

## RED HOOK COASTAL RESILIENCY (RHCR)

# Glossary of Technical Terms

**0.2% Annual Chance Flood/ base flood or 500-year flood**

A flood that has 0.2 percent (1 out of 500) of occurring in any given year. Also known as the base flood or 500-year flood. It should not be confused as a flood event that could happen only once in 500 years.

**1% Annual Chance Flood/ base flood or 100-year flood**

A flood that has a 1% chance (1 out of 100) of occurring in any given year. Also known as the base flood or 100-year flood. It should not be confused as a flood event that could happen only once in 100 years.

**2% Annual Chance Flood/ 50-year flood**

A flood that has a 2% chance (1 out of 50) of occurring in any given year. Also known as a 50-year flood. It should not be confused as a flood event that could happen only once in 50 years.

**5% Annual Chance Flood/ 20-year flood**

A flood that has a 5% chance (1 out of 20) of occurring in any given year. Also known as a 20-year flood. It should not be confused as a flood event that could happen only once in 20 years.

**10% Annual Chance Flood or 10-year flood**

A flood that has a 10% chance (1 out of 10) of occurring in any given year. Also known as a 10-year flood. It should not be confused as a flood event that could happen only once in 10 years.

**Base flood Elevation (BFE)**

Elevation of the 100-year flood. The BFE is determined by statistical analysis of the historical weather data and topography for each local area and is designated on the FIRMs. This elevation is the basis of the insurance and floodplain management requirements of the NFIP.

**Bulkhead**

A bulkhead is a structure that separates land and water at the shoreline, such as seawalls, steel sheet pile or riprap revetments commonly observed by the water's edge.

**Coastal Storm Surge**

Rise in the level of the ocean that results from the decrease in atmospheric pressure associated with hurricanes and other storms.

**Crest Elevation**

The 'top of wall' elevation of a flood protection structure.

**Design Flood Elevation (DFE)**

The DFE is the elevation adopted for the project for which it will provide flood risk reduction and meet the project specific criteria. It is the elevation of the highest flood that an intervention is designed to protect against.

**Deployable Protection**

An element of the flood intervention that needs to be actively engaged, installed, deployed or erected sufficiently in advance of the anticipated flood event by physical means and disengaged, uninstalled or removed after the flood recedes.

**Elevation Datum or Vertical Datum (NAVD 88)**

A vertical datum is an imaginary surface of zero elevation to which heights of various points in a geographic area are referenced. NAVD 88 is the elevation datum for this project and used to compare the various tide and flood elevations.

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<b>Freeboard</b>	The additional structure height above the stillwater such that wave overtopping during the design flood event remains at manageable levels.
<b>FEMA Certification</b>	A licensed engineer or Federal agency responsible for the design of the flood risk reduction system must certify documentation that the flood risk reduction system meets design standards as laid out in Code of Federal Regulations (CFR) 65.10. For a flood risk reduction system to be certified it must be designed for at least the 100-year flood.
<b>FEMA Accreditation</b>	Once the certification process is complete, FEMA accredits the flood risk reduction system as providing adequate risk reduction if the certification and adopted operation and maintenance plan are confirmed to be adequate. Accreditation is required to lower official risk designation on FIRM.
<b>FEMA Benefit Cost Analysis (BCA)</b>	The BCA is used to validate the cost effectiveness of a project. The future benefits of a mitigation project are estimated and compared to the cost to construct and maintain the project over its design life, resulting in a benefit-cost ratio (BCR). A project is considered to be cost effective when the BCR is 1.0 or greater, which means that the estimated benefits are higher than cost to construct the protection. A BCR of 1 or greater than 1.0 are required by FEMA in order to secure funding for the project.
<b>Flood Insurance Rate Map (FIRM)</b>	Official map of a community on which FEMA has delineated the Special Flood Hazard Areas, the Base Flood Elevations (BFEs) and the risk premium zones applicable to the community.
<b>Flood Depth</b>	Height of flood waters above the surface of the ground at a given point.
<b>Flood Elevation</b>	Height of flood waters above Mean Sea level. Mean Sea Level is an established reference point, in Sandy Hook, NJ in the NAVD88 Datum.
<b>Flood Frequency</b>	Probability, expressed as a percentage, that a flood of a given severity will be equaled or exceeded in any given year. As an example, the flood that has a 1-percent probability (1 in 100) of being equaled or exceeded in any given year is often referred to as the 100-year flood.
<b>Floodplain</b>	Any land area susceptible to being inundated by floodwaters from any source (coastal and/or rainfall).
<b>Flood Risk Reduction System</b>	Consists of a set of interventions that will act together to reduce the flooding risk from either coastal events, rainfall events or both. Also referred to as flood protection system.
<b>Green Infrastructure</b>	An approach to water management that protects, restores, or mimics the natural water cycle and alleviated flooding and stress on the existing infrastructure.

