

# MINNESOTA HISTORY OF SOLID WASTE MANAGEMENT

## 1900-1949

### How waste was managed

- Solid waste was not a big issue. Garbage dumps and burning dumps were located everywhere in the state.
- Over 1800 garbage and burning dumps were located in Minnesota.
- All types of wastes were disposed of in the dumps.
- Dumps offered the opportunity for people to scrounge for reusable items. One man's throwaway could be another man's treasure.
- All burnable materials were burned including: yard waste, tires and used oil.
- Used oil was dumped on roads or drained on the ground.
- Rural people all had burn barrels for anything that would burn.
- Dumps served as a social gathering place for people for such activities as shooting rats and watching bears (northern Minnesota)
- Any regulatory control was the responsibility of the city, village or township in which the dump was located.
- Typical problems were: smoke, odors, rodents, flies, litter and ground and surface water pollution.
- The MDH was created in 1927, but was only given legislative authority over dumps located in tourist camps, summer hotels and resorts.

### Waste composition and amounts

- Waste was much different than today's waste.
- Household wastes were much less in volume. No plastic containers.
- Glass and tin was used extensively for containers.
- Pop, beer and milk all came in returnable glass bottles.
- Most meat, fruit and vegetables were bought fresh from markets or were raised and processed by the household. Canning was the common method for preserving food.
- Meat from markets was usually wrapped in butcher paper. Fruit and vegetables were usually sent home in paper bags or burlap bags, which could be reused.
- Junk mail was nonexistent.
- People in general were much more frugal, two world wars and the great depression made people more conscious about saving and reusing as many items as they could.

## 1950s

### How waste was managed

- Dump sites continue as the disposal method.
- Land use, due to expanding cities with quickly increasing populations, caused concerns for many of the existing dumps. New dump sites were getting hard to site, NIMBY started with the increasing populations.
- Metro area shortage of dump sites led to the legislature to enact chapter 450 in 1957. Let cities of the second, third, and fourth class within 25 miles of Minneapolis City Hall create sanitary disposal authority. However, only one authority was formed and the shortage of dumps sites continued.
- In rural Minnesota life went on like it had in the past. Dumps continued to burn and bury. The siting of new dumps generally was not a problem in greater Minnesota.

### Waste composition and amounts

- Household wastes very small as compared to today wastes. No plastic containers. Glass bottles and tin cans were the main containers. Paper boxes for breakfast food and oatmeal.
- Televisions were just starting to become popular, this would prove to be a large problem in the future (electronic wastes)

## 1960s

### How waste was managed

- The shortage of dumps due to the increasing of population and the expansion of cities became a national issue.
- In 1965, the Federal Solid Waste Disposal Act was passed. 19 Solid waste research projects received up to \$2 million in aid from the Federal Government.

- In 1967 the Federal Beautification Act was passed. (Lady Bird Johnson Act) It did not allow any landfills to be built adjacent to a highway.
- In 1967 the Minnesota Legislature created the MPCA investing them with broad powers to control air, water and land pollution. The MPCA did not have authority to control solid waste activities. However, the MPCA was directed to study and make recommendations on solid waste disposal needs for the 1969 legislature.
- The 1967 Legislature also created the Metropolitan Council and directed it to study and plan solid waste management in the Twin Cities Metro area.
- The 1969 Legislature gave SW authority to the MPCA and to the Met Council
- State Solid Waste Act becomes law - Prohibits open burning; solid waste permitting process established; landfills upgraded; put emphasis on creating sanitary landfills.

### **Waste composition and amounts**

- Waste amounts increase as the population increases. More individual packaging begins.
- Glass returnable bottles (pop, beer and milk) still used extensively
- Milk starts to be sold in paper containers • Pop and beer begin to be sold in metal cans – mid 60s
- Convenience becomes important to the consumers and their way of life
- Burning dumps are still the most used waste disposal method in Minnesota.

