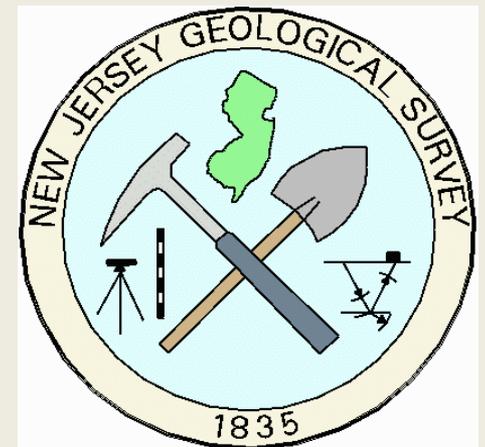


New Jersey's Water Supply Critical Area No. 2

Water Management Advisory Committee
6-20-2019

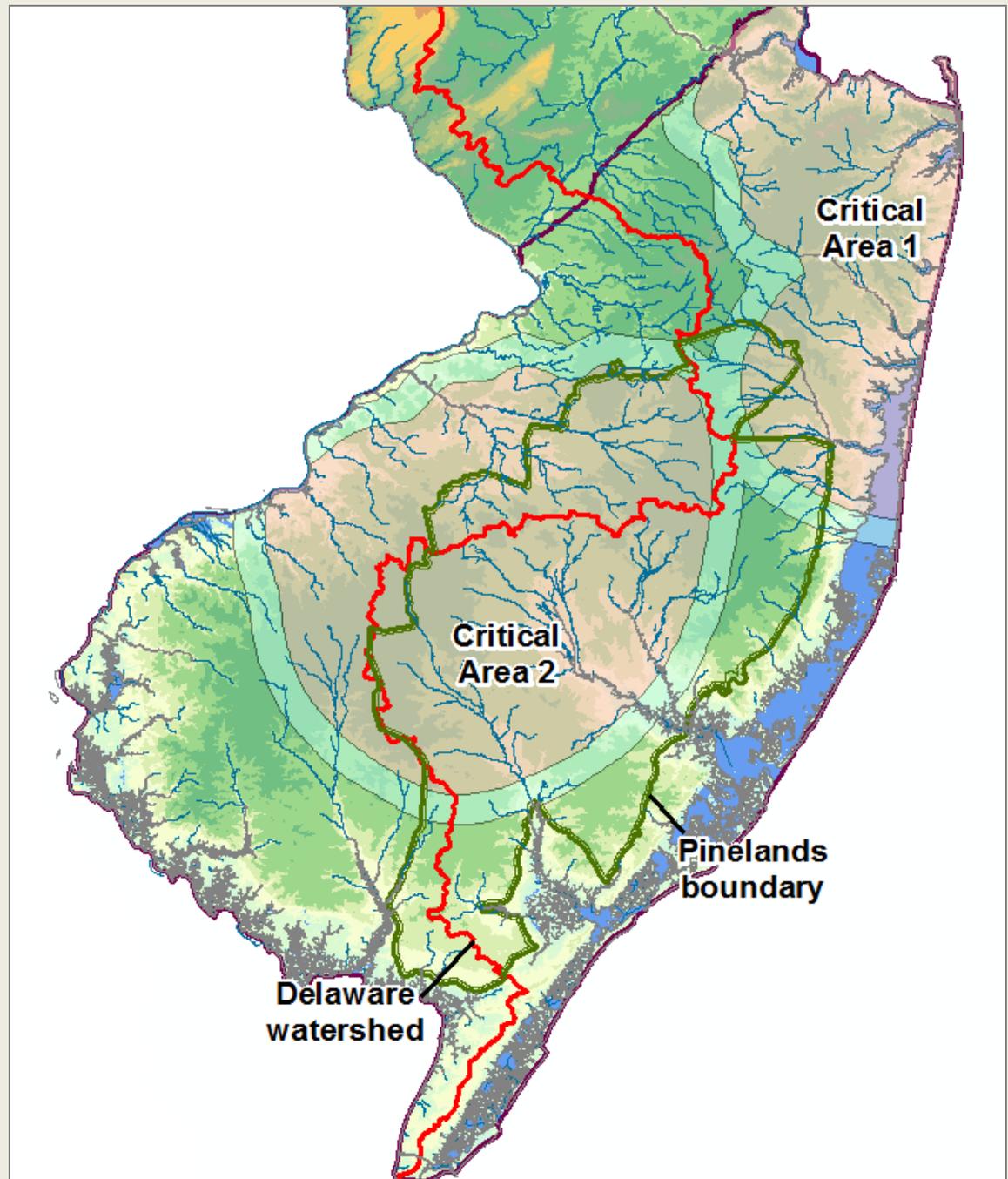


Ian Snook