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<b>Hazard</b>	Circumstance that increases the likelihood of danger or peril to life, property, or assets.
<b>Interim Flood Protection Measures (IFPM)</b>	Because long-term flood mitigation projects requires long implementation periods, the NYC Emergency Management (NYC EM), in coordination with the Mayor's Office, initiated the IFPM program to protect neighborhoods and critical facilities from low-impact, more frequent flooding events until permanent flood-reduction projects are completed.
<b>Interim Flood Protection System (IFPS)</b>	An Integrated flood protection system consists of various interventions that will act together to reduce the flood risks from future coastal and/or rainfall induced flooding. Also referred to as Flood Risk Reduction System.
<b>Mitigation Scenarios/ Strategies/ Alternatives</b>	Interventions necessary to reduce loss of life, property damage and damage to natural resources or ecosystem services. This Includes, but is not limited to, community-wide risk management projects, efforts to improve the resilience of critical infrastructure and coastal ecosystems, and initiatives to manage future risks.
<b>NAVD 88</b>	Vertical datum used for this project. See Elevation Datum.
<b>NFIP</b>	The National Flood Insurance Program (NFIP) provides insurance to help reduce the socio-economic impact of floods.
<b>Passive Protection</b>	Flood Protection that is permanent, always in place. No deployable parts required to be installed ahead of a storm event.
<b>Performance</b>	How a system reacts to a hazard according to a specific set of metrics.
<b>Resiliency</b>	The ability to successfully adapt to and/ or recover readily from a significant disruption.
<b>Return Period</b>	The probability that events such as floods, wind storms or tornadoes will occur is often expressed as a return period. It is a statistical measurement, typically based on historic data over an extended period, and is used to asses how often an event of a particular magnitude should be expected to occur.
<b>Risk</b>	Function of the probability of occurrence of some event (i.e., frequency with which it occurs) and the consequences of the event. Risk is an overarching concept that includes the components of hazard, exposure, vulnerability, performance, and subsequent consequences.
<b>Schematic Geometric Design (SGD)</b>	A level of plan development that focuses on horizontal alignment, big picture planning, and fatal flaws. Associated with alternative development and used in conjunction with alternative analysis.

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<b>Sea Level Rise (SLR)</b>	The change in elevation of the sea level over time, i.e. increase in Stillwater Elevation. Currently in New York Harbor Sea Level has been rising at 0.15-inches/year.
<b>Still Water Level (SWL)</b>	The projected elevation of floodwaters in the absence of waves.
<b>Storm Tide</b>	The combination of the normal tide and the storm surge to create the total increase in water level due to the storm.
<b>Stormwater Management</b>	Efforts to effectively manage water generated from rainfall events with the intention of minimizing flooding and improving water quality.
<b>Sustainability</b>	A set of environmental, economic, and social conditions in which all of society has the capacity and opportunity to maintain and improve its quality of life indefinitely without degrading the quantity, quality, or availability of natural resources and ecosystems.
<b>Vulnerability</b>	Degree to which an area or assets are susceptible to, and unable to cope with, the adverse effects of coastal storm and/ or rainfall flood hazard.