



We live in such a wonderful town that has maintained some of the Old Florida ambiance. If we all work together, we can do our best to protect it for future generations. This educational presentation is brought to you by the NSB Residents' Coalition.

**Our**  
MISSION

*NSB Residents' Coalition is a non-profit, nonpartisan community-focused volunteer organization dedicated to preserving the qualities that make our city unique by providing the information necessary for our city's citizens to take a meaningful role in shaping the future of New Smyrna Beach.*

[Join us](#)



We are a non-profit, nonpartisan community-focused volunteer organization dedicated to preserving the qualities that make our city unique by providing the information necessary for our city's citizens to take a meaningful role in shaping the future of New Smyrna Beach. Over a year ago, we assembled a group of experts to evaluate climate forecasts and the potential for extreme weather to affect New Smyrna Beach. Now, who loves baseball? How do you feel when your team hits a home run? And what on earth does this have to do with climate change?

## Baseball, Climate Change and Home Runs



According to a new study published by the American Meteorological Society, the warming earth is responsible for the increase in the number of home runs in MLB. Aside from sweating in the stands, a hotter climate will have many profound effects that we are just discovering. For instance, the Lancet, a peer-reviewed medical journal, reports that over 302 billion work hours were lost globally in 2019 due to excessive heat. How will that effect people who work outside, play golf or pickleball? The World Economic forum postulates “worse wine” and “much less coffee” and air travel may become more dangerous from clear air turbulence. So, tonight we are going to talk about what we can do about it... how we can defend our family and our homes against this rising heat and its affects?

## Protecting your family and property from storms



Over the next two hours we will cover: 1. Climate forecasts for New Smyrna Beach 2. Resiliency programs from Federal, State and local agencies 3. Insurance – what measures you can take to make your home continue to be eligible for reasonably priced insurance and home loans 4. Best practices in resilient construction and, 5. How to prepare for severe weather and hurricanes

## Protecting your family and property



A recent Associated Press - Center for Public Affairs Research poll finds that 8 in 10 U.S. adults say that in the past five years they have personally felt the effects of extreme weather. Fortunately, our State and local leadership have created many resiliency initiatives to help all of us deal with climate impacts.



NSB Residents' Coalition May 2023

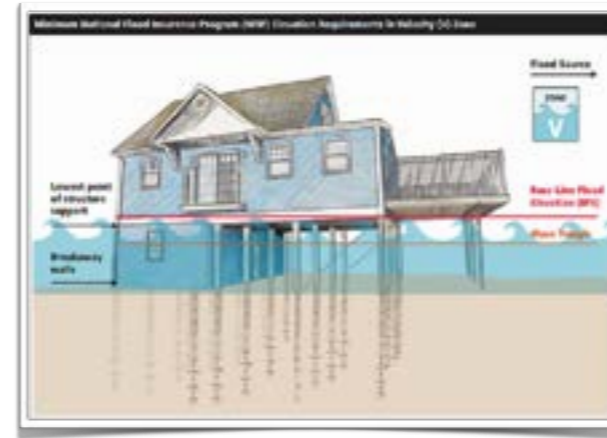


Biologist Farley Palmer presents information on climate change forecasts.

# Resiliency

Actions you can take now...

- If you own a home
- If you own a business
- If you rent a home
- If you are going to buy a home
- If you are going to build a home...

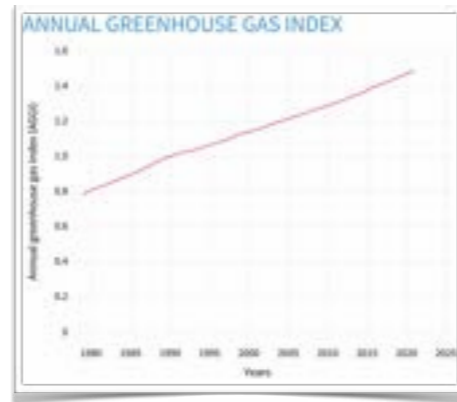


We all need to better understand the changing climate, learn how to harden our properties, and use better construction methods.

# Global Climate

## Greenhouse Gases

In 2021, the combined heating influence of all human-produced greenhouse gases was 49 percent higher than it was in 1990.



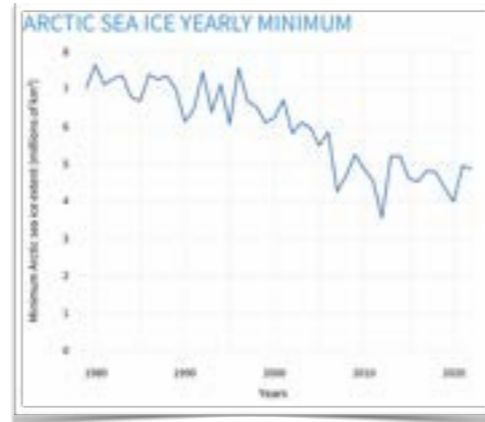
The following data is from the National Oceanic and Atmospheric Administration. In 2021, the combined heating influence of all human-produced greenhouse gases was 49 percent higher than it was in 1990. <https://www.noaa.gov>



# Global Climate

## Arctic Sea Ice

Since the start of the satellite era in 1979, the extent of ice covering the Arctic Ocean at the end of summer has shrunk by more than 40 percent.

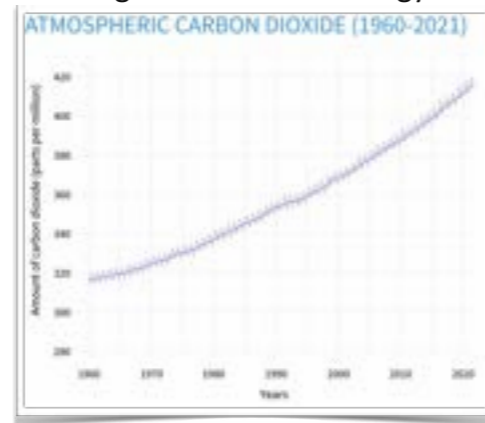


Since the start of the satellite era in 1979, the extent of ice covering the Arctic Ocean at the end of summer has shrunk by more than 40 percent.

# Global Climate

## Carbon Dioxide

Carbon dioxide in the atmosphere has risen more than 45 percent since people began burning fossil fuels for energy. It hit a new high of 414.7 parts per million in 2021.

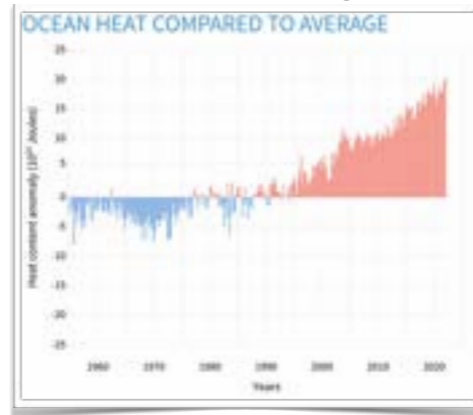


Carbon dioxide in the atmosphere has risen more than 45 percent since people began burning fossil fuels for energy. It hit a new high of 414.7 parts per million in 2021.

# Global Climate

## Ocean Heat

Global oceans gained an est. 0.58-0.78 watts of heat energy per square meter from 1993–2021, contributing to sea level rise, ice shelf retreat, and stress on coral reefs.

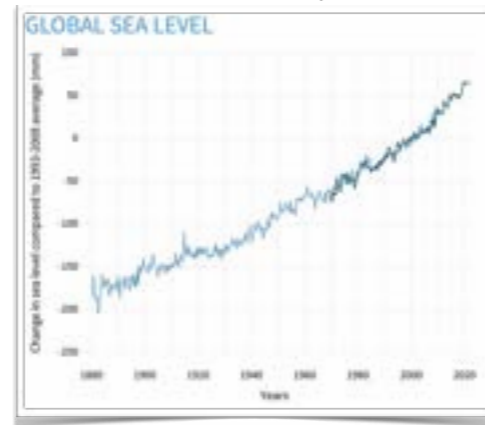


Global oceans gained an est. 0.58-0.78 watts of heat energy per square meter from 1993–2021, contributing to sea level rise, ice shelf retreat, and stress on coral reefs.

# Global Climate

## Sea Level

Sea level has risen 8 - 9 inches since 1880. The rate of sea level rise more than doubled from 2006–2015 compared to the rate throughout most of the twentieth century.

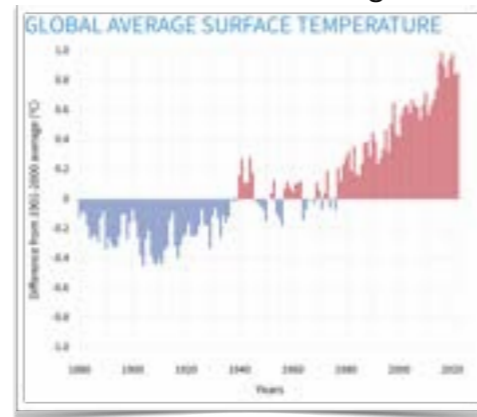


Sea level has risen 8 - 9 inches since 1880. The rate of sea level rise more than doubled from 2006–2015 compared to the rate throughout most of the twentieth century.

# Global Climate

## Global Average Surface Temperature

Global average surface temperature has risen 0.14 degrees Fahrenheit per decade since 1880. The rate of warming has more than doubled since 1981.



