

Regulatory Impediments to CFPUA Water Supply Sustainability and Resilience



Environmental Management Commission
Water Allocation Committee
September 9, 2015



Guiding Principles and Mission

CFPUA Guiding Principles

- Stewardship
- Sustainability
- Service

CFPUA Mission Statement

To provide high-quality service in an environmentally responsible manner while maintaining the lowest practical cost.

Stewardship – Sustainability - Service

Challenge: Secure Cost Effective Water Supplies for a Growing Population

POPULATION FORECASTS FOR SUB-AREAS OF REGION

FIGURE 2.5

Population	2010	2040	
	Base	Low Growth	High Growth
New Hanover County	202,667	249,026	337,054
Unincorporated	85,973	105,639	152,157
Wilmington	106,476	130,832	167,904
Beach Towns	10,218	12,555	16,993
Brunswick County	107,431	212,355	234,833
Leland	13,672	27,025	44,886
Other Brunswick	93,759	185,330	189,947
Pender County	52,217	90,261	115,742
Southeast Pender	21,190	42,423	60,186
Other Pender	31,027	47,838	55,556
3-County Region	362,315	551,642	687,629

Source: NHC Comprehensive Plan 2014 Existing Conditions Report

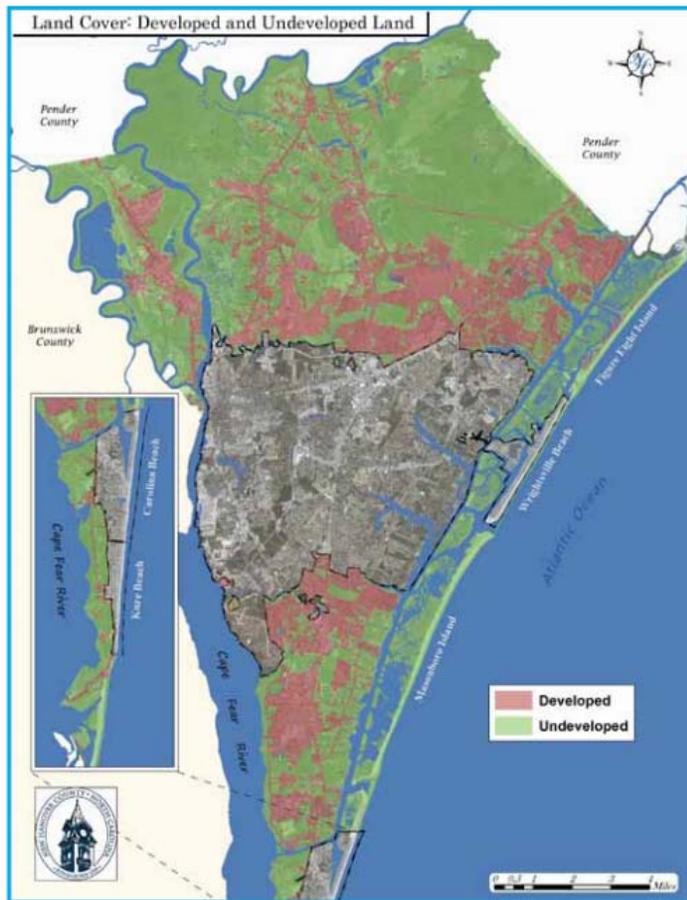
Regional Challenge:

- New Hanover County
- Brunswick County
- Pender County

All projected to grow.

All depend on the same river and aquifers for water supply.

NHC Growth Projections



Source: NHC Comprehensive Plan 2014 Existing Conditions Report

NHC Comprehensive Plan 2014:

NHC Population Growth Projections:

- from 203,000 in 2010
- to 337,000 in 2040
- 66% in 30 years.

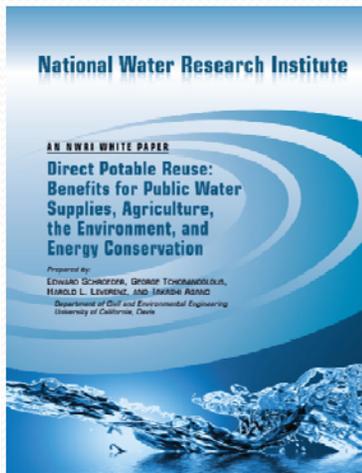
True? Who has a crystal ball?

Planning for water supply sustainability and resilience is essential for our community.

