New Jersey Water Supply Plan 2023 Update

Water Supply Advisory Council

November 17, 2023

What We'll Cover Today

- Overview of Water Supply Planning
- Public Engagement Process
- Water Use Essentials
- Plan Assessment Highlights
- Timing and Next Steps

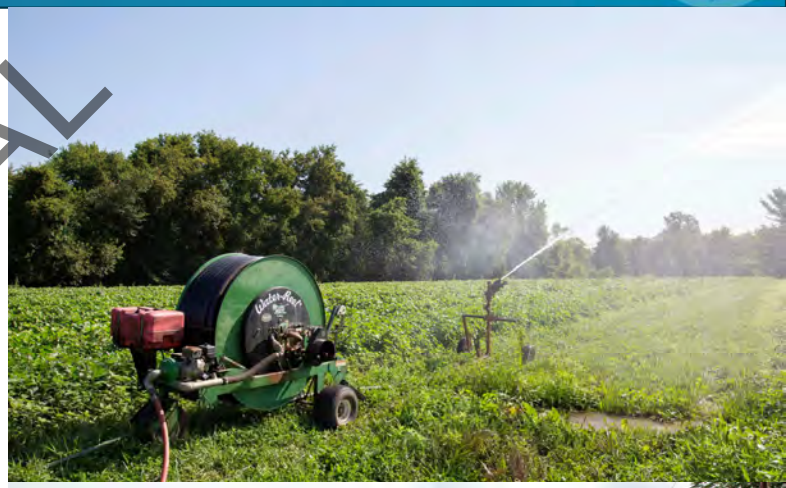
Note all data, figures and analyses are draft and may be revised for the final plan

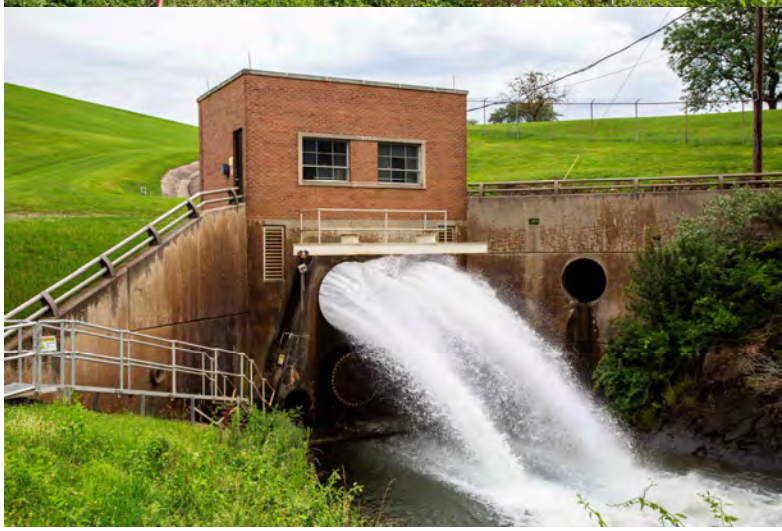
Water Supply Planning In NJ

- 1981 Water Supply Management Act
  - Develop and periodically update a WSP
  - Historically focused on quantity
- Engagement
  - Water Supply Advisory Council
  - Agency briefings
  - Stakeholder and public meetings
- 1982, 1996 and 2017 Plans
  - Numerous regional and statewide planning prior to 1982

2023 Water Supply Plan Overview

- 5-Year plan with 2050 planning horizon
- Addresses major comments on 2017 WSP
  - Lack of climate change evaluations
  - Limited public engagement and policy recommendations
- Major additions:
  - Climate change impacts to water availability
  - Safe drinking water assessment
  - Environmental Justice/Overburdened Community water supply impacts
  - 5 more years of data
- Rutgers University planning support





Chapter Outline- tentative

Executive Summary

Chapter 1: Introduction

Chapter 2: Statewide Water Availability

Chapter 3: Climate Change and Water Availability

Chapter 4: Statewide Water Demands and Balances

Chapter 5: Water Resource Protection and Planning Efforts

Chapter 6: Regional Planning for Deficit Mitigation and Avoidance

Chapter 7: Planning for an Uncertain Future

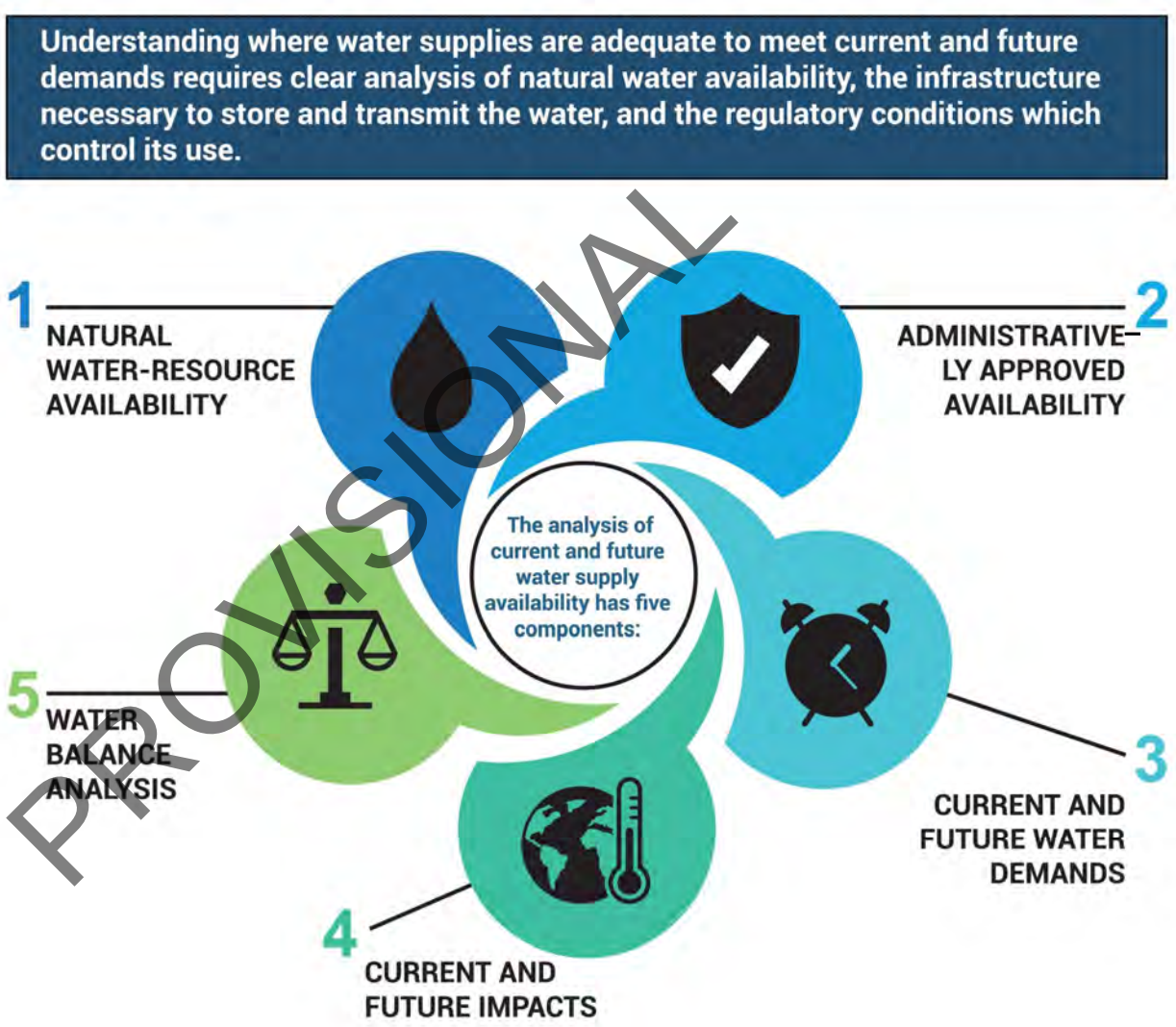
Chapter 8: Water Supply Action Plan

Technical Appendices (12)

