



### ***What is this report?***

This report is primarily based on information provided by the 67 counties in Florida and the Reedy Creek Improvement District (Note that RCID, which includes but is not limited to the Walt Disney World Complex is considered by Florida Statute to be a county under the provisions of the Solid Waste Management Act). It includes information on all aspects of the State's solid waste management program, covering areas such as biomedical waste, recycling and pollution prevention. This report also includes information about the activities of the Department and other state agencies, and organizations dealing with solid waste issues.

**In the past, each year referenced in this report referred to the State fiscal year (SFY). This year's report refers to the calendar year 1996, which is January 1, 1996 through December 31, 1996. Prior to calendar year 1996 and 1995, private sector recycling data was collected for all materials by each county via surveys for SFYs 1988-89 through 1994-95. Beginning in calendar year 1995, recycling data for 12 of the 19 material types was collected directly by the FDEP from recyclers via the Recovered Materials Dealers Certification and Reporting Program (see Certification of Recyclers, page 41). The data provided by the State's recyclers (both the public and private sector) includes tons of material recycled by material type and county of origin. This information is tallied for each county and provided to them for inclusion in their annual report and grant application to FDEP. The counties must still do surveys to gather information on the materials recycled from the remaining 7 material categories.**

### ***Why produce an annual report?***

In 1988, the Florida Legislature passed the Solid Waste Management Act (SWMA). It was an act which revised nearly all aspects of the State's solid waste management program. It required each county to initiate a recycling program with the goal of achieving a 30 percent recycling rate by the end of 1994. It also required the counties to submit annual solid waste management reports to the Department. The act directed the Department to prepare an annual report on the status of the State's solid waste management efforts. It further stated that the report should include, at a minimum, the following information:

- A comprehensive analysis, to be updated each report, of the solid waste generation and disposal in the State projected for the 20-year period.
- The total amount of solid waste generated, recycled and disposed, including the method of recycling and disposal used.
- An evaluation of the development and implementation of local solid waste management programs.
- An evaluation of the success of each county or group of counties in meeting the goals.
- Recommendations concerning existing and potential programs for solid waste reduction and recycling that would be appropriate for local government and state agencies.
- An evaluation of markets for recycling materials and the success of state, local and private industry efforts to enhance the markets for such materials.
- Recommendations to the Governor and the Legislature to improve the management of solid waste in the State.

### ***Why should we be concerned about solid waste?***

- Florida's Growth Rate

Since the 1830s, each decade has seen a sharp rise in Florida's population as demonstrated in Figure 1. From 1830 to 1950, the State's total population grew by only 2.74 million people. During the next forty years, Florida added 10.2 million people, with over one third of this growth taking place during the 1980's. Figure 2 shows how this period also saw the annual growth rate of the State fluctuate sharply, peaking at almost 80 percent during the 1960s. By 1990, Florida had become the fourth most populous State, even with a decrease in the growth rate. It is expected to hold this position through the year 2020, when the population is predicted to be between 17.5 and 23 million people (the low and the high growth projections shown in Figure 1). In addition, the State's annual growth rate in 2020 is projected to continue to decline to somewhere between 14.6 to 8.7 percent (according to the Executive Office of the Governor, Office of Planning and Budgeting).

- Municipal Solid Waste Collection

From SFY 1989 through calendar year 1996, the State has demonstrated a steady growth in the amount of municipal solid waste (MSW) collected. In 1991, about 19.5 million tons MSW was collected in Florida. This is equivalent to 8.3 pounds per day per person or 1.5 tons per year per person collected in the State of Florida. In calendar year 1996,

Figure 1: Florida Population Growth (1830 - 2020)

