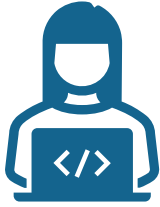


I-ADAPT: A Tool that Puts Flood Mitigation in the Hands of Delawareans



DELAWARE DEPARTMENT OF
NATURAL RESOURCES AND
ENVIRONMENTAL CONTROL

Jordana Cutajar
Resilience Planner IV
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Tool

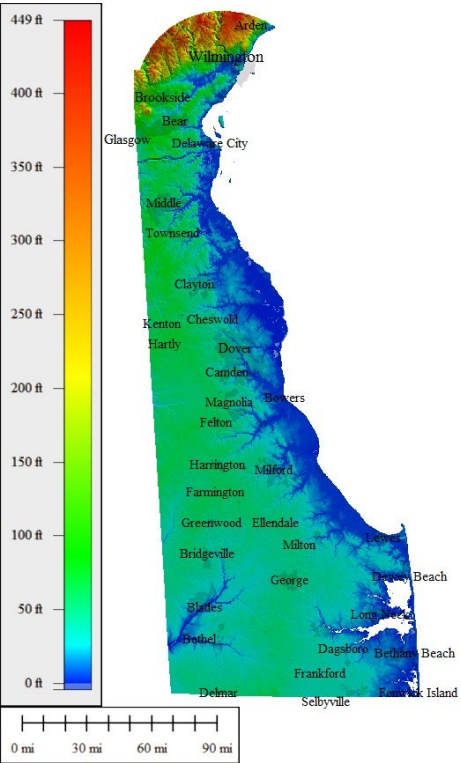


Adaptation
Strategy
Documents

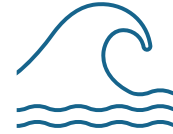


Website

Climate Change and Flooding in Delaware



Lowest lying state



Hotspot for sealevel rise



More frequent and intense storms



Increased precipitation and flooding

Creating the Individual Adaptation Decision And Planning Tool (I-ADAPT)



Nicole Marks

NOAA Coastal Management
Fellow 2020-2022

Goal of the I-ADAPT Products:
To help Delawareans become more resilient to climate change by finding solutions to protect their property from flooding.

What is the tool?



I-ADAPT:

Individual Adaptation Decision And Planning Tool
Uses information provided by the user to generate flooding adaptation strategy recommendations for the user's property.



I-ADAPT: Individual Adaptation Decision and Planning Tool

How to Complete the Tool

Instructions: The tool will suggest various flooding adaptation strategies for your property based on your answers to the following questions. In order to receive the most accurate results possible, please fill out the survey questions as accurately as possible. Please answer all questions in the order that they appear. Do not leave any questions blank. If you need to change an answer in the questionnaire, hit the "Back" button at the bottom of the screen. Once you change an answer, different questions may appear. Be sure to go through all questions following the changed answer to make sure you do not miss a new question. The tool will take approximately 15-20 minutes to complete.

Results: Your flood adaptation strategy recommendations will be displayed on the last page of the questionnaire. You will also have the option to receive a copy of your recommendations by email.

** All information entered into I-ADAPT will only be used to identify the flooding adaptation strategies that are most ideal for your property. At the end of the questionnaire, you will have the option to receive a copy of your results by email. If you elect to receive a copy of your results, your email address and questionnaire answers will be temporarily collected in order to automatically generate an email. Your information will be deleted and will not be used for any other purposes. If you elect not to receive an email, you will not be able to access the recommended adaptation strategies once the tool is closed. **



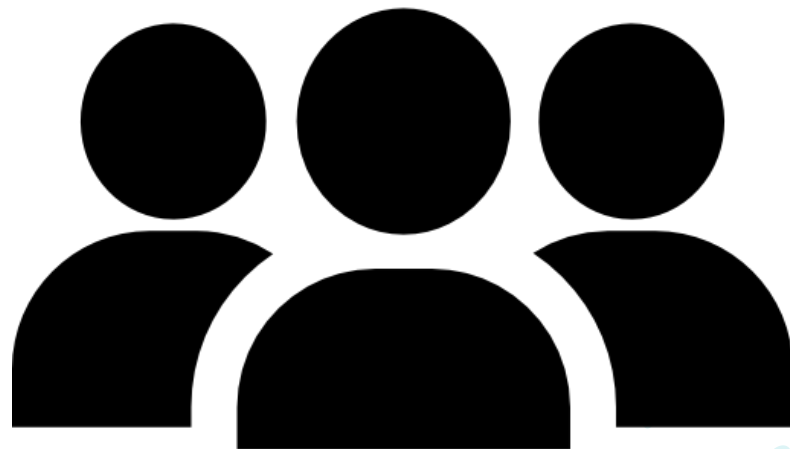
Click the "Next" button at the bottom of the screen to begin the tool.

