

METROTRENDS

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Environmental Issue

THE ENVIRONMENT IN THE DECADE OF THE 90'S

Americans have realized that one by-product of our life styles is an increasing amount of waste. Our life style and our profligate use of natural resources is placing increasing pressure on the environment.

As we move into the last decade of this millenium and then into the 21st century, the challenge to our society will be to bring the competing interests of unfettered growth (with its attendant pressures on natural resources) and what can be called the Green movement (with its implication of no growth) into a reasonable balance.

This issue of METROTRENDS reports on the four basic environmental issues — solid waste, clean air, water, and wastewater — in the context of a Central Arkansas status report.

Act 748 - Establishes an Arkansas Income Tax Credit for the Purpose of Waste Reduction, Reuse or Recycling Equipment

Act 754 - Increases the basic landfill disposal fee to be used to fund increased administration and enforcement personnel and for recycling grants.

Recycling received a major push with the following legislation:

Act 749 - A major enabling act for recycling. It creates a State Marketing Board for Recycling and establishes requirements for recycling plastic bottles, lead acid batteries, used motor oil, and waste tires. It requires recycling elements in all solid waste management plans, requires cities, counties and school districts to cooperatively purchase recycled paper; and sets recycling goals of 30% by 1995 and 40% by 2000 for the state.

Act 755 - Removes tax exemptions for industry landfills and uses those monies to fund the State Marketing Board for Recycling

Administrative responsibility and authority for dealing with the solid waste issue were
(continued on page 2)



SOLID WASTE

Garbage: The Hot Issue Of The 90's

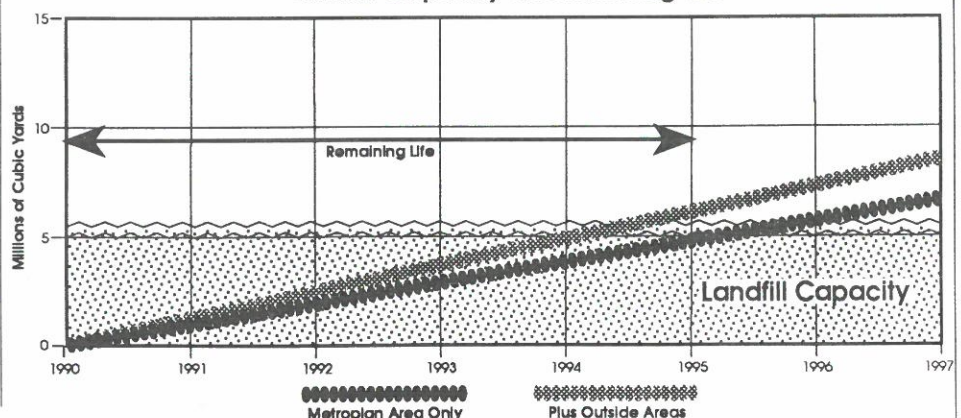
The entire solid waste management issue is being driven by two imperatives. The first is the long-pending EPA regulations on landfill standards (expected to be very stringent and very expensive to carry-out), and the second is fast disappearing landfill sites as citizens and environmentalists raise objections in an increasingly more settled landscape. In Arkansas, preliminary regional solid waste planning began under the mandate of Act 870 of 1989. This year, the 78th General Assembly passed twelve landmark acts dealing with solid waste management in its recently concluded session (summarized to the right) Deadlines set in legislation are illustrated on page 2.

New taxes were levied primarily on landfills and tax credits granted for recycling as follows:

Act 746 - Creates the Environmental Education Fund administered by the Department of Pollution Control and Ecology

Act 747 - Levies an additional landfill tax and creates a Landfill Post-Closure Trust Fund for those landfills that get abandoned by former operators without proper closing.

Landfill Capacity and Remaining Life





SOLID WASTE

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clarified primarily in Act 752 with minor amendments in the following acts:

Act 752 - Creates Regional Solid Waste Management Boards and gives them broad powers to develop solutions and to finance, construct and operate facilities.

Act 751 - Makes the disposal of yard waste unlawful in solid waste disposal sites after July 1, 1993.

Act 750 - Requires classification of landfills and certification of landfill operators

Act 1007 - Permits municipalities, counties and solid waste authorities to collect fees for solid waste management services, especially collection in rural areas.