Global average surface temperature has risen 0.14 degrees Fahrenheit per decade since 1880. The rate of warming has more than doubled since 1981.

# Global Climate

## Overview

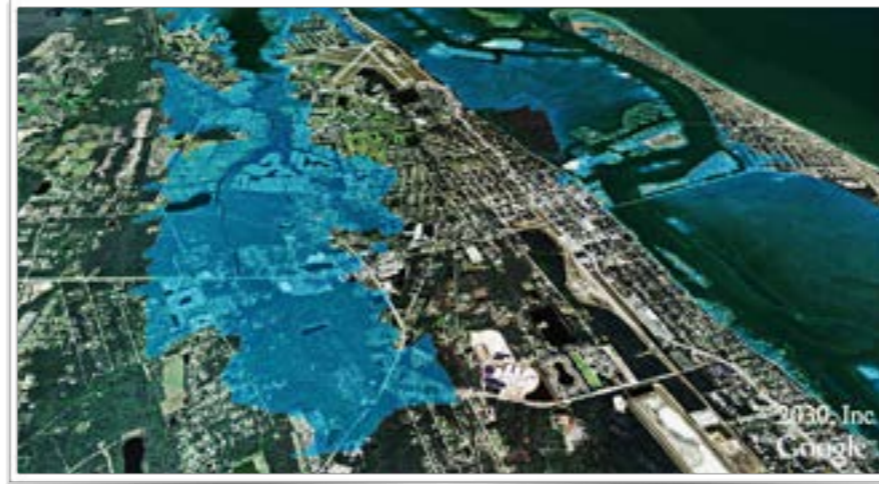


NOAA 2023

The global ocean is heating up, with far-reaching consequences. This leads to big problems for our planet, such as sea-level rise, increases in severe weather, massive melting of glaciers and ice sheets, and displacement of marine habitats.

# US Climate

## NOAA Multi-agency 30 year Forecast



Over the next 30 years: Sea level along the East coast is anticipated to rise, on average: 10 - 14 inches.

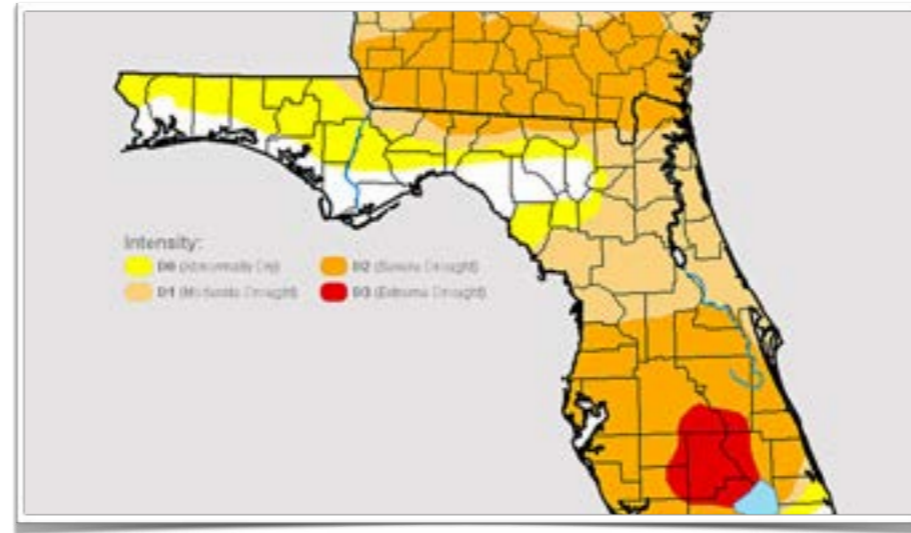
Sea level rise will cause tide and storm surge heights to increase and reach further inland.

Major flooding is expected to occur five times as often in 2050, and can be intensified by local factors.

Coastal flooding can be exacerbated by many factors that are not included in these estimates, such as rainfall, river discharge, wave impacts like coastal erosion, and existing infrastructure.

# Florida

## NOAA Future Climate Projections for 2030



Average daily temperatures have risen over 2° since the beginning of the 20th century that will likely cause the intensity of naturally occurring droughts that will likely trigger more frequent wildfire events. Nighttime warming has increased dramatically. Extended periods of extreme heat with high humidity can result in heat-related illness and stress agricultural production, water supplies, and energy generation. Decreased water availability, exacerbated by population growth and land-use change, will continue to increase competition for water and affect the region's economy and unique ecosystems.



# Florida

NOAA Future Climate Projections for 2030



**We all need to act now to become more resilient.**



- Average daily temperatures are rising.
- Ocean temperatures are rising.
- Drought and wildfires are increasing.
- More water is stored in the atmosphere.
- The frequency and intensity of storms are increasing.
- Displacement in marine and coastal habitats is increasing.
- Sea level rise is causing increased tidal flooding and infrastructure damage.

# New Smyrna Beach Forecast

Forecast from First Street Foundation



These data models developed by First Street Foundation leverage a peer-reviewed and open science approach. By partnering with world-class experts with specific knowledge of climate perils, climate science, economics and data science, these models build upon trusted US Government data, and decades of published research.

# **New Smyrna Beach Forecast**

**Forecast from First Street Foundation**

**You can go to the Risk Factor website and find the forecast for your own property:**

**<https://riskfactor.com>**



You can go to the Risk Factor website and find the forecast for your own property: <https://riskfactor.com>

# New Smyrna Beach Forecast

## Risk Factor Forecast for 32168



In the NSB zip code 32168... 7,818 out of 12,705 residential homes have a **moderate** risk for flooding  
295 out of 540 miles of roads have a **moderate** risk for flooding  
553 out of 632 commercial properties have a **moderate** risk for flooding  
22,124 properties in 32168 have **some risk** of being in a wildfire within the next 30 years.  
32168 is expected to experience 7 hot days this year with temperatures reaching **106°F**.

# New Smyrna Beach Forecast

## Risk Factor Forecast for 32169



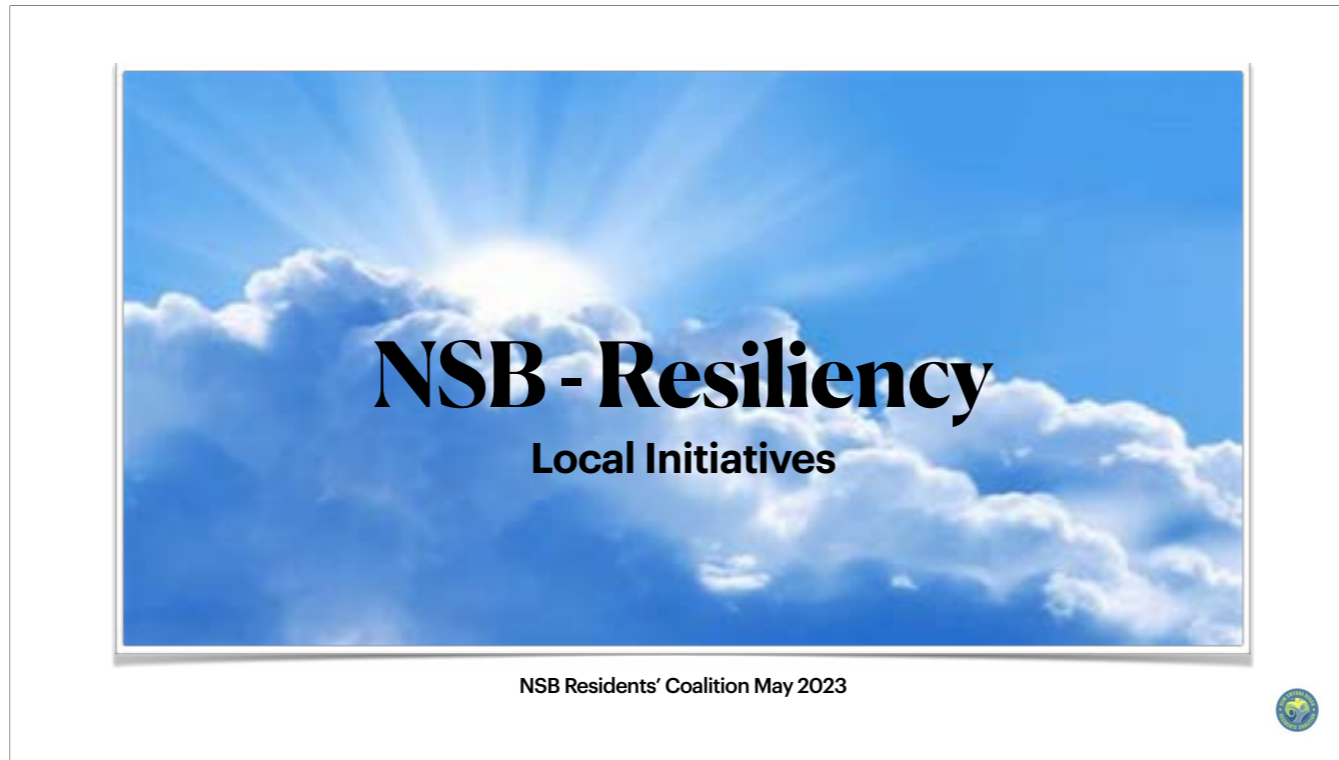
In the NSB zip code 32169... 4,580 out of 5,680 homes residential homes have a **severe** risk for flooding  
83 of 91 miles of roads have a **severe** risk for flooding  
256 out of 327 commercial properties have a **severe** risk for flooding  
32169 has a **major risk** of being in a wildfire within the next 30 years.  
32169 is expected to see 171.4% increase in the number of days over **105°F** over the next 30 years.

