

# FLINT RIVER BASIN REGIONAL WATER DEVELOPMENT AND CONSERVATION PLAN

*An Overview*

# Summary

- ❑ Plan developed starting in 1999 “in response to a prolonged drought, increased agricultural irrigation since the 1970’s and scientific studies that predicted severe impacts on streamflow in the Flint River Basin due to withdrawals from streams and the Floridan aquifer.”
- ❑ Moratorium on new Floridan agricultural withdrawal permits in the Lower Flint River Basin beginning in 1999
- ❑ Recommendations from Flint Plan focused exclusively on irrigation and farm-use permits
- ❑ Flint Plan involved scientific assessment of water resources and led to adoption of new water resource management practices
- ❑ Authority for plan development given to EPD under Water Quality Act (O.C.G.A. 12-5-31(h)) and Groundwater Use Act (O.C.G.A. 12-5-96(e))

# Methodology -- Modeling

- ▣ Hydrologic modeling of groundwater by US Geological Survey using UGA's Ag Water Pumping Study (2004) data.
- ▣ Modeling of streamflow by EPD incorporating direct surface water withdrawals and impact of groundwater withdrawals from USGS model.
- ▣ EPD applied USGS model to individual watersheds.

# Methodology - Public Involvement and Advisory Committees

- ▣ Stakeholder involvement from 19 member Stakeholder Advisory Committee (SAC) appointed by EPD
- ▣ Scientific expertise provided by 9 member Technical Advisory Committee (TAC) appointed by EPD (SAC had representation on TAC)
- ▣ Facilitation of committee meetings provided by UGA Fanning Institute

