REPORT OF THE
JOINT SUBCOMMITTEE STUDYING

Alternatives for Improving Waste Volume Reduction and Recycling Efforts

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

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Report of the
Joint Subcommittee Studying Alternatives for Improving
Waste Volume Reduction and Recycling Efforts
To
The Governor and the General Assembly of Virginia
Richmond, Virginia
January, 1988

TO: Honorable Gerald L. Baliles, Governor of Virginia

and

The General Assembly of Virginia

I. INTRODUCTION

The 1987 General Assembly adopted SJR 132, which created a joint subcommittee to study current and potential methods for solid waste volume reduction and recycling in the Commonwealth. The subcommittee was charged with the following duties:

1. to review existing public and private waste reduction programs and capabilities in Virginia;
2. to review governmental and private sector recycling programs;
3. to review waste volume reduction potential in the context of overall Virginia solid waste management initiatives;
4. to consider methods of assisting local governments in developing waste reduction programs, as well as methods of acquiring the cooperation of the general public;
5. to make recommendations to improve waste volume reduction and recycling in Virginia and to promote coordination between state agencies, private and public organizations, private industries, and local governments in this regard;
6. to make recommendations for incentives to promote waste volume reduction; and
7. to coordinate with and develop recommendations for the Department of Waste Management.

The study was initiated in recognition of the fact that Virginia, like most other states, faces the dilemma of how best to dispose of solid waste. Approximately 27,000 tons of solid waste are generated across the Commonwealth each day. Many local landfills around the state are reaching capacity as land mass to handle the ever-increasing flow of solid waste is becoming more scarce and the costs to properly manage the disposal of solid waste continue to rise.

II. BACKGROUND

A. A NATIONAL PROBLEM

Traditionally, the disposal of solid waste has been a responsibility of local government. For years, localities' landfills have been the sole strategy for the management and disposal of solid waste. As a result, many of these landfills are now approaching capacity. Information provided to the subcommittee indicates that within three years, one-half of the nation's 10,000 municipal landfills, where eighty-five percent of this country's solid waste is buried, will be full. The United States Environmental Protection Agency predicts that within five to ten years, those states located within the eastern and southern portions of the country will have severe shortages of landfill space.

B. THE PROBLEM IN VIRGINIA

Virginia is not immune to the solid waste disposal problem. Municipalities in the Commonwealth currently deal with ten million tons of non-hazardous waste annually. Localities are quickly filling the 173 municipal landfills in Virginia. The Newport News landfill is estimated to reach capacity by the year 2000. Other localities around the state face similar deadlines. According to Virginia's Secretary of Natural Resources, "... we're on the verge of a waste management crisis unless we change the way we do things."

The lack of remaining capacity at existing landfills is just one of the problems local governments are encountering with waste disposal. Landfills are disappearing not only because many have reached capacity, but because localities are finding it nearly impossible to build new ones due to public opposition, a lack of available open space appropriate for landfill sites, and the environmental risks of burying solid waste. Economics also plays a part in the demise of landfills. Increased regulation of the operation and establishment of landfills has caused tipping fees of landfills to increase, as has the lack of available landfill capacity. As landfills continue to reach capacity, many localities are forced to pay higher and higher transportation costs in order to transport their solid wastes to landfills which are located increasingly farther distances from their jurisdictions.

III. ALTERNATIVES TO LANDFILLS

The days of reliance upon landfills as the sole means of solid waste disposal are over. Cost, availability, increased regulation, environmental concerns and public opposition have forced localities to search for reliable alternatives to the landfill. The state of current technology provides two alternatives:

(1) waste-to-energy; and
(2) recycling

A. WASTE-TO-ENERGY

Waste-to-energy is the process of generating energy through the burning of solid waste. Current technology allows for the creation of three major types of waste-to-energy facilities:

1. mass burn incinerators;
2. modular incinerators; and
3. refuse-derived fuel (RDF) plants.

Mass burn incinerators, forty-five of which are in operation in the United States today, account for sixty-eight percent of all waste-to-energy capacity. Together, they are capable of processing 45,000 tons of trash per day. The fires in the burners (often two burners are placed in a single plant) heat boilers, making industrial steam or electricity for use in the local power grid. A mass burn facility is capable of burning over 1000 tons of garbage per day per burner. Mass burn facilities reduce waste volume by about 90%.

