

# The State of the Chattahoochee – A Call to Action

Presented to the Georgia Water  
Resources Conference

By

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# Objective

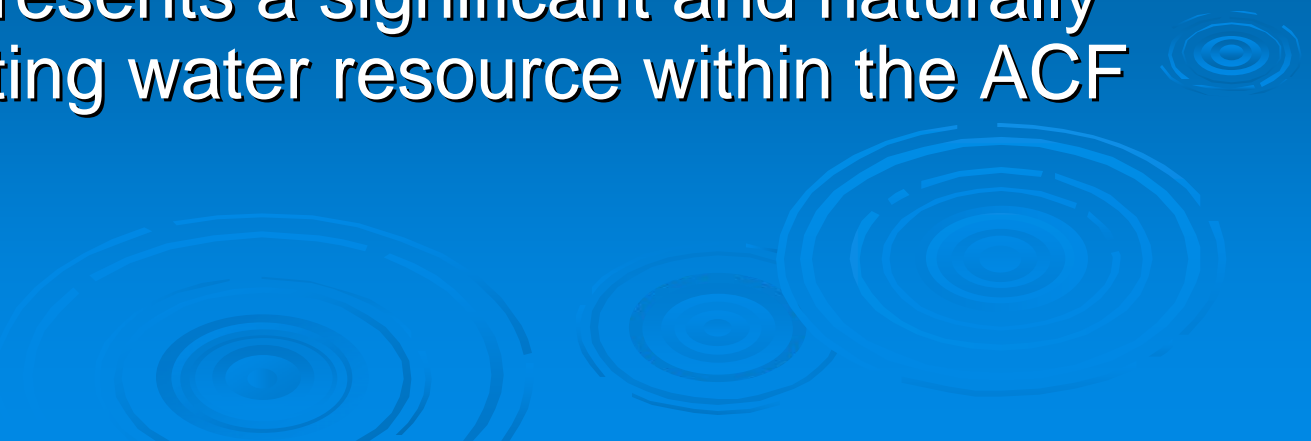
As a Stakeholder in the ACF Basin, our objective is to identify issues of concern and offer potential solutions regarding the continued and expanding use of the Chattahoochee River, ***IF*** the Chattahoochee River is to be preserved, environmentally protected, and continue to fulfill the needs of all Stakeholders in a fair and equitable manner.

# Issues

- Failure of the ACF Negotiations
- Recognition that all stakeholders, upstream and downstream, continue to look to the ACF System for additional sources of water to meet demands, further straining an already limited supply. (REF. A 1-3)

- Any use of the Chattahoochee River by a stakeholder at any point along the river must not penalize an upstream or downstream stakeholder to the benefit of the receiving stakeholder.
  - Any operational plan for the system must recognize all stakeholder needs.
  - Operation of the federal storage reservoirs must support their authorized purposes and federal law or the purposes must be modified according to law.
  - The adverse impacts of droughts must be spread equally to all stakeholders throughout the entire ACF basin

- Identification in the last known negotiating model that West Point Lake would be used as primary balancing resource to meet river basin needs during a sustained drought event . (Ref. B 1-4)
- There is **NOT** sufficient water in the Chattahoochee River Basin to meet the 2030 projected demands: assuring water supply, maintaining reservoir elevations at or near historical levels, and meeting downstream needs during periods of drought. Significant actions and changes in behavior are required now to forestall any water crisis in the ACF.
  - Demands are increasing.
  - Return rates are not increasing commensurate with increasing withdrawals.
  - Critical Yield is exceeded by the Forecast Demands if Lake Lanier is not drafted well below historical levels.
  - Metro Atlanta is projected to double in population to 8 million people (Ref C-1)

- A basin wide management approach, which is fair and equitable to all, must be established and followed.
    - The Flint River must assist in meeting demands required to satisfy the needs of the Apalachicola River.
    - The Chattahoochee River can not sustain the needs for the entire basin when the Flint represents a significant and naturally contributing water resource within the ACF basin.
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- The flow of the river and the elevation of its reservoirs have significant, economic repercussions on local economies:
  - Impacts to industry
  - Impacts to recreation (Ref D-1)
  - Impacts to tourism



➤ Returns to the river system are inadequate.

- Wastewater returns are not pacing withdrawals thus stressing the river more.
- Conservation practices are limited or marginally effective, and their impacts are not being quantified adequately.
- Public education and a recognition of the severity of the problem is lacking.
- There is an overdependence on septic systems basin wide.

- The use of annual averages to measure withdrawals and returns masks actual conditions and impacts on the system.
  - Average annual numbers conceal how peak monthly demands actually impact the river.
  - Peak demands often occur at periods of low flows and lowest returns.

- The basin lacks sufficient state of the art monitoring equipment to track and manage the system in real time.
  - The accuracy of withdrawal and return data is questionable.
  - Data is inconsistent.
  - The values of concern are withdrawal data, return data, contributing stream data, and storm water runoff data.

- The cost of litigation is and will continue to be excessive in dollars and time.
  - Equitable and balanced management of the system can be established minimizing these costs.
  - System wide consensus is possible with agreement on basic principles and fairness.

# Solutions

- Recognize and understand ACF limitations.
  - In good water years there is sufficient resource. In bad, years droughts are our nemesis.
    - Good water planning starts with efficient use during good years.
    - There is not a sufficient inventory of water to meet all needs during droughts.
  - Growth throughout the basin must be limited unless new fresh water sources are found, storage is increased, and returns are increased.
  - Planning should leave room for unanticipated demands.
  - No plan can, by virtue of its application, place undue economic or social strain on one Region over another.
  - Apply sustainability techniques to planning recognizing the environment and infrastructure has limits that can not be exceeded; environmental consequences of growth need to be analyzed.

