

Status of Recycling and Recycling Markets in North Carolina

Environmental Review Commission

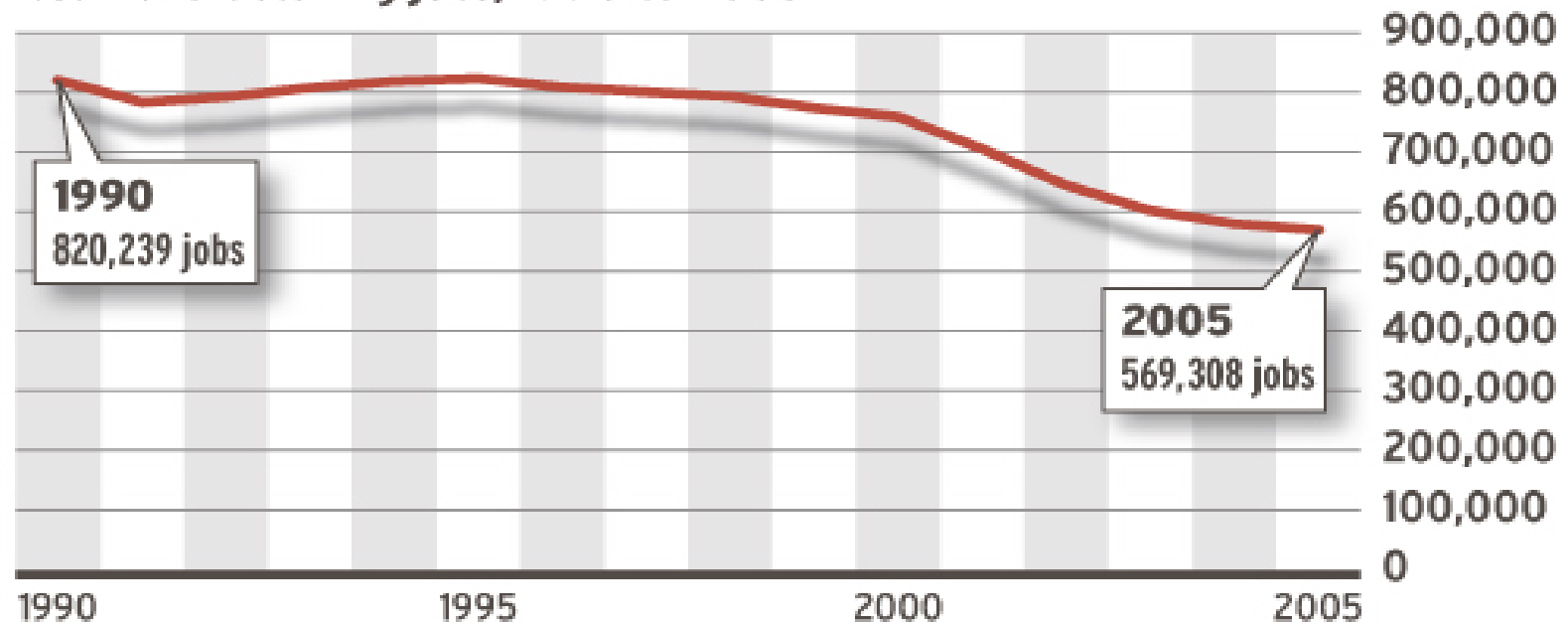
1/17/2007

Jobs

MANUFACTURING DECLINE

North Carolina's manufacturing sector has declined as businesses look overseas for cheaper labor. Although many jobs have gone to countries such as Mexico and Vietnam, China has come to symbolize the state's job losses.