Modular incinerators are generally much smaller than mass burn plants. They currently account for only nine percent of the waste-to-energy capacity throughout the nation and, according to the EPA, have less sophisticated furnace controls and often less rigorous air emission controls than do mass burn types.

RDF plants account for twenty-three percent of the country's waste-to-energy capacity. These plants do not necessarily include a furnace. The difference between RDF and mass burn plants is that the waste going through an RDF plant is processed and chopped, not necessarily burned. RDF plants, each of which is unique, use many sorting processes under one roof. Glass, metal and plastic can be separated and sold as scrap. Other unburnables are also removed (some of which are disposed of at landfills) while grass cuttings and backyard waste can be composted. The waste remaining is converted to fluff or pellets and used as fuel. RDF plants reduce wastes to about 60% of their initial volume.

B. RECYCLING

Recycling is the process of recovering used materials from the waste stream and, by one means or another, returning that material to the marketplace in the same or different form for continued use. Recycling therefore embodies two concepts:

(1) resource recovery; and
(2) reprocessing for market.

Recycling is not a new idea. For years, many private industries, such as bottlers and aluminum product manufacturers, have provided recycling programs. Many localities across the nation, including Fairfax County and Roanoke County, Virginia, are now providing recycling programs for certain types of solid waste. Some of these programs are voluntary, while others are mandatory. Many of these localities believe that their programs will enable them to recycle between twenty and fifty percent of their garbage.

The Roanoke County pilot recycling program began in the fall of 1987. Participation is completely voluntary, with residents in a limited geographic portion of the county being given three separate color coded baskets for source separated disposal of aluminum cans, glass and newsprint. Residents place their baskets at the curb for pick-up by a specially designed transfer truck which maintains the autonomy of the source separated materials. Although the program is brand new, initial reports indicate that participation and volume of source separated materials is much higher than initially predicted.

C. COMPONENTS OF THE MUNICIPAL SOLID WASTE STREAM

An important factor when considering methods to promote solid waste volume reduction is the composition of the solid waste stream. The typical municipal solid waste stream is composed of a large variety of materials, which can be categorized as including the following types of waste in the amounts indicated:

(1) paper and paperboard.....37.1%
(2) yard waste.....17.9%
(3) food waste..... 8.1%
(4) glass waste..... 9.7%
(5) metal waste..... 9.6%
(6) plastic waste..... 7.2%
(7) rubber and leather waste..... 2.5%
(8) textile waste..... 2.1%
(9) wood waste..... 3.8%
(10) miscellaneous waste..... 1.9%

Additionally, all types of solid waste fall into at least one of the following categories:

(1) recyclable;
(2) combustible;
(3) decomposable; or
(4) inert.

Although estimates differ, up to 90% of the materials in the waste stream are combustible, up to 60% of solid waste could feasibly be recycled, and up to 18% of the solid waste stream is decomposable. Consequently, recycling plants nor waste-to-energy plants are capable of disposing of the entire solid waste stream by themselves.

IV. DELIBERATIONS

The subcommittee's deliberations included five meetings and two public hearings. Representatives of municipal and county governments, private industry, the Department of Waste Management, the Division of Litter Control, recycling supporters, incinerator supporters, regional planning districts and other groups all commented on the solid waste disposal problem. Information was also received from experts as to the costs of recycling and waste-to-energy programs.

A. CURRENT EFFORTS AND PROGRAMS

1. Existing Waste Disposal Facilities

Currently in Virginia, there are 173 sanitary landfills, 72 inert and debris landfills, 52 industrial waste landfills, 15 incinerators/resource recovery units and 16 transfer stations (garbage is brought there to be relayed to other facilities).

2. The Department of Waste Management

The Department of Waste Management oversees the creation and operation of these sites, as its current waste management programs are designed to prevent the indiscriminate dumping of solid waste and the management of hazardous waste. According to a spokesman for the Department, their strategic planning program for waste management is designed to develop a comprehensive waste management program for the Commonwealth which includes extensive public participation. A Strategic Resources Committee (SRC) was established by the Department, consisting of twenty-two members, including attorneys, management personnel from private industry, representatives of various environmental interest groups, associations, a judge, a doctor, a scientist, a local public official and other knowledgeable individuals. The SRC developed the following goals:

(1) find innovative methods for solving waste management problems;
(2) reduce hazardous waste by using less hazardous materials in production;
(3) emphasize recycling solid waste and
(4) provide decisive leadership for meeting waste volume reduction objectives.

