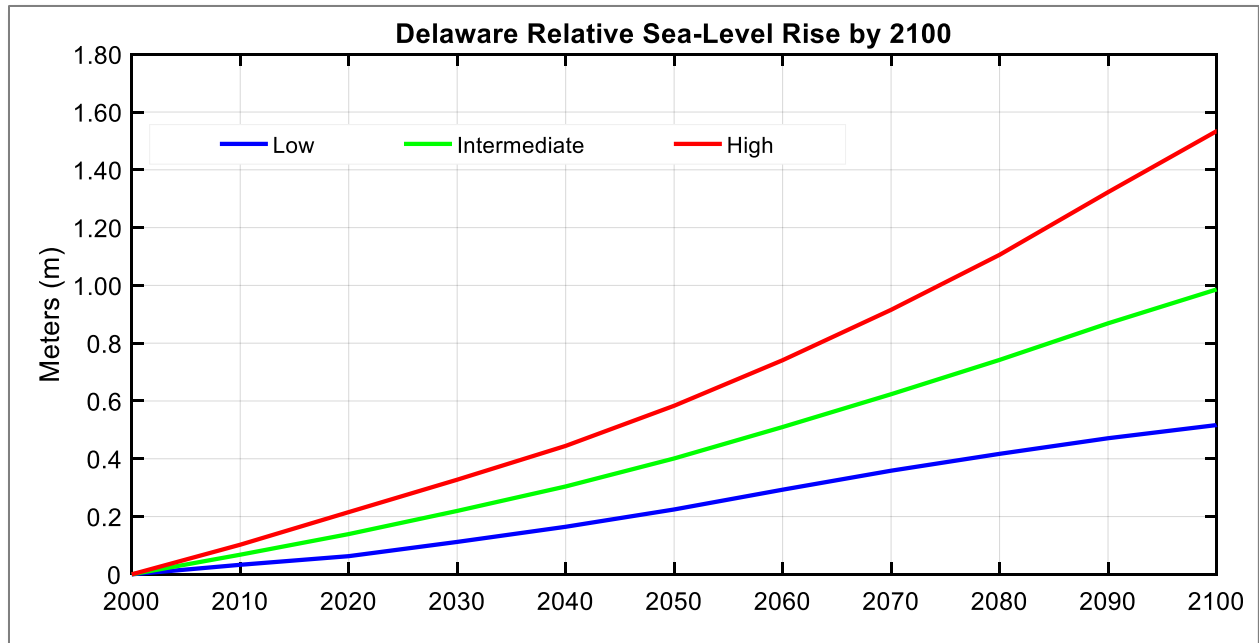


FAQs for SLR Scenarios



The 2017 SLR planning scenario curves for Delaware to the year 2100. The Low, Intermediate and High planning scenarios correspond with 5%, 50%, and 95% probability levels, respectively.

****Need to insert chart showing Meters and Feet for Yr 2050 and 2100**

Q. Why should Delawareans care about sea level rise?

Delaware is vulnerable to flooding due to its low land elevation and coastal geography. Sea level rise increases the average height of high tides over time. Low lying areas will likely experience more frequent tidal flooding. Sea level rise also amplifies the risks of flooding and damage from storms that bring heavy rain, waves and/or storm surge. Over time, sea level rise can be expected to alter the federally regulated floodplain under the National Flood Insurance Program (NFIP). FEMA's NFIP identifies high risk zones needing federal flood insurance based in part on historic flooding patterns. Sea level rise is not factored into its criteria. Today, over 20% of FEMA flood claims come from properties located outside of the federal flood zone. It is critical that communities and decision makers have access to information about future sea level rise in order to get a comprehensive understanding of their risk.

Q. What are sea level rise scenarios and how do they support planning and decision making?

The 2017 State of Delaware Sea Level Rise Planning Scenarios estimate future sea level rise based on current observations and scientifically-supported projections. These scenarios are not forecasts or predictions because estimating future sea level rise depends heavily on global greenhouse gas emissions trends well into the future; the rate of emissions may increase or decrease depending on global mitigation efforts. Therefore, the scenarios adopt one vision of the future: a "business as usual" rate of emissions that closely mirrors current day, and then

incorporates rigorous modeling and scientific observations to generate a framework for state officials, planners, and community leaders to plan within. In other words, the scenarios offer a window to the future so that land use decisions and capital improvement projects can be designed with that future state in mind.

Q. Is this the first time the State has issued sea level scenarios?

No, the state first issued sea level rise planning scenarios in 2009. The 2009 scenarios served as the scientific foundation for a comprehensive needs assessment of Delaware's critical infrastructure and later, Executive Order 41, "Preparing Delaware for Emerging Climate Impacts and Seizing Economic Opportunities from Reducing Emissions" (2013) which recommends that officials factor sea level rise into capital improvement projects and land use decisions when there is some risk of flooding. It further states:

"DNREC shall periodically update the scenarios with the best scientific data available and distribute new guidance to state agencies."

In 2016 DNREC Delaware Coastal Programs and Delaware Geological Survey convened the 2016 Delaware Sea Level Rise Technical Committee to update the original scenarios based on the latest scientific research and modeling, including the Intergovernmental Panel on Climate Change's (IPCC) Fifth Assessment Report published in 2013 and National Climate Assessment in 2014.

Q. How do the 2017 scenarios differ from the 2009 scenarios?

Though the rates of sea level rise at year 2100 are within a few centimeters of the 2009 projections, there are some notable differences in how the scenarios are constructed. The Delaware Sea Level Rise Technical Committee chose a framework that uses physically-based ocean-atmosphere models to calculate sea-level rise over time. These models are more sophisticated and of a higher resolution than was previously available. There is also higher confidence in the 2017 scenarios because:

- The Technical Committee adopted a science-based methodology that assigns probabilities, or confidence levels, to each value on the graph, not just year 2100
- Regionally observed tide gauge data, land subsidence, and ocean current dynamics are directly integrated into the projections since Delaware experiences a much higher rate of sea level rise compared to the global average
- These changes improve decision making capacity by allowing greater flexibility and confidence when choosing a scenario. Now, planners and decision makers can choose any year on the graph to plan to, because any value for sea level rise along the curve is valid.

Q. How do I select a scenario and use it in planning decisions?

Planners and officials should factor sea level rise into their land use and capital improvement decisions in order to promote public safety and resiliency. Selecting the appropriate scenario (Low, Intermediate,

High, or maximum projected) is a matter of understanding: 1) the time horizon or life cycle of a project; and 2) tolerance for risk.

Knowing risk tolerance is absolutely crucial to decision-making because these projections are not predictions; they do not forecast with absolute certainty how much sea level rise is expected in the future. Projects with a shorter service life (20-30 years) will not encounter the same increase in sea level rise as projects with a longer service life. It is also helpful to remember that sea level rise is one component of overall flood risk in the state. Thus, the 2017 scenarios are a planning tool and should be used in combination with other data and risk-based information, including FEMA floodplain maps.

In general, projects with a longer lifespan and/or that have low tolerance for risk will best be served by the High curve since there is less of a probability of SLR exceeding values on that curve. Evacuation roads, power substations, and fire stations are some examples of projects fitting this criteria. Projects with shorter lifespans and higher tolerances for risk (boat ramps, parks) are better suited for the Low or Intermediate SLR scenarios.

Q. Which curve is the observed SLR following right now?

(John – please help provide this answer)