NJDEP



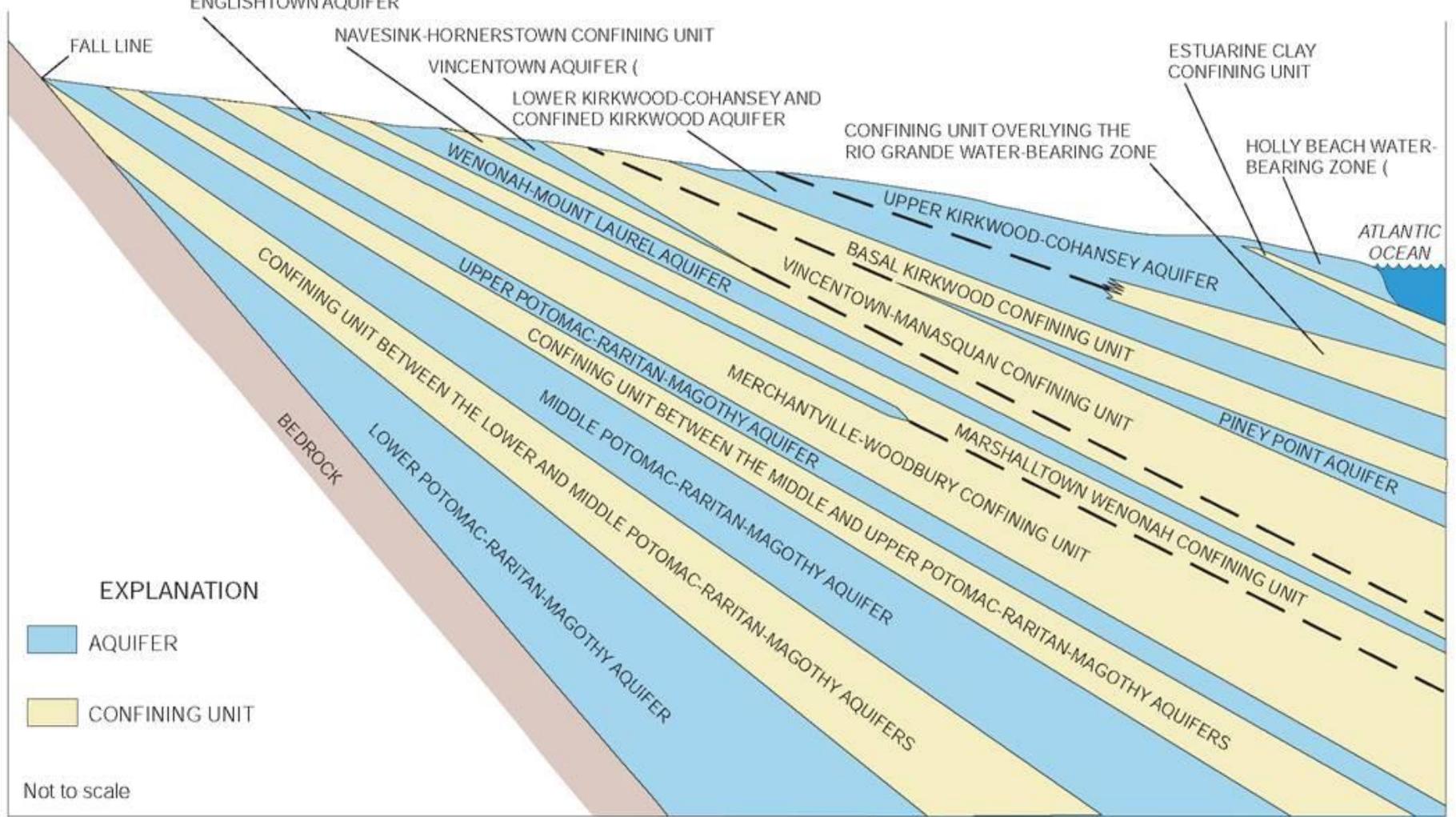
Presented to an advisory committee of the DRBC on June 20, 2019.
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without permission of DRBC.