- Stakeholders throughout the system must develop the best science available; establishing a state of the art monitoring system is a critical piece of the puzzle.
  - Use accurate data for planning and policy making.
  - Share accurate and current data with all stakeholders in real time
  - Define and support delivery requirements
  - Eliminate the use of average annual numbers in planning and managing the system as these “mask” true impacts.
  - Design, install and monitor a “Real Time” basin operating system that includes ALL withdrawals, returns, precipitation, runoff, downstream deliveries, lake elevations and regional meteorology.
  - Data must be compiled by a single agency responsible for the entire basin that compiles and reports all relevant system data from the three states that rely on the ACF.
  - As the data identifies problems or shortages, responsible parties must adapt.
- The water Withdrawal Permit process must include a guaranteed return commitment with significant penalties for non compliance.
- No longer allow **ANY** new development if septic systems are the method of wastewater treatment. Existing septic systems should be abandoned, as soon as possible, and users must be connected to sanitary sewer systems to increase river system returns commensurate with increasing withdrawals
- The approach to managing the ACF must be from a basin wide perspective. The overriding principal must be that the management practices will not be reliant upon sources being stressed, reserved or underutilized in any one segment of the entire system.

- Create significant and effective pricing and non-pricing mechanisms that stimulate behavioral changes in water usage. If behavior doesn't change then continue to modify mechanisms to achieve results.
  - Current Per Capita use = 140 Gallons/Day
  - Target Per Capita use = < 100 Gallons/Day
- Increase Seasonal Storage in existing reservoirs
- Reevaluate current management practice of reservoirs to meet flood storage requirements.
  - Develop new flood studies for each federal reservoir.
  - Evaluate and manage land use.
  - Improve Storm water discharge practices and data.
  - Establish new and improved storm forecasting techniques to allow for pre evacuation management of reservoirs.
- Expedite the development of sole purpose regional water supply reservoirs. The development of these dedicated facilities must have minimal impact on the storage and yield of existing reservoirs .
- Operate the system of reservoirs on a fair and equitable basis.