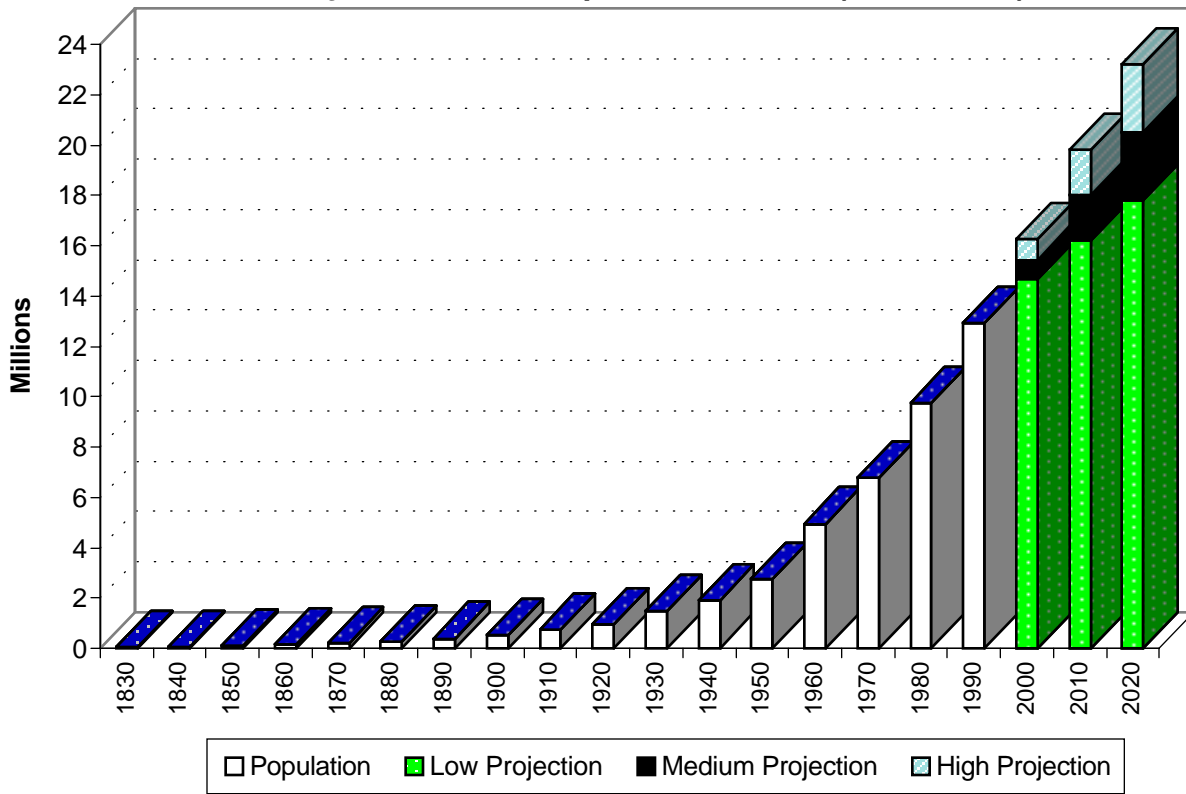
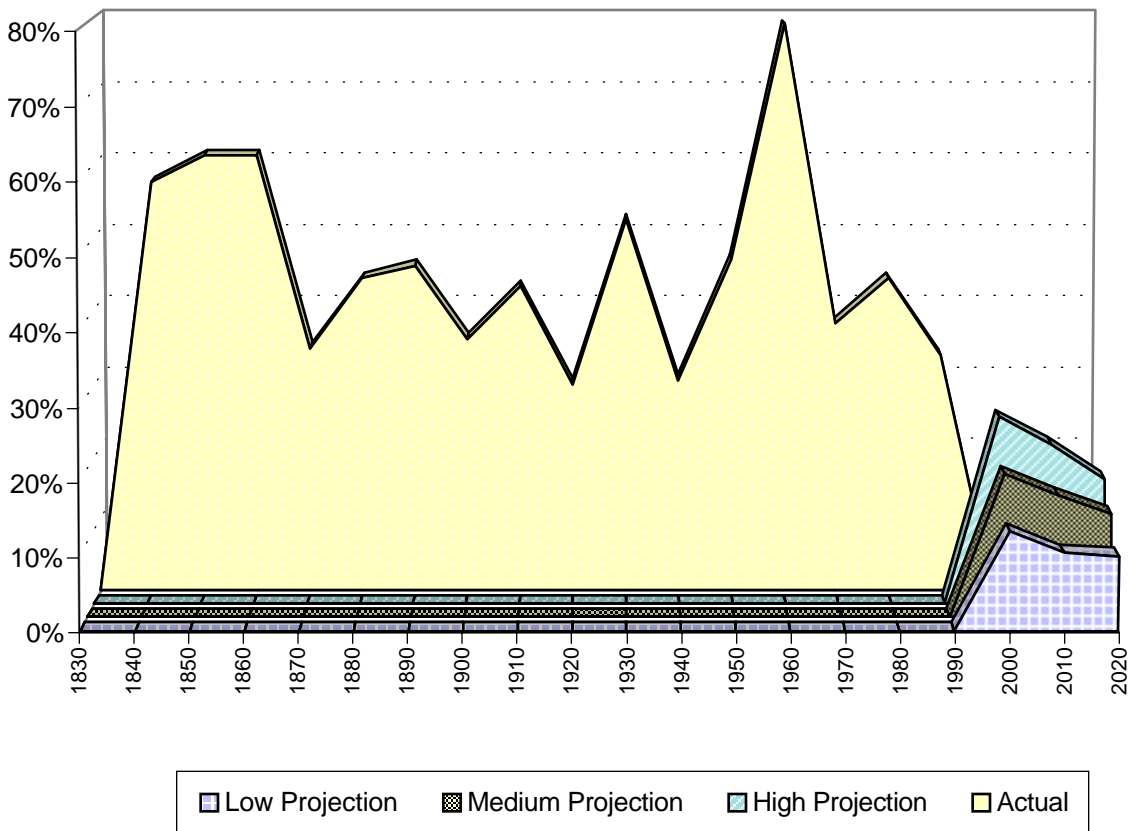