NJ Critical Areas
&
Delaware Basin
&
Pinelands



NORTHWEST

SOUTHEAST



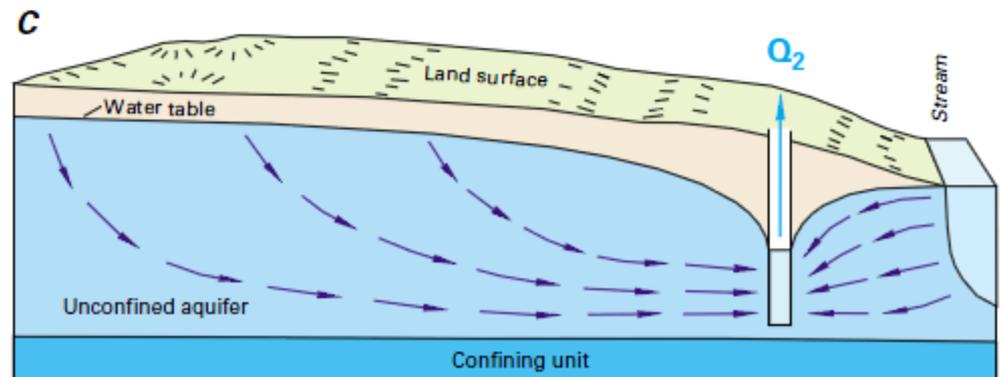
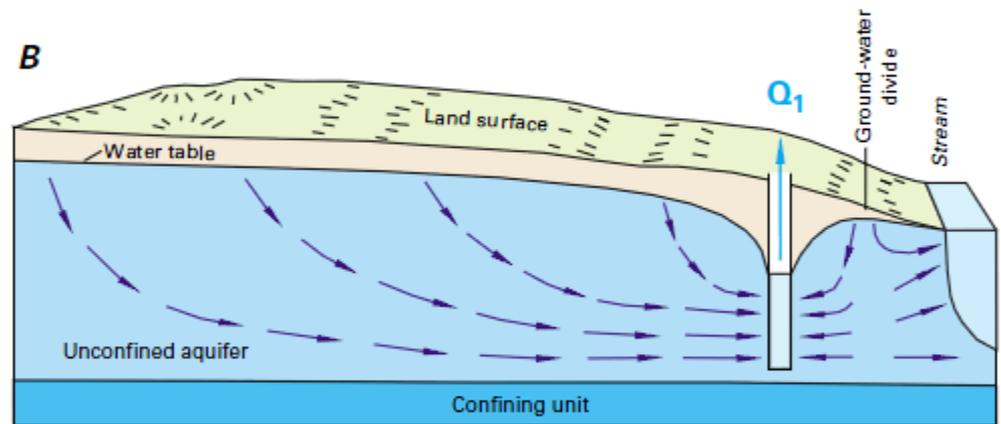
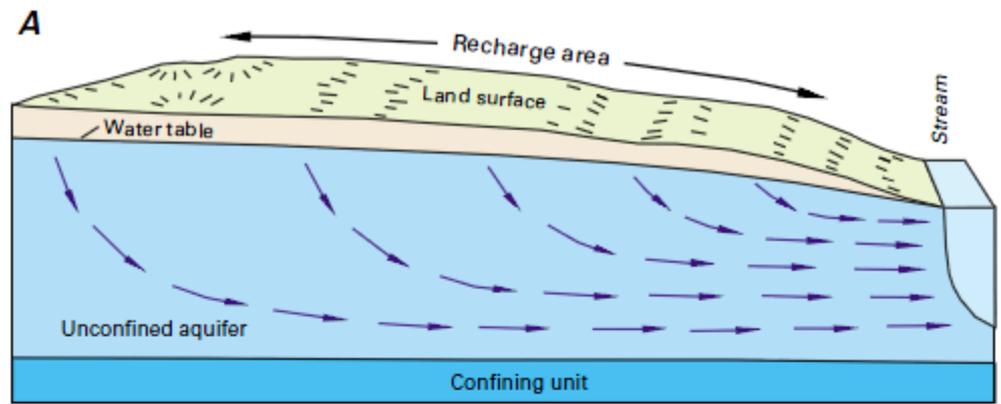
EXPLANATION

