

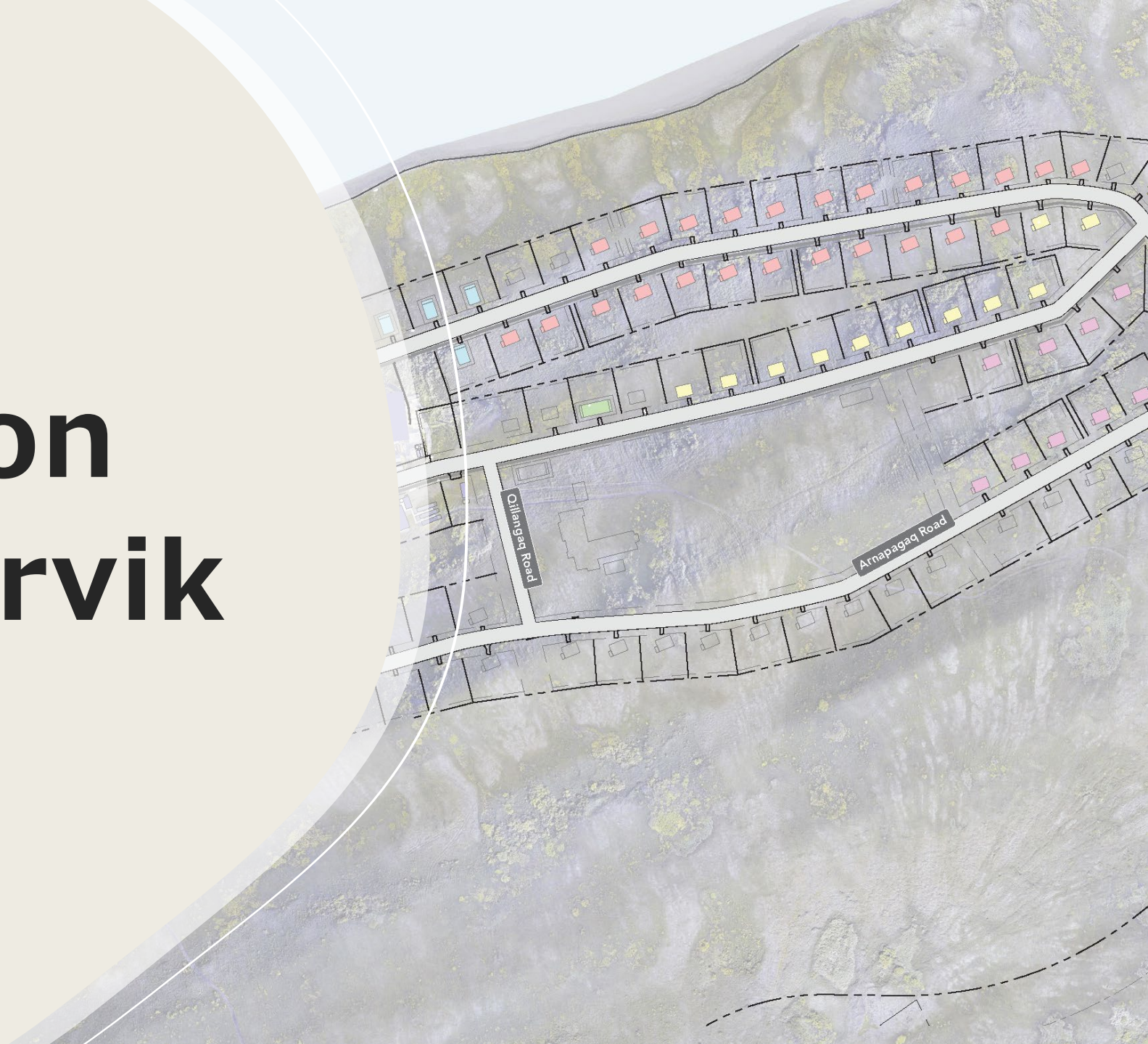
Newtok Relocation to Mertarvik

2022 and Beyond

Patrick M. LeMay, PE

Newtok Project Manager

April 25, 2022



Underwater



Housing & School Critical Path



Housing & School Critical Path

- Soon, the old Newtok Village Location will not be a viable place to live and flourish.
- August 2022: The Newtok Runway will be permanently closed.
- August 2022: Newtok will not have a runway to support the Post Office.
- August 2022: Newtok will not have a runway to support the Clinic.
- December 2022: The River could potentially be at the steps of the school.
- Newtok may lose the school during the 2022 Fall/Winter Storm Season.
- The Mertarvik temporary school is at capacity.

Housing & School Critical Path Call to Action

- Newtok Village Council needs to write letters or call Senator Lyman Hoffman and Representative Tiffany Zulkosky.
- The people within Newtok need to send emails to both the State of Alaska Legislative Representatives both at the State and Federal level.
- Call to action from both private foundations and Federal Government Agencies to fund housing.
- Housing Materials need to be purchased by October 2022 to be able to construct all 26 homes in Mertarvik by September 2024.