# Construction Resiliency

## Best Practices: Dune reconstruction



- Reconstructing Dunes: Match existing dune structure and planting. Add dune fencing and plants.
- Sea oats and other native plants wrap wind blown sand. Their roots hold the sand in place.
- Protect reconstructed dunes from pedestrians and vehicles.



Our Federal, State and local governments have many programs to help us defend against climate effects. The following are just a few of them.



## Local Initiatives

### The City of New Smyrna Beach Flood Exposure Analysis

- Moratorium on new residential development of 10 acres or more until June 27th.
- Jones Edmonds Flood Exposure study in progress.
- A City-wide comprehensive exposure analysis of Hurricane Ian that also partially fulfills the FDEP and state statute requirements for Vulnerability Assessments.
- Analysis of the impact of large new developments and their associated stormwater management systems for potential adverse offsite impacts.
- Review of the City's stormwater code and standard for appropriateness and potential improvements.
- City will present findings at the end of May.



Our City currently has a number of resiliency and sustainability initiatives in the works.

The moratorium, the flood exposure study, a comprehensive analysis of Hurricane Ian, an analysis of the impact of large development on stormwater management, and a review of potential improvements to our stormwater code.



# Local Initiatives

The City of New Smyrna Flood Mitigation Programs in progress now...

Alternatives to Mitigate Structural Flooding

► **Flood Mitigation of Flood-Prone Homes**  
Applicable to typical elevation and demolition reconstruction projects:

EXISTING BUILDING      RENOVATED/REHABILITATED BUILDING

The new Finish Floor Elevation will be determined based on the following criteria:

- a minimum of 2.0 feet above the Base Flood Elevation (BFE)
- sea level rise factor: 3.0 ft



FEMA has a flood mitigation grant program to collect Flood Data for the elevation of flood-prone homes as well as demolition and reconstruction of some flood-vulnerable homes.

# Local Initiatives

The City of New Smyrna Flood Mitigation Programs in progress now...



There are a number of NSB homes that are now being elevated.

Consider other resiliency upgrades when elevating existing homes such as strengthening the roof and adding hurricane resistant doors and windows.

## Local Initiatives

The City of New Smyrna Flood Mitigation Programs in progress now...



- The City and their consultant will present their flood exposure findings before the end of May. The City of New Smyrna Beach will receive \$1 million in state funding to help clean up canals surrounding Pine Island and Aqua Golf, two centrally located mainland communities that saw some homes flooded with 4 feet of storm surge during Hurricane Ian last September.



**New Smyrna Beach**  
**... UTILITIES ...**

## **Grid Modernization and Water Optimization Plans**

April 27, 2023

NSB Utilities has many resiliency initiatives underway including grid modernization and water optimization plans.

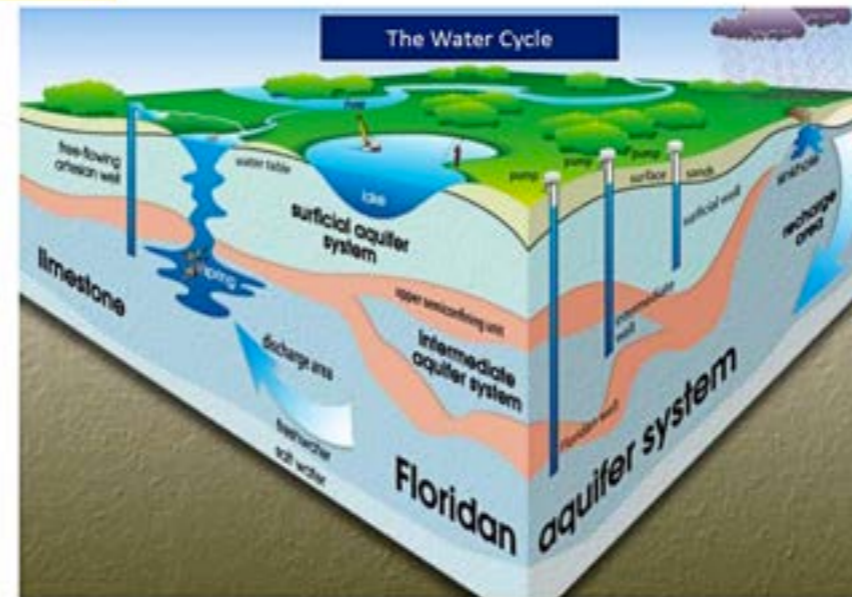
## Raw Water Source and Permit

NSBU Wells are issued through a Consumptive Use Permit (CUP) issued by St. John's Water Management District (SJRWMD).

- CUP is for 20 years (2020-2040) at 8.33 MGD
- Wellfield Pumping is balanced to maintain high quality water.

### Factoid:

Historical data shows no increase in chlorides, known as saltwater intrusion in well fields.



Our Utilities has an extensive well system. Wellfield pumping is balanced throughout the system and historical data shows no saltwater intrusion.

## Water System Optimization Plans

### Multiple System Resiliency Projects:

- Well rehabilitation improvements – improves well asset performance and extends useful production life
- Uninterrupted Lift Station pumping Improvements to better weather storms
- Lining sewer gravity pipes to limit infiltration

### Convert Disinfection from Chlorine Gas to Sodium Hypochlorite (liquid) Bleach:

- Eliminate Hazardous use of gas chlorine
- Safer to handle and store
- More commonly available and cost effective for water treatment

### Replace Lime Water Treatment with Pellet Softening:

- Increase plant capacity and reduce operating costs
- Eliminate expensive to dispose of lime sludge byproduct
- Create a beneficial use sand byproduct
- Improve reliability and efficiency of water production



Resiliency projects include: well rehabilitation; lift station improvements; sewer pipe lining; conversion of disinfection system from chlorine gas to sodium hypochlorite; and replacement of lime water treatment to pellet softening.

## Water-Wastewater Optimization Summary

- NSBU has detailed plans to address water supply needs well into the future
- The Consumptive Use Permit (CUP) renewal (2020-2040) shows that the UCNSB has done a good job managing our potable water supply over the years
- Average water consumption per customer reduced 25% since 2000, due to; conservation programs, improved efficiency of new construction and plumbing fixture design
- We are performing best practices for inspection and maintenance to ensure the health of our precious raw water well assets
- NSBU is making significant investments to increase capacity and extend the life of our GWTP Water and WRF Wastewater plants and resiliency of our distribution and collection systems
- An approved and scalable Alternative Water Source (AWS) plan will provide future potable water capacity when needed
- These collective plans will sustain our customers and community we proudly serve in the foreseeable future



NSB Utilities has detailed plans to address future water supplies and has been able to reduce customer consumption by 25% through its conservation programs. Our Utilities has an approved plan for adding alternative water sources when they are needed.

# Modernization Background



Prioritizing Strategic Projects that...

- **Support Utilities Commission Vision:**

*"To be a community partner with safety as the priority, while providing reliable, essential utility services, dedicated to sustainable resources and community stewardship"*

- **Introduce Advanced Technology to Improve Customer Experience**

- Reduce electric outage frequency and duration
- Improve Transmission Grid Reliability and Resiliency
- Near Real-time System Conditions, Outage Information and Customer Consumption Data
- Provide Opportunities to Save Money through Managed Conservation

- **Increase Reliability and Operational Efficiency**

- Opportunity to Reduce System Peaks and Delay/Eliminate New Infrastructure for Peak Loads
- Continue Digital Transformation (Manual to Automatic) - Fewer Truck Rolls, Near Real-Time Updates from Field
- More Robust Work Planning (Work Management) and Maintenance Programs (Asset Management)
- Improved Visibility and Reporting Systems

- **Address Evolving Expectations of Customers, Regulatory Requirements and Be Prepared for Future**

- Planned Approach to Electric Vehicles and Utility-Scale Solar for a green environment
- Remote Monitoring and Control of; NSBU Field Assets and Distributed Energy Resources (DERs such as Solar and EVs, etc.)

- **Modernization Project Portfolio is a Planned, Cost-Effective Investment Strategy Leveraging Industry Best Practices**

The research and introduction of proven new technologies is designed to improve customer experience and reduce electrical outages, capture real time data on outages and consumption, and help customers save money through managed conservation.



## Electric Modernization Projects: 2023 – 2027



- Consultants provided a multi-staged modernization plan
- Providing customer value
- Adapting industry best practices
- Focused on Foundational and Priority programs



Figure 1: Modernization Pyramid of Priority Programs

Electric modernization projects are based on best practices, priorities and customer value. These include smart street lighting, electric transportation, selective undergrounding, and overall system hardening.