AQUIFER

CONFINING UNIT

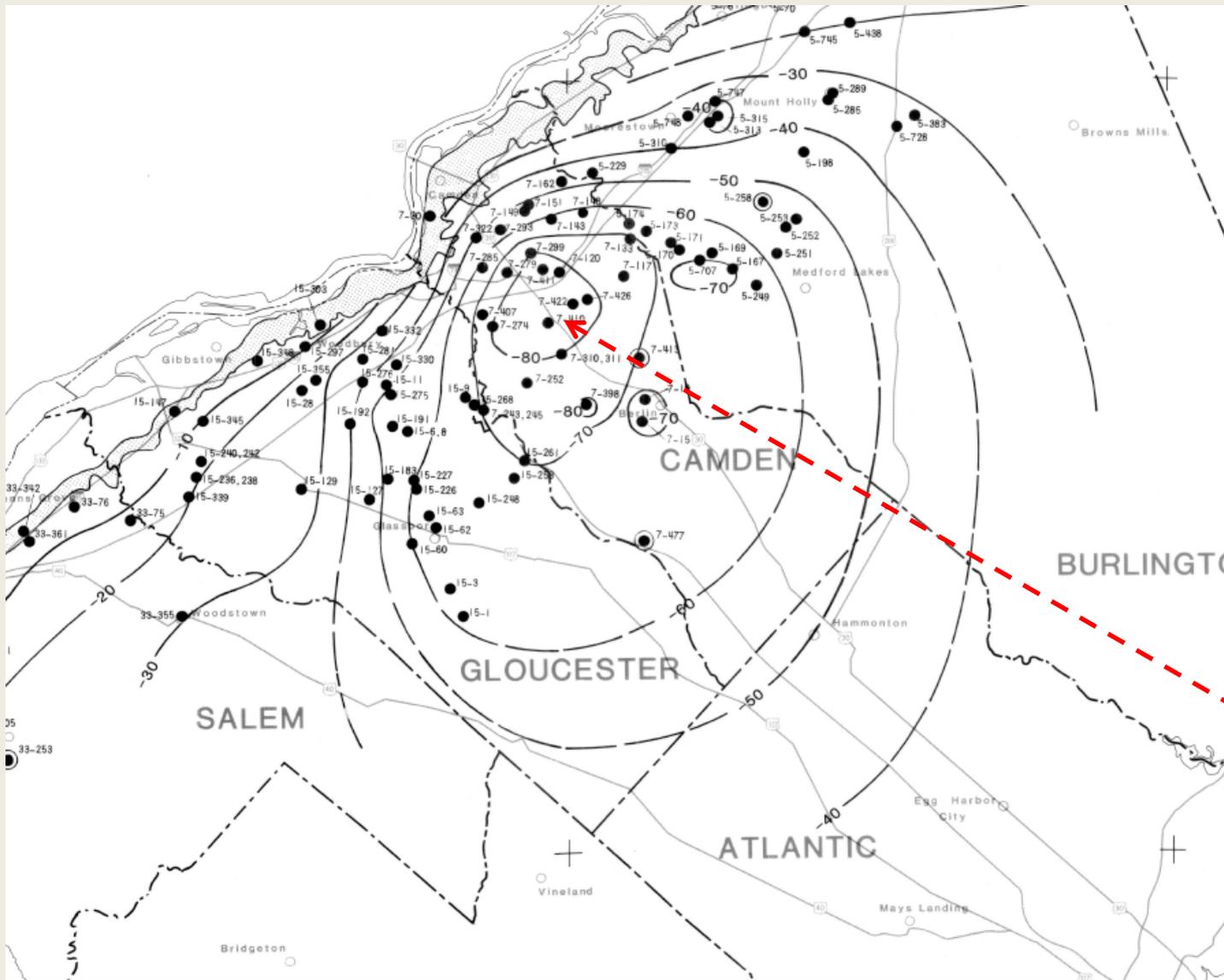
Not to scale

- Withdrawals create drawdown.
- Cannot withdraw water without drawdowns.
- Drawdowns pull in water.



