Savannah-Upper Ogeechee Regional Water Planning Council Meeting

May 9, 2024

GEORGIA WATER PLANNING

waterplanning.georgia.gov

Welcome and Opening Remarks

Council Chair, Bruce Azevedo

Council Business

Council Chair, Bruce Azevedo

Approve today's meeting agenda

Approve October 5, 2023 meeting summary

Georgia's State Water Pl

Savannah-Upper Ogeechee Regional Water Counc
Draft Agenda – May 9, 2024
10:00 am

Elberton Arts Center
17 W Church St, Elberton, GA 30635
Click here to join the meeting
To Join Meeting by Phone: (844) 566-5330, Meeting ID: 190 151

9:30 – 10:00 a.m.	Council Registration/Guest Sign In, *Ashley Reid and Autumn M*
10:00 – 10:05 a.m.	Welcome
10:05 – 10:15 a.m.	Council Business, *Chairman Azevedo*
	• Approve October 5, 2023 draft council meeting summa • Approve today's draft meeting agenda
10:15 – 10:25 a.m.	October 5th Meeting Review, *Ashley Reid, CDM Smith*
10:25 - 10:40 a.m.	Georgia EPD Updates *Clete Barton, Georgia EPD*
	• General Updates • Seed Grants Project Updates
10:40 – 11:00 a.m.	South Carolina State Water Planning Updates, *Scott Harder, So*
	10 MINUTE BREAK
11:10 – 11:35 a.m.	Operations Overview of Plant Vogtle, *Suzanne Sharkey, Georgi*
11:35 a.m. – 12:00 p.m.	Stormwater and Water Resource Planning, *Caroline Smith, Geo Professionals*
	30 MINUTE BREAK FOR LUNCH
12:30 – 1:00 p.m.	Soil Amendments Regulatory Update, *Tonya Bonitatibus, Savan*
1:00 – 1:10 p.m.	Speaker/Topic/Field Trip Brainstorm Exercise, *Ashley Reid, CD*
1:10 – 1:15 p.m.	Public Comment
1:15 – 1:30 p.m.	Next Meeting Plans/Meeting Adjourned

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CDM Smith

Memorandum

To: *Savannah-Upper Ogeechee Regional Water Planning Council*

From: *Ashley Reid, CDM Smith*

Date: *October 5, 2023*

Subject: *Savannah-Upper Ogeechee Regional Water Planning Council Meeting Summary (subject to Council review and approval)*

Welcome, Introductions and Council Business

Chairmen Bruce Azevedo called the meeting to order at approximately 10:04am. Chairmen Azevedo called for a motion to approve the prior Savannah-Upper Ogeechee (SUO) Council Meeting Minutes (June 6, 2023). No additional changes were noted, and minutes were approved by the motion, second and unanimous vote.

Chairman Azevedo called for a motion to approve the drafted agenda for the meeting. The agenda was approved by the motion, second and unanimous vote.

Chairman Azevedo expressed his appreciation to the Council for helping advance the planning process over the last couple years and for seeing the plan revision through to approval.

Regional Water Plan Revision Recap

Ashley Reid, CDM Smith, gave an overview of the recently adopted 2023 SUO Regional Water Plan which outlines the near- and long-term strategies needed to meet water needs through 2060.

The 2023 Resource Assessment Results were presented to the Council as well. Below are summarized statements for each assessment:

- Groundwater Supply: There will be adequate supplies to meet the regional needs in the future over the planning horizon at the regional level.
- Surface Water Quality: Some stream segments, including the Savannah Harbor, will have a limited capacity to accept wastewater discharges. To address the region's future need will encompass addressing non-point sources of pollution and existing water quality impairments.
- Surface Water Availability: Over the next 40 years, the modeling analysis indicates that the water supply and instream flow needs in the region are not met hydrologically at 7 withdrawal locations and 13 discharge locations. Potential surface water challenges exist at these locations.

OCTOBER 5, 2023
COUNCIL MEETING REVIEW

ASHLEY REID, CDM SMITH

10/5/23 Council Meeting Review

- Regional Water Plan Revision Recap
  - Groundwater Supply - At the regional level, there will be adequate supplies to meet the region's future groundwater supply needs over the planning horizon.
  - Surface Water Quality - Assimilative capacity assessments predicted that some stream segments, including the Savannah Harbor, will have limited capacity to accept future wastewater discharges. Addressing non-point sources of pollution and existing water quality impairments will be a part of addressing the region's future needs.
  - Surface Water Availability - Over the next 40 years, the modeling analysis indicates that the water supply and instream flow needs in the region are not met hydrologically at 7 withdrawal locations and 13 discharge locations.

10/5/23 Council Meeting Review

- Regional Seed Grant Project Status Updates
  - 6 projects completed (FY 2015 thru FY 2021)
  - 2 FY 2022 projects scheduled to be completed 2024
- SFY24 RWP Seed Grant Overview
  - Up to $75,000 per project to Implement Regional Water Plans
  - Cost-Share: 60% state funds/40% local match (10% of project total as cash)
  - Letter of Support from Regional Water Planning Council(s)

10/5/23 Council Meeting Review

- Seed Grant Project Updates
  - High Frequency Monitoring and the Effects of Agricultural Water Withdrawal
  - Pilot study to Preserve In-stream Water Quality and Instream Flows
- Soil Amendments Regional Update
- Phinizy Center Lab Tour

Georgia EPD Updates

Clete Barton, GA EPD

GEORGIA
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EPD Updates: public drinking water systems

- Public drinking water systems: lead service line inventories (due Oct. 2024)
  - EPD & GEFA implemented an online system to accept & track these submissions
  - Training sessions have been being held to support systems with implementation
  - https://epd.georgia.gov/watershed-protection-branch/drinking-water

EPD Updates: Nutrient Reduction Strategies

- *Roadmap for Developing and Updating Nutrient Reduction Strategies* (2023)
  - Commitments to develop and revise nutrient-related strategies and plans
- Draft document, *Update to the Strategy for Addressing Phosphorus in NPDES Permitting*
  - Draft update to EPD's 2011 Phosphorus Strategy
  - Public Meeting held on April 4
  - Comments are welcome to EPD.Comments@dnr.ga.gov
- Information about both items can be found here: https://epd.georgia.gov/forms-permits/watershed-protection-branch-forms-permits/wastewater-permitting/permitting-strategies

EPD Updates: Seed Grants

- *Two Seed Grants Projects were selected this year.*
- *EPD will announce the Seed Grant in July.*
- *Applications will start being accepted in October.*

South Carolina State Water Planning Updates

Scott Harder, SCDNR

Savannah-Upper Ogeechee Council Meeting

Elberton, GA, May 9th, 2024

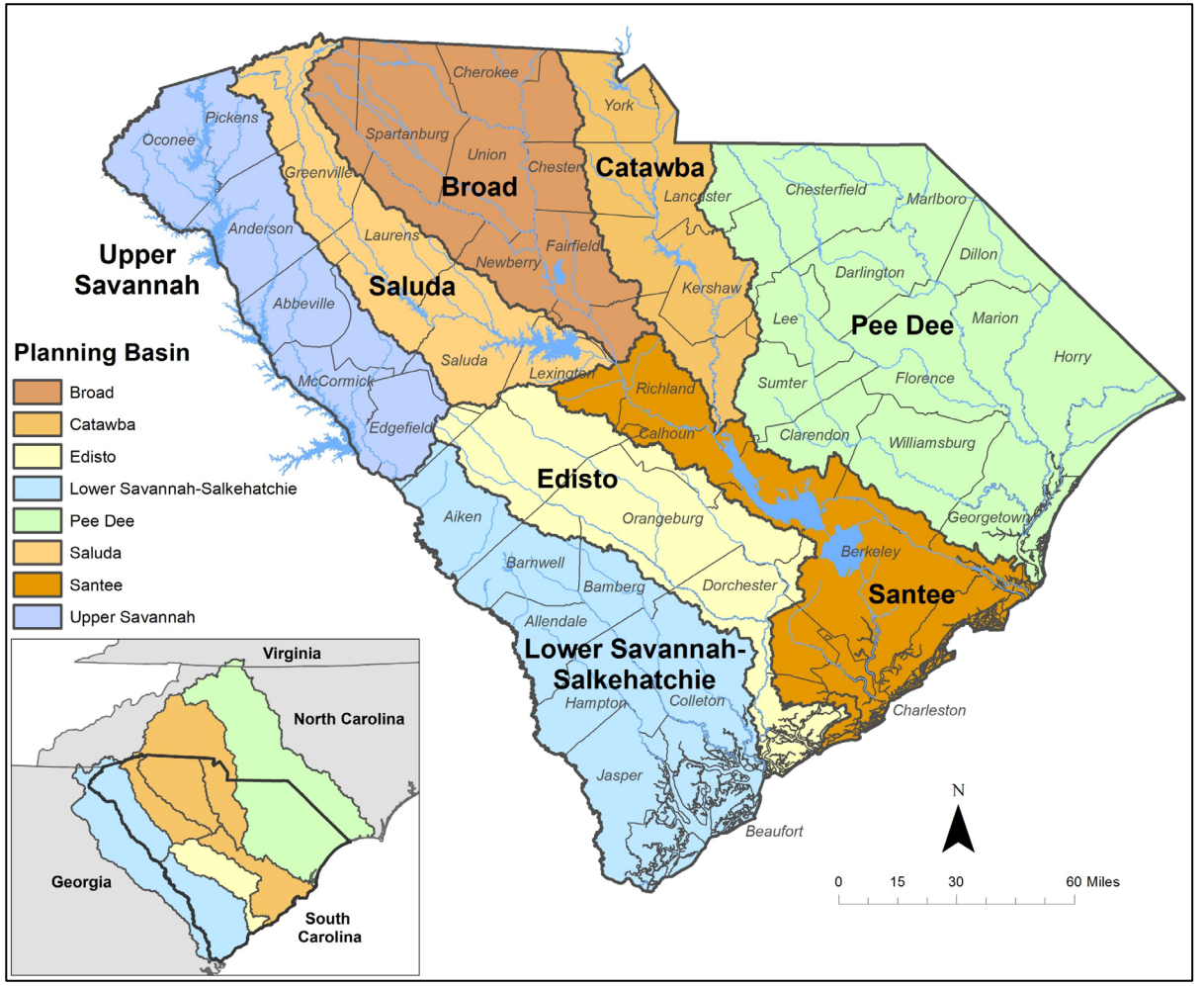
Scott Harder

Hydrology Section Chief

SC Department of Natural Resources

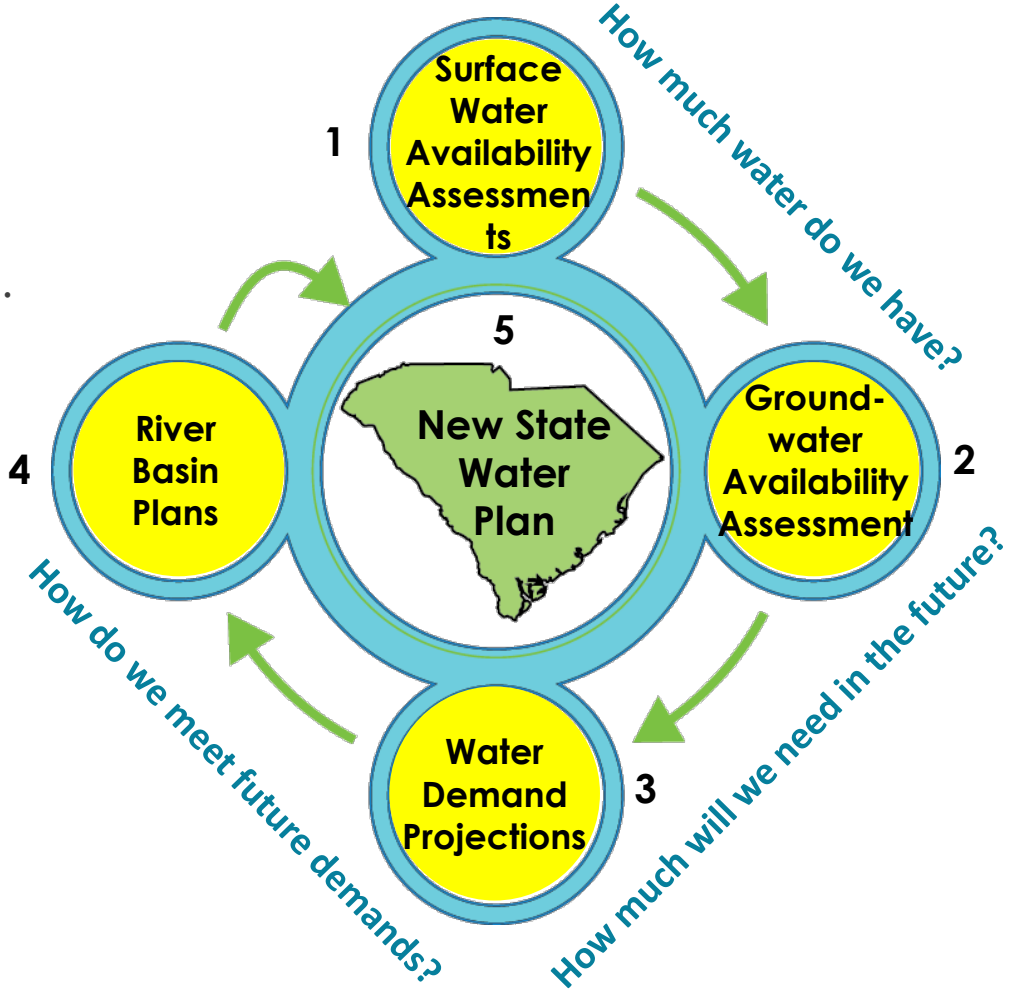
South Carolina's Eight Planning Basins

- River Basin Plans are being developed for the State's eight major planning basins using a "bottom-up" approach where stakeholders in each basin lead the development of their basin plan.
- Collectively, the River Basin Plans will form the foundation of a new State Water Plan.



Five-step Process

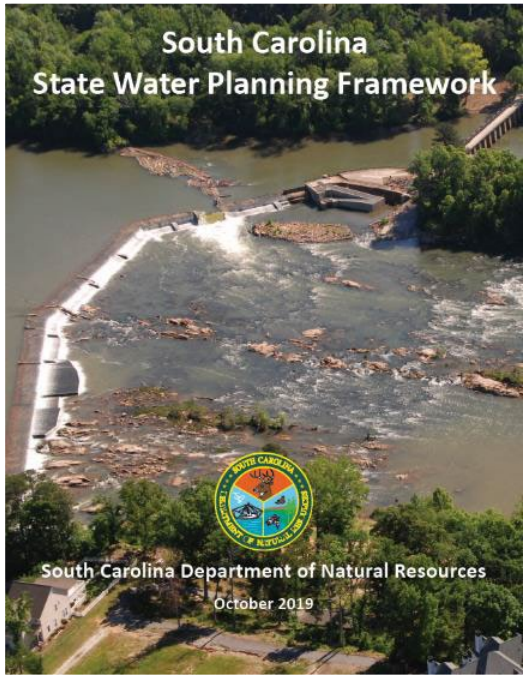
1. ***Surface Water Assessments*** – completed in 2017 for each basin (CDM Smith, Inc).
   - Several models recently updated.
2. ***Groundwater Assessment*** – completed in 2021 (USGS).
   - 3 regional models to be developed over the next several years.
3. ***Water Demand Projections*** – methodology report completed in October 2019 (SCDNR).
   - Projections completed as needed in each basin during basin planning process.
4. ***River Basin Plans***
   - Completed under the direction of the SC Planning Framework.
5. ***State Water Plan*** – River Basin Plans will form the foundation of a new State Water Plan.



Cooperators:

Planning Process Advisory Committee

- Convened by SCDNR in March 2018.
- Purpose - develop a guidance document (Planning Framework) for developing River Basin Plans and for updating the State Water Plan.
- South Carolina State Water Planning Framework (Planning Framework) was published in October 2019 after an 18-month process.

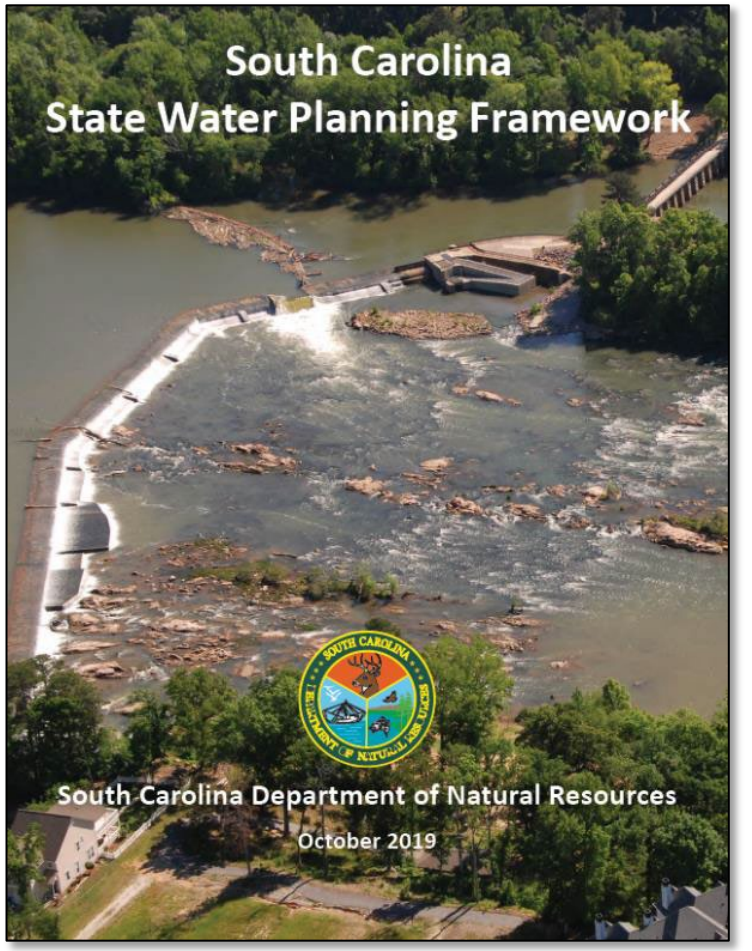


Planning Framework is available for review and download at:
https://hydrology.dnr.sc.gov/water-planning-framework.html

What is a River Basin Plan?

