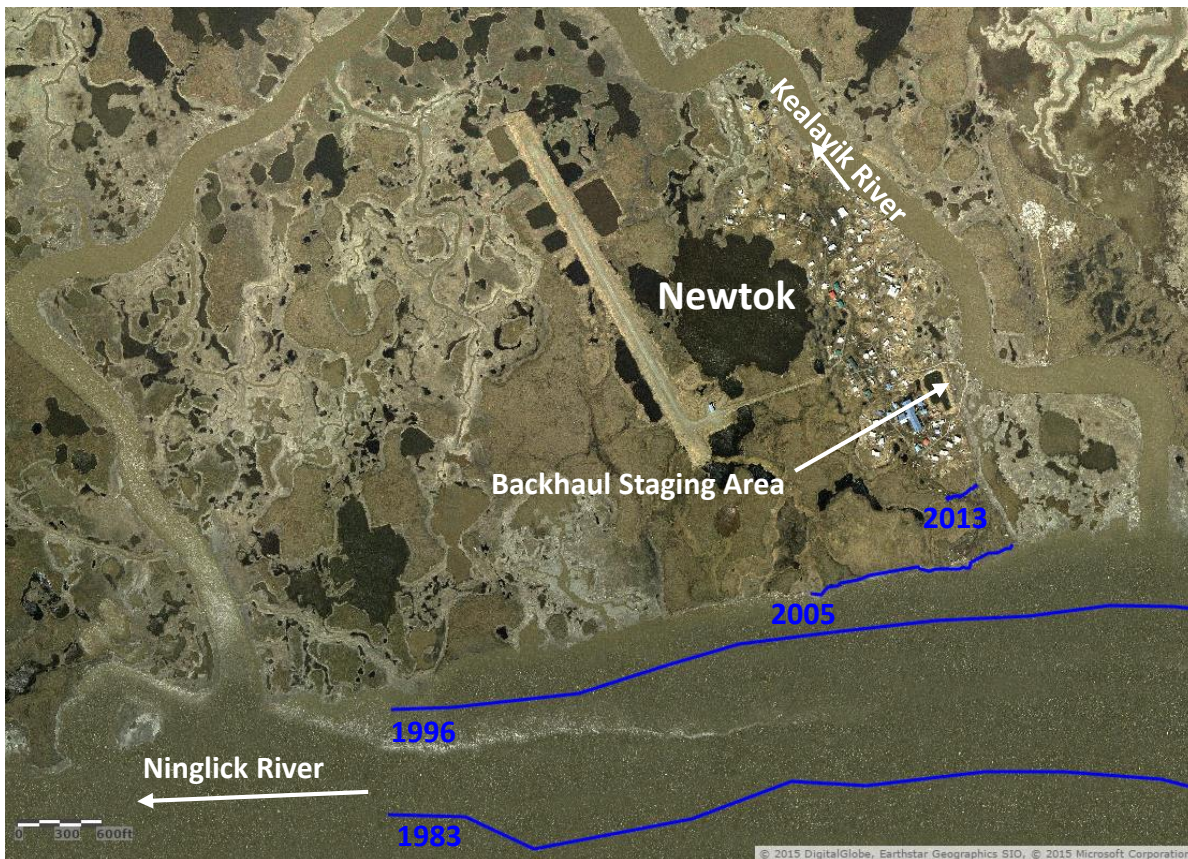




DETAILED ACTION PLAN NEWTOK BACKHAUL STAGING AREA WASTE EROSION ASSESSMENT & REVIEW (WEAR) MAY 2015

The **Newtok Backhaul Staging Area** is a collection point for old vehicles and building materials that could potentially be shipped out of Newtok. The landowner is believed to be Newtok Native Corporation. The site is located west of the school at latitude 60.937262 and longitude -164.627492 and was inspected for the Waste Erosion Assessment and Review (WEAR) project on June 17, 2013.



Imagery Dated 2005. WEAR Map at <http://dec.alaska.gov/eh/sw/wear.html>

Community* – NEWTOK – Newtok (population 380) is located on the Ninglick River north of Nelson Island in the Yukon-Kuskokwim Delta Region, 94 miles northwest of Bethel. Due to severe erosion, the village wants to relocate to a new site called Mertarvik, known locally as Taqikcaq, approximately 5 miles away on Nelson Island. In November 2003, the 108th Congress passed S. 924, allowing the village to relocate to Nelson Island. The legislation authorizes an exchange of lands between the U.S. Fish and Wildlife Service and the Newtok Native Corporation to allow villagers to relocate. Newtok is a traditional Yup'ik Eskimo village, with an active subsistence lifestyle.



CONTAMINANT RISK

The Backhaul Staging Area has been in use since the 2000s. The staging area was categorized as small in size, having an area of 0.24 acres. This area between the sewage lagoon and the river is used as storage for items that could potentially be backhauled from the community for recycling. The site includes snowmachines, refrigerators, barrels, cable, construction and demolition (C&D) debris, and other miscellaneous metals and woods.