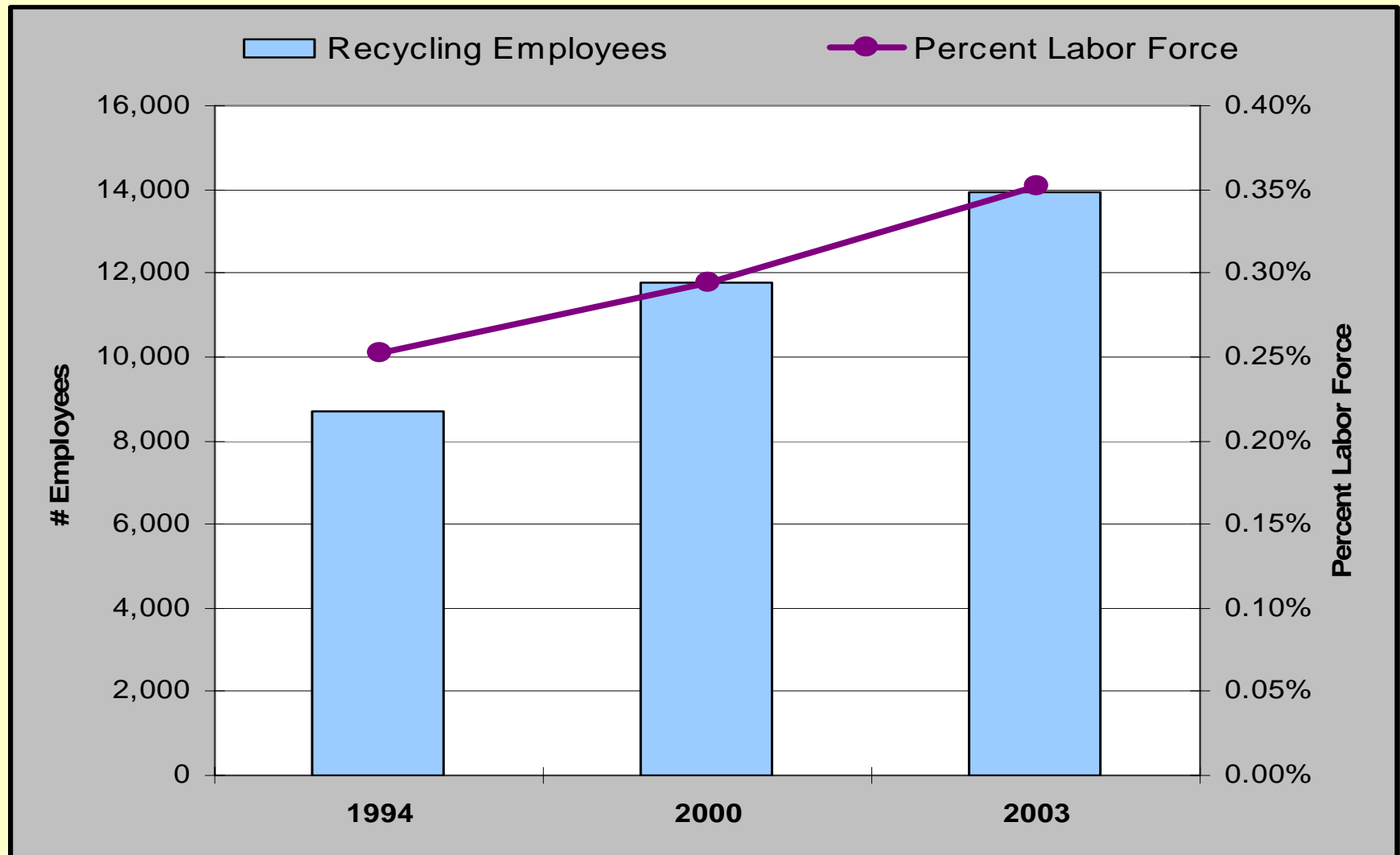
N.C. manufacturing jobs, 1990 to 2005



Source: N.C. Employment Security Commission

The News & Observer

Growth in Recycling Jobs in NC



Recycling Essential to NC Manufacturers – Examples of products made in NC



Problem for Economic Growth: Global Warming

- Nicholas Stern, former World Bank chief economist and currently head economist with the British Treasury:

Unabated climate change will cost as much as 20 percent of the global GDP and could lead to an economic upheaval on the scale of the 1930s Depression.

Role of Waste/Recycling in Global Warming

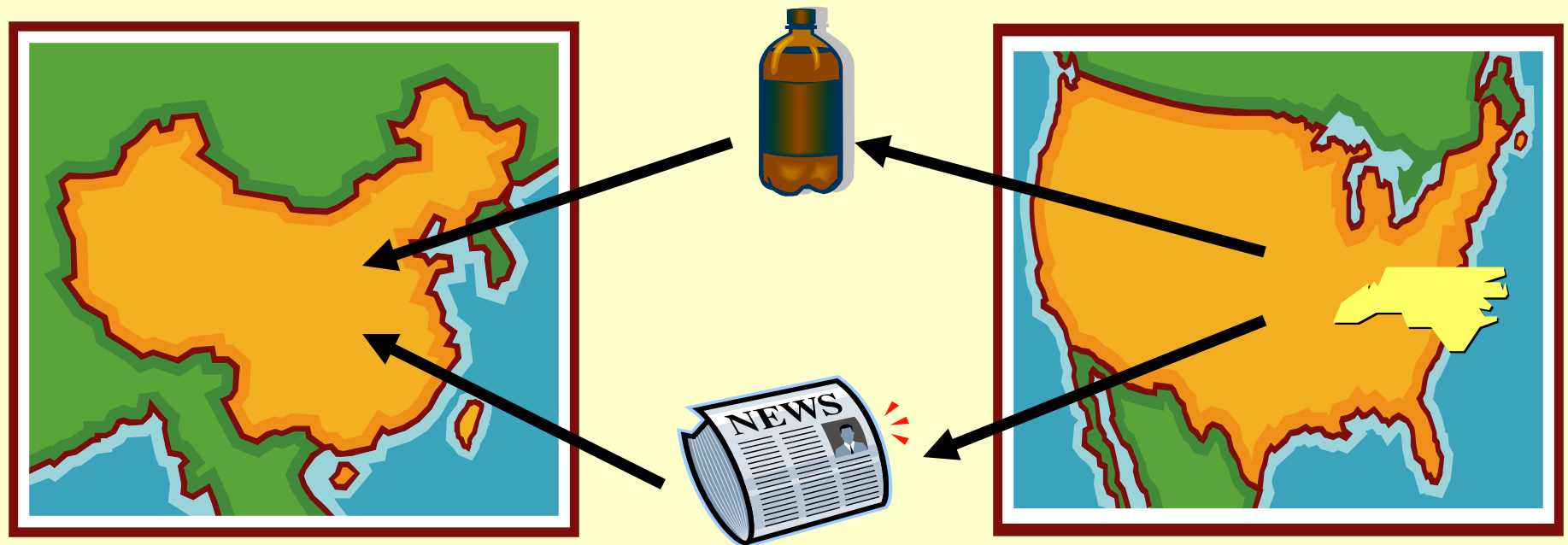
- Landfills account for 37% of human-generated methane emissions - methane 21% more effective at trapping heat than carbon dioxide.
- Recycling reduces greenhouse gases through landfill diversion, and through energy and resource conservation.
- Local government recycling efforts in NC reduce the equivalent greenhouse gas emissions of over 400,000 cars/year.
- Increasing local recycling tonnage by 25% would remove the equivalent of another 100,000 cars