# Public EV Charging Stations



- 7% of all new US vehicles sold in Q1 2023 were Electric Vehicles
- Five dual-port stations installed – locations planned with City NSB
- Level 2 stations add 30 miles of vehicle range/hr. of charge
- Price is \$.35/kWh & taxes to offset installation costs
- Future units based on demand

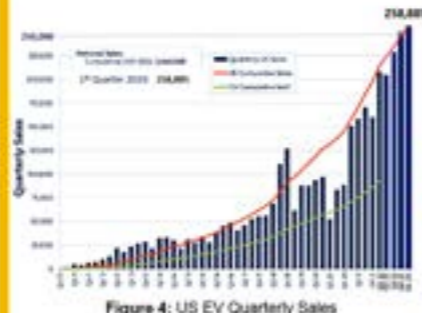


Figure 4: US EV Quarterly Sales

Source: Cox Automotive Inc., 4/12/2023



Figure 5: EV charging station at Sams Ave.



Figure 6: NSBU EV Charging Stations

Electric EV charging stations are being added at strategic locations.

# Advanced Metering & Smart Grid



- Tools to help conserve energy and water
- Remote account connection – electric
- Customer portal energy manager
- Fewer estimated bills
- Outage notification
- Improved Smart Grid operations
- Minimize trucks rolls - reduce emissions
- "Big Data" enables business analytics

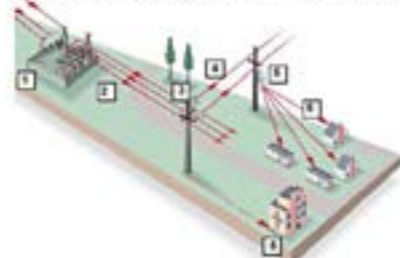


Figure 9: Grid sensory intelligence



Figure 10: Customer Portal. Hourly consumption

Advanced metering and smart grid initiatives are begin deployed. More data-capture enables better business analytics.

## Electric Reliability Improvement Program (ERIP)



*Electric Reliability Improvement Program – Improve system wide electric reliability performance and customer experience to targeted levels aligned with industry benchmarks*



### *NSBU Reliability Averages through 2020*

- Frequency SAIFI 1.68, CAIDI 55 and SAIDI 92
- Outage Frequency SAIFI was higher than desired
- Also drives up related System Average Outage Duration - SAIDI
- Restoration Time CAIDI is and has been excellent - maintain



### Program Goals

Reduce average outage Frequency SAIFIS 1.0 and Duration SAIDI  $\leq$  60 and supporting metrics for outage and maintain restoration time CAIDI  $\leq$  55 minutes  
If *both* SAIFI and CAIDI reduction targets are met, SAIDI would reach 55



- Three-year field implementation timeline FY21-23, and to achieve targets by FY24 to allow for follow on system upgrades and stabilization
- Q1-Q2 2023 Reliability Performance thus far is Best on Record!

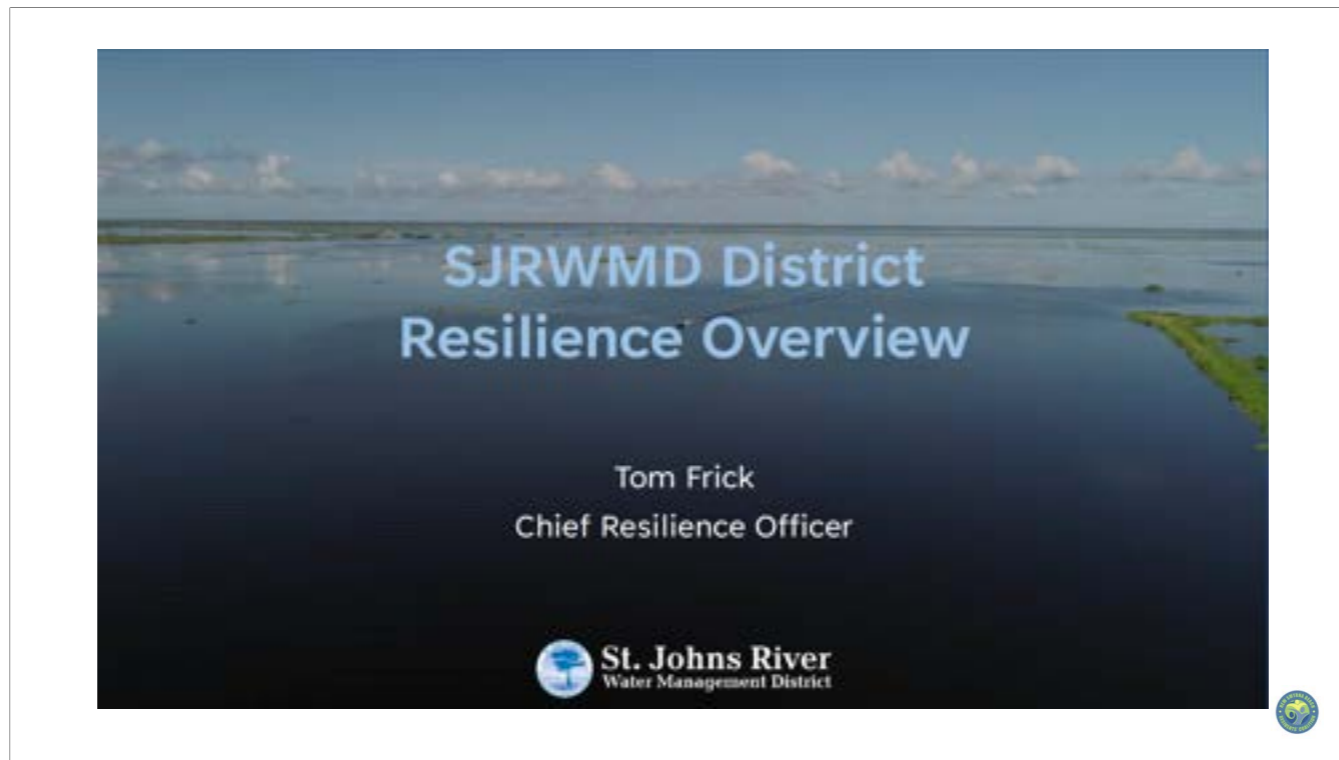
Our Utilities electric reliability program goals are to reduce the frequency and duration of outages, So far, in 2023, it is “the best on record.”

## Summary



- Grid Modernization and Water Optimization Strategies Support our Vision:  
*"To be a community partner with safety as the priority, while providing reliable, essential utility services, dedicated to sustainable resources and community stewardship"*
- The Plan Prioritizes Strategic Projects that Improve Customer Experience, Operational Effectiveness, and System Resiliency and Sustainability
- Addresses Evolving Expectations of; Customers, Regulatory Requirements and Be to Prepared for Future
- Modernization and Optimization Project Portfolio is a Planned, Cost-Effective Investment Strategy Leveraging Industry Best Practices to benefit our customers and the community we proudly serve

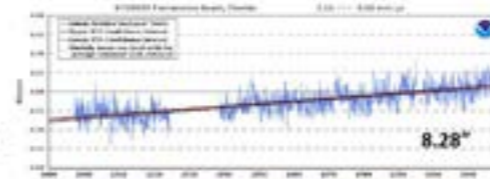
Utilities modernization and water optimization are improving customer experience, operational effectiveness and system resiliency and sustainability.



Presentation by Thomas Frick, Chief Resilience Officer, of the St Johns River Water Management District of the next five slides.

## Resilience Drivers in our Communities

- **Increasing temperature/evaporation**
  - Drought, wildfires, water demand, recharge
- **Changing weather events**
  - Localized flooding, increased rainfall rate, increased severity of tropical events, increased storm surge
- **Sea-level rise**
  - Coastal water quality and habitat, saltwater intrusion, flooding
- **Land use changes**
  - Flooding, water demand, recharge
- **Aging Infrastructure**



First, let's frame the conversation and define what we mean when we talk about resilience. Resilience is being able to recover quickly from events both acute, for example sudden impacts from hurricanes, or chronic, like sea-level rise. Communities in the District and throughout Florida are being impacted by environmental changes such as increasing temperature, changing weather events and sea-level rise. As you can see in the graphic in the upper right, sea-level has increased more than 8 inches in the past 100 years in Fernandina Beach and is projected to increase by another foot in the next 30 years. These environmental changes are exacerbated when layered upon land use changes, such as building in low-lying areas, and aging infrastructure. Bottom line, resilience is planning for a changing future.