## **1970s**

### **How waste was managed**

- Open dumps are closed and sanitary landfills are established using county solid waste plans as a tool.
- MPCA promulgates solid waste rules requiring disposal facilities to obtain permits and meet basic design and operational meetings.
- In 1971 the Legislature enacted Chapter 400 establishing a much expanded role in solid waste management for counties outside the Twin Cities Metropolitan area.
- MPCA required all counties to submit plans on managing solid waste. In these plans, the county needed to indicate the dumps to be upgraded to sanitary landfill status and the dumps to be closed.
- By 1973, approximately 1,500 operating open dumps were replaced by approximately 140 permitted landfills.
- In 1973 the MPCA revised the solid waste rules to: exclude hazardous waste disposal practices, to provide for a five-foot minimum separation to the ground water table and establish closure requirements for dumps.
- September 1973, 84 of the 87 county plans had been submitted to MPCA for approval.
- In 1974 all efforts were directed to dump closing and construction of permitted landfills.
- In 1974, landfill operator training was offered for the first time.
- In 1974 the water monitoring reports start to show the presence of leachate at permitted landfills. This served as the early warning that something was wrong and that sanitary landfills could actually cause pollution problems.
- Foundation of the Met Council and metro counties solid waste planning structure.
- 1976 Federal Resource Conservation and Recovery Act (RCRA) enacted.
- 1977 almost all open dumps were closed and nearly all landfills were permitted.
- In 1978, a number of landfills permitted in the early 1970s were either closing or asking for expansions. A crisis situation was predicted in the metropolitan area, and the other large cities in the state (Duluth, St Cloud, Rochester).
- The 1978 Legislature enacted Chapter 728, which required the State Planning Agency to study the problems with solid waste and hazardous waste in the state and report back to the Legislature. This study known as the “Casserly Report” was published in 1979. Its recommendation would be used for legislation in 1980.
- In 1979, the MPCA began to focus on ground water and hazardous waste. That June, the MPCA published the state hazardous waste rules.

### **Waste composition and amounts**

- Amounts of MSW increasing as the population of the state grows and the economy booms.
- Consumer convenience becomes extremely important.
- The use of plastic in packaging increases.
- The use of glass returnable bottles in the beverage business decreases as the use of aluminum cans increases.
- Fast food industry becomes extremely large.
- Disposable diapers become very popular with the working families
- SEE US EPA.1977 Solid Waste Composition Study

## **1980s**

## **How waste was managed**

### **1980**

- Minnesota Waste Management Act established by the Legislature.
- Establishes state waste management hierarchy (emphasizing “resource recovery”- waste combustion, composting-recycling-over land disposal)
- Creates landfill siting process
- Solid waste abatement planning required in Twin Cities region waste assurance provided (i.e., designation or flow control)
- Waste Management Board (precursor to OEA) created and given solid and hazardous waste responsibilities (hazardous waste siting and recycling grants)
- Provides grants to MPCA for solid waste planning, as well as for new technology for resource recovery.
- Legislative Commission on Waste Management created
- MPCA documents ground water contamination problems at unlined landfills

### **1981**

- RCRA State Plan (MPCA state solid waste plan approved by federal EPA)

### **1982-84**

#### **Development of Recycling and Solid Waste Management**

- First resource recovery facility opens (1982)
- Initial development of recycling and public education initiatives
- Solid waste plans are required to contain information and to be approved by the MPCA
- 1982- landfill “Certificate of Need” legislation – intends that landfilling is the method of last resort

### **1983**

- In 1980 Minnesota’s Superfund Program was created under the Minnesota Environmental Response and Liability Act (MERLA) and the federal Superfund Program under the 1980 Comprehensive Environmental Response, Compensation and Liability Act [CERCLA]. This provided legal and financial tools to remediate uncontrolled releases of hazardous substances, including where releases had been identified at landfills.