2020 Accomplishments

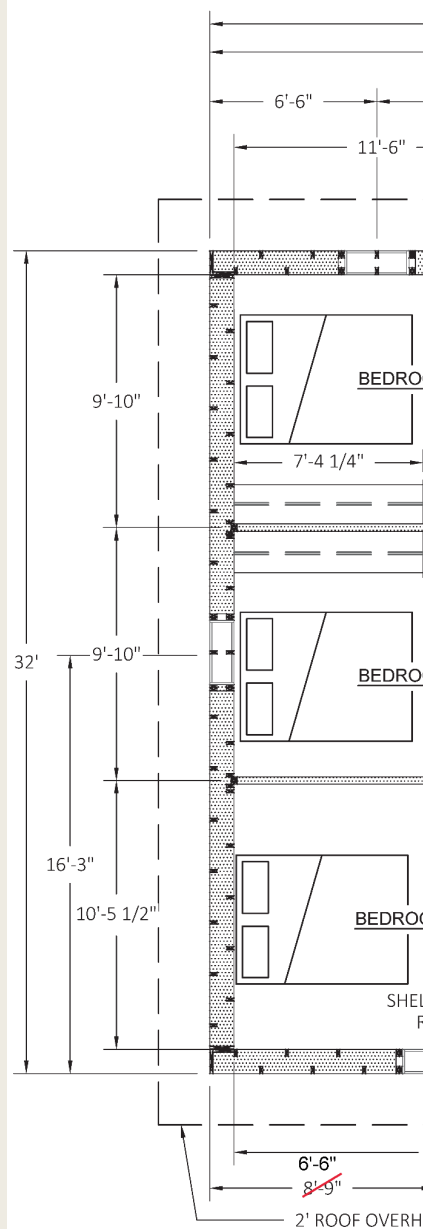
- Constructed 3,500-feet of Pioneer Roads (0.7-Mile).
- Constructed 29 Gravel House Pads.
- Constructed 7 Two-Bedroom Homes at a cost of \$150,000 each.
- Constructed 2 Four-Bedroom Homes at a cost of \$160,000 each.
- Drilled two high-quality Drinking Water Wells.
- Purchased and Stockpiled Gravel for 2021 Roads—4,325-feet (0.82-Mile).
- Mertarvik became operational as a Pioneer Village with a landfill, sewage treatment plant, and fuel handling services.

2021 Accomplishments

- Constructed 3,500-feet of Pioneer Roads (0.7-Mile).
- Constructed a Teacher Housing Duplex.
- Started the Construction of the Mertarvik Airport in May 2021 with completion planned for August 2022.
- Won three FEMA Project Grants for construction of 13 house pads, laundromat/bath house, and the remainder of the high voltage power distribution grid.

Housing Accomplishments

- 28 Homes have been constructed as of March 2022 which includes homes constructed by AVCP, ANTHC/UICC, and Newtok.
- NVC planned construction of one BIA HIP home in 2023.
- AVCP has two homes under construction with a planned completion of Fall 2022.
- AVCP is planning the start of construction of six additional homes in Summer 2022.
- Funding is needed for 26 additional homes to finish the relocation of the Newtok population. With the current inflationary costs related to building materials, approximately \$6.2-million will be needed. Housing is the #1 priority for the relocation effort.
- Funding is needed for an additional eight to ten homes to alleviate overcrowding within homes. This is a lower priority after water and sewer are installed in Mertarvik.



NOTE

FLAME BLOCK FIRE-RATED OSB SHEATHING SHALL BE INSTALLED ON BOTH SIDES OF COMMON WALL FROM THE FLOOR TO THE ROOF.

Home Energy Rating Certificate



The Building Located At:

NHN Quirun Street
Newtok, Alaska

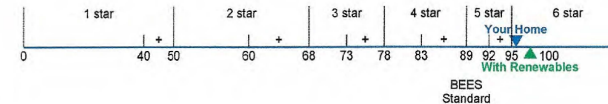
Has Been Energy-Rated As:

★★★★★★

Six Star

Efficiency Score

95.6 points



Amount of CO2 Produced by the Home

31,071 pounds per year

Projected Annual Energy Costs

\$11,747 per year

Score with Renewables

97.5 points

Estimated Annual Energy Costs

Space Heating \$1,537

Water Heating \$1,649

Space Cooling \$0

Lights & Appli. \$9,275

Renewables -\$714

Owner of Record: Newtok Village Council

Legal Description

Lot 36 Block 3 Mertarvik Subdivision of Newtok, Alaska

Energy Rater: Terry Duszynski
Westlake, Inc. dba Duszynski & Associates

Date Construction Began: 7/1/2021

Certifying BEES: 2018

Energy Rating Date: 10/13/2021

File: Newtok- Mertarvik Duplex10-13-10.hm2

AkWarm: 2.10.0.0 Library: 8/31/2021

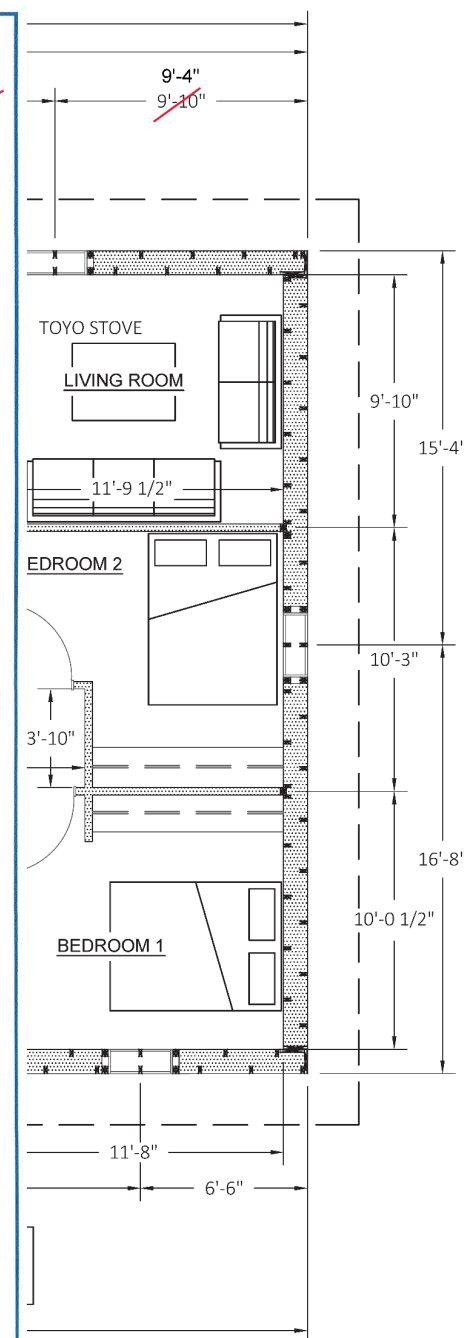
I certify that this Energy Rating is true and correct, to the best of my knowledge and belief, and the structure located on the above described property complies with the all the requirements of the building energy efficiency standards as required by Section .04 Part A. of the AHFC New Construction Inspection Guidelines, per the standards adopted by 15 AAC 155.010.

