Groundwater Permits

Presented to
Hampton Roads Planning District Commission
October 16, 2014

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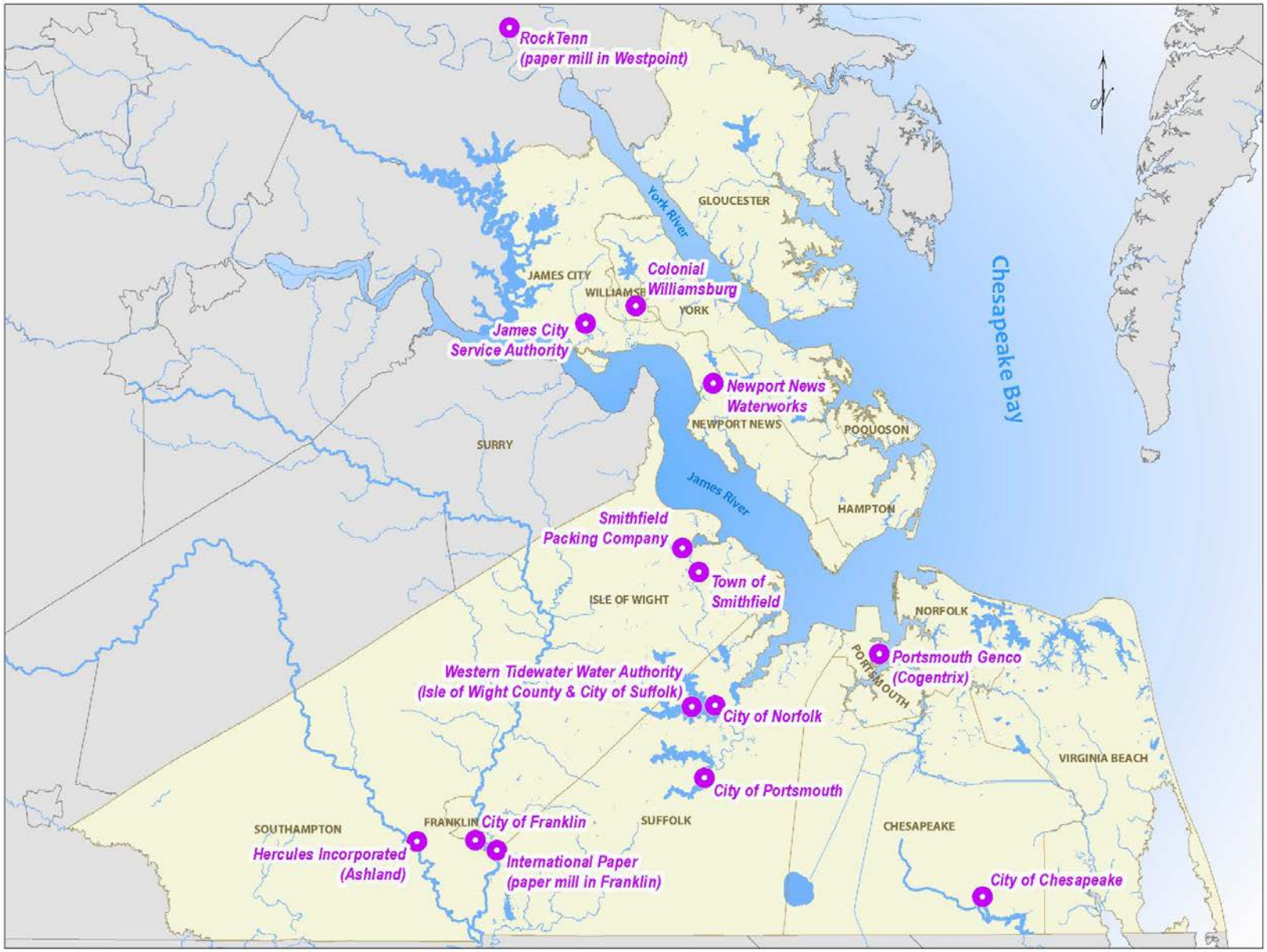
Principal Water Resources Engineer

Agenda Item #6

Who are largest groundwater users?



Why is DEQ proposing cuts?