Possible contamination at the Backhaul Staging Area is fuels. This site contains multiple old ATVs and 55-gallon drums, which do not necessarily have all fuel removed. Contaminants associated with fuels include benzene and polycyclic aromatic hydrocarbons (PAHs). These contaminants are known to cause cancer and other chronic diseases and could have a serious impact on nearby soil, water, and subsistence resources. This site contains construction and demolition (C&D) debris that is a concern due to the possible presence of asbestos-containing materials. Asbestos was widely used in construction materials prior to the 1980s and remains in many rural communities in their older structures. Asbestos is known to cause lung cancer, but does not pose a health risk if it remains contained and is not released to the environment. Asbestos released to water due to erosion is less of a health concern; however, asbestos fibers released to the air pose a more significant risk to human health and the environment. Once asbestos fibers are released they are difficult to clean up, which can result in both short term and long term impacts.

During the 2013 inspection no stressed vegetation was found nearby. The nearest residence is located 350 feet away. This site is within the drinking water protection zone for the school's groundwater well. According to the Alaska Department of Environmental Conservation's (ADEC), Drinking Water Watch database, the water system is monitored for a range of volatile organic compounds (VOCs) on a 3 year schedule. Although no VOCs have been detected over the drinking water standards, VOCs have been detected.



Refrigerators, Metals, Etc. (ADEC 2013)



Snowmachines, Barrels, Etc. (ADEC 2013)



Metals Pile (ADEC 2013)

EROSION RISK

The Ninglick River is severely eroding the southern banks of Newtok. The Army Corps of Engineers' 2009 study, *Alaska Baseline Erosion Assessment (BEA)*, calculated a long-term average erosion rate of 71 feet per year for the Ninglick River. This extreme rate of erosion is due to wave action and thawing of ice-heavy soil in the shoreline. The soil type in this area is rich in loam, an easily erodible material. The Ninglick River has been consistently eroding towards Newtok for decades.

The Backhaul Staging Area lies 350 feet away from the Ninglick River. Using the 71 feet per year erosion rate calculated by BEA, it was estimated that the site will begin eroding in 2018, 5 years after the 2013 inspection.



Ninglick River Erosion (ADEC 2013)



Ninglick River Erosion (ADEC 2013)

MITIGATION

Newtok is in the process of moving to a new location, Mertarvik, on the northeast side of Nelson Island. Efforts are not being taken to mitigate erosion, as costs associated with slowing or stopping this erosion problem are extremely high. The BEA estimated it would cost \$90 million to protect the one-mile stretch of shoreline adjacent to the community.

Mitigation Options

- A. **No Action** – If no action is taken to control erosion or remove the site, the shoreline will continue to erode and will impact the Backhaul Staging Area. This has been estimated to happen 5 years after the site visit, around 2018. This would cause navigation hazards as well as the release of fuel and C&D contamination would be detrimental to water and subsistence resources.
- B. **Remove Site** – Removing the materials at the Backhaul Staging Area before erosion reaches the site would eliminate the chance of navigation hazards. Cleaning up any contaminated soil would additionally eliminate contaminant risk. Without contaminant risk, erosion of the site would not impact water or subsistence resources. This action would require planning, money, and equipment to load the large pieces into a barge as well as test and remediate any contaminated soil.
- C. **Erosion Mitigation** – Currents are the primary cause of erosion on this riverbank. With the extreme erosion rate, erosion mitigation would be extremely expensive (estimated at \$90 million by BEA). As such, the community has already begun the relocation process so erosion mitigation would provide little benefit.

SUMMARY

The Newtok Backhaul Staging Area poses a contaminant risk due to the variety of contaminants that could be present at this site, the close proximity to residences, and location within the drinking water protection zone for the community water system. The Ninglick River is severely eroding the shoreline at a rate of 71 feet per year (calculated by BEA). Erosion has been occurring for decades and is estimated to impact this site around 2018. There are no erosion mitigation controls for this site. The community of Newtok is in the process of relocating to the new site of Mertarvik.

RECOMMENDATIONS

The effort to relocate the Newtok community to the new community of Mertarvik is already underway. Erosion rates are extreme; the BEA expects that the community will be lost in 10-15 years. As the staging area is already designated for backhaul, it is recommended to remove the materials in conjunction with the relocation of the community. Sampling should be done after removal to ensure no contamination remains. If contamination is found, it is recommended that cleanup be conducted.

Erosion is estimated to reach this site in 2018, it is necessary to plan and obtain funds to backhaul the materials from the site and perform any contamination cleanup before erosion from the Ninglick River impacts this site as well as other key infrastructure such as the school, homes, and the school sewage lagoon.



Imagery Dated 2005. WEAR Map at <http://dec.alaska.gov/eh/sw/wear.html>

*Community Database Online, Division of Community and Regional Affairs, Department of Commerce, Community and Economic Development

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