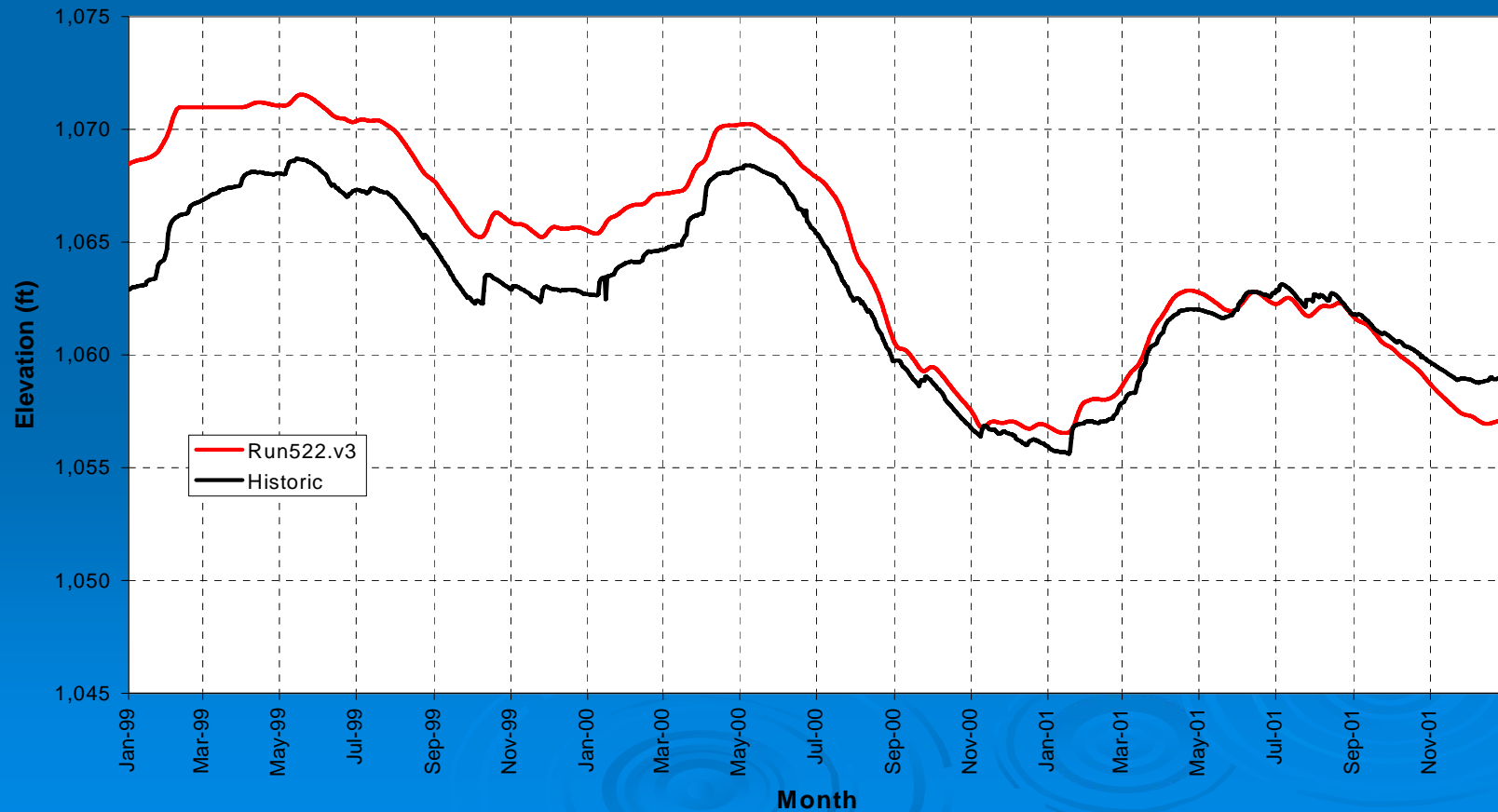
# Appendices



# B-2

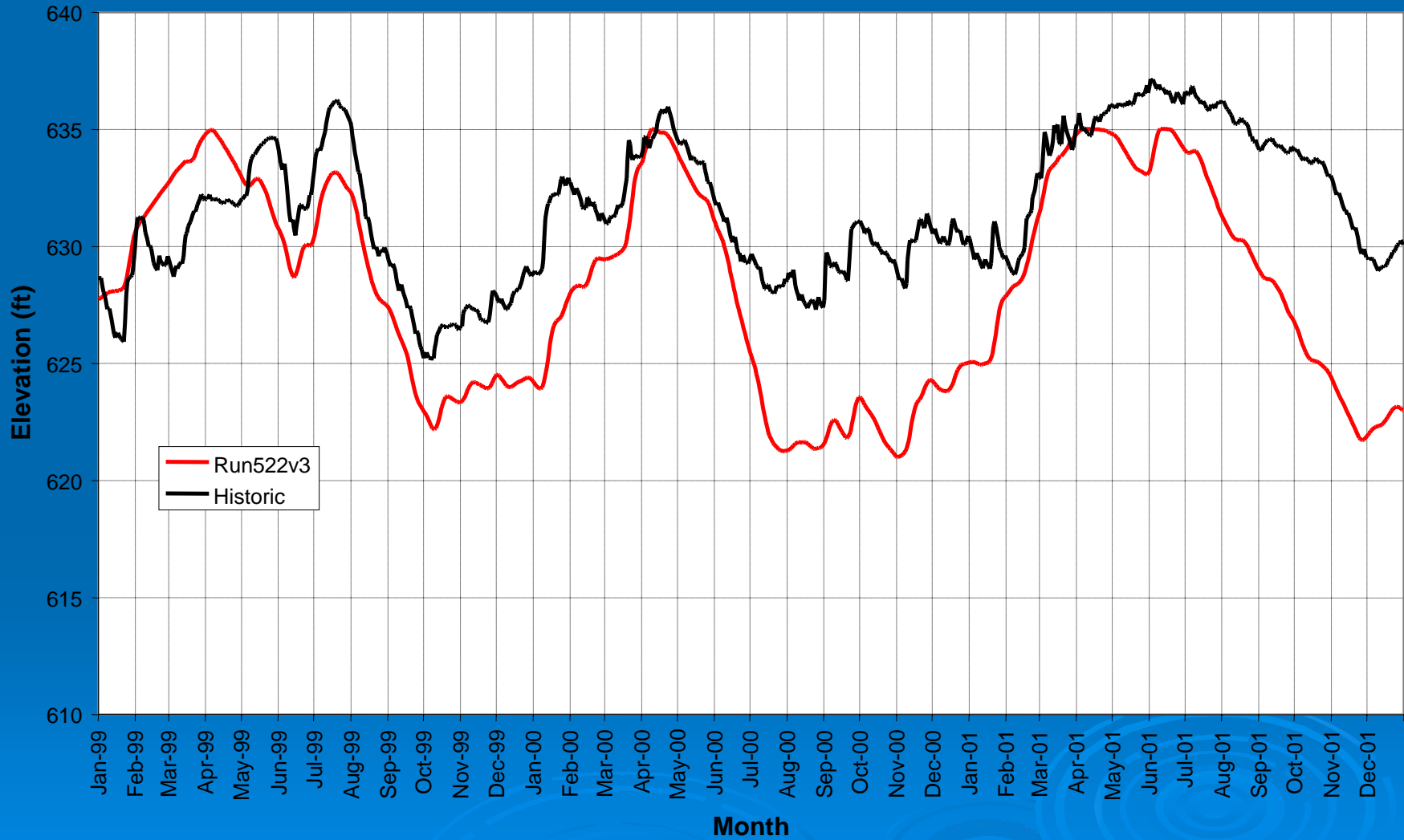
## Data Presented by EPD in last version of ACF negotiations July/August 2003