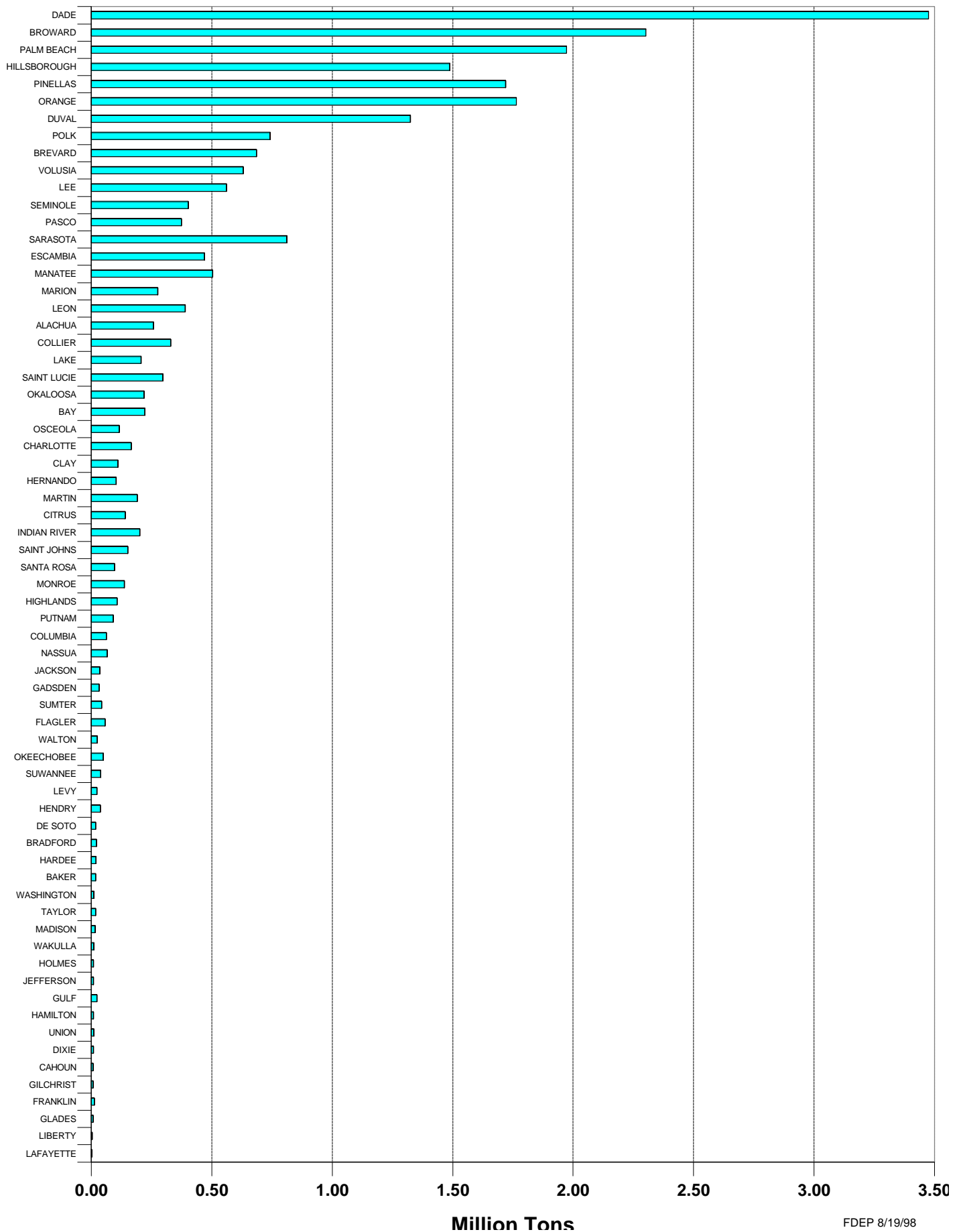