As part of this strategic planning initiative, the Department of Waste Management held seven public meetings across the Commonwealth during September and October of 1987. These meetings solicited public comments regarding waste management in Virginia. Although there were many regionalized comments, the public comments generally affirmed the following basic issues raised by the SRC:

(1) the public must be protected from the mismanagement of wastes;
(2) waste minimization should be a goal for Virginia industry producing hazardous waste;
(3) recycling is the future in solid waste management; and
(4) the Commonwealth needs to provide strong leadership in waste management issues.

The SRC recommended that the best long-term approach for the Commonwealth in dealing with the waste management problems would be to develop a comprehensive waste management strategy which would emphasize in the following order:

(1) source reduction;
(2) reuse;
(3) recycling;
(4) resource recovery (energy production); and
(5) landfilling.

In addition, the SRC recommended that:
(1) the loan authority of the Virginia Resources Authority be expanded to include solid waste management facilities;
(2) recycling be encouraged by stimulating markets through the development of tax incentives, education in the community, etc.;
(3) local governments establish a funding source for future facilities or improvements to existing facilities through funding mechanisms such as tipping fees;
(4) the Commonwealth provide procurement opportunities for state agencies, where feasible, to favor the use of recycled materials;
(5) regional coordination and co-operation between counties, cities and towns be encouraged in order to promote successful recycling;
(6) a pilot recycling project for special wastes (e.g. white goods, batteries, tires) should be funded by the state in a cooperating locality;
(7) more education concerning recycling be provided to local governments and the public; and
(8) state-managed funding programs for energy should promote recycling and resource recovery studies.

Finally, the SRC suggested that although there is support for recycling activities, the nature of legislation adopted by the Commonwealth should reflect appropriate impact assessment and public review. For that reason, the SRC recommended that this legislative subcommittee's study be continued for an additional year to allow impact assessment studies and public review to continue regarding legislative proposals developed in cooperation with the Department of Waste Management including:

1. proposed legislation for a state-directed recycling program which considers public/private ventures, voluntary and mandatory programs, and institutional arrangements; and
2. proposed legislation or regulatory programs which consider financial incentives to facilitate the recycling/reuse of special wastes such as auto batteries, used tires, white goods, used oil, pesticides and household hazardous wastes.

3. The Division of Litter Control and Recycling

The Division of Litter Control and Recycling, which is charged with finding ways to reduce litter and encourage recycling activities, conducted a survey during the summer of 1987 to determine attitudes toward litter, solid waste disposal, and recycling in Virginia. Among other things, the results of this statewide telephone survey showed that:

(1) most respondents believed that their household solid wastes eventually found their way to a dump or other types of landfills;

(2) two-thirds of the respondents have their refuse collected from their home;

(3) few respondents perceive there to be any problem in their community's ability to find adequate disposal space for local solid waste;

(4) most respondents believe that recycling is an important activity;

(5) the greatest perceived benefits of recycling are that it conserves resources and reduces litter, thereby saving consumers and taxpayers money;

(6) there is little awareness of the ability to recycle items other than aluminum cans, such as newspapers, paper stocks, and glass containers;

(7) over 80% of those who responded would be willing to take their newspapers, glass bottles and jars, and aluminum cans to a convenient local collection center for recycling purposes.

The Division of Litter Control and Recycling currently serves as a conduit between local governments and the 296 private recycling centers located in Virginia. The Division also awards grants to localities as seed money for local litter control and recycling programs. These grants come from a portion of the revenue generated from the litter control tax. According to the Commissioner of the Division, in 1986 87 out of 95 counties, all 41 cities and 150 out of 189 incorporated towns in Virginia received grants ranging from $300 to $19,000.

4. Private Industry

There are currently a number of industries in Virginia which utilize recycling in their businesses. Glass, aluminum and paper industries all incorporate recycling into their manufacturing processes.

(a) Glass industry

Glass is 100% recyclable. Currently glass plants use 30-35% cullet (crushed glass) in their operations. Therefore, for every four glass containers manufactured, a fifth container can be processed with no additional energy cost. According to a glass industry spokesman, Owens-Illinois experienced a 25% increase in cullet collected during the first half of 1987. In the last ten years, the glass industry has intensified its recycling efforts. In the last two years, glass recycling centers located in Virginia have increased from 18 to 64.