Next

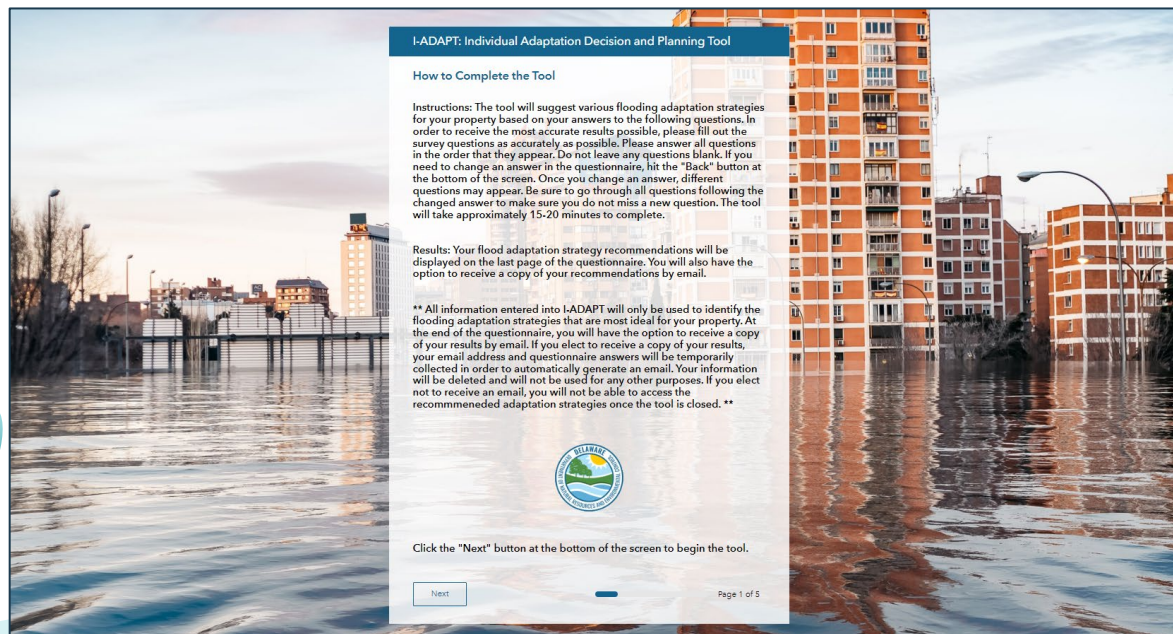


Who should use I-ADAPT?

- Residential property owners (homeowners)
- Residential property renters
- Business property owners
- Business property renters



How was the tool created?



Background information

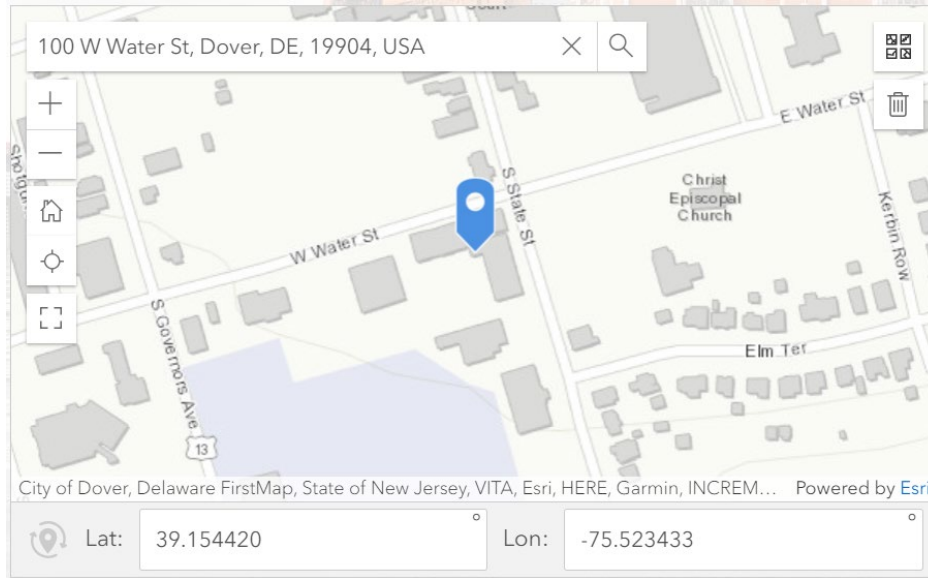
- Extensive literature review
- Technical expert input
- Contractor interviews
- Public Focus Groups
- Technical Focus Group

How does the tool work?



