and with only three to five materials involved, are enjoying a certain amount of success. Given these factors, they are unwilling at this time to commit to a contractual arrangement that might not be beneficial based on their experience to date.

The CCSWMD will continue to coordinate with these adjoining counties, and as their recycling programming efforts expand, explain the potential mutual benefits to regional use of the MRF. The district will also evaluate requests from other public and private entities to expand the operational capacities of the MRF.

☐ SUPPORT STATE AND FEDERAL EFFORTS IN WASTE REDUCTION LEGISLATION

Truly effective waste reduction efforts can only be provided through uniform federal and state legislation. The CCSWMD and County Legislature will encourage and support the enactment of such legislation on the state and national level. Additionally, the county will encourage waste reduction techniques through various educational programs. The thrust of this programming effort will be to influence consumer purchasing habits; encouraging the purchase of more durable and re-usable goods as opposed to disposable items, and other ways to reduce the volume of household wastes. The program will also keep consumers informed of new environmentally friendly packaging codes and state and national recycling logos.

D. Institutional Measures

☐ CONTINUATION OF THE CHEMUNG COUNTY SOLID WASTE MANAGEMENT DISTRICT AS THE COUNTY SOLID WASTE MANAGEMENT AGENCY - RESPONSIBLE WITH AUTHORITY TO PROMULGATE APPROPRIATE RULES AND REGULATIONS TO EFFECTIVELY MANAGE SOLID WASTE GENERATED IN THE COUNTY

The analysis completed in this Plan indicates that the CCSWMD has the legal, fiscal, facility and staff standing to implement the Integrated Solid Waste Management System. The district is the appropriate institutional arrangement to undertake this integrated system approach.

Therefore, no revisions or modifications are proposed at this time.

If in the future, the district finds the need for additional capital expenditures, and/or statutory authority, it can and will approach the County Legislature to provide the same. Given the Legislature's longstanding support of district activities, there is no basis to assume that such authority or funding will not be granted.

□ ADOPTION OF AMENDMENTS TO THE COUNTY SOLID WASTE MANAGEMENT LAW TO IMPLEMENT SOURCE SEPARATION RECYCLING PROGRAM EFFORTS THROUGH A PROGRESSIVE BAN OF IDENTIFIED, MARKETABLE RECYCLABLE PRODUCTS IN THE SOLID WASTE STREAM

In 1989, the county passed a Solid Waste Management Local Law. This law empowered the district to promulgate rules and regulations as necessary to effectively manage the county's solid waste. The law envisioned the establishment of a MRF and attendant regulations relative to mandatory source separation and recycling.

In December of 1989, NYSDEC approved the County's Comprehensive Recycling Analysis. This document set forth the county's approach to the State's mandatory recycling program, wherein it will achieve the State 40% recycling goal by the year 1997. The MRF is a key component in this program. Operation of this facility will allow co-mingling of the recyclable components of the waste stream and ensure a quality product to meet enhanced market requirements. This approach is assured to provide a more effective recycling program both in terms of participation rates and revenues.

In order to ensure successful participation in the MRF operation, the CCSWMD will need to provide mandatory requirements for source separation and recycling. These requirements will need to address not only the solid waste generator, but also the collection service areas. They will establish the types of materials to be recycled, separation requirements and preparation procedures. The district will promulgate the necessary rules and regulations to initiate the proposed mandatory recycling program by banning these materials from the solid waste stream. The materials to be included in these initial regulations include the following:

- all colors of glass
- all HDPE and PET plastics
- tin/aluminum and bi-metal cans
- newspapers and magazines
- white goods/ferrous metals
- office paper
- corrugated cardboard

The district will also, for the time being, continue current voluntary recycling efforts for the following materials:

- auto batteries
- junk mail
- waste oil
- polystyrene

The above amendments to the County Solid Waste Management Law will be drafted, adopted and in effect by the end of 1991.

