Demographic Analysis and Critical Facilities

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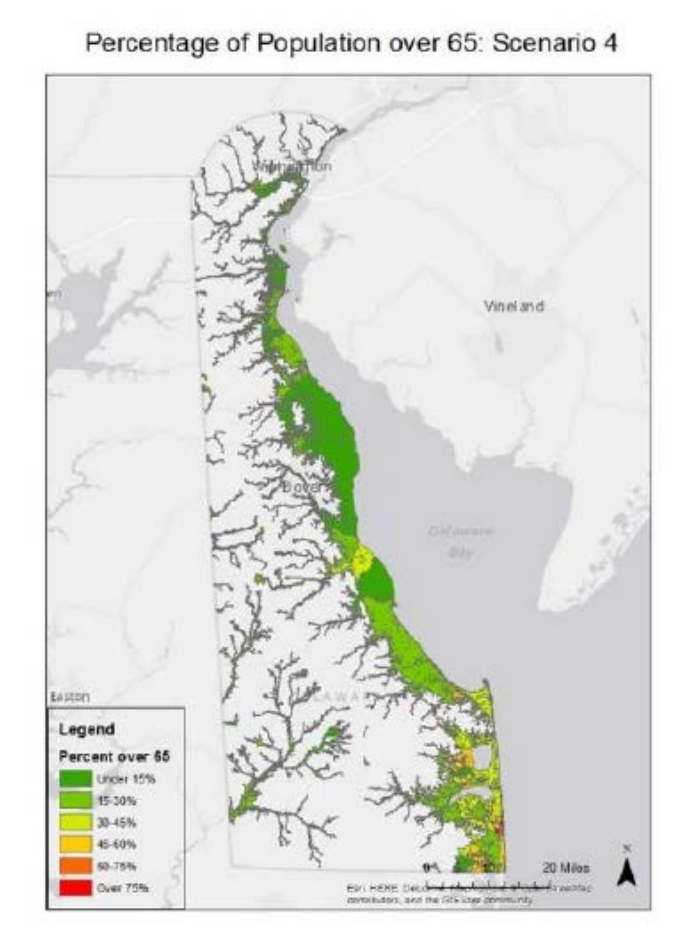
Demographic Analysis Tools

- Combined building, population, tax parcel, land use, and demographic data to examine areas flooded in models
- Significant exposure in Wilmington and eastern Sussex County
- Major travel and evacuation routes inundated



Modeled Flood Risks

- Over 8,000 inundated mobile homes
- More than a dozen flooded fire stations
- Loss of travel to Nanticoke Memorial Hospital
- Loss of travel to multiple nursing homes
- 7-15% of major route road miles flooded

Data Issues to Address

- Information Availability – Many empty data layers in FEMA compatible modeling tools
- Risk Valuation – Property tax assessments do not translate to real value for Delaware properties, must go beyond simple adjustment for inflation
- Seasonal Housing – Census records likely do not reflect peak summertime populations in Sussex County
- Evacuations – Any major evacuation would include MD and VA

Outcomes

- Pre-plan for evacuation or loss of access to Nanticoke and area nursing homes
- Consider how to estimate beach population during hurricane season
- Awareness of both pace of development and demographic changes, especially in Sussex County

Data Presentation

- These data layers change constantly
- Flood models can also change and we should explore multiple scenarios
- Looking to move beyond static maps, CADSR developed an interactive Web Mapping Interface