(b) Aluminum industry

Aluminum recycling is good business, according to a representative of Reynolds Aluminum Recycling Company. The company extends money for cans at a price which the consumer perceives to be of value. Aluminum recycling saves 95% of the energy needed to produce aluminum. Consequently, in each of the last six years, his company has recycled more than 100% of the cans which it manufactures. Reynolds currently operates two reclamation plants in Virginia, whose capacities taken together equal 40% of the company's capacity to make primary aluminum from ore. Reynolds' recycling network includes more than 1,500 buying locations. They operate 44 recycling centers in Virginia with processing centers in Richmond, Roanoke, Bristol and Virginia Beach and provide a market for 23 independent recyclers. In 1986, Reynolds realized a 50% increase in its collections over the previous year.

(c) Paper industry

Twenty-five pulp and paper mills are currently located in the Commonwealth. Of these, at least three use only recycled waste paper. Old newspapers and old corrugated are the largest and most common grades of waste paper. The national recovery rate for these two types is 30% and 40% respectively. A spokesman for the paper industry indicated that Virginia is well situated to take advantage of the increasing demand for these products by manufacturers in Southern states because of the close proximity of mills in Virginia which would be able to use these recycled materials.

In addition to existing recycling efforts in the glass, aluminum and paper industries in Virginia, a spokesperson for the plastic industries indicated that recycling is being utilized there as well. Although there are no plastic recyclers in Virginia buying plastic (despite the fact that there are approximately 150 plastic industry businesses located in Virginia which employ about 14,000 individuals), there are numerous recyclers in other states. Plastic milk and soft drink containers are easily identified by their shape and have very short life spans. Therefore, they have a high turnover rate which guarantees a continuous supply for the recycling stream. Currently, over 20% of the plastic soft drink containers are being recycled into products such as fiber fill, strappings for pallets, distributor caps for cars, carpet backing and paint brush bristles.

B. PUBLIC COMMENT

1. Recycling

Supporters of recycling point to a number of advantages offered by recycling, such as:

(1) it conserves energy;
(2) it conserves resources;
(3) it reduces the solid waste flow;
(4) it alleviates the pressure on landfills; and
(5) it has no negative environmental impact.

Yet recycling has its limitations. In order to recycle effectively, resource recovery must occur. This could be accomplished by voluntary participation or mandated recycling. But resource recovery is only part of recycling. Markets must exist for products manufactured from the material recovered. Recycling, according to many, is market dependent. Technology therefore plays an important role in whether recovered materials can be converted into a product for which there is a demand.

Testimony to the subcommittee emphasized the need to procure public participation and cooperation at the source separation stage of recycling. In addition to the market-dependent nature of recycling, source separation is required for successful recycling programs. Unless material is source separated by the public, increased processing costs would be incurred which would eventually affect the price of products manufactured from recycled material. This could result in decreased demand and, consequently, fewer available markets for recycled materials.

All persons who testified stressed that in order to gain maximum public participation with regard to source separation, it is necessary to make source separation as convenient as possible. Curbside pick-up of

previously source separated materials was suggested. The establishment of conveniently accessible local collection centers for drop-off by residents of previously source-separated materials was also encouraged, as was providing receptacles at existing waste disposal sites such as landfills, waste-to-energy plants, and private recyclers.

In conjunction with the need to procure public participation, many speakers suggested that public education be initiated concerning recycling. They assured the subcommittee that increased public cooperation could be gained by providing information to children and adults alike as to the reasons for recycling and the types of products capable of being recycled.

2. Waste-to-energy

Proponents of incineration emphasized that incineration has the greatest potential for solid waste volume reduction: 90% of the components found in the waste stream are combustible. Testimony indicated that while mass burn facilities reduce waste volume by approximately 90% RDF facilities reduce waste to about 60% of the original volume.

Proponents also suggest that a certain amount of source separation prior to incineration is preferable. This is because certain types of solid waste (i.e. glass), if burned, reduce the B.T.U. value of the burn. As a result, less energy is derived and a greater risk of pollution occurs. If limited source separation is performed prior to burning, certain materials are recovered, environmental impact is lessened and more energy is generated.