Figure 2: Florida Annual Population Growth Rate (1830 - 2020)



Source: Florida Population Studies, Feb '94, Vol. 27, No.2; University of Florida

**Figure 3: Total Tons of MSW Collected in Florida  
By Descending Population  
(Jan. 1, 1996 - Dec. 31, 1996)**



about 24 million tons of MSW were collected in the State. This is equivalent to 9 pounds per day per person or 1.6 tons per year per person collected in the State. Detailed county information is provided in Appendix A, Tables 1A & 5A.

Figure 3 shows that in calendar year 1996, Dade County collected far more MSW than any other county in the State. With 3,474,895 tons collected for the year, it exceeded the collection of the county with the next highest collection tonnage, Broward County, by over 1,173,900 tons. The ten most populated counties accounted for **68 percent of the total tons of MSW collected in the State.**

**Over 79 percent of the total tons of MSW were collected by the 15 most populated counties in the State.** See Appendix A, Table 5A for more details.

*In calendar year 1996, 55 percent of all the MSW collected by the counties in Florida was generated by the commercial sector. Collection from residential single family units was 34 percent, and collection from residential multi-family units accounted for about 11 percent.* See Table 1 for statewide details. County information on collection and recycling rates is provided for 1996 in Appendix A, Table 2A.

In calendar year 1996, all of **Florida's 67 counties projected that a total of 31,886,128 tons of MSW would be collected in 2016.** This would be a 34 percent increase over the amount of MSW collected in calendar year 1996. Appendix A, Table 3A lists the projected amounts for 2015 by material type for each county.

**Table 1: MSW Collected by Generator Type in Florida**

Generator Type	Collected Jan. 1, 1996 - Dec 31, 1996				Population: 14,411,563
	Collected Tons	Percent Total Tons	Total Units <sup>3</sup>	Population Served <sup>4</sup>	Pounds per Capita Per Day
Residential Single-Family	7,953,415	33	4,237,955	11,145,822	3.02
Residential Multi-Family <sup>1</sup>	2,632,570	11	2,333,781	4,550,873	1.00
Commercial <sup>2</sup>	13,159,925	55	511,870	14,411,563	5.00
State Totals	23,745,910	100	7,083,606	14,411,563	9.02

<sup>1</sup> Includes apartments, condominiums and others.

<sup>2</sup> Includes government & institutional .

<sup>3</sup> Number of generator type reported by all the counties.