- Declining water levels
- Land subsidence and loss of storage
- Reversal of groundwater flow leads to salt water intrusion

Supporting Data & Authority

Model simulations, measurements, and regulations

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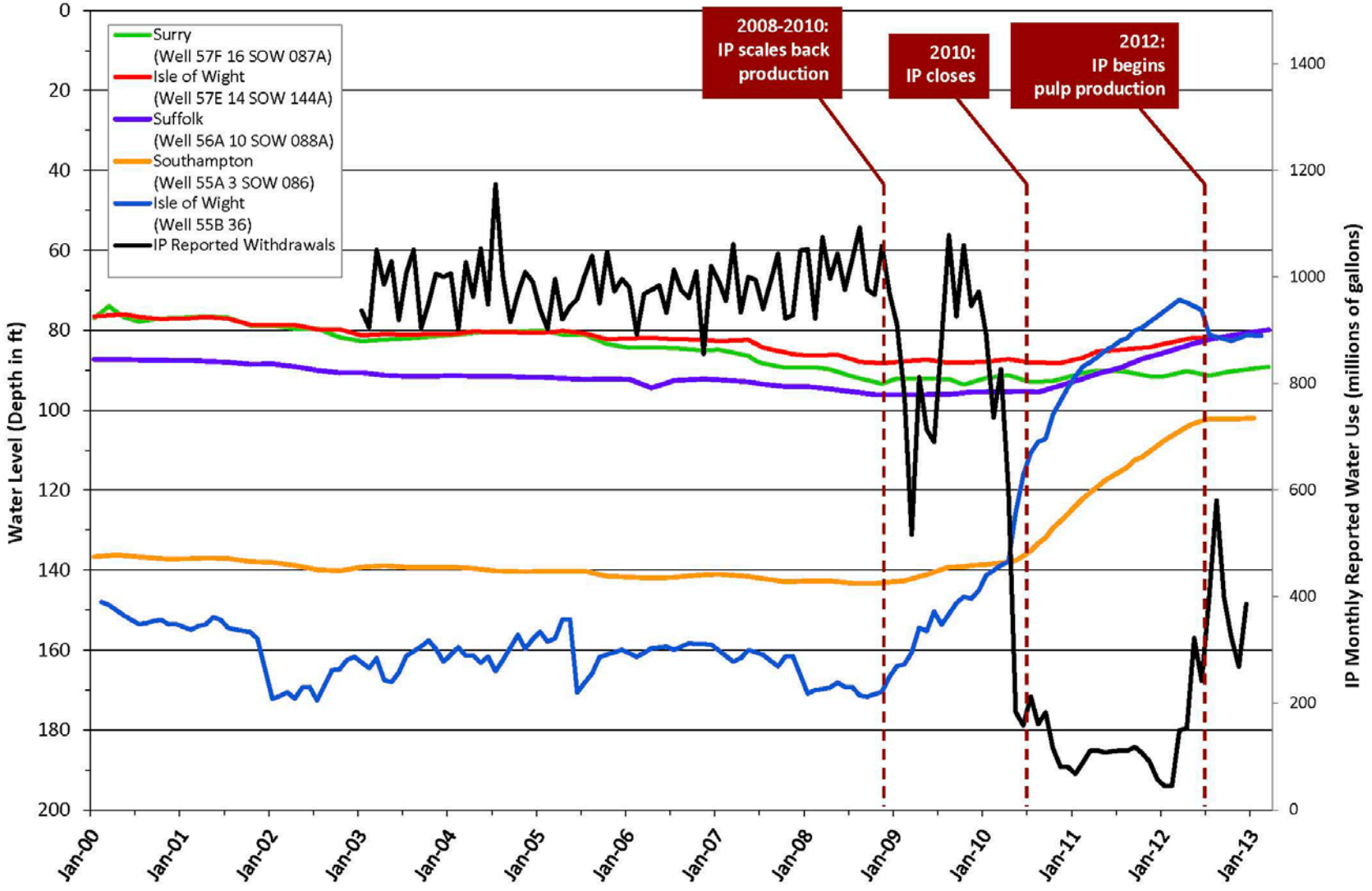
Did previous IP reductions fix the problem?