E. Financial Measures

- CONTINUATION OF COUNTY WEIGHT BASED SOLID WASTE USER FEE STRUCTURE
- ESTABLISH A NO CHARGE/FEE STRUCTURE FOR THE RECYCLABLE PORTION OF THE SOLID WASTE STREAM AS DELIVERED TO THE MRF

The CCSWMD has employed a tipping fee or user charge to cover operation and maintenance expenses since its inception in 1971. This system has been very successful in reasonably allocating and recovering system costs among the users. The financial analysis completed within this Plan indicates such a user fee structure to be the most appropriate in that it also indirectly reinforces waste reduction, reuse and recycling by charging for solid waste management/disposal in direct proportion to the amount of waste generated. The CCSWMD will continue to operate its facilities under the current weight based tipping fee system. These fees may be amended from time-to-time as needed to adequately cover system costs including, operation and maintenance of all facilities, administration, and a reserve fund for closure and post closure of landfill facilities.

In addition, and in order to further the success of waste reduction, recycling and reuse efforts, the county will institute a "non-fee" for the deposit of recyclable materials at the MRF. No charge will be assessed by weight or other means for any acceptable recyclable materials disposed at the MRF location.

□ CONTINUATION OF AD-VALOREM TAXING TO RETIRE DEBT FOR CAPITAL EXPENDITURES

As indicated in the financial alternative analysis, the current procedure of using general revenue bonds to finance capital expenditures for solid waste management facilities is the most appropriate approach for Chemung County. The use of this type of financing supports the current use of an ad valorem tax to repay the debt. The use of an ad valorem tax can also be justified in that it equitably assigns or allocates costs to all those who may benefit from the use of the system. Given the success of this financing scheme, no changes appear warranted at this time.

The district will, as part of its annual monitoring and analysis, continue to evaluate the effectiveness of this financing system and recommend revisions as warranted.

F. Monitoring/Self Analysis

□ DEVELOPMENT OF ON-GOING, ANNUAL MONITORING PROGRAM TO EVALUATE EFFECTIVENESS OF PROGRAM EFFORTS AND DETERMINE APPROPRIATE CHANGES

Solid waste management technology is a very dynamic process. Technologies are constantly emerging that make it possible, both economically and environmentally, to recycle more and varied products. Improvements are being made in waste-to-energy and incineration processes to make them more economically and environmentally acceptable. Companies are responding to consumer demands to provide less packaging and more durable goods. In order to keep current with these technological and policy changes, the CCSWMD will need to establish an on-going process to assess the effectiveness of current waste management techniques/efforts and evaluate the cost-effectiveness of others. To this end, the CCSWMD will perform an annual analysis of the county waste stream quantity and characteristics, and the effectiveness of its on-going facility and programming efforts to meet the goals of this Plan and the NYS Solid Waste Management Plan. Included in this analysis will be recommendations for facility and program changes as warranted, which will be implemented by the CCSWMD in a timely manner.

G. Recycling Program Goals

Chemung County is currently recycling approximately 30,000 tons per year or 25% of the total solid waste stream (120,000 tpy). This percentage is achieved through various private commercial recycling efforts, reuse of foundry sand at the landfill and voluntary recycling program efforts. Waste composition studies conducted at the milling station indicate that in excess of 20,000 tons per year of municipal solid waste can be recycled. The MRF design will accommodate this 20,000 ton annual recyclable estimate which will be equivalent to approximately 1/3 of the municipal solid waste stream currently being disposed at the milling station.

The county will initiate mandatory county-wide recycling in January of 1992. An estimated 18,500 tons of recyclables will be processed at the MRF in 1992 with an estimated 75% participation rate. By 1993, it is estimated that 15,000 tons of yard waste and C & D wood waste will be recycled. This will result in nearly 66,000 tons of potential solid waste being recycled in 1993 which represents more than 50% of the total estimated solid waste stream for that year. This recycling goal is well in excess of the State's 40% recycling mandate by 1997.

H. Socio-Economic Aspects of the Integrated Program Approach

As expressed numerous times in this document, Chemung County took the initiative in the early 1970's to manage solid waste at the county level. This step has allowed the county to keep pace with the fast changing technology and state regulations. The county has in place the facilities, administrative body, and legal and financial framework necessary to implement the integrated solid waste management system with minimal changes. The integrated system, as proposed, does not deviate significantly from the course the county set in the 1970's. As a result, there should be no significant social or economic impacts associated with system implementation. On the contrary, had the county not taken the initiative to manage solid waste, or should this plan suggest major changes in the established system, there would likely be significant social and economic impacts. This is evidenced by the tipping fees currently charged in adjoining counties that do not or can not manage their solid waste. These fees range from \$65 to \$90 per ton as compared to Chemung County's rate of \$40.