<sup>4</sup>Total Units times residents per units: Single Family - 2.63, Multi-Family - 1.95 and commercial - state population.

## **What's in MSW?**

Table 2 demonstrates how the composition of MSW has changed in Florida over the last several years. Construction and demolition (C&D) debris, metals and miscellaneous materials have shown a general upward trend in percent of total composition since SFY 1989. However, during calendar year 1996, paper has continued to decline and food waste has demonstrated a noticeable decline. Tires, yard waste, textiles, plastics and glass have shown little or no significant change in the percent of total composition.

**Table 2: Change in Florida's Solid Waste Composition**

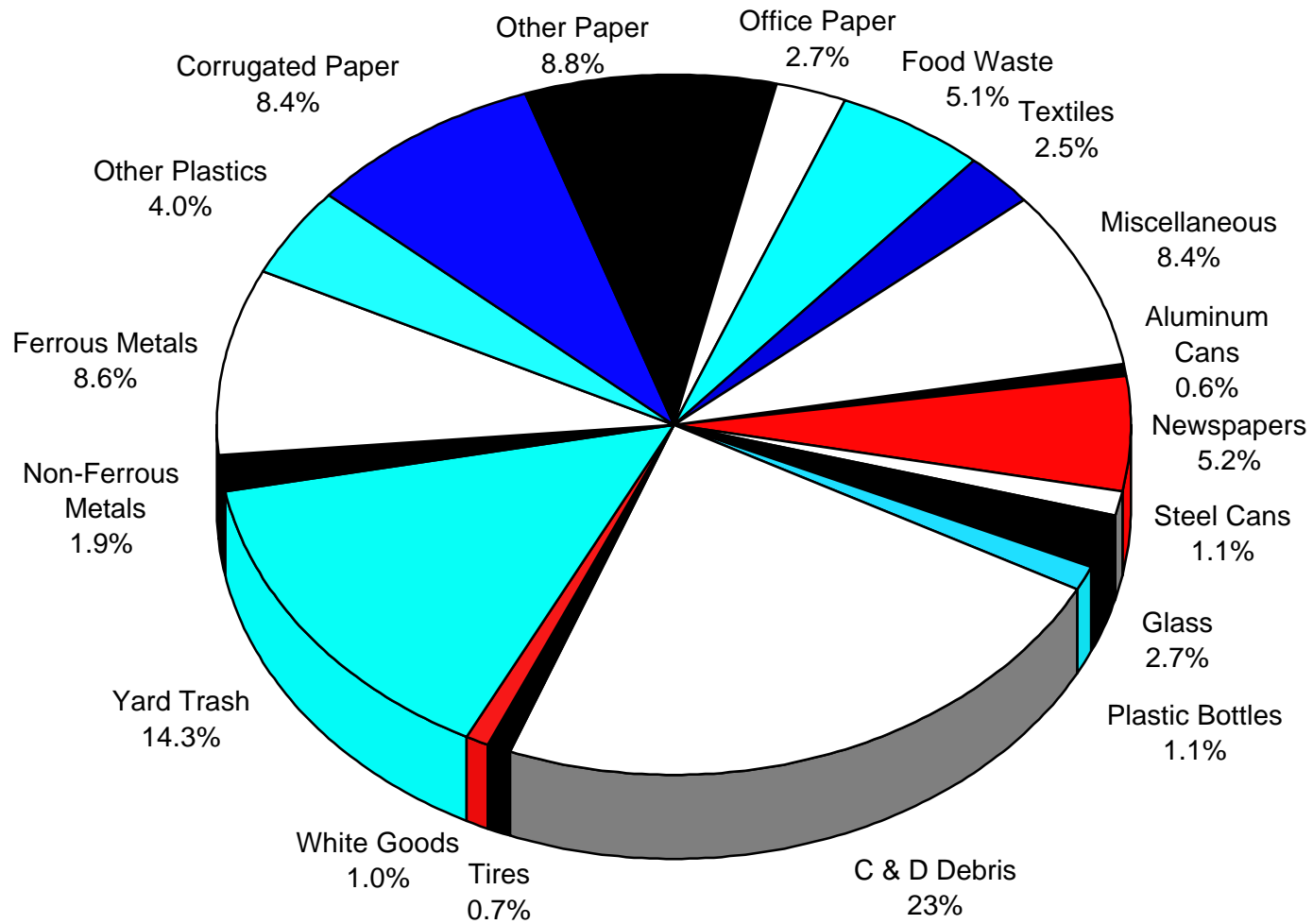
SFY	Percent of Total Waste per Year									
	C&D Debris	Food Waste	Tires	Yard Waste	Textiles	Metals	Plastics	Glass	Paper	Misc.
1989	6.0	10.0	2.0	15.0	3.0	6.0	9.0	5.0	39.0	5.0
1990	19.0	8.0	1.0	15.0	3.0	7.0	7.0	4.0	30.0	7.0
1991	16.6	6.5	1.2	15.5	2.9	9.3	6.3	4.2	30.1	7.4
1992	16.3	6.3	0.7	15.4	3.0	10.3	6.6	3.7	30.7	6.1
1993	20.6	5.7	0.7	16.0	3.0	10.2	5.9	3.4	28.7	5.8
1994	21.9	5.5	0.7	14.8	2.8	10.8	5.7	3.0	27.5	7.3
1995	24.2	5.5	0.7	14.3	2.7	10.1	5.4	2.7	26.9	7.5
1995 <sup>1</sup>	22.6	5.4	0.8	14.4	2.4	12.1	5.2	2.7	26.3	8.1
1996 <sup>1</sup>	23.1	5.1	0.7	14.2	2.5	13.2	5.1	2.7	25.1	8.4