Property Location

User inputs exact location of the primary structure on their property.

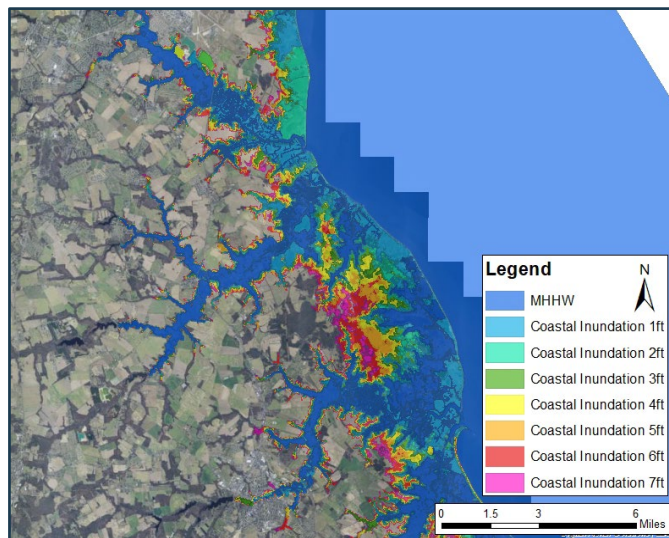


How does the tool work?

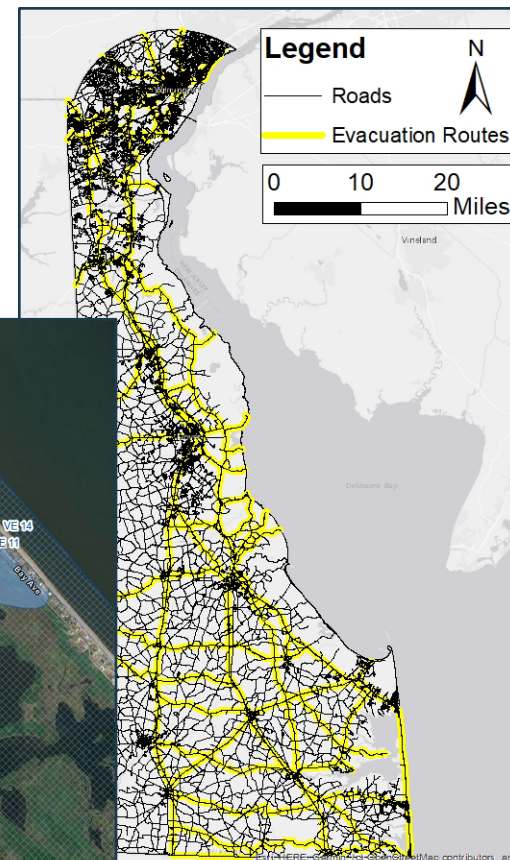
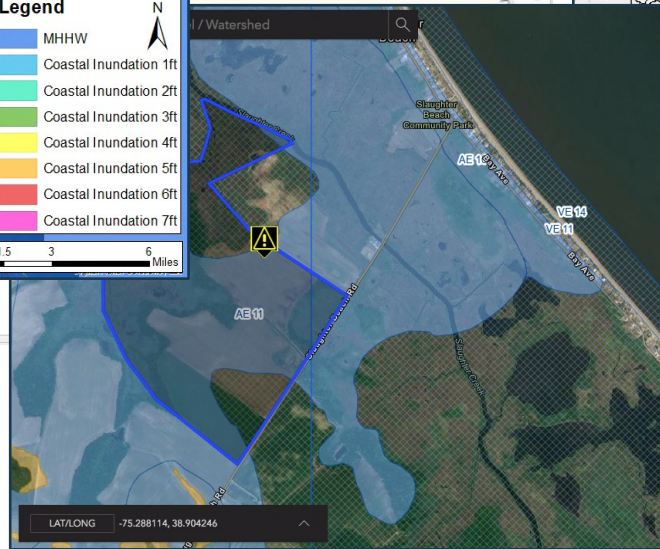
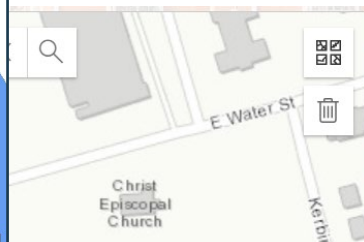


Property Location

User inputs exact location of the primary structure on their property.