This does not mean to imply that there will not be costs associated with the integrated system implementation, or that tipping fees and the cost of solid waste management will not increase in the future. In fact, the cost of solid waste management will increase in the future as presented later in this section. However, this plan and the proposed integrated system will guide the county in meeting its future solid waste management needs in a cost-effective manner with a relatively minor impact on tipping fees and overall system costs. Furthermore, the self-monitoring and analysis component of the integrated solid waste management system will ensure that the system continues to provide an efficient and environmentally sound solid waste management program within technological and regulatory constraints.

I. Implementation Program

1. Program. Again, as noted previously, the county has already initiated implementation of many aspects of the outlined integrated system approach. In terms of facilities, the county landfill operation in Lowman is operating in accordance with its' permit and has an estimated site life of between 15 and 25 years (based on recycling, reduction and reuse measures). The milling station continues to operate effectively and the MRF construction is complete. Process equipment is currently being installed at the site. The MRF will begin operation with a pilot program covering the City of Elmira by June of 1991, with a county-wide operation anticipated by the fall of 1991. Current improvements at the solid waste management complex on Lake Street include the construction of a yard waste transfer area. The location of a yard waste composting site has yet to be finalized. The current proposal is a site located at the old sludge drying beds at the Chemung County Sewer District #1 plant site which adjoins the solid waste complex. This area is under study to determine the exact limits of the floodway boundaries for Newtown Creek. The district can not proceed with engineering and permitting plans for the yard waste composting site until the completion of these studies. Should this site not be feasible, the district will initiate a site study to determine the most efficient and effective location for this facility and begin engineering and permitting plans. It is anticipated that a final decision will be made on the yard waste composting site location by the end of 1991. Engineering plans, permitting and construction of the facility will take another 6 to 8

months; which means that the proposed yard waste composting facility should be in operation by the end of 1992.

Closure plans for the current C & D landfill site will commence in 1992. Engineering and permit plans are in the process of completion for the approval of a new C & D landfill facility to serve as a remediation of Area 3 at the landfill site. Should these plans not be approved, the county will immediately seek approval of an alternate C & D landfill facility site at or adjoining the existing landfill operation in Lowman.

With the initiation of operations at the MRF will come the kick-off of the county's recycling program. The initial phase of this program will be a voluntary, pilot operation primarily in the City of Elmira. This approach was chosen to allow the county to work out the system problems before a mandatory, county-wide program is implemented in January 1992. With the experience gained in this pilot program effort, the county will begin drafting revisions to the County Solid Waste Management Law necessary to implement the mandatory recycling program. These revisions will be completed late in 1991, with adoption by the County Legislature prior to January 1992.

With the exception of C & D material recycling, the county has already initiated the public education and coordination efforts of the recycling program as outlined in the integrated system. These will primarily be on-going efforts. Their effectiveness will be assessed annually in the self-monitoring process. The C & D recycling will be instituted with the construction and operation of the new C & D landfill facility. As noted earlier, this facility should be on-line by early 1992.

Finally, with regard to the institutional and financial aspects of the integrated system approach, these mechanisms are currently in place and operating as needed to implement the various components of the system. The tipping fee structure will be revised as necessary to accommodate the system costs as outlined. These revisions will include an amendment to the Solid Waste Management Law authorizing the disposal of recyclable materials at no cost by county residents and haulers/ collection agents. The district has in place the weigh scale equipment, computers and programming necessary to effectively monitor system costs versus disposal material amounts. This system and equipment will be incorporated in the annual self-monitoring efforts that the district will conduct.

2. Administrative Structure. The Chemung County Solid Waste Management District will have full responsibility for the implementation of the integrated solid waste management system. As outlined in the institutional and financial analysis, the district has the legal, fiscal, facility and staff standing to implement the integrated system. The district's eighteen plus years of efficient management of solid waste in the county reinforces this conclusion.