<sup>1</sup> Calendar year data.

In calendar year 1996, about 5.5 million tons (or 23 percent) of all the MSW collected in the State was C&D debris. Yard trash made up about 3.4 million tons of all MSW collected or 14 percent. If all paper materials are combined for the current year, they equal more than any other material collected, at 6.0 million tons or about 26 percent of all the MSW collect in Florida. Details are depicted in Table 4 of the Recycling and Waste Reduction section which follows. Figure 4 shows the relative percent composition of MSW collected in the State categorized into 19 material types.

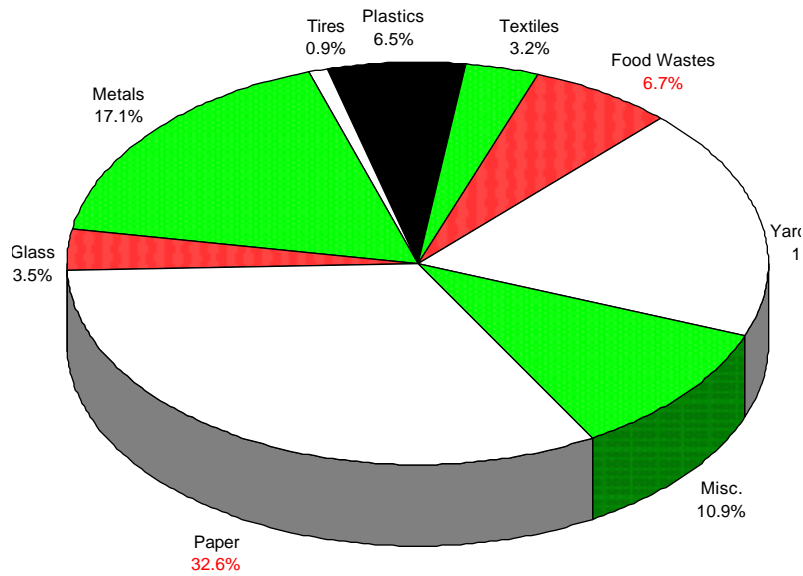
Figure 5 shows the waste composition of Florida in calendar year 1996 as compared with that of the United States in calendar year 1993. Florida's percent waste composition for metals, yard wastes, food wastes, tires, and miscellaneous materials is greater than that of the nation. The U.S. has a larger proportion of all remaining material types. **It should be noted that comparisons made between the State and the Nation should be viewed with caution because of the differing methodologies of data collection.**