Recycling Markets

- Demand for recyclable materials is steadily rising.
- Manufacturers relying increasingly on recycled commodities, in the U.S. and around the world.
- The number of recycling companies in North Carolina is growing and able to handle more material.
- Rapid growth in some market areas – e.g., electronics, plastics.
- Slower growth in other areas: e.g., construction waste.

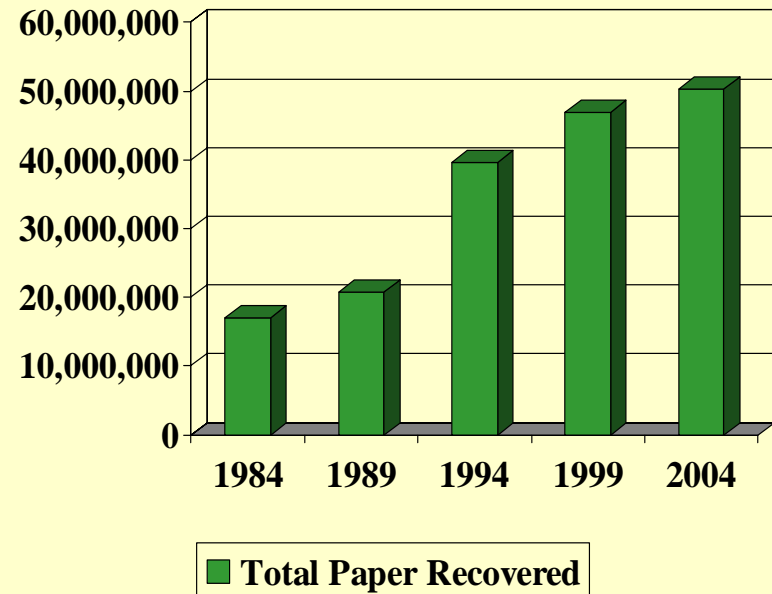
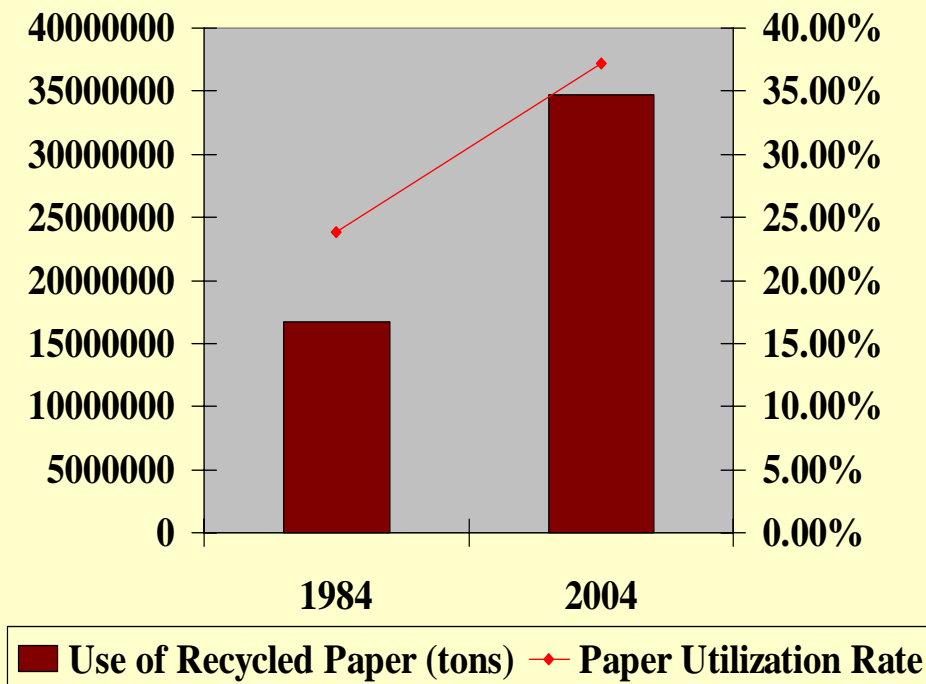
China Consuming More Recyclables