A River Basin Plan answers four questions:

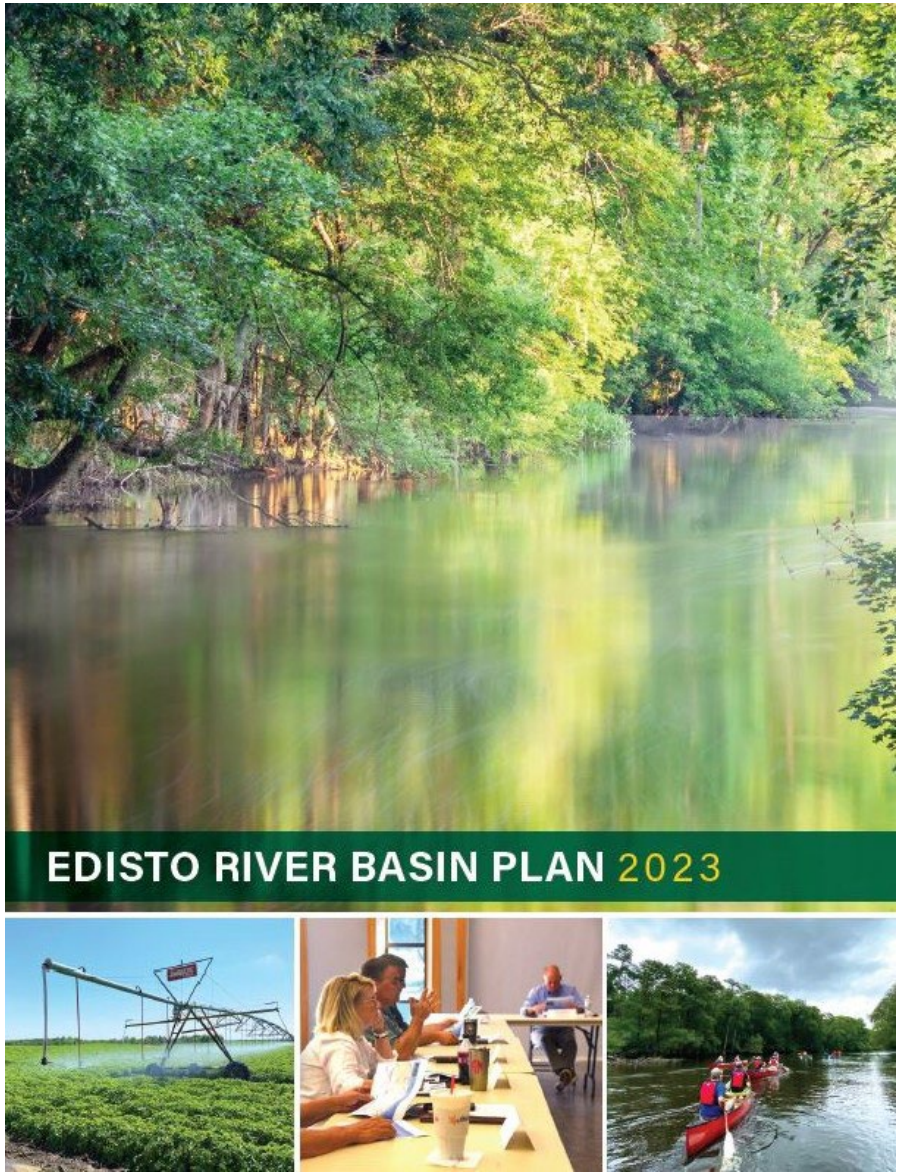
1. What is the basin's current available water supply and demand?
2. What are the current permitted and registered water uses?
3. What will be the basin's water demand over the Planning Horizon, and will the water supply meet the demand?
4. What water management strategies will be employed to ensure the supply meets or exceeds the projected demand over the Planning Horizon?



Proactive Water Management, not Reactive!

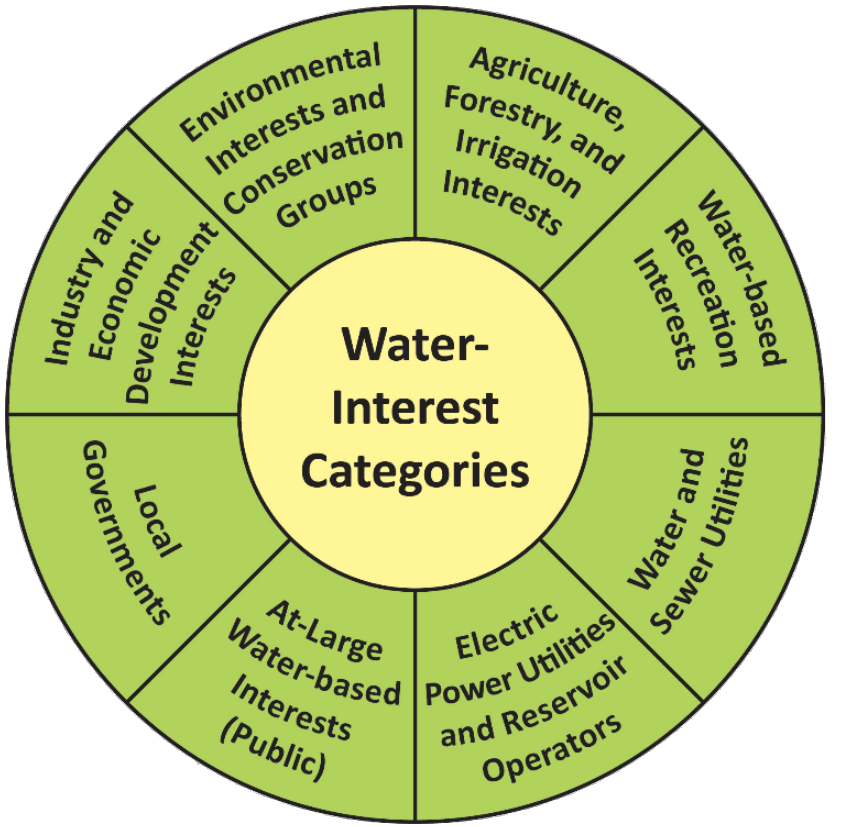
Features of a River Basin Plan

- **Stakeholder-developed.**
- Covers a **50-year** Planning Horizon.
- Considers both **surface water** and **groundwater** resources.
- Current focus is on water ***quantity*** not water ***quality*** with emphasis on drought conditions.
- **Not a regulatory document** but may include recommendations regarding State water policy, law, and regulations.
- Updated every 5-years – **water planning will be an ongoing process**.
- Supported by hydrologic data, models, and water-demand projections.



Planning Framework calls for the formation of a River Basin Council (RBC) in each planning basin

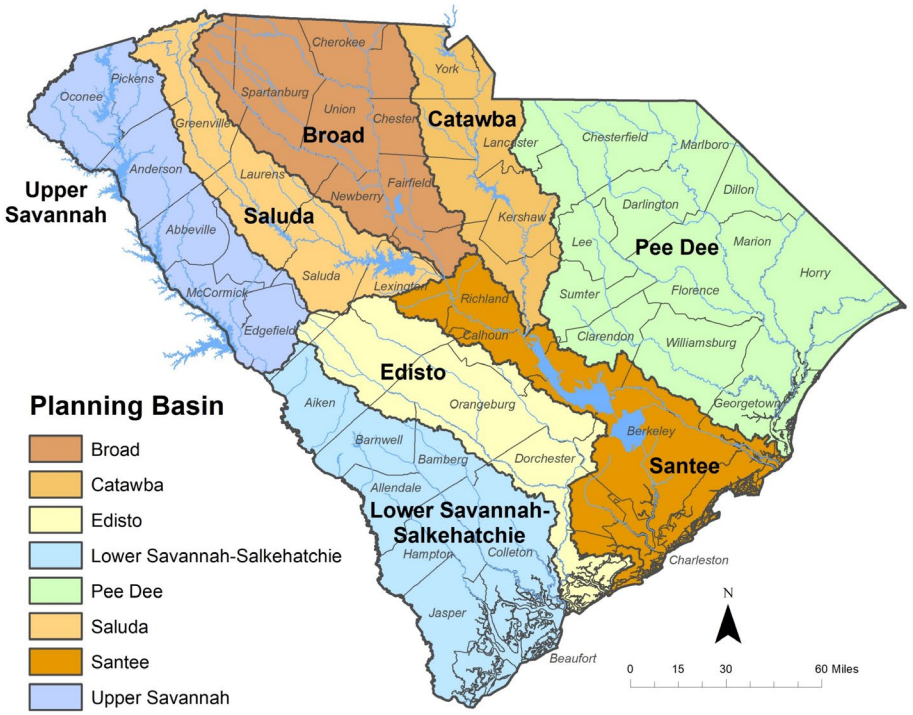
- **Stakeholder-led team** responsible for developing the River Basin Plan.
- **25-30** members representing **8 interest categories.**
- Governed by a set of Bylaws.
- **Consensus based** decision-making process.
- Chair and Vice-Chair elected by RBC.



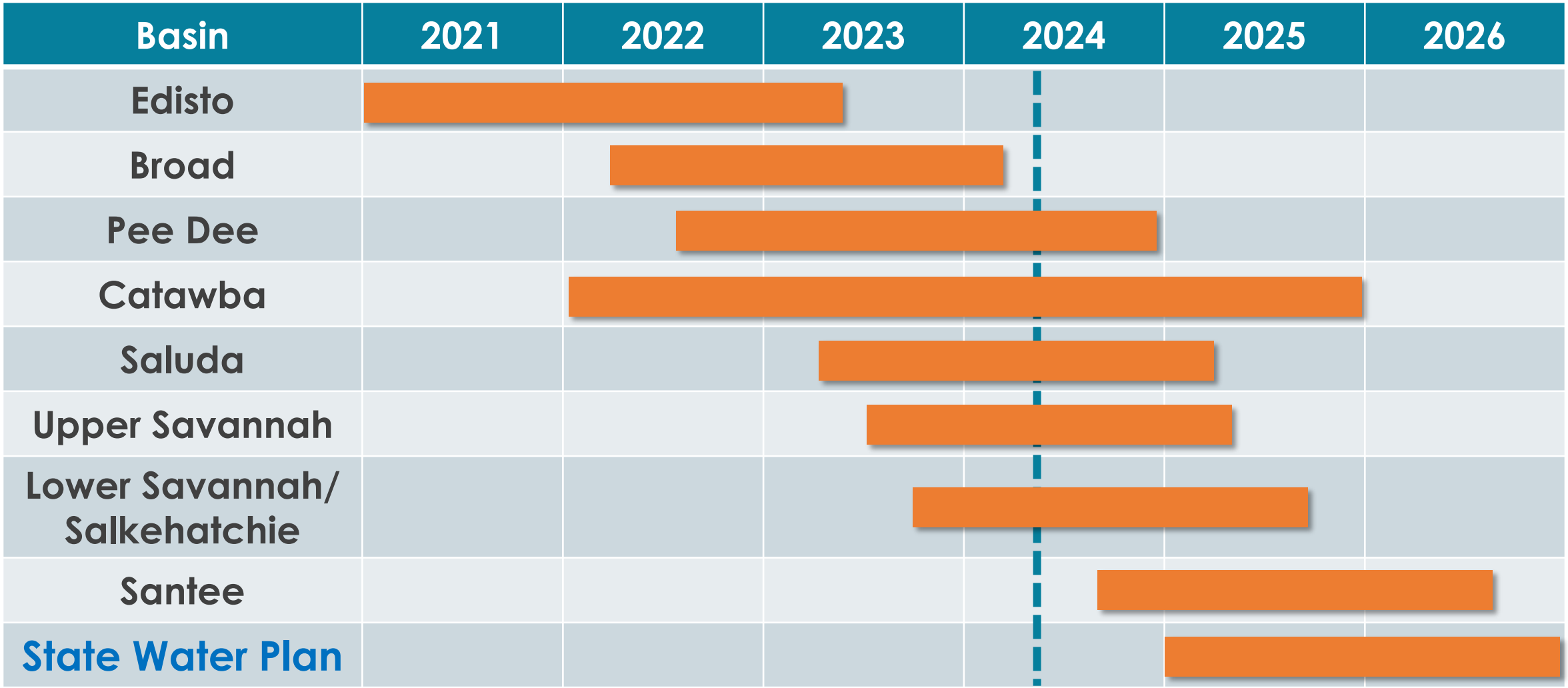
River Basin Plans will be developed over a 2-year period

River Basin Planning Current Status

Basin	Status
Edisto	June 2020 – June 2023
Broad	March 2022 – February 2024
Pee Dee	June 2022 – present
Saluda	March 2023 - present
Upper Savannah	July 2023 - present
Lower Savannah/ Salkehatchie	November 2023 - present
Santee	Scheduled to begin Fall 2024
Catawba	CWWMG's Integrated Resource Plan in progress

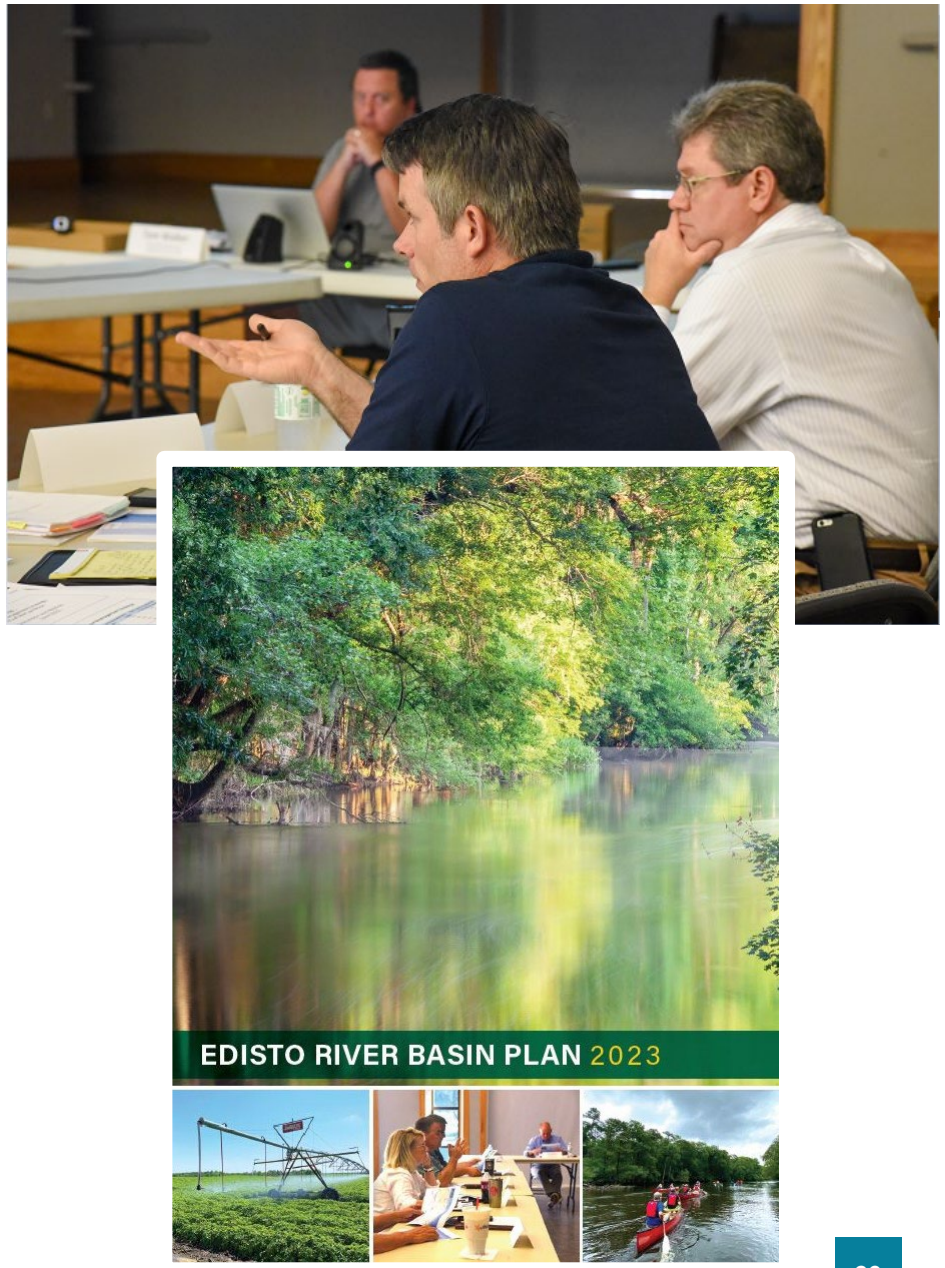


State Water Plan - Schedule



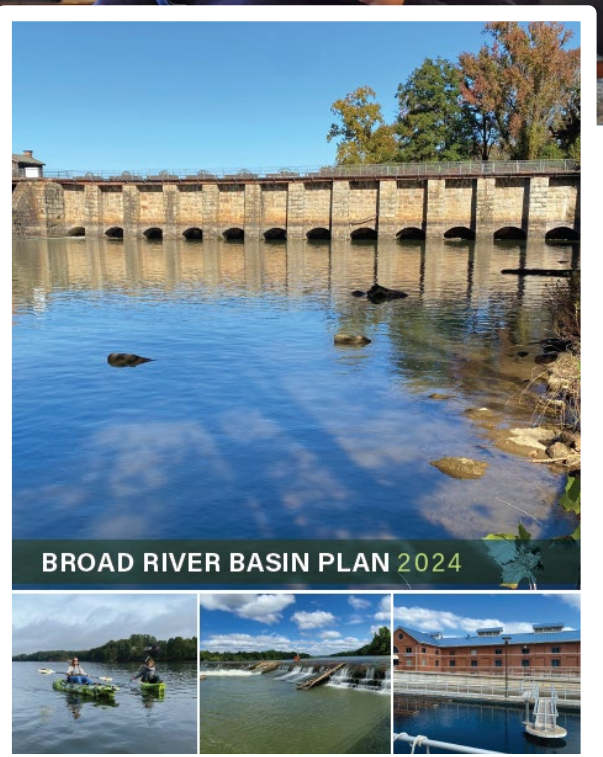
Edisto River Basin

- 1st basin to implement the Planning Framework.
- Completed both surface and groundwater availability assessments.
- Full Plan and Executive Summary available at: **https://hydrology.dnr.sc.gov/edisto-basin-planning.html.**
- Implementation phase to begin in 2024.