## Impacts to our Communities

- **Groundwater availability**
  - Changes in rainfall, water demand, and recharge
  - Saltwater intrusion
- **Localized flooding**
  - Increased nuisance/tidal flooding
  - Increased extreme weather events
  - Increased storm surge height
- **Water quality and wetland habitat**
  - Loss of inundation and filtering ability
  - Changes in wetland communities
  - Increased salinity in groundwater & coastal areas



What are the impacts from these changing conditions that our communities are experiencing or will experience in the future if we don't plan for them? The three biggest impacts, and there are others, but these capture the big ones, are:

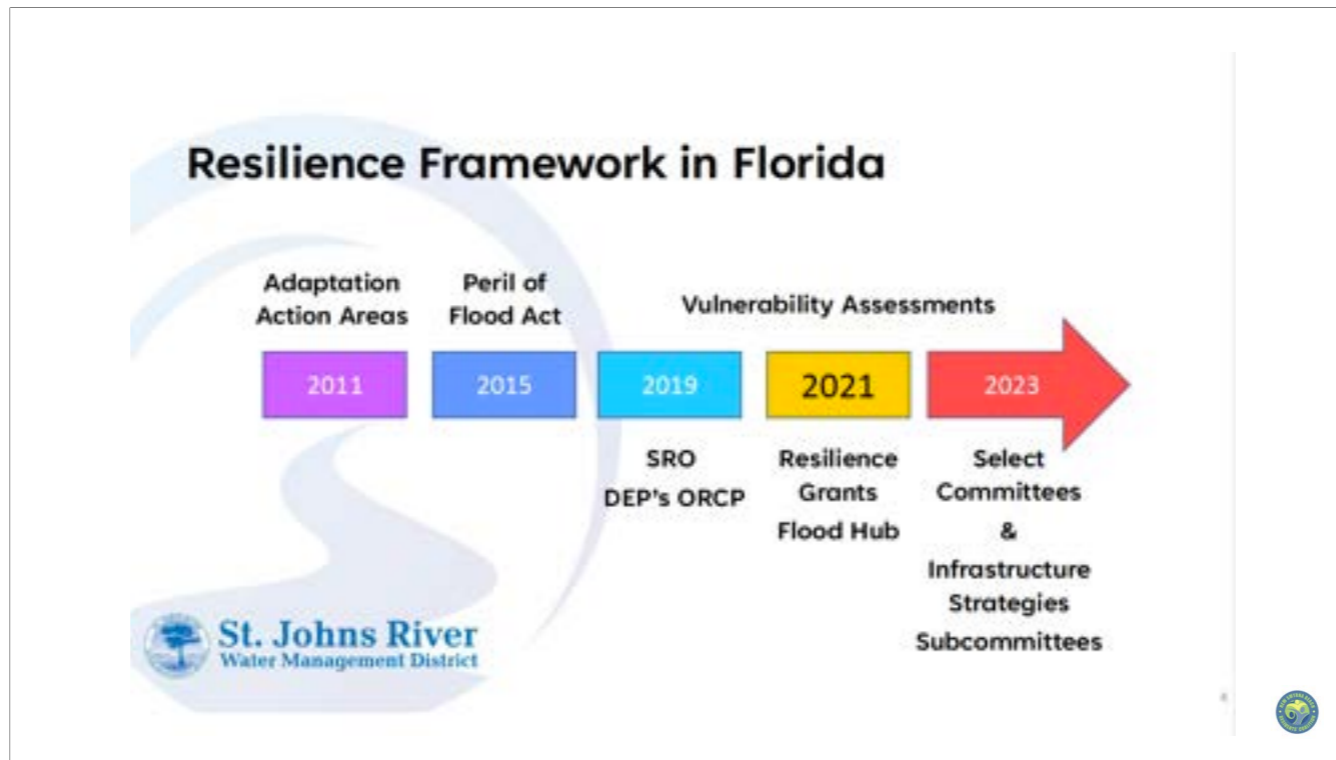
Changes in fresh groundwater, mainly from saltwater intrusion, changes in recharge and demand

Localized flooding from SLR, increased storm surge, and increased extreme weather events

Loss of wetland's ability to attenuate flood water and improve water quality

I'll refer back to this slide in a few minutes but first I want to take some time to tell you about what is happening at the state level.





Resilience efforts for our communities has become more and more visible in the past decade. First, local governments were allowed, but not required, to identify Adaptation Action Areas. These are optional designation for areas experiencing or are vulnerable to current and future coastal flooding. Then in 2015 the Legislature required coastal local governments to include in their Comp Plan sea-level rise as one of the causes of flood risk, with the passing of The Peril of Flood Act. Under the Act, coastal governments must address high tide events, storm surge, flash floods, and related sea level rise impacts.

In his first year as Governor, Gov. DeSantis created the State's first ever resilience officer. The SRO job is to help coordinate state agencies efforts for resilience. Additionally in the early part of the Governor's term, FDEP established the Office of Resilience and Coastal Protection, which administers the majority of the functions that is now codified in the Resilient Florida legislation. All these efforts at the State level are focused on providing resources, mainly technical assistance and funding, to local communities.

The Resilient Florida Legislation is an example of the State's efforts. In 2021, Senate Bill 1954 (Sec. 380.093, F.S.) was signed into law by Governor DeSantis to address statewide flooding and sea level rise. The Bill is divided into three main sections; planning, assessment, and funding of turn-dirt projects.

The planning component is accomplished mainly through Resilient Florida Grant Program, which provides grants to local governments to complete comprehensive planning requirements related to flooding; vulnerability assessments to identify or address risks of flooding and SLR. WMD's are not eligible for this funding.

The Florida Flood Hub and DEP are responsible for the assessment section of the law. The Flood Hub is located at the USF College of Marine Sciences with a goal to improve flood forecasting and inform science-based policy, planning, and management. It's envisioned the Flood Hub will be the central repository for scientific information, including SLR & climate models for local governments to use in their individual Vulnerability Assessments. The law also tasks DEP with developing a Comprehensive Statewide Flood Vulnerability and Sea Level Rise Data Set and Assessment (Sec. 380.093(4), F.S.) by July 1, 2024.

Lastly, the Statewide Flooding and Sea Level Rise Resilience Plan also known as just the Resilience Plan (Sec. 380.093(5), F.S.) is submitted by DEP annually consisting of a ranked list of resilience projects that address the risk of flooding and SLR to coastal and inland communities. This program is identified at \$100M per year, though the funding has been much greater than that in the first two years. This is the funding source from which in 2021 as part of the first ever Resilience Plan, the District is planning on participating in 6 potential projects for which we will need to provide matching dollars from non-state funds.

Senate Select Committee on Resiliency; House Select Committee on Hurricane Resiliency and Recovery;

House Infrastructure Strategies Committee now with 3 subcommittees- Ag, Conservation & Resiliency Subcommittee; plus Water Quality, Supply & Treatment Subcommittee; and Transportation & Modals Sub

## Impacts to our Communities

- **Groundwater availability**
  - Changes in rainfall, water demand and recharge
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- **Water quality and wetland habitat**
  - Loss of inundation and filtering ability
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  - Increased salinity in groundwater and coastal areas



## District Resilience Priorities

- **Saltwater intrusion**
  - Enhancing recharge (e.g., AWS)
  - Monitoring and modeling
  - Permitting
- **Flood protection**
  - Structures and land management
  - Wetland acquisition and enhancement
  - Monitoring and modeling
- **Nature-based solutions**
  - Wetland acquisition and enhancement
  - Living shorelines



Saltwater Intrusion model

Flood protection through our structures and wetland acquisition and enhancement >780k land under our control; 67% wetlands; 73% 100-yr FP

Other Nature Based efforts: living shorelines (oysters, clams, seagrasses); L-77W levee example;

Cost Share: 395 projects; >\$825M total investment (\$181.5 WMD; \$101.6 State; \$543.9 LGs)

# State of Florida Initiatives

## Florida Division of Emergency Management



The State of Florida Division of Emergency Management has a number of hurricane response and recovery programs including the Resilient Florida Grant Program and the Freedom First Budget with a \$3 billion allocation for environmental restoration and conservation.

<https://www.floridadisaster.org>

# State of Florida Initiatives

## My Safe Home

**FLORIDA HOMEOWNERS!**

**GET READER FOR HURRICANES!**

**VISIT My Safe FL Home.com**

THE MY SAFE FLORIDA HOME PROGRAM WAS ENACTED BY THE FLORIDA LEGISLATURE TO HELP SINGLE-FAMILY HOMEOWNERS PROTECT THEIR HOMES AGAINST HURRICANES AND SAVE MONEY DOING IT!

**GET A FREE HOME HURRICANE INSPECTION**

OWNERS OF ANY SITE-BUILT, SINGLE-FAMILY, DETACHED RESIDENTIAL FLORIDA PROPERTY MAY APPLY FOR A FREE HOME HURRICANE INSPECTION.

- Complete home hurricane inspection of your single-family home of NO-DOB and receive a report.
- Receive an inspection report detailing the strength of your home against hurricanes and recommended improvements to increase that strength.



Our State also has the My Safe Home Florida Program: Any Floridian whose primary residence is a site-built, single-family, detached home is eligible to apply.

<https://mysafehome.com>

# Insurance Update

Adding resiliency to reduce insurance costs



Insurance agent Jeff Whyte presents an insurance update over the next six slides.

Home Insurance Opportunities: While the insurance market is limited what can be considered now to lower costs?

# Insurance Update

## Deductibles

The screenshot shows a 'Declarations' page from an insurance policy. It includes a table of deductibles for different types of property and coverage. Key items include:

- Homeowners Deductible:** \$5,000 (5% of Insured Value)
- Commercial Deductible:** \$5,000
- Business Equipment Deductible:** \$5,000
- Personal Property Deductible:** \$5,000
- Auto Deductible:** \$5,000
- Liability Deductible:** \$5,000
- Umbrella Deductible:** \$5,000
- Professional Services Deductible:** \$5,000
- Director and Officer Deductible:** \$5,000
- Employer's Liability Deductible:** \$5,000
- Medical Expenses Deductible:** \$5,000
- Disability Deductible:** \$5,000
- Life Insurance Deductible:** \$5,000
- Accidental Death & Dismemberment Deductible:** \$5,000
- Travel Deductible:** \$5,000
- Medical Payments Deductible:** \$5,000
- Personal Injury Deductible:** \$5,000
- Advertising Deductible:** \$5,000
- Professional Services Deductible:** \$5,000
- Director and Officer Deductible:** \$5,000
- Employer's Liability Deductible:** \$5,000
- Medical Expenses Deductible:** \$5,000
- Disability Deductible:** \$5,000
- Life Insurance Deductible:** \$5,000
- Accidental Death & Dismemberment Deductible:** \$5,000
- Travel Deductible:** \$5,000
- Medical Payments Deductible:** \$5,000
- Personal Injury Deductible:** \$5,000
- Advertising Deductible:** \$5,000



Deductibles Higher non hurricane deductible.  
 Personal Property Replacement Cost v Actual Cash Value.