Energy Rater Signature

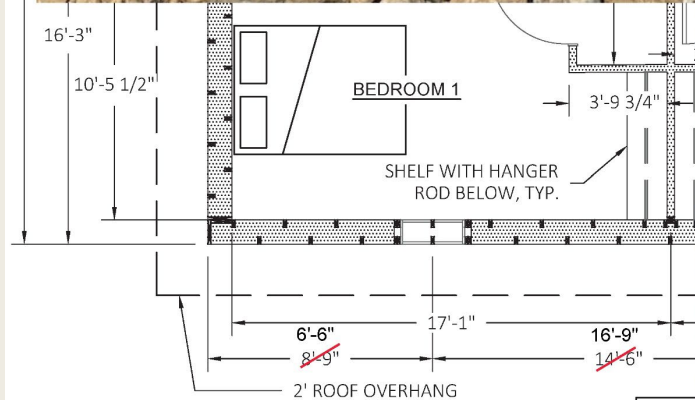
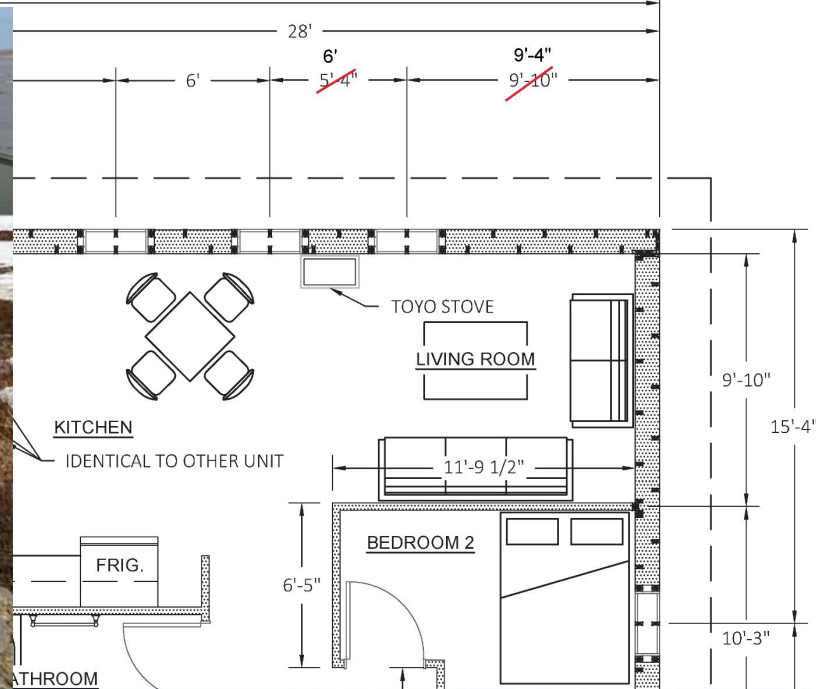
Date

Return to: _____

Form PUR-101 v.3/1/16



100% DESIGN



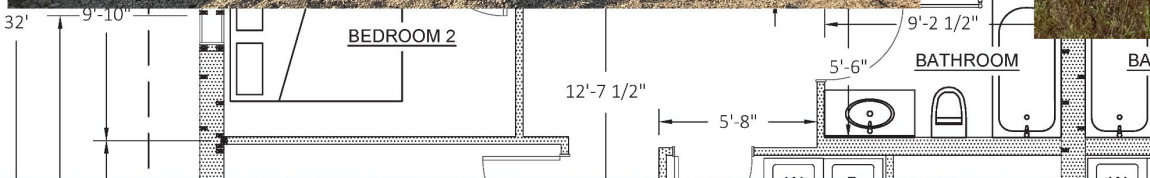
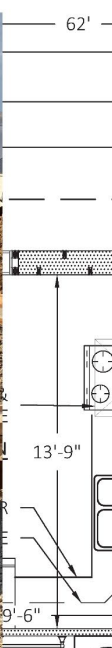
NOTE