Water Levels from USGS Synoptics

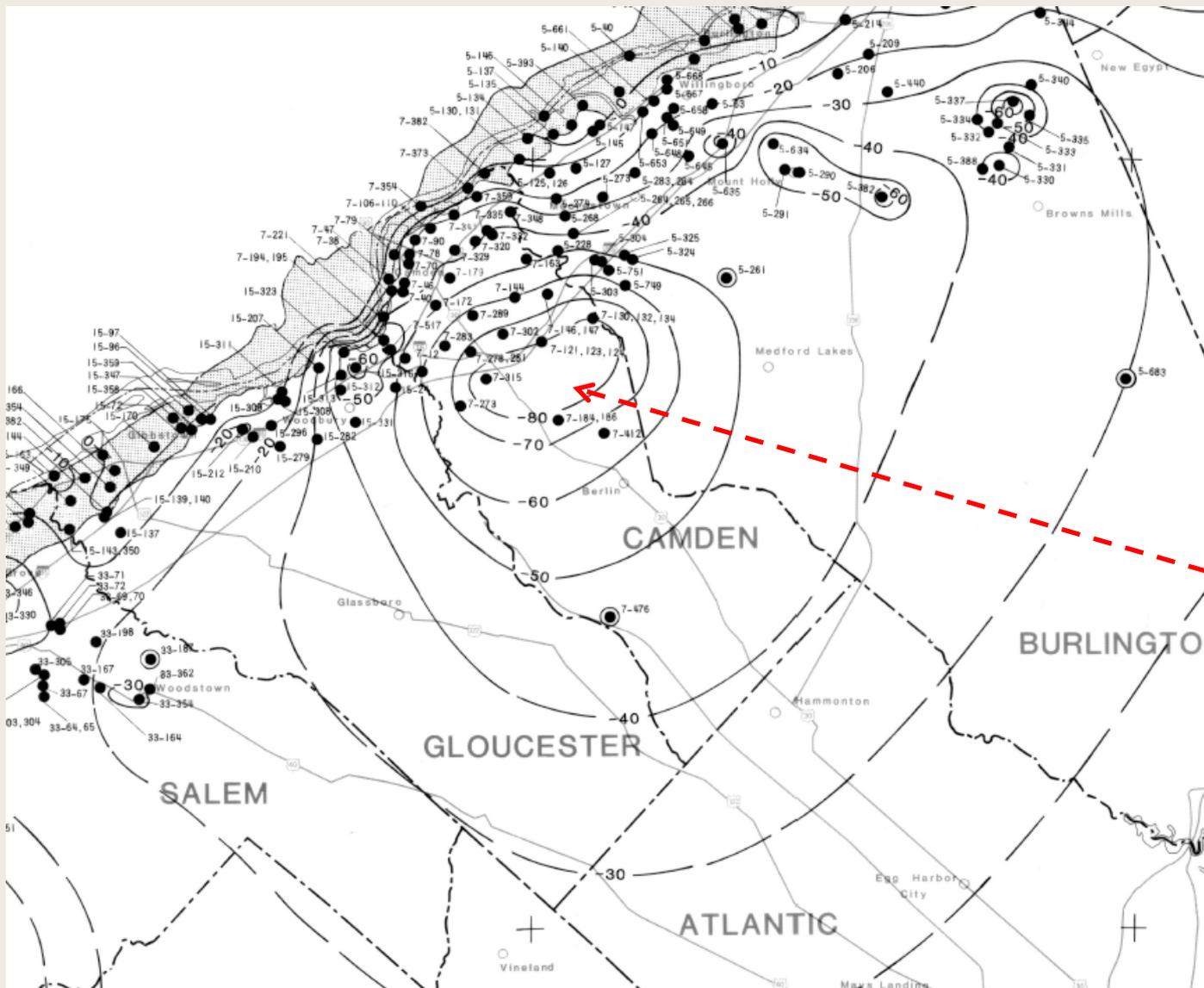
- Systematic measurements
- Snapshot of groundwater levels NJ coastal plain
- Every 5 years since 1978
- Basis for many NJDEP decisions