- 37% of recycle PET bottles going to China
- 400 million lbs. per year



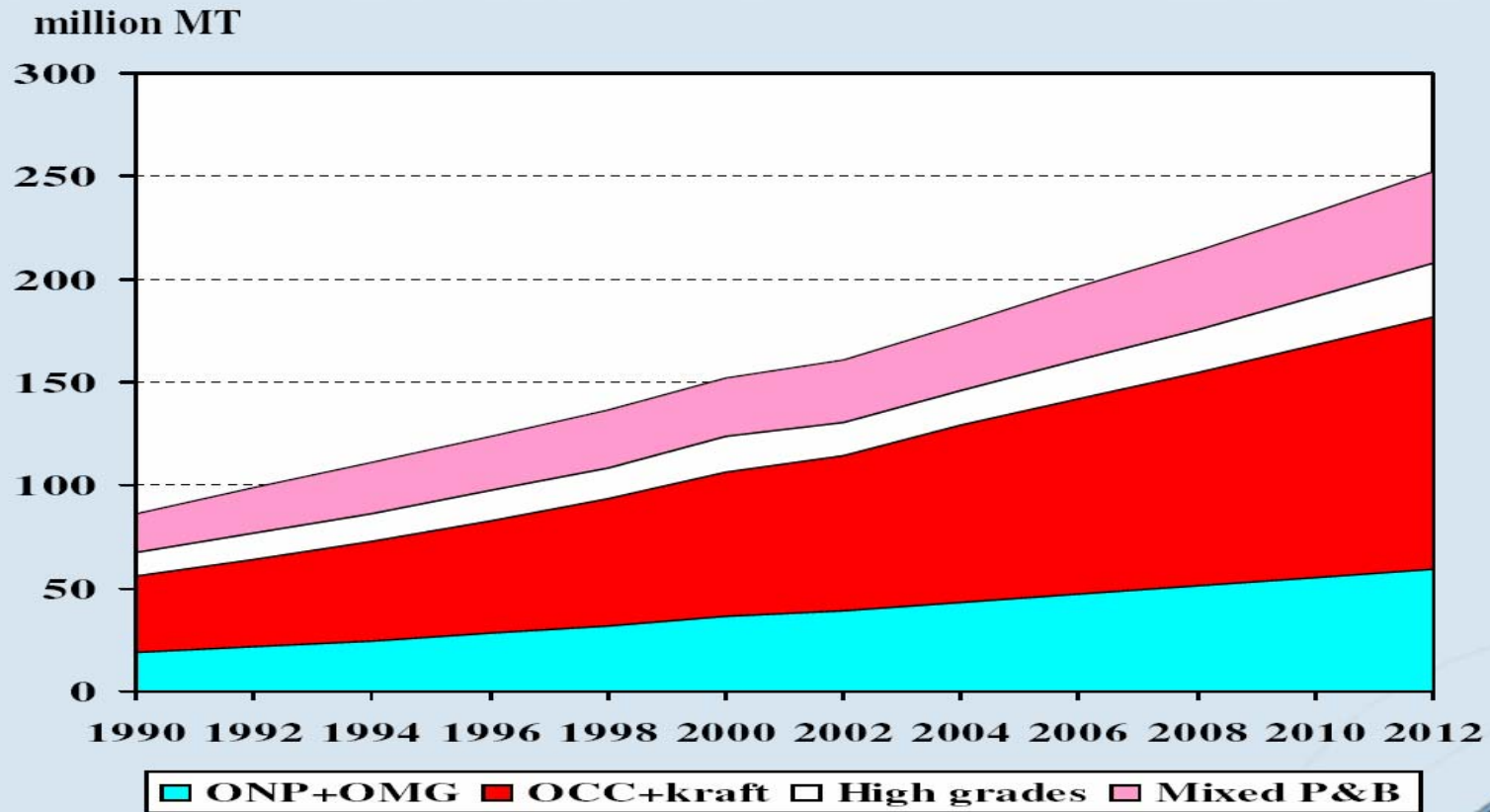
- Over 40% of China's imported recovered paper comes from the U.S.
- \$100 million in paper exported to China from U.S. *per month*
- China building 16 million tons of recycled paper capacity by 2010