3. Local Laws. No new local laws will be required to fully implement the proposed integrated system. In 1989, the county passed the Solid Waste Management Law. This local law sets forth the framework for the district to comprehensively manage solid waste in the county in accordance with the state goals and those of the county itself. The law establishes the CCSWMD, its Administrative Board and General Manager as the regulatory and enforcement authorities. It provides for the district and the General Manager to establish rules, regulations and procedures as necessary to carry out the law's and the state's policy/intent.

Although this local law speaks to recycling and the provision of rules and regulations to carry out a program, it will require revision to incorporate the specifics of the county-wide mandatory recycling program. These revisions will be prepared following the initial progress of the City of Elmira pilot recycling program. The district wishes to amend the law only once, and therefore, will use the pilot program to work through any system "bugs" and provide workable recycling regulations on a county-wide basis. The revisions to the local law will be drafted late in 1991 and will be adopted and in effect by January 1, 1992.

4. Implementation Costs. As previously presented, the 1991 budget for the CCSWMD totals \$5,125,568. The expense breakdown for this budget is as follows:

Administration	14.1%
Transfer Station	2.5%
Landfill	24.1%
Milling Station	17.3%
Recycling	11.4%
Debt Service	<u>30.6%</u>
TOTAL 1991 BUDGET	100.0%

The debt service costs include over \$5.8 million in capital improvements during the past four years for the landfill expansion program, including closure of Area 5.

A summary of the revenue sources for the 1991 budget is presented below:

Ad Valorem Taxes	21.2%
Tipping Fees	50.0%
Sale Of Recyclables	3.9%
Landfill Bond Funds	6.8%
Transfer Of Unexpended Funds	17.0%
Earnings On Investments	0.7%
State Aid	0.4%
TOTAL	100.0%

This budget assumed a seven month operation of the MRF in 1991. It does not, however include increased debt service costs associated with the MRF building and equipment. Additional capital cost components associated with the integrated solid waste management system include final closure of the existing C & D site at the landfill, implementation of a remedial action plan for Area 3 of the landfill including development of a new C & D landfill, development of a yard waste composting operation and finally, purchase of a C & D wood waste recycling system. A summary of these additional future bond costs are presented below:

<u>PROJECT</u>	<u>CAPITAL COST (\$)</u>
MRF Building & Equipment	\$ 4,750,000
Recycling Buckets & Jersey Barriers	170,000
Compost System	335,000
C & D Landfill Closure	1,750,000
Area 3 Remediation	1,800,000
Cell 3 Landfill Expansion	2,500,000
C & D Wood Waste Recycling Equip.	500,000
Miscellaneous Costs	195,000
TOTAL	\$ 12,000,000

It should be noted that \$700,000 of the above capital cost has already been appropriated through a 1990 budget transfer of unexpended funds. Furthermore, the current fund balance of the CCSWMD is nearly \$1.6 million, hence it is assumed that one-half of this amount (\$800,000) could also be used to reduce future bond requirements. Finally, the CCSWMD recently applied for a 50% landfill closure grant from NYSDEC. Hence, such a grant could further reduce bond costs by \$875,000. Thus, the total bond requirements estimated to be incurred by the CCSWMD for the implementation of the integrated solid waste management system is \$9,625,000. This bonding will occur over the next three years and will meet the CCSWMD's needs for the next ten years.

Assuming an estimated 7% interest rate with an average bond period of 12.5 years, the estimated increase in debt service is nearly \$1,300,000 per year. If this increase in debt service was to be raised solely by tipping fee charges at the milling station and the landfill, the tipping fees would have to be increased some \$15 per ton over the next four years. This is based on a total solid waste tonnage in 1993 of 124,000 tons less 15,500 tons for current commercial recycling less 20,000 tons for recycling through the MRF. Due to the uncertainty of net MRF operational costs together with the extent of the existing district's fund balance, this tipping fee cost increase should be phased in over the next few years. Starting in 1992, it is recommended that the tipping fee be increased from \$5 to \$10 per ton resulting in an overall tipping fee charge at the milling station of \$45 to \$50 per ton for registered haulers and \$25 to \$30 per ton for registered haulers at the landfill.

J. Interim Measures

No interim measures are necessary in the proposed integrated solid waste management system. The county already has in place and/or is in the process of providing all of the aspects of the system, whether they are facilities, programs or legislation. The only aspect of the integrated system that could potentially be considered in "interim measure" is the pilot recycling program that will be initiated in June of 1991. This program will only operate in the City of Elmira. Its use will allow the MRF to gear-up to full operation in a phased manner, while also allowing the district to identify and address recycling system and operational issues prior to bringing the entire county on-line.