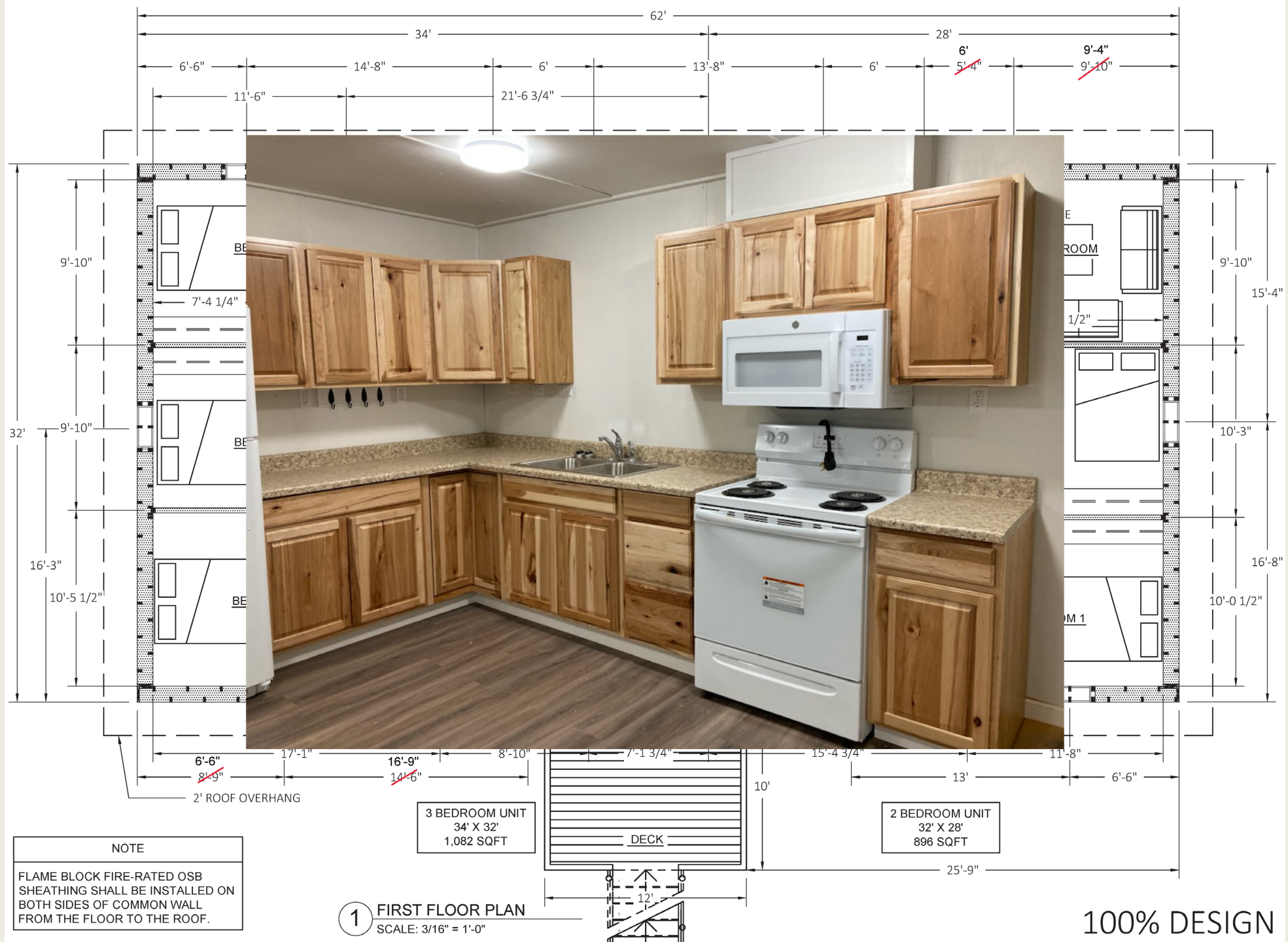
FLAME BLOCK FIRE-RATED OSB SHEATHING SHALL BE INSTALLED ON BOTH SIDES OF COMMON WALL FROM THE FLOOR TO THE ROOF.

1 FIRST FLOOR

SCALE: 3/16" = 1'-0"