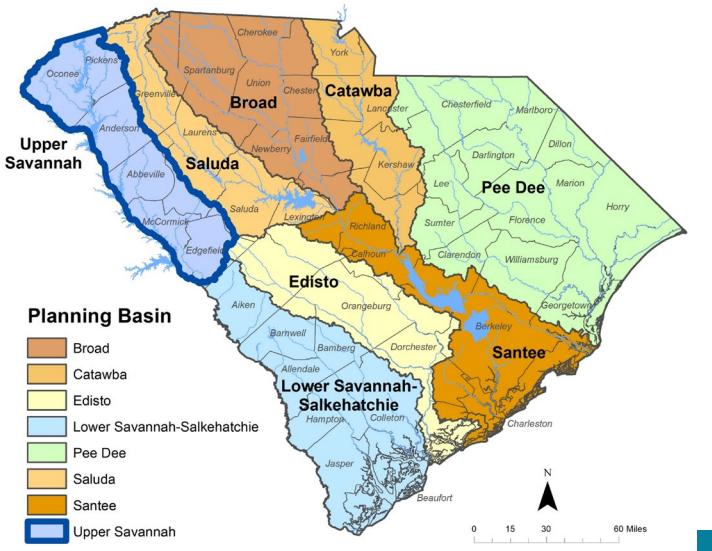
Broad River Basin

- 2nd basin to implement the Planning Framework.
- Focused primarily on surface water.
- Full Plan and Executive Summary available at: https://hydrology.dnr.sc.gov/broad-basin-planning.html.
- Implementation phase to begin in 2024.



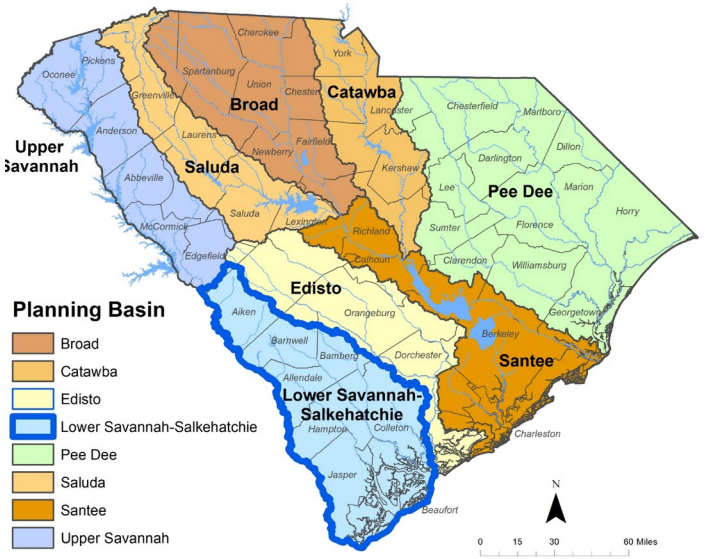
Upper Savannah River Basin Planning

- Initiated in July 2023, 10 RBC meetings to date.
- Chair – Jill Miller (SCRWA), Vice-Chair – Jeff Phillips (Greenville Water).
- Phase II – Water Availability Assessment nearly complete.
  - Focus is primarily on surface water.
  - Will include Reservoir Safe Yield estimates.
- Final River Basin Plan – June 2025.



Lower Savannah-Salkehatchie River Basin Planning

- Began in November 2023, 6 RBC meetings to date.
- Chair – Kari Foy (Low Country Regional Water System), Vice-Chair – Ken Caldwell (Alliant Insurance Services, Tree Farmer).
- Recently began Phase II – Water Availability Assessment
  - Assessment will include both surface water and groundwater.
- Final River Basin Plan – October 2025.



Interbasin River Council has been formed between the Upper Savannah and Lower Savannah-Salkehatchie RBCs.

Questions?

Scott Harder – harders@dnr.sc.gov

10 MINUTE BREAK

Nuclear Energy - Plant Vogtle Operations Overview

Suzanne Sharkey, Georgia Power Company

Nuclear Energy – Plant Vogtle

Clean, Safe, Reliable and Affordable Electrical Energy … and Carbon Free!

Suzanne Sharkey
Area Manager
Georgia Power Company

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Safety First

Every job, every day, the right way.

We believe the safety of our employees, guests and customers is paramount. We will perform and maintain every job, every day, safely.

Plant Vogtle 1&2

Plant Vogtle 3-4 – March 2024

Plant Vogtle 1-4 – March 2024

Plant Vogtle

Georgia Power

45.7 percent

OglethorpePowerCorporation

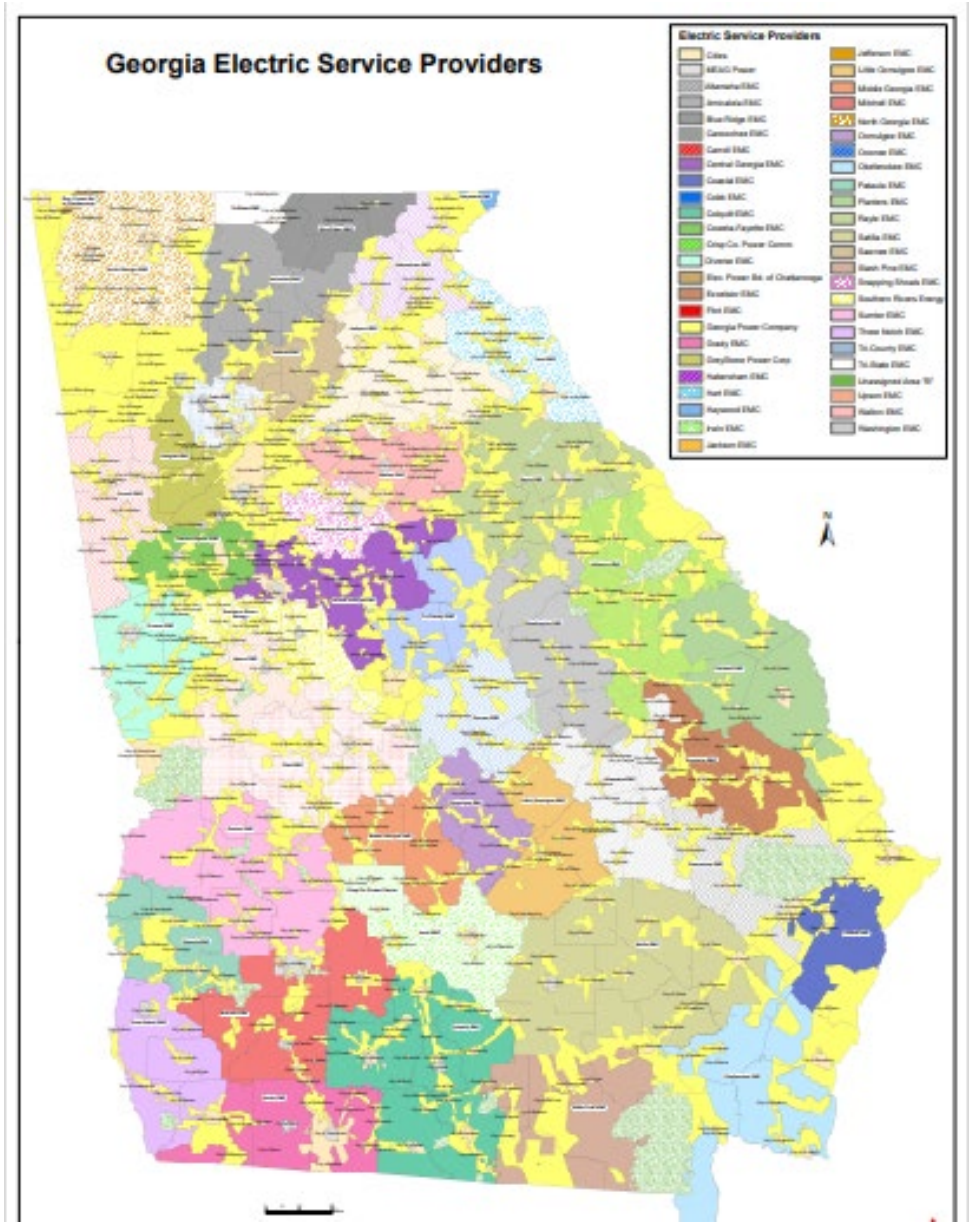
30 percent

MEAGPOWER

22.7 percent

Dalton UTILITIES

1.6 percent




TURBINE
GENERATOR
STEAM!
REACTOR
ELECTRICITY!

Vogtle 3&4 low pressure turbine rotors

Vogtle Unit 3 generator rotor (2019)

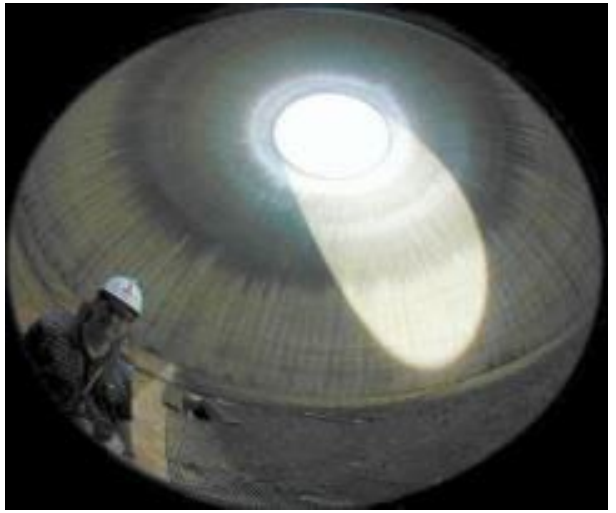
Vogtle Control Rooms

Vogtle Unit 1 Control Room

Vogtle Unit 3 Control Room

Vogtle 1&2 Cooling Towers

- 548 feet tall
- 500,000 GPM per tower
- 15,000 GPM evaporates
- 5,000 GPM returned to river



Vogtle 3&4 Cooling Towers

- 596 feet tall
- 500,000 GPM per tower
- 15,000 GPM evaporates
- 5,000 GPM returned to river

Cooling Tower Lapse.mp4

An aerial view looking inside the Vogtle Unit 4 cooling tower.

July 2017

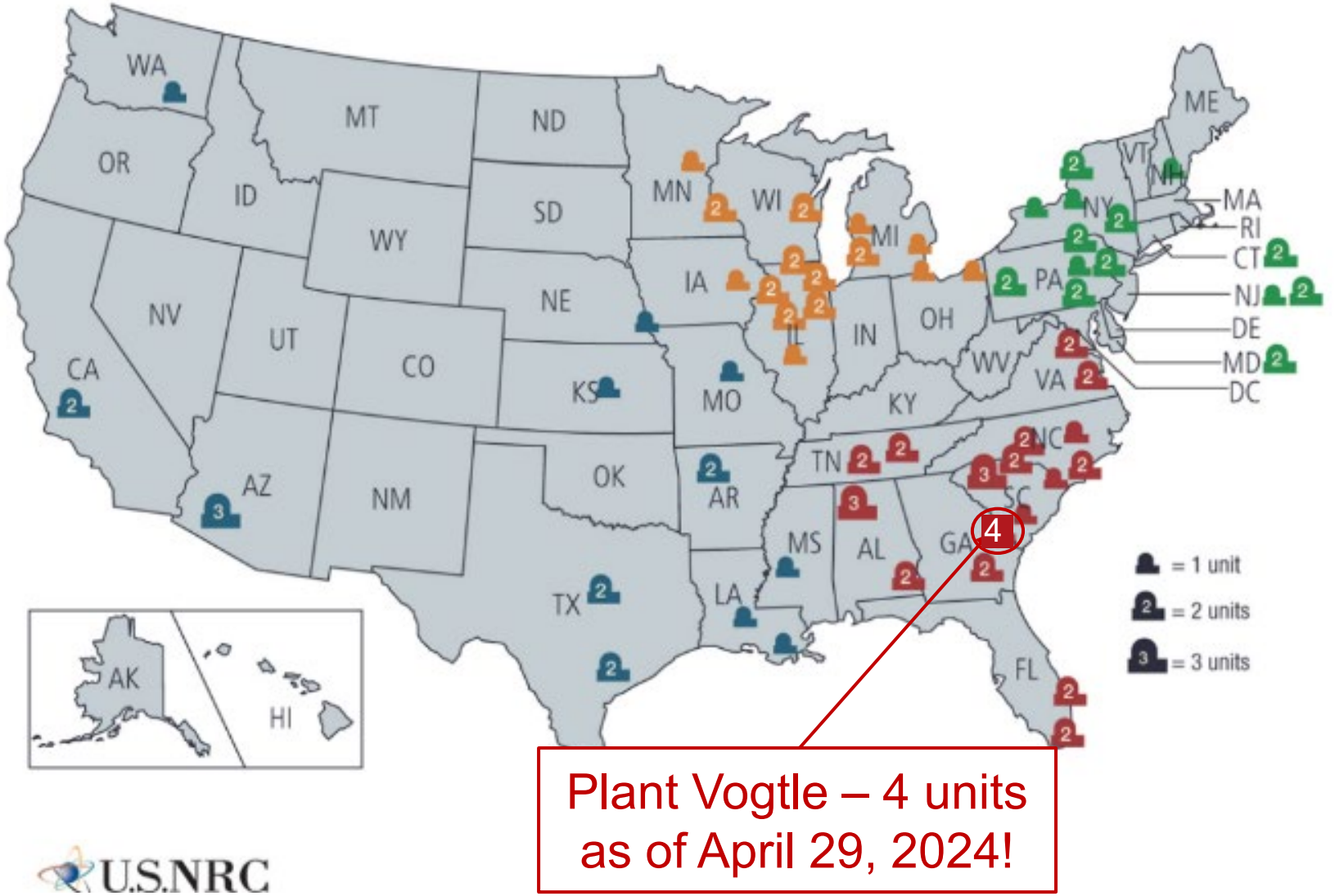
Southern Company Nuclear Energy Facilities

Plant Farley
2 PWR Units (1977, ‘81)
950 mw each
1,900 mw total

Plant Vogtle
2 PWR Units (1987, ‘89)
1240 mw each
2480 mw total

Plant Hatch
2 BWR units
1975 & ’79
924 mw each
1848 mw total

U.S. Operating Commercial Nuclear Power Plants



Plant Vogtle – 4 units as of April 29, 2024!