K. Public Participation

As summarized in Chapter II, Chemung County has been actively involved in the management of solid waste in the county for over 18 years. The CCSWMD has over this time frame conducted numerous studies, public participation efforts and public hearings, and has worked diligently to keep the public informed on all of its actions.

The district actually began a comprehensive solid waste management planning process in 1984, with the landfill site analysis study conducted by Clark Engineers. That study involved representatives from all of the county departments, agencies and the general public in a decision-making process that put the county on its current solid waste management course. Following that study, the county initiated environmental and hydrogeologic investigations at the landfill site (the selected site). These studies culminated in a full SEQR process including a DEIS, public hearing and FEIS. The DEIS and engineering reports for the landfill expansion clearly addressed the basic concepts of an integrated solid waste management system as contained in this document. Thus the concept and basic premises of this plan have been before the "public" since 1987. Further, the district, in undertaking the MRF, C & D site remediation of Area 3, Solid Waste Management Law, etc., all of which are an integral part of the integrated system, has complied with SEQR reviews and public hearings as required.

At the outset of the planning process embodied in this document, the district declared its intent to become Lead Agency under SEQR, and sent notice to all county department heads, town supervisors and village and city mayors of its intent to prepare this plan. The district requested that these agencies and officials provide any comments, questions or concerns regarding solid waste management in the county. During the course of the plan's preparation, the Chemung County Environmental Management Council (EMC) was requested to appoint a subgroup to review the document and its findings. This group met in late February and provided a series of comments on the document(s). These comments have been incorporated in this final plan.

Upon completion of the final plan, the district again notified all county departments/agencies and all chief elected officials, sent the original SEQR notice, of the plans' completion and the scheduled Public Information Meeting. A copy of the plans' Executive Summary accompanied each of these meeting notices.

Notice of the meeting was also published as a paid commercial advertisement in each of the two local newspapers 10 days in advance of the meeting date. Less than ten representatives of the public attended the public information meeting which was held on March 19, 1991; only a few questions were raised mainly relating to clarifications regarding the recycling program. No written comments were submitted regarding the plan's integrated system approach.

L. Neighborhood Jurisdictions

As noted previously, in the spring of 1990, the CCSWMD petitioned five of the adjoining counties to offer a regional contractual arrangement in the operation of the MRF and to ascertain their interest in this recycling approach. The MRF is capable of expanding operations to accommodate recyclables from these communities, which would have the benefit of reducing operational costs through economies of scale, and perhaps expanding potential markets and market prices based on the greater quantities of materials to be recycled.

To date, none of these counties has responded favorably to this offer. As they are just initiating recycling efforts, they do not have a sound basis to evaluate the benefits/costs associated with use of the MRF. Many are requiring source separation by the generator, and with only three to five materials involved, are enjoying a certain amount of success. Given these factors, they are unwilling at this time to commit to a contractual arrangement that might not be beneficial in their view.

CCSWMD will continue to coordinate with these adjoining counties as their recycling efforts expand. Once the MRF has been in operation for a full year, and operational data/costs are available, the district will provide this data to the adjoining counties in an attempt to convince them of the potential mutual benefits in regional use of the MRF.

The district will also evaluate requests from other public and private entities to expand the operational capacities of the MRF on a case-by-case basis.

M. SEQR Compliance

As noted above, the CCSWMD declared itself Lead Agency in 1989 for this action,

namely the preparation and adoption of a comprehensive solid waste management plan. At that time the Administrative Board did not make a determination of significance due to insufficient information. They felt that the plan had not been formulated to the extent to allow a reasoned elaboration of the potential impacts and their significance. During the preparation of the plan document and in the formulation of the integrated management system, the consultant and the district fully evaluated all aspects of the plan and its implementation. Based on the facts contained in this document and the district's assessment of the associated potential impacts, the district finds that the implementation of the integrated system as contained in this document will not have any significant adverse environmental impacts. Conversely, the district finds that the absence of such a coordinated and comprehensive solid waste management approach could have significant social and economic impacts on the county, its residents, and business community.

