

# MEETING FUTURE URBAN WATER DEMANDS IN NORTH CAROLINA

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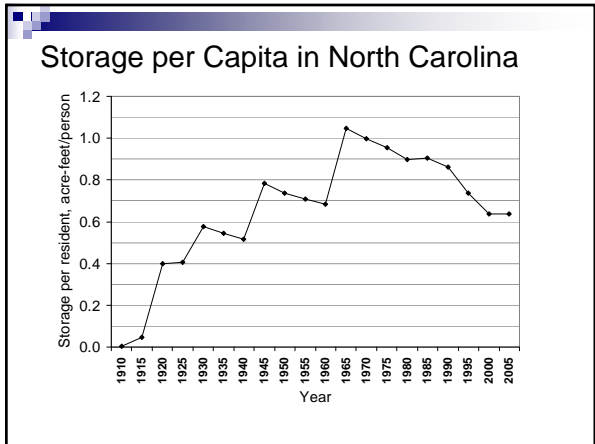
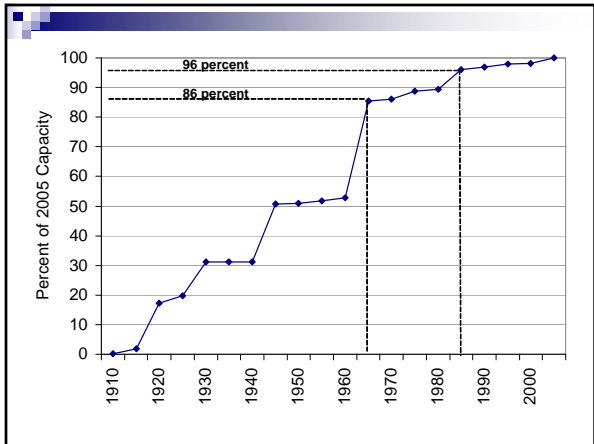
- ## Options to Manage Growth
- Increase Storage
    - Preserve and develop as needed remaining sites for surface water reservoirs,
    - exploit aquifer storage and retrieval where feasible, and
    - construct above ground reservoirs;
  - Demand Side Management
  - Reallocation of Existing Storage to Public Water Supply
  - Managed water reuse

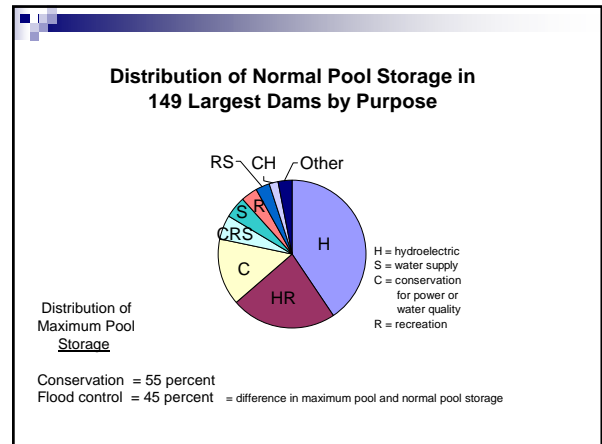
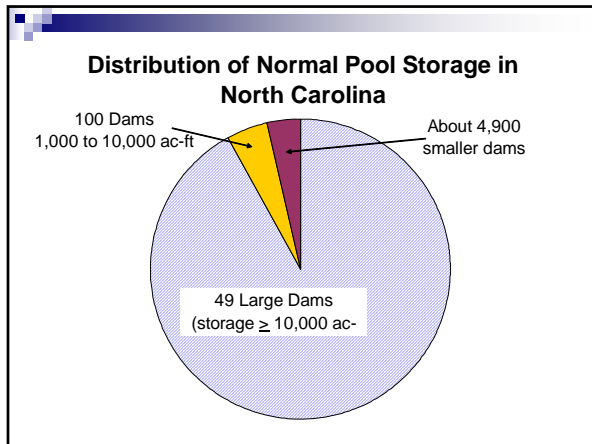
## Supply Side

- 82 percent of withdrawals from surface sources
- 18 percent of withdrawals from groundwater

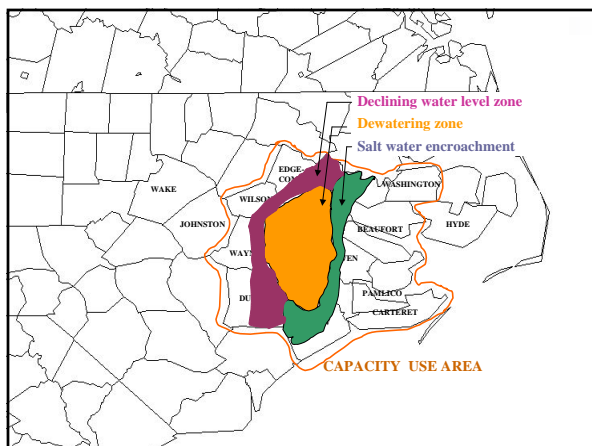
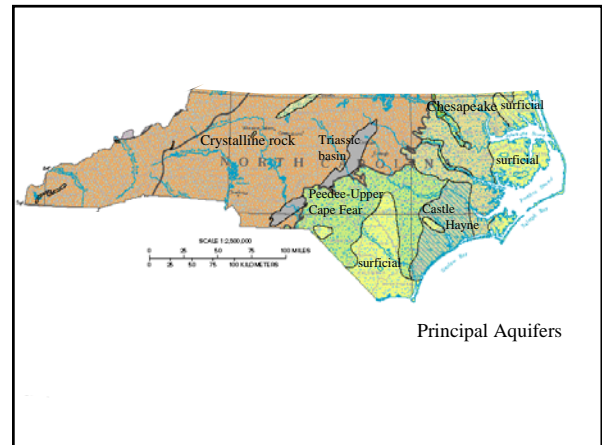
(USGS water use estimates for 2000)