# Insurance Update

## Dwelling Coverage

Policy Number	Policy Name	Reason For Issuance
Effective Date 08/05/2022 11:05 AM Standard Time at the Insured Location	Expiration Date 08/05/2023	PCS Replacement Endorse

**YOUR HOMEOWNER'S INSURANCE POLICY DOES NOT INCLUDE COVERAGE FOR DAMAGE RESULTING FROM FLOOD EVEN IF HURRICANE WINDS AND RAIN CAUSED THE FLOOD TO OCCUR. WITHOUT SEPARATE FLOOD INSURANCE COVERAGE, YOU MAY HAVE UNCOVERED LOSSES CAUSED BY FLOOD. PLEASE DISCUSS THE NEED TO PURCHASE SEPARATE FLOOD INSURANCE COVERAGE WITH YOUR INSURANCE AGENT.**

**THIS POLICY CONTAINS A SEPARATE DEDUCTIBLE FOR HURRICANE LOSSES, WHICH MAY RESULT IN HIGH OUT-OF-POCKET EXPENSES TO YOU.**

The portion of your premium for Hurricane Coverage is: \$100.00  
The portion of your premium for Non-Hurricane Coverage is: \$676.00

A premium adjustment of .77% of wind premium is included to reflect the wind mitigation features of the dwelling. Adjustments range from 0% to 89% credit subject to verification that your home meets the windstorm mitigation characteristics of the 2001 Florida Building Code.

A premium adjustment of -.12% is included to reflect the Building Code Grade for your area. Adjustments range from 1% surcharge to 52% credit.



Dwelling Coverage - Not the same as market value.

# Insurance Update

## Wind Mitigation



Windstorm Mitigation  
Hurricane Roof Straps

# Insurance Update

## Wind Mitigation



Roof Materials and 4 Point issues  
Budgeting Roof - Expected life of asphalt shingles

# Insurance Update

## Certification of Elevation

U.S. DEPARTMENT OF HOMELAND SECURITY  
Federal Emergency Management Agency  
National Flood Insurance Program

FORM No. 1080-008  
Expiration Date: November 30, 2019

### ELEVATION CERTIFICATE

Important: Follow the instructions on pages 1-8.

Check all pages of the Elevation Certificate and all attachments for (1) community official, (2) insurance agent/company, and (3) building owner.

**SECTION A - PROPERTY INFORMATION**

A.1. Building (Struct.) Name	FIRM POLICY/ID# (if different from A.2)	
A.2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.	Company NAIC Number	
City	State	ZIP Code
A.3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)		
A.4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.)		
A.5. Latitude/Longitude: Lat _____ Long _____ Horizontal Datum: <input type="checkbox"/> NAD 83 <input type="checkbox"/> WGS 1984		
A.6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.		
A.7. Building (Tag) Number _____		
A.8. For a building with a sidewalk or driveway: a) Square footage of sidewalk or driveway _____ sq ft b) Number of permanent foot openings in the sidewalk or driveway within 1 ft of and above adjacent grade _____ c) Total net area of foot openings in A.8.b _____ sq ft d) Engineered foot openings? <input type="checkbox"/> Yes <input type="checkbox"/> No		
A.9. For a building with an attached garage: a) Square footage of attached garage _____ sq ft b) Number of permanent foot openings in the attached garage within 1 ft of and above adjacent grade _____ c) Total net area of foot openings in A.9.b _____ sq ft d) Engineered foot openings? <input type="checkbox"/> Yes <input type="checkbox"/> No		



Elevation – Certificate of not, how high is high enough?

# Insurance Update

## Home Alarm System



Alarm Credits 24/7 monitored - it's the response that counts Savings, Cost Effectiveness will vary, consult with you agent first.

# Flood Protection

## Best Practices: Temporary Barriers



These resilience construction slides are presented by Jeff introduces architect, Kevin Schweizer

- Temporary barriers: Flood wall; Flash wall; Flood barricade.
- Apply for FDEP permits.

# Construction Resiliency

## Best Practices: Backup Power



- Choose appliances that can be installed above the possible flood level.
- Elevate water heaters and outside air conditioning compressor units on sturdy platforms and secure with metal strapping.
- Elevate emergency generators and other units and panels.

# Construction Resiliency

## Best Practices: Roof Construction: Shingles

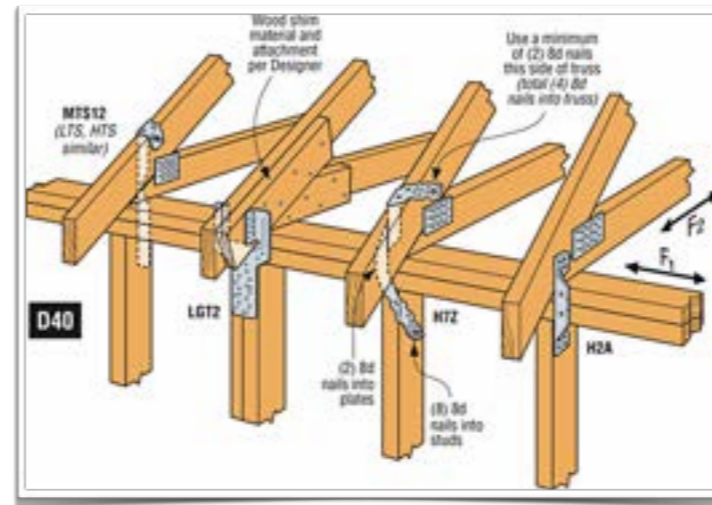


- Use Class H shingles with wind rating for 150 mph and Underwriters Laboratory L 2218- Class 4 Shingles (FM 3373) for impact resistance.
- Shingles must be installed correctly with starter strip, Ring Shank Nails every 6", and properly adjusted pressure gun.



# Construction Resiliency

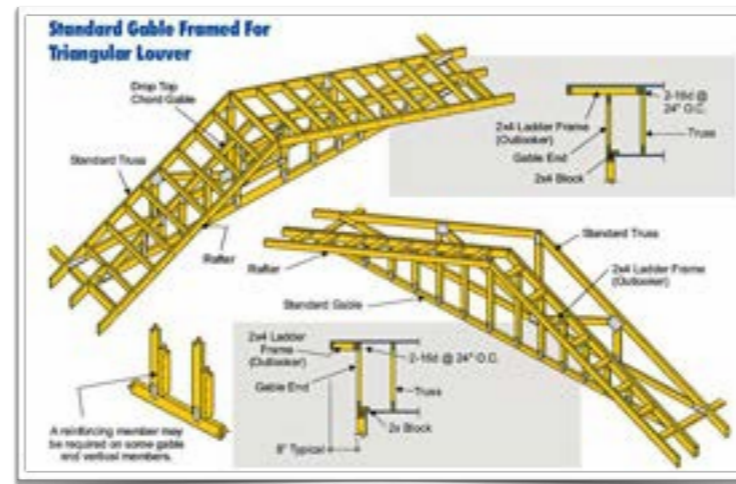
## Best Practices: Roof Construction



- Install Hurricane Clips/Hardware to connect roof rafters or truss ends to side walls.
- Seal the seams of roof decking with 6-inch wide roofing tape and upgrade to a synthetic tear-resistant roofing underlayment material.
- Use adhesive-backed “Peel and Stick” roof membrane underlayment and add a thin felt paper on top to make re-roofing easier in the future.
- Retrofit existing shingle roofs by reinforcing the first course of shingles on the eaves and gable edges by applying three (3) 1-inch diameter dabs of roofing cement under each edge shingle (two weeks prior to any storm for proper adhesion).

# Construction Resiliency

## Best Practices: Roof Construction



- Install bracing to gable-end walls to roofing members to prevent collapse at the top plate joint from high winds.
- Vented Attic - use hurricane-rated Ridge Vent (TAS 100(A)-tested product, combined with well-attached sturdy Soffit Vents.
- Soffit Materials should be well-fastened to wood framing every 12 inches.
- Use strong soffit materials that are well fastened to framing every 12 inches.

# Construction Resiliency

## Best Practices: Soffit Construction



- Soffit Materials should be well-fastened to wood framing every 12 inches.
- Use strong soffit materials that are well fastened to framing every 12 inches.

# Construction Resiliency

## Best Practices: Windows



- Operable Windows and Shutters can protect glass from flying debris.
- Louvered Bahama Shutters - hinged above the window.
- Roll-down Storm Shutters - automated and other action.
- Removable Panels + Impact Screens - metal, fiberglass, plywood and screening.

# Construction Resiliency

## Best Practices: Windows



- Laminated glass, impact-resistant windows are now required by building codes to be hurricane resistant - replacement of old non-rated windows provides a permanent solution in most storm occasions. Impacts from flying debris can shatter, but not break the window, so the interior of your home stays protected.