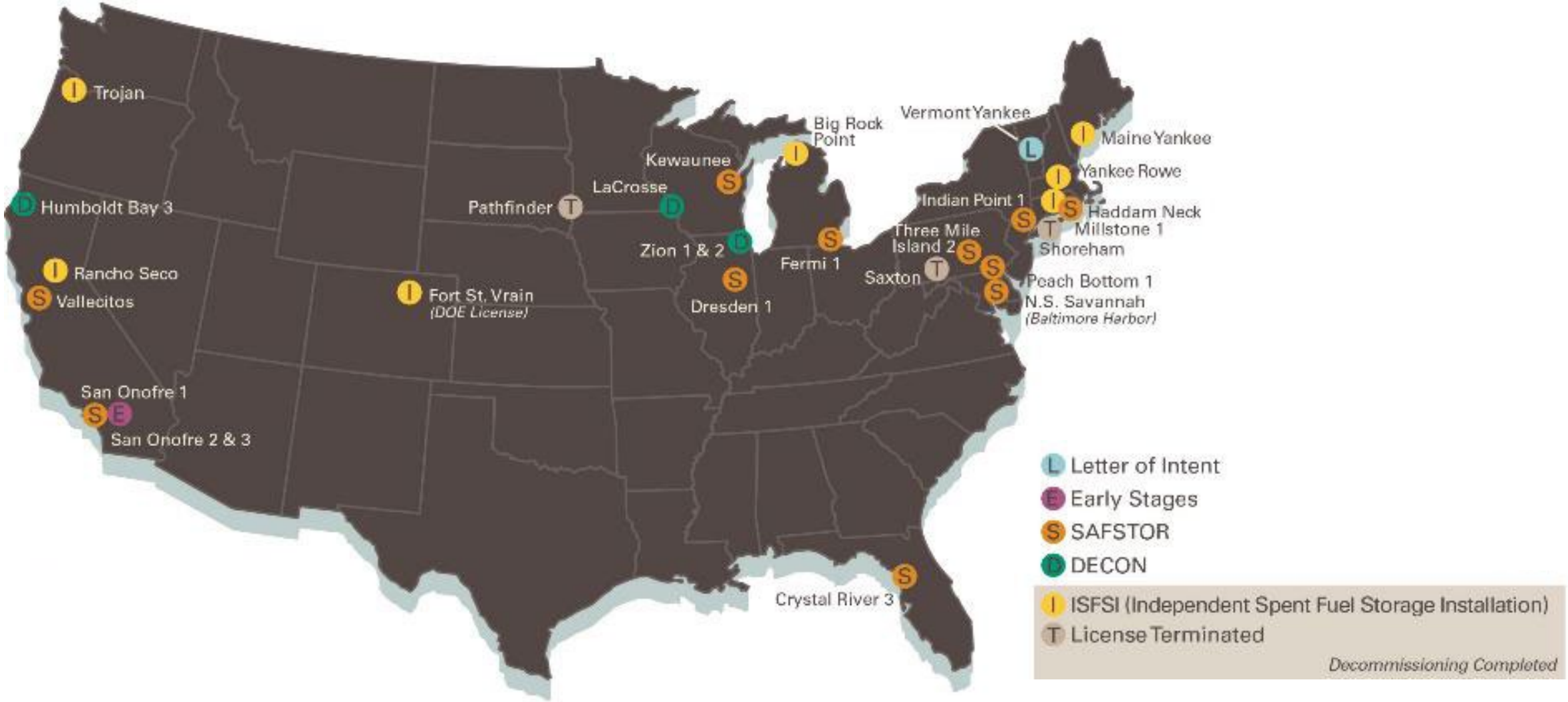
U.S.NRC

94 operating U.S. nuclear energy units

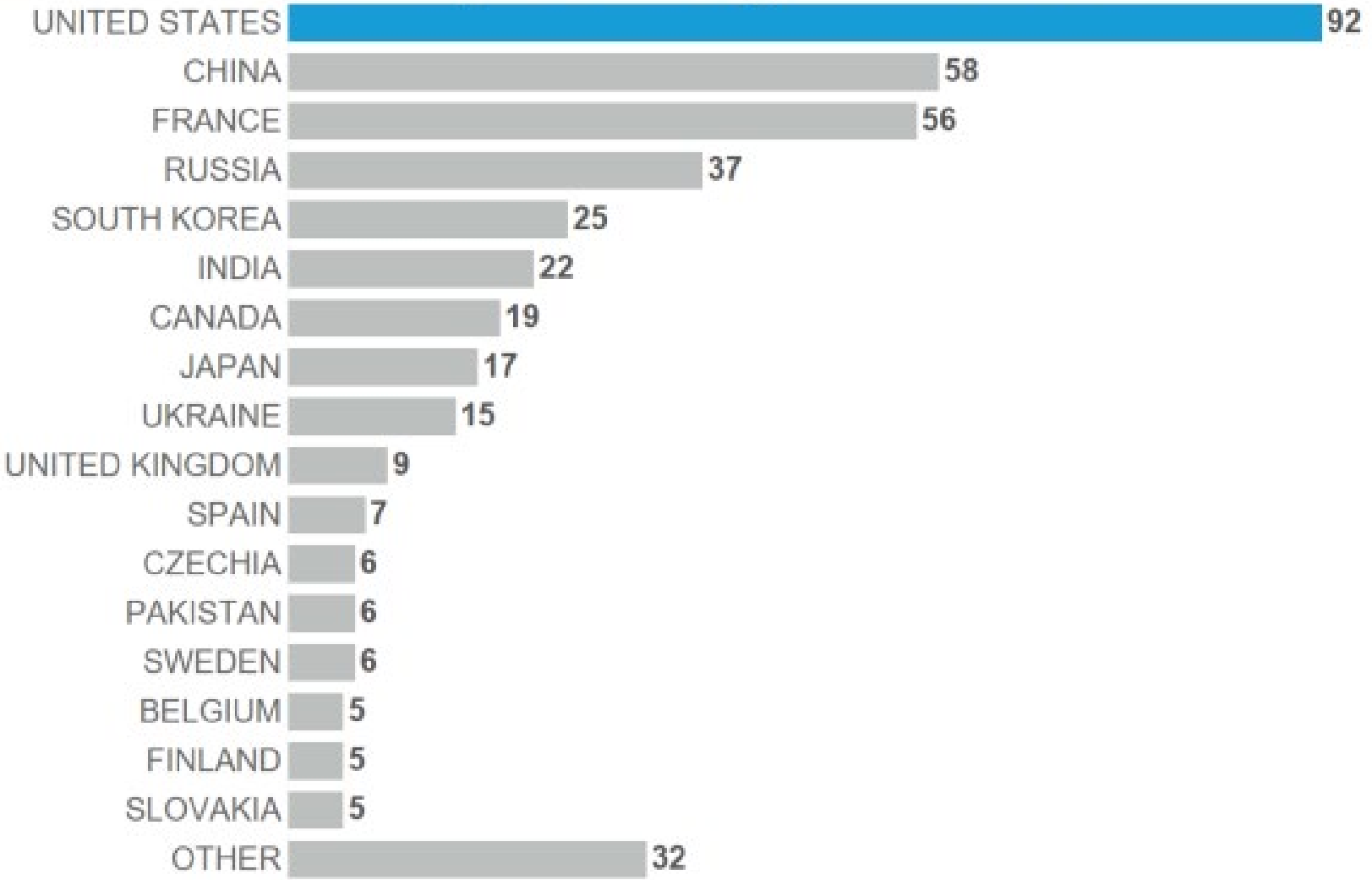
Also appx 100 U.S. Navy reactors, nuclear research/test reactors, and radioisotope processing facilities!

U.S. nuclear power plants reduce carbon emissions by the equivalent of taking 100 million U.S. passenger vehicles off the road!

Nuclear plants decommissioning status - 2023



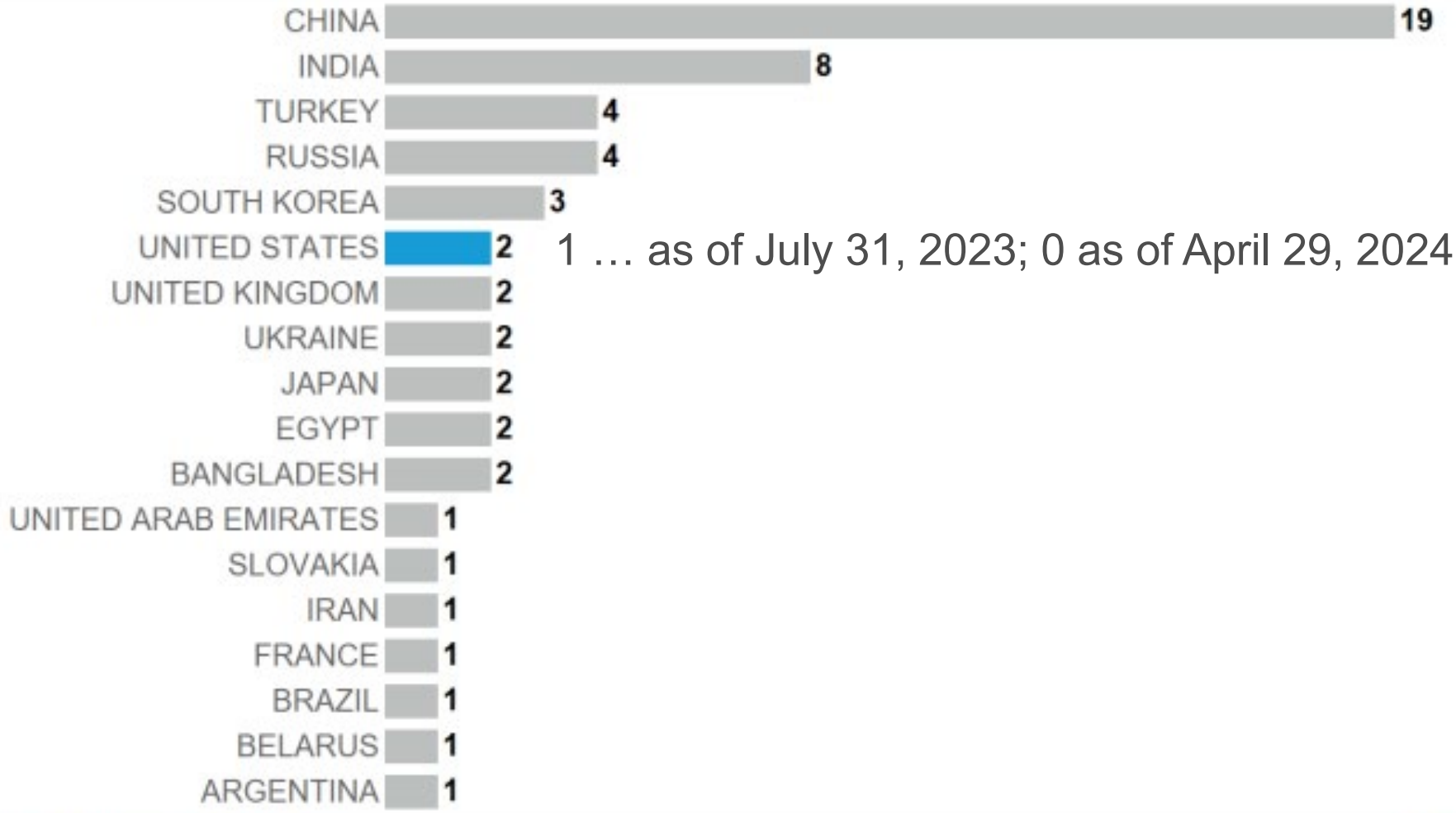
422 reactors operating worldwide



93 … as of July 31, 2023!
And now 94!

Source: International Atomic Energy Agency
Updated: March 2023

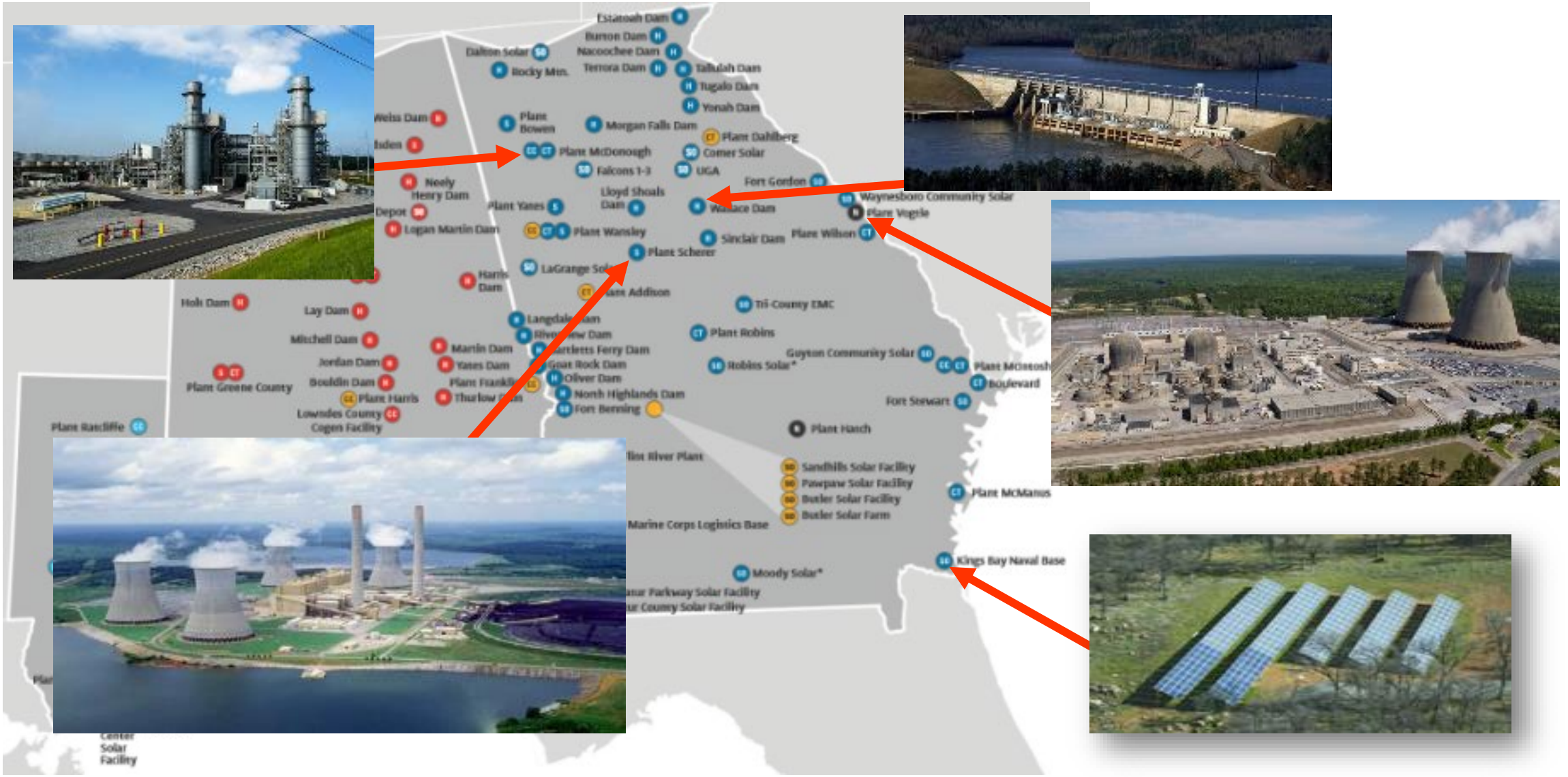
57 reactors under construction worldwide



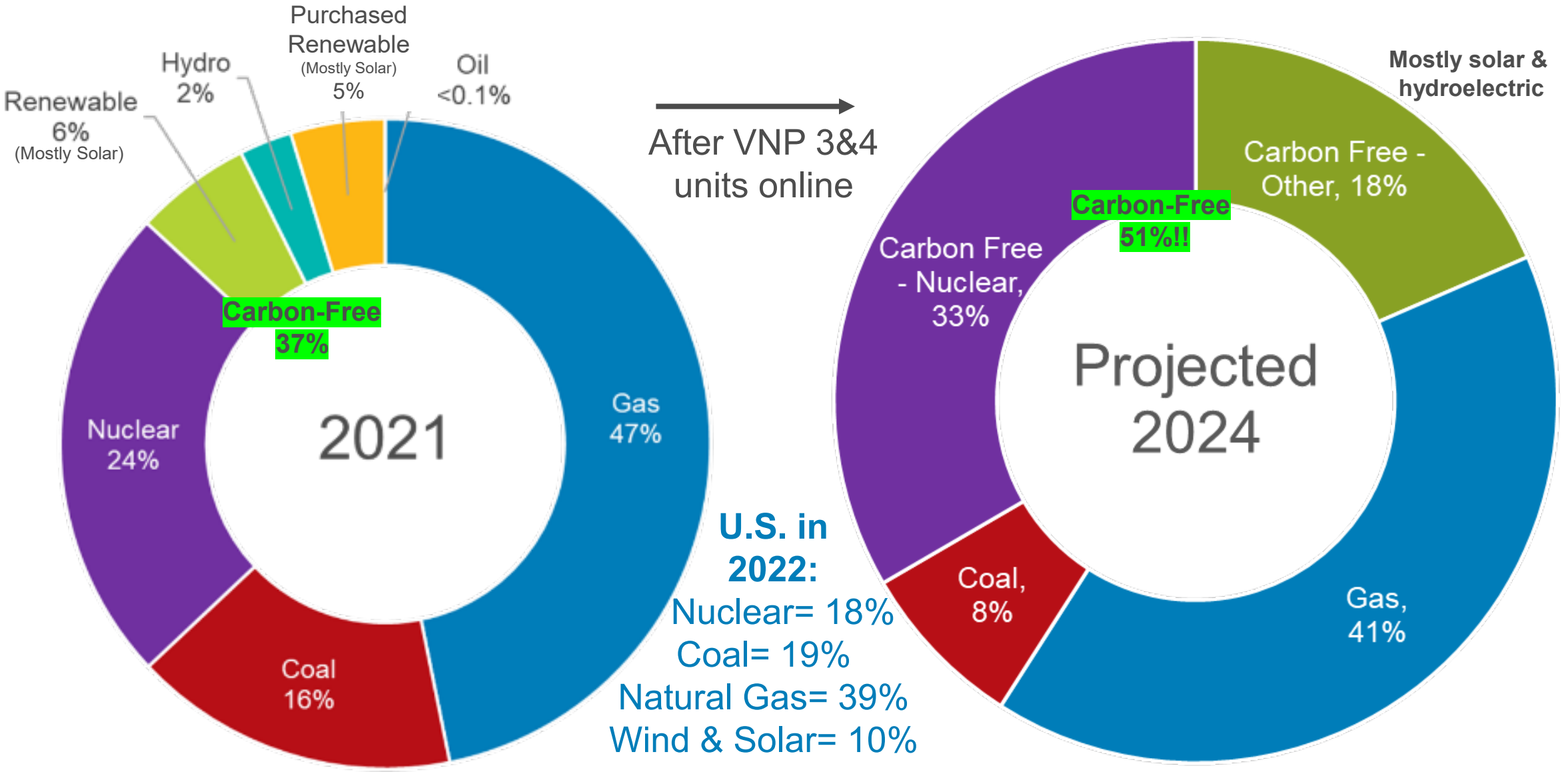
1 … as of July 31, 2023; 0 as of April 29, 2024.