Magothy
1978

<-80'

Walker, 1983



Raritan, Potomac 1978

<-80'

WATER SUPPLY MANAGEMENT ACT

The Legislature finds and declares that the water resources of the State are public assets ...

that ownership of these assets is in the State as trustee of the people; ...

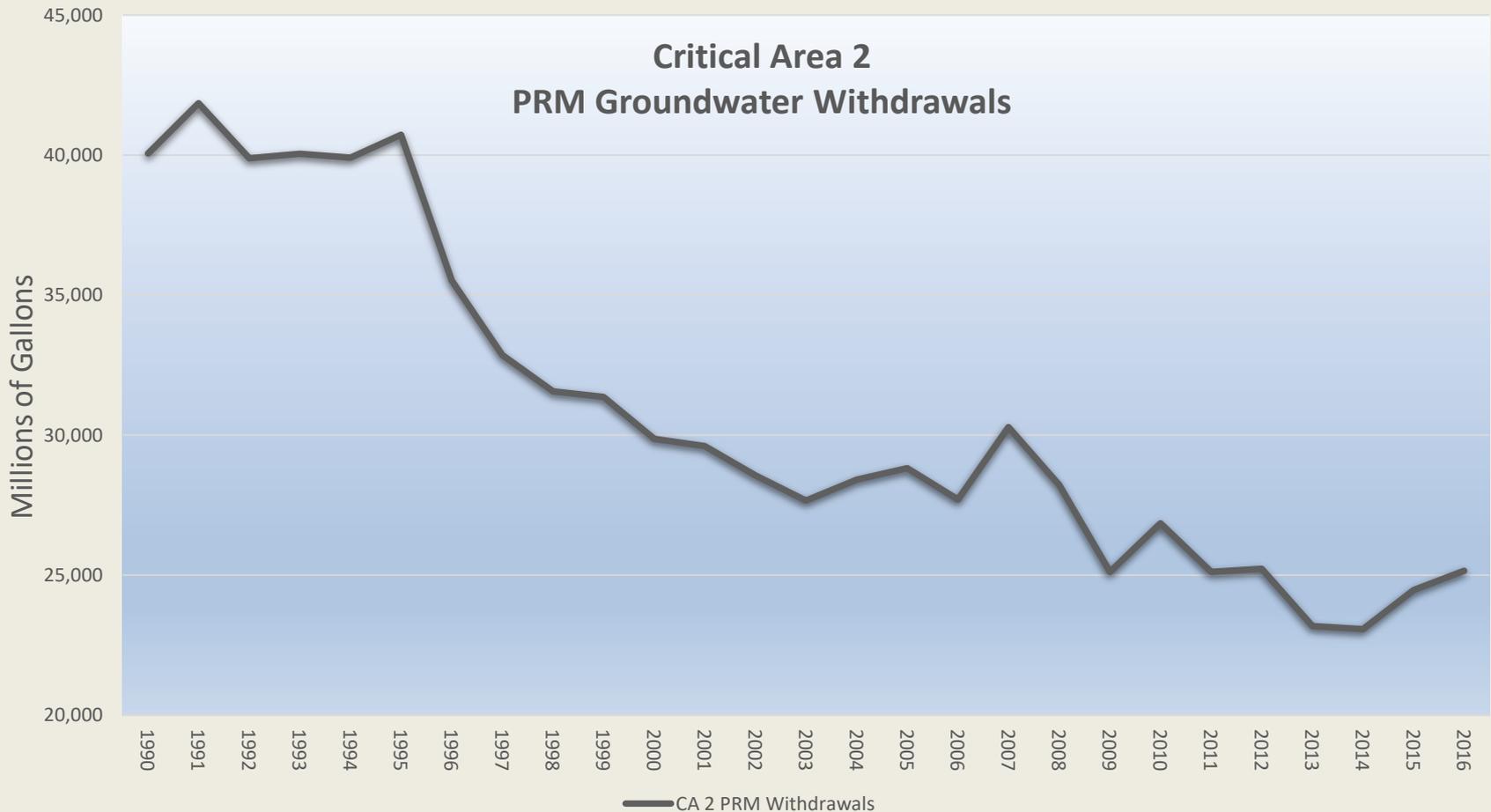
the water resources of the State and any water brought into the State must be planned for and managed as a common resource ...

