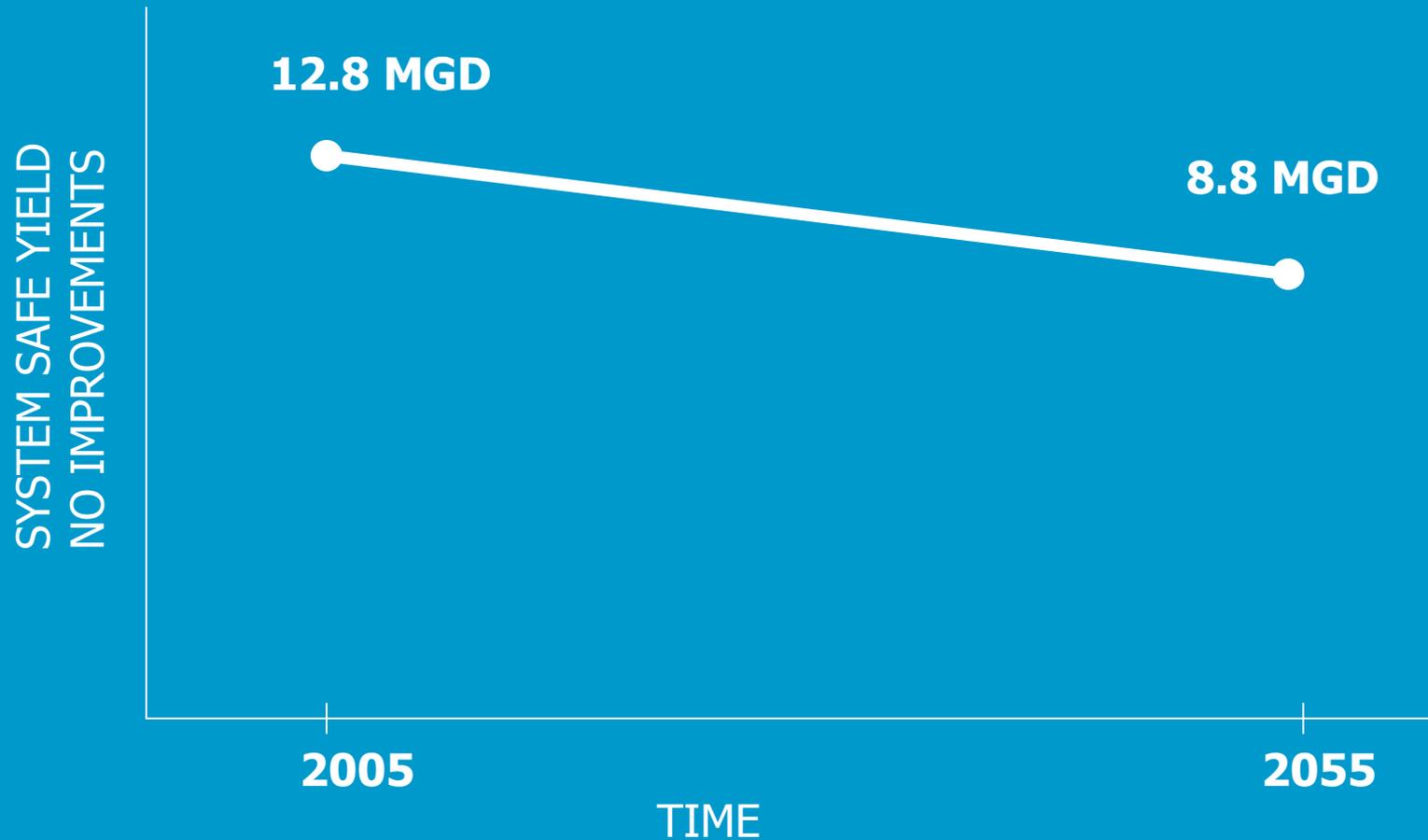




# **Capacity, Demand, Conservation, Options**

***Presented to:  
Charlottesville City Council  
The Design Center Conference Room  
May 6, 2008***

# Water Capacity



# Water Demand Projections

- Initial Analysis in 1997; Updated 2004
- 2004 Update Used in 2006 Permit Application
- Historic Data Used From 1973 - 2001
- Multiple Methodologies – Averaging Method
  - Historic Water Treated
  - Population Trend
  - Comprehensive Plans
  - Historic Retail Demand