Source: International Atomic Energy Agency
Updated: March 2023

Southern Company – Generation of Electricity



Georgia Power Projected Energy Mix – 2024



U.S. in 2022:

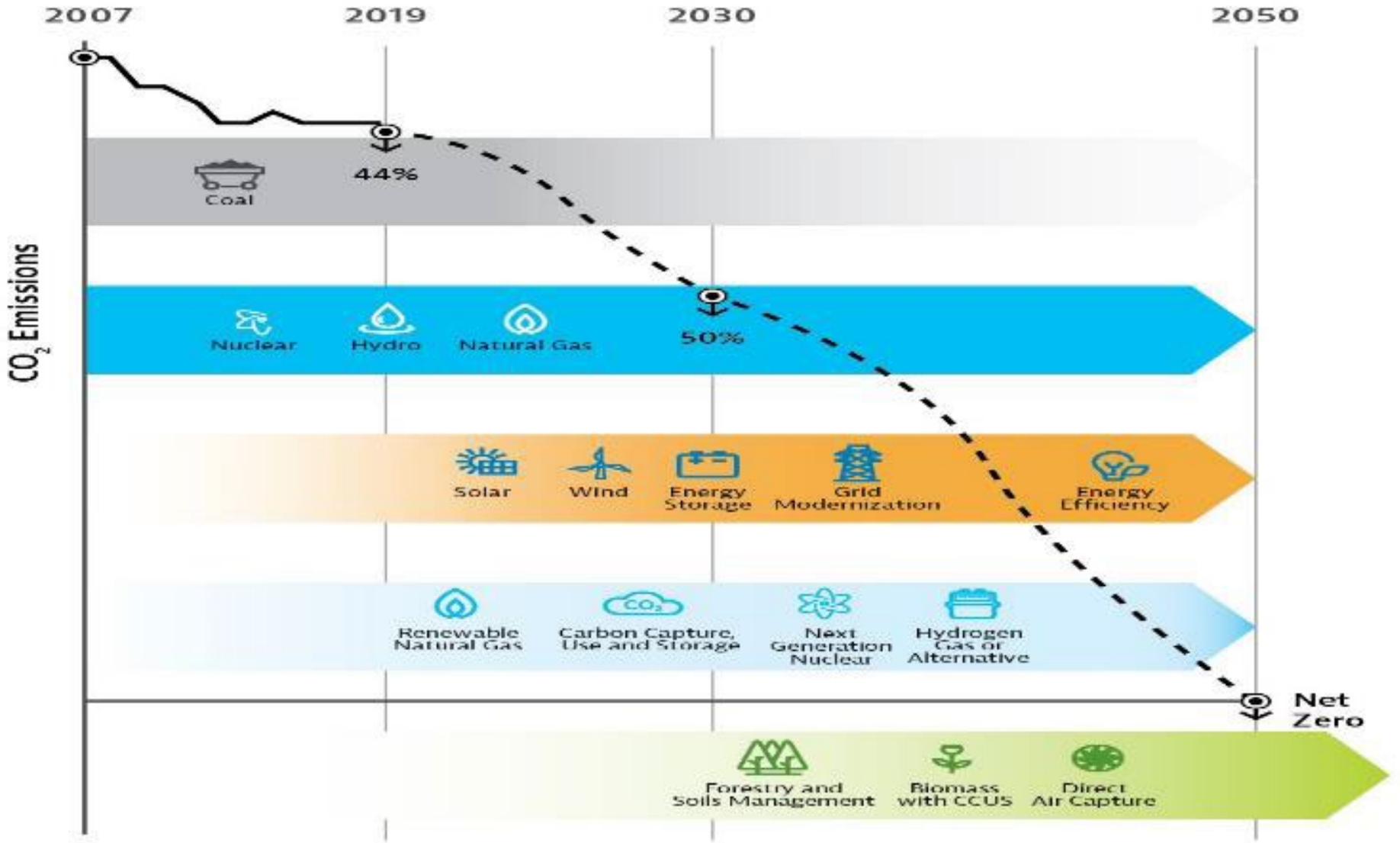
Nuclear= 18%

Coal= 19%

Natural Gas= 39%

Wind & Solar= 10%

Southern Company – A Path to Net Zero Carbon Emissions



Nuclear Energy – a tremendous amount of energy

1.725 mil acres / 2700 sq. miles or
2,000 wind turbines

42,320 acres or
15 million solar panels

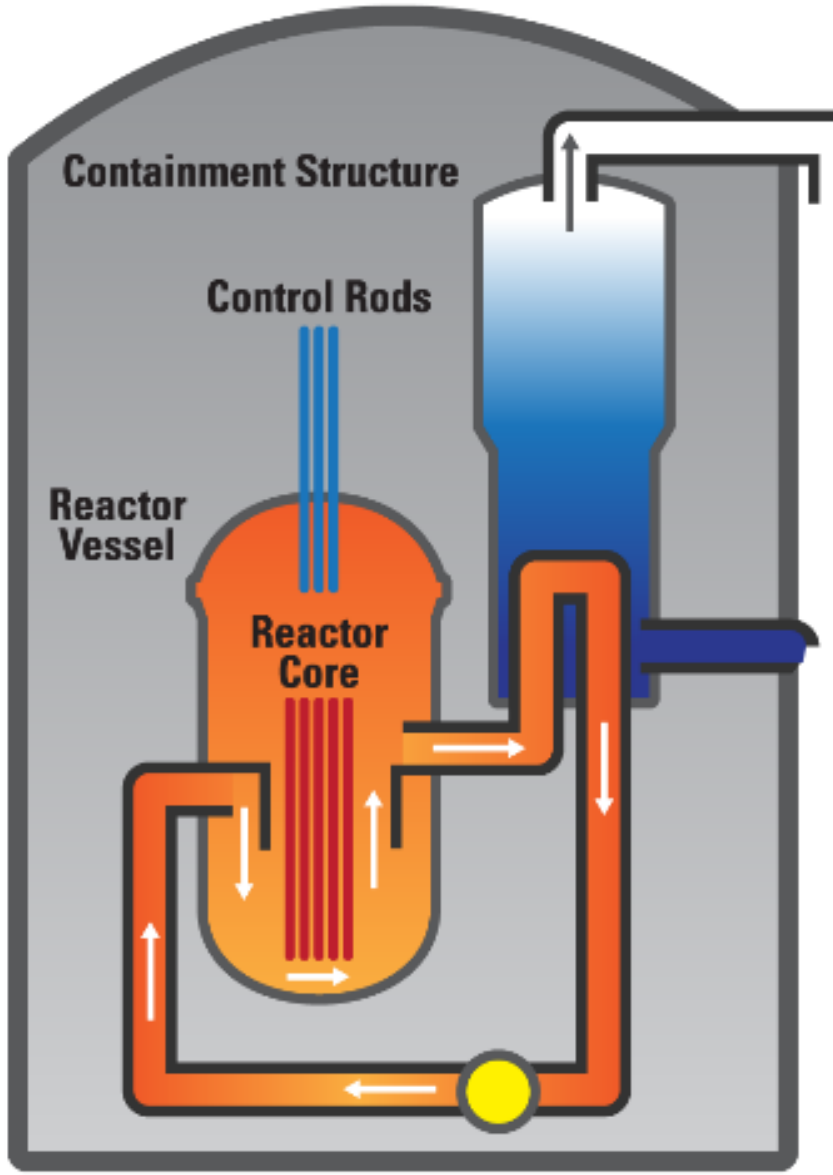
8.6 million acres of trees

2,000 acres (4 Vogtle units)
4,600 megawatts

360
Pellets

264
Fuel Rods

193
Fuel Assemblies



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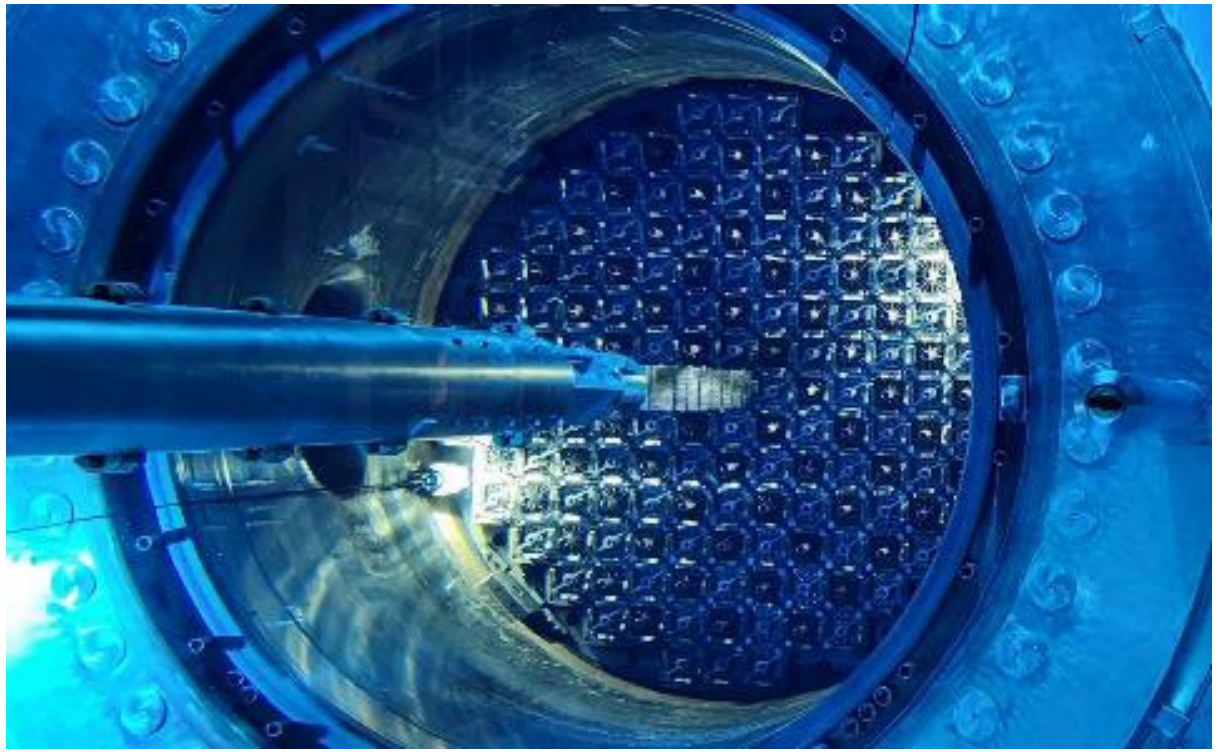
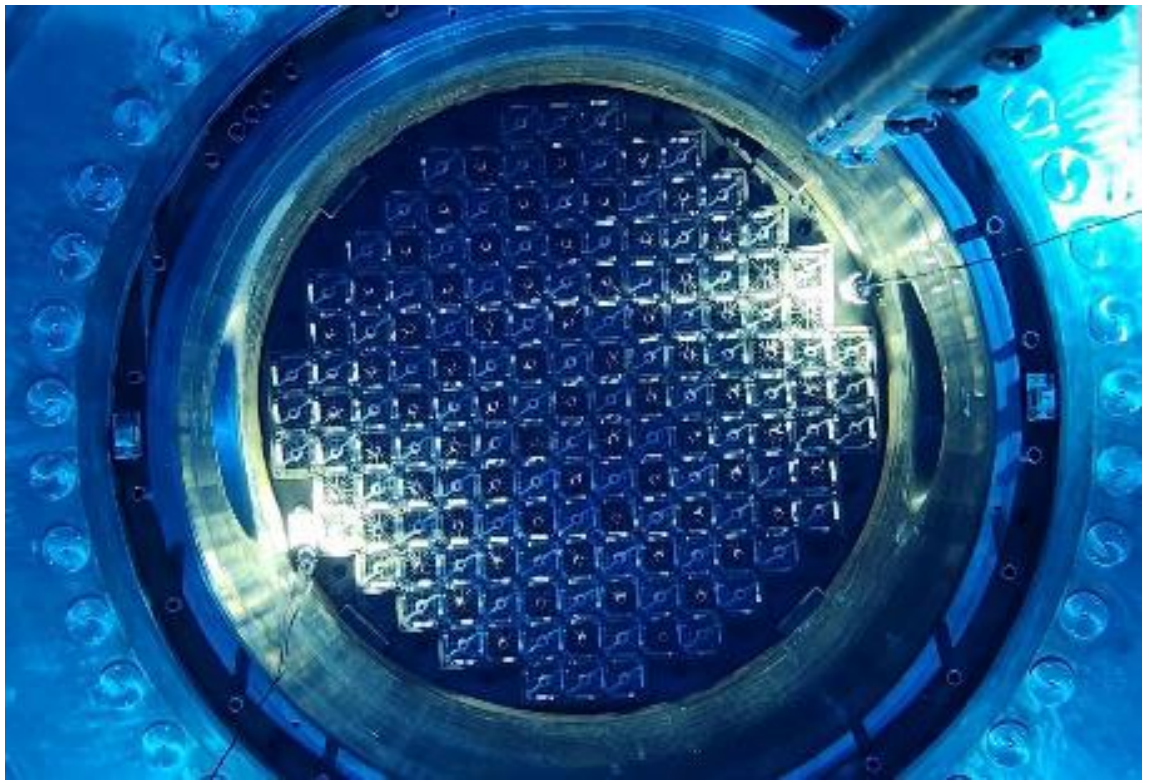
18,000,000
Pellets
in one Reactor Core

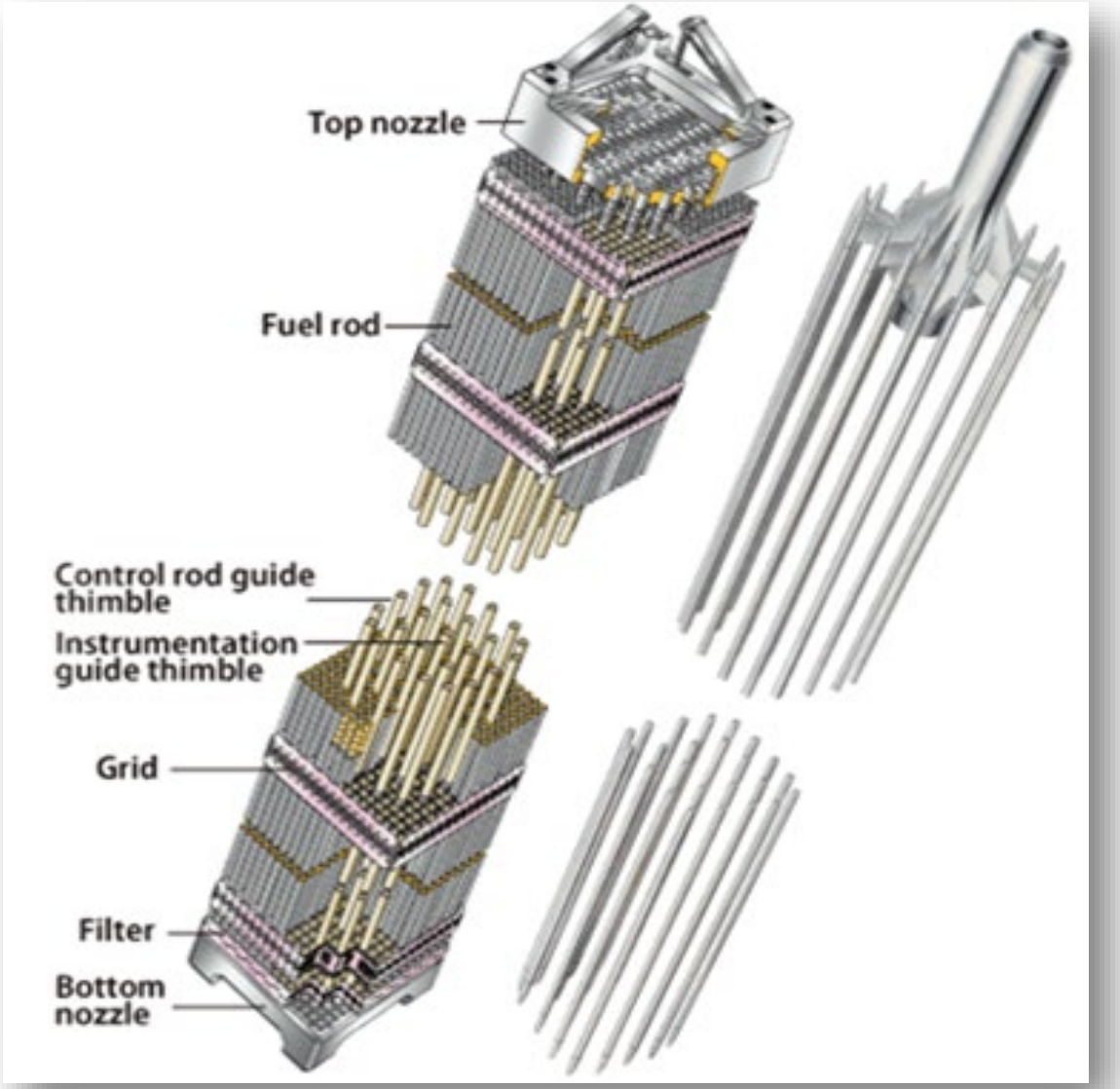
Vogtle Unit 3 fully fueled for first time – Oct. 17, 2022





Vogtle Unit 3 initial criticality achieved March 6, 2023

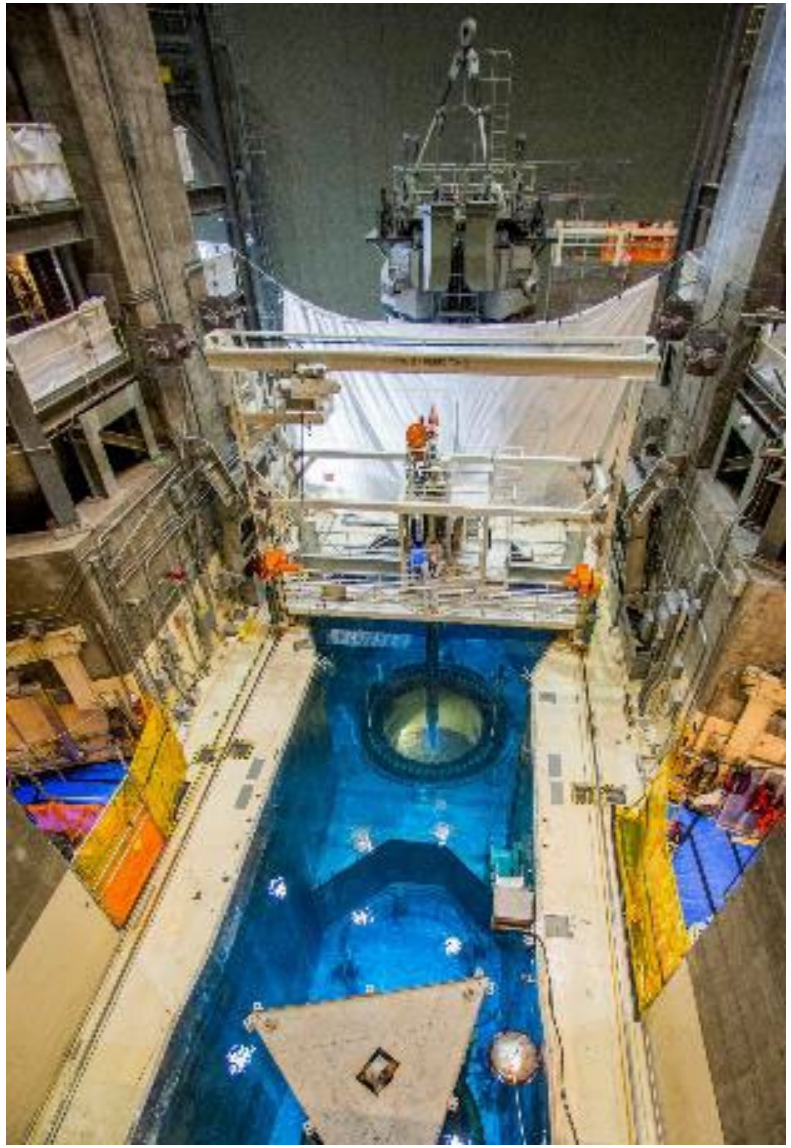
Fuel and Control Rod Assemblies

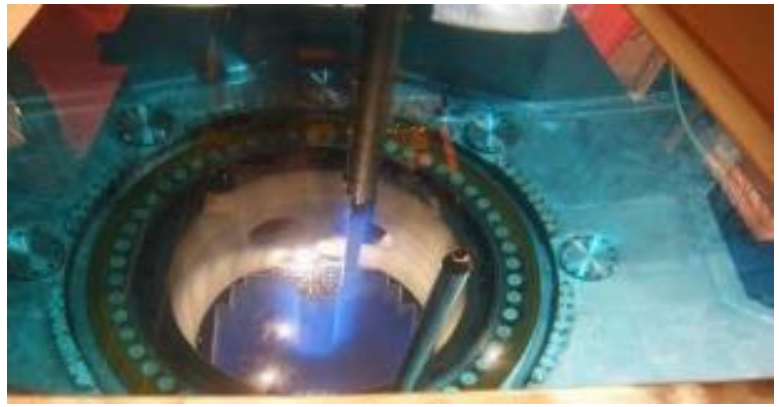


Vogtle 1 & 2, per reactor -
- 193 fuel assemblies
- 53 control rod assemblies

Vogtle 3 & 4, per reactor –
- 157 fuel assemblies
- 53 “black” and 16 “gray” control rod assemblies

