

# Regional Framework for Coastal Resilience in Southern CT

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## Project Type (Primary Category) Terminology

**Coast Natural Infrastructure** – Mostly made up of coastal systems such as beaches, dunes, Marshes, and Estuaries. These types of natural infrastructures are critical along the coast because they reduce wave attenuation, provide protection from storm surges and flooding, and act as natural barriers to protect the vulnerable coastline and its many ecosystems from rising sea levels and future coastal storms. Ideally, implementing and constructing these green or hybrid solutions would provide the essential protective measures that are needed to restore these natural coastal systems in an effort to become resilient against a changing climate.

**Hard Infrastructure** – Is comprised of buildings, critical facilities, roads, bridges, and dams that provide us with an overall network of systems that allow our economy to function properly through the use of transportation systems and emergency services. Improving and updating these assets is essential to prevent future destruction from all natural hazards. Ideally, upgrading, flood proofing, and retrofitting many of these structures with green solutions or other environmentally safe and stable materials will eventually strengthen our overall system and provide an effort to protect all critical infrastructures from climate change.

**Inland Natural Infrastructure**- As you step away from the coastline, there are many other networks and ecosystems that lie within in both urban and rural settings. Floodplains, floodplain benches, riparian buffers, wet meadows, depressions, riverine corridors, flood protection systems, and bioengineered banks are all inland structures that provide our ecosystems with protection from both urban and rural flooding, whether it's from impervious runoff or high-end rainfall events. Many of these structures could be retrofitted with green or hybrid solutions in order to restore many of the inland natural habitats and essentially protect lives, properties, homes, and roads from future erosion and flooding.

**Shoreline Infrastructure**- The shoreline consists of revetments, bulkheads, groins, breakwaters, jetties, riprap, and tide gates, which are all forms of hard structures. Hardening many of these exposed coastlines has provided crucial protection in absorbing wave energy, reducing coastal inundation and erosion along the immediate coast. Some have provided near-shore habitat for marine life such as vegetation and living organisms. Many of these structures have held our shoreline intact, especially providing protection from rising sea levels. However, hardening the coastline is not always the answer; we must look beyond and examine all other available options, whether it's retrofitting these structures with green solutions or using other reliable resources and materials to bulk-up our shorelines. Each of these structures has their advantages and disadvantages and we must take that into accountability when hardening our changing coastline.

**Stormwater Management**- Many projects focus on stormwater infrastructure and network systems located within both an urban and rural landscape. These structures include culverts, outfalls, pipes, channels, permeable pavement, green roofs, street planters, rain gardens/bioswales, infiltration galleries, green street concepts, and other drainage systems. All of which can help develop and improve LID strategies and BMP's within a city and suburban landscape. Implementing, upgrading, and monitoring stormwater infrastructure and drainage systems are vital for reducing all types of runoff, whether it's from impervious surfaces or from high-end storm events. Improving the overall network of drainage systems would essentially accommodate more flow and provide further flood protection at critical gaps. Retrofitting and installing green and natural infrastructure techniques would enhance and modify these stormwater management systems by increasing waterways, storage, and infiltration of runoff, while mitigating future flooding and erosion within cities and towns.

**Other-** A variety of projects that are currently situated at the coast or near inland areas that have been identified as either current projects or are a placeholder for future resilience opportunities and solutions along the coast. These selected project sites could be further reviewed along the immediate shoreline in an effort to become more resilient against the frequency and intensity of future storms.