### **1985-86**

#### **Mandatory Waste Processing**

- Legislation for the Metro Area
- Requires that no unprocessed MSW generated in the Metro Area go to landfills after Jan. 1, 1990

#### **Waste Management Act Amendments**

- Waste tires could not be disposed in the land (Minn. Stat. §115A.904)
- Source separated recyclable materials may not be accepted at public resource recovery facilities, except for transfer to a recycler, unless no other person is willing to accept the recyclable materials
- Third Metropolitan Region Solid Waste Plan sets abatement goals based on hierarchy (80% processing; 20% reduction/recycling; market development and public education); abatement grant program established

#### **Solid Waste Planning Rules Adopted**

- County Solid Waste Management master plans are stated, implementing the waste management hierarchy HHW Program Developed • MPCA sponsored household hazardous waste (HHW) collections begin

### **1987-88**

- Solid Waste Responsibilities are divided
- County solid waste management master plans approved by Met Council for Metropolitan region; WMB for greater Minnesota
- Political support building for major processing facilities due to difficulties in siting new landfill capacity (examples East Central – Pope/Douglas – Prairieland )
- Greater regional awareness of solid waste problems
- Major recycling programs implemented
- WMB assumes responsibility for planning and issuing Certificates of Need for landfill capacity
- MPCA promulgates new landfill siting criteria, design standards, closure/ post closure and financial assurance requirements are set by MPCA
- New requirements for liners, leachate collection systems, ground water monitoring and financial assurance increased operating costs for MSW landfills about 50% of operating landfills close by 1990 (55 still in operation)
- MPCA streamlines permit-by-rule for recycling, yard waste, transfer and demolition facilities
- MPCA establishes partnership program with counties for HHW management

#### **Waste Management Act Amendments**

- Spent lead acid batteries and used oil disposal in MSW was prohibited
- Used motor oil is restricted from disposal in or on the land without MPCA approval

## **1989**

- SCORE Legislation passed
- Sets county recycling goals
- Establishes state funding for waste reduction, recycling and problem materials management from sales tax applied to garbage collection services (\$25 million to counties)
- Office of Waste Management (OWM) replaces the Waste Management Board
- Counties required to have a Household Hazardous Waste Plan completed by Oct. 4, 1990

## **Highlights of the '80s**

- Processing facilities built and operating (some built with CAP funding)
- 1982 - St Johns Incinerator (Collegeville) - Closed 1988
- 1982 - Red Wing (Red Wing)
- 1983-84 - Rueters RDF (MPLS)
- 1985 - Newport (RDF) NRG (Newport)
- 1985 - WLSSD Incinerator (Duluth)
- 1986 - Quadrant WTE (Perham Facility)
- 1986 - RECOMP RDF-Compost (St Cloud)
- 1987 - Wilmarth (Mankato-NSP-NRG) rebuilt to burn RDF
- 1987 - Olmsted County WTE (Rochester)
- 1987 - Red Wing WTE (Red Wing) • 1987 - Pope/Douglas WTE (Alexandria)
- 1987 - Fillmore County MSW Composting • 1988 - Polk County WTE (Fosston)
- 1988 - Elk River Incinerator (Elk River)
- 1984-88 - Future Fuels - SWIS Corp. (RDF- Compost) (Thief River Falls)
- 1988 - Lake of the Woods MSW Composting
- 1989 - HERC WTE Facility (MPLS)
- 1989 - Fergus Falls WTE (Fergus Falls)
- 1989 - Rice County HHW and Recycling Facility

## **Waste composition and amounts**

- Waste volumes continue to increase
  - Aluminum continues to increase in the beverage container market, glass continues to decline
  - Plastics show increases-Shrink wrap and protective wrapping becomes standard in the shipping of goods
- Paper continues to increase (office paper is a large percentage due to the introduction of printers for computers)

## **1990s**

### **How waste was managed**

#### **1990**

### **Pollution Control Act**

- Requires industries to prepare plans and progress reports for submission to the MPCA and the OWM
- Provides for financial and technical assistance from the MPCA and OWM on pollution control methods
- Metro Counties create SWMC