Legislation Established Deadlines*

2000	Recycling goal of 40 percent of municipal waste stream.				
1995	Recycling goal of 30 percent of municipal waste stream.				
1993	JULY 1 The disposal of yard waste is unlawful in solid waste disposal sites after this date.				
1992	JANUARY 2 The Commission shall adopt regulations to carry out the provisions on dealing with waste tires.	JULY 1 No plastic bottles shall be used unless the product is labeled with a recycling code.	JULY 1 A \$10 retail charge will be levied on lead acid battery sales without a battery trade-in.	JULY 1 A waste tire site must be permitted in each district and all tires disposed of in such a site.	DECEMBER 31 Used motor oil regulations shall be adopted.
1991	MAY 24 Members of new solid waste management boards must be appointed.	JULY 1 A fee of \$1.50 per motor vehicle tire sold at retail is levied.	JULY 1 A fee of \$1.50 per waste tire imported into the state is levied.	DECEMBER 31 Each city and county shall establish a recycling and source separation program for recyclables.	

Solid Waste Issues for the 1990's

- Providing disposal capacity by 1994 when current landfills will be full will require the formation of an active service district or districts in 1991.
- The issue of public control versus the possibility of private monopoly of disposal facilities should be addressed forthrightly and not left to chance.
- The public will need to develop more realistic expectations regarding recycling and display a willingness to pay the additional cost associated with recycling and environmentally sound disposal.
- In order to combat the NIMBY syndrome (not in my back-yard), government must take extraordinary efforts to be fair to citizens and/or areas that are most impacted by disposal facilities, even if the cost is higher.

Act 722 - Establishes an Environmental Officer for each county.

Metroplan's two year regional study effort in solid waste collapsed in January amid disagreement on the structure of regional administration for a Pulaski County based regional solution. In the mean time, Saline County led by the City of Benton has been working to put together a four-county solid waste management district with Clark, Garland, and Hot Spring counties.

Act 752 initially places both Pulaski and Saline in the six county Central Arkansas Solid Waste Management District. However, Pulaski County can become its own separate district either through a unanimous interlocal agreement or by

requesting designation as such from the Pollution Control and Ecology Commission.

The Metroplan Solid Waste Management Needs Assessment projected demand to exceed current disposal capacity in late 1994. Although two of largest landfills in the state, both private, are located in Pulaski County and have both filed pre-applications for expansion, the only public disposal facility in the works is the City of Little Rock's proposed new landfill. While work on a regional administrative arrangement in Pulaski County remains stalled, the fate of the Little Rock site remains in question under the new legislation and raises the uncomfortable possibility of a private sector monopoly on local capacity.

*The deadlines were established in the solid waste acts recently passed by the Arkansas General Assembly.

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Will Growth Foul the Waters?

Sherwood

The City of Sherwood, together with its future growth area to the north, is separated into two drainage basins - Five Mile Creek to the south and Kellogg Creek/Bayou Meto to the north.

Sewage treatment for the south basin is at North Little Rock's Five Mile Creek treatment plant. In addition, about 1,800 Sherwood customers are served by private sewer systems. Faced with regulatory orders to upgrade their treatment facilities, the private system owners have considered alternatives such as selling their systems to Sherwood or connecting to North Little Rock or Jacksonville for treatment.

The recommendation made by Thomas Engineering Company for the future growth area to the north is to begin planning for the construction of a Sherwood treatment plant. The development of the Gap Creek basin and the area south of Kellogg Creek can be expected within twenty years. With respect to the southern basin, the recommendation is to establish a continuing treatment agreement with North Little Rock for treatment at the Five Mile Creek Plant. The agreement should secure Sherwood's right to existing and future capacity at the plant.

North Little Rock

The City of North Little Rock maintains three wastewater treatment plants — Five Mile Creek, White Oak Bayou and the Faulkner Lake Plants. The Faulkner Lake facility is an R.B.C. (Rotating Biological Contactor) Plant and the White Oak Bayou and Five Mile Creek Plants consist of aerated lagoons. All three facilities are in compliance with federal and state regulations.

The Five Mile Creek Sewage

Treatment Plant, completed in 1973, provides secondary treatment. The facility consists of two aerated lagoons, a twenty-two acre polishing pond, a chlorination process, and a newly constructed effluent pump station and outfall to the Arkansas River. The drainage basin for the plant consists of approximately 9,100 non-flood acres, including

Wastewater Issues For the 1990's

- Sewer capacity in fast growing exurban areas such as Cabot will pose a serious problem.
- Development pressures in the Lake Maumelle watershed, if uncontrolled, will lead to increased pollution of the area's primary drinking water supply.