**Figure 4: Florida MSW Composition\***  
**(Jan. 1, 1996 - Dec. 31, 1996)**

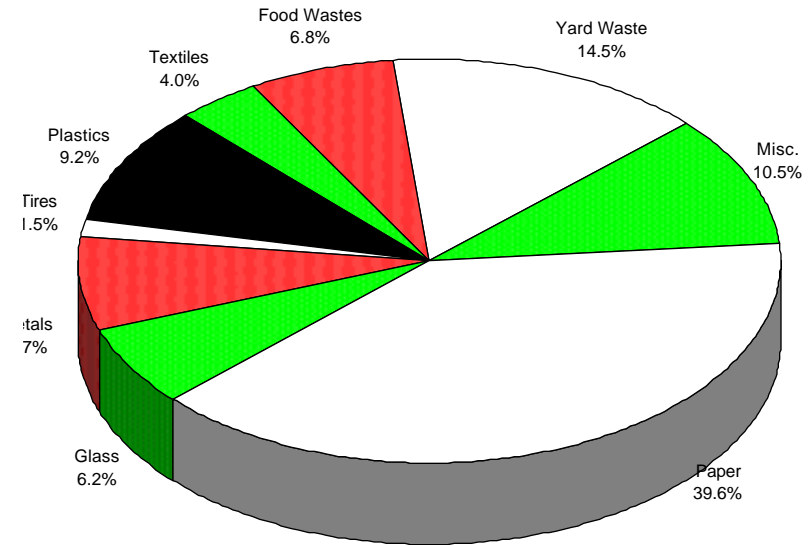


\* Based on information provided by the counties in the 1997-1998 Recycling and Education Grant applications. Total State MSW amounts are derived from the sum of local MSW surveys.