The Remarkable Story of Paper



- 78 percent of U.S. paper mills rely on some amount of recycled fiber

Global Collections of Recovered Paper by Grade

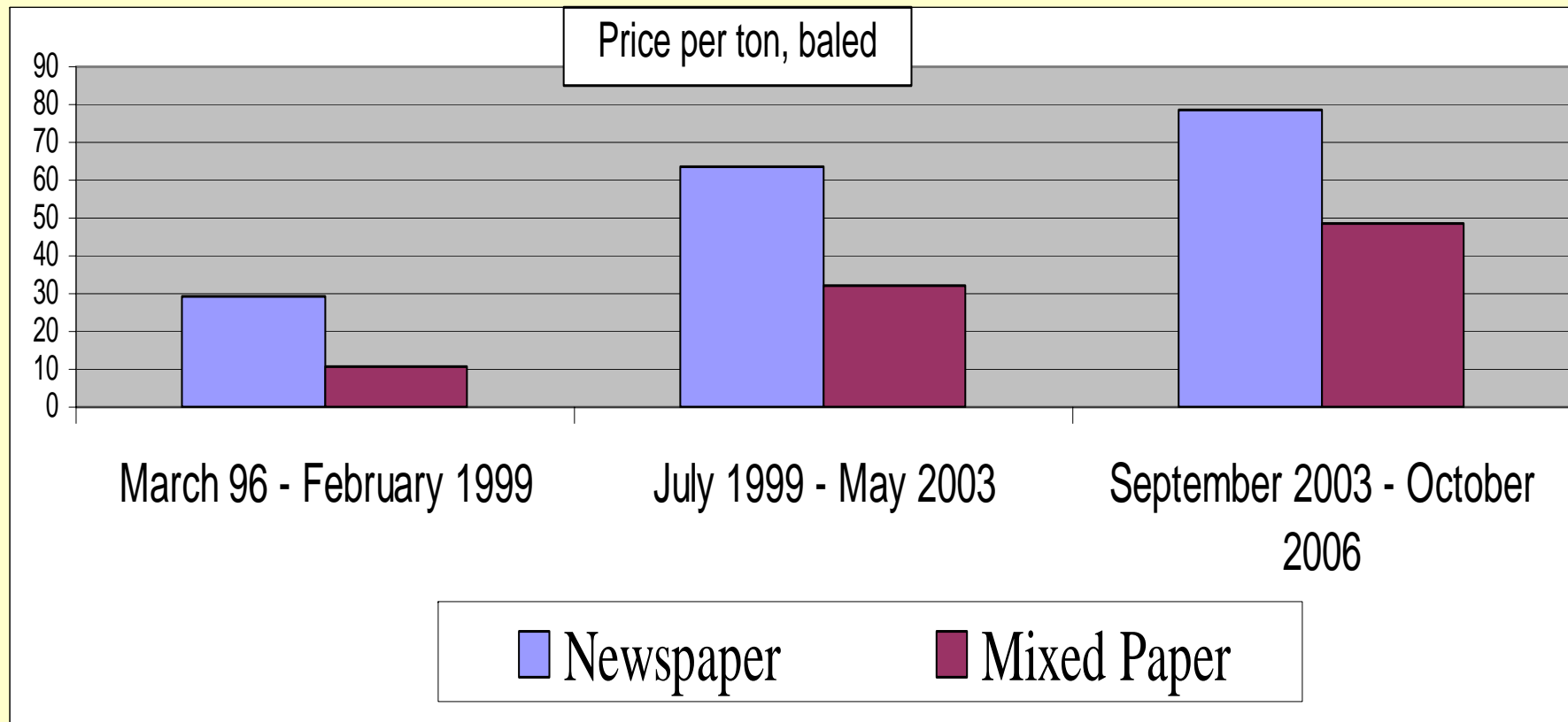


Global consumption of recycled paper expected to rise steadily – increase of 25% in next 6 years.

Data courtesy of Moore & Associates

Recycling Market Prices since March 1996

Prices per ton received by major processors in NC from mills



Every year, North Carolina landfills over *1.26 million tons* of recyclable paper

Estimates of disposed tonnage:

- Newspaper 123,000
- Cardboard 300,000
- Magazines 65,000
- Office Paper 248,000
- Mixed Paper 460,000
- Telephone books 18,000
- Milk Cartons 16,000
- Books 31,000
- Approximate market value of disposed paper:
\$50,000,000/year

Aluminum

- Aluminum industry has heavy presence in southeast – Novelis, Wise, Alcoa.
- Industry **needs** 20% more material, or 150,000 tons of additional cans - over 6 times what we dispose in NC.
- Market value of what we dispose in NC:

\$20 million/year

Plastics

- North Carolina home to largest mixed bottle recycling plant in U.S.
- North Carolina hosts the second largest HDPE recycler in the U.S.
- Many other recyclers of post-consumer and post-industrial plastics in North Carolina.
- Plastics recycling involves skilled labor and sophisticated technology, like optical sorting.
- We still throw away 80% of our plastic bottles in North Carolina – market value approx:
\$23 million/year.