Lat: 39.154420



How does the tool work?



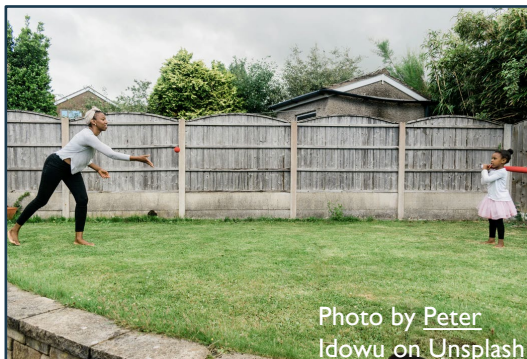
Property Location

User inputs exact location of the primary structure on their property.



Physical Factors

Ex: Do you have a yard?



How does the tool work?



Property Location

User inputs exact location of the primary structure on their property.



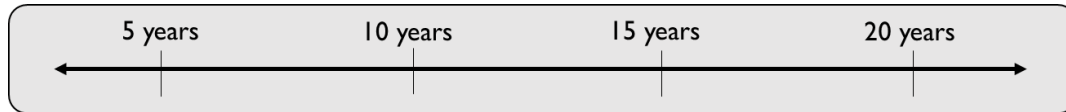
Physical Factors

Ex: Do you have a yard?



Personal Preferences

Ex: How long do you want to live at the property?



How does the tool work?



Property Location

User inputs exact location of the primary structure on their property.



Physical Factors

Ex: Do you have a yard?



Personal Preferences

Ex: How long do you want to live at the property?



Personalized Results

Results include recommended strategies for now and for later.

Right Now:
Strategies you can implement **right now** to reduce your property's flood risk.

Future:
Strategies that you will **likely need to implement** to reduce your property's flood risk through **2050**.

How does the tool work?



Property Location

User inputs exact location of the primary structure on their property.



Physical Factors

Ex: Do you have a yard?



Personal Preferences

Ex: How long do you want to live at the property?



Personalized Results

Results include recommended strategies for now and for later.



Adaptation Strategies

Describe each of the recommended adaptation strategies.

What are adaptation strategy documents?

Adaptation Strategy Documents

Each **adaptation strategy document** provides information on one flooding adaptation strategy.



Flooding adaptation strategies include everything from elevating a home to installing a rain garden.

Strategies grouped by the following categories:

Interior adaptations

Exterior adaptations

Shoreline adaptations

Yard adaptations

Other adaptations





How were the adaptation strategy documents created?

- Extensive literature review
- Technical expert input
- Contractor interviews
- Public Focus Group on layout and content

I-Adapt Yard Adaptation

Rain Garden

Overview

- Building a well-designed rain garden can reduce potential flood damage costs.
- Rain garden installation projects can vary in difficulty and cost.
 - Simple "Do It Yourself" projects.
 - Complex projects involving extended downspouts, pipes, or French drains.
- For the average single-family home, the rain garden should be about 20% of the size of the impervious surface* (roof, patio or pavement) that is draining into the garden.
- Residential gardens are typically 100 to 400 square feet in size.
- Soil excavation is often necessary.

Potential Benefits:

- On-site stormwater management which reduces flooding risk.
- Filters pollutants such as chemicals, metals, fertilizers and pesticides from stormwater.
- Recharges the water table.
- Reduces the local mosquito population.
- Visually appealing.
- Improves mental health.
- Provides wildlife habitat.




Photo credit: Arlington National Cemetery licensed under CC

Key Takeaways

During intense precipitation events, stormwater systems may not be able to keep up with the influx of water.

Grass lawns do not have deep root structures to absorb as much water as the deep, dense root system of a well-designed rain garden.

To avoid repair costs associated with flood-related damage or destruction of property, a rain garden can be installed to reduce flooding on residential and commercial properties.

Always plant deep-rooted native species.