### **Waste Management Act amendments**

- Yard waste can not be disposed in landfills and resource recovery facilities, in the Metro Area, except for the purposes of composting [Minn. Stat. § 115A.931]
- A person may not dispose of unprocessed MSW at a Metro Area disposal facility. Certain exemptions exist for unprocessable wastes and other conditions. [Minn. Stat. § 473.848]
- A person may not place a major appliance in MSW, in or on the land, or a disposal or processing facility. Counties are required to provide for the opportunity to recycle residential major appliances. [Minn. Stat. §§ 115A.02, subd. 17a, 115A.552, 115A.9561]
- A person may not place in MSW a dry cell battery containing mercuric oxide electrode, silver oxide electrode, nickel-cadmium or sealed lead-acid that was purchased or used by a government agency or an industrial, communications, or medical facility. [Minn. Stat. 115A.9155]

## **1991**

### **MPCA prioritizes permitting projects**

- New federal standards for landfills enacted (Subtitle D of federal RCRA)
- MPCA prioritizes permitting activity for facilities that are higher on the Waste Management Act's hierarchy Waste

### **Management Act amendments**

- A person may not place in MSW a rechargeable battery or battery pack or a product with a non-removable battery pack. [Minn. Stat. § 115A.9157]
- Solid waste generated outside of Minnesota may not be processed or disposed of unless the waste meets all current solid waste management regulations and has separated all items that are banned from MSW. [Minn. Stat. § 115A.935]

### **Fourth Metro regional Solid Waste Plan**

- Establishes goal of 35% recycling by 1993 (50% by 2000)
- Emphasis on toxicity reduction; reduced dependence on landfilling • Greater responsibility on generators to recycle and reduce waste

## **1992**

- MPCA receives approval from Federal EPA for the Solid Waste Permitting Program
- Each county required to implement their Household Hazardous Waste Management Plan by June 30, 1992.

### **Waste Management Act amendments**

- The yard waste ban was extended to greater Minnesota [Minn. Stat. § 115A.931]
- A person may not place mercury, a thermostat, thermometer, electric switch, appliance, medical/scientific instrument that has not had the mercury removed in solid waste, knowingly place in a processing or disposal facility or in a wastewater disposal system. Manufacturers are required to provide information on recycling or proper management of the product. A person may not sell for resale, or at retail, a toy or game that contains mercury. [Minn. Stat. §§ 115A.932, 116.92, 116.932]

### **Federal court flow control decisions**

- 1992-Faribault & Martin counties waste designation ordinance struck down; 1994 Supreme Court Carbone decision; 1995 - "Environmentally Inferior Facilities" struck down.
- Limits the ability to direct MSW to resource recovery facilities
- Increased the amount of MSW going out-of-state landfills
- Many local governments subsidize tipping fees to at public resource recovery facilities to make them competitive with out-of-state landfills

## **1993**

### **Waste Management Act amendments**

- A person (households were exempt until August 1, 1994) may not knowingly place a fluorescent or high intensity discharge lamp in solid waste or at a solid waste facility, except a household hazardous waste or recycling facility. [Minn. Stat. § 115A.932]
- A person shall not dispose of residential lead paint at an unlined land disposal facility or a MSW incinerator. Citizens who remove lead paint must manage the waste in accordance with household hazardous waste laws. [Minn. Stat. §§ 116.875, 116.88]
- Hennepin County enacts an ordinance requiring waste generators to fund solid waste management programs. This is the first solid waste generator fee in the state.

## **1994**

- Office of Environmental Assistance (OEA) created. It replaces Office of Waste Management and assumes Metropolitan Council's solid waste responsibility
- Landfill Cleanup Act creates close landfill program
  - Transfer of ownership of landfills to state
  - In response a significant portion of MSW landfills close, leaving only 27 MSW landfills operating
  - 106 Minnesota Landfills become part of program

## **1994 -95**

### **Waste Management Act amendments**

- Prohibition on disposal of motor and vehicle fluids and filters expanded to include brake fluid, power steering fluid, transmission fluid, commercially generated motor oil filters and antifreeze. [Minn. Stat. § 115A.916]
- Households generating fluorescent or high intensity discharge lamps may not knowingly dispose of them in solid waste or at a solid waste facility, except a household hazardous waste or recycling facility. [Minn. Stat. § 115A.932]