970 acres within districts that now are privately served. Of its present customer base of 8,348 connections, 5,214 connections are within the city limits of Sherwood.

Jacksonville

The City of Jacksonville has recently completed a nine million dollar plant east of U.S. Highway 67-167 on Bayou Meto. The plant is a circulating oxidation process with filtration and chlorination. The Jacksonville Sewer Commission has been receptive to treating flow from areas outside the city and has prepared model procedures and treatment fee schedules that other areas could use to study such a possibility. In 1990, the utility installed a new 5,500 foot trunk line that is expected to provide some relief to wet weather over-lock problems in the Sunnyside area and a rehabilitation program was implemented to help reduce infiltration and inflow.

Maumelle

The plant for the Maumelle Sewer Improvement District #500

is located in the eastern edge of the city in the industrial district. Maumelle maintains 72.24 miles of sewer lines serving a population of 6,714. There are 14 lift stations.

The activated sludge facility has a treatment capacity of 600 thousand gallons a day. There are two finishing ponds for treatment of sludge discharge.

Little Rock

The Little Rock Wastewater Utility maintains 900 miles of public

sewers serving over 60,000 homes in Little Rock and portions of Alexander and Pulaski County with two treatment plants and 23 pump stations.

Little Rock's Adams Field Wastewater Treatment Plant has been in operation since 1961. From 1961 to 1972, the plant was equipped with only primary treatment. Secondary treatment facilities were added in 1972. The plant is now rated as a 36 million gallons per day complete-mix activated sludge plant and serves 70 percent of the city.

The Fourche Creek Wastewater Treatment Plant is a two-stage or secondary treatment plant with a treatment capacity of 19.5 million gallons a day. The original plant was constructed in 1981-1983. The addition of the new activated sludge facilities came about in 1989. Wastewater from southwest Little Rock enters the plant via a pressure line from a pump station located in College Station.

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AIR QUALITY

Clean Air Is Economic Advantage

On November 15, 1990, President Bush signed the Clean Air Act Amendments of 1990 into law. While these amendments do little to alter previously established national ambient air quality standards for the major urban air pollutants, the 1990 Act does establish different categories of non-attainment, along with specific requirements and timetables for re-attainment.

In addition, the Clean Air Amendments establish tighter pollution standards for mobile sources, such as automobiles and trucks, to be phased-in beginning in the 1994 model year. For example Central Arkansas Transit Authority (CATA)

will be required to replace existing buses with new or retrofitted buses that filter diesel engine emissions better, are electrically powered, or use alternative fuels, such as compressed natural gas (CNG), methanol, or propane.

Nationwide, the most widespread and persistent urban air pollution problem is ozone O₃ (see national non-attainment map). The other major urban air pollutants are sulfur dioxide (SO₂), carbon monoxide (CO), and particulate matter (PM-10).

With regard to the Little Rock-North Little Rock area, Arkansas

Department of Pollution Control and Ecology (ADPC&E) measurements at a variety of monitoring stations have not exceeded the national ambient air quality standards for any major pollutant since the early 1980s.

Based on ADPC&E' data, the metropolitan area is in no danger of violating the particulate matter standards. Ozone is another matter, however. The area's ozone levels are sufficiently high during summer months that non-attainment status could easily occur with respect to O₃. During three days within the past five years an ozone level greater than 0.12 PPM did occur. *If only two such days were to occur during the same calendar year, a non-attainment status would go into effect.*

If the ozone threshold was ex-



Wastewater

(continued from page 3)

The Sewer Department is faced with regulatory orders to reduce the amount of storm water run-off and ground water that gets into the sewer system. To correct the problem will require a \$24 million rehabilitation program to be financed by a consumer rate increase.

Wrightsville and Alexander

Wrightsville and portions of Alexander are dependent on septic tanks for wastewater disposal. However, Wrightsville is in the process of applying for grant funds in connection with the State of Arkansas' Wrightsville Correctional Facility for a joint treatment plant to be located on state-owned property and to empty into the Arkansas River. Parts of Alexander are served by Little Rock Wastewater Utility.