Electronics

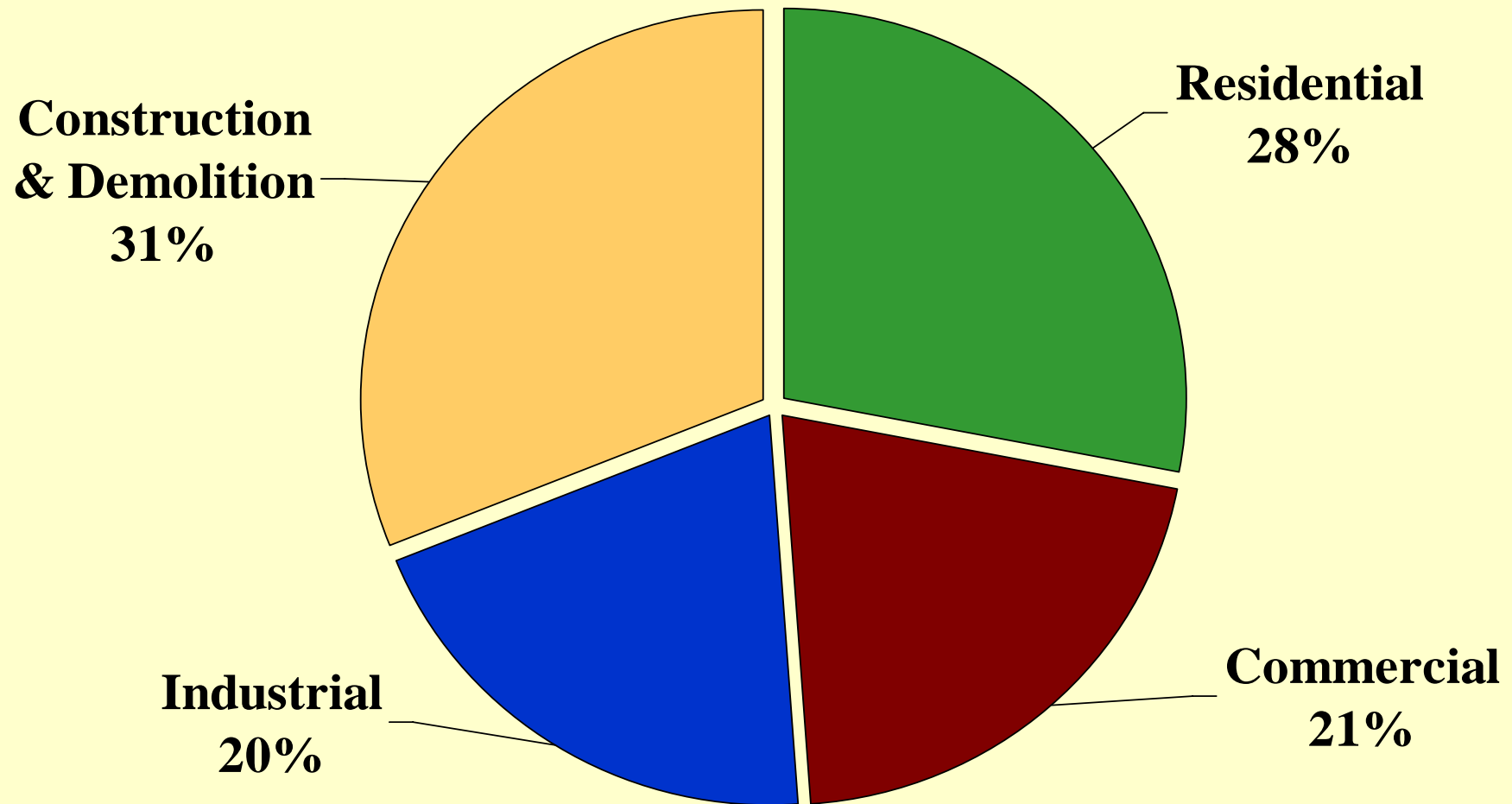
- One of fast growing part of the solid waste stream – approximately 77,000 tons generated per year.
- Some counties running very good electronics collection program – increasing public interest in recycling options.
- Overall, collection programs growing slowly - limited by funding.
- Dell/Goodwill collection program helpful but limited to computers and to western part of state.
- State funding source would accelerate collection dramatically and feed expanding markets.

Electronics

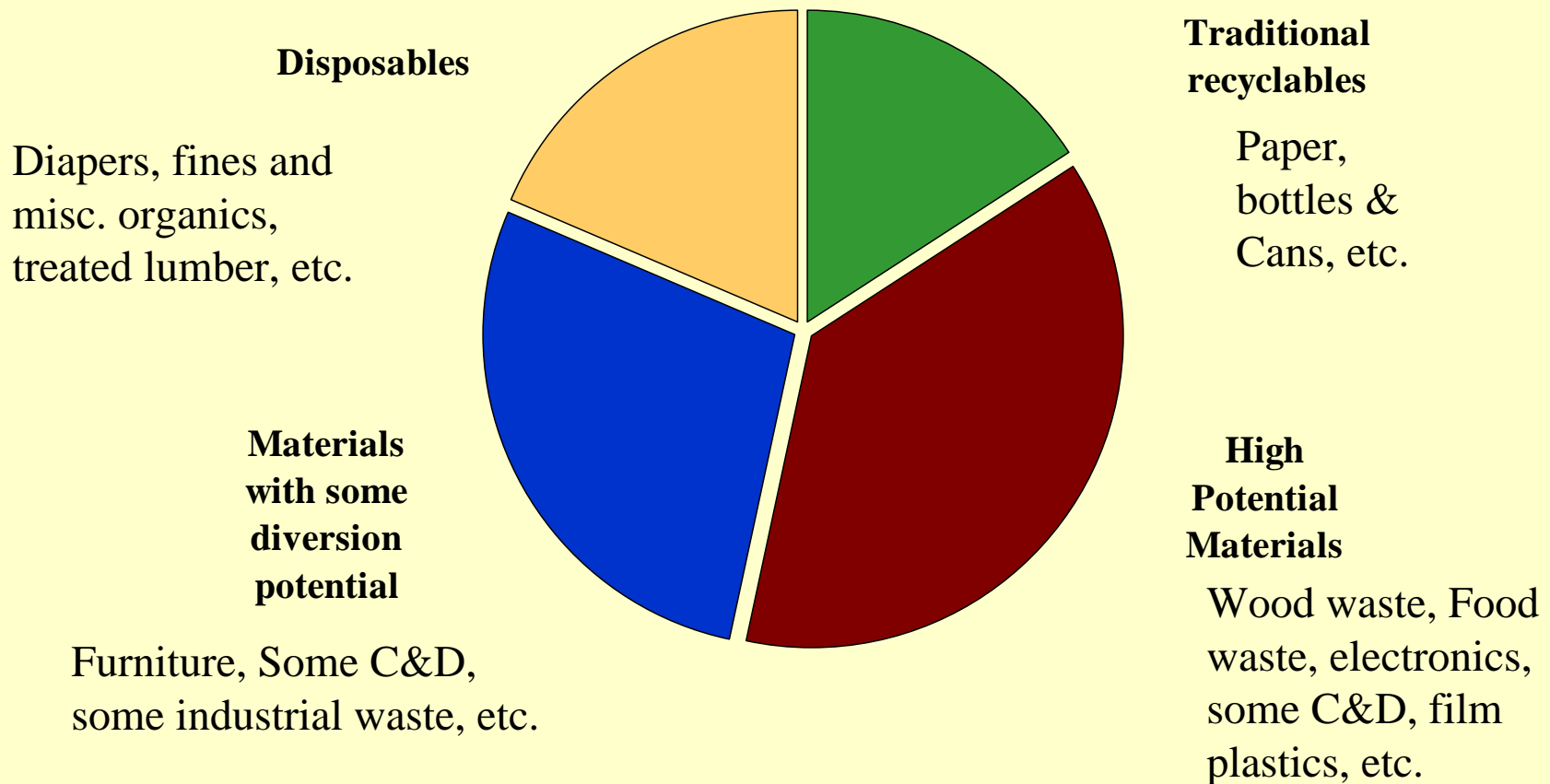
- Markets for electronics are excellent.
- Over 30 companies in North Carolina collecting and/or processing electronics.
- Investments include new \$4 million shredder at GEEP in RTP.
- Recyclers need more material