Moving 7 Day Ave. Elevations at Lake Lanier



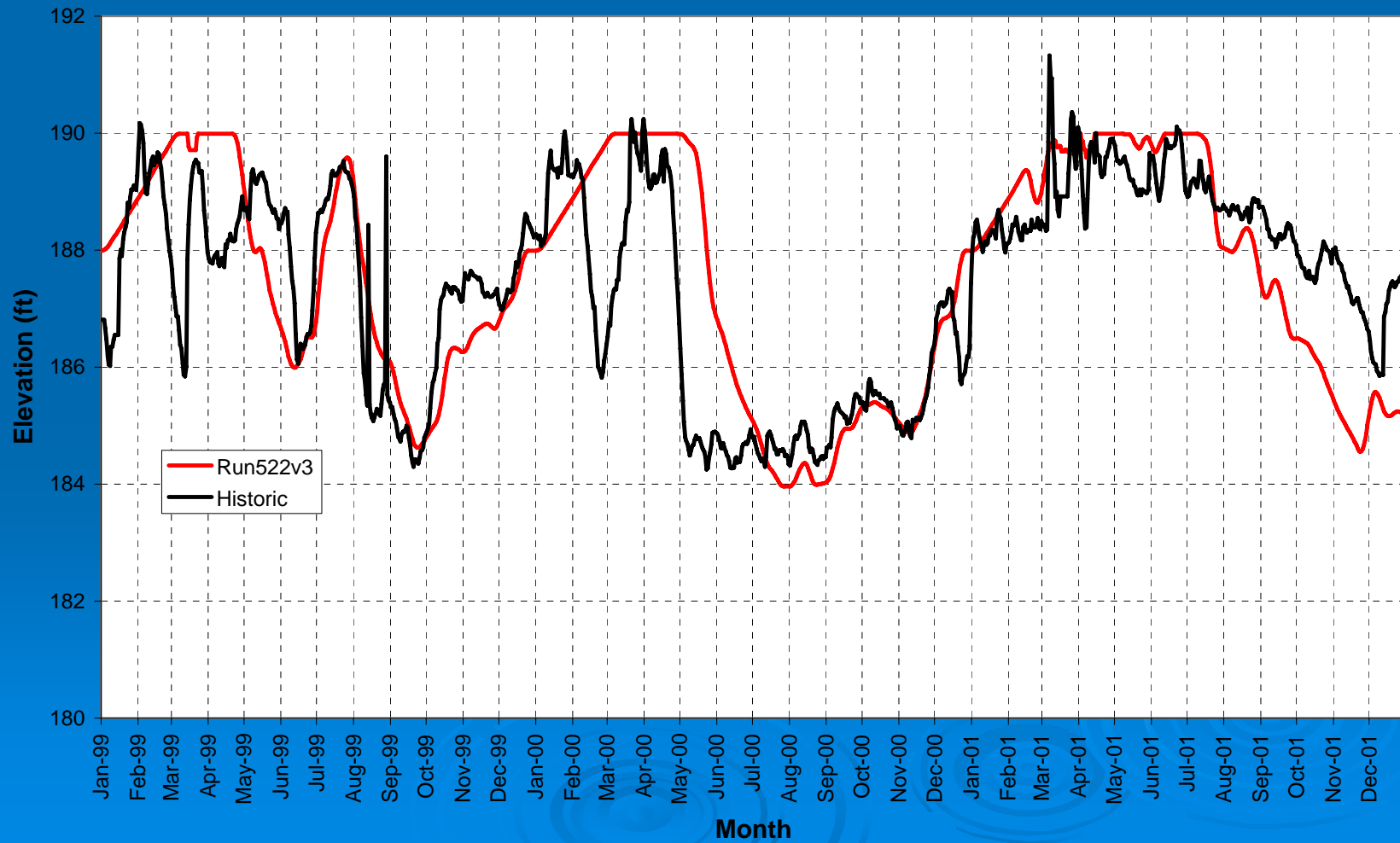
# B-3

## Moving 7 Day Ave. Elevations at Lake West Point



# B-4

Moving 7 Day Ave. Elevations at Lake W.F. George



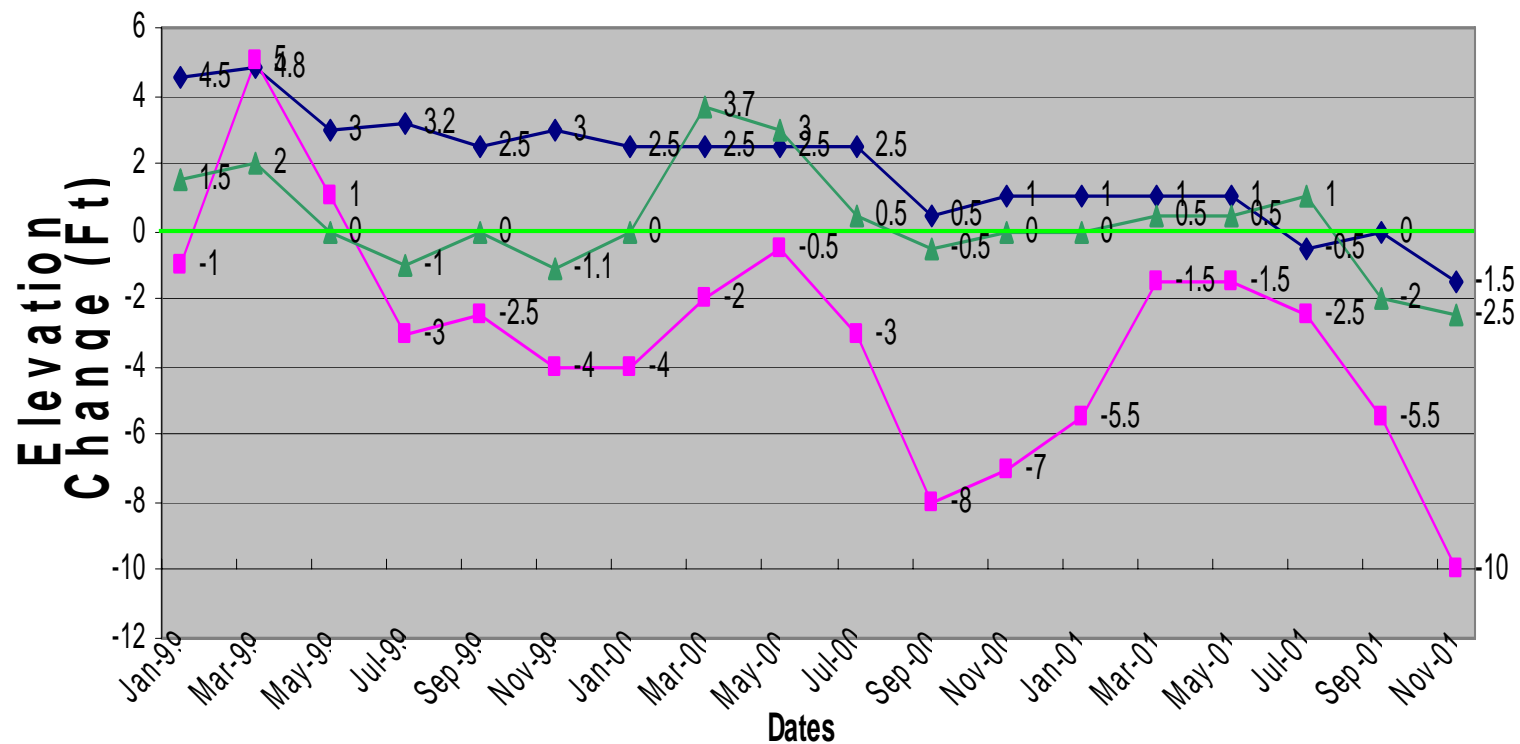