Benton

The Benton Sewer System serves substantially all of the households in the city. There are approximately 8,000 users of the system.

The city is under regulatory orders to repair wastewater lines that are dumping untreated raw sewage into the Saline River during periods of heavy rain. The project would include building a 20 million gallon storage lagoon and repairing lines at an estimated cost of \$2.6 million. The alternative is paying state and federal fines.

Bryant

The City of Bryant's sewer system was completed in 1965 with an oxidation pond as the only treatment. A major expansion and update of the treatment facilities was completed in 1981 and presently serves about 1,874 customers. The facility consists of an aerated lagoon-polishing pond operated in series, followed by sand filters and effluent chlorination.

Future plans call for the extension of sewer lines to the north side of I-30 in Bryant, the elimination of an inadequate sewer package plant in the Springhill Subdivision and addition of holding ponds at the treatment plant for periods of heavy flows.

Sixty percent of the project will be financed by an E.D.A. grant. The remainder will come from a 4.7 percent interest loan through the state. Total cost of the project is estimated at 1.3 million dollars. The project may be underway by early 1992.

Haskell

The city of Haskell completed a 2.8 million dollar wastewater treatment plant that went on line in June, 1990. The plant uses the Parkson Biolac Process to treat 350,000 gallons of wastewater a day and has a treatment capacity of 600,000 gallons a day. There are two chlorination ponds. The plant serves 521 customers, all residents of Haskell. The facility was designed to accommodate any future expansion.

Shannon Hills

A contract with the Little Rock Wastewater Utility to treat Shannon Hills' sewage at the Fourche Creek plant is pending. **M**

ceeded in this area, the types of mandated control measures to be implemented would depend upon the severity of the "expected exceedance." For example, if the EPA determined that the area was in "marginal" non-attainment, an inventory of area ozone emission sources would be required, "reasonably available control measures" would have to be implemented, the SIP would have to be revised to reduce "volatile organic compounds" (VOC), and the periodic inspection of motor vehicle emissions would be required. If the EPA assigned a "moderate" O₃ non-attainment classification to this area (i.e., from .138 to .160 PPM), an additional requirement to cut ozone by 15% within six years would go

Clean Air Issue For the 1990's

- Continued urban sprawl using a traditional suburban pattern of low density development and strict separation of uses could cause the metropolitan area to fall out of compliance this decade.

into effect. In general, the worse the air quality, the more control measures are mandated by the 1990 Amendments.

Given that mobile sources (i.e., automobiles and trucks) are primarily responsible for ozone pollution in urban areas, our continued over-reliance on single occupancy vehicle use could result in the central Arkansas metropolitan area slipping into the unenviable status of an

ozone non-attainment area with all the aforementioned regulatory consequences. On the other hand, if a larger proportion of regional trips were diverted to mass transit and ridesharing, if land use development patterns were altered to allow more pedestrian trips, and if greater development densities made mass transit more attractive, both ozone pollution and the capital requirements of additional roadway capacity could be reduced. **M**

Ozone Areas Violating Standards During 1987-1989





Recent Developments In Regional Water Supplies

Saline County

At the request of the Saline County Rural Development Authority (RDA), a preliminary study of potential water supplies for Saline County was completed by Hope Engineers in July 1990. The study found that the future Saline County demand for water will be approximately 16 million gallons per day by the year 2010, 22 million by the year 2020, and 60 million by the year 2050. Currently, the major Saline County water supplier, the Benton Municipal Water System, has a safe yield capacity of only 6 million gallons per day.

The study concluded that the county must develop another water source if it is to continue to grow. Among the alternatives examined in the study were (1) a Lake Ouachita pipeline, (2) a Lake DeGray pipeline, (3) an Arkansas River pipeline, and (4) a reservoir created by damming the North Fork of the Saline River.

In August of 1990, Saline County residents took the first step in the development of North Fork option by passing a 12 year, one cent sales tax to fund construction of a long-term raw water supply. The tax is expected to generate approximately \$2 million per year.

In the fall of 1990, the Rural Development Authority, with matching funds from the Arkansas Soil and Water Conservation Commission, commissioned a \$40,000 study to be conducted by FTN and Associates, a Little Rock engineering firm specializing in water resources. The purpose of the study, which should be completed by the end of June 1991, is to examine the feasibility of all potential water supplies for

Saline County. When completed, the study will be subject to review by the Arkansas Department of Pollution Control and Ecology, the U.S. Environmental Protection Agency, and the U.S. Corp of Engineers. The RDA has committed to aggressively pursuing the study's final recommendations.