CFPUA Supply vs Demand

Year	2014	2020	2030	2040
Supply (Surface Water & Ground Water)	61.494 MGD	62.152	62.152	62.152
Demand	19.483 MGD	21.509	24.583	28.102
Percentage	32%	35%	40%	45%

CFPUA Water Supply Resources Planning



- **Surface Water Withdrawals**
- **Groundwater Withdrawals**
- **Aquifer Storage and Recovery**
- **Direct Potable Reuse**
- **Conservation**

Surface Water: Resource and Impediments



Resource:

Lower Cape Fear River

- 53.3 MGD Raw Water

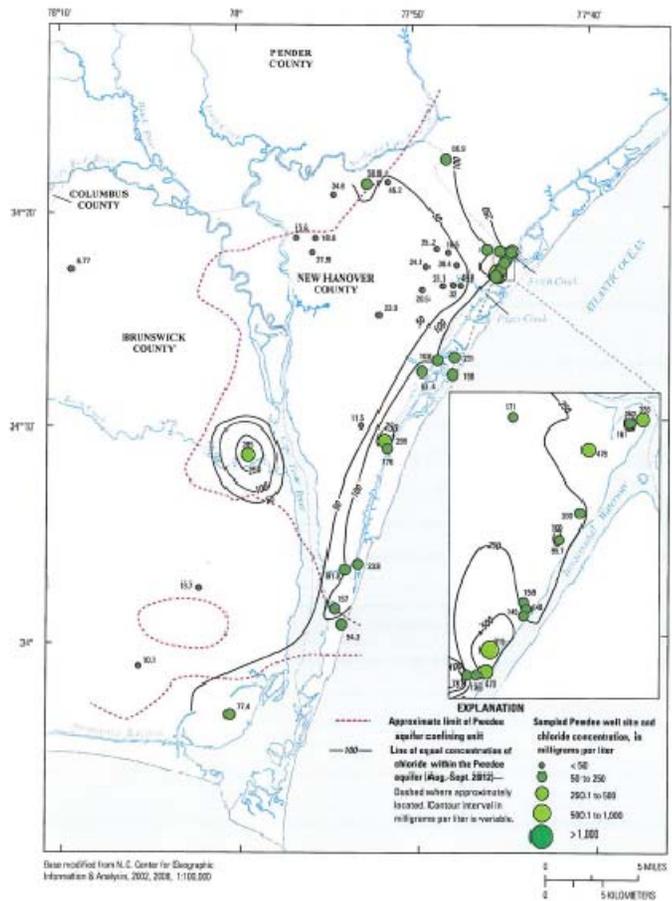
Threats:

- Upstream Withdrawals
- Lower Natural Flows

Regulatory Impediments:

- No Allocation Permitting
- No Permit, No Security

Groundwater: Resource and Impediments



Resources:

- Castle Hayne Aquifer
- Peedee Aquifer

Threats:

- Aquifer Depletion
- Salt Water Intrusion

Regulatory Impediments:

- No Capacity Use Area
- No Permit, No Security

Source: USGS Hydrogeology, Hydraulic Characteristics, and water-Quality Conditions in the Surficial, Castle Hayne, and Peedee Aquifers of NHC, NC

ASR: Resource and Impediments



Resource:

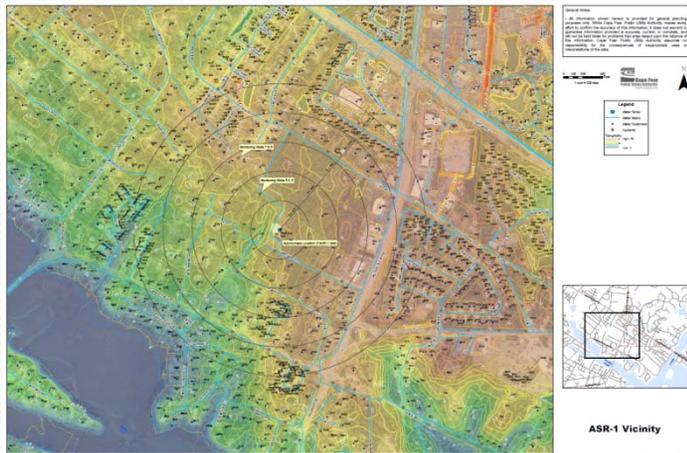
- Stores Surface Water in Aquifer
- Treats Disinfection Byproducts
- Shaves Peak Demands

Threats:

- Homeowner Irrigation Wells
- Time to Permit and Operate

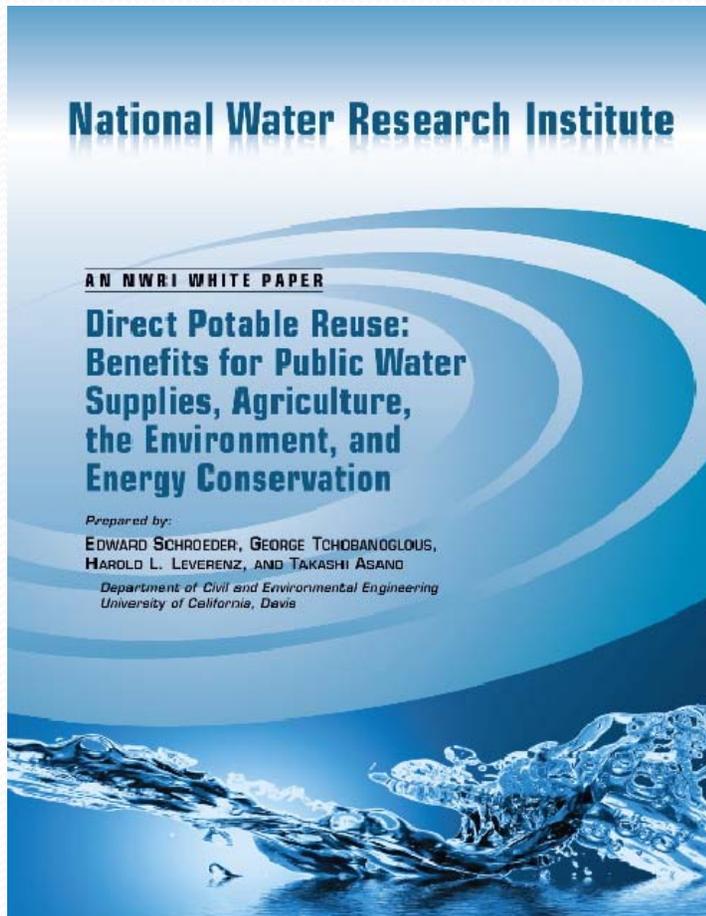
Regulatory Impediments:

- No ASR Protection Zone
- Lack of Familiarity



Source: USGS Hydrogeology, Hydraulic Characteristics, and water-Quality Conditions in the Surficial, Castle Hayne, and Peedee Aquifers of NHC, NC

Direct Reuse: Resource and Impediments



Source: NWRI

Resource:

Northside WWTP Effluent

- 16 MGD Advanced WWTP
- 2 Miles from Water Plant

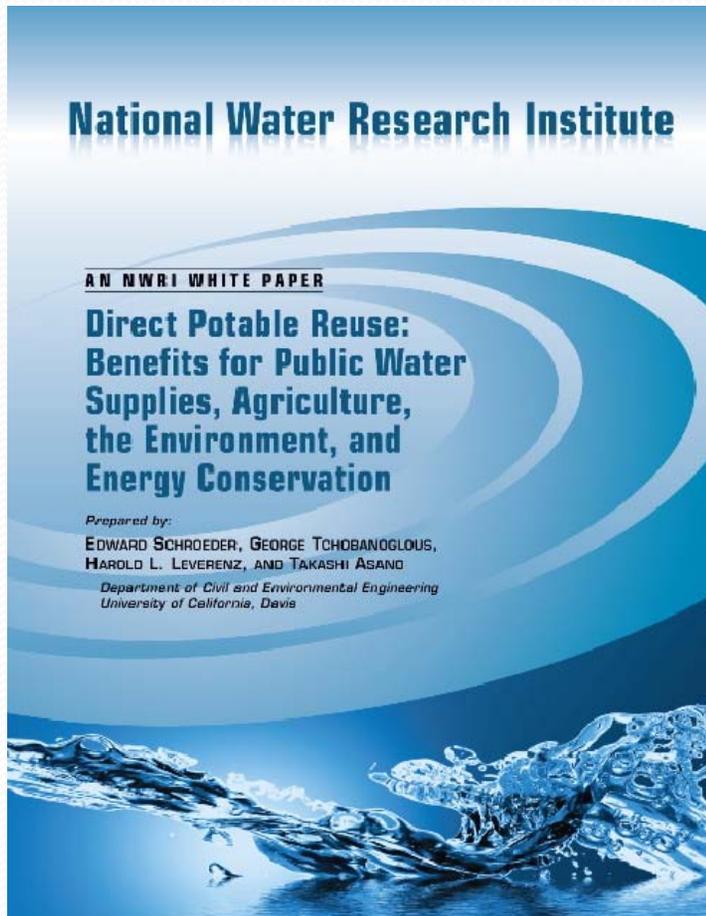
Threats

- Investment without Regulation
- Public Perception

Regulatory Impediments:

- No Clear Regulatory Path
- Permits Unattainable

Conservation: Resource and Impediments



Source: NWRI

Resource:

Conservation Behavior

- Household Fixture Efficiency
- Self Regulating Cost Avoidance

Impacts:

- Decreases Demand
- Loses Revenue
- Increases Prices

Regulatory Impediments:

- None



Requests to Remove Regulatory Impediments

Surface Water Withdrawals

- **Need Surface Water Allocation Permitting**

Groundwater Withdrawals

- **Need Coastal Capacity Use Area Permitting**

Aquifer Storage and Recovery

- **Need ASR Protection Zone from Incursion by Other Wells**

Direct Potable Reuse

- **Need Regulatory Path and Attainable Permits**

Conservation

- **Hope for the Best but Plan for the Worst**