A negative declaration will be filed in accordance with SEQRA.

Key elements that will cross into all aspects of the integrated system are public information and education efforts. The district has plans in 1991 to significantly expand public education efforts, given the current budget of \$50,000. These efforts will focus on educating the public regarding requirements of the source separation and recycling program that will begin in mid-1991. These efforts will continue as this program is expanded to full implementation in 1992. Beyond that, educational and informational programming will continue as appropriate to update county residents and businesses on waste reduction techniques.

There are several components of the county's total solid waste stream that are not currently managed by the CCSWMD or any other county entity. These include agricultural, infectious wastes and hazardous wastes. The current management structure for these waste streams has been evaluated and found to be sufficient at this time. These waste streams are, therefore, not proposed to be part of the integrated management system as outlined in this Plan. They will continue to be handled in the private fashion which currently exists.

The one exception is household hazardous wastes. At this time the county has determined that the management of these wastes would be handled in a more cost-effective and environmentally sound manner by the NYSDEC. The county finds that without specific state guidelines and sanctions, the liability and cost of providing county management is prohibitive. The county will consider incorporating the management of

this waste stream in this integrated management system if, at some time in the future, the state develops a system to assist them in cost-effective management. Until such time, these wastes will be handled by the individual generator in conformance with NYSDEC guidelines.

As noted earlier, the CCSWMD has already begun to implement certain elements of this integrated system. The Materials Recycling Facility building construction is complete and the installation of the recycling equipment is currently underway. Expanded public education efforts are underway to prepare county residents and business of the upcoming source separation and recycling program requirements. Engineering reports and documentation required for the closure of the existing C & D site and permits for the construction and operation of the new C & D facility at the landfill site are also underway. Initial plans for the location and operation of the yard waste composting facility are awaiting completion of a Newtown Creek floodplain mapping update, which is also underway. Finally, rules and regulations amending the County Solid Waste Management Law to implement the source separation and recycling program are being drafted.

The CCSWMD will, upon adoption of the Plan and thus the Integrated Solid Waste Management System, begin implementation of the remaining program elements including the annual monitoring and self-analysis program. Presented in Table VI - 1, is a summary of Chemung County's integrated management system components as compared with the state's goals as expressed in the NYS Solid Waste Management Plan. Inspection of this table indicates that the county's plan closely parallels the state's goals relative to the comprehensive management of solid waste.

Table VI-1. Summary of key system elements and the New York State Solid Waste Management Hierarchy

<u>NYS Goal</u>	<u>Chemung County Integrated System Component</u>
A) WASTE REDUCTION	State and federal actions are required to effectively impact waste reduction. Chemung County will focus on public education efforts to influence consumer behavior
B) REUSE/RECYCLING	MULTIPLE COUNTY ACTIONS
Mandatory Recycling	Chemung County will amend the Local Solid Waste Management Law to incorporate mandatory source separation and recycling of solid waste
Material Recycling Facility (MRF)	Chemung County has constructed and will operate a Material Recycling Facility (MRF) adjacent to the central milling station to process recyclable materials for market
Other Planned Recycling Activities	Existing private recycling efforts and initiatives will be encouraged to continue CCSWMD and the County EMC will continue to provide technical assistance to offices and small business to establish recycling programs CCSWMD will initiate a C&D material recycling program at the County landfill site pending approval of a new C & D landfill by DEC. CCSWMD will continue to work with the County Sewer Districts to improve the quality of their sludge, so that it may be re-used as a final cover material for on-going landfill closure projects

Table VI-1(con't). Summary of key system elements and the New York State Solid Waste Management Hierarchy

<u>NYS Goal</u>	<u>Chemung County Integrated System Component</u>
Yard Waste Composting	CCSWMD will plan, build and operate a yard waste composting facility
C) WASTE-TO-ENERGY	Incineration will continue for disposal of regulated infectious medical wastes CCSWMD will continue to reassess the appropriateness of incineration on an on-going basis
D) LANDFILL/RESIDUAL DISPOSAL	CCSWMD will continue to operate and expand the existing approved four cell sanitary landfill. CCSWMD will seek permit and operation approval of a new C&D landfill site as a remediation measure for closed fill Area 3 at the landfill site