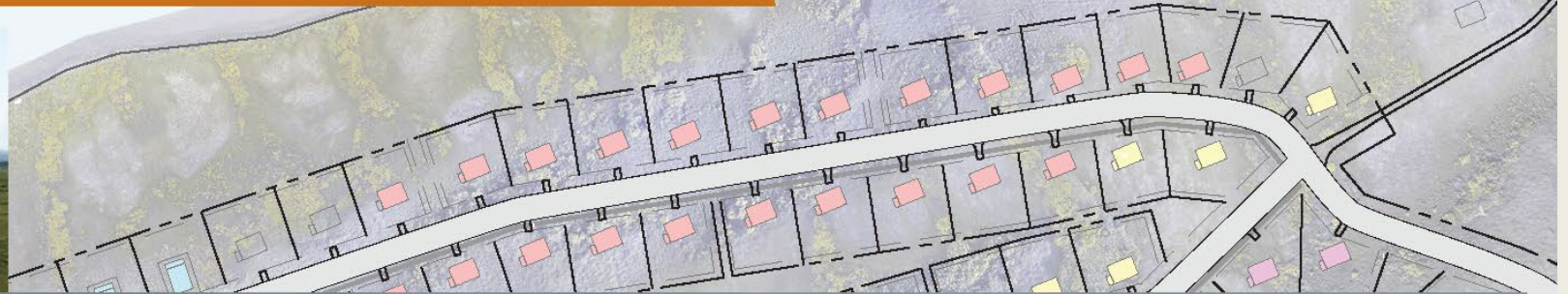


Housing Cost Comparisons

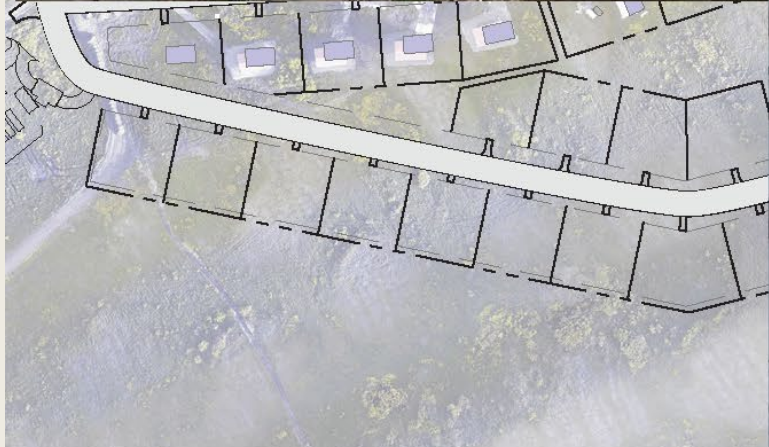
- Three homes were constructed in 2018 (each was 1,344 Sq Ft) at a cost of \$375K/home to build (\$279.02 per Sq Ft).
- 13 homes were constructed in 2019 (each was 1,408 Sq Ft) at a cost of \$658K/home to build (\$467.33 per Sq Ft).
- Seven homes were constructed in 2020 (each was 986 Sq Ft) at a cost of \$150K/home to build (\$152.13 per Sq Ft).
- Two homes were constructed in 2020 (each was 1,408 Sq Ft) at a cost of \$160K/home to build (\$113.64 per Sq Ft).
- One AHFC Duplex was constructed in 2021 (1,984 Sq Ft) at a cost of \$385K to build at \$194.05 per Sq Ft. This structure was AHFC Energy Star Rated at 97.5 points (Six Star).
- The nine homes constructed in 2020 are of the same basic building design as the Six Star Energy Rated Duplex, but were not individually rated.

Relocation Accomplishments to Date

June 15, 2020



December 1, 2020



2022 Planned Construction

- Construct 7,596-feet (1.44-Miles) of Pioneer Roads. This will complete the pioneer roads concept, allowing access to all residential lots needed to relocate the population.
- Construct 29 Driveways.
- Construct 29 gravel house pads. This will complete all house pad construction needed for the relocation of the remaining population. Within this number, 10 spare lots will be available for future housing.
- Construct the Department of Justice Domestic Violence Shelter.
- Construct one 1,408 Sq Ft BIA HIP four-bedroom home (Pending finalizing BIA HIP approval) .
- Install remaining power poles, transformers, and high voltage transmission line. This will finalize the power grid and will complete the build out for the community.
- Pending additional funds, the water line from the well field to the water treatment plant and a 150,000-gallon water storage tank will be constructed. This project is short by \$3.0-million.