Waste-to-energy plants, like recycling, are also market-dependent. A market must exist for their by-products (steam, electricity, refuse-derived fuel). Currently, waste-to-energy plants in Virginia handle about 20% of all municipal solid waste generated in Virginia. This percentage is expected to rise to 35% once the new Fairfax incineration facility comes on line.

Opponents of incineration point to what they call the "catch 22" of incineration, that matter is neither created nor destroyed. Many opponents believe that incineration is a waste volume reduction technique, not waste disposal. They point to the ash that remains following incineration, as well as to the emissions into the air while the incinerators are in operation, as potentially degrading the environment. The Executive Director of the Air Pollution Control Board informed the subcommittee that permit and operational requirements are very stringent on incinerators due to the wide variety of materials being

burned at each facility. In addition to the State Air Pollution Control Board, the State Water Control Board, the Department of Health, the Department of Waste Management, and local governments all play an important role in any incinerator permit approval.

Currently, ash resulting from incineration is tested periodically for content by the Department of Waste Management. Opponents of incineration warn that since the EPA has declared incinerator ash a special waste, new requirements for its disposal may come into play, such as monofilling.

3. Comments received suggesting legislation

(a) From proponents of recycling

Proponents of recycling, many of whom believe that comprehensive recycling and incineration cannot co-exist, suggested legislation requiring recycling to the maximum extent in a community before any incineration permit could be issued to a new plant, legislation mandating recycling, legislation requiring manufacturers to accept materials recovered from their prior products or substitute new materials for use in production which they would be willing to accept after recovery, as well as legislation providing favorable financial and tax incentives to businesses who participate in recycling. Many proponents of recycling encouraged the state to provide funds for recycling education programs for the public, as well as the initiation of a state procurement process for purchasing recycled products for all offices under state jurisdiction.

(b) From proponents of waste-to-energy

Proponents of waste-to-energy plants requested legislation which would ensure that these co-generation plants would be paid a favorable electrical purchase contract rate by utility companies over more traditional fossil-fuel burning co-generation plants.

(c) From local government representatives

Proponents of all methods of waste disposal agreed on at least one issue: that the Commonwealth not mandate any form of program without providing the necessary financial and technical assistance to ensure its success. Local government representatives placed particular emphasis on this issue.

4. Local government positions

Speakers representing the Virginia Association of Planning District Commissions, the Virginia Municipal League, and the Virginia Association

of Counties all voiced support for an integrated solution to the problems of solid waste disposal. They proposed the implementation of programs providing for waste minimization, waste reduction and recycling through the utilization of recycling programs, waste-to-energy plants and landfills.

5. Regional Cooperation

Many of those who testified, including representatives of the Virginia Association of Planning District Commissions and the Virginia Municipal League, called the subcommittee's attention to the fact that the serious problems of solid waste collection may exceed the internal capabilities and geographical limitations of any one political jurisdiction. They encouraged cooperative intergovernmental agreements, stating that regional approaches to waste management are easier for local officials to consider when the long-term economics of a project indicate a savings over time to local residents. They requested that, in order to encourage the realization of a regional program, the Commonwealth provide financial incentives which would assist in the resolution of controversial issues such as the siting of resource recovery plants or landfills and regional agreements on project cost-sharing. They also suggested that where regional cooperative efforts were slow to materialize, financial incentives from the state to stimulate more regional waste stream, economic feasibility studies and recycling program initiatives might be necessary.

A representative of the Virginia Association of Counties requested that the state not mandate regional cooperation, as a number of regional cooperative efforts currently in progress in the Commonwealth were all initiated voluntarily. Examples of current regional cooperative efforts in Virginia include SPSA in the Tidewater area (six cities and two counties) and the Alexandria/Arlington Resource Recovery Facility.

C. HARD-TO-RECYCLE PRODUCTS

Used oil, lead batteries, used tires and farm chemicals continue to present disposal difficulties, according to the Director of the Department of Waste Management. These exist in large quantities and there is little demand for the used material.

1. Used oil

Currently in Virginia, 540 service stations are accepting used oil. When oil prices were higher, recyclers would pay for used oil. Prices for oil have decreased though, and 50 of these service stations are charging a fee of $.30/gallon for collection of used oil. It is estimated that 287,000 gallons of oil are collected in the Commonwealth annually.