Web Flood Mapping Interface

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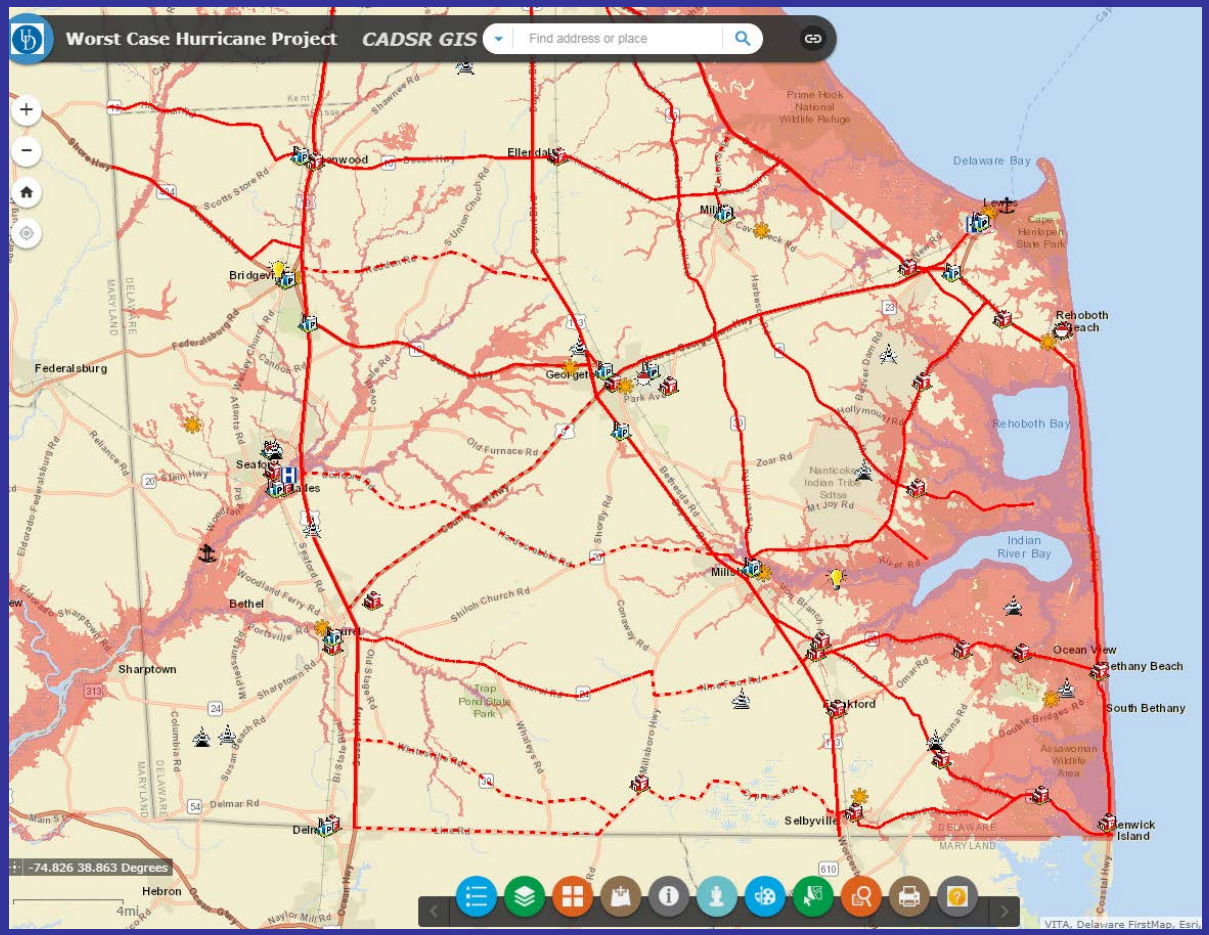
CADSR supported this project by creating a web mapping interface to display and query related data. Features include:

- A wide array of detailed land use to identify and query critical facilities and land use.
- Several tools to add additional data, further identify data on the map, mark up, and print maps
- Password protected
- Built on same technology in use at DelDOT and other State agencies

Data currently included:

- DelDOT assets (roads, bridges, signals, drainage structures, maintenance yards and areas, pavements, and multi-modal facilities data
- Bridge vulnerability
- Critical response facilities
- Hurricane scenario data
- Coastal inundation depth estimates
- Predicted maximum wind gusts for scenarios
- Flood plains and wetlands
- Shelter facilities
- Vulnerable community facilities and populations
- 20,000 destinations, categorized and mapped at the building site level
- Thematic Census maps, population, households, poverty, age
- Housing units, mobile homes, multi unit housing