Newtok Shore Line Erosion Update

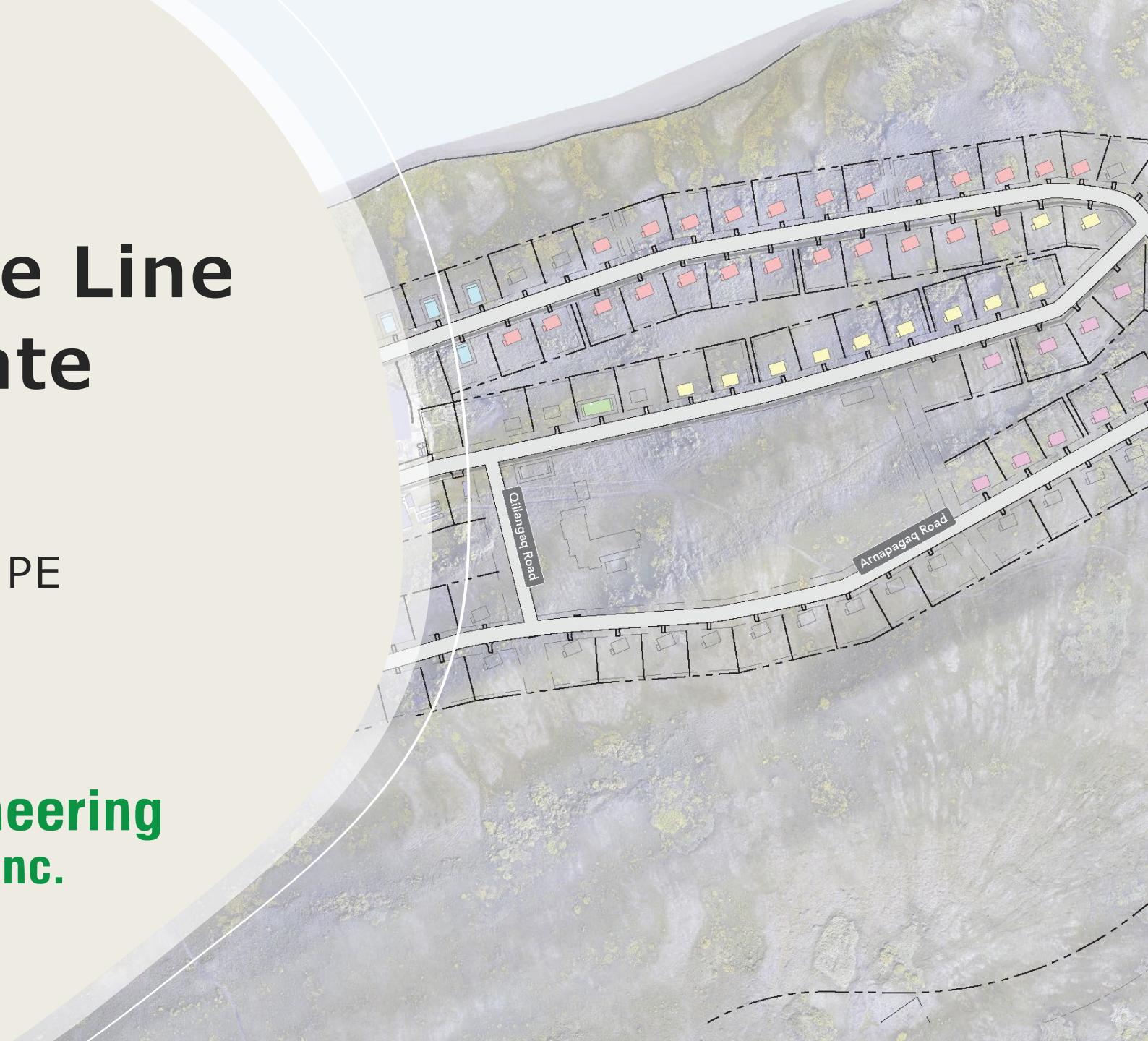
2022 and Beyond

Mr. Patrick M. LeMay, PE

March 17, 2022



**LeMay Engineering
& Consulting, Inc.**



Statistics

- From 1954 to 2016, 4,168 feet of land was lost at a rate of 67 feet per year.
- From 2006 to 2016, 700 feet of land was lost at a rate of 70 feet per year.
- From 2012 to 2016, 250 feet of land was lost at a rate of 62.5 feet per year.
- From 2016 to October 28, 2018, 125 feet of land was lost at a rate of 62.5 feet per year.
- From October 28, 2018, to March 17, 2022, 215 feet of land was lost at a rate of 71.7 feet per year.
- The Fall/Winter Storm Season of 2021 was mild with only 10 feet of land loss.
- The former drinking water source (community's backup) was lost in June 2019 with the pond draining.