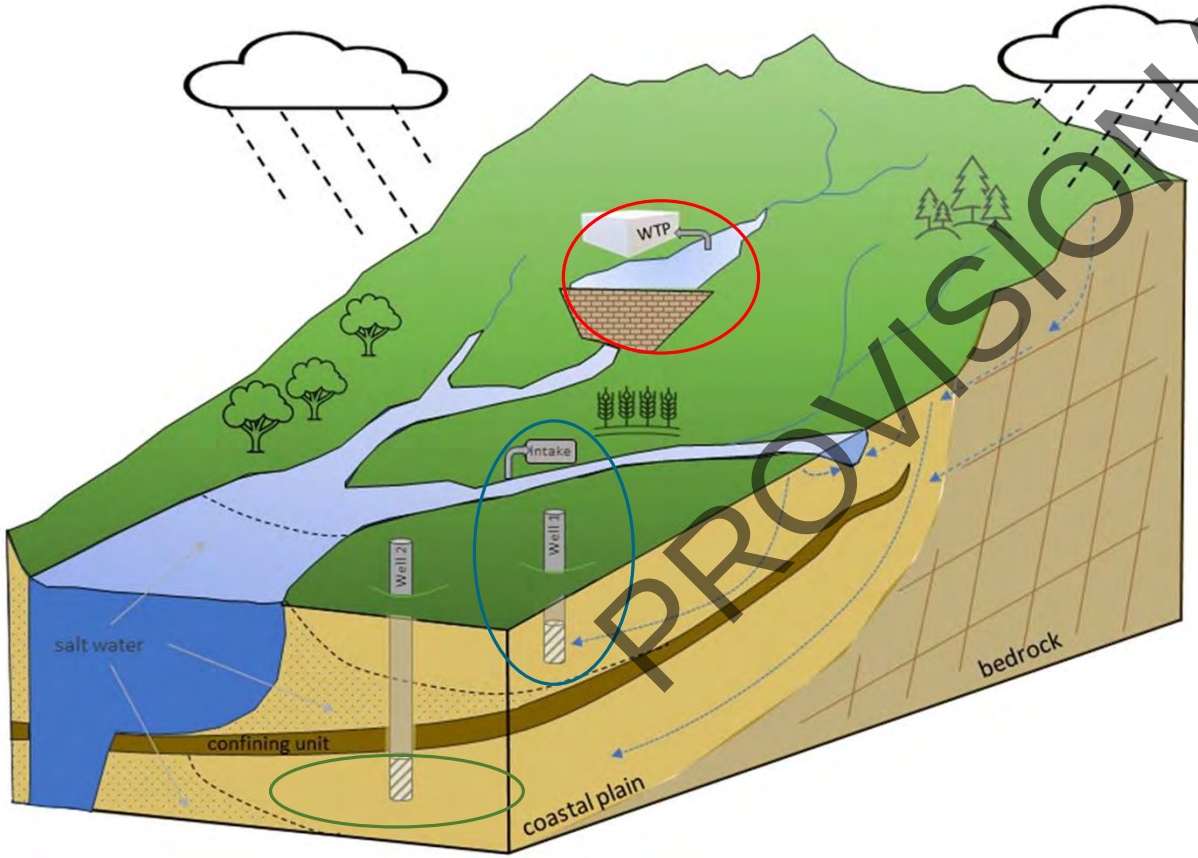
Public Engagement

- Water Supply Advisory Council
- Invited Stakeholders
- Website and email
  - www.dep.nj.gov/water-supply-plan/
  - watersupplyplan@dep.nj.gov
- Coming:
  - Draft Plan agency and public briefings
    - Response to comments
  - Final Plan release & implementation

Water Supply Assessment Process



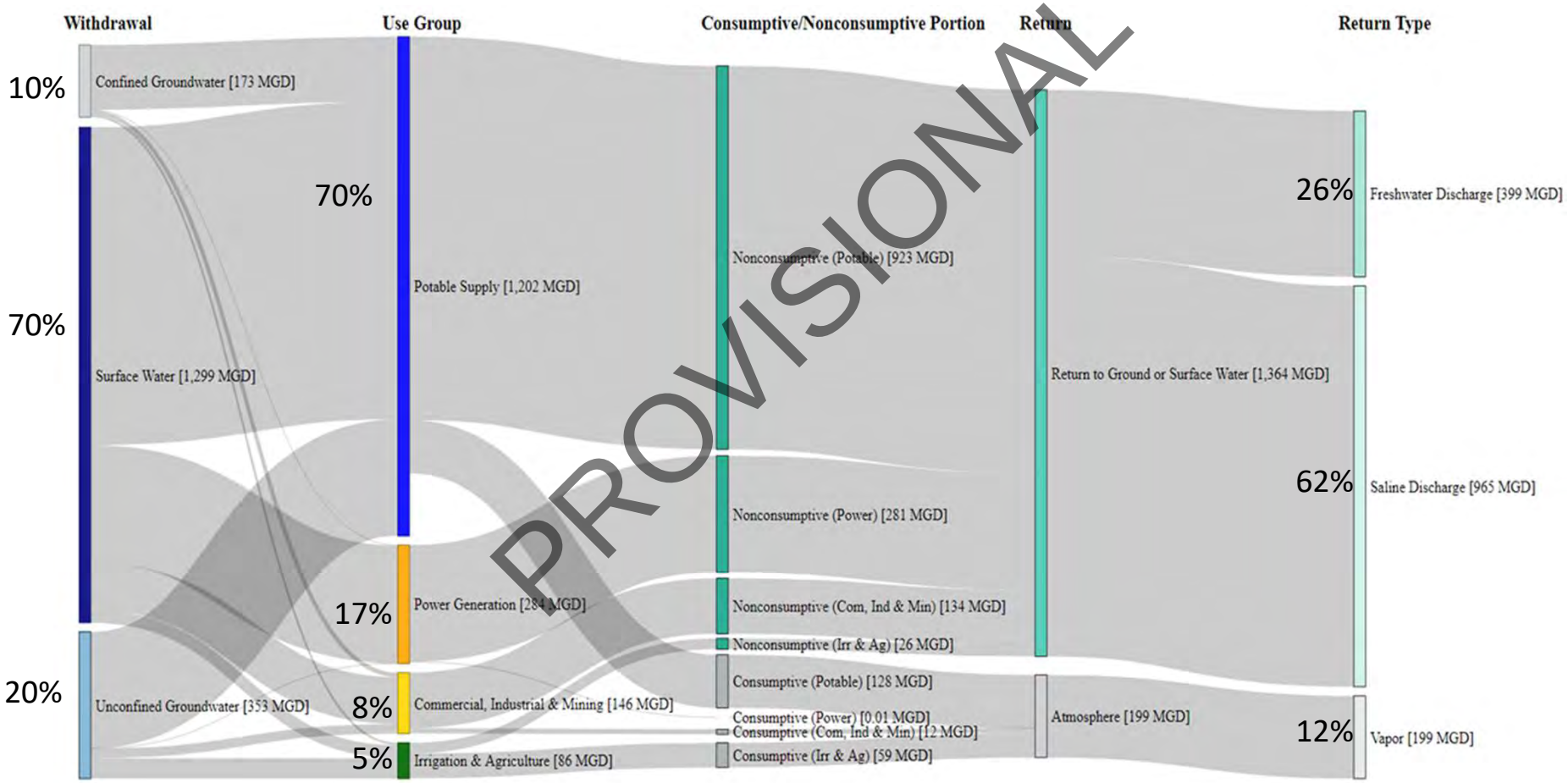
Natural Resource Availability



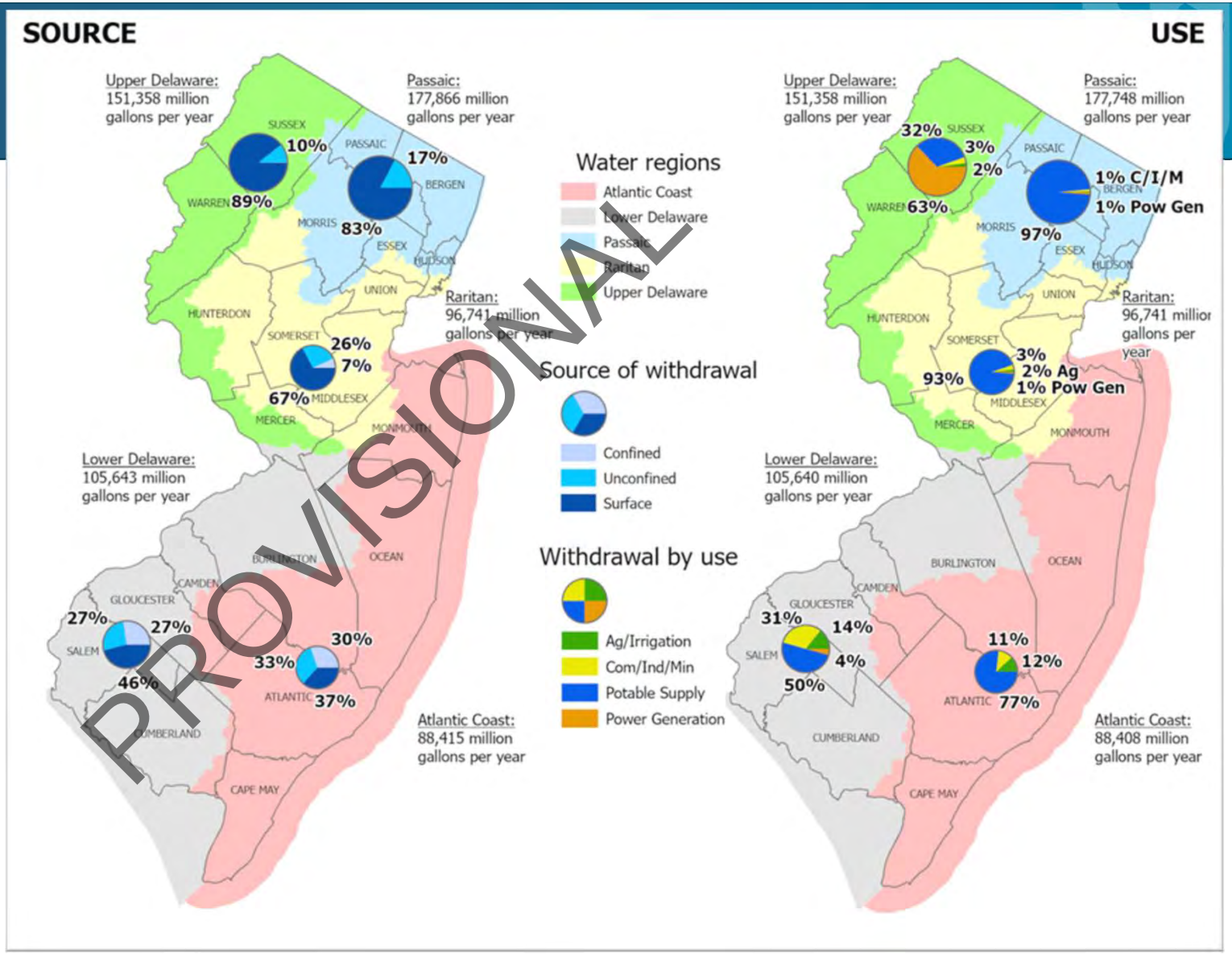
Availability methods and models account for interconnectedness of water:

