

CLIMATE CHANGE IN DELAWARE RISK ASSESSMENT AND PLANNING

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DELAWARE'S COASTLINE AND LANDSCAPE

- 380 miles of coastline 25 miles are along the Atlantic Coast
- Mean elevation from sea level is 60 ft, lowest level in the United States
- Today 22,000 people at risk from coastal flooding. Increasing to 31,000 by 2050
- By 2050 there will be 7.1% of Delaware's land in the 100 year floodplain. 130 square miles.
- Coastal Flood Days in Lewes, DE: 1964 there were under 50, today there are over 200.



DELAWARE'S APPROACH TO CLIMATE CHANGE

Delaware's Climate Action Plan

• 2020 year-long public engagement workshops with 10 state agencies to develop a roadmap.

• 2013 Sea Level Rise Recommendations

- Improve coordination among government and regional partners to streamline SLR adaptation efforts
- Provide increased regulatory flexibility for adaptation
- Develop policies for growth, future investments and natural resources management •
- Increase public education and outreach on sea level rise

Coastal Inundation Maps

- Developed by the Delaware Geological Survey in 2017 to inform infrastructure, land use and investment planning for sea level rise.
- DNREC's Delaware Coastal Programs
 Resilient Communities

 - Adapting to Sea Level Rise

SLR PROJECTIONS – DELAWARE CITY



Mean Higher High Water (2017) Mean Higher High Water (2050) Mean Higher High Water (2100) Legend

Sources Mean Higher High Water layers sourced from The Delaware Geological Survey. World Imagery sourced from ESRI.

0.25 0.5 Miles

SLR PROJECTIONS – CITY OF NEW CASTLE



SLR PROJECTIONS – CITY OF NEW CASTLE



SLR PROJECTIONS – CITY OF LEWES



Mean Higher High Water (2050) Mean Higher High Water (2100)

0.25 0.5

NPDES PERMITTING AND CLIMATE CHANGE

Industrial Stormwater

DNREC will be conducting risk assessments of high-risk facilities based on:

- Proximity to impaired or sensitive waters
- Flooding and other environmental factors
- SIC Code and potential pollutants
- Compliance history

NPDES PERMITTING AND CLIMATE CHANGE

Individual Wastewater Plants

- 5 of Delaware's 12 POTWs will be impacted by SLR in 2050 and beyond
- SLR planning varies among municipalities.

NPDES PERMITTING AND CLIMATE CHANGE

Municipal Stormwater

- MS4 general permits encourages permittees to consider green infrastructure.
- Developing county level risk assessments to include flooding and other climate change factors.
- Coordinate with permittes, conservation districts and DNREC's Environmental Finance on future projects that factor in climate change.



RESILIENT COMMUNITIES AND MS4 PERMITTING

- **Strategy:** Coordinate community projects addressing coastal hazards with MS4 permit compliance.
- **Resilient Communities in Delaware** The partnership funded through NOAA helps communities work through the stages of assessing their vulnerabilities, prioritizing potential adaptation and planning options, and implementing their plans.
- **MS4 Program** Can provide assistance to communities after the partnership activities have completed.

LOCAL PLANNING AND ACTION

 City of Lewes – Planning Commission established a Sea Level Rise Subcommittee to develop a SLR ordinance, design standards and a Resiliency code.



LOCAL PLANNING AND ACTION

Atlantic Coastal Communities –

7 unique coastal municipalities banded together to address:

- impervious surfaces
- stormwater management options for coastal areas
- Regulatory options for stormwater management
- Stormwater ulitity fee evaluation



LOCAL PLANNING AND ACTION

- City of New Castle Sea Level Task Force formed to assess impacts of SLR and prioritize actions for remediation
- Delaware City Creating a committee for hazard mitigation and climate adaption needs including sea wall maintenance and other flood controls.



WHAT'S NEXT

- Conduct stormwater risk assessments
- Determine long term plans for wastewater treatment plants
- Collaborate with other state NPDES programs, EPA and ACWA
- Factor in climate change and SLR in State Revolving Fund loans and grant applications





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