Refueling & Maintenance Outages

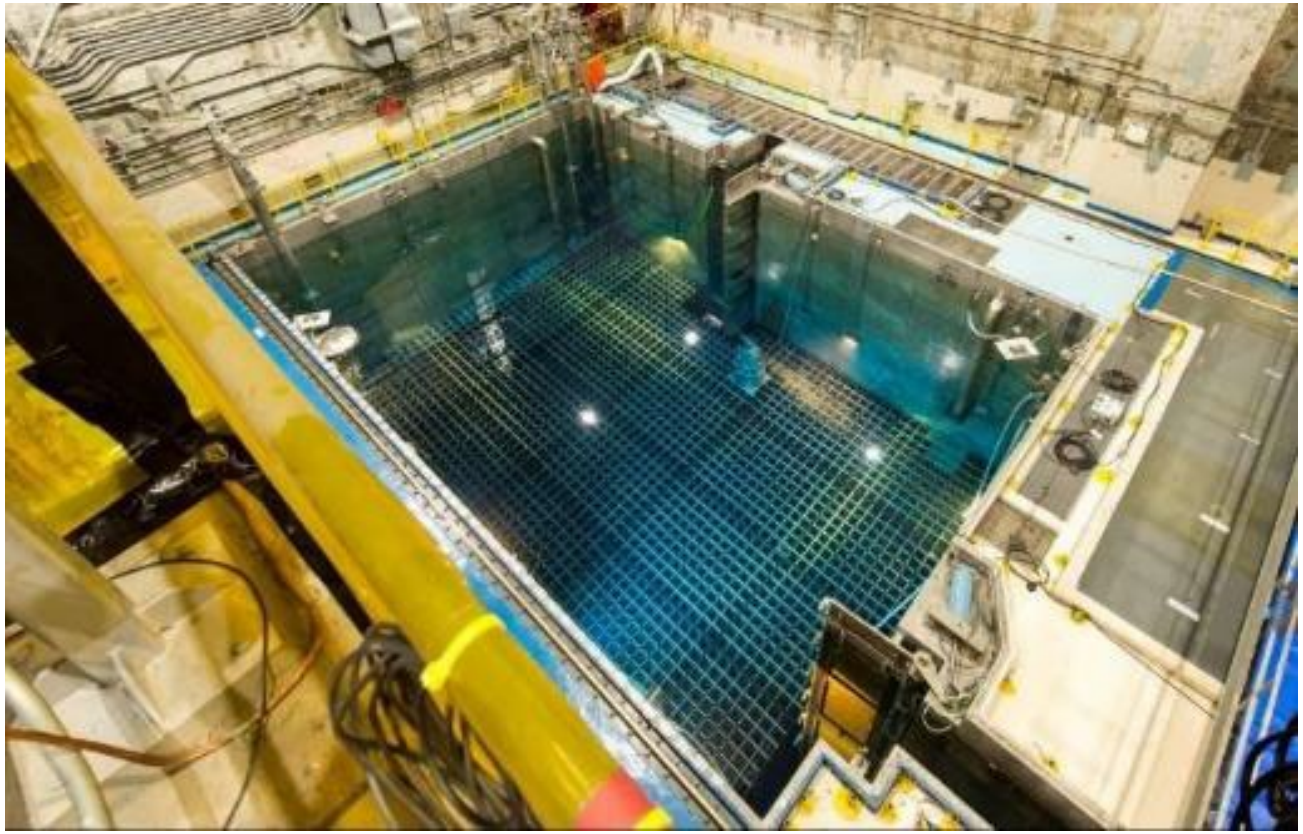




- Every 18 months (spring and fall)
- Hundreds of contractors
- Systems checked, repaired & replaced
- New fuel added; appx 40% used fuel removed

Fuel inspection

Vogtle Unit 1 Used Fuel Pool

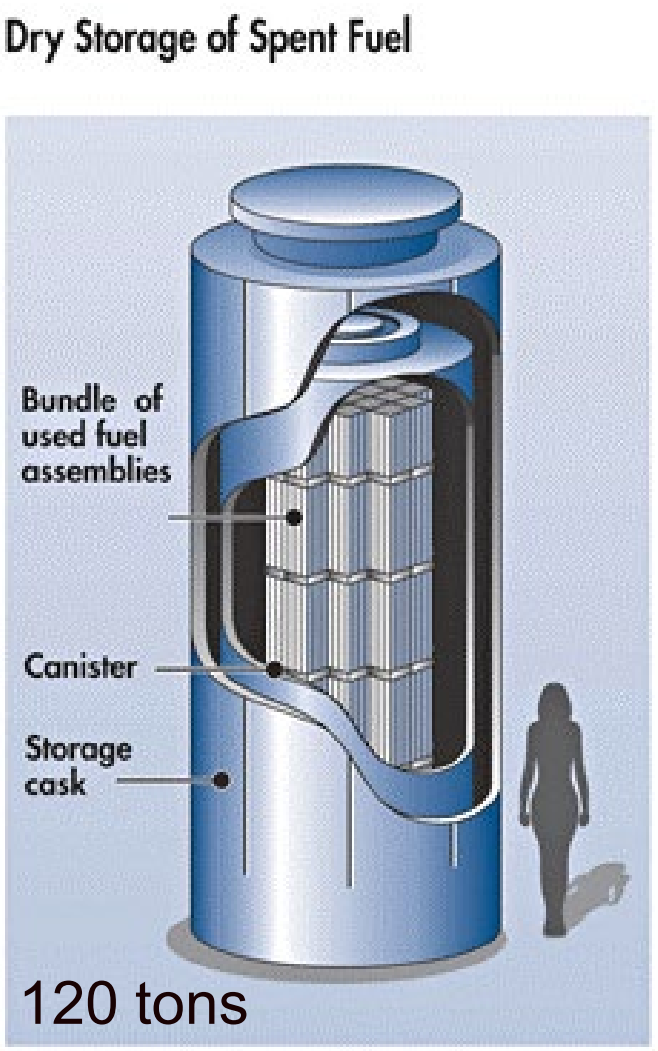


Unit 3 spent fuel pool; new fuel added 1Q 2022

-One of eight spent fuel racks; each rack is 17 feet tall; made of neutron-absorbing materials to minimize decay heat from used fuel assemblies.

-Can store 880 fuel assemblies; stainless steel walls create 42-foot deep pool of 190,500 gallons of borated water.

Used Fuel Storage



Used Fuel Storage

- Vogtle began loading fuel into dry storage in 2013
- Most nuclear plants use dry storage
- No current long-term storage (i.e., Yucca Mt) or reprocessing currently in U.S.

Independent Spent Fuel Storage (ISFS) – Oct. 2022

vertical-cask-transporter-time-lapse-video FB

Beyond on-site storage of used nuclear fuel

- Place in permanent repository – i.e., Yucca Mountain, Nevada

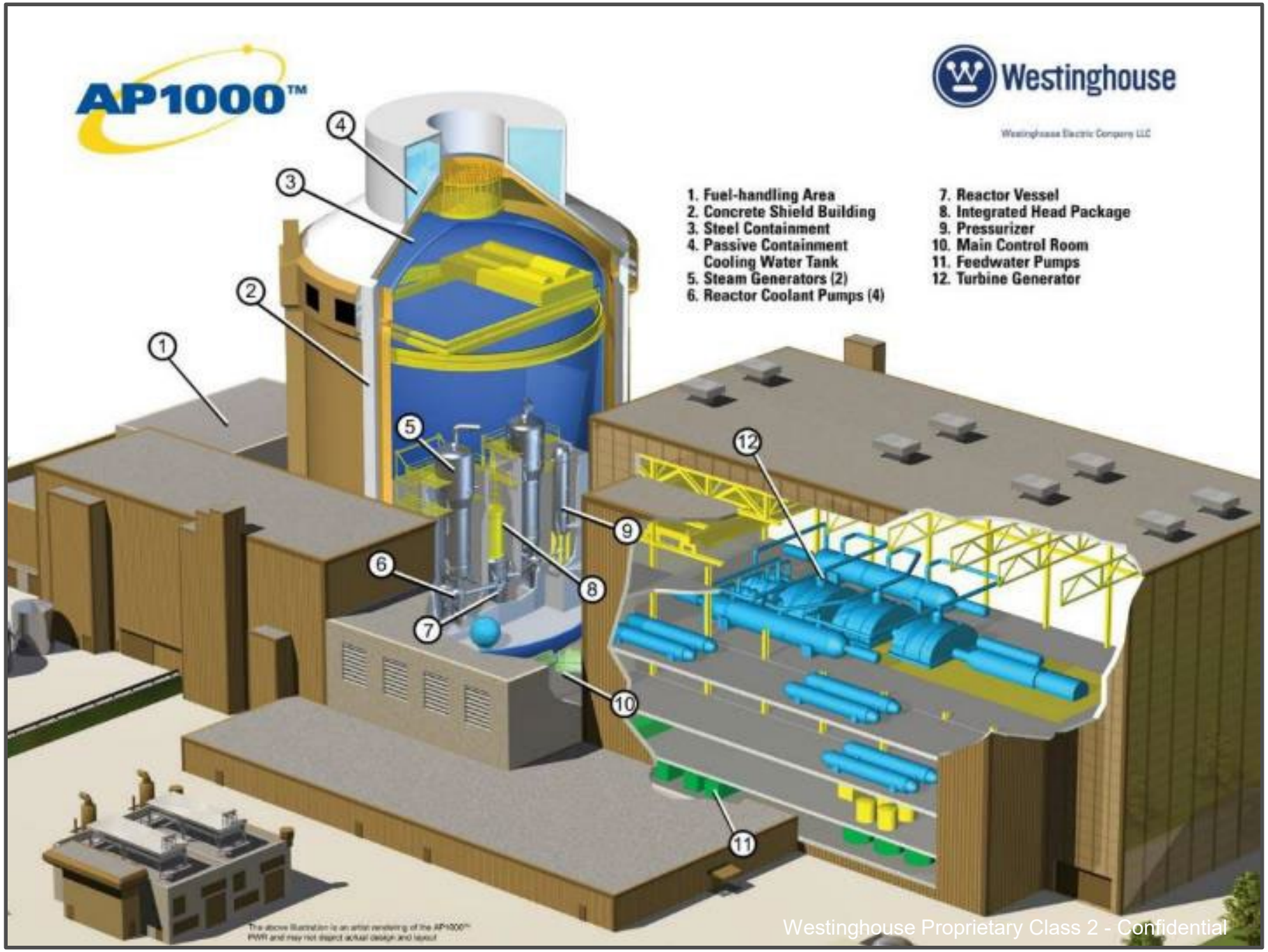
and/or

- Place in off-site temporary storage
- Reprocess to make new fuel
- Use in next generation of electric generating facilities

Vogtle Units 1 & 2 FLEX Dome

- Stores mobile diesel generators, pumps and other equipment needed in a “beyond design basis” event
- Post-Fukushima response

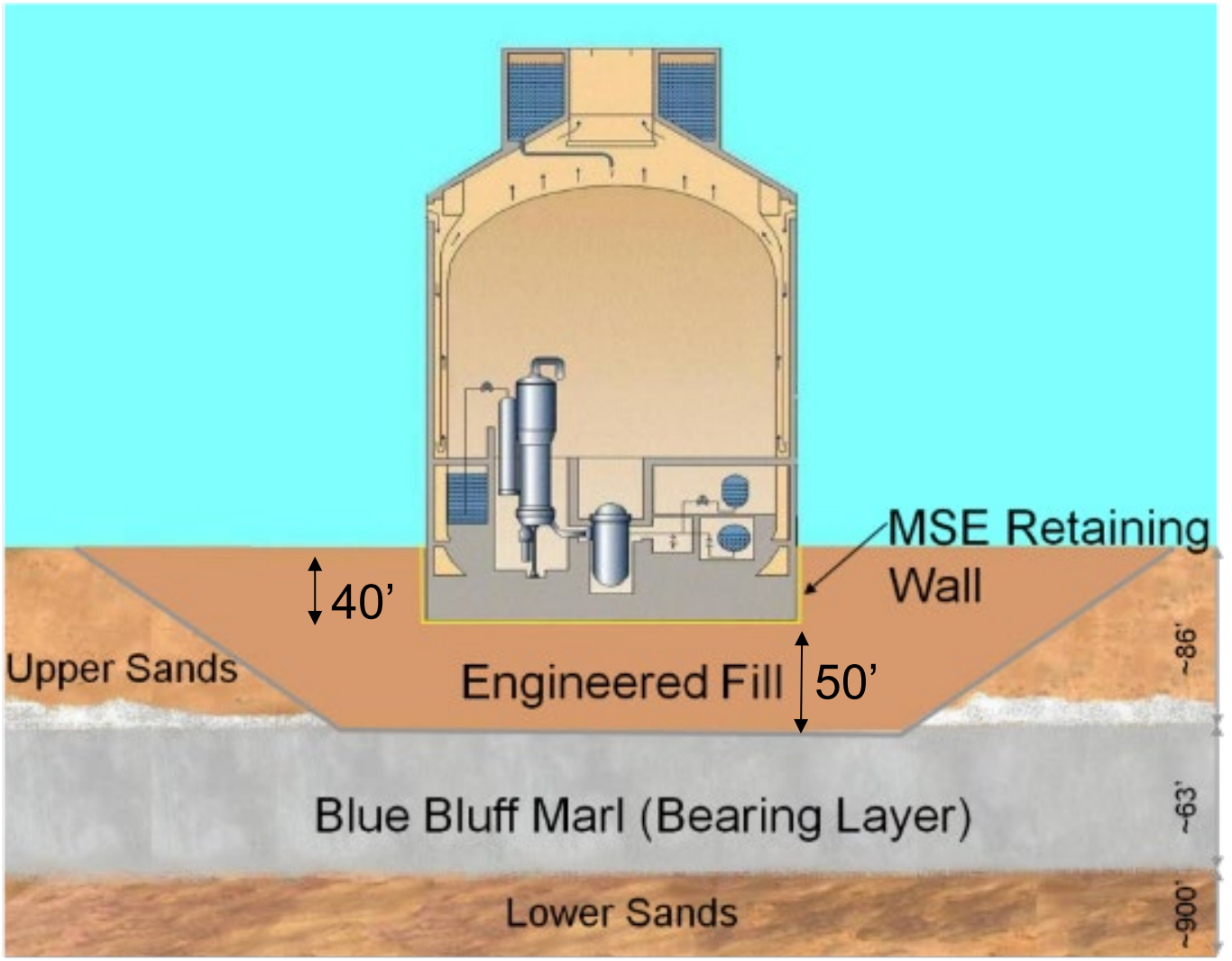
- With connection points inside secured area of facility



AP1000 (Advanced Passive) Design

- AC electrical power not required for safe shutdown
- Operator actions not required for 72 hours to maintain core and containment cooling
- Designed for core to stay remain covered with water

Plant Vogtle 3 and 4 - Timeline



2009 – NRC issues Early Site Permit; Georgia PSC approves construction; Preliminary site work begins

2010 - 2012 – 22 million cubic yards of earth moved; Engineered fill sifted and compacted

2012 – NRC issues Construction and Operating License (COL); Full construction begins

Reactor Vessels at Vogtle – Nov 2016

Unit 4 reactor cavity – March 2021

[YouTube video Unit 3 reactor vessel placement]

Plant Vogtle 3&4 – June 2018

Vogtle Unit 3 passive water tank placement – May 2020

- Final large module for Unit 3
- 35 feet tall, 720,000 pounds empty
- Holds 750,000 gallons of water
- Part of passive cooling system (if needed) - to provide emergency cooling to reactor and used fuel pool

EA_CC_Vogtle 4 CB20 Placement Timelapse_Final (brightcove.net)

https://youtu.be/bB4REu5c_Ow

Plant Vogtle – Nov. 2021

Vogtle 1-4 – March 2024

Vogtle 3&4 timeline

2009	Georgia PSC approves construction of units 3 and 4
	NRC issues Early Site Permit // Preliminary site work begin
2012	NRC issues Construction and Operating License (COL)
2013	First Nuclear Concrete in Unit 3 and Unit 4
	Shaw sold to CB&I
2015/16	CB&I sold to Westinghouse // Settlement Agreement // Initial Prudency
2017	Westinghouse Bankruptcy // SNC Assumes Project Management // VC Summer project ended
2019	Unit 3 Containment Vessel Completion and Initial testing started
2021	Unit 3 Hot Functional Testing Completion
2022	Unit 3 Fuel Load
2023/24	Commercial Operation Dates for Units 3/4

Challenges Faced & Overcome

- Reconstituting a nuclear workforce after 30 years of dormancy
- Fukishima (2011) – impacted ability to acquire license by 10+ months
- Modular construction challenges
- Westinghouse Bankruptcy / New Contractor
  - Loss of Fixed Price Contract protections
  - New Project Management Structure/ Budget/ Schedule
  - Stakeholder Approvals
  - Kept project alive
- Competing for skilled craft labor in a strong economy
- First of a kind; Unit 3 lessons learned applied to Unit 4
- COVID-19 Pandemic

Advantages of nuclear energy - NEI

Nuclear fights climate change. Nuclear energy provides large amounts of 24/7/365 carbon-free electricity now, which is crucial to protect the environment.