- Reservoir Systems
  - RiverWare models
- Unconfined Aquifers & Surface Water
  - Stream Low Flow Margin Method
- Confined Aquifers
  - Modflow models

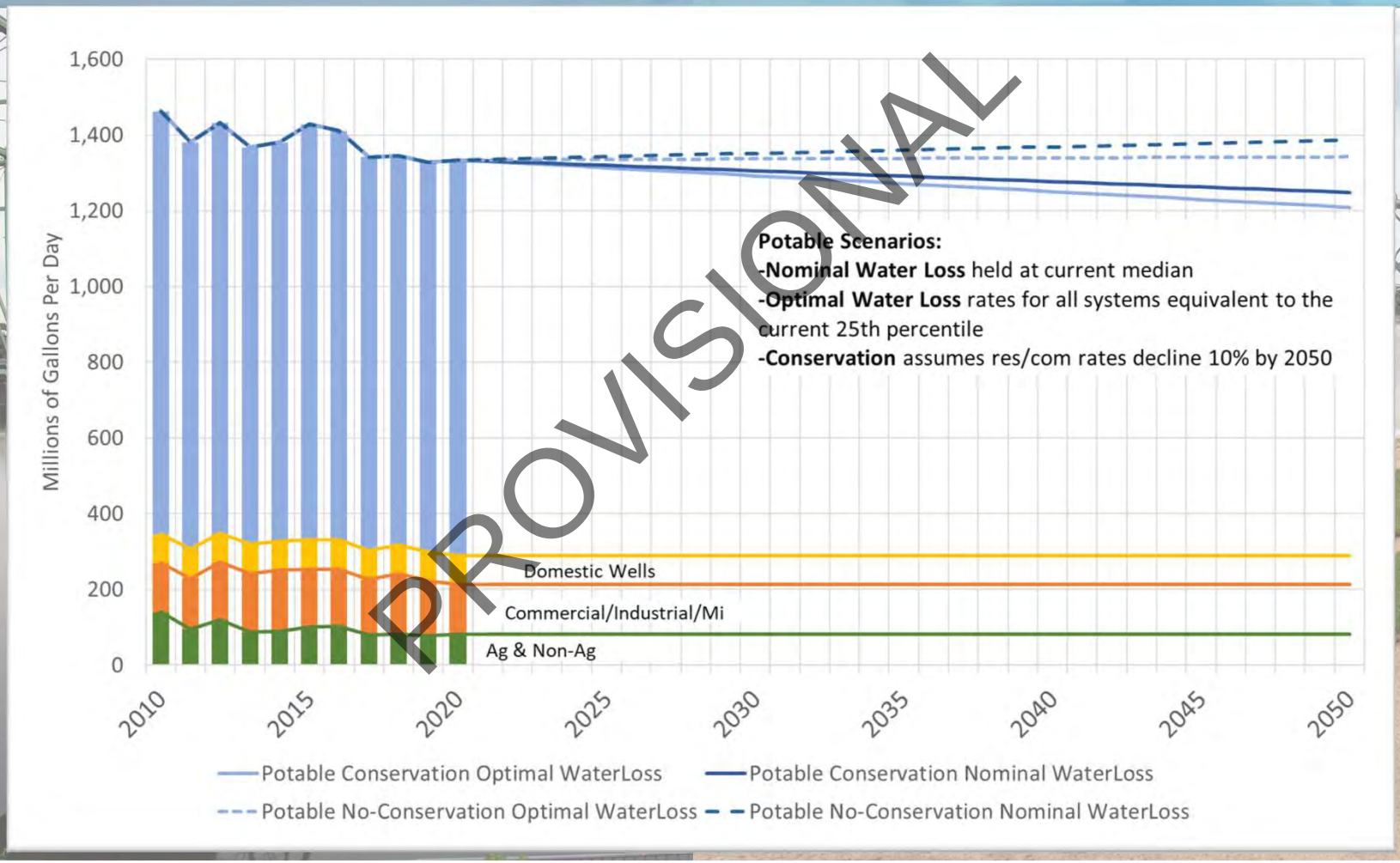
Current Water Use: Statewide Transfers



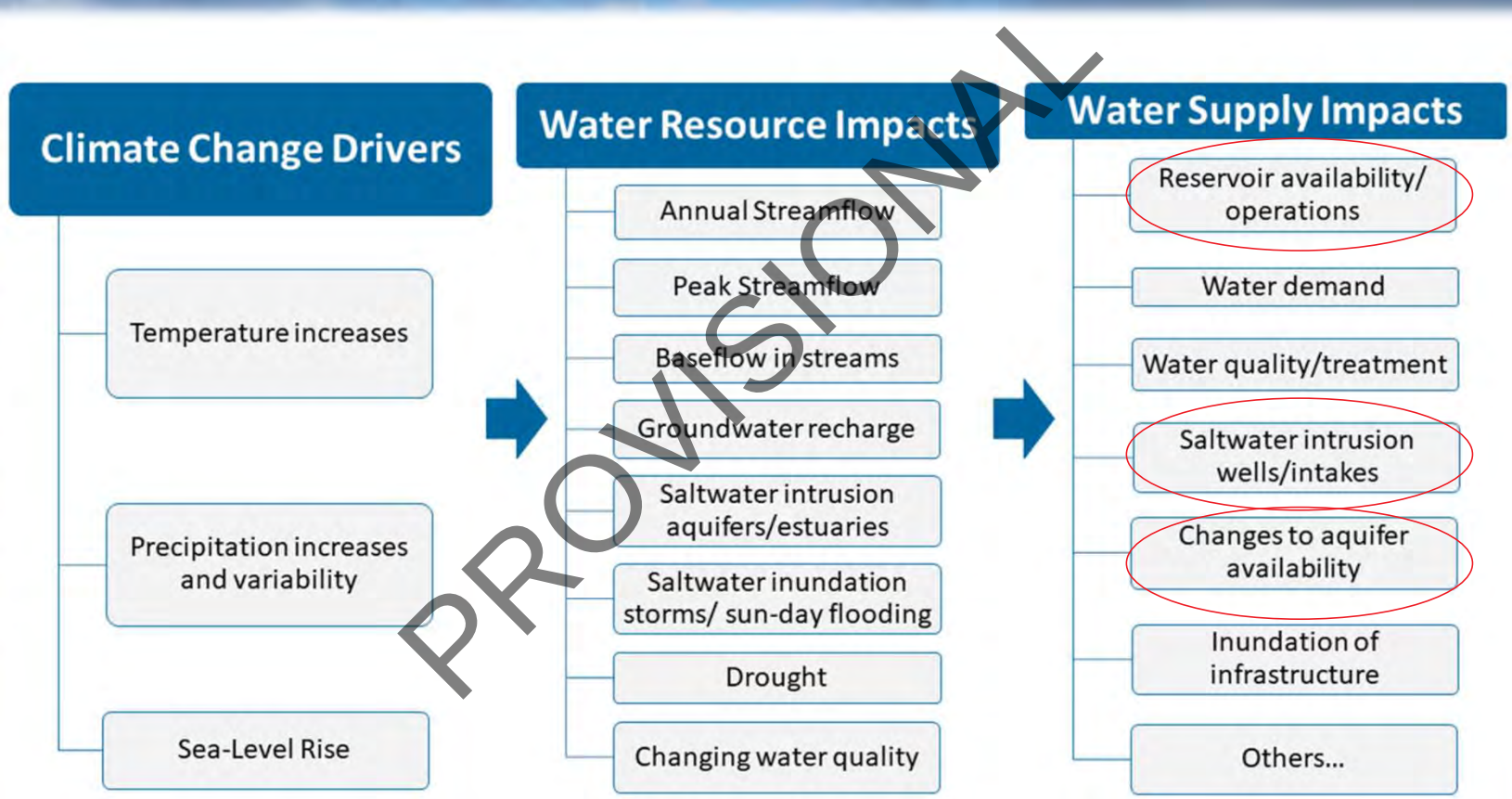
Water Source and Use by Water Region



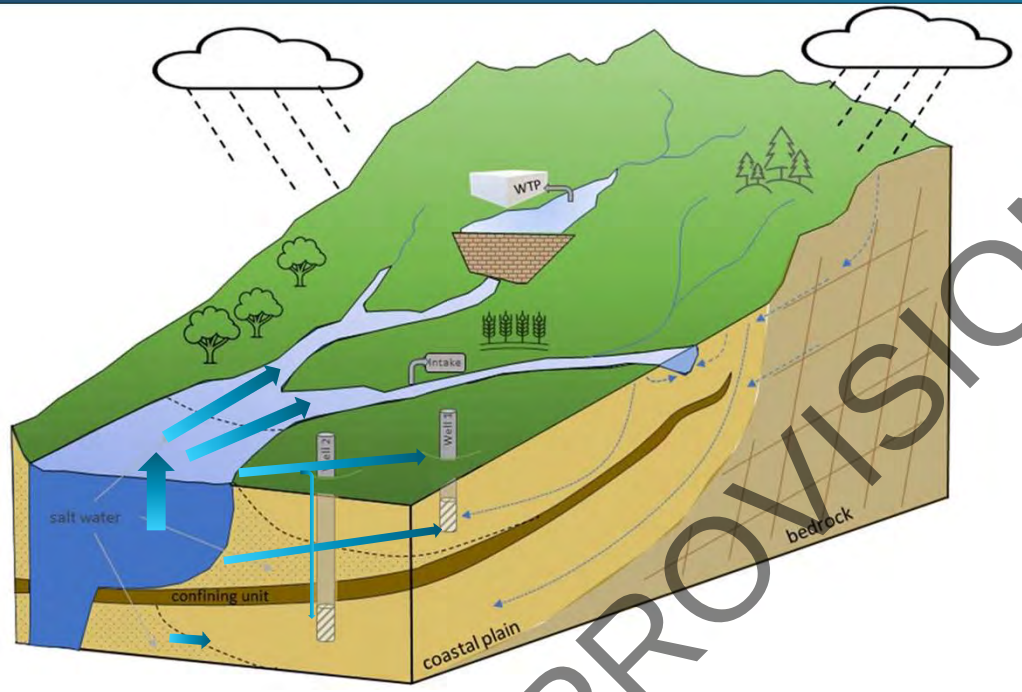
2050 Forecasted Demands

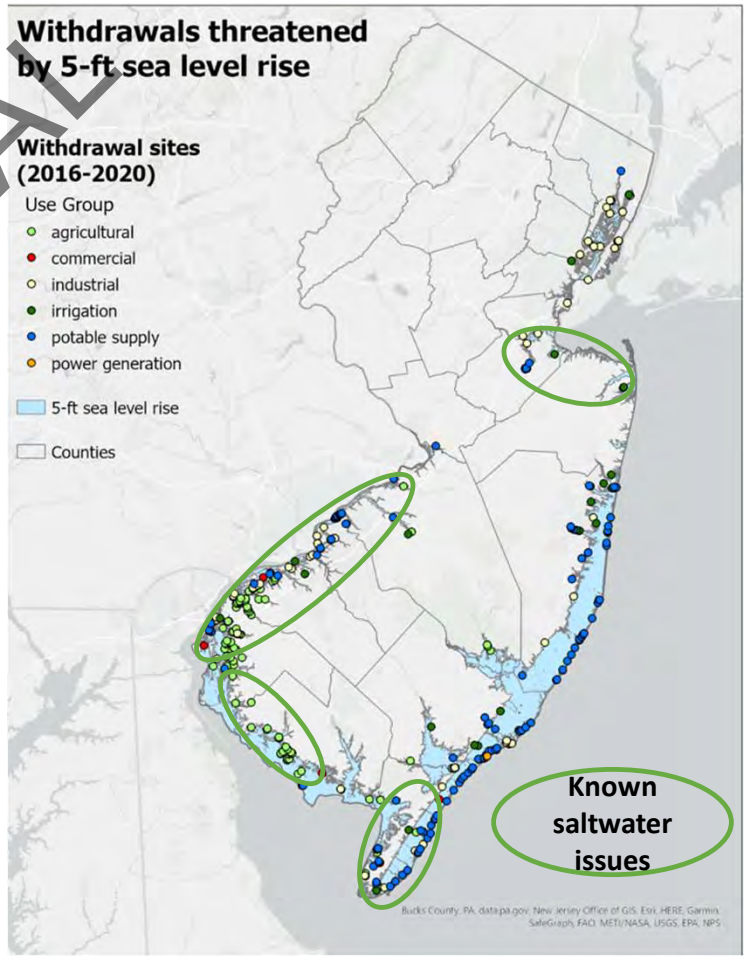


Eval. 1- Climate Change and Water Supply



Sea Level Rise Impacts to Water Supply





