



Sustainable Northern Communities: Newtok/Mertarvik Plans Completed

August 24, 2009 – Fairbanks, Alaska—As part of its Sustainable Northern Communities (SNC) program, the Cold Climate Housing Research Center (CCHRC) has finished conceptual plans for the evacuation center for the village of Newtok. A traditional Yup'ik village in western Alaska, Newtok is one of five villages classified as 'imminently threatened' by the changing climate and coastal erosion. In July 2008, CCHRC joined a collaboration of state, federal, and tribal entities to help the village move to higher ground. The evacuation center, targeted for construction in the summer of 2010, will be capable of housing the entire village during a flooding event. The collaborative process adopted for designing this structure represents a change in approach to building in rural Alaska.

As a result of the changing climate, sea ice forms too late to buffer the coast from storms, and Newtok is losing its shoreline at an average of 80 feet a year. The village has already lost their barge landing and landfill. Now the community's water source, airport and homes are all threatened. As a result, the Newtok Traditional Council and the Newtok Planning Group have outlined a multi-year plan to move the entire village to Nelson Island, 9 miles to the south. The new site, temporarily called Mertarvik, is located safely above the rising waters while still close enough for the village to maintain its traditional dependence on the sea for subsistence. The Mertarvik Evacuation Center will be the first building constructed at the new site, and the building is designed to become the Community Center once the population has safely moved. "The Newtok Planning Group wanted to be sure that the Evacuation Shelter would serve the community's emergency response needs and also set the precedent for future construction at the new village site. It was important to us that the shelter be easy for the community to maintain, low cost, and culturally and environmentally appropriate" says Sally Russell Cox, Coordinator of the Newtok Planning Group and State of Alaska Planner.

The Sustainable Northern Communities program is the larger counterpart to the CCHRC's Sustainable Northern Shelter (SNS) program. The SNS program aims to work with local communities to build affordable, culturally-rooted, energy-efficient housing in rural Alaska villages by combining traditional home designs with modern homebuilding techniques. As part of the SNS program, CCHRC collaborates with the people of the community on the design of the home, to ensure the home is suitable to their lifestyle. Recently CCHRC finished a prototype home in Anaktuvuk Pass, Alaska. The Sustainable Northern Communities program expands the concept from homes to other buildings.

The Evacuation Center is designed to function as a 'stand alone' building, providing water, waste disposal, electricity, and heat in the absence of any infrastructure at Mertarvik. It utilizes a self-contained sewage treatment plant and water storage system that allows the building to 'go cold' and requires minimal power when the building is not in use. Villagers will be educated in operating the building so that they can use and maintain the Center during an emergency.

"We feel fortunate to work with the people of Newtok. This community has been very proactive in taking responsibility for their future," says CCHRC President and CEO Jack Hébert. "It is our hope that we can continue to work with the community in the establishment of a new village at Mertarvik. This is a great opportunity to address sustainability and be an example of what is possible for the future of rural Alaska."

The Mertarvik Evacuation Center benefits not only from the technical expertise of CCHRC but also the embodied knowledge of Elders and tribal leaders of the community. Taking lessons from thousands of years of Yup'ik building techniques, CCHRC created elongated Arctic Entries that change grade and create natural cold traps. The entire first floor of the building is bermed underground. This below-grade area takes advantage of the tempering properties of the earth and can be kept above freezing with minimal energy. The foundation rests directly on the basalt bedrock of Nelson Island, a rare luxury in a region covered mainly in deep permafrost. CCHRC compiled information on prevailing winds from the FAA and the local Elders to properly orient the building and prevent snowdrift and heating loss.

The Newtok/Mertarvik project partners have created their own organization called the Newtok Planning Group. The group includes nearly 30 entities, including the Alaska Department of Transportation, the Newtok Tribal Council, Army Corps of Engineers, the U.S. Dept. of Commerce, Federal Aviation Administration and others.

Located in Fairbanks, Alaska, the Cold Climate Housing Research Center is a non-profit institution dedicated to research that improves the durability, health, and affordability of shelter for people living in circumpolar regions around the globe.

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