Saline County's largest water supplier, the Benton Municipal Water System, currently provides water service to residents in the City of Benton, and to a large rural area composed of four rural water associations (Salem, Southwest, West Bauxite, and Tull). Like the Saline County RDA, the Benton Water System is also exploring alternative water sources to meet its future needs. In March of 1990, Affiliated Engineers completed a preliminary water supply study for the city.

The study found that the Benton Municipal Water System is currently at its maximum capacity. The existing raw water supply for the Benton service area, obtained from the Saline River, has a safe yield capacity of only 6 million gallons per day. Although the area's average water demand is only 4 million gallons, the maximum water demand is 7 million gallons, more than 1 million gallons higher than its safe yield capacity. According to preliminary estimates, future demand is expected to grow by 3% annually.

The study concluded that an additional water supply will be needed to meet the future needs of the Benton service area. Of the three alternatives examined (the Dog Creek Reservoir, the Williams Creek Reservoir, and Hurricane Lake), the study recommended

the development of the Dog Creek Reservoir. The development of Dog Creek would provide another 12 million gallons per day which, when added to the city's current safe yield capacity of 6 million gallons, would enable the city to meet its 30 year need of 18 million gallons per day.

Benton is currently in the last stages of the licensing process for the Dog Creek proposal.

However, Benton will likely delay any final decision on the project until the joint water resources study of the Saline County Rural Development Authority and Arkansas Soil and Water Conservation Commission is completed in June of 1991.

Pulaski County

The Little Rock Water Works is Pulaski County's primary water supplier. Water is taken from two sources Lake Maumelle and Lake Winona. During 1990, Lake Maumelle provided about 56% of the water supply, an average of 29 million gallons daily. Lake Winona supplied approximately 44%, an average of 23 million gallons daily.

Current demand for Little Rock water is distributed as follows:

Water Demand	
System	Million Gallons (per day)
Little Rock	35.89
N. Little Rock	17.71
Bryant (Saline)	.50
Total	54.11

Little Rock demand for water includes Little Rock residents and metered customers in the cities of

Water Issues of the 1990's

- Water capacity in fast growing and low density exurban areas such as Woodland Hills in Saline County is a major problem.
- The fragmentation of water supplies and duplication of treatment facilities in the metropolitan area will be unnecessarily costly to rate payers.
- Extension of water service that encourages urban sprawl have a detrimental effect on transportation systems, air quality, and sensitive natural areas.

Cammack Village, Wrightsville, and Alexander. North Little Rock demand includes North Little Rock residents, metered customers in the City of Sherwood, and water sold to the City of Jacksonville Water Department, the Central Arkansas Water Users Association, and the Brushy Island Improvement District.

The Little Rock Water Works can safely provide a total of 113 million gallons per day. By the year 2020, demand is expected to reach 120 million gallons per day. In

anticipation of this future shortage, the Little Rock Water Works has obtained the right of first refusal for 120 million gallons per day from Lake DeGray.

In addition, the Water Works is also studying other options. Two consulting firms, Garver & Garver and Montgomery Engineers, were recently commissioned to conduct a feasibility study of potential water supplies. This study, which should be completed by mid-June, will examine four major water supply alternatives - Lake DeGray, Lake

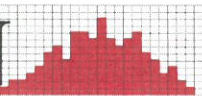
Quachita, Greer's Ferry, and water from the Arkansas River.

The North Little Rock Water Department recently commissioned a \$50,000 study to be conducted by the New York consulting firm of Parsons, Brickerhoff, Gore, and Storiee. The purpose of the study is to examine the feasibility of an independent North Little Rock water system to be supplied by a source other than the Little Rock Water Works. Initially, the study was to examine all potential options. However, a preliminary finding of the study is that the only realistic option is Greer's Ferry. The study, which should be completed by the fall of 1991, will focus on the feasibility of developing Greer's Ferry.

Jacksonville and Sherwood, both of which obtain their water from North Little Rock, have no plans for exploring alternative water supplies at this time. The City of Maumelle currently receives its water from four underground wells and is exploring the option of adding three more wells. M

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Little Rock, Arkansas 72201



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