Examples of native Delaware plant species:

○ Arrowwood	○ Foxglove
○ Beach plum	○ Great blue lobelia
○ Black-eyed Susan	○ Groundsel bush
○ Blazing star	○ Highbush blueberry
○ Blue vervain	○ Inkberry
○ Blueflag iris	○ Mistflower
○ Butterfly milkweed	○ Monkey flower
○ Cape American beach grass	○ New England aster



Photo credit: USFWS Alaska licensed under CC

Where can I find the tool?



Website:

de.gov/iadapt



Or scan this QR code to visit the website!

The screenshot shows the Delaware.gov website with the following content:

- Delaware.gov** header with navigation links: Agencies, News, Topics, Contact.
- Secondary navigation: CHOOSE, ABOUT DBEC, ADMIN LINK, DBEC NEWS, CONTACT US.
- I-ADAPT: A Flood Planning and Adaptation Tool** title.
- Left sidebar menu: Delaware Coastal Programs, Home, Contact Us, Delaware Coastal Management Program, National Estuarine Research Reserve, Stewardship, Coastal Science, Planning & Training, Outreach, Division of Climate, Coastal and Energy.
- Main content area:
 - Introduction: "The individual Adaptation Decision and Planning Tool, I-ADAPT, is designed to help Delaware residents adapt to increased flooding..."
 - Benefits: "As Delaware residents experience flooding events more frequently due to climate change induced sea level rise and increased coastal storm activity..."
 - Tool Description: "The I-ADAPT tool was developed for Delaware homeowners, renters, business property owners and business property renters..."
 - Usage: "The web-based tool takes both physical property characteristics and personal preferences into account in order to recommend flooding adaptation strategies..."
 - Recommendations: "The tool generates two lists of recommended strategies..."
 - Disclaimer: "The recommended adaptation strategies are available on the final stage of the tool..."
 - Guidance: "The recommendation are intended to guide the user's adaptation strategy decision making and planning process..."
 - Disclaimer: "I-ADAPT is not intended to substitute or take precedence over the guidance of design engineers, contractors, utility companies or regulatory agencies..."
 - Privacy: "All information collected will only be used to identify flooding adaptation strategies that are most ideal for your property..."
- Right sidebar:
 - Buttons: Go to the I-ADAPT Tool, Sign Up for I-ADAPT, I-ADAPT Definitions, Adaptation Strategies, Additional Resources.
 - I-ADAPT Community Workshops section with links for various locations.
 - Image of a "HIGH WATER" sign in a flooded area.



What information is on the website?

- Link to the Tool
- Tool overview
- How to use the tool
- Tool definitions
- Additional resources
- Comprehensive list of flood adaptation strategies

The screenshot shows the Delaware.gov website with the following content:

- Header:** Delaware.gov, Agencies, News, Topics, Contact. Navigation: DIVISIONS, ABOUT DNREC, ADMIN LAW, DNREC NEWS, CONTACT US.
- Section Header:** I-ADAPT: A Flood Planning and Adaptation Tool
- Left Sidebar (Delaware Coastal Programs):**
 - Home
 - Contact Us
 - Delaware Coastal Management Program
 - National Estuarine Research Reserve
 - Stewardship
 - Coastal Science
 - Planning & Training
 - Outreach
 - Division of Climate, Coastal and Energy
- Main Content:**
 - Introduction:** The Individual Adaptation Decision and Planning Tool, I-ADAPT, is designed to help Delaware residents adapt to increased flooding. Users enter information about their property and the tool generates recommendations on how to lower their flood risk.
 - Context:** As Delaware residents experience flooding events more frequently due to climate change induced sea level rise and increased coastal storm activity, they need to know which adaptation strategies could help protect their unique properties from flooding.
 - Impact:** More frequent intense storms and flooding are among the impacts of climate change that Delaware is already experiencing. Learn more about climate change in The First State, and how we can minimize harmful greenhouse gas emissions and increase our resiliency, at [de.gov/climate](#).
 - Section: A Tool to Help Delawareans Prepare for Flooding**
 - The I-ADAPT tool was developed for Delaware homeowners, renters, business property owners and business property renters.
 - The web-based tool takes both physical property characteristics and personal preferences into account in order to recommend flooding adaptation strategies. After the user enters their structure's location, and answers questions about their property and personal preferences, the tool computes adaptation strategy recommendations for the individual's property.
 - The tool generates two lists of recommended strategies:
 1. Strategies the user can implement on their property right now.
 2. Strategies the user may need to implement on their property to reduce their flood risk through 2050.
 - Image:** A photograph of a flooded street with a yellow diamond-shaped sign that reads "HIGH WATER".
 - Additional Info:** The recommended adaptation strategies are available on the final page of the tool. Users can also receive an email containing their personalized adaptation strategy recommendations. The recommendations are intended to guide the user's adaptation strategy decision-making and planning process. Depending on results, the user may need to reach out to various professional agencies (design engineers, contractors, utility companies, regulatory agencies, etc.) in order to implement the recommended adaptation strategies. I-Adapt is not intended to substitute or take precedence over the guidance of design engineers, contractors, utility companies or regulatory agencies. For more information, contact the Delaware Coastal Programs [I-Adapt Team](#) RL.
 - Privacy Information and Disclaimer:** All information collected will only be used to identify the flooding adaptation strategies that are most ideal for your property. After you receive your results, all your submitted responses are automatically deleted from the system. The I-ADAPT Tool is intended for planning purposes only. It is not intended to substitute or take precedence over the guidance of design engineers, contractors, utility companies or regulatory agencies. The tool is not designed or intended for properties located outside of Delaware.
- Footer:** [Home](#) [About Us](#) [Adaptation](#) [Assessments](#) [Climate Change](#) [Energy](#) [Climate Plan](#) [Coastal Programs](#) [Flooding](#) [Resources](#) [Strategies](#) [Tool](#)