# Construction Resiliency

## Best Practices: Entry Door



- Upgrade to impact-resistant windows and doors if possible.
- Hurricane-resistant doors are safer, quieter and much stronger than traditional entry doors.

# Construction Resiliency

## Best Practices: Garage Door



- Severe damage to homes from strong hurricanes is typically caused by uneven air pressure loads when windows break or garage doors collapse.
- Standard garage door is typically the most vulnerable and largest opening in your home's building envelope.
- There are retrofitting bracing and reinforcement materials that can strengthen your existing garage door.
- Install a hurricane-resistant garage door if possible. High wind-design pressure ratings are recommended.

# Construction Resiliency

## Best Practices: Floors and Walls

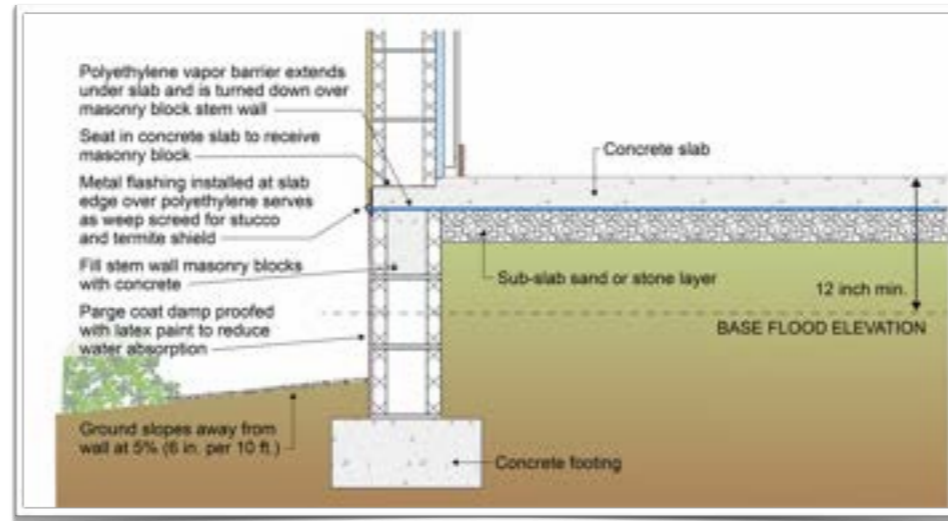


- When remodeling, choose materials that can resist damage from flooding, termites, and other possible hazards
- Ceramic, porcelain tile, brick or vinyl flooring with water-proof mortar or decorative concrete finishes.
- Use pressure-treated woods, fiber cement and paperless drywall materials.
- Build washable, drainable walls with solid wood and plywood structural materials and leave a gap in the drywall behind removable moldings.



# Construction Resiliency

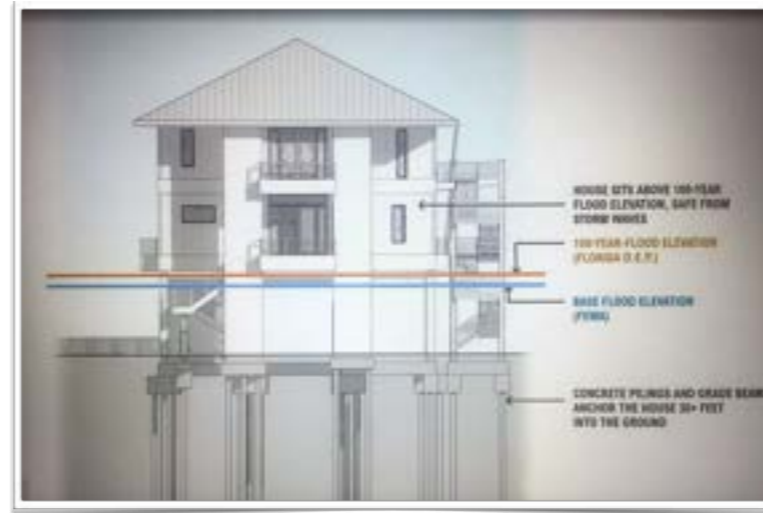
## Best Practices: Flood-Resistant Raised-Slab Foundations



- Ensure the foundation footing is deep enough to prevent undermining due to scour.
- Ensure exterior grade slopes away from the house.
- Elevate the floor assembly. • Protect and elevate electrical, HVAC, and other service equipment.
- Build with materials that are moisture, decay, and corrosion resistant.
- Design assemblies to easily dry when they get wet.

# Construction Resiliency

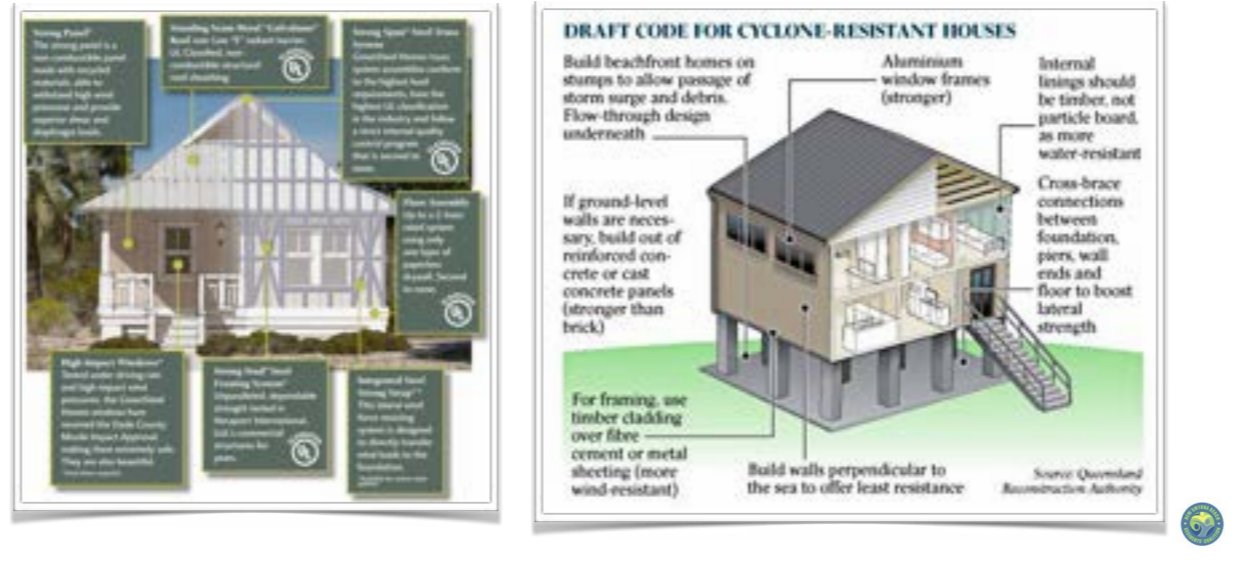
## Best Practices: House Elevation Pilings



- Home should be raised above the flood plane.

# Construction Resiliency

## Best Practices: House Elevation Pilings



- Walls: poured and reinforced concrete. Hurricane-resistant walls must have the structural capacity and hardness to handle the in-plane shear forces of hurricane winds to reduce lateral twists that damage the plumbing as well as the mechanical systems.
- Metal roof attached to frame with ring-shank nails and hurricane clips. Use gable end anchoring.
- Design buildings with square, hexagonal or octagonal floor plans with roofs of multiple slopes such as a four-sloped hi roof. A 30-degree roof slope will have the best result.
- Avoid roof overhangs as they cause wind lift. Any overhang should be limited to 20 inches.

# Construction Resiliency

## Best Practices: Wind Resistant



Add cables to roof framing structure on the coast.

- Roof deck sealed with spray polyurethane foam used to glue roof undersides to avoid air penetration.
- Windows: use safety plate shatter-proof glass with high-pressure DP “hurricane proof” rating for 200 mph winds. Use fewer and smaller windows.
- Storm-proof frames for all windows. Add storm shutters.
- Doors: Hurricane-resistant entry doors and garage doors.

# Construction Resiliency

## Best Practices: Trim Trees



- Hire a professional arborist to evaluate and trim trees. Keep gutters and drain pipes clean.
- Clean combustible material from yard to avoid fires.
- Landscaping should be designed to repel flood “waves” caused by wind or passing vehicles.
- Adequate storm water retention must be considered for excessive rain events.

# Construction Resiliency

## Best Practices: Minorca



Locally, the Minorca Condominiums survived hurricanes Ian and Nicole intact even though they are surrounded on water from three sides. They are raised about 9 feet above sea level and have extensive open areas, grass swales around the buildings and large storm water ponds.

# Construction Resiliency

## Best Practices: Mexico Beach



- In the wake of Hurricane Michael, one home survived in Mexico Beach, Florida... built to codes that were more strict than laws required.
- Reinforced concrete walls, 40-foot pilings driven deep into the ground and other factors to keep the house safe in the storm.
- Cost: 15 to 20 percent more to go beyond standard Florida building codes.
- Steel cables attached to pilings held the roof in place. • Withstood 130 mph winds.

The next portion of the program is by Dr. Jennifer Languell and is a separate PDF on Babcock Ranch Construction.