Sea-Level Rise Takeaways

- Estuary/intake impacts
- Unconfined aquifer impacts
- Minimal confined aquifer impacts
- Overland flow and infrastructure impacts
- Existing problems don't go away

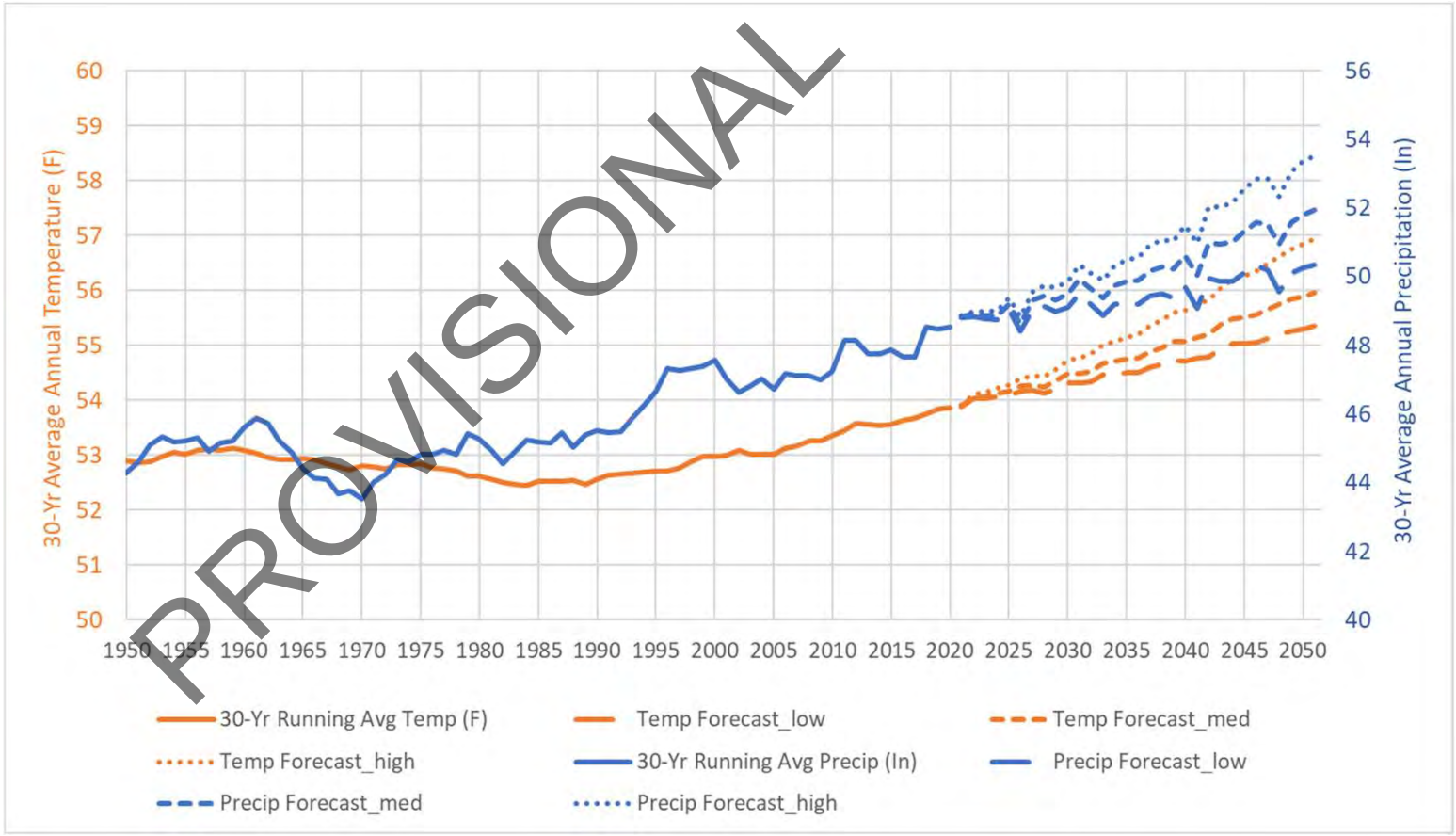
Temp and Precip Trends & Forecasts*

Precipitation and temperature changes impact groundwater recharge

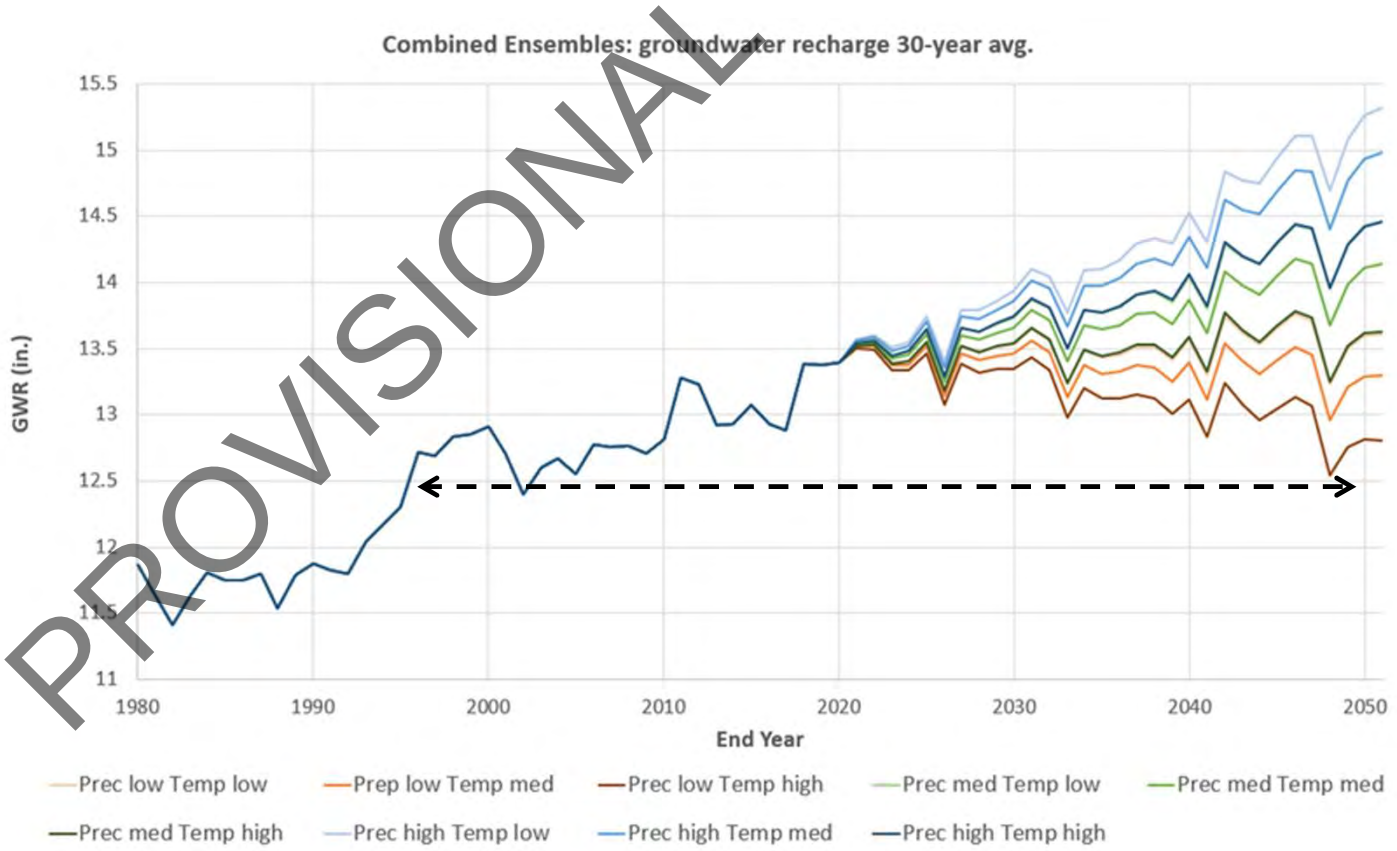
*2020 - 2050 forecasts based on DEP data, with daily data specific to this WSP analysis only