Critical Area Implementation

- Defined and delineated depleted zone and threatened margin of CA aquifers.
- Reductions in allocations were ordered
 - Reductions in pumping
 - Reduce threat of saltwater intrusion
- Allocation reductions phased in as alternate water sources became available.
 - NJAW Tri County Pipeline 1998

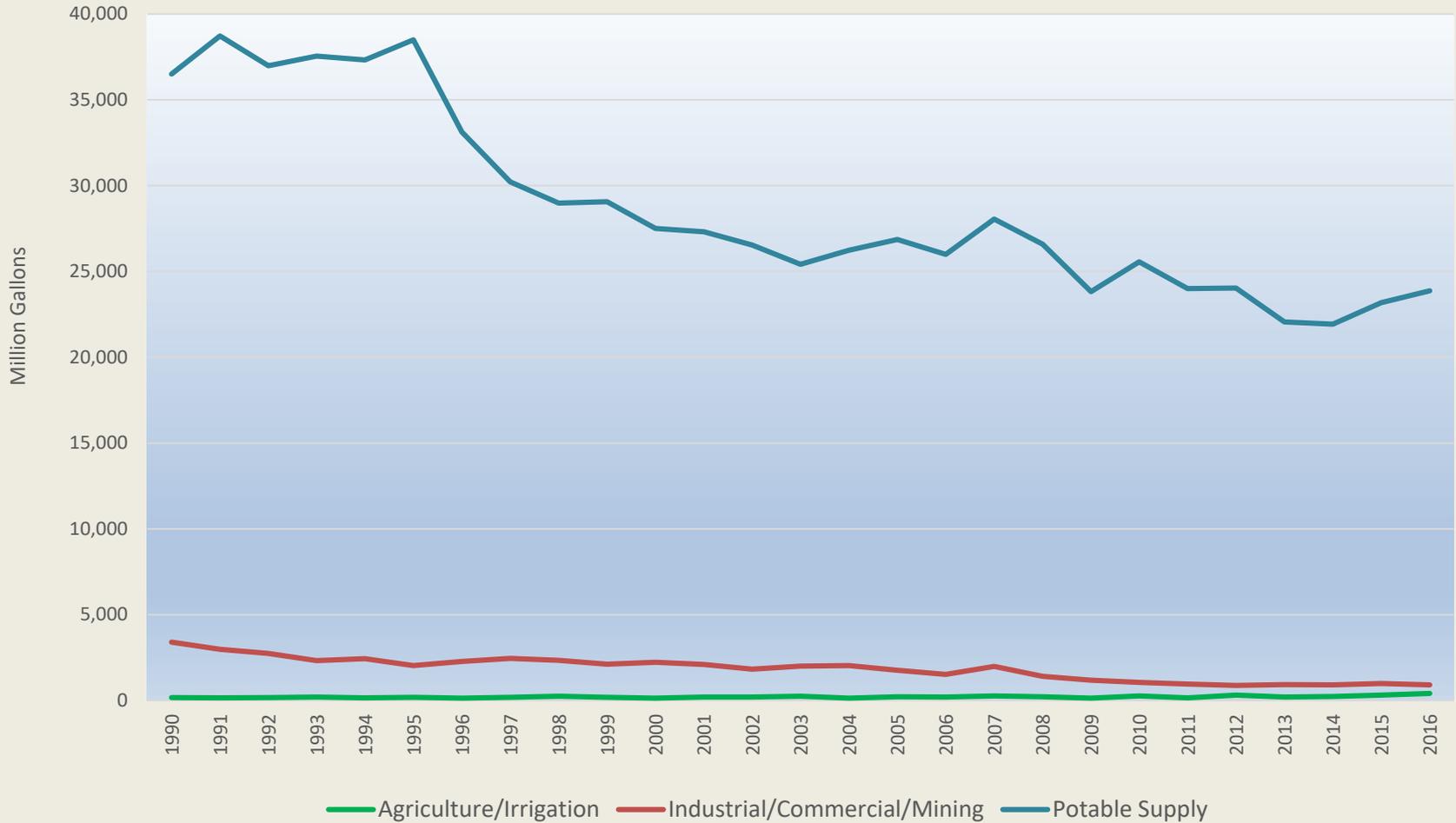
CA2 reductions starting in 1998

NJ American Water Delran Intake and Tri-County pipeline came online



<https://www.nj.gov/dep/njgs/geodata/dgs10-3.htm>

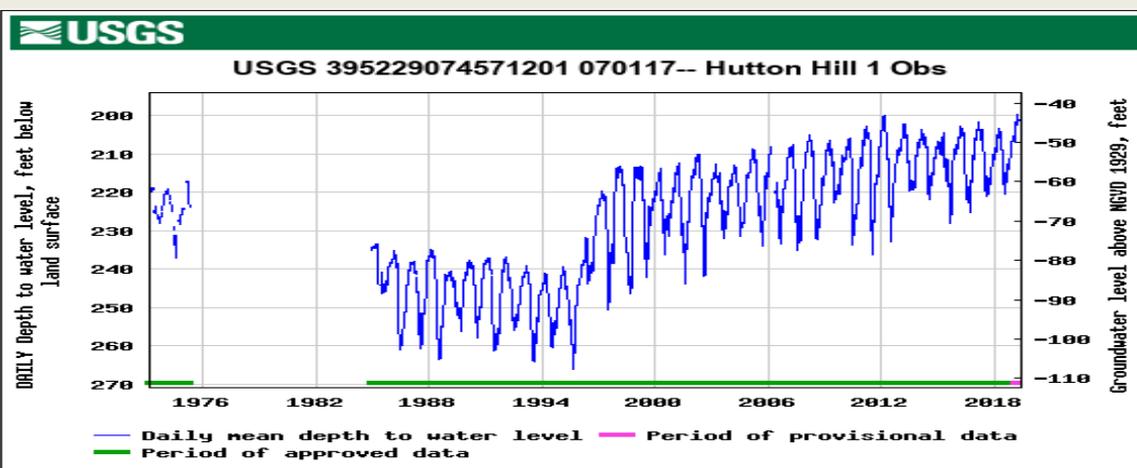
Critical Area 2 Withdrawals by Use Group



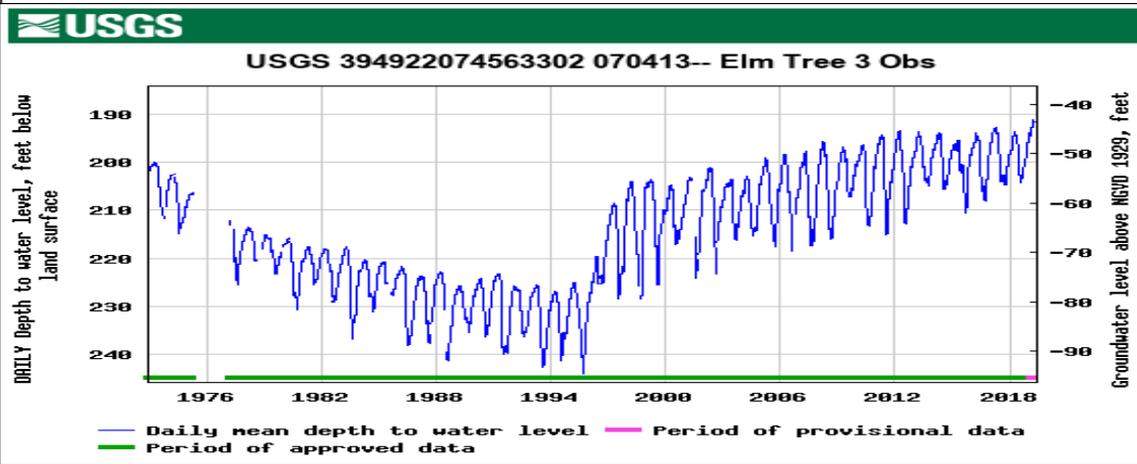
<https://www.nj.gov/dep/njgs/geodata/dgs10-3.htm>