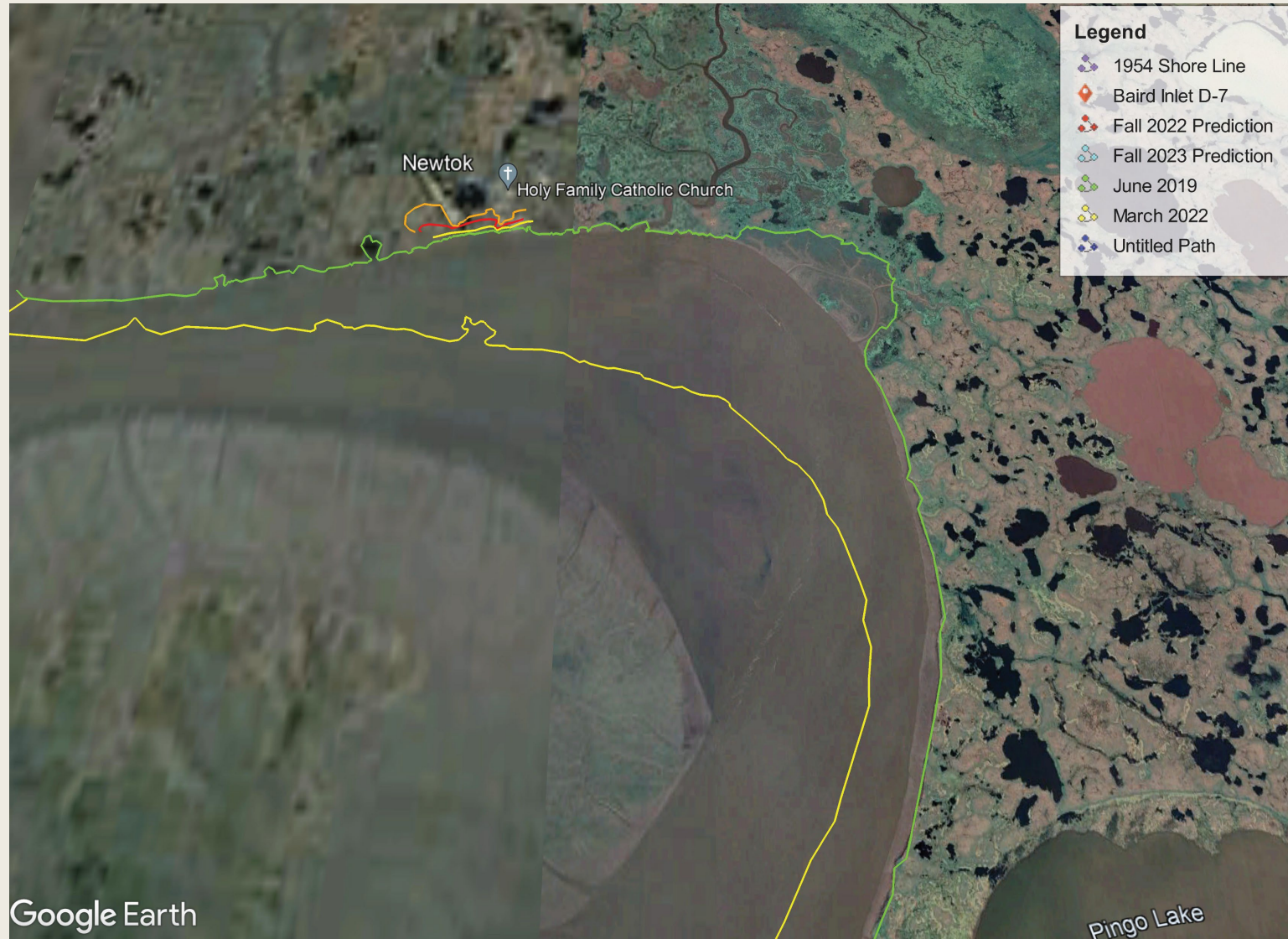
Additional Statistics

- As of September 9, 2019, there is 71 feet from the shoreline to the first LKSD-threatened Teacher House. [Update: in 2021, four LKSD Teachers' Houses located on the south side of the school were demolished.](#)
- As of September 9, 2019, there is 210 feet from the shoreline to the School. [Update: The shoreline is within 140 feet of the school as of March 2022.](#)
- As of September 9, 2019, there is 225 feet from the shoreline to the School's Water Treatment Plant. [Update: The shoreline is within 65 feet of the School's Water Treatment Plant as of March 2022. This area is eroding faster than our monitoring point. This facility will be lost in December 2022 if Newtok has a typical Fall/Winter Storm Season.](#)
- As of September 9, 2019, there is 275 feet from the shoreline to the DOT Runway. [Update: The shoreline is now at 184 feet from the end of the runway as of March 2022. The Newtok Runway will close in August 2022.](#)
- Average erosion rate of 71.7 feet per year.
- 25 feet of land was lost within one Fall/Winter Storm cycle occurring September 2-7, 2019.
- Typically, there are five Fall/Winter Storms per year with an average loss per storm cycle of 25 feet.