2. Lead batteries

A 1987 report from the Department of Waste Management regarding lead batteries in the Commonwealth indicates that in 1985, approximately 4,219,600 batteries were discarded. Batteries are replaced on an average of every three to four years. Due to the potential of lead leaking from a battery reaching groundwater, there is environmental concern regarding their improper disposal. Although lead batteries can be recycled, the 1987 report concluded that their recycling is tied to the price of lead and the manner in which batteries are sold. Lead prices are down and therefore lead battery recycling has decreased, although a majority of car batteries sold at department store auto service centers and service stations are being recycled. Discarded batteries are reaching landfills in Virginia, although, as the report indicates, the magnitude of this problem at the present time cannot be defined from an economic or environmental standpoint.

3. Used tires

The Commonwealth has passed enabling legislation which allows local governments to pass a model tire storage ordinance. The model ordinance limits the number of tires which can be stored without a firebreak. Used tires are currently being shredded and used by landfills as a base for roads through their facilities. They are also being used experimentally by oystermen as cultches for oysters. Currently, one company in Virginia is purchasing used tires.

4. Farm chemicals

Farm chemicals present problems on three levels in Virginia: (i) leftover pesticides which cannot be used; (ii) pesticides which have been banned from usage but still remain on property; and (iii) pesticides containing dioxins for which there is no method of disposal.

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V. RECOMMENDATIONS

1. That legislation be enacted requiring every county, city or town, individually or in concert with other local jurisdictions, and with the assistance and approval of the Department of Waste Management, to develop a plan for providing an operation, facility or facilities, easily accessible to the public, for the disposal of recyclable materials. These facilities may be (i) publicly or privately owned or operated, (ii) permanent collection centers, (iii) temporary transfer sites, (iv) a separate facility at a landfill, or (v) any other form of disposal site approved by the Department of Waste Management. Each plan should include an estimate of the cost of its implementation and be submitted to the Department of Waste Management no later than April 1, 1989. This legislation should not be enacted unless $350,000 is appropriated to the Department of Waste Management to fund its administrative costs in assisting local jurisdictions in the development of recycling plans. (See Appendix A for copy of draft legislation implementing this recommendation.)

2. That the Department of Waste Management implement a statewide program for solid waste management which emphasizes the following priorities:

a. reduction in the amount of solid waste generated;
b. recycling materials;
c. recovery of energy from solid waste which cannot be recycled, provided that the energy recovery facility preserves the quality of air, water and land resources; and
d. disposal of solid waste which cannot be recycled or from which energy cannot be derived.

(See Appendix B to this report for copy of draft resolution implementing this recommendation.)

3. That legislation be enacted requiring the Department of Conservation and Historic Resources and the Department of Transportation, prior to April 1, 1989, to submit to the Department of Waste Management estimates of the costs of establishing and maintaining separate recycling containers for disposal of glass and aluminum at state parks, waysides and rest areas. (See Appendix C for draft legislation implementing this recommendation.)

4. That the 1987 study of alternatives for improving waste volume reduction and recycling efforts be continued for another year to enable the joint subcommittee to further review potential incentives, methods and regionalization efforts for waste volume reduction and recycling in the Commonwealth. (See Appendix D for draft resolution implementing this recommendation.)

APPENDIX

D 12/22/87 Heard C 12/28/87 ds

SENATE BILL NO. ..... HOUSE BILL NO. .....

A BILL to require local jurisdictions to develop recycling plans.

Be it enacted by the General Assembly of Virginia:

1. § 1. Every county, city or town, individually or in concert with other local jurisdictions, shall, with the assistance and approval of the Department of Waste Management, develop a plan for providing an operation, facility or facilities, easily accessible to the public, for the disposal of recyclable materials. These facilities may be (i) publicly or privately owned or operated, (ii) permanent collection centers, (iii) temporary transfer sites, (iv) a separate facility a landfill, or (v) any other form of disposal site approved by the Department of Waste Management. Each plan shall include an estimate of the costs of its implementation and be submitted to the Department of Waste Management no later than April 1, 1989.

2. That the provisions of this act shall not become effective unless a general fund appropriation of $350,000 is provided for in the general appropriation act of the 1988-1990 biennium to the Department of Waste Management for the purpose of assisting local jurisdictions in the development of recycling plans as required in § 1 of this act.