CA2 Groundwater Levels

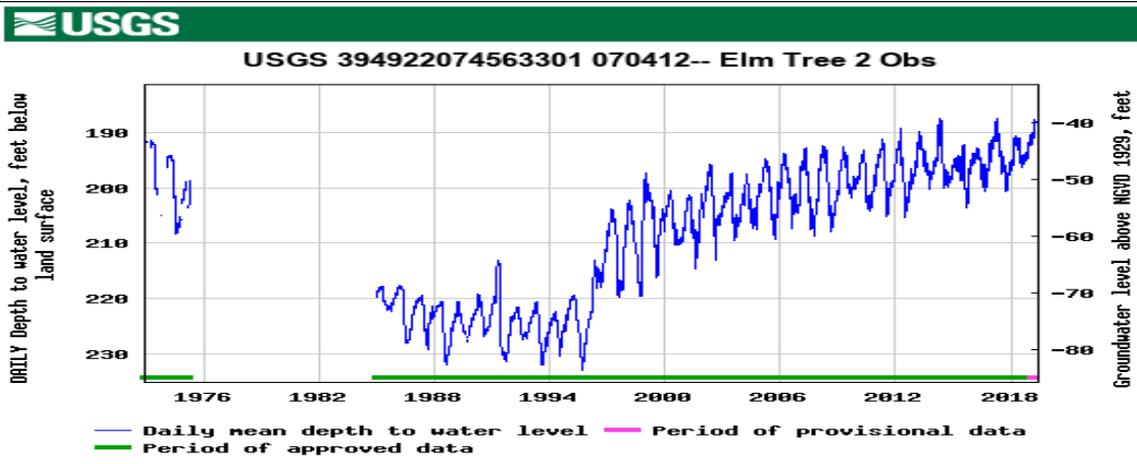
Hutton Hill 1
Camden Co
Upper PRM



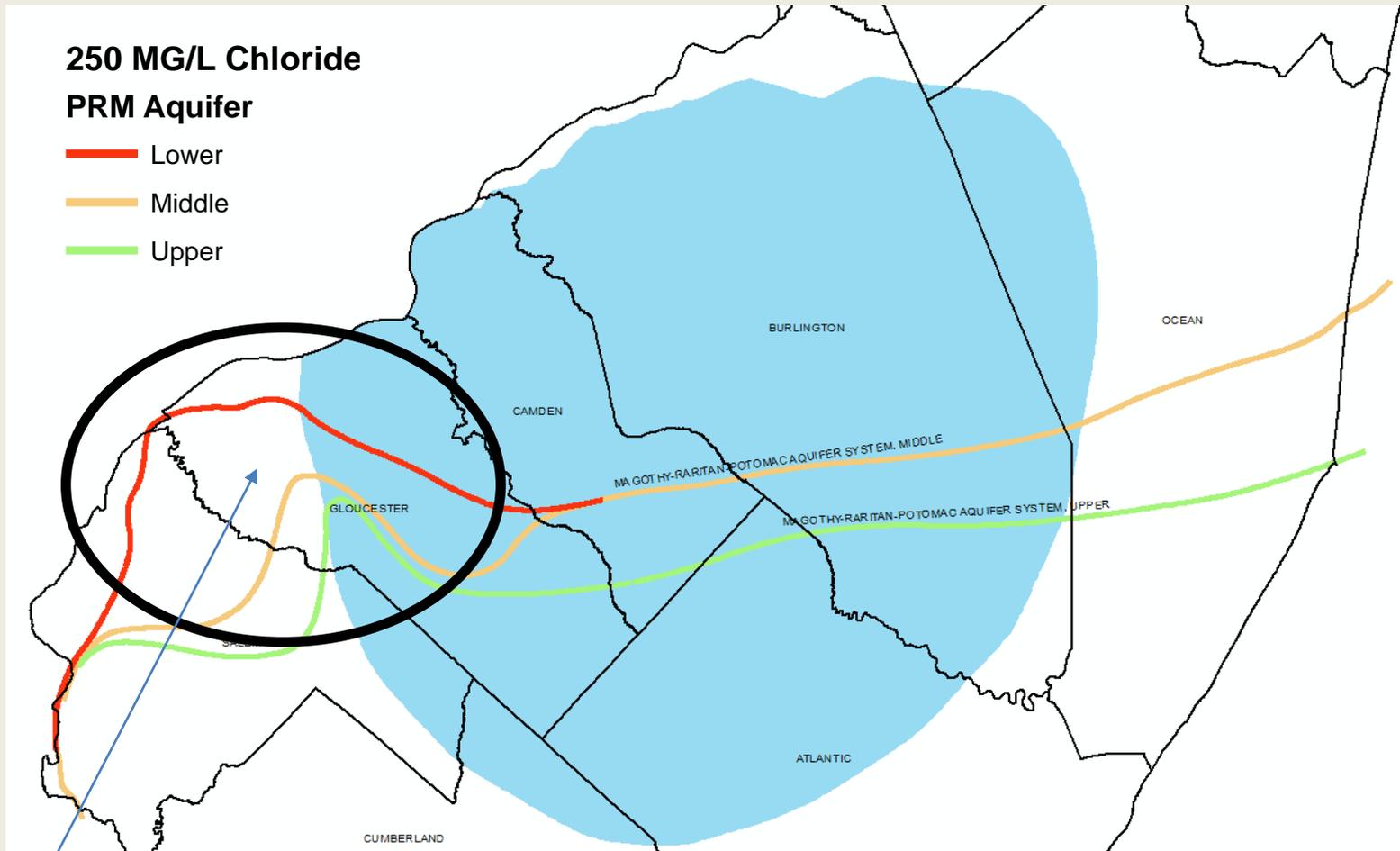
Elm Tree 3
Camden Co
Middle PRM



Elm Tree 2
Camden Co
Lower PRM



250 MG/L Chloride



-Future water-supply in the southwestern portion of CA2 and the Delaware Bay region are constrained by the presence of the saltwater front that bulges nearly to the Delaware River in Gloucester County. GW flow in this region is to the NE, under the influence of the regional cone of depression in the aquifer in Camden County.

New Jersey Water Supply Plan 2017-2022

- The Critical Area Management Plan implemented in 1991 and still in progress, has achieved significant reductions in withdrawals from the PRM aquifer. Declining withdrawals coupled with conservation measure and regional water supply alternatives have greatly increased the aquifers water levels.
- In the unconsolidated and middle portions of the PRM aquifer in Burlington and Camden counties, water levels have shown recoveries of nearly 50% of the pre-1970 levels.