Precipitation trends

Temperature trends

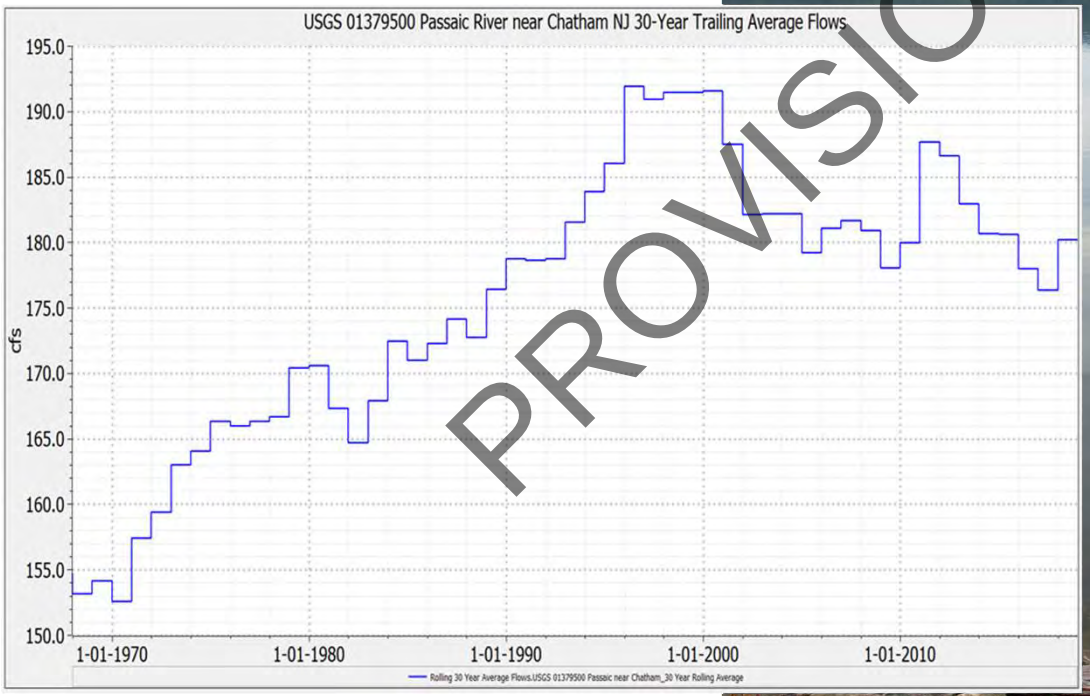


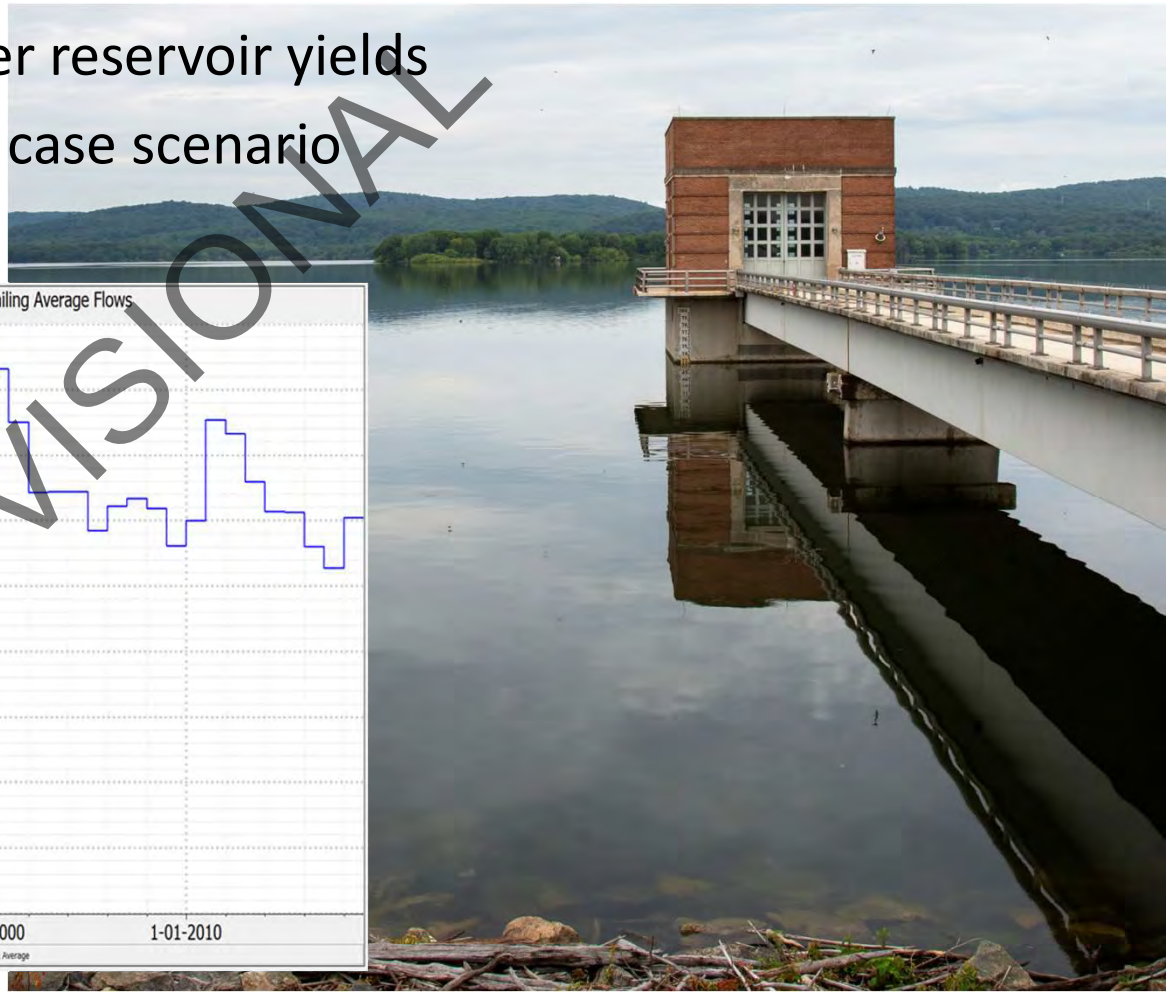
Impacts to Groundwater Recharge



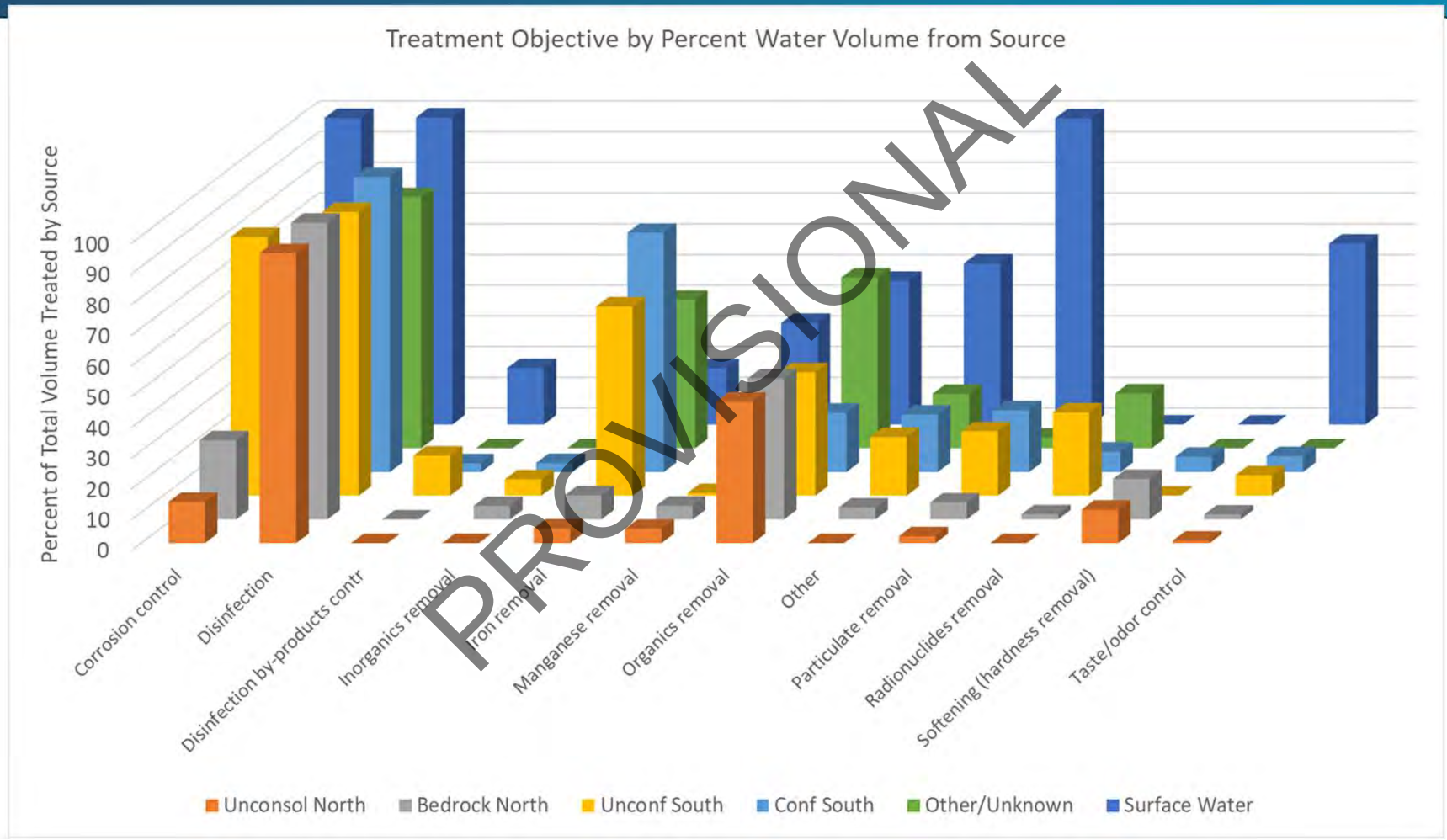
Impacts to Surface Water Reservoir Systems