# B-1

## Moving 7 Day Average Elevations

0 = Historic Levels

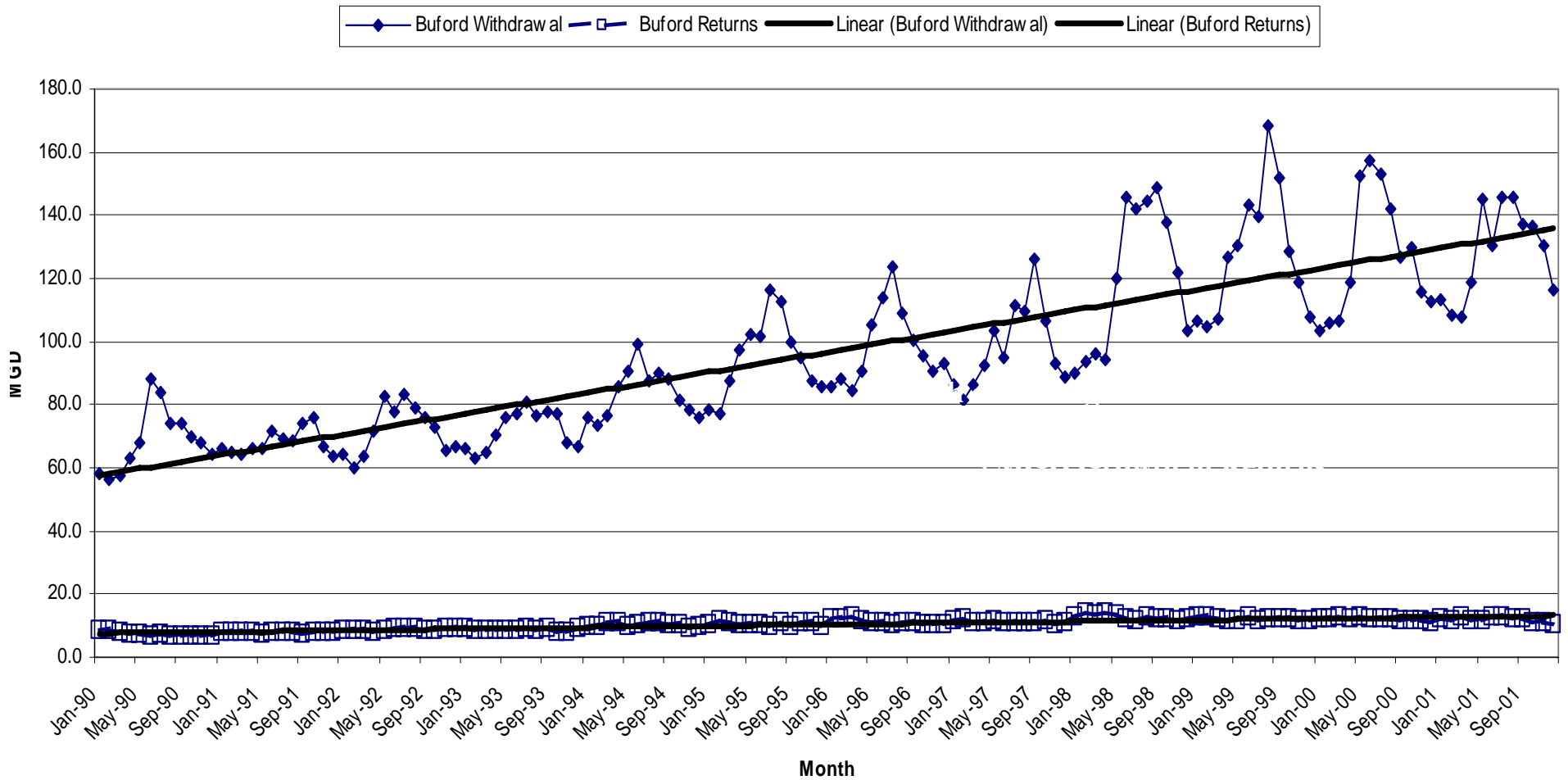
## Run522v3 vs. Historic Data

◆ Lake Lanier    ■ West Point Lake    ▲ Lake W.F. George



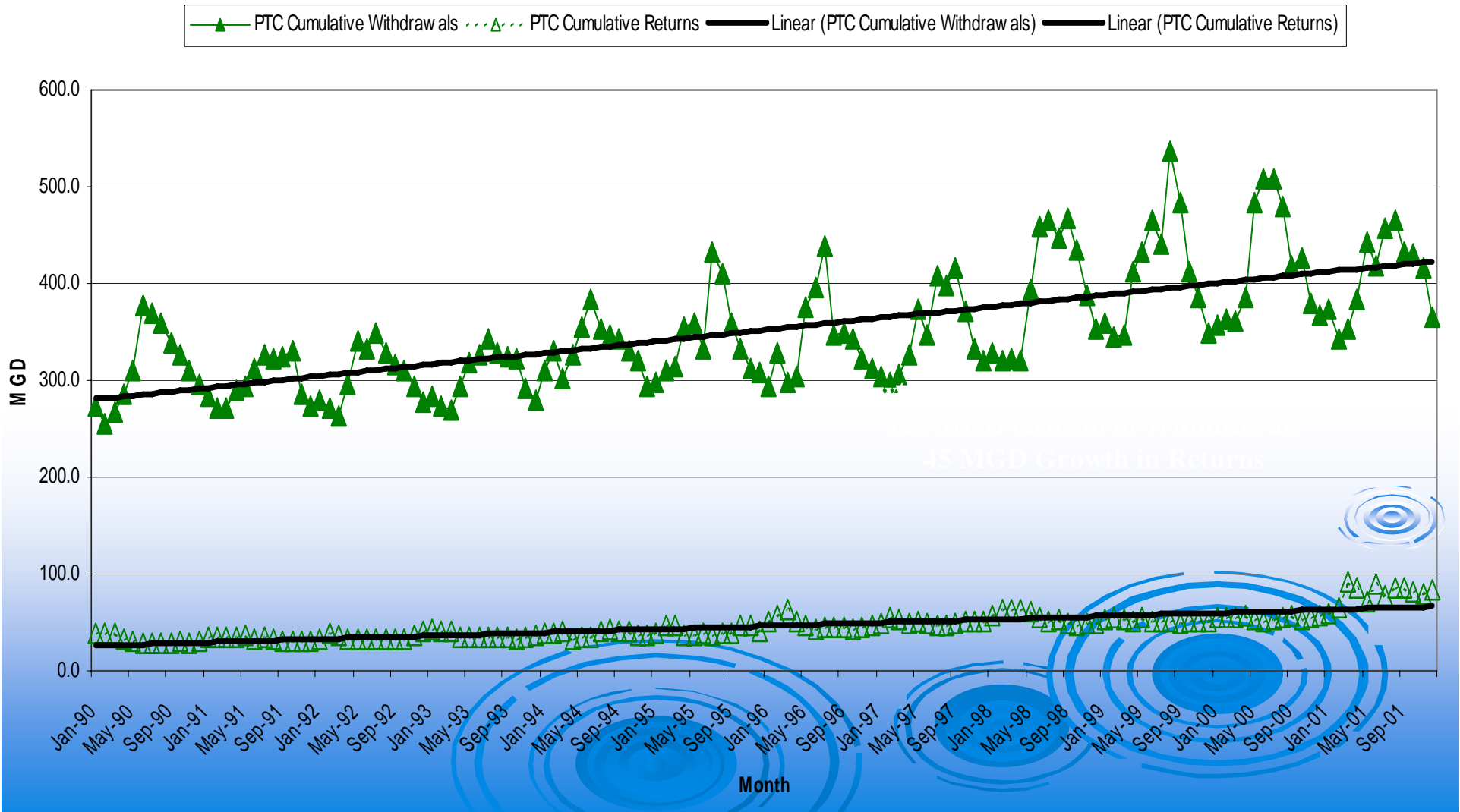
# A-1

Cumulative Withdrawals & Returns by Reach in Chattahoochee River Basin  