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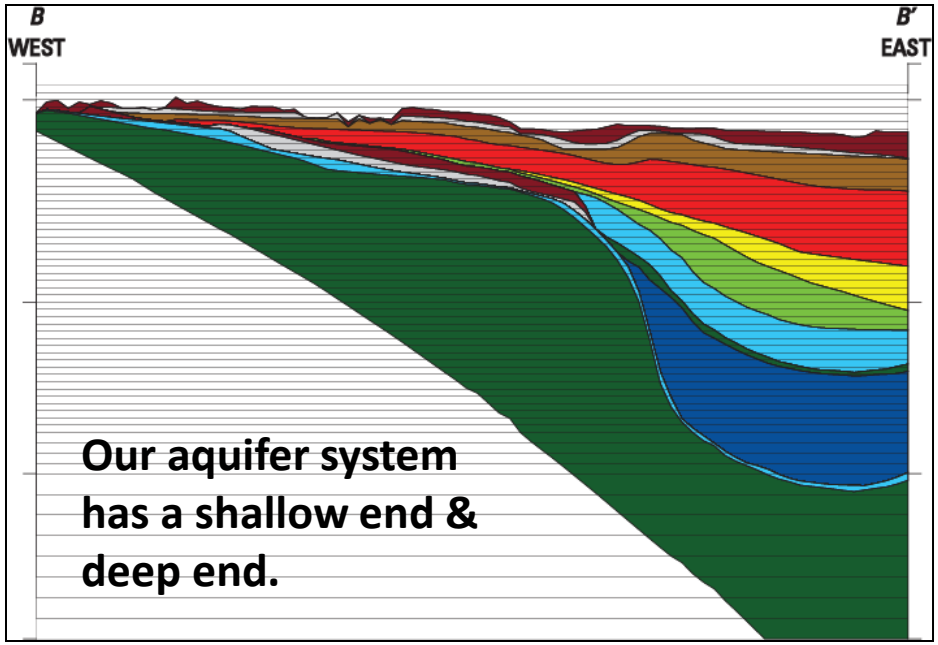
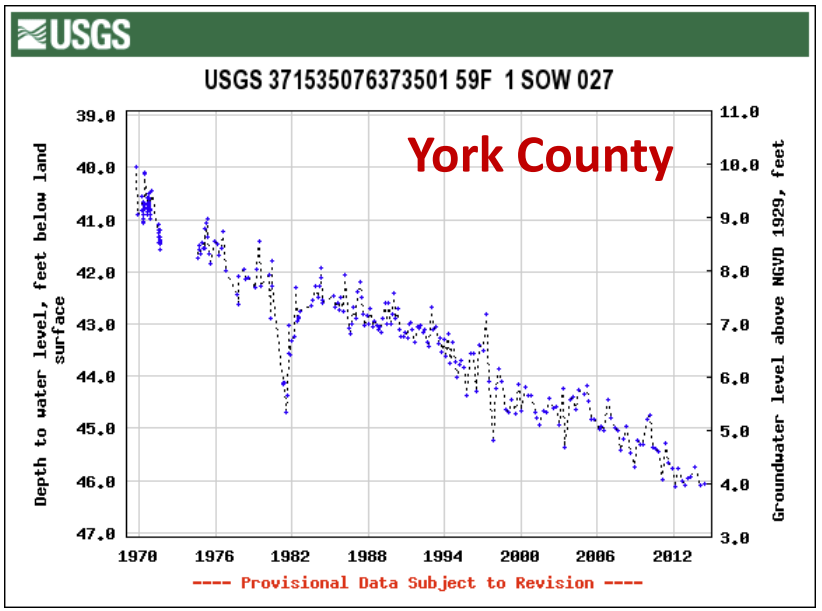
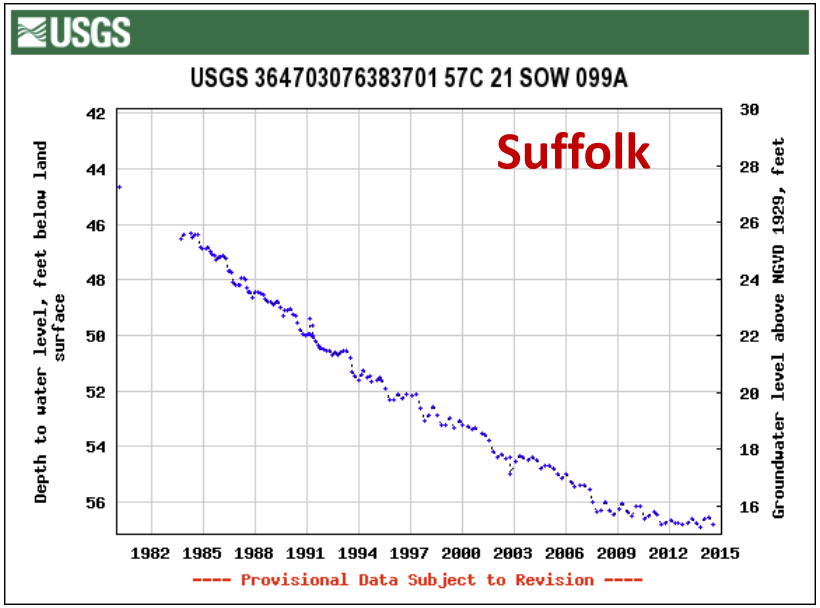
Declining Water Levels?