- More streamflow annually = larger reservoir yields
- Adequate supplies under ‘worse’ case scenario
- More work needed….

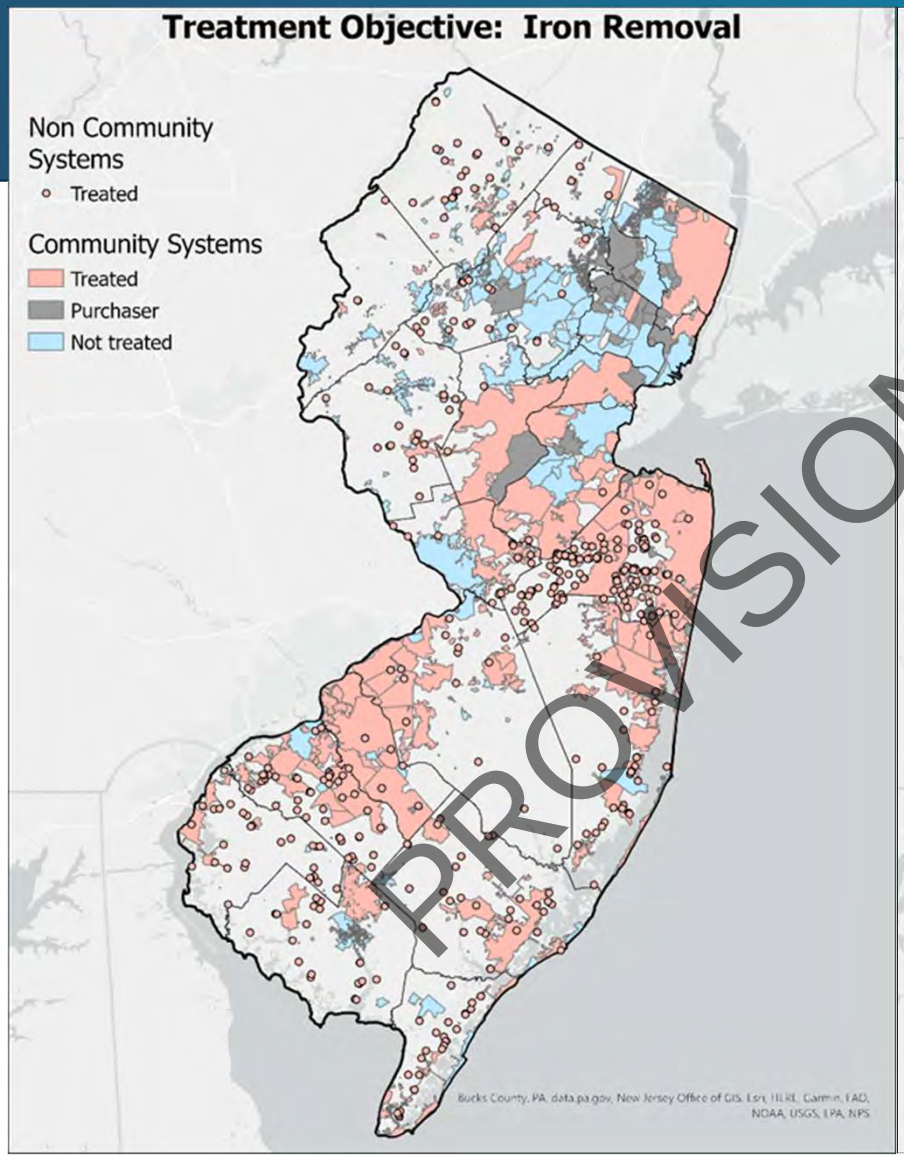


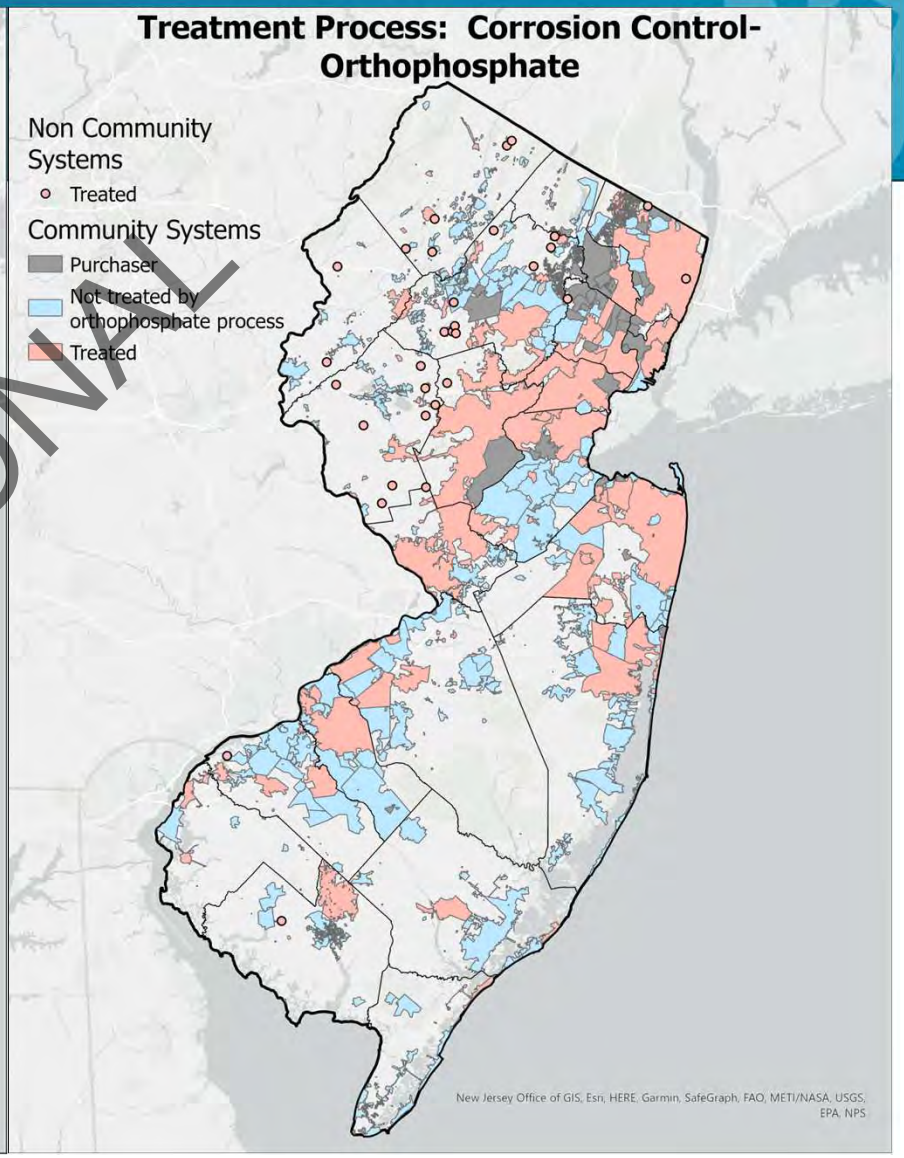


Eval. 2- Statewide Drinking Water Assessments

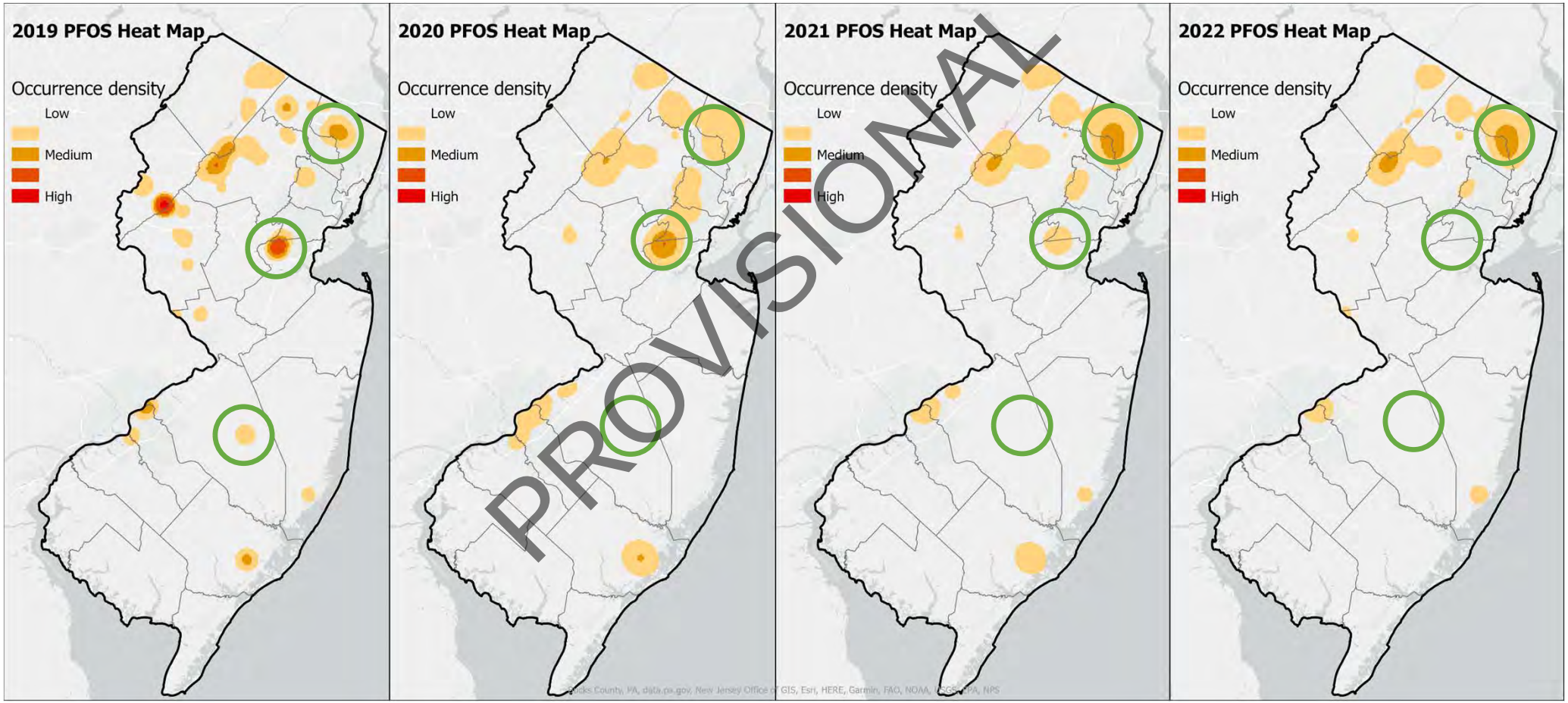


Statewide Drinking Water Assessments



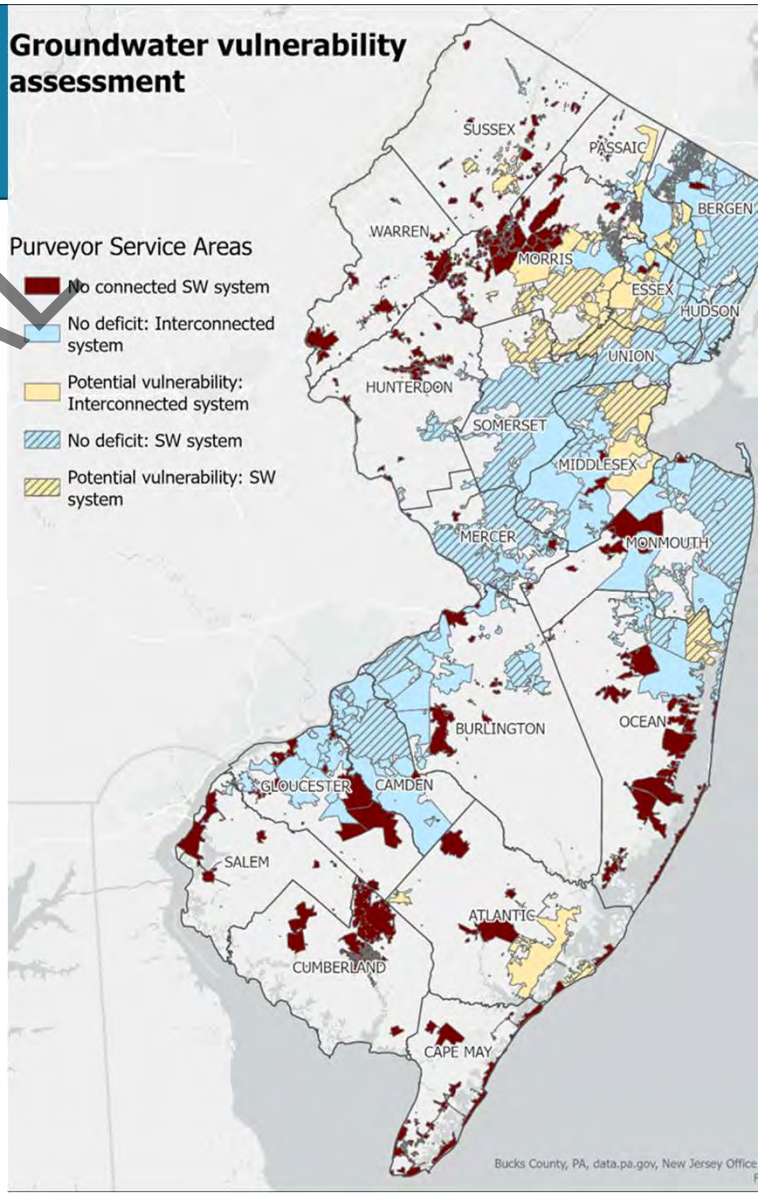