Nuclear protects our air. Nitrogen oxide, sulfur dioxide, particulate matter and mercury: all things you don't want in the air you breathe. Nuclear energy provides clean power without a trace of those pollutants.

Nuclear generates jobs. Nuclear energy provides well-paid, long-term jobs and supports local economies with millions of dollars in state and local tax revenues.

Nuclear provides energy security. Nations are waking up to the fact that they are more secure with nuclear in their energy portfolio—especially with the U.S. as their chosen partner.

Nuclear Energy

Generates Large Amounts of Electricity – Safely and Reliably – 24/7 for 18-24 months at a time
(90%+ capacity factor)

- **Electrical Grid Stability**
- **Price Stability** (Long-Term Investment)
- **Runs When Needed** (Fuel on Site)
- **Clean Air, Carbon Free**
- **Fuel and Technology Diversity**
- **National Security, Energy Independence, & International Leadership**
- **Jobs, Tax Base, Community Benefits** *(Appx $400M/ Year/Site)*

Stormwater Management and Water Resource Planning

Caroline Smith, Georgia Association of Water Professionals

GEORGIA
WATER PLANNING

www.georgiawaterplanning.org

GEORGIA ASSOCIATION OF WATER PROFESSIONALS

Pam Burnett, Executive Director

Founded in 1932, by treatment plant operators, the Georgia Association of Water Professionals educates, provides professional development and promotes sound public policy in the water resources and related environmental fields.

Georgia Association of Water Professionals

GAWP IS COMPRISED OF 4,000 INDIVIDUAL MEMBERS AND 300 UTILITY AND CORPORATE MEMBERS.

Our members are water and wastewater treatment plant operators and managers, municipal and industrial officials, stormwater and environmental managers, civil engineers, environmental engineers, scientists, manufacturers and their representatives, contractors, elected officials, and others concerned with Georgia's water resources.

Georgia Association of Water Professionals

FOSTERING INDUSTRY COLLABORATION AND ENGAGEMENT

- Many Waters... One Source for Answers
- 38 Committees
- Robust technical programs at conferences and workshops.
- Executive Luncheon and Utility Leader Call series.
- Leadership Academy to support growth.
- Collaborative discussions on industry issues and solutions.

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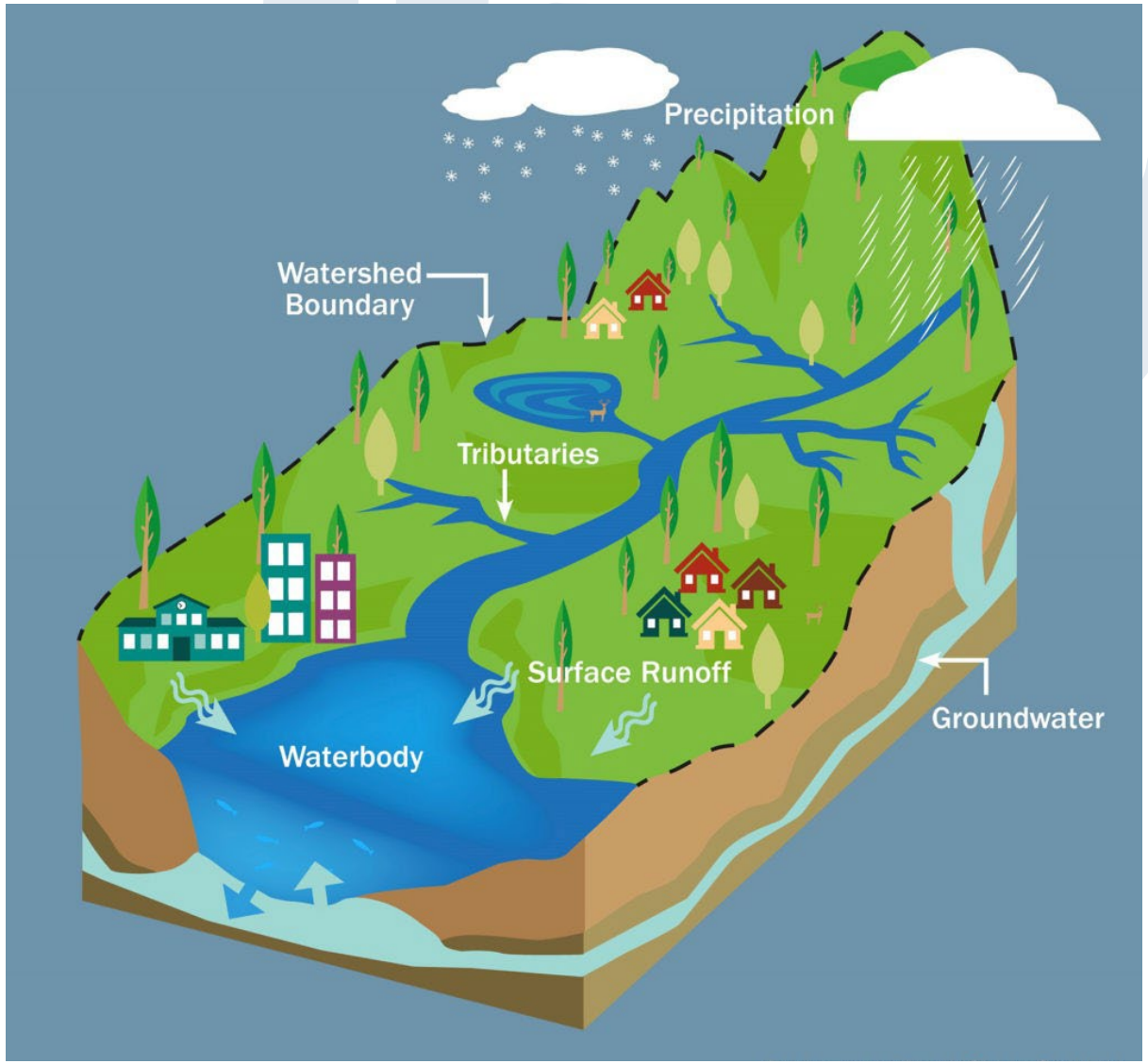
WHAT IS A WATERSHED?

- Watershed is that geographic area that drains into a stream or river
- Watershed = catchment = drainage area
- Urbanization of watersheds increases stormwater flows
- Groundwater, surface water, atmospheric water all connected



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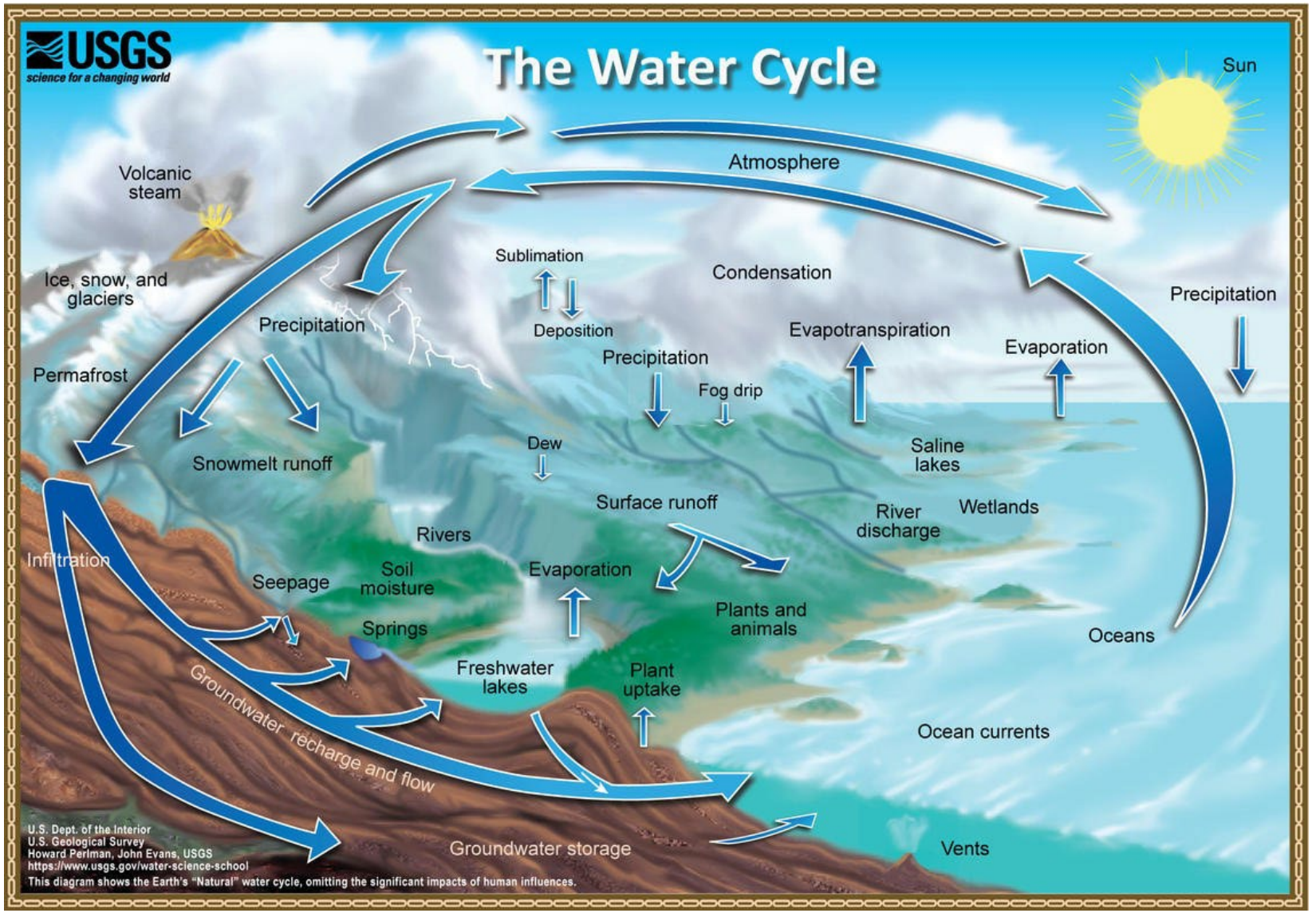
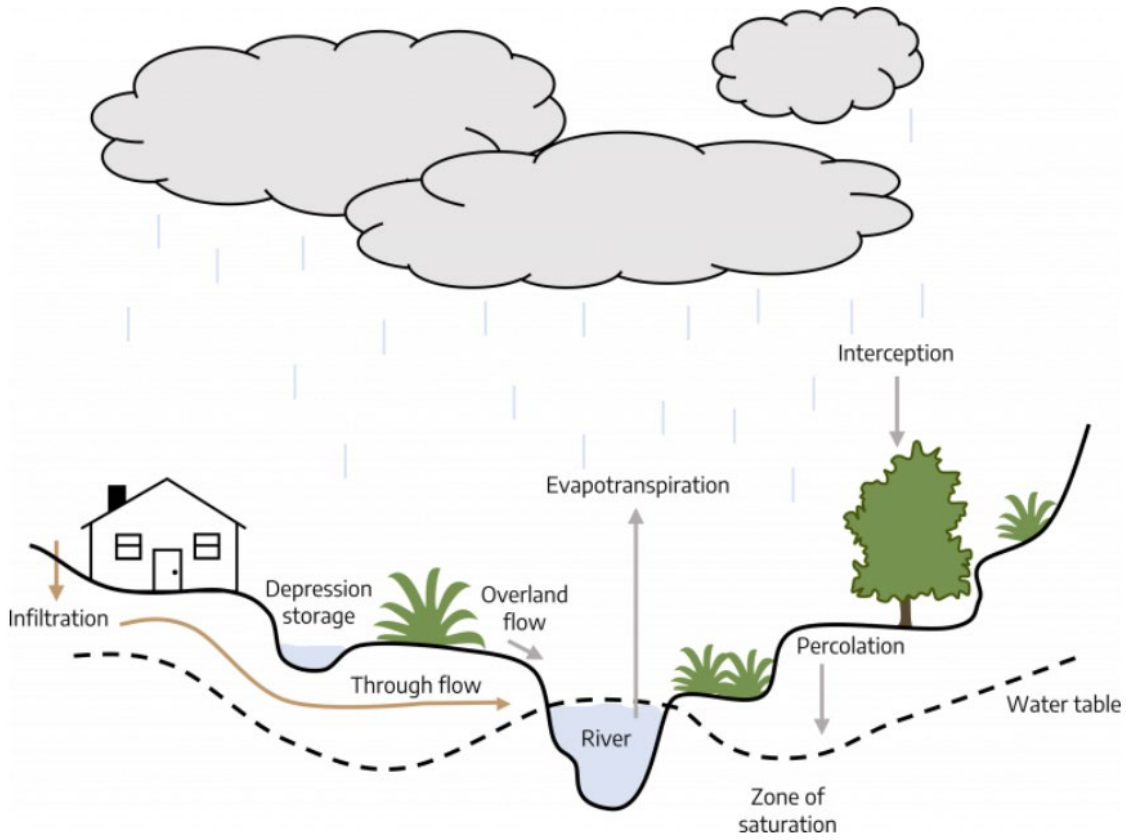

USGS
science for a changing world
The Water Cycle
Sun
Atmosphere
Volcanic steam
Ice, snow, and glaciers
Sublimation
Condensation
Deposition
Precipitation
Precipitation
Evapotranspiration
Evaporation
Precipitation
Permafrost
Precipitation
Fog drip
Dew
Snowmelt runoff
Saline lakes
Surface runoff
River discharge
Wetlands
Rivers
Infiltration
Seepage
Soil moisture
Evaporation
Springs
Plants and animals
Oceans
Freshwater lakes
Plant uptake
Groundwater recharge and flow
Ocean currents
Groundwater storage
Vents
U.S. Dept. of the Interior
U.S. Geological Survey
Howard Perlman, John Evans, USGS
https://www.usgs.gov/water-science-school
This diagram shows the Earth's "Natural" water cycle, omitting the significant impacts of human influences.

STORMWATER

- Stormwater is the result of precipitation that flows overland to streams and other bodies of water
- Stormwater collects pollutants as the water flows overland
- Stormwater is typically not treated
- The amount of runoff is increased by hard, impervious, or compacted surfaces



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QUALITY & QUANTITY

- Stormwater is directly related to <u>land use</u>
  - **'generally, the more the land is *used* (developed) the more stormwater will be generated'**
- Concentrations and Number of Contaminants in Streams Increase With Urban Development

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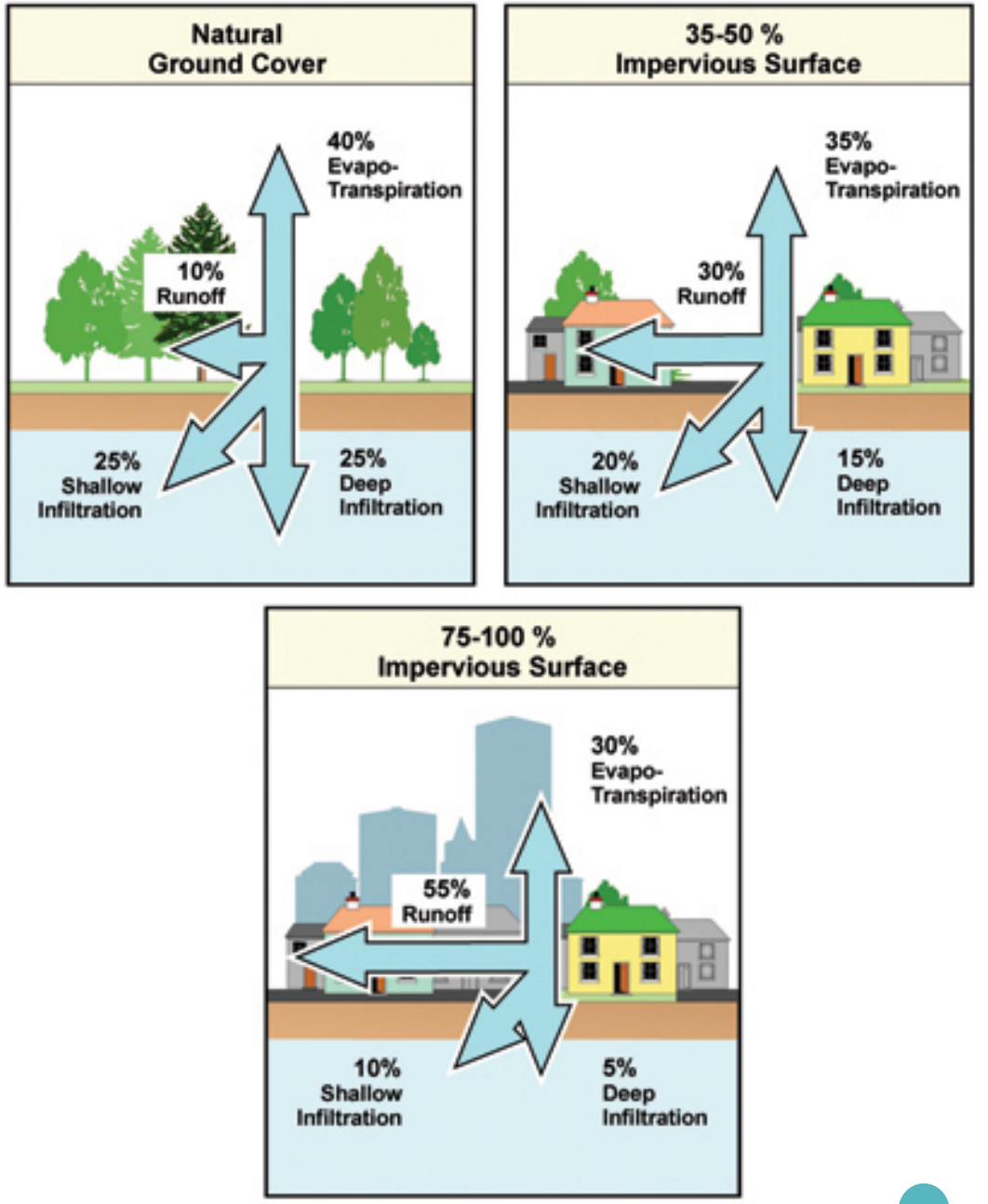
INCREASED RUNOFF

- Increased levels of sediments, nutrients, and other pollutants
- “Flashy” streamflow
- Decreased Groundwater Recharge
- Flooding
- Wastewater Overflows



WOULD YOU RATHER FISH IN…

THIS

OR THIS?

