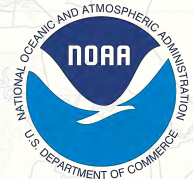# Oxford 2100

Adapting to Climatic Changes

Partnership for Action Learning in Sustainability

- Connects local clients to UMD faculty

- Students work on real-world projects

- Build a sense of community

Current & Past Clients

- MNCPPC
- PG Parks
- PG Planning
- Garrett Park
- City of Frederick
- Anne Arundel County

... and many more ...

Oxford, Maryland

- Settled in 1659
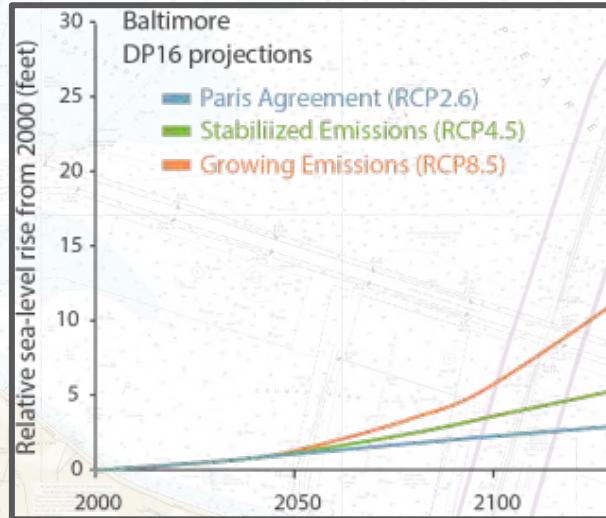- Bustling port town by 1694
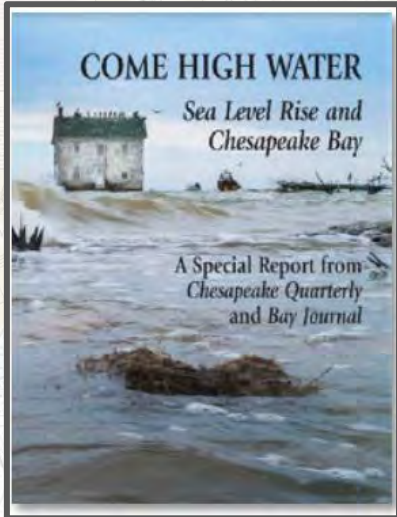
- Current population 827

Current & Future Challenges

Permanent Flooding

Loss of History

Infrastructure & Access

Lifestyle Change

COME HIGH WATER
Sea Level Rise and Chesapeake Bay

A Special Report from Chesapeake Quarterly and Bay Journal

Baltimore
DP16 projections

Paris Agreement (RCP2.6)
Stabiliized Emissions (RCP4.5)
Growing Emissions (RCP8.5)

Relative sea-level rise from 2000 (feet)

Oxford
Oxford
Oxford Park
Oxford

9ft
8ft
7ft
6ft
5ft
4ft
3ft
2ft
1ft
Current MHHW

Project Beginnings

- Stormwater & Tidal damage is increasing

- Normal sea-rise visioning is not encouraging

- Looking for visualizations of future success

Inventory & Analysis

GIS Data

Analysis of Talbot County

wetlands estuarine dominant

zoning residential (50%) commercial (15%)

structures 20% of homes threatened

Flood Risk Areas

- Medium Risk
- High Risk
- Focus Area
- Boundary

ITERATIVE METHODOLOGY

- ideation
- initial goals
- abc inventory
- user groups
- user narratives
- program
- project areas
- field trips
- research
- ideation
- objectives
- mission
- goals
- precedent analysis
- precedent analysis
- composite analysis
- ideation
- master plan
- focus area
- plans and design

Site Visit

Sept. 30, 2021
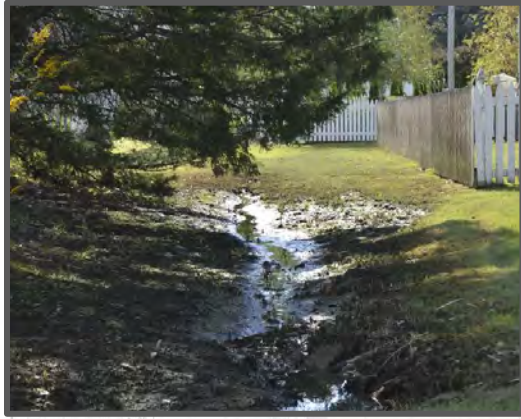
Met Cheryl!