New & Emerging Contaminants- PFOS



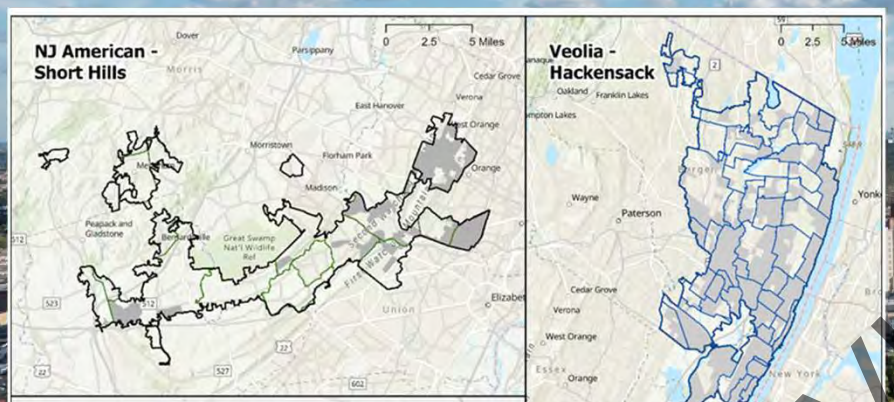
Impacts of New and Emerging Contamination

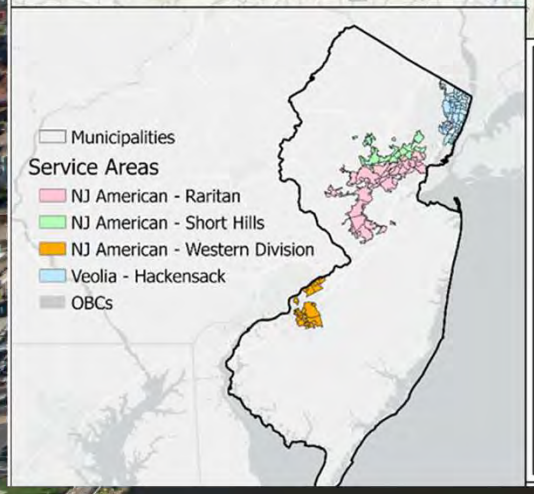
- Long-term treatment costs
- Water source changes
- Unintended consequences



Eval. 3- Overburdened Communities

Within Service Areas





Percent Comprised of overburdened communities:

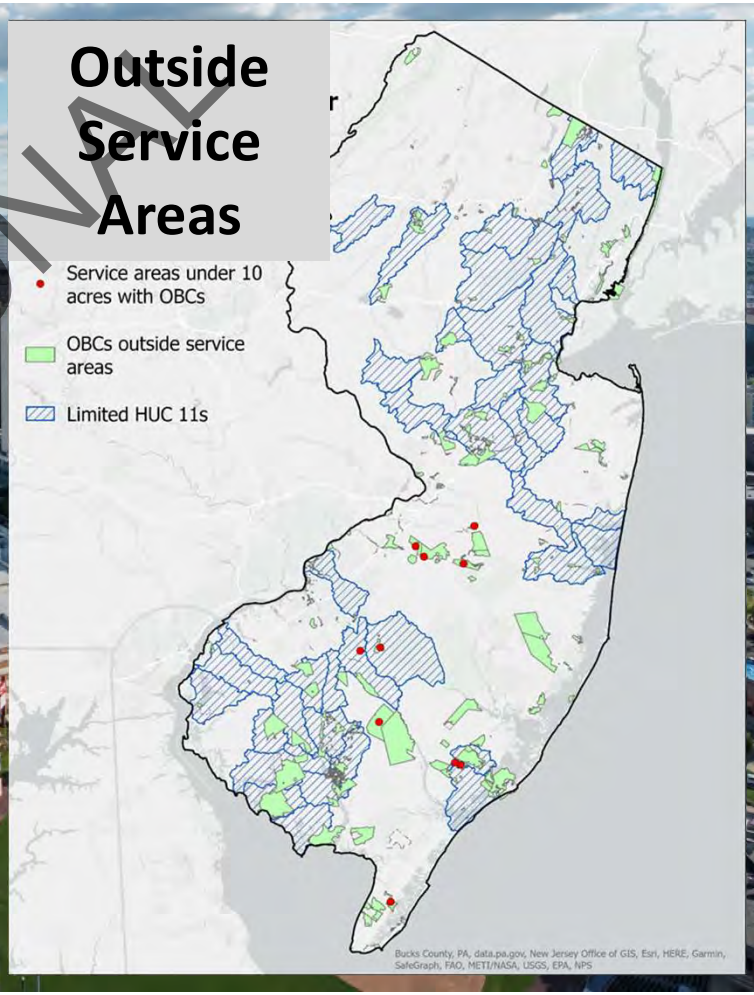
NJ American - Short Hills = 21%

Veolia - Hackensack = 57%

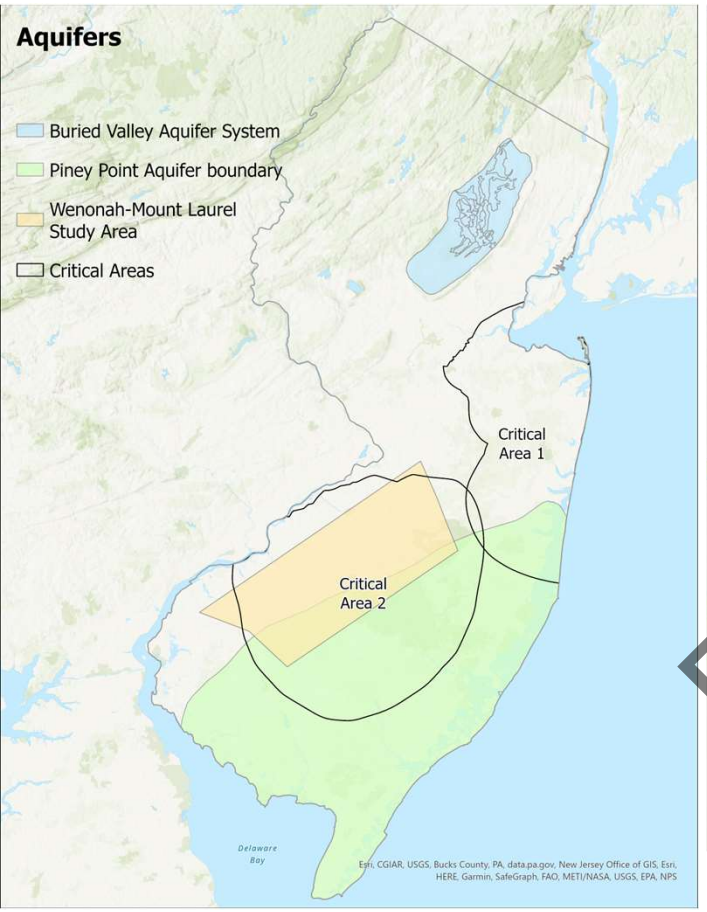
NJ American - Western Div. = 23%

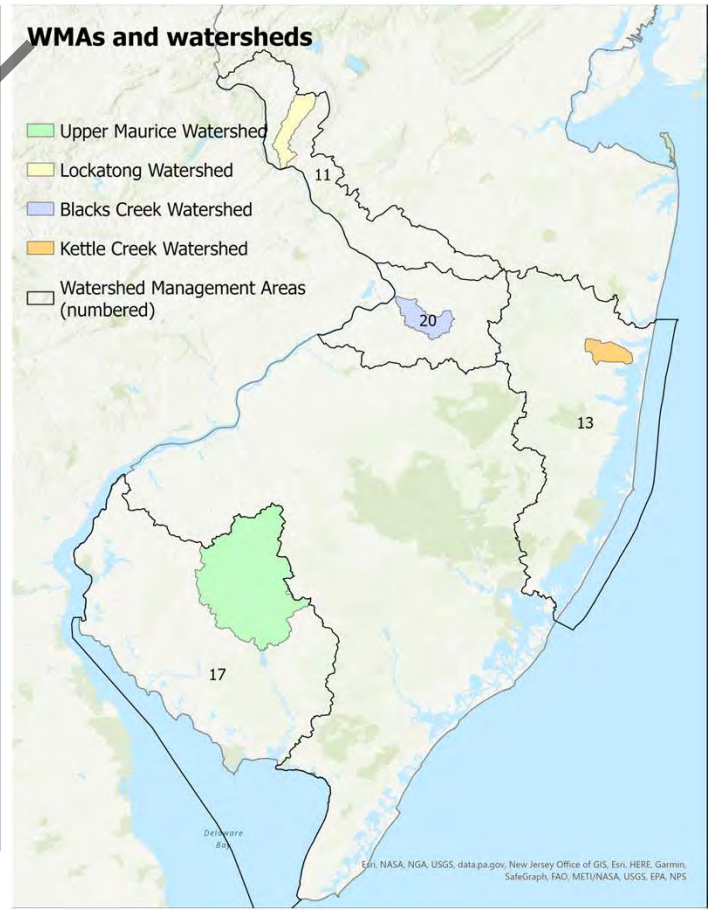
NJ American - Raritan = 43%

Outside Service Areas



Water Allocation Availability Screening



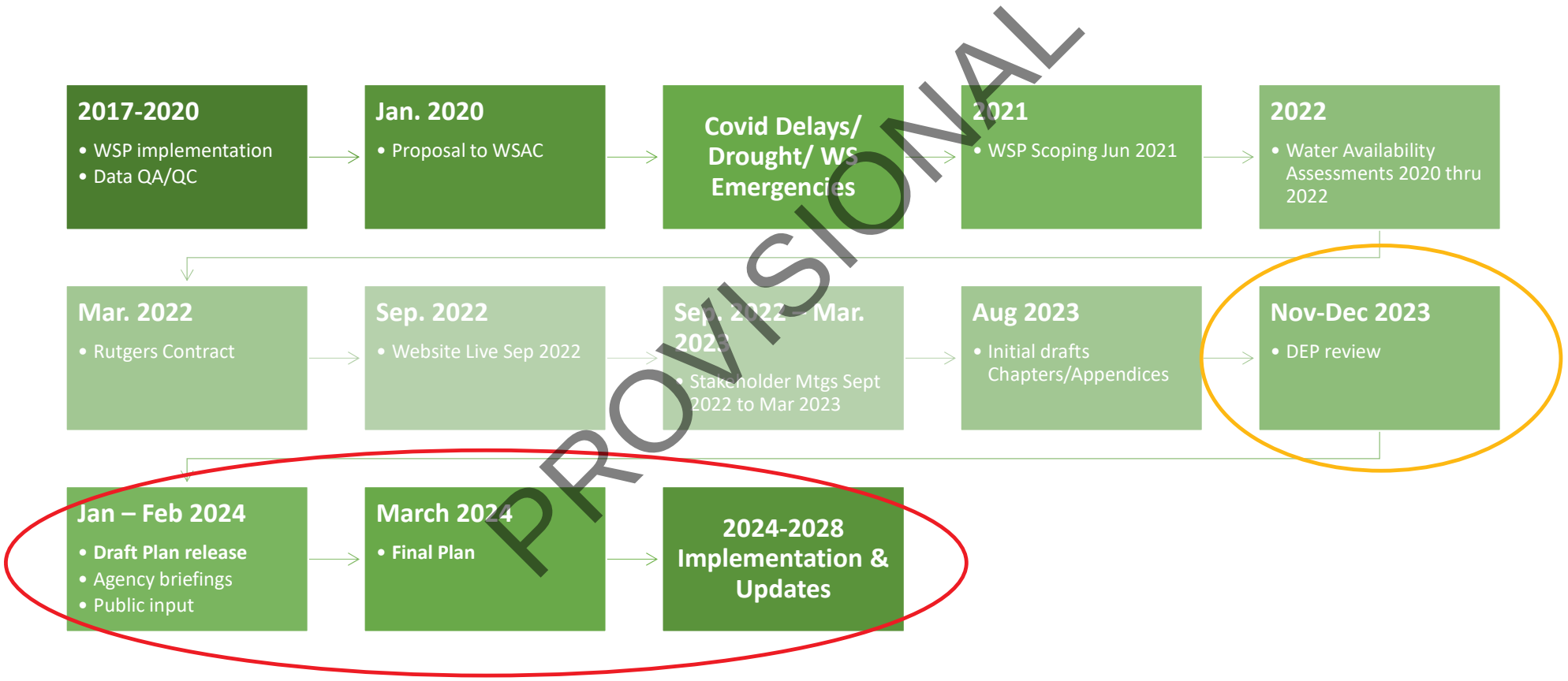


WAAS Tool Website

Recommendations

- Monitoring and Research
- Climate Change
- Resiliency and Asset Management
- Water Supply for Overburdened Communities
- Laws and Regulations
- Regional and Statewide Assessments

Timeline and Next Steps- tentative



Thanks and Questions

- Water Supply Plan Team
  - Department Leads
    - NJGWS Water Supply Modeling and Planning
    - Division of Water Supply and Geoscience
    - Water Resource Management
  - Rutgers, The State University
  - Water Supply Advisory Council
- More info
  - email: watersupplyplan@dep.nj.gov
  - website: www.dep.nj.gov/watersupplyplan
  - New Jersey Water Withdrawal Data Summary Viewer
    https://experience.arcgis.com/experience/9da78182503e467989c280bfdf741d3a