Sources of Waste in NC



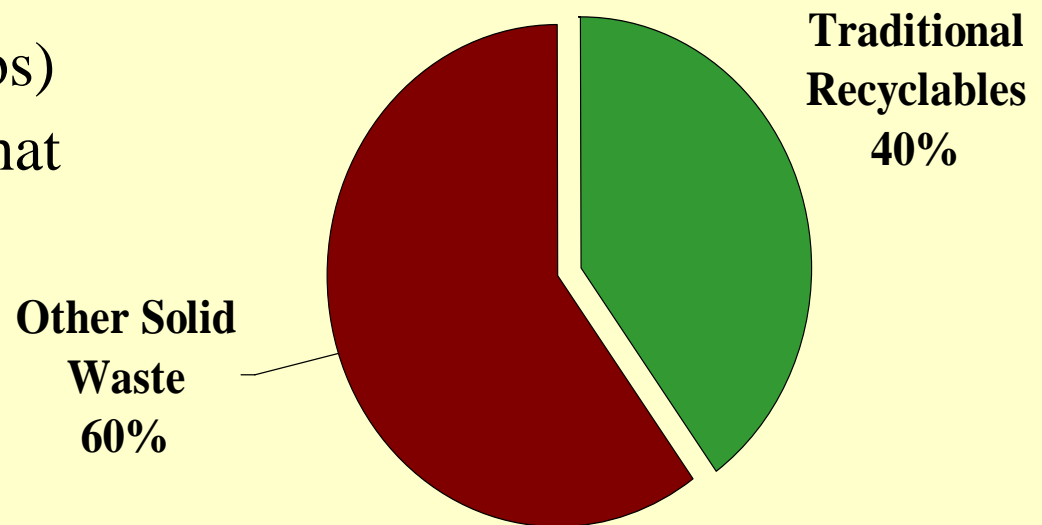
North Carolina Waste Diversion Potential



With the right programs, incentives, and funding in place, over half of North Carolina's waste stream is divertable from disposal.

Household Generation

- Estimated tons of solid waste generated per household: .94 (1,880 lbs)
- % of household waste that are recyclables: 40%
- Recyclable lbs. per household: 745
- Average program is only collecting 226 lbs per household served