Met Sasha!

Toured Town

Ate Ice
Cream

Slept Over

Site Visit

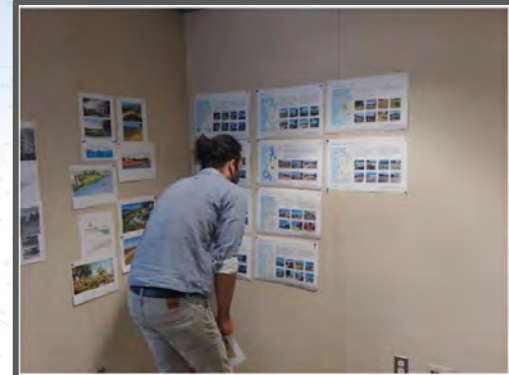# Design Ideation

Ideation Exercises

Precedent Research

Sketches

Lit Review

Charettes

Collaboration

Site Visit

Design Ideation

Courageous By Design

Symposium of Landscape
Architects on Climate Change

*"Knowing what we do will
not be enough
but doing it anyway
is **courageous**"
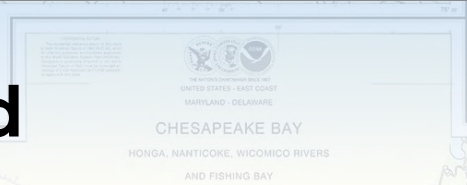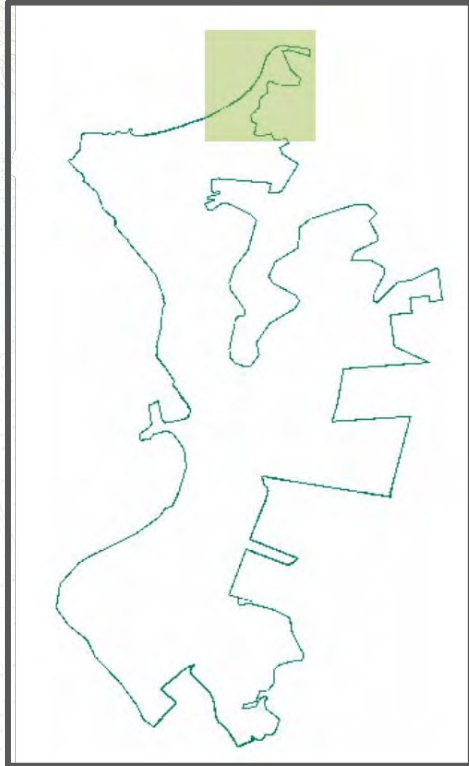-Kate Orff* **SCAPE**

Existential Questions

- What is the purpose?
- How do we act?
- *Climate Grief*

*Resilience
is our Duty*

The Strand

Critical Issues:

- 50% of buildings at risk of flooding

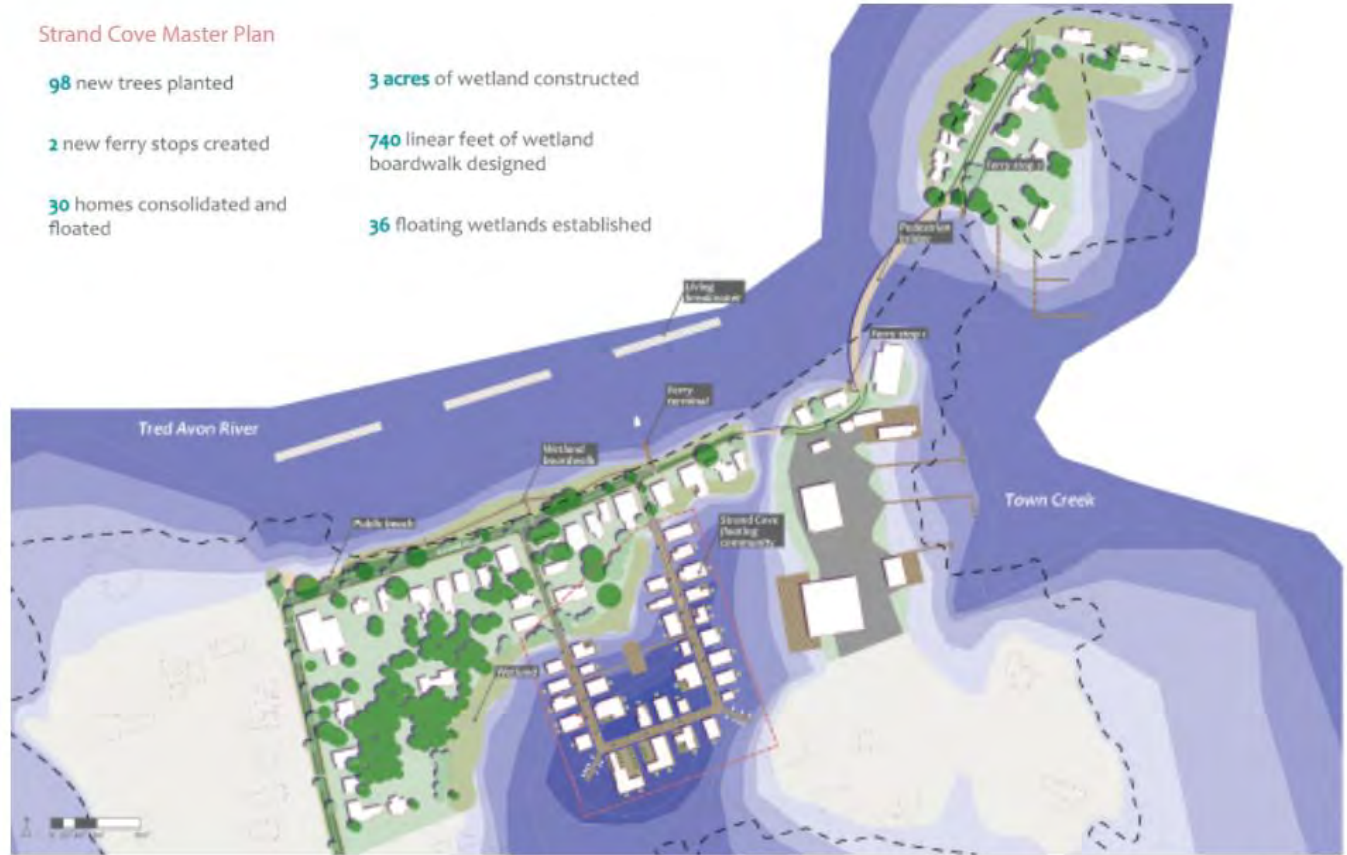- Northernmost tip becomes inaccessible when the road is flooded

The Strand

"Living With the Water"