Georgia Association of Water Professionals

WOULD YOU RATHER FISH IN…

THIS

OR THIS?

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POLLUTANTS

Total Suspended Solids

- A.K.A. sediment
- # 1 water pollution problem

- Enters waterways through erosion on farm fields, construction sites, and stream banks during storms.
- Affects stream organisms, degrades aquatic habitat, and reduces water clarity.
- Toxic contaminants also often attach to sediment, making its pollution even more harmful.
- High amounts of sediment require treatment from drinking water treatment plants.

POLLUTANTS

Major sources of nutrient pollution include fertilizers, manure, wastewater treatment plants, and urban runoff.

Contributes to:

- Algal growth,
- Low dissolved oxygen
- Fish kills.

Phosphorus

- Associated with sediment
- 1/3 soluble, 2/3 insoluble in water

Nitrogen

- From atmosphere (car exhaust, etc.)
- From fertilizer
- Water soluble
- Contaminates shallow groundwater

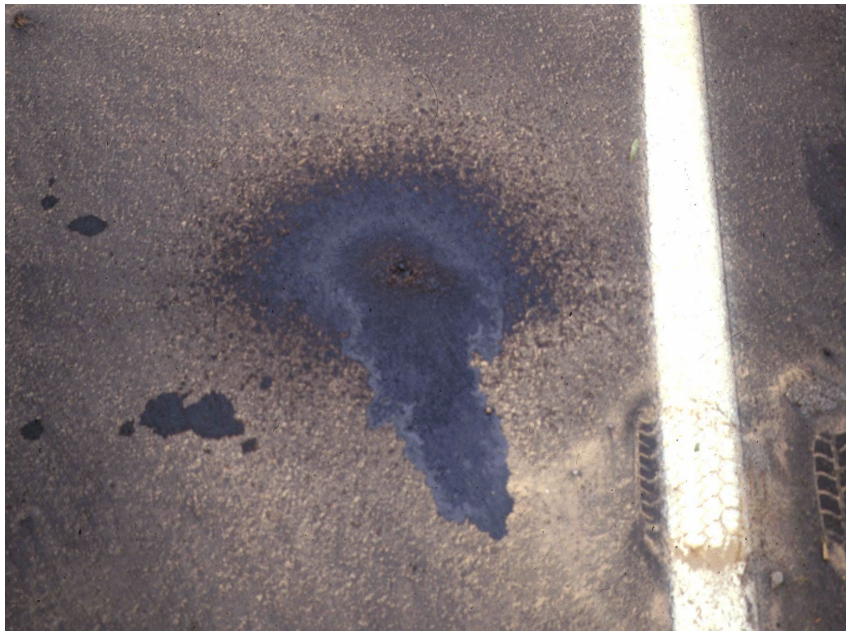
TASTE-AND-ODOR COMPOUNDS

- Make drinking water unpalatable for users and are expensive to treat
- **Geosmin**, an odorous but harmless chemical produced by cyanobacteria, which is a type of algae. Excess nutrients contribute to algal growth, which increases amounts of geosmin.
- **Total organic carbon**, a type of organic pollutant that contributes to a swampy, earthy, or musty taste in drinking water linked to organic matter decomposition

POLLUTANTS

Hydrocarbons

- Oil, gas, grease, etc. from cars/trucks



Bacteria

- Specified as fecal coliform
- Animal waste
- Leaking septic/sewers

POLLUTANTS

Temperature

- Runoff from hot pavement
- Power plant/industrial discharge
- Impacts aquatic species
- Lowers DO

Heavy Metals

- Lead, zinc, cadmium
- Sources: cars, truck, industrial processes

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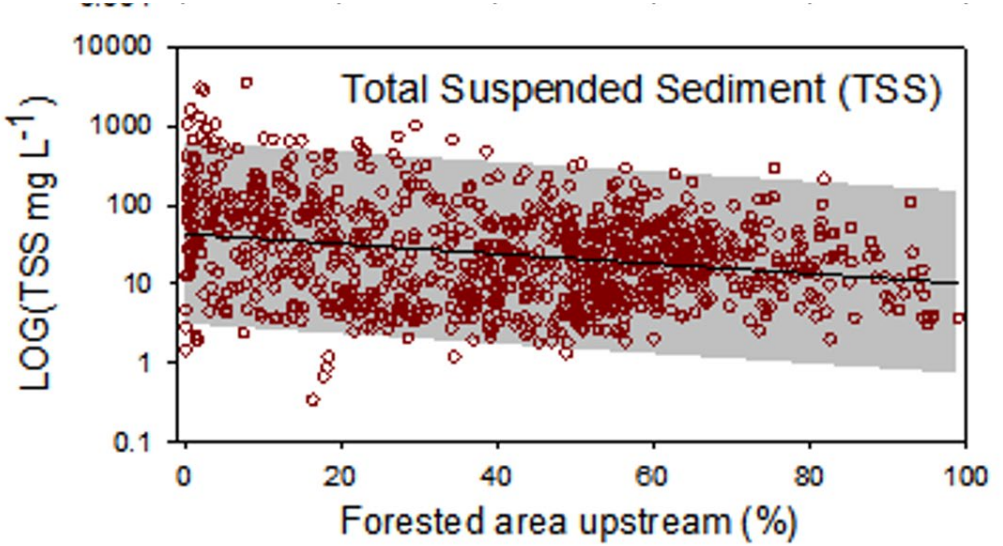
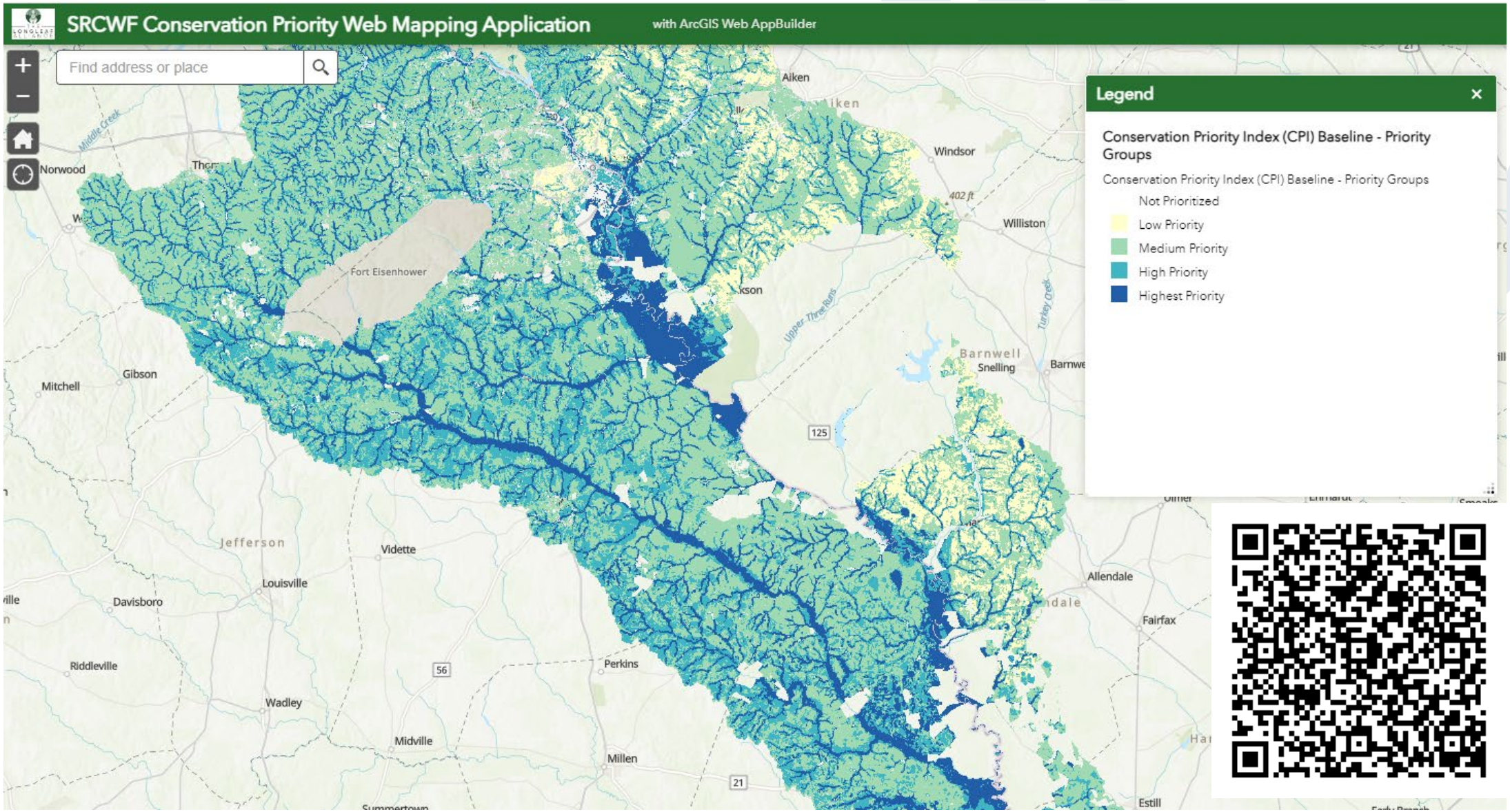
IMPACTS

- Harm to aquatic life
- Reduced assimilative capacity
- Increased treatment costs
- Taste and odor issues
- Recreation and Tourism



TOOLS

- Leverage partnerships for data and $
- Use existing resources
- Promote Best Management Practices (BMPs)
- Education & Outreach (WQ11)
- Asset Management
- Encourage Implementation of Nutrient Management Programs.
- Encourage Comprehensive Land Use Planning and Floodplain Management.
- Modeling alternatives and future conditions



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https://savannahrivercleanwater.org/

PREVENTION

- Asset management
  - Inventory
  - Mapping
  - Condition assessment
  - Maintenance program
- Promote Use of Forestry Best Management Practices and Stream Buffer Protection.
- Encourage Implementation of Nutrient Management Programs
  - Fertilizers (Residential & Ag)
  - Green Infrastructure & Nature Based Design

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QUESTIONS?

CAROLINE SMITH

CSMITH@GAWP.ORG

404-219-4640

EDUCATION

- Encourage Implementation of Local Stormwater Education, Public Awareness, and On-site BMPs.
- Perform public education, outreach, participation, and involvement activities.
- Consider stenciling stormwater manhole covers and stormwater sewer grates with “Drains to stream. Do not dump contaminants.”

- WQ1 - Evaluate/ Update Local Wastewater Master Plans
  - Add stormwater!
- WQ7 - Evaluate Restoration of Natural and/or Construction of Treatment Wetlands in Non-Urban/Low-Density Areas
- WQ11 - Customize State and Other Available Materials and Programs for Stormwater Public Education and Outreach

Management Strategy	Watershed Management Goals for Developing Lands						Watershed Management Goals for Urban Land					
	Restrict development	Conserve forests and reduce forest cleaning	Limit impervious cover	Control runoff volume	Control peak flow rates	Limit pollutants	Encourage reuse of existing urban areas	Increase tree canopy	Reduce, disconnect, and (or) treat impervious cover	Reduce runoff volume and peak flows	Reduce pollutants	Stabilize stream channels
Land-use planning and zoning	●	●					●					
Source-water protection	●	●				●						
Natural resources conservation planning		●										
Stream corridor protection	●	●										
Better site design		●	●									
Impervious cover gaps			●						●			
Erosion and sediment control						●						
Runoff-reduction approach				●	●	●						
Wastewater management						●					●	
Stream repair												●
Redevelopment and infill policies and incentives							●		●	●	●	
Reforestation and urban forest management								●				
Stormwater retrofits									●	●	●	
Pollution source controls											●	
Illicit discharge detection and elimination											●	
Pollution caps						●					●	

WORKFORCE NEEDS

FIELD CREWS

Public sector needs can't keep up with rising industry salaries.

Increased projects from ARPA funding has also created contractor shortages that could previously fill the gap.

ENGINEERS

Public and Private sectors both need additional engineers in the water sector.

OPERATORS

Certified Water and Wastewater Operators.

Certification training program offered through GWWI.

SKILLED MAINTENANCE TECHS

Technological advances changing the landscape of the required job skills.

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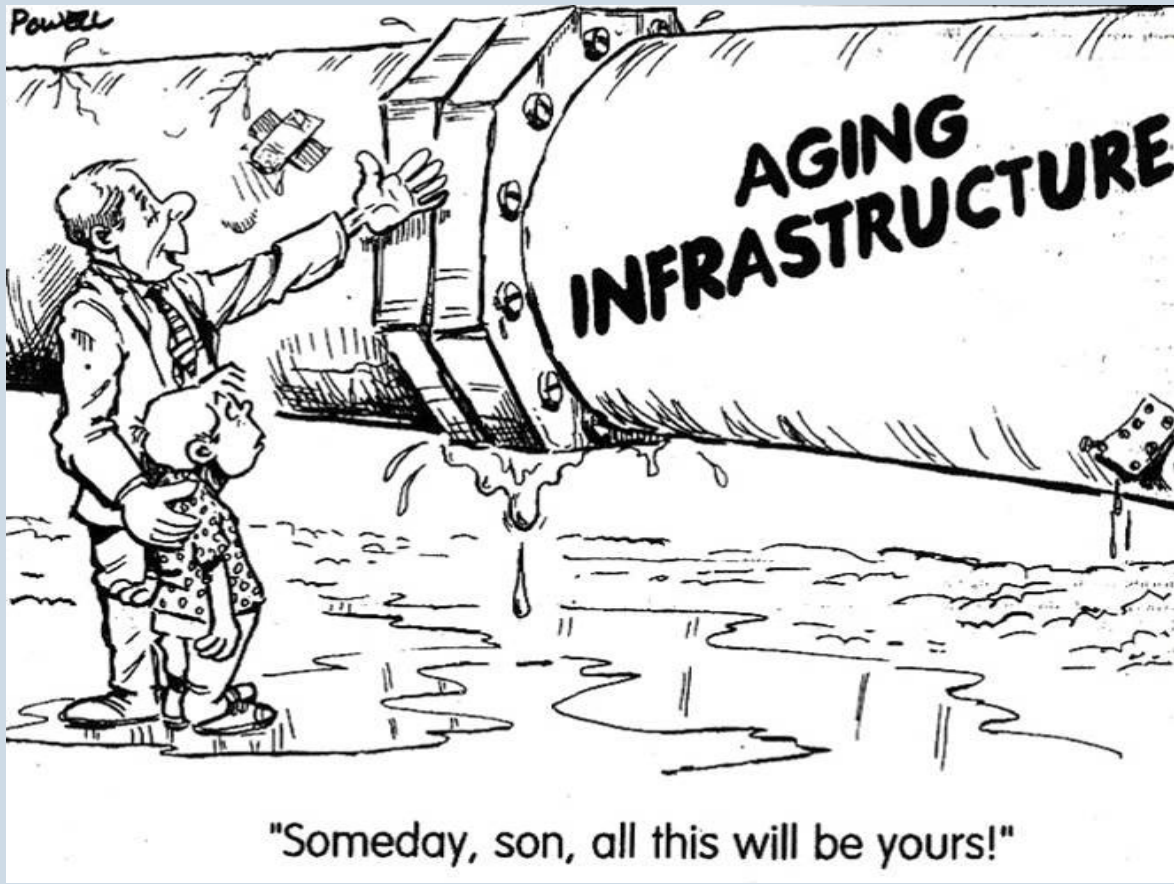
INFRASTRUCTURE COSTS

Inflation and supply chain issues has created SIGNIFICANT cost increases and delays for plant and infrastructure upgrades.

ARPA and infrastructure funding has put a focus on water and wastewater needs. The funding helped make a dent but falls short from the overall needs of utilities to expand and maintain.

Rising costs of power, chemicals, testing, treatment, equipment, construction and high-tech purification



20 MINUTE LUNCH BREAK

Soil Amendments Regulatory Update

Tonya Bonitatibus, Savannah Riverkeeper

Speaker/Topic/Field Trip Suggestions

Ashley Reid, CDM Smith

Public/Elected Officials Comments/Questions

Next Meeting

Tentative Topics for next meeting

1. Seed grant updates
2. MNGWPD Updates
3. USACE Regional Project updates

Thank You

Need More Information?

reidan@cdmsmith.com