## Surface Storage



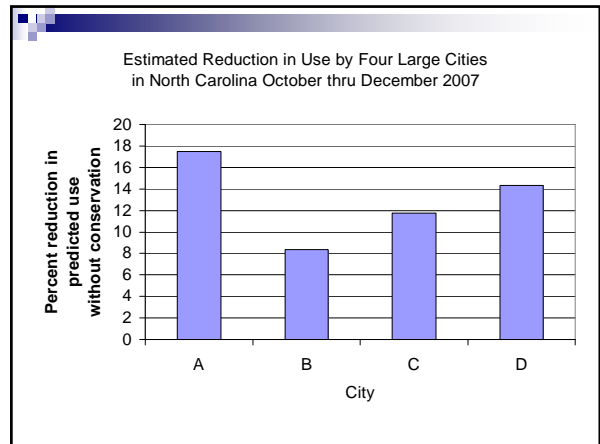
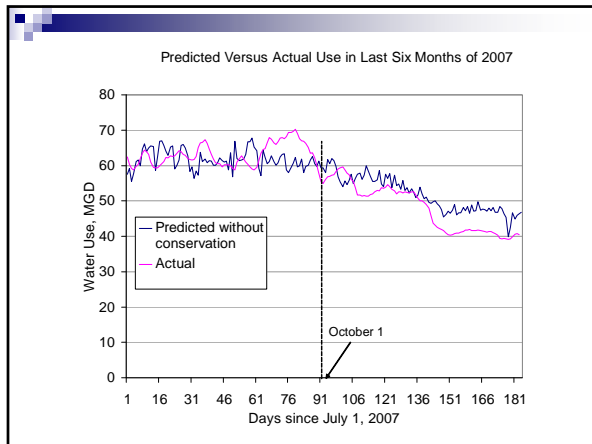


# Groundwater

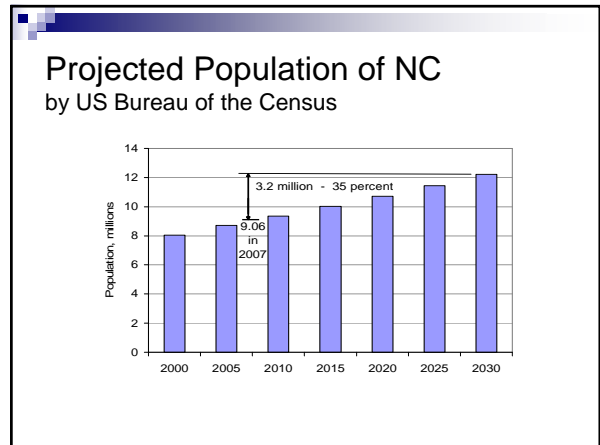


# Demand Side Management

Things cities in NC have proven they can do --- curtail outdoor use during droughts.



Without Demand Side Management, Demand will continue to increase!



- ### Demand Side Management
- Comprehensive package of technologies, practices, financial incentives, and pricing
  - Over some specified period of time
  - Reduce volume of water necessary to deliver same services
  - At a cost less than that of expanding supply by an equivalent amount

- ### A menu of DSM options
- Assistance to customers – leak detection, water audits, advice on water saving appliances and practices
  - Regulation on use of selected fixtures
  - Financial incentives (rebates)
  - Tiered and other forms of pricing

### Selected Water Efficient Technologies

Dual flush toilets

Waterless urinals

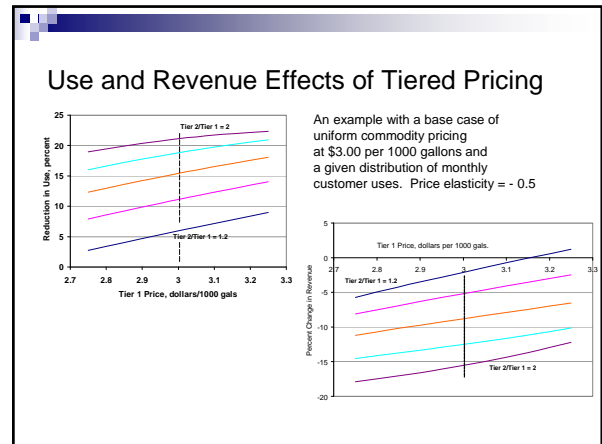
Low flow showerheads

Energy Star Clotheswashers and Dishwashers

Sub meters

Master meter

Submetering



## Implications of Current Conditions and Projected Growth

1. Limited options to expand supply. Not likely that adequate new sources can be developed to meet unmanaged demand.

2. Much of existing system storage has been developed for purposes other than public water supply. Planning for public water supply should be part of more comprehensive planning that considers all major uses, especially water quality, flood damage, and hydroelectric power.

3. There are significant opportunities to improve the supply-demand balance through demand side management.

## Some New Initiatives for NC

- Water Resources Research Institute to identify future reservoir sites with funds from CWMTF
- RBC Blue Water gift to WRRRI to develop models, training programs, and evaluation techniques for demand side management in southeastern states
- Study underway by Environmental Review Commission to examine options to reform water allocation law