Monitoring data from wells in a Shallow Aquifer – Piney Point

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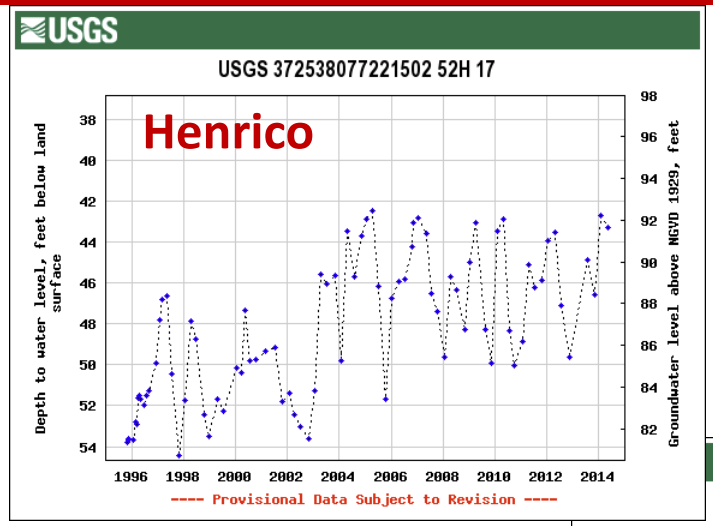
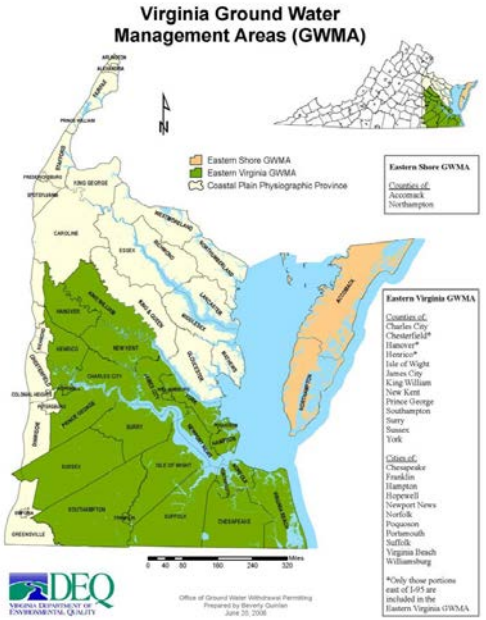
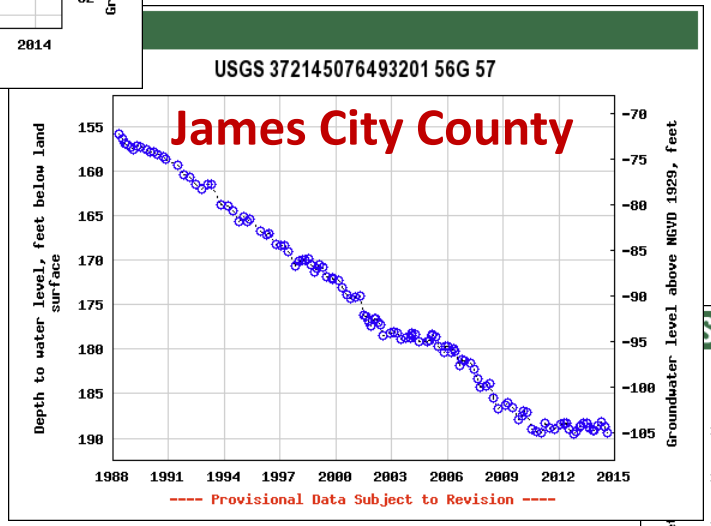
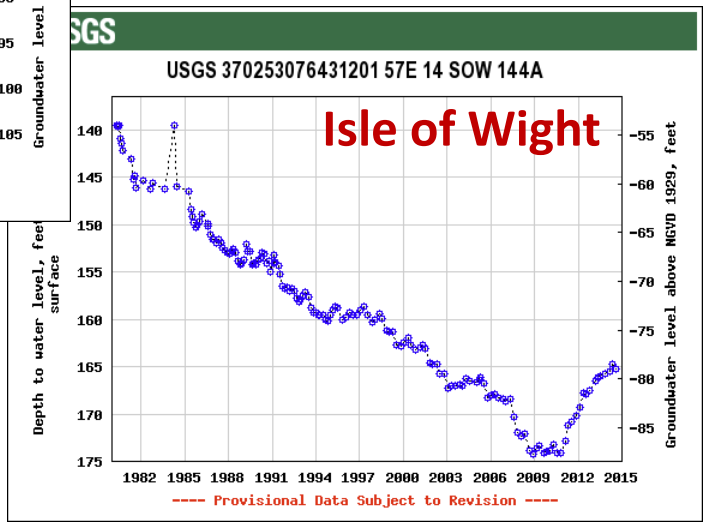
Declining Water Levels?