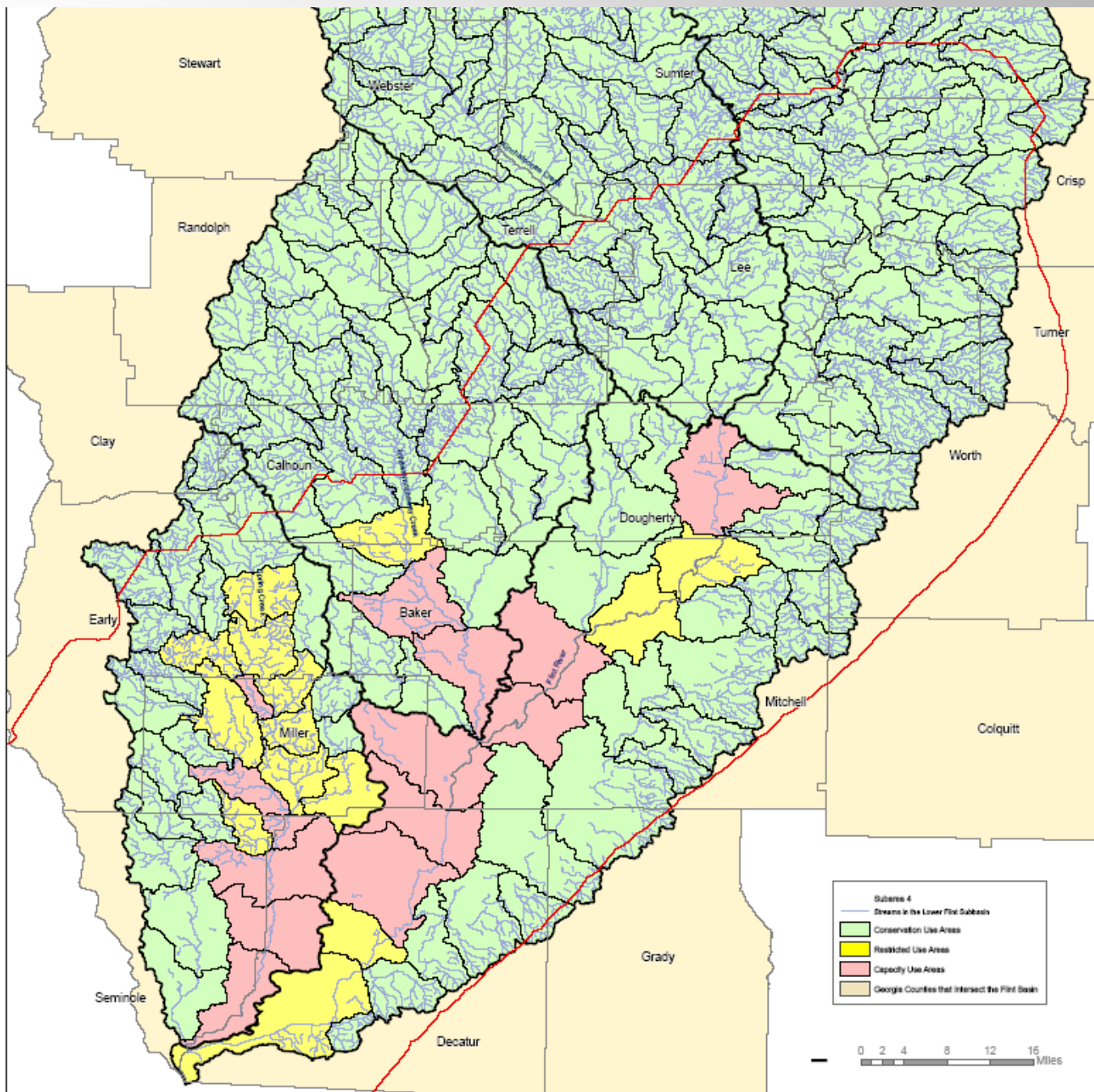
# Plan Development Process

- ▣ Monthly SAC meetings from October 2004 through November 2005
- ▣ Summary of technical findings and stakeholder input resulted in modified permitting strategies and recommendations for statutory and regulatory reform
- ▣ A public comment period was held during December 2005-January 2006
- ▣ Rule modifications stemming from the Flint Plan were adopted by the DNR Board February 22, 2006.
- ▣ Plan to be re-evaluated every 3 years

# Major Technical Findings

- ▣ Average drought-year irrigation is about 9.5 inches per acre. Prior studies used NRCS estimate of 18 in/acre.
- ▣ Groundwater users consistently apply more water, on average, than surface water users during a growing season. It's more reliable.
- ▣ Groundwater withdrawals affect stream flow, but this effect is concentrated in certain watersheds, not the whole basin.
  - Capacity Use (red)
    - ▣ GW pumping causes significant impact to streamflow
  - Restricted Use (yellow)
    - ▣ GW pumping causes some impact to streamflow
  - Conservation Use (green)
    - ▣ GW pumping causes little to no impact to streamflow





# Major Technical Findings

- ▣ Since irrigation became common, streams reach lower drought-year flows sooner and more frequently. Endangered freshwater mussels impacted in some areas during '98 - '02 drought
- ▣ 7Q10 flows are lower since irrigation became widespread, so wastewater will be less able to be assimilated.
- ▣ Spring Creek is the most heavily irrigated sub-basin, and experiences the greatest impacts due to irrigation.
- ▣ Overall, problems only exist during drought years.
- ▣ In severe drought years, irrigation will have to be reduced by up to 20% in the heavily impacted sub-basins through the FRDPA.



# New Permit Procedures

- ▣ All applications will be reviewed more carefully for their effect on nearby irrigation wells and streams.
- ▣ Only farm uses will get farm-use permits (recreational use/aesthetics in not farm use).
- ▣ All new surface water permits in Spring and Ichawaynochaway sub-basins will have to allow 25% AAD to pass instead of 7Q10.
- ▣ All new permits will require mandatory conservation measures, such as end-gun shut off switches, as a part of the application process.

# New Permit Procedures

- ▣ For Floridan and all surface water permits issued after March 1, 2006, the following conservation measures are mandatory:
  - Capacity and Restricted Use Areas
    - ▣ End gun shut-off systems
    - ▣ Leak prevention and repair
    - ▣ Pump shut down system in the event of malfunction
    - ▣ Rain gage shut-off system for drip, traveler & solid set
  - Conservation Use Areas
    - ▣ End gun shut-off systems
    - ▣ Leak repair and maintenance

# Regulatory Reform: Water Use Statutes

- ▣ Application fees (\$250) for NEW applications in Flint River Basin only
- ▣ Ag permits in FRB have 25-year limit, but can be renewed at original capacity
- ▣ Farm use must commence within 2 years of permit issuance, or it can be revoked.

# Regulatory Reform: Flint River Drought Protection Act

- ▣ Auction can now include groundwater users in certain areas within 3 miles of streams
- ▣ Auction can be limited to certain sub-basins, like Spring Creek and Ichaway
- ▣ Allow partial withdrawal of land instead of all-or-nothing
- ▣ Only fixed systems (center pivots, solid set, drip systems, etc...) are eligible to participate.

# Summary

- ▣ The Flint Plan adopted in March 2006 was in many ways a precursor to the current planning process
  - Stakeholder involvement
  - Resource assessments
  - Selection of management practices
  - Suggestions for potential statute/regulatory change
  - Scheduled periodic evaluation