Buford Reach, Includes Lake Lanier  
Jan 1990 - Dec 2001



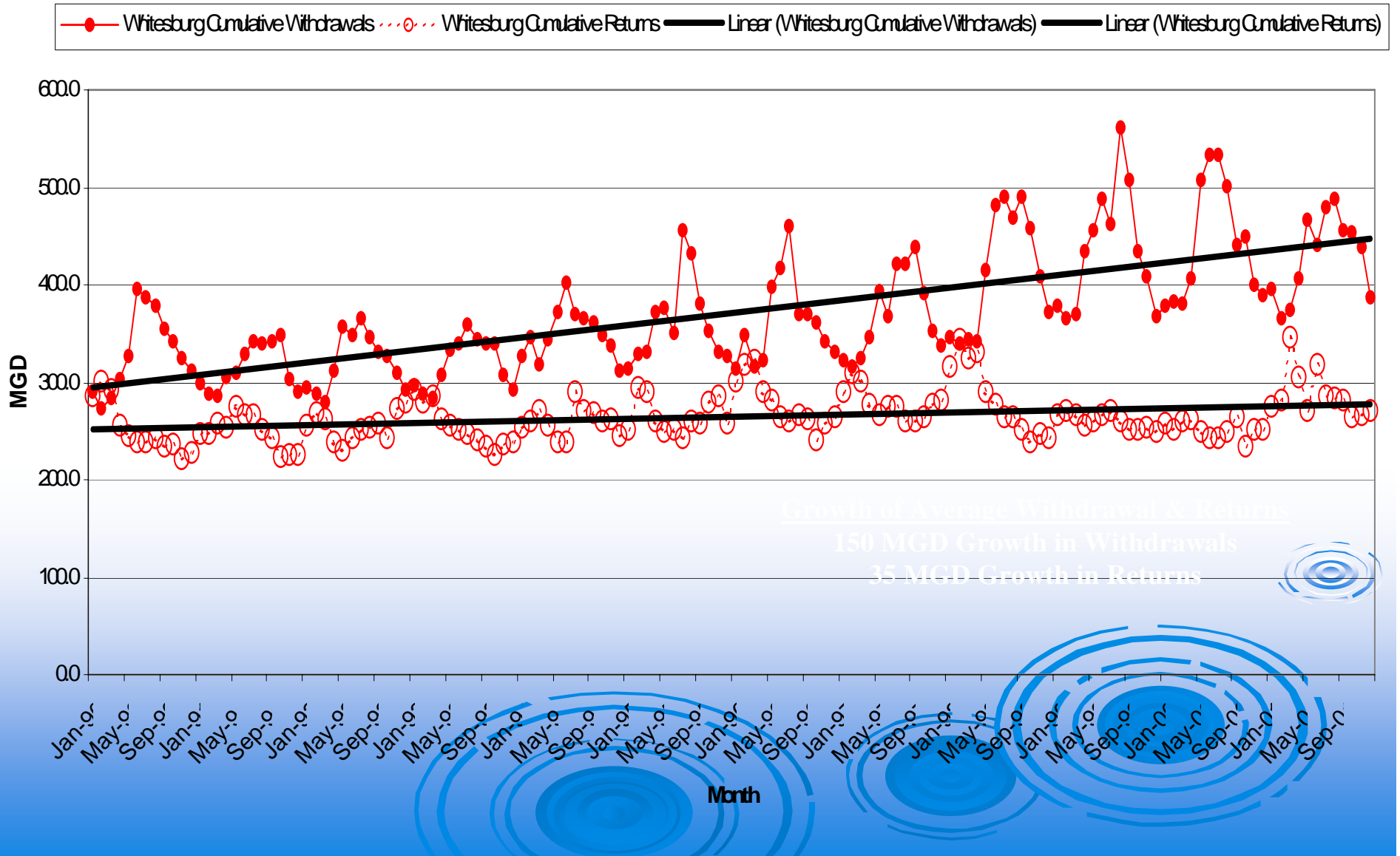
# A-2

## Cumulative Withdrawals & Returns by Reach in Chattahoochee River Basin PTC Reach, Includes Buford Reach Jan 1990 - Dec 2001