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D 12/22/87 Heard C 12/28/87 smw

HOUSE JOINT RESOLUTION NO.....

Requesting the Department of Waste Management to establish a comprehensive statewide program for solid waste management.

WHEREAS, landfills located in the Commonwealth are rapidly being filled to their capacity; and

WHEREAS, the removal of reusable and recyclable materials from the solid waste stream will decrease the flow to solid waste disposal facilities, aid in the conservation and recovery of valuable resources, conserve energy in manufacturing processes, increase the supply of reusable raw materials for industries in the Commonwealth, prolong the useful lives of landfills, and substantially reduce the required capacity of proposed resource recovery incinerators, contributing to their overall combustion efficiency and thus reducing costs in planning, construction and operation; and

WHEREAS, a successful recycling program requires a market and distribution networks for recyclable or reusable material recovered from the solid waste stream; now, therefore, be it

RESOLVED by the House of Delegates, the Senate concurring, That the Department of Waste Management is requested to consider the establishment of a comprehensive statewide program for solid waste management which emphasizes reducing the amount of solid waste generated, recycling material, the recovery of energy from solid waste that cannot be recycled if the energy recovery facility preserves the

quality of air, water and land resources, and the disposal by landfilling or other methods approved by the Department of Waste Management, of solid waste which cannot be recycled or from which energy cannot be recovered; and, be it

RESOLVED FURTHER, That, in order to demonstrate the Commonwealth's commitment to solid waste reduction, it shall aid in the identification and establishment of markets for recyclable materials and encourage state agencies to procure recyclable and recycled products and materials; and, be it

RESOLVED FINALLY, That there be a statewide objective of recycling twenty-five percent of the solid waste stream by 1995.

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D 12/23/87 Heard C 1/4/88 owj

SENATE BILL NO. ..... HOUSE BILL NO. .....

A BILL to require the preparation of cost estimates for establishing and maintaining recycling containers at certain state facilities.

Be it enacted by the General Assembly of Virginia:

1. § 1. The Department of Conservation and Historic Resources and the Department of Transportation shall submit to the Department of Waste Management, prior to April 1, 1989, estimates of the costs of establishing and maintaining separate recycling containers for the disposal of aluminum and glass at state parks, waysides and rest areas.

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D 12/22/87 Heard C 12/28/87 bap

HOUSE JOINT RESOLUTION NO.....

Continuing the joint subcommittee studying alternatives for improving waste volume reduction and recycling efforts.

WHEREAS, Senate Joint Resolution No. 132, passed during the 1987 Session of the General Assembly of Virginia, requested a joint subcommittee to study alternatives for improving waste volume reduction and recycling efforts; and

WHEREAS, the joint subcommittee has held five meetings during which the review of many issues has taken place, including:

1. Existing public and private waste reduction programs and capabilities in Virginia;

2. Governmental and private sector recycling programs;

3. Waste volume reduction potential in the context of overall Virginia solid waste management initiatives;

4. Consideration of methods of assisting local governments in developing waste reduction programs, as well as methods of acquiring the cooperation of the general public;

5. Recommendations to improve waste volume reduction and recycling in Virginia and methods of promoting coordination between state agencies, private and public organizations, private industries, and local governments in this regard, and

6. Coordination with and the development of recommendations for the Department of Waste Management; and

WHEREAS, due to the complexity of the issues involved and the need to determine what, if any, financial or tax incentives would be appropriate to promote a successful overall solid waste management program in the Commonwealth, the joint subcommittee has agreed that the issues raised during 1987 require further attention and that the future activities of the joint subcommittee should be concentrated on particular matters; now, therefore, be it

RESOLVED by the House of Delegates, the Senate concurring, That the joint subcommittee studying alternatives for improving waste volume reduction and recycling efforts is continued. The joint subcommittee shall focus its efforts upon, but not be limited to, the following issues:

1. Incentives to promote volume reduction and recycling,

2. The regionalization approaches to solid waste management; and

3. Methods for the disposal of hard to recycle products such as oil, lead batteries, tires and farm chemicals.

The current membership of the joint subcommittee should continue to serve.

The joint subcommittee shall complete its work in time to submit its recommendations to the 1989 Session of the General Assembly.

The indirect costs of this study are estimated to be $11,490; the direct costs shall not exceed $6,480.

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