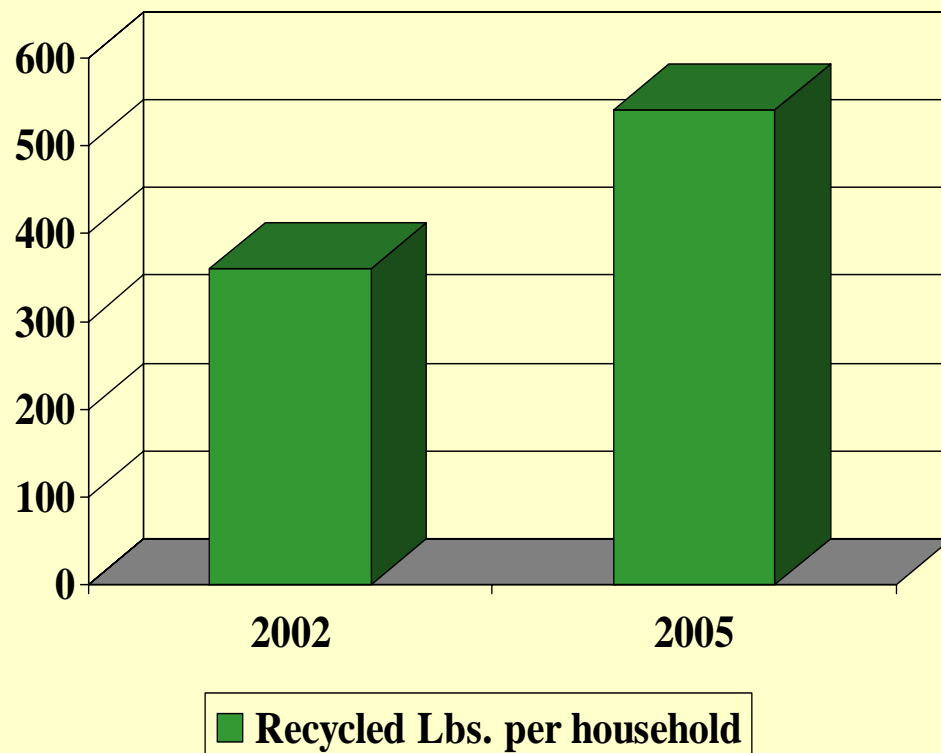


Local Government Recycling Efforts

- City and county programs performing steadily, but most could be improved.
- Improvements needed include:
 - increasing participation
 - collecting a wider range of materials
 - modernizing collection systems
- Local programs need motivation/incentives to improve.

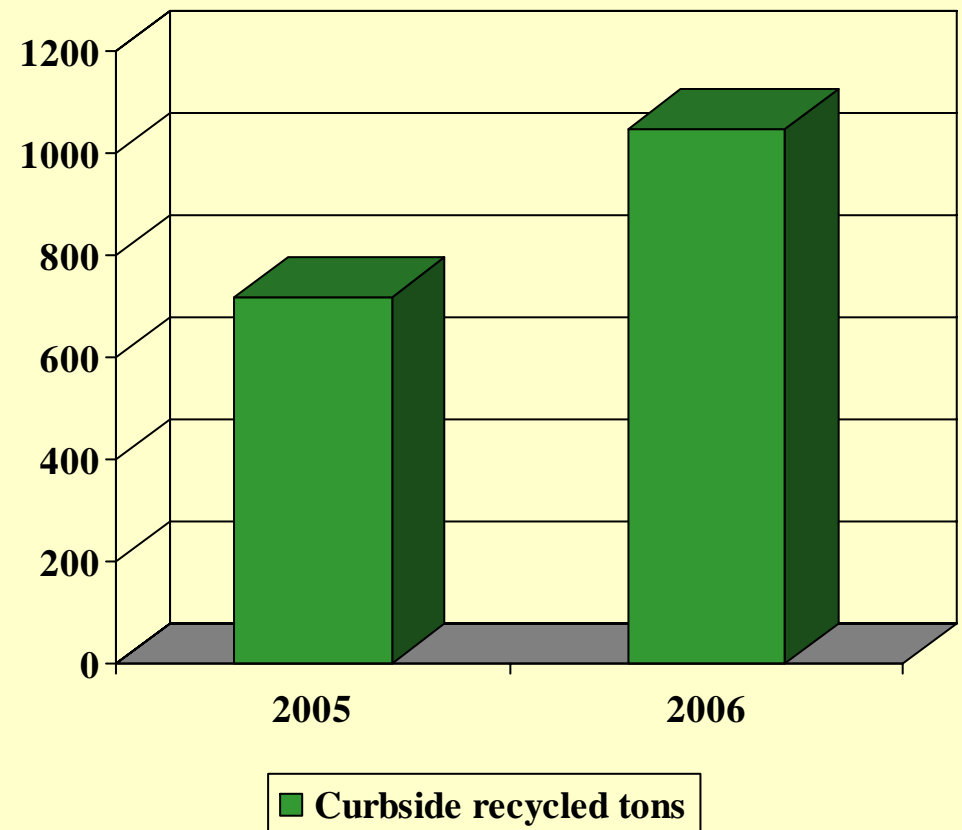
Municipal Success Story: Brevard

- Suspended program in 2003; reinstated in 2004
- 2005 recycling rate of 540 lbs/household – 50% greater than in 2002.
- **\$22 per-ton cheaper to recycle than to collect and dispose of solid waste.**



Success Story: Kernersville

- Program changes in 2005:
 - Added materials
 - Began commingling, using carts
 - Conducted broad public education campaign
- Household recycling tons **increased 45% from 2005 to 2006**



Recycling success in rural NC

- Study completed for Perquimans, Chowan, and Gates (PCG) counties showed *recycling saves the counties a net \$79 per ton*.
- 10 of top 15 recycling counties in NC are rural – Dare, Macon, Swain, Alleghany, Watauga, Craven, McDowell, Iredell, Transylvania, Stokes.
- Access to markets for rural counties has improved.

Options for Increasing Recycling in North Carolina

- Enforce the current and pending material disposal bans.
- Enact additional bans if enforcement is improved.
- Increase funding for recycling grants and public education.
- Set and enforce performance standards for local recycling programs.

Options for Increasing Recycling in North Carolina

- Require and/or provide incentives to private haulers to offer recycling services to customers.
- Provide strategically targeted tax credits to increase the diversion of large waste streams, such as food and wood wastes.
- Enact an advanced recycling fee on electronics and establish a comprehensive statewide recovery system.
- Increase the commitment of citizens, governments, businesses, institutions, builders, and industry to recycling.