# A-3

## Cumulative Withdrawals & Returns @ Whitesburg Chattahoochee River Basin Jan 1990 - Dec 2001



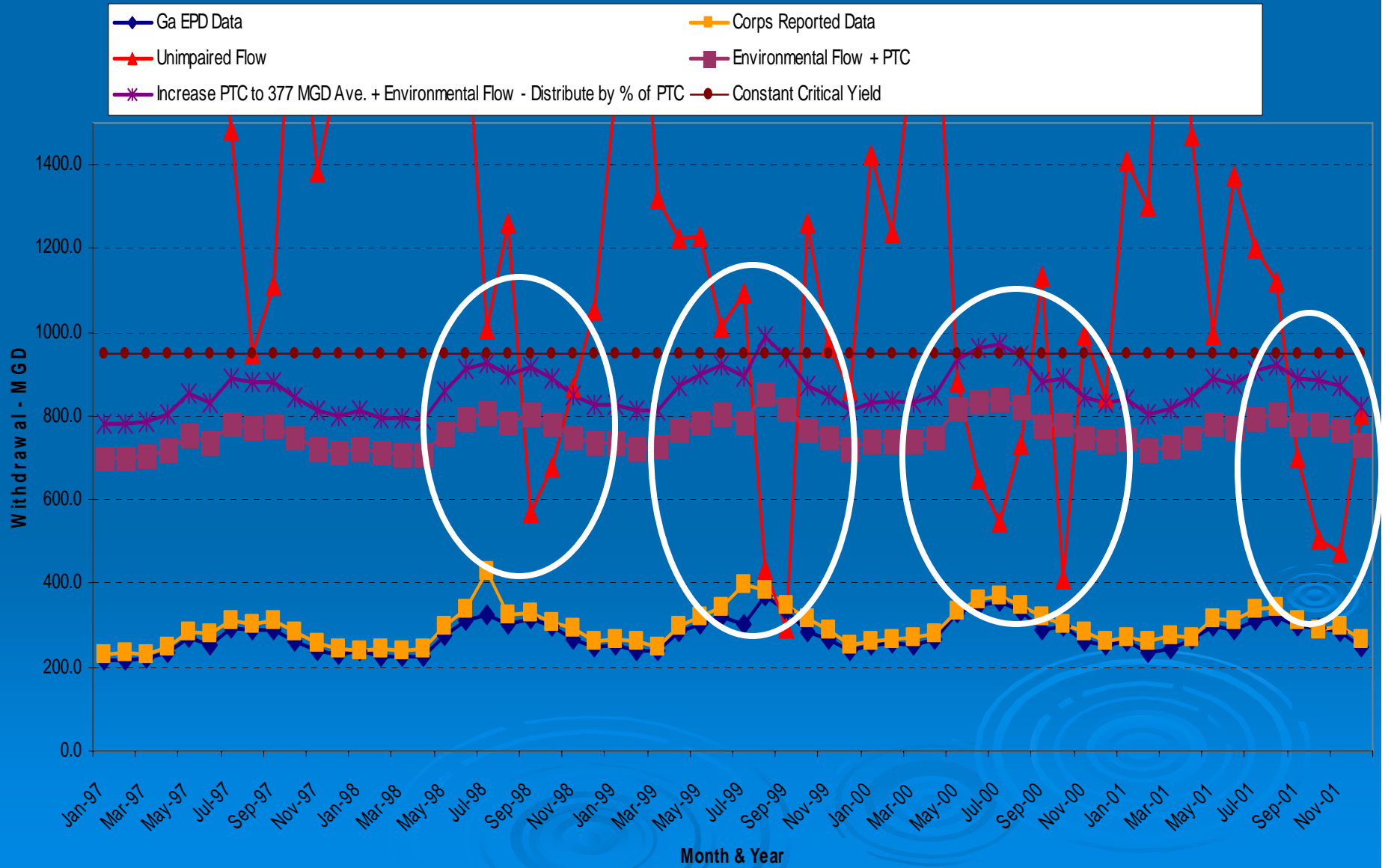
# D-1

## Effects of Drawdown Lanier, West Point & W.F. George

<b>Drawdown (Below Normal Summer Pool)</b>	<b>Exposed Ground Lanier (38,000 Acres) (Acres / % of Reservoir Area)</b>	<b>Exposed Ground West Point (25,900 Acres) (Acres / % of Reservoir Area)</b>	<b>Exposed Ground W. F. George (45,181 Acres) (Acres / % of Reservoir Area)</b>
1 Foot	518 Acres / 1%	797 Acres / 3%	1,516 Acres/ 3%
2 Feet	1,027 Acres / 3%	1,578 Acres / 6%	2,970 Acres/ 7%
3 Feet	1,527 Acres / 4%	2,344 Acres / 9%	4,446 Acres/ 10%
4 Feet	2,020 Acres / 5%	3,093 Acres / 12%	5,971 Acres/ 13%
5 Feet	2,506 Acres / 7%	3,827 Acres / 15%	7,397 Acres/ 16%