Audrey Seiz

Strand Cove Master Plan

98 new trees planted

2 new ferry stops created

30 homes consolidated and floated

3 acres of wetland constructed

740 linear feet of wetland boardwalk designed

36 floating wetlands established
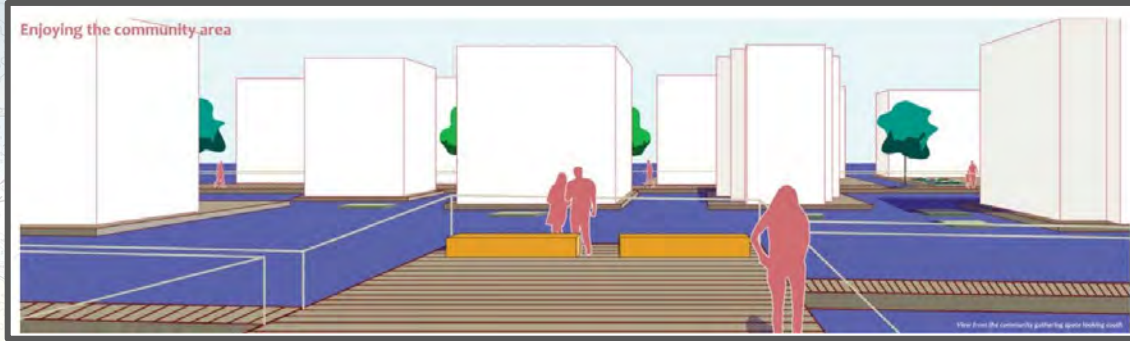
Tred Avon River

Town Creek

Living With The Water | Audrey Seiz

The Strand

Design Strategies:

- **Embrace Water**
  - Floating Homes
  - Public Boardwalks

- **Adapt Through Ecology**
  - Constructed Wetlands
  - Living Breakwaters

- **Maintain Historic Character**
  - Homes Accessible via Water
  - Salt-tolerant Plantings

Enjoying the community area

Floating Community

The Historic Harbor

Critical Issues:

- Frequent & severe tidal flooding due to low elevation

- Frequent & severe pluvial flooding due to geology

- Highest concentration of historic buildings in town
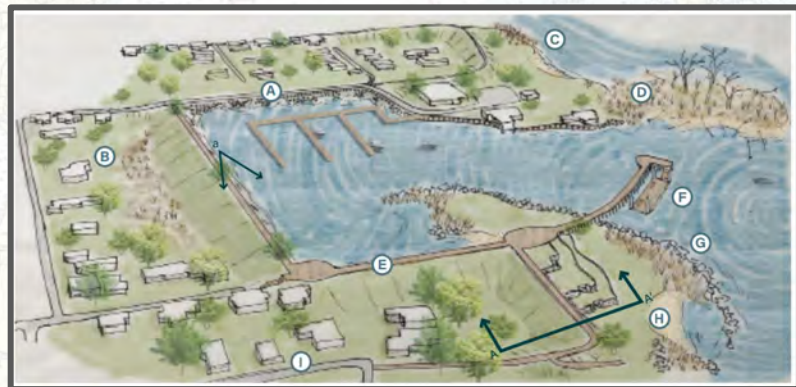
The Historic Harbor

"Harbor to Harbor"

Micaela Ada

"Innovate Restore Fortify"

Deb Shteinberg
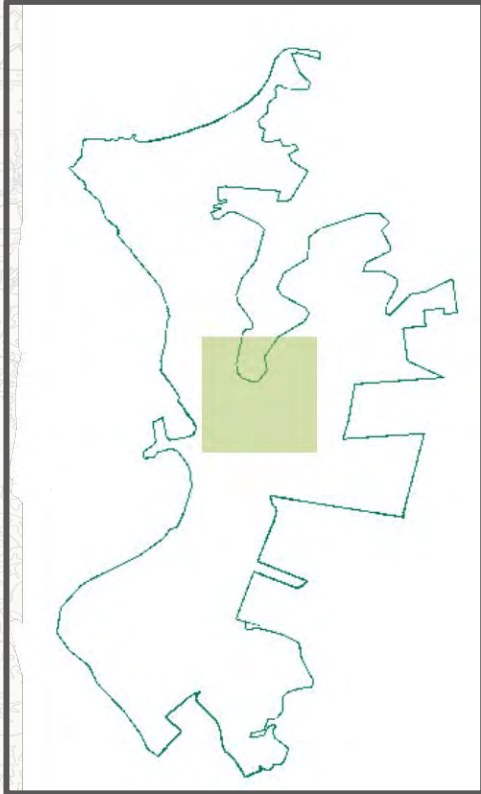
"Our Future Heritage"

Matt Reise

The Historic Harbor

Design Strategies:

- ## Nature-Based Solutions
  - Constructed Wetlands

- ## Plan for People
  - Boardwalk overlooks
  - Guided Trails
  - Fishing Piers

- ## Fortify
  - Levee system
  - Stone Shorelines

The Causeway

Critical Issues:

- Severe flooding via stormwater collection & high water table

- Holds the town's only access road - flooded regularly
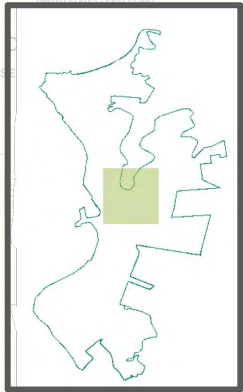
The Causeway

"Oxford 2100"

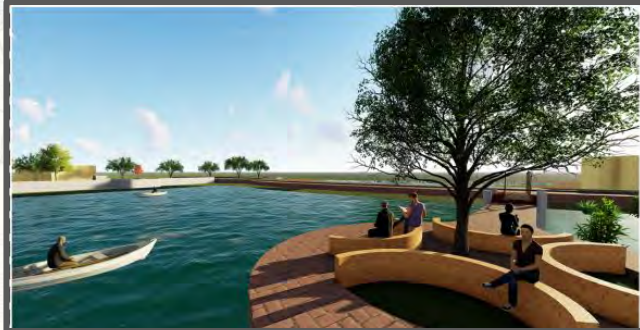*"Harbor to Harbor"*

Jainee Shah

Micaela Ada

The Causeway

Design Strategies:

- **Accept the Water**
  - Allow lands to flood

- **Take Advantage of Change**
  - Build estuarine research
  - Opportunities for recreation
  - Chance for tourism

- **Elevate Necessities**
  - Raise the entry road

Southern Oxford

Critical Issues:

- Wind-driven storm surge

- Wetlands & high ground threatened by salt-water intrusion

Southern Oxford

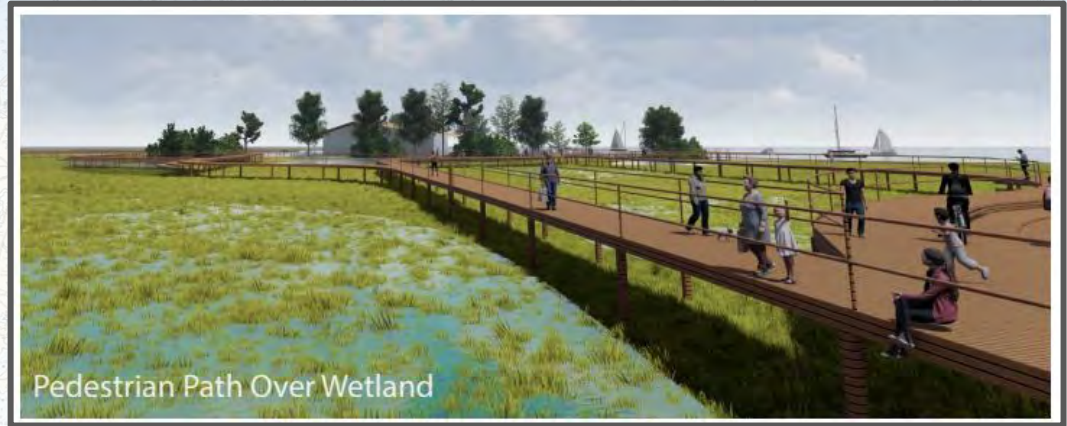*"Wetland Water Wonder"*

Erin Callahan

"A Step at a Time"

Danny Bentley

Southern Oxford

Design Strategies:

- **Storm Surge Solutions**
  - Constructed Wetlands
  - "Oyster-tecture"

- **Augment Industry**
  - Grow tourism
  - Build research capacity

- **Improve Ecological Health**
  - Native Plantings

Pedestrian Path Over Wetland

Closing

Oxford's Next Steps:

- Oxford Community Resilience Committee Review
- Presentations to the Public
- Engineering Feasibility Review

Student Takeaways:

- Introduction to working with communities
- Introduction to Climate-Change Design
- Nature-Based Climate Resilience
- Great project!

Thank You