Monitoring data from wells in the Deep Aquifer - Potomac



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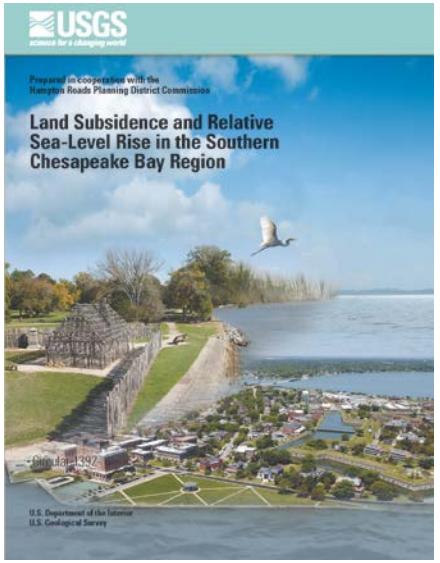
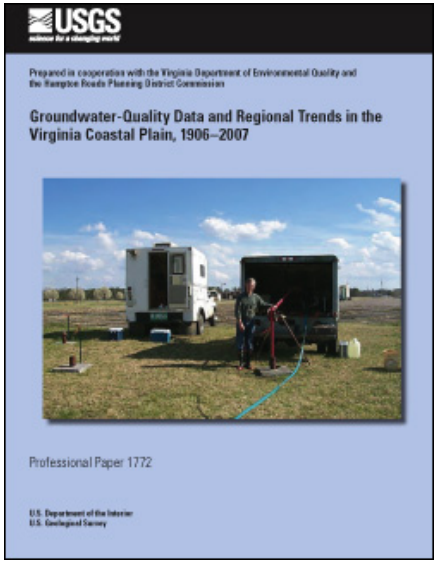
Data or Legal requirement to support cuts?

- Model and measurements support concerns for declining water levels.
- No model projections and less data to support subsidence and saltwater intrusion concerns.
- Regulations give DEQ authority to manage resource based on these concerns.





Significant Cuts?

Permit Holder	Current Withdrawal (MGD)	Permitted Withdrawal (MGD)	DEQ Requested Target (MGD)	Percent Cut below Current Use	Percent Cut below Permit
RockTenn - West Point Mill	20.09	23.03	9.0 – 10.0	55-50%	61-57%
James City Service Authority	5.41	8.83	3.0 - 4.0	45-26%	66-57%
Colonial Williamsburg	1.4	1.84	1.2	14%	35%
Portsmouth Genco (Cogentrix)	0.18	2.6	1.0 – 1.2	12-0%	62-54%
City of Portsmouth	2.91	15.42	3.49	0%	77%
City of Chesapeake	3.5	11	3.5	0%	68%
Town of Franklin	0.93	2.88	.93 – 1.3	0%	68-55%
International Paper – Franklin Mill	9.08	20.61	10.0 – 12.0	0%	51-42%
Western Tidewater Water Authority (Suffolk & Isle of Wight)	3.51	8.34	3.5 – 3.9	0%	58-53%
Newport News Waterworks	1.53	3.44	1.53	0%	56%
Hercules Incorporated (Ashland)	2.74	6.67	3	0%	55%
City of Norfolk	0.06	3.74	3.74	0%	0%
Smithfield Packing Company, Inc.	1.65	2.6	2.6	0%	0%
Town of Smithfield	0.86	1.27	1.27	0%	0%

Most public water systems also have surface water supply. Chart only shows groundwater.

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Alternate Water Sources

Optimize Surface Water in Region

Desalination of Surface Water

Alternate Water Sources

Wastewater Reuse

Rainwater Harvesting

Issues

- Alternatives are expensive.
- New permits are uncertain.
- No remedy for costs sunk into groundwater infrastructure that would no longer be used if we switch sources.

Timeline

Permitting Process

Follow-up meetings with each permit holder

Oct/Nov 2014

Finalize new permits

Sept 2015

Permit Term

Partial reductions in withdrawals

2017-2018

Full reductions to meet targets

Sept 2025

Related Studies underway:

- Economic Impact Analysis of groundwater cuts
- State Water Supply Plan

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Recommended Actions

Authorize the HRPDC chairman to send a letter to David Paylor, Director of DEQ, asking him to:

1. Continue to coordinate closely with HRPDC and its member localities,
2. Allow HRPDC and its localities sufficient time to consider the impacts of DEQ's proposed permit reductions on the regional water supply, and
3. Work with HRPDC and its member localities to gain regional support for a long-term solution.

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