**Figure 5: Municipal Solid Waste Composition  
Comparison: U.S. and Florida<sup>1</sup>**



**1996 Florida MSW Composition<sup>2</sup>  
23.7 Million Total Tons**



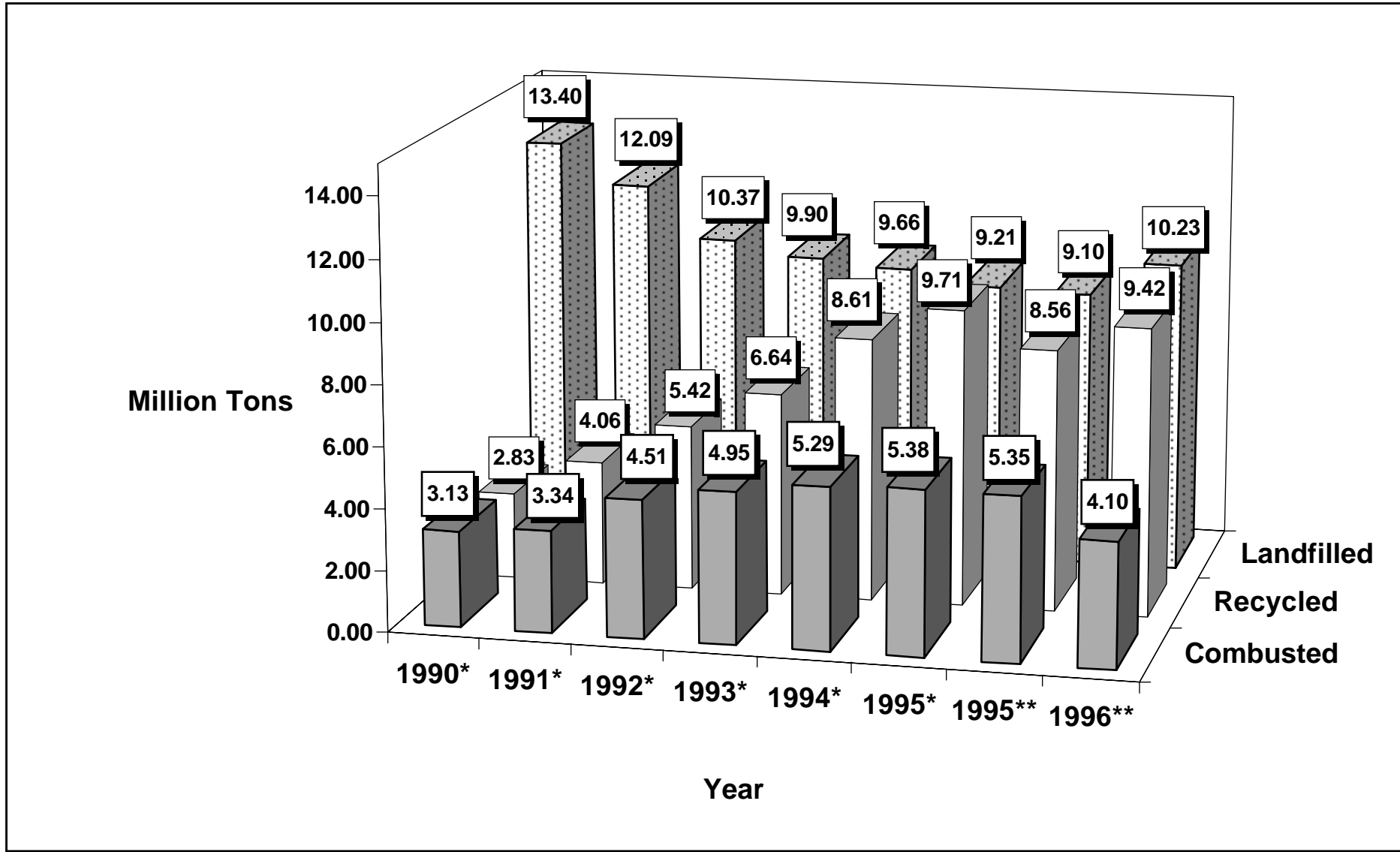
**1995 U.S. MSW Composition<sup>3</sup>  
208 Million Total Tons**

<sup>1</sup> For comparative purposes, these charts do not include Construction & Demolition Debris as EPA does not consider it a Municipal Solid Waste.

<sup>2</sup> Based on calendar year 1996 information provided to FDEP by Florida's Counties in the Recycling & Education Grant applications. The total tonnage does include C&D debris.

<sup>3</sup> U.S. data adapted from: Characterization of Municipal Solid Waste in The United States: 1996 Update; United States Environmental Protection Agency.

**Figure 6: Florida Municipal Solid Waste Management**  
*(July 1, 1989 - December 31, 1996)*



\* State Fiscal Year (July 1-June 30)

\*\* Calendar Year

## *Managing the MSW*

In general, Florida's MSW is either recycled by the public or private sector, landfilled in a class I, II, III or C&D debris facilities, or combusted in a waste-to-energy facilities or in an industrial boiler as process fuel. Figure 6 depicts the State's MSW management trends from SFY 1990 and calendar year 1996. **During this time period, there has been a 24 percent decrease in the tons of MSW disposed in the State's landfills.** Consequently during the same period, there has been **increase in the tons of MSW combusted and recycled by approximately 32 percent and 233 percent, respectively.** Detailed county management figures over the past six years are available in Appendix A, Table 4A. Table 5A in Appendix A shows detailed county information for 1996.

## *Personnel in Recycling*

Appendix E lists the Department's Solid and Hazardous Waste staff, their position, program areas and telephone number. Appendix F, Table 1F lists the address and telephone numbers of State's county solid waste directors and the County Recycling Coordinators. In addition, the address and telephone numbers of the City Recycling Coordinators, as reported to the Department by the County programs are also listed in Appendix F, Table 2F. All of the larger private companies involved in recycling in Florida are listed in Appendix B, Table 13B.

## *County Summary Sheets*

Municipal solid waste and recycling data summary sheets for each of the State's 67 counties and the Reedy Creek Improvement District are provided in Appendices G for 1996. County sheets are listed in alphabetical order preceded by the state total sheet.