- A person may not place a telephone directory (that contains more than 7,500 listing) in solid waste, in a solid waste disposal facility or at a resource recovery facility, except a recycling facility. Directory publishers or distributors have certain collection and recycling requirements. [Minn. Stat. § 115A.951]
- Unprocessed MSW disposal restriction was amended to cover all MSW generated in the Metropolitan Area and established a standard of no more than 35 percent of the weight before processing may be disposed of in any MSW disposal facility on an annual basis. [Minn. Stat. § 473.848]
- The ban on the delivery of source-separated recyclables was amended to include disposal facilities and private resource recovery facilities unless approved by the Director of the MOEA. [Minn. Stat. § 115A.95]
- A person may not knowingly vent or otherwise release into the environment, any CFC used as refrigerant in appliances. [Minn. Stat. § 116.731]
- Motor oil filter ban extended to those generated by households. [Minn. Stat. § 115A.916]

## **1996**

- Legislative Commission on Waste Management (LCWM) abolished Waste Management Act amendments
- Businesses that purchase and use 150 or fewer gallons per month and residential users may not place antifreeze in the sanitary sewer system. [Minn. Stat. § 115A.916]
- 1996-98 Waste Management Act re-examined by the OEA

## **1997**

### **Fifth Metropolitan Regional Solid Waste Policy Plan**

- Focus on waste and toxicity reduction; sustainability

### **Olmsted County Solid Waste Management contract with waste haulers.**

- Use of contract and service fees to control flow of MSW

## **1998**

- Stearns County Solid Waste Collection and Transportation Ordinances use public health as a way to direct the collection and transportation of MSW
- Public Entities Law [Minn. Stat. §§115A.46, 115A.471] requires that a public entity that manages solid waste must manage waste in a manner that is not inconsistent with the county solid waste management plan.

## **1999**

- Wabasha County Public Solid Waste Service Ordinance assumes responsibility for the collection, transportation, processing and disposal of all MSW generated within the county

## **Highlights of the '90s**

- Processing facilities built and operating (CAP Grant Funding)
- 1990 – Aitkin County HHW/Recycling Facility
- 1990 – Norman County Recycling Facility (Ada)
- 1990 – Swift County MSW Compost and Recycling Facility (Benson)
- 1990 – Goodhue Recycling Facility
- 1991 – Hubbard County Recycling Facility (Park Rapids)
- 1991 – City of North Mankato Recycling Facility (North Mankato)
- 1991 – Dodge County recycling Facility
- 1991 – Lake County Recycling Facility
- 1991 – Prairieland MSW Compost Facility (Truman)
- 1991 – Wright County MSW Compost (Buffalo)
- 1991 – Kandiyohi HHW/Recycling Facility (Willmar)
- 1991 – East Central MSW Compost Facility (Mora)
- 1992 – Clearwater County Recycling Facility (Bagley)
- 1992 – Redwood County Recycling Facility (Redwood Falls)
- 1992 – Hennepin County HHW facility (MPLS)
- 1992 – Pennington County MSW Compost Facility (Thief River Falls)
- 1992 – Cass County HHW/Recycling (Pine River)
- 1992 – WLSSD HHW Facility (Duluth)
- 1992 – Blue Earth County HHW Facility (Mankato)
- 1992 – Olmsted County HHW Facility (Rochester)
- 1994 – Otter Tail County HHW/Recycling Facility (Fergus Falls)
- 1994 – Koochiching Recycling /HHW Facility (International Falls)

- 1994 – Waseca County Recycling/HHW Facility (Waseca)
- 1994 – Cook County recycling Facility
- 1995 – Polk County MRF at Polk Co. WTE Facility (Fosston)
- 1997 – St Louis County HHW Facility
- 1997 – Scott County HHW Facility
- 1998 – Tri - County North HHW Facility (St. Cloud)
- 1998 – Chisago County HHW Facility
- 1999 – City of Hutchinson Organic Compost/HHW Facility (Hutchinson) Facilities closed for operations during the '90s
- Recomp MSW Compost (St Cloud) 1994
- East Central MSW Compost (Mora) 1994
- Wright County MSW Compost Facility 1994
- Quadrant (Perham) Resource Recovery Facility 1998
- WLSSD Incinerator 1998