# Construction Resiliency

Best Practices: Dr. Jennifer Languell and Babcock Ranch



For more than 25 years, Dr. Jennifer Languell has worked with builders and developers to help them design and implement strategies to achieve their sustainability and resilience goals by creating more resource efficient, healthy and durable projects. She is a LEED AP, USGBC Green Rater, FGBC Designated Professional and Certifying Agent, NGBS Accredited Verifier, Class 1 Energy Rater and a Certified Residential Contractor. For her work, Dr. Languell and her company Trifecta have received numerous awards from government and industry organizations. She is a sought-after subject matter expert for the media in outlets such as BusinessWeek, CNN Headline News, HGTV, NPR and CNBC. Dr. Languell co-hosted the Discovery Channel's environmental series Discovery Project Earth.



# Construction Resiliency

Best Practices: Dr. Jennifer Languell and Babcock Ranch



The next part of the presentation is by New Smyrna Beach Fire Chief, Shawn Vandemark.

# Storm Preparation

City of NSB Fire Chief Shawn Vandemark



Flooding, evacuations, defensible space from wildfire, overall preparedness: Know your risk.

<https://www.noaa.gov/know-your-risk-water-wind>

NOAA Flood exposure map: <https://coast.noaa.gov/floodexposure/#-9012758,3385259,12z>

Coastal Evacuation Zone: <https://www.volusia.org/core/fileparse.php/6143/urlt/EvacZone.pdf>

# Storm Preparation

City of NSB Fire Chief Shawn Vandemark

Prepare Now:



Create a plan to secure your home in the event of damaging winds, storm surge and flooding. Do you have a safe room in your house and/or business? If not, consider creating/building one.

If your property has flooded in the past and if the storm is carrying a lot of water it could take a few days to try to prepare the property from flood intrusion. You should also be prepared to evacuate well in advance of the impact.

# Storm Preparation

## Storm Approach



Storm Approach:

If a hurricane watch is called for NSB, make sure you monitor the changing conditions through local media updates and NOAA:

<http://www.nhc.noaa.gov/>

# Storm Preparation

## Storm Approach



Predicting hurricane impact location is still challenging but generally within 2 or 3 days of impact the target area will be fairly well known. The size of the storm, the wind speed and the amount of moisture it is carrying are critical factors. Be prepared in advance to anticipate the direction of the storm and the potential for damage. If it is a major storm, be prepared to bring your whole household together including pets to plan how and when to evacuate. If there is a mandatory evacuation, the sooner you leave the less crowded the roads will be.

# Storm Preparation

## Secure Yard



Make sure all trees and shrubs are trimmed and clear rain gutters. Reinforce your garage doors.  
Bring in all outdoor furniture, garbage cans, decorations, and anything else that is not tied down.  
If winds become strong, stay away from windows and doors and close, secure and brace internal doors.  
Secure your boat in your yard or dock or move it to a safer location.

# Storm Preparation

## Secure Windows



Secure your home: Make sure your home is properly secured before the storm hits. This includes boarding up windows, securing doors, and clearing your yard of any debris or loose objects that could become projectiles. Cover all of your windows, either with hurricane shutters or wood.

Although tape can prevent glass from shattering everywhere, be warned that tape does not prevent the window from breaking.

# Storm Preparation

## Hurricane Supplies



Stock up on supplies: Make sure you have enough food, water, cash and other supplies to last for several days. Don't forget important items like medication, first aid supplies, and batteries for flashlights. Create a complete list of what to do to prepare your home and family for a hurricane, high wind, flood or fire. Consider a backup generator and know how to safely use it and keep it properly ventilated.



# Storm Preparation

## Hurricane Supply List

Non-perishable food (enough to last at least 3 days)  
Water (enough to last at least 3 days)  
First-aid kit (include any prescription medication you may need)  
Personal hygiene items and sanitation items  
Flashlights (have extra batteries on hand)  
Battery operated radio (again, have extra batteries)  
Waterproof container with cash and important documents  
Manual can opener  
Lighter or matches  
Books, magazines, games for recreation  
Special needs items: pet supplies and baby supplies if applicable  
Cooler and ice packs  
A plan for evacuation and for if family members are separated



Non-perishable food (enough to last at least 3 days)    Cooler and ice packs    Water (enough to last at least 3 days)  
First-aid kit (include any prescription medication you may need)    Personal hygiene items and sanitation items  
Flashlights (have extra batteries on hand) and battery operated radio (again, have extra batteries)  
Waterproof container with cash and important documents    Manual can opener    Lighter or matches  
Books, magazines, games for recreation    Special needs items: pet supplies and baby supplies (if applicable)  
A plan for evacuation and for if family members are separated

# Storm Preparation

## Prep your vehicle



Make sure your car has a full tank of gas well before the storm hits. Gas stations may be closed or out of fuel after the storm, so it's important to have enough gas to evacuate if necessary. If you have an electric vehicle, make sure it's fully charged before the storm hits. Know how far it will go on a full charge and plan accordingly. Be aware that charging stations may not be available after the storm, so it's important to have enough charge in your vehicle to evacuate to a safe location. Salt water may severely damage an electric vehicle and cause a fire. EV fires can be six times as difficult to put out. Move vehicles to higher ground so they do not flood.

# Storm Preparation

Secure your valuables and important documents



Make copies of important documents like insurance policies, passports, and medical records, and store them in a waterproof container. Scan important papers and put that data on a hard drive or USB drive and/or in the cloud. Make sure you have a record of your passwords. Include a list of medications and doctors for each member of the family and for pets. Have a list of critical technology items to secure or take with you if you need to evacuate. If you work from home, secure your home office and protect your important documents and data. If you have a local business, make sure you secure your business property and data as quickly as you can so that you have time to do the same for your home and family. Communicate with your employees/clients and let them know your plans and how to communicate with you during and after the storm.

# Storm Preparation

## Power Outages



Have extra cash on hand in the event no ATMS in your area are accessible or working. Charge your cell phone and limit use after power is out. When the AC is out, prevent as much light from entering and warming the house by covering up your windows on the inside. If you have back-up or battery operated fans, don't run them unless you are in the room. Fans create a difference in perceived temperature but do not cool the room; instead they create a cooling effect by dispersing the heat off your skin. It is said they can actually add heat to a room just by running.

# Storm Preparation

## Power Outages



Water: Fill bathtub and large containers with water for washing and flushing only. Turn your fridge temperature down and/or freeze any food or drinking water that can be frozen if you expect a power outage. Have a cooler with ice packs prepared to cool your drinks and snacks after power has been out for more than 4 hours.

# Storm Preparation

## Evacuation



By the time a Extreme Wind Warning/Advisory is called. It may be too late to evacuate. If you are living beachside, the north causeway and the south causeway will be closed as the wind approaches 40 mph. Stay informed: Listen to local officials and follow their instructions for hurricane preparation and evacuation. Keep track of the latest updates from the National Hurricane Center. Listen to emergency alerts and follow those. The best way residents can stay informed about public shelter openings is to download the Volusia County emergency preparedness app, visit: [www.volusia.org/PIN](http://www.volusia.org/PIN)

# Storm Arrival

Evacuate



Evacuate if necessary: If you live in an evacuation zone, make arrangements to evacuate to a safer location as soon as possible. Know where you are going to go based on the trajectory of the storm. Make sure to have a plan in place for your pets, and leave as early as possible to avoid traffic. Consider turning off your HVAC. Take copies of your most important documents, food, water and medications. Notify family, friends, and caregivers of your location.

# Storm Arrival

Know and prepare the safest room in your home



If you stay, finish all preparation well before the storm arrives. Anticipate the duration of the storm and the likelihood for power outages and loss of potable water. Assume that you will lose power, Internet and possibly cell service for some period of time. Gather all family members and pets. Go into a safe room until the winds abate. If the eye of the storm goes over, remember the winds will pick up again from a different direction. Listen to the radio reports. Have extra batteries for your radio.



# Storm Aftermath

## Report Dangerous Conditions



Often the most dangerous time is after the storm abates. Keep track of all family members and pets and check to see if there are any downed power lines. If the water is off or if you see broken water mains, avoid drinking the water once it comes back on until it is deemed safe by the utility company. Stay away from damaged areas. Do not drive through flooded roads. Report any dangerous conditions as soon as you can to the City incident command center or 911. Make sure to have Wireless Emergency Alerts enabled on your phone.

## Storm Aftermath



Hurricanes can cause significant damage, so plan ahead for the aftermath. Have a plan in place for debris removal and repairs, and be prepared to contact your insurance company and utility companies if necessary with your policy number. Listen to emergency responders and stay away from any downed power lines and flooded areas. This is just a general list, and your specific circumstances may require additional preparation measures. It's always best to listen to the advice of local officials and follow their instructions. Please do not put our first responders' lives at risk.

[Chip back to close the show...](#)

## Next Steps



Thank you Chief Vandemark and to all of our community's first responders. Our City's Flood Exposure Study will be presented before the end of this month. We want to suggest some next steps we all can take to sustain our economy and make our city stronger and more resilient.

After the flood study, we will need to consider changes to building codes and our Land Development Regulations.

Also, consider creating a home resiliency assessment program to outline the most affordable ways to make properties more durable and flood-resistant.

And consider a trade show that showcases many of the resiliency measures and products we have covered in this program.



We are optimistic that, if we all work together, we can become a much more resilient community... Optimism is Sustainable!  
President of the Coalition, Genie Flynn gives the closing remarks.