Worst Case Hurricane Project
CADSR GIS
Find address or place
Prime Hook National Wildlife Refuge
Delaware Bay
Ellendale
Milton
Lewes
Cape Henlopen State Park
Rehoboth Beach
Bridgeville
Federalsburg
Georgetown
Rehoboth Bay
Seaford
Nanticoke Indian Tribe Sdtsa Mt Joy Rd
Indian River Bay
Millsboro
Bethel
Sharptown
Ocean View
Bethany Beach
South Bethany
Trap Pond State Park
Selbyville
Fenwick Island
Assawoman Wildlife Area
Delmar
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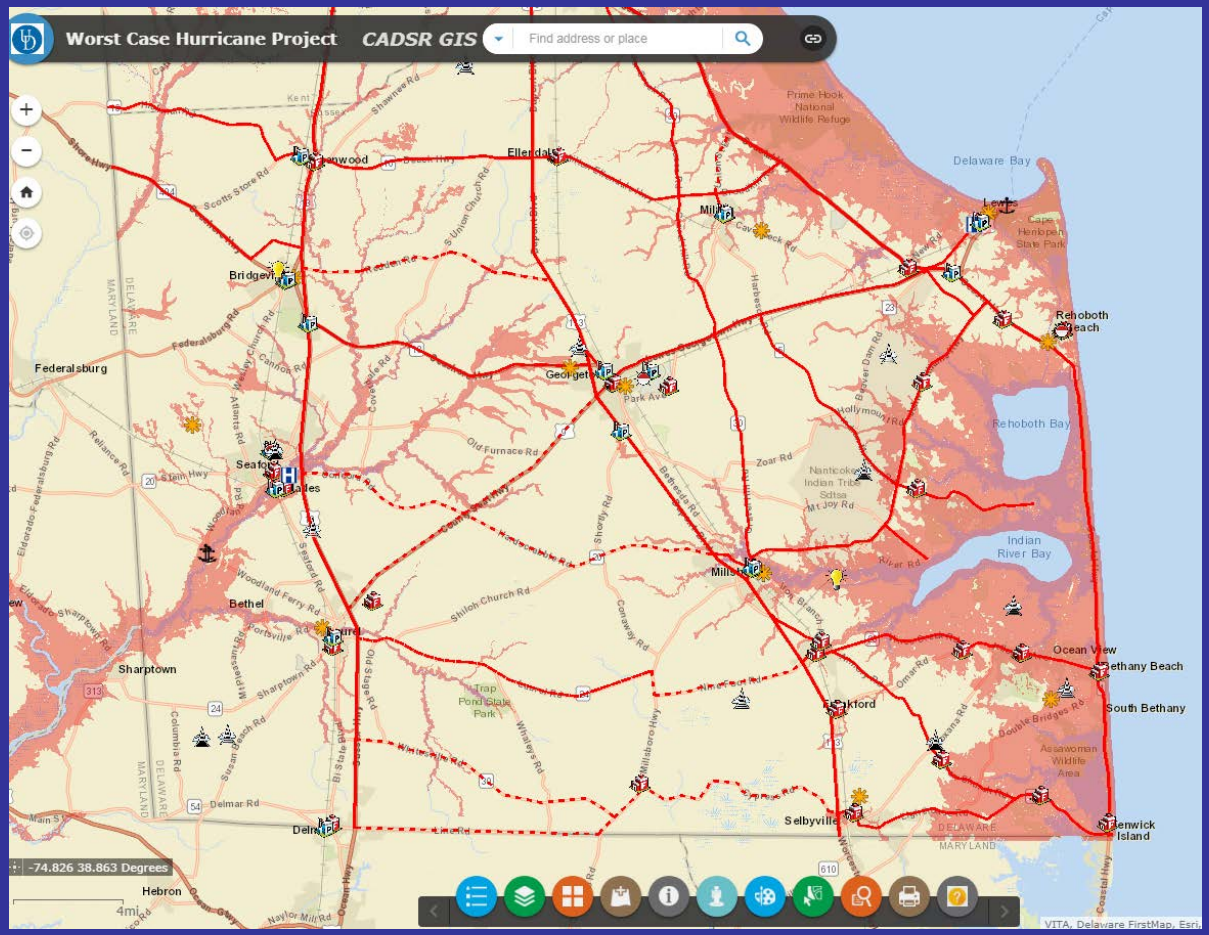
-74.826 38.863 Degrees
4mi
VITA, Delaware FirstMap, Esri,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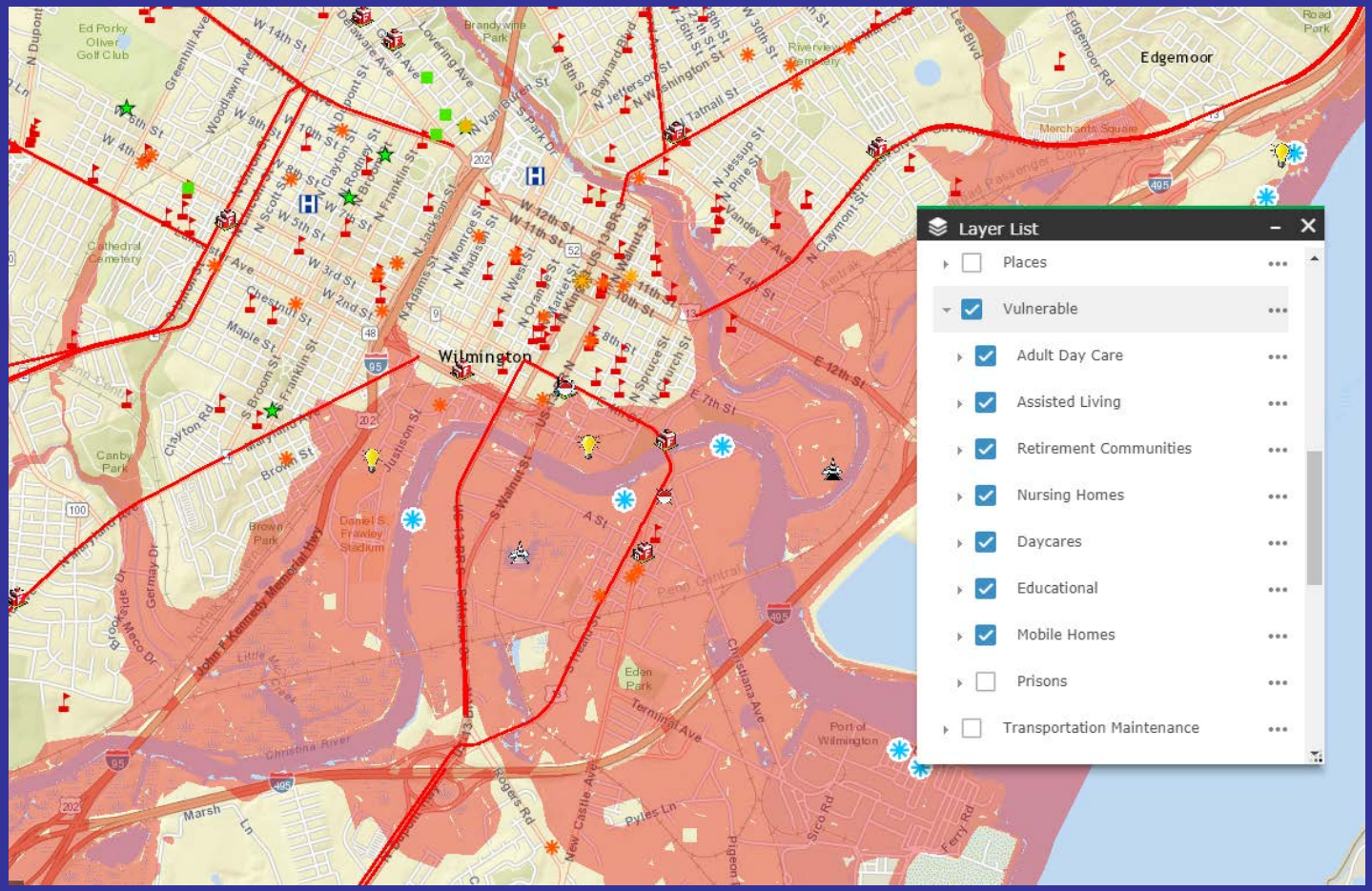
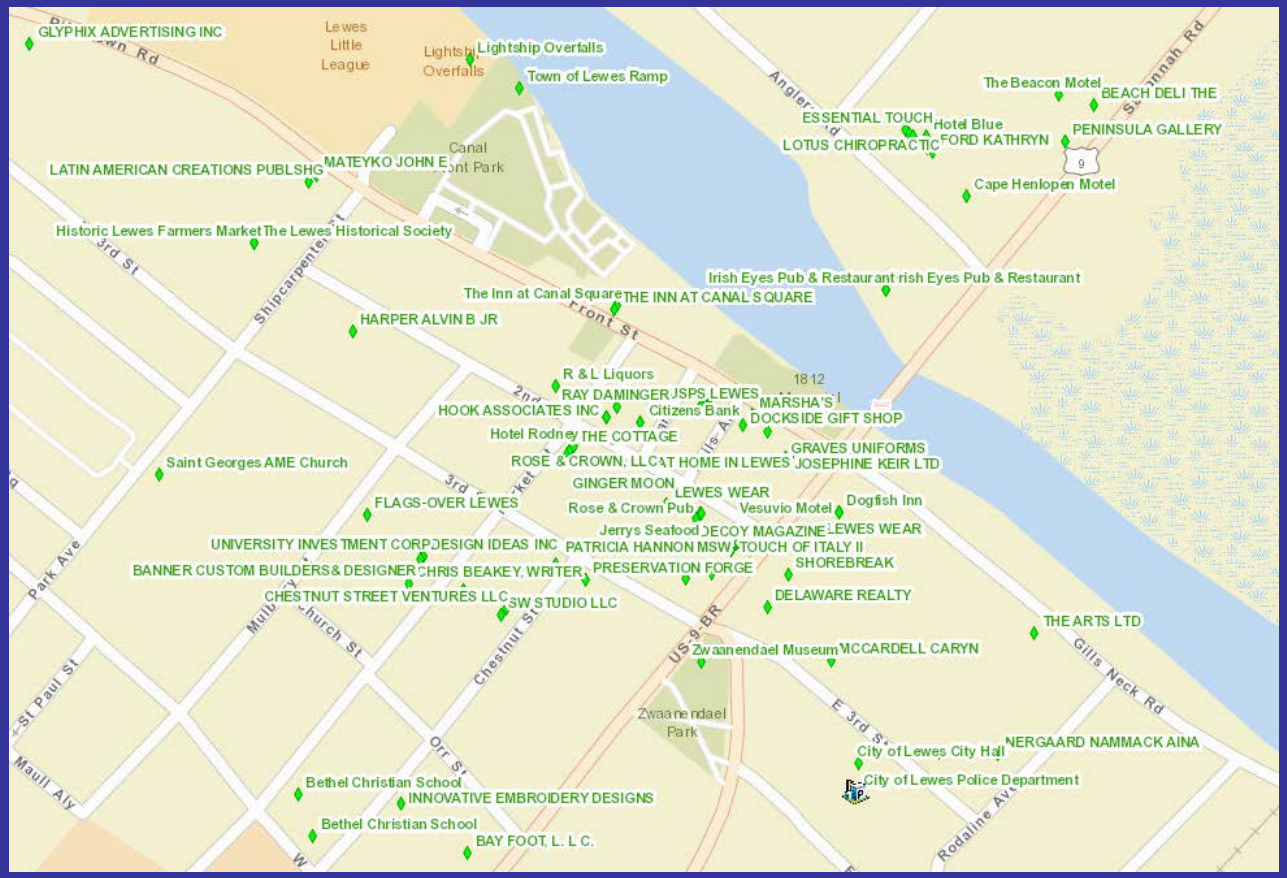

Layer List
Places
Vulnerable
Adult Day Care
Assisted Living
Retirement Communities
Nursing Homes
Daycares
Educational
Mobile Homes
Prisons
Transportation Maintenance
Wilmington
Edgemoor

Destinations



Moving Forward

- Refinement, update, and documentation
- Building level layer
- Loss estimation
- Additional automated tools for data query and summary
- Evacuation modeling using high resolution data
- Shelter Capacity
- Incorporation of monitoring data
- Peninsula wide data and evacuation

https://cadsrgis2.org/hurricane

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