## **Waste composition and amounts**

The 1990's were a decade of both population growth and growth in MSW production. Total MSW production during the decade grew at 33.6% or approximately 3.4% per year. The population during the decade grew at approximately 12.4% or at approximately 1.25% per year. The 1990's saw the beginning and the growth of recycling. During the decade recycling grew from a statewide rate of approximately 25% to approximately 47.7%.

The composition of MSW produced in Minnesota changed during the decade of the 1990's. A summary of changes taken from the R W. Beck, Inc Study are as follows:

- Paper – decrease from 40.1% of total waste stream to 34.3%
- Plastic – remained the same 11.4 %
- Metal – Increase from 5.0% to 6.1%
- Glass – decrease from 3.1% to 2.8%
- Organics (food wastes) - decrease from 13.3% to 12.4%
- Organics (yard wastes) – decrease from 2.9% to 2.3 %
- Wood waste – increase from 6.5% to 7.5%
- Other Organic – decrease from 3.7% to 1.4%
- Textiles – increase from 3.1% to 5.1% (increase due to carpet recycling in late 1990's)
- Construction/Demolition – decrease from 2.9% to 2.8%
- Diapers – decrease from 2.4% to 2.1%
- Tires – increase from .1% to .8%
- Other Inorganic - increase 3.8% to 5.8% P
- Problem Materials – increase from .8% to 1.9%
- HHW/HW – increase from .9% to 1%

## **2000s**

### **2000**

#### **OEA Solid Waste Policy report**

- Proposes new policies that emphasize reduction, recycling and recovery
- Set goal of eliminating landfilling of unprocessed MSW by 2008
- Transition from waste management to resource efficiency

### **2001**

- NEPSI (National Electronics Product Stewardship Initiative) kicks off with meeting in Washington, D.C. NEPSI's purpose is to bring stakeholders together to develop solutions to the issue of electronic products management

### **2002**

#### **State Solid Waste Policy report**

- Waste as a resource Lake of the Woods MSW Compost Facility closes, not cost effective SCORE funding reduced by Legislature from \$14.1 million to \$12.6 million Quadrant WTE reopens as the Perham Resource Recovery Facility

### **2003**

- OEA Solid Waste Task Force recommends a vision, goals and action items for solid waste management in Minnesota.

- Minnesota legislature bans cathode ray tubes in MSW. Effective July 1, 2005, a person may not place an electronic product containing a cathode ray tube in MSW. (Chapter 128, Article 1, Section 129)
- Metropolitan Regional Solid Waste Plan focuses on sustainability, waste as a resource, solid waste management hierarchy, generator responsibility, government as a leader, product stewardship, private sector initiative and reinvigoration of recycling.
- Ramsey/Washington County Environmental Service Charge - the counties jointly implement an Environmental Service Charge, which transfers the service charge for solid waste management from the property tax statement to hauler bills for all customers of garbage services in the two counties.
- Norman County Recycling Center closes due to high cost of operation
- SCORE funding unallotted (11.5%) by governor for FY2003

#### **2004**

- SCORE Funding restored to level before unallotment, but still \$1.6 million short of years before FY2002.
- SWIS/Pennco MSW Resource Recovery (MSW Compost facility) in Thief River Falls closes for financial reasons.
- Clearwater County Recycling Facility closes due to high costs of operation.

#### **2005**

- Legislature extends July 1, 2005 date for the ban on Cathode Ray Tubes in the MSW to July 1, 2006.
- Legislative Waste Management Task Force was created to examine the management of organic wastes, to examine alternative methods of establishing a statewide system for the disposal of electronic waste and to examine the prospects for expanding current landfills and siting new landfills.
- The Legislature passes a bill to merge the Minnesota Office of Environmental Assistance and the Minnesota Pollution Control Agency.