# C-1

## Ga EPD Withdrawals vs. Corps Reported Withdrawals @ PTC Reach



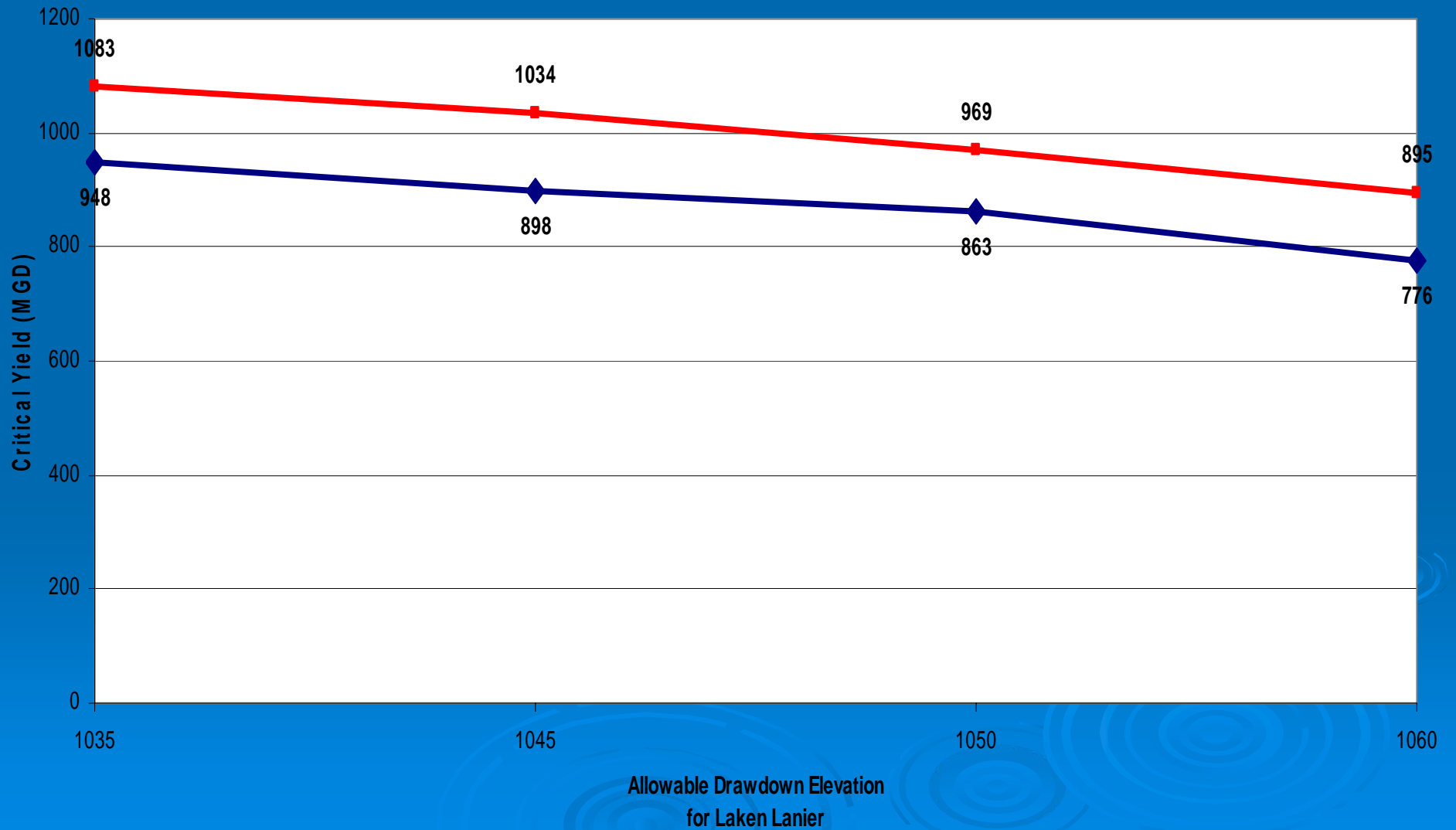
# Critical Yield Analysis

- In order for the system to sustain itself through a drought, there must be sufficient storage to provide a determinate release that will pull the reservoir to a predetermined point, or empty, and then refill by the end of the drought cycle. The Critical Yield is that release.
- Demands for all uses **cannot exceed** that Critical Yield.
- The minimum elevation that the reservoir can be drafted is critical to this calculation.
- Prior negotiating positions have modeled Lake Lanier remaining well above historical low levels, thereby, reducing the Critical Yield.

# Critical Yield

## Buford Dam Location vs. Atlanta Gage Location

◆ Critical Yield @ Buford Dam    ■ Critical Yield @ Atlanta Gage



# Critical Yield (Elev. 1070-1035) 2030 Demands

	<b>Buford Dam</b>	<b>Peachtree Creek</b>
<b>Critical Yield</b>	948 MGD	1083 MGD
Withdrawal Req't	(-)280 MGD	(-)425 MGD
Return	(+)80 MGD	(+)106 MGD
Net Buford Use		(-)200 MGD
Flow Remaining	748 MGD	564 MGD
Req'd Environmental Flow (750 cfs)		485 MGD

# Critical Yield (Elev. 1070-1060) 2030 Demands

	<b>Buford Dam</b>	<b>Peachtree Creek</b>
<b>Critical Yield</b>	776 MGD	895 MGD
Withdrawal Req't	(-)280 MGD	(-)425 MGD
Return	(+)80 MGD	(+)106 MGD
Net Buford Use		(-)200 MGD
Flow Remaining	576 MGD	376 MGD
Req'd Environmental Flow (750 cfs)		485 MGD

# Critical Yield Shortfall

- In order to meet the Forecast Demands with the Forecast Returns included, the Critical Yield at Peachtree Creek must be 1,049 MGD in order for there to be the required 485 MGD passing Peachtree Creek.
- Reservoir Operational Pool that provides a minimum of 1,049 MGD Critical Yield is Elev. 1070-1042.

# Critical Yield (Elev. 1070-1060) 2001 Actual Demands

	<b>Buford Dam</b>	<b>Peachtree Creek</b>
<b>Critical Yield</b>	776 MGD	895 MGD
<b>Withdrawal Req't</b>	(-)128 MGD	(-)279 MGD
<b>Return</b>	(+)12 MGD	(+)69 MGD
<b>Net Buford Use</b>		(-)116 MGD
<b>Flow Remaining</b>	648 MGD	569 MGD
<b>Req'd Environmental Flow (750 cfs)</b>		485 MGD

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