Coming to a library near you!

I-ADAPT Community Workshops

New Castle

Route 9 Library and
Innovation Center
Tuesday, May 7
6-8 PM



Kent

Dover Public Library
Tuesday, May 21
6-7:30 PM



Sussex

Lewes Public Library
Thursday, May 23
6-7:30 PM



Help Spread the Word!!

Delaware Partners **Better Together** Workshop Series


Disaster Readiness Tools & Tips

RESOURCE FAIR i

Tuesday, May 7, 2024
4:00pm - 6:00pm

I-ADAPT Workshop 6:00pm - 8:00pm
Route 9 Library

Featured Event




I-ADAPT
Individual Adaptation Decision & Planning Tool
Presented by DNREC 6:00pm - 8:00 pm

FREE
Demonstrations
& Assistance on how
to use I-Adapt by
DNREC Staff!

Learn How I-ADAPT Can Help You Prepare Your Property For Potential Flooding


- Scan the QR Code to visit the I-ADAPT website & learn more
- Answer questions about your property and preferences
- I-ADAPT generates personalized recommendations, complete with estimated budgets and additional resources

Scan Me!




dnrec.delaware.gov/coastal-programs/i-adapt


Join us!
Rt. 9 Library will host more Delaware Libraries Partners onsite. All welcome to stay through I-ADAPT Workshop! This event is free & open to the public!




3022 New Castle Ave, New Castle, DE
DelawareLibraries.org



Sea Grant
DELAWARE



DEWA



GREEN BUILDING UNITED

I-ADAPT
Individual Adaptation Decision And Planning Tool

Learn How I-ADAPT Can Help You Prepare Your Property For Potential Flooding



3 Easy Steps


1. Scan the QR Code to visit the I-ADAPT website
2. Answer questions about your property and preferences
3. I-ADAPT generates personalized recommendations, complete with estimated budgets and additional resources



Learn More About I-ADAPT
Tuesday, May 21, from 6 p.m. to 7:30 p.m. Dover Public Library, 35 Lookerman Plaza, Dover

Featuring:
Information on I-ADAPT *Demonstrations* *Assistance From Trained DNREC Staff*

DelawareLibraries.org





I-ADAPT
Individual Adaptation Decision And Planning Tool

Learn How I-ADAPT Can Help You Prepare Your Property For Potential Flooding



3 Easy Steps

1. Scan the QR Code to visit the I-ADAPT website
2. Answer questions about your property and preferences
3. I-ADAPT generates personalized recommendations, complete with estimated budgets and additional resources



Learn More About I-ADAPT
Thursday, May 23, from 6 p.m. to 7:30 p.m. Lewes Public Library, 111 Adams Ave. Lewes

Featuring:
Information on I-ADAPT *Demonstrations* *Assistance From Trained DNREC Staff*

DelawareLibraries.org





Evaluating I -ADAPT





Thanks!

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Acknowledgements: Nicole Marks and Coastal Programs!
Slide Credits: Slidesgo