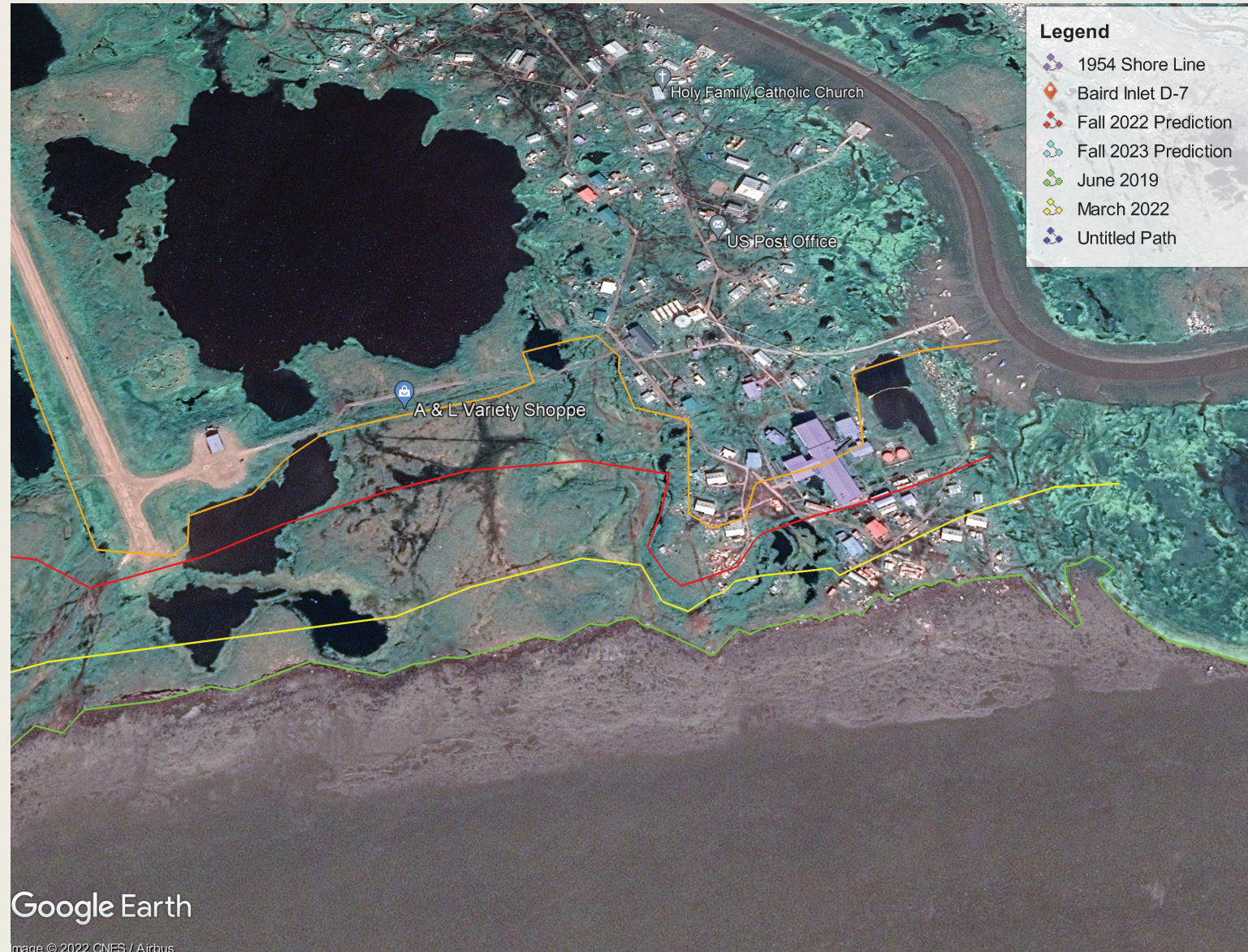
1954 Quad-Map of Newtok, Alaska



Current Shoreline



Current Shoreline



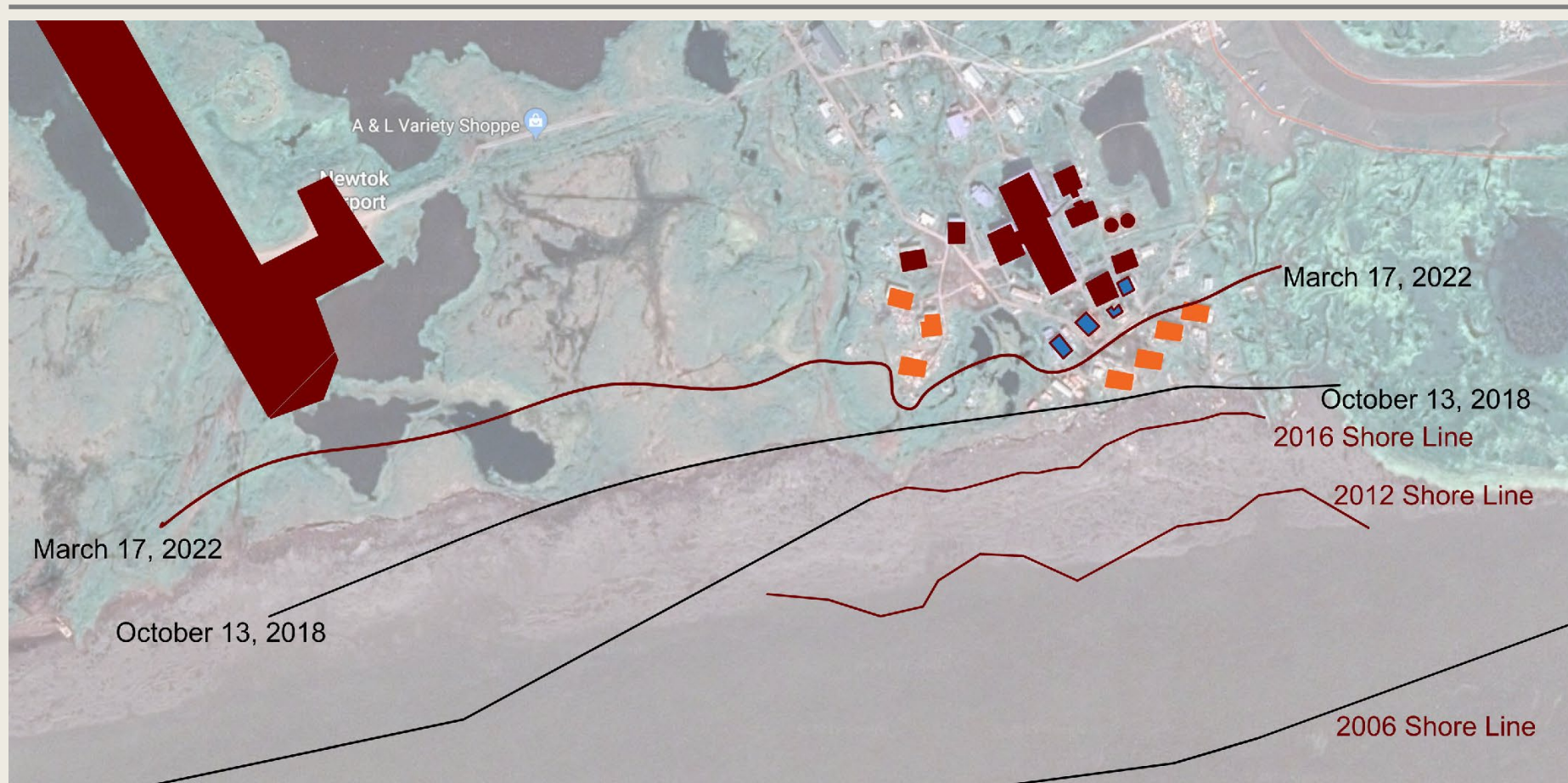
Current Shoreline



July 14, 2014, to March 17, 2022



Shore Line from 2006 to Current



Funding & Timeline



Timeline Goals and Funding Needs

Priority Project	Funding Request	Date for Funds to be Emplace to Meet Goal	Completion Goal
#1 Remaining Housing	\$6.2-Million	July 2022	October 2024
#2 Sewer Lagoon	\$2.5-Million	August 2022	October 2024
#3 Sewer Force Main, Lift Station, and Main Lines	\$4.6-Million	August 2022	October 2023
#4 Sewer Service Lines to Homes	\$1.1-Million	August 2022	October 2024
#5 Drinking Water Distribution Loops 1 & 2	\$4.9-Million	August 2022	October 2024
#6 Water Services to Homes	\$1.1-Million	August 2022	October 2024
#7 Balance Power Plant with Upsized Engines*	\$600k	August 2022	October 2023
#8 Additional Housing for Overcrowding	\$2.4-Million	November 2023	October 2025
#9 Fuel Storage Farm	\$4.1-Million	November 2023	October 2025

Timeline Goals and Funding Needs

Secondary

Priority Project	Funding Request	Date for Funds to be Emplace to Meet Goal	Completion Goal
#10 Second 150,000-gallon Water Tank	\$2.3-Million	November 2023	October 2025
#11 Tribal Office	\$900K	November 2023	October 2025
#12 Equipment Shop	\$1.1-Million	November 2023	October 2025
#13 Environmental Cleanup Funds to Restore Newtok back to Nature	\$60 to \$80 -Million	November 2023	TBD
#14 Final Road Elevation with Funds Provided in the Yearly Allocation of the BIA TIPP Program	TBD		
#15 Grid Scale Solar and 1-mW Battery System	\$3.8-Million	August 2022	October 2023

Timeline Goals and Funding Needs

Projects by Others

Priority Project	Funding Needs	Date for Funds to be Emplace to Meet Goal	Completion Goal
#1 Mertarvik School	\$60-Million	November 2023	October 2024
#2 US Post Office in Mertarvik	\$900K	June 2022	October 2023
#3 YKHC Mertarvik Clinic	\$2.1-Million	June 2022	October 2024
#4 Mertarvik Airport	Funded	NA	September 2022

Questions