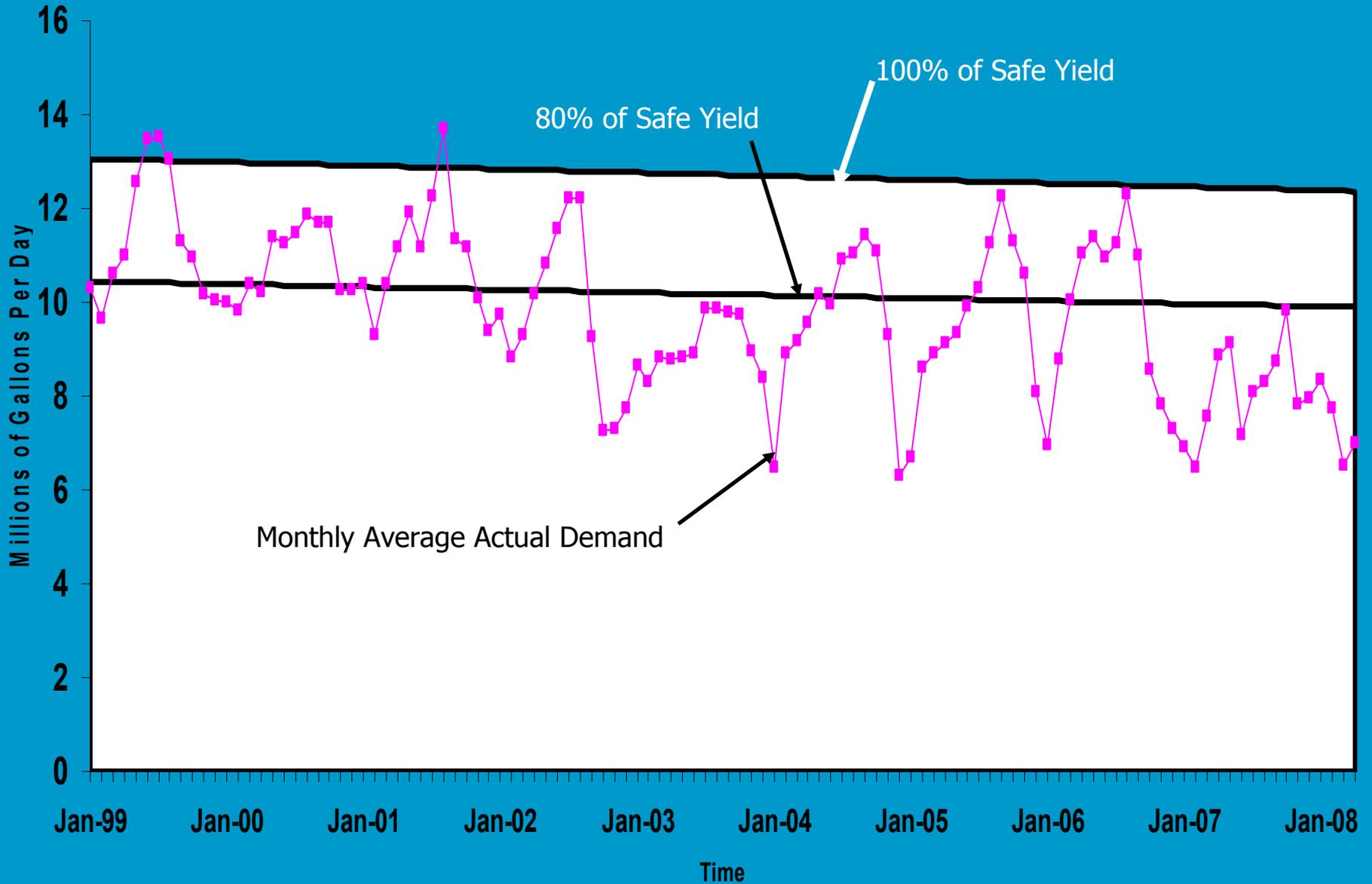
# Water Demand Projections

- Linear Regression Statistical Analysis: Long-Term Trend
- Method Approved by USEPA
- Conservation – Used 5% Allowance – Guidance from American Water Works Association Manual M50
- Forecast: 2055 Water Demand = 18.7 MGD
- Water Supply Deficit = 9.9 MGD

# Comparing Supply and Demand

- Must Meet Demand All The Time
- Requires Planning Ahead
  - "80% Rule"
- Use Long-Term Trending
- Foresight vs. Hindsight

# Supply and Demand



# Water Supply Options

- Legal Criteria: “Least Environmentally Damaging, Practicable Alternative”
- RWSA Goal – Satisfy Both Local Goals and Regulatory Requirements
- July 2004 Report – 22 Alternatives
- September 2004 – “Short List” =4
  - James River Pipeline
  - Ragged Mountain
  - South Fork Dredging
  - South Fork Bladder (4-Foot Crest)

# Water Supply Options

- Preferred Alternative – Expand Ragged Mountain with New SFRR Pipeline (Approved 2006)
  - “Stays in the Watershed”
  - Innovative Stream Flows and Aquatic Ecology
  - Satisfies Entire “Deficit”
  - Phasing Options Available
  - Reservoir That “Won’t Silt In”

# Water Supply Options

- Preferred Alternative – Expand Ragged Mountain with New SFRR Pipeline (Approved 2006)
  - Excellent Mitigation Plan
    - 75,000 feet of Stream Buffers Protected by Conservation Easements
    - 200 Acres of New Riparian Forest Planted
    - 4 Acres of New Wetlands
    - Environmental Education

# Water Supply Options

- Preferred Alternative – Expand Ragged Mountain with New SFRR Pipeline (Approved 2006)
  - Mitigates Long-Term Historical Risk at I-64
  - Improved Lacustrine Habitat and Natural Area
  - Does **NOT** Prohibit Maintenance Dredging

# Innovative Stream Flows



The Daily Progress  
– July 11, 2005



American Water Works Association Journal  
- June 2007



A reliable source of safe drinking water is fundamental to the viability and public health of any community

**NOTICE:**  
**BOIL WATER**  
**BEFORE**  
**DRINKING**